

# *Le Jardin de Mère Nature dans une Petite Planète*

(Mother Nature's Garden on a Small Planet)

a SPECIES DISTRIBUTION LISTING for

## **TOWNSHIP 13 SOUTH, RANGE 10 EAST PIMA COUNTY, ARIZONA Gila and Salt River Baseline and Meridian**

August 31, 2010 Update

“An increasing need for careful husbandry of the earth's natural resources has renewed interest in the classification and mapping of ecosystems. The inventory of our remaining biotic entities is particularly urgent because the increased aspirations of a constantly growing world population are placing ever greater stress on these generous, but finite, living resources.”

United States Department of Agriculture, Forest Service, General Technical Report RM-73



This photograph was taken looking southwest, the Roskrige Mountains are in the background.  
William T. Kendall, July 4, 2005

“To know the desert involves an acquaintance with all its aspects, and all its physical features, as well as all of the animals and plants that have learned how to find in it a congenial place to live. The most significant lesson that the desert dweller can learn from a familiarity with its plant and animal life is to regard himself not as an exile from some better place, but as a man at home in an environment to which his life can be adjusted without physical or intellectual loss.”

Forest Shreve, *The Cactus and Its Home*, found in *Discovering the Desert*, by William G. McGinnies

## MAJOR CONTRIBUTORS AND SOURCES OF INFORMATION

William T. Kendall \*WTK (date of observation)\*

Southwest Environmental Information Network (SEINet) \*85 (a date of a search for information on the species)\*

E. Lendell Cockrum. 1960. *The Recent Mammals of Arizona: Their Taxonomy and Distribution*, The University of Arizona Press, Tucson, Arizona. This inclusion is based on the general distribution maps and statements. \*118 (distribution note, map - Figure Number and Page Number)\*

Charles H. Lowe. 1964. *The Vertebrates of Arizona with Major Section on Arizona Habitats*, The University of Arizona Press, Tucson, Arizona. \*55\*

## SPECIES DISTRIBUTION LISTINGS

Species Distribution Listings are being developed to encourage and promote the conservation of local native animals and plants. The listings are developed for legally defined geographic areas, and larger bodies of water. The listings include species reported as having been observed in or reported from the described area. Exotic and non-local landscaped plants are not included in the listings unless they have become naturalized into the surrounding native environment. Neither “Man” nor our domesticated animals, except for feral animals, have been included in the listings of species; however, they have had an impact on all natural areas, the future degree of this impact must be managed in order to restore and provide for the continuation of the natural interrelationships between all species.

Due to the continuing addition of species, the listings should be considered works in progress. In the listings, and most often in the listing of animals, species have been included based on general distribution mapping and/or statements and not on an observation made in a specific location. It is recommended that we consider a species as being “confirmed” to a township or general listing area only after we have at least three recorded sightings, cited in the footnotes, with no more than one of those records being based on general distribution mapping for the species. Note that the Southwest Environmental Information Network (SEINet) \*85\* may have several collections recorded for a species within any given township or listing area, and that the date shown in parentheses is a date of the search of their records and not a date of recorded sighting. Note also that many of the individual species collection records found in SEINet include additional associated species. For assistance with the identification of a plant, contact the

University of Arizona Herbarium (520-621-7243; FAX: 520-621-7186; P.O. Box 210036 Herring Hall, 1130 East South Campus Drive, Tucson, Arizona 85721).

Individual species records are presented alphabetically by division, class, family and genus within their kingdoms. Following the scientific name is the authority, common synonym(s), common name(s), a general description of the species, a general description of the habitat, the biotic communities in which it has reportedly been observed and footnotes. An attempt is being made to identify the range in mature (flowering/fruitlet) heights reported for the plants. Wherever possible the flowering period is given as it has been reported and is inclusive to early month (1<sup>st</sup>-10<sup>th</sup>), mid-month (11<sup>th</sup>-20<sup>th</sup>) and late month (21<sup>st</sup>-end). The habitat description is provided in order to help you visualize the types of natural habitats a species is found in. Descriptions have been developed from and are based on herbarium records and general descriptions of habitat. The habitat description provided should not be considered as limiting as to the type of habitat that a plant might occupy. The terms “streambed”, “creekbed”, “riverbed” or “lakebed” refer to their dry aspects. Plants reported as occurring in recently burned areas were observed in the area within one year following a fire. The range in elevation has been rounded off to the nearest 100 feet up for the higher elevation, or down for the lower elevation. Species reported from within 0 to 100 feet as their lower elevation limit have been recorded as occurring “from sea level”. The reporting of the ecological formations follows the mapping presented in the “Biotic Communities of the Southwest” by David E. Brown and Charles H. Lowe, August 1980, with the exception of the “wetlands” which are being reported as an ecological formation in the listings. Species not considered to be native to Arizona are shown as being **EXOTIC**, printed in red. Exotic plants are not recommended for use in landscaping or restoration projects. Plants that may be an attractive component of a restored native habitat are so noted. Plants reported as having been used by native peoples of North America and which might be investigated to determine their value as a home garden or commercial food, fodder, beverage, spice, fiber, and/or dye crop may be so noted; much of this information is based on the records of the Native American Ethnobotany website [University of Michigan - Dearborn], footnote \*127\*. Species once reported as having occurred within the described area, but that no longer occurs there, may be shown as EXTIRPATED. Disjunct species, outliers and plants on the edge of the main population, as observed by the surveyor, may be noted as being PERIPHERAL. When describing the “native range” of plants in North America northwestern refers to Alaska, northern refers to northern Canada (the Yukon Territory, Northwest Territories and Nunavut), northeastern refers to Greenland, central refers to southern Canada (north-central: British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Newfoundland and Labrador, New Brunswick, Nova Scotia and Prince Edward Island) and the United States (south-central), and southern refers to Mexico, below which is Central America and South America. In the footnotes, the source(s) used for the inclusion of the species in a listing is printed in either green \*00\* (indicating that the entry is based on an actual sighting) or blue \*00\* (indicating that the entry is based on a general distribution description and/or mapping). Plants listed in the book “Livestock-Poisoning Plants of Arizona” by Ervin M. Schmutz, Barry M. Freeman and Raymond E. Reed and published in 1968 (80) as being either “Major Poisonous Range Plants” or “Secondary Poisonous Range Plants” are further identified by their listing heading being printed in red in the footnotes; plants considered to be “Rarely Poisonous and Suspected Poisonous Range Plants” and “Poisonous Cropland and Garden Plants” have also been noted. In order to facilitate referencing to T.H. Kearney and R. H. Pebbles’ “Arizona Flora” the corresponding page number(s) for the species has been provided in the footnote (\*46 (Page #)\*).

Local native plants are recommended for use in landscape and restoration projects. Once established many native species require little, if any, irrigation. The inclusion of a plant in the township listing does not necessarily mean that the plant is suitable for the site in which you want to plant it. Ideally restoration should include those species of plants that were native to the property. The source material, of plants and seed, used in the project should be as local as possible. In order to determine what plants were native try to locate photographs of the area prior to clearing or look for natural areas and remnant populations and plants adjacent to where the restoration is to take place. Plants should be planted in their approximate

original habitat and density and taking into consideration the original local native site and elevation of occurrence.

The use of local native plants in landscape and restoration projects encourages native animals to remain in the area and helps us to retain the area's natural beauty and unique identity and heritage.

The Species Distribution Listings have been created and maintained by William T. Kendall. Any questions, concerns, corrections and/or comments, including the reporting of unrecorded species and information relating to historical distributions, may be sent to the following address: William T. Kendall, P.O. Box 86091, Tucson, Arizona 85754-6091

**DISCLAIMER:** The information presented under "Township Notes" has been obtained from large scale mapping and should be used only as a general guide. The listings are not meant to take the place of on-site surveys for species. Information used in the listings is accepted from biologists and individuals interested in helping to promote the conservation of our natural resources. Mistakes are made in the identification of species, the interpretation of data and in the recording of information, and changes in nomenclature occur. For these reasons I can not and do not warrant the accuracy of these listings. Attempts are made to keep the information contained in the Species Distribution Listings as accurate as possible; however, I disclaim any implied warranty or representation about its accuracy, completeness, or appropriateness for any particular purposes. Users of the information found in the listings assume full responsibility for their use of the information and understand that I not responsible or liable for any claim, loss, or damage resulting from its use.

**CAUTION:** Many native desert plants have sharp thorns and spines. Care should be given when handling these plants and consideration should be given to public safety at sites where they are to be planted. Range plants having a known toxic or poisonous property may be so noted. Footnotes for plants whose sources may have cautionary statements, comments and information on rarely poisonous or suspected poisonous properties may be shown in red \*00\*. Many poisonous plants are similar in appearance to edible ones. No field collected plant should be eaten unless you know for a fact that it is safe for you to do so.

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## Acknowledgements

## Footnotes and References for the Species Distribution Listings

## TOWNSHIP NOTES

**LOCATION:** This township is located in north-central Pima County in south-central Arizona. Portions of this township are located within the Ironwood Forest National Monument. This township is bounded on the north by the alignment for Tucker Road and on the south by the alignment for Mile Wide Road.

**Historic Farming Activities:** Historic farms: the Anway Farm, the Hearst Farm, the Kai Farm and the Tucker Farm.

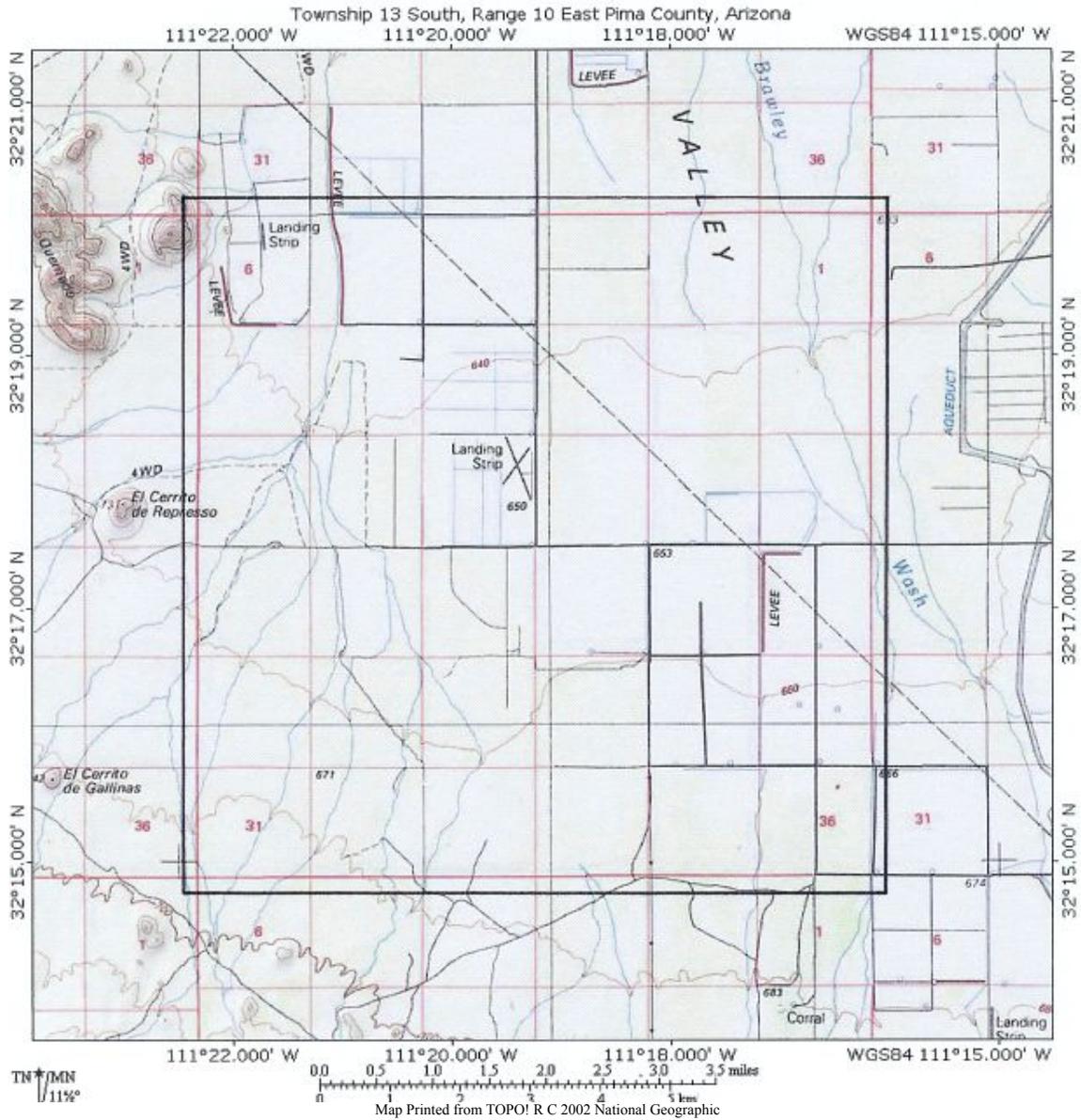
**LANDMARKS:** Named washes include the Blanco Wash and Brawley Wash. This township is located in Avra Valley.

**ELEVATION:** Elevations range from approximately 2,055 feet on the north township line at the Blanco Wash to approximately 2,272 feet at southwest corner (1).

**PHYSIOGRAPHIC PROVINCE:** This township is located within the Sonoran Desert Section of the Basin and Range Physiographic Province (2).

**SOILS:** Soils have been described as being Soils are described as Thermic (hot) Arid Soils (soils with mean annual temperatures of 59 degrees to 72 degrees Fahrenheit (15 degrees to 22 degrees Centigrade) and 5 to 10 inches (13 to 25 cm) mean annual precipitation) and/or Thermic (hot) Semiarid Soils (soils with mean annual temperatures of 59 degrees to 72 degrees Fahrenheit (15 degrees to 22 degrees Centigrade) and 10 to 16 inches (25 to 41 cm) mean annual precipitation) of the Anthony-Sonoita Association (deep, arid soils on the alluvial fans and valley slopes); Continental-Sonoita-Tubac Association (deep, arid soils on uplands); Mohave-Tres Hermanos-Anway Association (deep, arid soils on the valley plains), and the Pinaleno-Nickel-Palos Verdes Association (deep, arid, gravelly soils on deeply dissected uplands) (3).

**BIOTIC COMMUNITY:** This township is located within the Lower Colorado River Subdivision of the Sonoran Desertscrub Regional Formation of the Desertscrub Formation with associated Wetlands (4).



Map of Township and Adjacent Sections

LISTED BELOW ARE A FEW OF THE NATIVE PLANTS REPORTED AS OCCURRING IN THIS TOWNSHIP THAT MIGHT BE CONSIDERED FOR USE IN LANDSCAPE AND RESTORATION PROJECTS

Trees and Large Shrubs (over 7 feet maximum height)

- Saguaro (*Carnegiea gigantea* - 5' to 60')
- Velvet Mesquite (*Prosopis velutina* - 2' to 56')
- Blue Paloverde (*Parkinsonia florida* - 40" to 40')

Catclaw Acacia (*Acacia greggii* var. *greggii* - 40" to 25')

Whitethorn Acacia (*Acacia constricta* - 1' to 20')

Chain-fruit Cholla (*Cylindropuntia fulgida* var. *fulgida* - 3' to 15')

Greythorn (*Ziziphus obtusifolia* var. *canescens* - 3' to 13')

Creosote Bush (*Larrea tridentata* var. *tridentata* - 20" to 13')

Fishhook Barrel Cactus (*Ferocactus wislizeni* - 1' to 11')

Desert Broom (*Baccharis sarothroides* - 3' to 10')

Cane Cholla (*Cylindropuntia spinosior* - 16" to 10')

Fourwing Saltbush (*Atriplex canescens* - 1' to 10')

Desert Pricklypear Cactus (*Opuntia engelmannii* var. *engelmannii* - 20" to 8')

#### Vines and Climbers

Drummond Clematis (*Clematis drummondii* - 10' to 40')

Fingerleaf Gourd (*Cucurbita digitata* - 3' to 40')

#### Shrubs (2 to 7 feet maximum height)

Canyon Ragweed (*Ambrosia ambrosioides* - 1' to 7')

Desert Saltbush (*Atriplex polycarpa* - 12" to 78")

Desert Mistletoe (*Phoradendron californicum* - 8" to 5', see note)

Triangleleaf Bursage (*Ambrosia deltoidea* - 1' to 4')

White Bursage (*Ambrosia dumosa* - 7" to 40")

Burroweed (*Isocoma tenuisecta* - 6" to 40")

#### Grasses

Plains Bristlegrass (*Setaria vulpiseta* - 12" to 48")

Spidergrass (*Aristida ternipes* var. *gentilis* - 8" to 48")

Purple Threeawn (*Aristida purpurea* - 4" to 40")

#### Shrubs (under 2 feet maximum height), Subshrubs, Herbs and Small Succulents

Hoary Indian Mallow (*Abutilon incanum* - 8" to 13')

Desert Night-blooming Cereus (*Peniocereus greggii* var. *transmontanus* - 1' to 8')

Apricot Mallow (*Sphaeralcea ambigua* - 16" to 78")

Whitestem Paperflower (*Psilostrophe cooperi* - 4" to 32")

Gordon Bladderpod (*Lesquerella gordonii* var. *gordonii*) - 3" to 24")

Arrowleaf Mallow (*Malvella sagittifolia* - 6" to 18")

Bajada Lupine (*Lupinus concinnus* - 3" to 18")

Arizona Phacelia (*Phacelia arizonica* - 1" to 16")

Arizona Poppy (*Kallstroemia grandiflora* - 4" to 12" in height, with stems extending to 4' in length)

California Evening Primrose (*Oenothera arizonica* - 2" to 12")

Desert Holly (*Acourtia nana* - 2" to 10")

Arizona Blanketflower (*Gaillardia arizonica* - 4" to 8")

## CONSERVATION RELATED ORGANIZATIONS AND NURSERIES

### **Arizona Department of Agriculture**

<http://www.azda.gov/>

**Native Plant Crimes HOTLINE: 602-364-0907**

The mission statement of the Arizona Department of Agriculture is to regulate and support Arizona agriculture in a manner that encourages farming, ranching, and agribusiness while protecting consumers and natural resources.

### NOTICE OF INTENT TO CLEAR LAND

The Arizona Department of Agriculture enforces the sections of the Arizona Revised Statutes commonly referred to as the "Arizona Native Plant Law". The statutes require, in part, that anyone who is clearing land notify the State of Arizona in advance of the clearing. Some land owners involved in the clearing of land allow for nurseries and people who are interested in salvaging plants to do so prior to the clearing. The Arizona Department of Agriculture posts these notifications in their county offices. You may also contact the Arizona Department of Agriculture and, for a fee, be put on a mailing list of people receiving copies of the Notices of Intent to Clear Land.

Contact Information: Arizona Department of Agriculture, 1688 West Adams Street, Phoenix, Arizona 85007. Telephone number: 602-542-4373.

### **Arizona Game and Fish Department**

<http://www.gf.state.az.us/>

**Operation GAME THIEF: 602-942-3000**

~~The mission statement of the Arizona Game and Fish Department is to conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use by present and future generations.~~

As part of their conservation program the Arizona Game and Fish Department provides ideas on how to learn to live with, and landscape for, wildlife:

### LIVING WITH WILDLIFE

[http://www.azgfd.gov/w\\_c/urban\\_wildlife.shtml](http://www.azgfd.gov/w_c/urban_wildlife.shtml)

Contact Information: Arizona Game and Fish Department, 5000 West Carefree Highway, Phoenix, Arizona 85086-5000. Telephone number: 602-942-3000

### **Arizona Native Plant Society**

<http://aznps.org/>

The Arizona Native Plant Society is a statewide nonprofit organization devoted to Arizona's native plants. Its mission is to promote knowledge, appreciation, conservation, and restoration of Arizona native plants and their habitats. They work with the Southwest Rare Plant Task Force to develop strategies for protecting rare species and their habitats; they keep abreast of conservation issues concerning native plants species and responds to those through their Conservation Committee; they promote the use of native species in residential and commercial landscapes; they publish the Plant Press, support the publication of scholarly works and maintains a website with information and links about native plant, and they host a series of statewide events that provide forums to learn from professionals. Member activities and benefits include chapter and statewide gatherings; field trips and educational presentations; conservation through education, outreach and restoration; habitat restoration projects; informative website, newsletters and journals, and interactions with plant experts and enthusiasts.

#### LISTING OF SOURCES FOR NATIVE PLANTS AND SEEDS

The Arizona Native Plant Society maintains a listing of Native Plant and Seed Sources at:

<http://www.aznps.org/sources.html>

Contact Information: Arizona Native Plant Society, PO Box 41206, Tucson, Arizona 85717.

### **Tucson Cactus and Succulent Society**

<http://www.tucsoncactus.org/>

The Tucson Cactus and Succulent Society is a non-profit organization dedicated to educating, teaching and learning about cacti and succulent plants. Their monthly programs feature knowledgeable individuals who can educate you and help you understand more about these fascinating plants. They conduct and sponsor native cactus and succulent rescue operations, plant sales, field trips, nursery and garden visits, conventions and conferences as well as other activities throughout the year.

#### NATIVE PLANT RESCUE NOTICE

The Tucson Cactus and Succulent Society expends a tremendous amount of time and effort in the organizing and overseeing of their native plant rescue events. The native plant rescues carried out by the dedicated members of the Society provide an immeasurable service to our community.

Members of the Tucson Cactus and Succulent Society organize native plant rescues in areas being cleared for development. If interested in rescuing plants and/or obtaining local native plants for your landscaping or restoration project join the Society and become a rescue crew member.

Contact Information: Tucson Cactus and Succulent Society, PO Box 64759, Tucson, Arizona 85728-4759.  
Telephone number: 520-885-6367.

### **Desert Survivors Native Plant Nursery**

<http://www.desertsurvivors.org/nursery.asp>

The Desert Survivors Native Plant Nursery sells many local native plants and is willing to consider growing any native plant for which there is a buyer.

Contact Information: Desert Survivors Native Plant Nursery, 1020 West Starr Pass Boulevard, Tucson, Arizona 85713. Telephone number: 520-791-9309.

**Native Seeds/SEARCH**  
<http://www.nativeseeds.org>

The Native Seeds/SEARCH is a nonprofit conservation organization that seeks to preserve the crop seeds that connect the Native American cultures to their lands. The mission of the Native Seeds/SEARCH is to conserve, distribute and document the adapted and diverse varieties of agricultural seeds, their wild relatives and the role these seeds play in the cultures of the American Southwest and Northwest Mexico.

Contact Information: Native Seeds/SEARCH, 526 North Fourth Avenue, Tucson, Arizona 85705. Telephone number: 520-622-5561 or toll free at 866-622-5561; FAX 520-622-5561; e-mail: [info@nativeseeds.org](mailto:info@nativeseeds.org)

## LISTING OF PLANTS

STRICTLY ENFORCED LAWS PROTECT MANY OF ARIZONA'S NATIVE  
PLANTS FROM COLLECTION, MUTILATION AND DESTRUCTION

Native Plant Crimes HOTLINE: 602-364-0907

Kingdom Plantae: The Plant Kingdom  
Subkingdom Tracheobionta: The Vascular Plants  
Superdivision Spermatophyta: The Seed Plants

CLASS LILIOPSIDA: The MONOCOTS

Poaceae (Gramineae): The Grass Family

*Aristida hamulosa* (see *Aristida ternipes* var. *gentilis*)

***Aristida purpurea* T. Nuttall: Purple Threeawn**

COMMON NAMES: Blue Threeawn, Democrat Grass, Nealley Three-awn, Perennial Three-awn, Purple Needle-grass, Purple Three-awn, Purple Threeawn, Red Threeawn, Reverchon Three-awn,

Reverchon Threeawn, Three Awn, Three-awn, Threeawn, Tres Barbas, Tres Barbas Purpurea, Wiregrass. DESCRIPTION: Terrestrial annual or perennial graminoid (a bunchgrass (clumpgrass) with erect culms 4 to 40 inches in height and up 4 to 12 inches in width at the base, plants 8 to 12 inches in height and 4 to 6 inches in width at the base were reported, plants 14 inches in height and 2 to 6 inches in width at the base were reported); the foliage is light to dark green curing to gray or straw; the inflorescence is green, purplish or dark red-purple; the awns are purple; flowering generally takes place between early January and mid-August; however, flowering may occur throughout the year under favorable conditions (additional records, including varieties: one for early January, one for early September, six for mid-September, one for late September, four for early October, three for late October, two for mid-November and two for late November). HABITAT: Within the range of this species it has been reported from mountains; rocky summits; gravelly-sandy, sandy and clayey-loamy mesas; plateaus; along canyon rims; rocky cliffs; chutes; rocky canyons; rocky canyon sides; along bouldery-rocky-cobbly, rocky, rocky-gravelly, gravelly-sandy and sandy canyon bottoms; scree; talus slopes; sandy bases of escarpments; crevices in boulders and rocks; gravelly bluffs; buttes; rocky knolls; ledges; bouldery and rocky, gravelly-sandy-clayey and sandy ridges; ridgetops; silty ridgelines; rocky openings in forests; along meadows; foothills; rocky, gravelly, sandy, loamy and clayey hills; rocky, rocky-gravelly and gravelly hillsides; bedrock, bouldery, rocky, rocky-cobbly, rocky-sandy, rocky-sandy-loamy, shaley, cindery, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-sandy-clayey, sandy, loamy, clayey-loamy and silty-clayey slopes; sandy alluvial fans; rocky, rocky-gravelly, gravelly and sandy bajadas; bedrock, bouldery, rocky and shaley outcrops; amongst boulders and rocks; sandy lava flows; sand hills; sand dunes; in blow sand; breaks; rocky-sandy and sandy steppes; rocky, sandy, sandy-clayey, clayey and clayey-loamy prairies; bouldery-rocky, rocky, gravelly, gravelly-sandy and sandy plains; rocky, rocky-sandy, cindery, gravelly, gravelly-loamy, sandy, loamy, clayey-loamy and silty-clayey flats; rocky, gravelly-sandy and sandy valley floors; valley bottoms; along railroad right-of-ways; along gravelly, gravelly-loamy, sandy, sandy-loamy and clayey roadsides; along and in rocky, gravelly, sandy and clayey-loamy arroyos; along sandy bottoms of arroyos; along and in sandy draws; gulches; gravelly-sandy bottoms of gulches; rocky gullies; rocky-gravelly ravines; springs; in rocks along streams; bouldery streambeds; along creeks; along and in creekbeds; riverbeds; along and in bouldery, bouldery-cobbly-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; along and in bedrock, rocky, gravelly-sandy and sandy drainages; bouldery-rocky, rocky and pebbly drainage ways; sandy lakebeds; swamps; depressions; rocky, gravelly and sandy banks of washes; sandy edges of rivers and washes; gravelly margins of washes; mudflats; gravel bars; sandy beaches; rocky-clayey, gravelly and sandy benches; gravelly terraces; bottomlands; gravelly and sandy floodplains; mesquite bosques; along ditches; recently burned areas; riparian areas, and disturbed areas growing in dry rocky desert pavement; bouldery, bouldery-rocky, bouldery-rocky-cobbly, bouldery-cobbly-sandy, bouldery-cindery, bouldery-gravelly, rocky, rocky-cobbly, rocky-gravelly, rocky-sandy, shaley, shaley-sandy, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; rocky loam, rocky-sandy loam, rocky-clayey loam, cobbly-gravelly loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, sandy-silty loam, clayey loam, silty loam, humusy loam and loam ground; rocky clay, rocky-sandy clay, gravelly-sandy clay, sandy clay, silty clay and clay ground, and gravelly silty, sandy silty and silty ground, occurring from sea level to 9,000 feet in elevation in the forest, woodland, scrub, grassland, desert scrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant may be grazed by Black-tailed Prairie Dogs (*Cynomys ludovicianus*) and White-tailed Jackrabbits (*Lepus townsendii*). *Aristida purpurea* is native to central and southern North America. \*5, 6, 15, 33 (Page 244), 43 (081709), 46 (Page 120), 48, 58, 63 (081709 - color presentation), 85 (092709 - color presentation of dried material), 105, **HR\***

***Aristida ternipes* A.J. Cavanilles var. *gentilis* (J.T. Henrard) K.W. Allred: Spidergrass**

SYNONYMY: *Aristida hamulosa* J.T. Henrard, *Aristida ternipes* A.J. Cavanilles var. *hamulosa* (J.T. Henrard) J.S. Trent, *Aristida ternipes* A.J. Cavanilles var. *minor* (G. Vasey) A.S. Hitchcock. COMMON NAMES: Arizona Threeawn, Hook Threeawn, Mesa Threeawn, Poverty Threeawn,

Spidergrass, Three Awn, Threeawn Spider Grass, Three-awn, Three-awn Grass, Threeawn, Wild Oat, Zacate Arana de Tres. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) 8 inches to 4 feet in height); the flowers are maroon-red; flowering generally takes place between mid-March and mid-December. HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; rock cliffs; canyons; rocky canyon bottoms; crevices in boulders; rocky and rocky-clayey ridges; foothills; rocky, gravelly-sandy, gravelly-clayey-loamy and sandy hills; hillsides; piedmonts; rocky and sandy slopes; bajadas; amongst rocks; sandy hills; sandy prairies; gravelly and sandy plains; sandy and silty flats; rocky valley floors; railroad right-of-ways; along gravelly-loamy, sandy and clayey-loamy roadsides; shallow draws; along streambeds; along creeks; along and in sandy washes; drainages; within drainages; sandy and sandy-clayey-loamy swales; sandy beaches; benches; terraces; floodplains; mesquite bosques; along fencelines; stock tanks (charcos or repressos); ditches; riparian areas, and disturbed areas growing in dry bouldery, rocky, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy-clayey loam and clayey loam ground, and silty ground, occurring from 600 to 7,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Aristida ternipes* var. *gentilis* is native to southwest-central and southern North America and Central America. \*5, 6, 15 (recorded as *Aristida hamulosa* Henr.), 33 (recorded as *Aristida hamulosa* Henr., Page 239), 43 (092709), 46 (recorded as *Aristida hamulosa* Henr., Page 120), 58 (*Aristida hamulosa* Henr.), 63 (092709), 77 (recorded as *Aristida hamulosa* Henr.), **85** (092709 - color presentation of dried material), 105 (note on page 15)\*

*Aristida ternipes* var. *hamulosa* (see *Aristida ternipes* var. *gentilis*)

*Aristida ternipes* var. *minor* (see *Aristida ternipes* var. *gentilis*)

*Cenchrus ciliaris* (see *Pennisetum ciliare*)

### ***Cynodon dactylon* (C. Linnaeus) C.H. Persoon: Bermudagrass**

COMMON NAMES: Acabacahuiztle (Hispanic), Acacahuitzli (Nahuatl), Bermuda Grass, Bermudagrass, Bramilla (Hispanic), Canzuuc (Maya), Chiendent Pied-de-poule, Common Bermudagrass, Devil Grass, Devilgrass, European Bermuda Grass, Gallitos (Hispanic), Gewonekweek (Afrikaans), Grama (Hispanic), Grama de la Costa (Hispanic), Grama-seda, Gramilla (Hispanic), Grana (Hispanic), Guix-biguiñi (Zapoteco), Lan-suuk (Maya), Manienie, Motie Molulu, Pasto Bermuda (Hispanic), Pasto Estrella (Hispanic), Pata de Gallo (Hispanic), Pata de Perdiz (Hispanic), Pata de Pollo (Hispanic), Tsakam Toom (Hispanic), Zacate (Hispanic), Zacate Bermuda (Hispanic), Zacate Borrego (Hispanic), Zacate Chino (Hispanic), Zacate del Conejo (Hispanic), Zacate Inglés (Hispanic), Zacate Pilillo (Hispanic), Zaruue (Hispanic). DESCRIPTION: Terrestrial perennial graminoid (a sodgrass with usually stoloniferous and creeping culms 2 to 24 inches in height); the foliage is green or yellow-green curing to straw after a frost; the color of the florets has been described as being purple; flowering generally takes place between mid-February and late November (additional records: one for early January and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; canyons; bouldery-gravelly-sandy, rocky and sandy canyon bottoms; pockets of sandy soil in boulders; buttes; meadows; foothills; rocky hills; rocky hillsides; rocky, gravelly, sandy and clayey slopes; rocky outcrops; sand hummocks; prairies; plains; gravelly, sandy and clayey flats; valley floors; clayey valley bottoms; along railroad right-of-ways; along gravelly, gravelly-clayey-loamy and sandy roadsides; sandy bottoms of arroyos; seeps; springs; about streams; along streambeds; along creeks; along sandy creekbeds; along rivers; riverbeds; along and in rocky and sandy washes; within drainages; within rocky drainage ways; in clayey soils around ponds; cienegas; freshwater marshes; clayey marshlands; sandy depressions; along sandy banks of draws, streams, creeks, rivers and washes; sandy edges of rivers, ponds, lagoons, bogs and marshes; shores of lakes; gravel bars; sandy beaches; sandy benches; loamy bottomlands; floodplains; mesquite bosques; in and around clayey-loamy stock tanks; edges of canals;

along canal banks; along ditch banks; bouldery and sandy riparian areas; waste places, and disturbed areas growing in moist, damp and dry bouldery, bouldery-cobbly-sandy, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; clay ground, and bouldery-gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 6,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant which poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a veterinary aid. Bermuda Grass is sometimes confused with another exotic species, Large Crabgrass (*Digitaria sanguinalis*) a species of similar general appearance. Bermuda Grass goes dormant when nighttime temperatures drop below freezing or average daytime temperatures are below 50 degrees Fahrenheit. Vigorous growth is achieved when nighttime temperatures are above 60 degrees Fahrenheit and daytime temperatures are above 85 degrees Fahrenheit. *Cynodon dactylon* is native to Africa. \*5, 6, 15, 16, 18, 22 (color photograph), 30, 33 (Page 129), 43 (100509), 46 (Page 124), 58, 63 (053109 - color presentation), 68, 77, 80 (Bermudagrass is listed as a Poisonous Cropland and Garden Plant. "Cattle grazing on Bermudagrass pasture may develop photosensitization, paralysis or a nervous syndrome."), 85 (053109 - color presentation of dried materials), 101 (color photograph), 105, 109, 127, **WTK** (July 4, 2005)\*

***Echinochloa colona* (C. Linnaeus) J.H. Link: Jungle Rice**

SYNONYMY: *Echinochloa colonum* (C. Linnaeus) J.H. Link. COMMON NAMES: Armilá;n (Spanish), Arroz del Monte (Hispanic), Awnless Barnyard Grass, Blé du Dekkan (French), Capim-arroz (Portuguese), Capim-da-colônia (Portuguese), Capituva (Portuguese), Corn Panic Grass; Deccan Grass, Junglegrass, Jungle Rice, Jungle-rice, Junglerice, Jungle Ricegrass, Leopard Grass, Millet-rice, Pasto del Arroz (Spanish), Schamahirse (German), Shama Millet, Tiger Grass; Watergrass, Zacate Pinto, Zacate Rayado, Zacate Tigre, Zancaraña (Spanish). DESCRIPTION: Terrestrial annual graminoid (4 to 40 inches in height); the foliage is blue-green, green or yellow-green and may be mottled with purple; the stems may be colored with purple, the leaves may be banded with purple; the spikelets (flowers) are pale green or green; flowering generally takes place between late July and mid-November (additional records: one for mid-January, one for late March, one for early June, one for early July and one for mid-December); the fruits may be green, maroon and/or red. HABITAT: Within the range of this species it has been reported from mountains; plateaus; canyons; canyon bottoms; meadows; rocky hills; rocky hillsides; pockets of soil on rocky outcrops; sandy slopes; amongst cobbles; cobbly and sandy plains; plains; gravelly-silty and silty flats; valley floors; valley bottoms; coastal flats; along roadsides; along and in gravelly arroyos; along bottoms of arroyos; gulches; seeps; springs; sandy streambeds; along creeks; along rivers; bouldery-cobbly-sandy riverbeds; along and in bouldery, rocky, gravelly, sandy and silty-clayey washes; along and in drainages; around pools; muddy ponds; in pondbeds; along lakes; marshes; silty-muddy swamps; in sandy depressions; swales, along sandy and sandy-silty banks of arroyos, rivers, washes and drainages; sandy-loamy edges of rivers, riverbeds and pools; muddy margins of ravines, rivers and pools; along shores of lakes; along beaches; sandy benches; loamy bottomland; rocky and sandy floodplains; dams; around and in sandy and silty stock tanks (repressos); shores of reservoirs; in ditches; along ditch banks; rocky and sandy-clayey-loamy riparian areas; waste places, and disturbed areas growing in shallow water; muddy, and wet, moist, damp and dry bouldery, bouldery-cobbly-sandy, rocky, cobbly, gravelly and sandy ground; sandy-clayey loam, humusy-clayey loam and loam ground; sandy clay and silty clay ground, and gravelly silty, sandy silty and silty ground, occurring from sea level to 7,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food. *Echinochloa colona* may be native to Europe; however, the origin of this species is obscure. \*5, 6, 15, 16 (recorded as *Echinochloa colonum* (L.) Link), 30, 33 (recorded as *Echinochloa colonum* (L.) Link, Pages 275-276), 43 (100809), 46 (recorded as *Echinochloa colonum* (L.) Link, Page 138), 63 (100809 - color presentation), 68 (recorded as *Echinochloa colonum* (L.) Link), 77

(recorded as *Echinochloa colonum* (L.) Link), **85** (100809 - color presentation of dried materials), 101 (color photograph), 127\*

*Echinochloa colonum* (see *Echinochloa colona*)

*Eragrostis arida* (see *Eragrostis pectinacea* var. *miserrima*)

***Eragrostis pectinacea* (A. Michaux) C.G. Nees von Esenbeck ex E.G. von Steudel var. *miserrima* (E.P. Fournier) J.R. Reeder: Desert Lovegrass**

SYNONYMY: *Eragrostis arida* A.S. Hitchcock, *Eragrostis tephrosanthos* J.A. Schultes. COMMON NAMES: Desert Lovegrass, Gulf Lovegrass. DESCRIPTION: Terrestrial annual tufted graminoid (a bunchgrass (clumpgrass) with ascending or erect culms 4 to 28 inches in height); flowering generally takes place between early August and late October (additional records: one for late May, one for late June and one for mid-July). HABITAT: Within the range of this species it has been reported from mountains; bouldery canyons; sandy ridgetops; clearings in forests; meadows; foothills; hills; clayey hillsides; escarpments; bouldery-rocky, rocky, gravelly, gravelly-sandy-loamy, sandy-loamy and silty-loamy slopes; llanos; Tobosa flats; valley floors; along roadsides; arroyos; along streams; streambeds; along creeks; sandy soils along rivers; along and in gravelly and sandy washes; clayey lakebeds; playas; cienegas; depressions; swales; edges of washes and pools; swales; gravelly terraces; bottomlands; sandy floodplains; mesquite bosques; banks of stock tanks; along sandy ditches; sandy riparian areas; waste places, and disturbed areas growing in dry bouldery, bouldery-rocky, rocky, stony, gravelly and sandy ground; gravelly-sandy loam, sandy loam, silty loam and humusy-clayey loam ground, and clay ground, occurring from 800 to 7,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetlands ecological formations. NOTE: *Eragrostis pectinacea* var. *miserrima* is native to south-central and southern North America; Central America, and northern South America. \*5, 6, 30 (species), 33 (recoded as *Eragrostis arida* Hitchc., Pages 84-85, *Eragrostis tephrosanthos* Schult., Pages 86-87), 43 (101009), 46 (recoded as *Eragrostis arida* Hitchc., Page 87), 63 (101009), **85** (101009 - color presentation of dried material)\*

*Eragrostis tephrosanthos* (see *Eragrostis pectinacea* var. *miserrima*)

***Pennisetum ciliare* (C. Linnaeus) J.H. Link: Buffelgrass**

SYNONYMY: *Cenchrus ciliaris* C. Linnaeus. COMMON NAMES: African Foxtail, African Foxtail Grass, Anjangrass, Buffel Grass, Büffelgras (German), Buffelgrass, Bufle, Cadillo Buffel (Hispanic), Cenchrus Cilié (French), Dhaman (India), Huizapol (Hispanic), Pasto Buffel (Spanish), Sandbur, Zacate Buffle (Hispanic). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) 4 inches to 5 feet in height); the leaves are green; the spikelets are reddish turning a golden-brown when dry; flowering may take place several times a year when sufficient moisture is available (flowering records: one for mid-February, one for early April, one for mid-April, one for mid-August, one for late September, one for early October, one for mid-October, one for late October and one for late November). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; along rocky and sandy canyons; canyon bottoms; bases of cliffs; rocky-gravelly-clayey bluffs; buttes; ridges; ridgetops; foothills; rocky hillsides; rocky slopes; bajadas; rocky and rocky-gravelly outcrops; sandy plains; sandy flats; valley floors; along rocky roadsides; along and in arroyos; within draws; ravines; springs; cobbly creekbeds; rocky, rocky-cobbly-sandy and cobbly riverbeds; along and in gravelly-sandy washes; oases; marshes; depressions; rocky-sandy banks of washes; edges of arroyos and washes; sandy beaches; floodplains; lowlands; riparian areas, and disturbed areas growing in moist and dry rocky, rocky-cobbly-sandy, rocky-gravelly, rocky-sandy, cobbly, gravelly-sandy and sandy ground; loam ground; rocky-gravelly clay ground, and sandy-silty (loess) ground, occurring from sea level to 7,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities.

*Pennisetum ciliare* is native to southeastern Europe; western and southern Asia, and Africa. \*5, 6, 16, 22 (color photograph), 30, 33 (Page 266), 43 (101909), 46 (Supplement Page 1041), 63 (101909 - color presentation), 77, 85 (101909 - color presentation of dried material), **WTK** (July 4, 2005)\*

***Schismus barbatus* (P. Loeffling ex C. Linnaeus) A. Thellung: Common Mediterranean Grass**

COMMON NAMES: Common Mediterranean Grass, Kelch-grass, Mediterranean Grass, Mediterraneangrass, Zacate Mediterrane Comun. DESCRIPTION: Terrestrial annual tufted graminoid (1 to 14 inches in height); the foliage is green; the inflorescence is greenish-purple; the spikelets (flowers) may be purple tinged; flowering generally takes place between early January and early June (additional records: one for mid-October and one for late October, flowering beginning as early as November has been reported). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy and sandy-silty mesas; rocky cliffs; rocky and clayey canyons; sandy canyon bottoms; rocky talus; bluffs; rocky ridges; ridgetops; ridgelines; rocky, sandy-loamy and clayey hills; hilltops; rocky hillsides; along rocky, rocky-gravelly-loamy, rocky-loamy-clayey, gravelly, gravelly-sandy, sandy, sandy-loamy, loamy and clayey slopes; rocky alluvial fans; gravelly-sandy bajadas; rocky outcrops; sand dunes; blow-sand deposits; gravelly-sandy plains; gravelly, gravelly-sandy, sandy and silty flats; sandy valley floors; around wharves; roadbeds; along gravelly and sandy roadsides; springs; in sandy soils along streams; along gravelly-sandy and sandy creekbeds; along rivers; along rocky, gravelly and clayey-loamy riverbeds; along and in rocky-sandy, rocky-silty, gravelly-sandy and sandy washes; drainages; sandy and silty lakebeds; depressions; sandy banks of streams; sandy edges of streambeds and lakes; margins of washes; sandy benches; shelves; gravelly and sandy terraces; floodplains; canal banks; gravelly-sandy riparian areas, and disturbed areas growing in wet, moist and dry desert pavement; rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, gravelly-sandy loam, sandy loam, clayey loam and loam ground; rocky-loamy clay and clay ground, and rocky silty, gravelly silty, sandy silty and silty ground, occurring from sea level to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. *Schismus barbatus* is native to southwestern Europe; western, central and southern Asia, and northern and southern Africa. \*5, 6, 15, 16, 22 (color photograph), 33 (Pages 172-173), 43 (102209), 46 (Page 98), 58, 63 (102209 - color presentation of seeds), 68, 77, 85 (102209 - color presentation of dried material), **WTK** (July 4, 2005)\*

*Setaria macrostachya* (see NOTES and related footnotes 33, 46, 85 and 105 under *Setaria vulpiseta*)

***Setaria vulpiseta* (J.B. de Lamarck) J.J. Roemer & J.A. Schultes: Plains Bristlegrass**

COMMON NAMES: Assaak, Plains Bristlegrass, Xikkaa Kiix, Zacate Tempranero, Zacate Temprano. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass with somewhat geniculate culms 1 to 4 feet in height, one plant was described as being 2 inches in width at the base, several plants were described as being 8 to 16 inches in width at the base); the stems and leaves are pale to bright green sometimes with a bluish tinge curing to an orange-brown; the flowers may be orange and purple; flowering generally takes place between late April and mid-October (additional records: one for early March and one for mid-November). HABITAT: Within the range of this species it has been reported from mountains; cliffs; rocky canyons; rocky canyon sides; canyon bottoms; canyonettes; rocky talus; bases of cliffs; crevices in rocks; amongst rocky buttes; crests of buttes; rocky ledges; ridges; openings in woodlands; foothills; hills; hilltops; hillsides; rocky and gravelly slopes; bajadas; rocky outcrops; amongst boulders and rocks; sandy dunes; sandy mesquite hummocks; plains; gravelly flats; valley floors; along gravelly roadsides; arroyos; gravelly-sandy-loamy draws; streambeds; sandy creeks; along and in gravelly washes; within drainages; drainage ways; depressions; gravelly-sandy banks of streambeds, sandy riverbeds; creeks and washes; rocky edges of streambeds and washes; benches; sandy-loamy bottomlands; sandy floodplains; mesquite bosques; stock tanks; riparian areas, and disturbed areas growing in muddy and moist and dry bouldery, rocky, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam and sandy loam ground; sandy clay and clay ground, and cobbly-

sandy silty ground sometimes in the partial shade of shrubs and trees, occurring from sea level to 6,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: *Setaria vulpiseta*, the Plains Bristlegrass has been recorded in many texts as *Setaria macrostachya*; however, it has been reported that *Setaria macrostachya*, with the common name Large-spike Bristlegrass is an EXOTIC species that may also be found in Arizona. There appears to be some confusion as to what's what with this species with regard to its taxonomy. The native Plains Bristlegrass may be an attractive component of a restored native habitat, and the plant is reportedly a good soil binder. Plains Bristlegrass is an important forage grass with a high palatability; however, it is often selectively grazed over other range grasses and does not stand up well to heavy grazing. *Setaria vulpiseta* is native to south-central (again, some say that it is native and some say that it isn't) and southern North America; Central America, and South America. \*5, 6, 15 (recorded as *Setaria macrostachya* H.B.K.), 16 (recorded as *Setaria macrostachya* H.B.K.), 33 (recorded as *Setaria macrostachya* H.B.K., Plains Bristlegrass,, Page 270), 43 (102409), 46 (recorded as *Setaria macrostachya* H.B.K., Plains Bristlegrass, Page 139 and reidentified as in the Supplement, Page 1041), 48 (recorded as *Setaria macrostachya*), 58 (recorded as *Setaria macrostachya* H.B.K.), 63 (102409 - color presentation of seed), 77 (recorded as *Setaria macrostachya* H.B.K.), **85** (102409 - *Setaria macrostachya* Kunth and *Setaria vulpiseta* (Lam.) Roemer & J.A. Schultes), 105 (recorded as *Setaria macrostachya* H.B.K.)\*

### ***Sorghum halepense* (C. Linnaeus) C.H. Persoon: Johnsongrass**

COMMON NAMES: Aleppo Grass, Aleppohirse (German), Aleppo Milletgrass, Cañota (Spanish), Herbe d'Alep (French), Herbe de Cuba, Hierba Johnson (Spanish), Johnson Grass, Johnsongras (Afrikaans), Johnsongrass, Means Grass, Sorgho d'Alep (French), Sorgo de Alepo, Sorgo de Aleppo (Spanish), Wilde Mohrenhirse (German), Zacate Johnson. DESCRIPTION: Terrestrial perennial graminoid (20 inches to 8 feet in height); the foliage is green; the flowers are cream-purple, greenish-purple, dark red-purple or purplish; flowering may take place year-round. HABITAT: Within the range of this species it has been reported from mountains; canyons; sandy canyon bottoms; bluffs; meadows; foothills; hills; hillsides; sandy, sandy-loamy and sandy-silty slopes; amongst boulders and rocks; sand hummocks; rocky mudflows; sandy steppes; prairies; plains; sandy and loamy flats; valley floors; coastal prairies; along cindery railroad right-of-ways; along gravelly-sandy, gravelly-loamy and sandy roadsides; gulches; springs; rocky-sandy soil along streams; along and in streambeds; along and in rocky and rocky-gravelly-sandy creeks; along creekbeds; in sandy soil along and in rivers; along and in sandy riverbeds; in rocky and sandy washes; drainages; cienegas; freshwater marshes; sandy banks of creeks, rivers and washes; edges of streams; gravel and sand bars; cobbly-sandy and sandy benches; sandy terraces; sandy, loamy and silty bottomlands; sandy and sandy-loamy floodplains; silty-clayey stock tanks; along canals; along canal banks; along and in sandy-loamy ditches; along clayey and clayey-loamy ditch banks; gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in wet, moist and damp bouldery, rocky, rocky-gravelly-sandy, rocky-sandy, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; sandy loam, clayey loam, silty-clayey loam and loam ground; silty clay and clay soils, and sandy-silty and silty ground, occurring from sea level to 7,500 feet elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a fodder and as a toy or in games (children used stems and leaves to make whistles). Johnsongrass was introduced into the United States around 1830. *Sorghum halepense* readily hybridizes with *Sorghum bicolor* (Sorghum) which is also an exotic. *Sorghum halepense* is native to western, middle and southern Asia and northern Africa. \*5, 6, 15, 16, 22 (color photograph), **33** (Pages 310-313), 43 (102409), 46 (Page 143), 58, 63 (102409 - color presentation), **68** (“Johnsongrass ordinarily is good feed, but sometimes the plant, particularly the leaves, contain hydrocyanic (prussic) acid, a cyanide type of poisoning. Any factor which interrupts normal growth may cause the release of HCN within plants. Rapid growth of new leaves, wilting due to drought, frost, freezing, cutting, or trampling are the most dangerous events.” See text for additional information), **77**, **80** (**Johnsongrass is Listed as a Major Poisonous Range Plant**). “Most losses from Johnsongrass are

due to hydrocyanic-acid poisoning, but plants also accumulate dangerous levels of nitrate. Danger from HCN poisoning is greatest when soils are high in available nitrogen and low in phosphorus, when plants have been exposed to drouth or disease which results in slow or stunted growth, and when plants are making rapid regrowth or have been frosted. Leaves are more toxic than stems, and young plants are more toxic than mature ones.... Management to defer pastures during dangerous periods of growth, and feeding of animals before turning them on pastures containing Johnsongrass are the best preventive measures. ” See text for additional information.), 85 (102409 - color presentation), 101 (color photograph), 105, 127, **WTK** (July 4, 2005)\*

## CLASS MAGNOLIOPSIDA: The DICOTS

### Amaranthaceae: The Amaranth Family

#### ***Amaranthus palmeri* S. Watson: Carelessweed**

COMMON NAMES: Bledo, Careless Weed, Careless-weed, Carelessweed, Palmer Amaranth, Palmer’s Amaranth, Palmer Pigweed, Pigweed, Red-root Pigweed, Quelite, Quiltite de las Aguas, Red-root, Rough Pig Weed. DESCRIPTION: Terrestrial annual forb/herb (8 to 80 inches in height, sometimes to 15 feet in height); the stems may be green or red; the leaves are green, the flowers (in spikes) are hyaline cream with green midribs, green, pink or white-green; flowering generally takes place between early June and late December (additional records: one for early February, two for mid-March, two for early May and one for mid-May). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; rocky and gravelly-loamy canyons; sandy canyon bottoms; talus slopes; gravelly ridgetops; meadows; foothills; rocky hills; rocky hillsides; rocky, gravelly, sandy, sandy-loamy and sandy-silty-loamy slopes, alluvial fans; bajadas; sand dunes; sandy plains; gravelly, sandy and loamy flats; basins; valley floors; along railroad right-of-ways; along gravelly-loamy, sandy and sandy-silty roadsides, stony arroyos; draws; springs; sandy streams; creeks; creekbeds; along and in rocky-cobbly-sandy and sandy riverbeds; along and in gravelly, gravelly-sandy, gravelly-sandy-silty and sandy washes; gravelly-sandy-loamy drainage ways; water holes; playas; cienegas; swampy areas; silty swales; sandy and silty banks of streams, creeks, rivers and washes; sandy edges of washes and marshes; sandy-loamy shores of ponds; mudflats; beaches; gravelly-sand and sand bars; sandy benches; sandy terraces; bottomlands; along sandy floodplains; sandy mesquite bosques; along fencelines; around stock tanks; along sandy and silty ditches; sandy and gravelly-sandy-silty riparian areas; waste places, and disturbed areas growing in dry rocky, rocky-cobbly-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, sandy loam, sandy-clayey loam, sandy-silty loam, humus-clayey loam and loam ground; clay ground, and gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 8,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Mourning Doves (*Zenaida macroura*), Quail and Whitewing Doves (*Zenaida asiatica*) feed on the seeds. *Amaranthus palmeri* is native to southwest-central and southern North America. \*5, 6, 15, 16, 43 (110109), 46 (Page 266), 58, 63 (110109 - color presentation of seeds), 68 (“The plant is relished by livestock in all stages of growth, and is sometimes cut for hay or put into silos.... Palmer amaranth contains nitrate varying from a trace to over 9 percent. As in monolepis, the nitrate is not poisonous, but can be changed quickly into the toxic nitrite by enzymatic action.”), 77, 80 (This species is listed as a Major Poisonous Range Plant. “The poisonous principle is nitrate. Most plants contain small amounts of nitrate, but carelessweed, under favorable growth conditions will store up high concentrations. ... Carelessweed is relished by livestock, particularly during the earlier stages of growth. It usually is most dangerous immediately following significant environmental changes, but poisonings have occurred at all

growth stages under a variety of conditions. The nitrate content of carelesweed has been found to be significantly higher in plant samples collected in the morning as compared to afternoon samples. Some plots of ground will produce carelesweed of higher nitrate content than others. ... Known areas of carelesweed should be avoided by livestock during the early stages of growth and following periods of sudden temperature changes as occur in the fall or mid-summer at the higher elevations in Arizona. Carelesweed may remain dangerous as a component of hay or ensilage.” See text for additional information.), 85 (110109 - color presentation of seed), 101 (color photograph), 115 (color presentation), 127, **HR\***

*Cladotrix lanuginosa* (see *Tidestromia lanuginosa*)

***Tidestromia lanuginosa* (T. Nuttall) P.C. Standley: Woolly Tidestromia**

SYNONYMY: *Cladotrix lanuginosa* T. Nuttall. COMMON NAMES: Espanta Vaqueras, Espanta Vaqueros (Spanish), Herba Lanuda, Hierba Ceniza, Honeymat, Honeysweet, Kau Ee Oona (Yaqui), White Mat, Woolly Honeysweet, Woolly Mat, Woolly Tidestromia, Woolly Tidestromia. DESCRIPTION: Terrestrial prostrate annual forb/herb (3 to 20 inches in height and 8 inches to 5 feet in diameter); the plants are gray, gray-green, reddish, white-green, whitish or yellowish-green; the stems are pink, purple, red or red-purple; the flowers are white, yellow or yellowish-green; flowering generally takes place between late June and late November (additional record: one for mid-May). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon bottoms; talus; sandy ridges; sandy foothills; rocky and sandy hills; rocky hillsides; bouldery, rocky, gravelly, gravelly-sandy, gravelly-loamy and sandy slopes; alluvial fans; rocky bajadas; lava flows; sand hills; sand dunes; sand hummocks; sandy plains; sandy and clayey flats; basins; sandy valley floors; valley bottoms; coastal dunes; coastal flats; coastal beaches; along roadbeds; along gravelly-loamy, sandy, sandy-loamy and clayey roadsides; along sandy arroyos; draws; gullies; ravines; sandy riverbeds; along and in rocky, gravelly and sandy washes; along drainages; along drainage ways; depressions; swales; banks of rivers and washes; sandy edges of washes; rocky-sandy shores of lakes; mudflats; sandy beaches; sandy-loamy terraces; sandy-silty lowlands; along sandy floodplains; mesquite bosques; sandy riparian areas, and disturbed areas growing in muddy and wet, moist, damp or dry bouldery, rocky, gravelly and sandy ground; gravelly loam and sandy loam ground; gravelly clay, sandy clay and clay ground, and gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 7,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Woolly Tidestromia is an alternate host plant of the Beet Leafhopper (*Circulifer tenellus*). Subspecies and varieties for this species may or may not be recognized by various sources. *Tidestromia lanuginosa* is native to south-central and southern North America. \*5, 6, 16, 28 (color photograph), 43 (110109, no records located for varieties or subspecies), 46 (Page 268), 58, 63 (110109 - color presentation), 77, 85 (110209 - also recorded as *Tidestromia lanuginosa* ssp. *eliassoniana* Sanchez-del Pino & Olivera, *Tidestromia lanuginosa* (T. Nuttall) P.C. Standley ssp. *eliassonii* Sánchez-del Pino & Flores-Olivera, *Tidestromia lanuginosa* ssp. *lanuginosa* (Nutt.) Stand. and *Tidestromia lanuginosa* var. *lanuginosa* (Nutt.) Stand., color presentation), 106 (110109 - *Circulifer tenellus* C.F. Blake), 115 (color presentation), **WTK** (July 4, 2005)\*

*Tidestromia lanuginosa* ssp. *eliassoniana* (see footnote 85 under *Tidestromia lanuginosa*)

*Tidestromia lanuginosa* ssp. *eliassonii* (see footnote 85 under *Tidestromia lanuginosa*)

*Tidestromia lanuginosa* ssp. *lanuginosa* (see footnote 85 under *Tidestromia lanuginosa*)

*Tidestromia lanuginosa* var. *lanuginosa* (see footnote 85 under *Tidestromia lanuginosa*)

## Asteraceae (Compositae): The Aster Family

### ***Acourtia nana* (A. Gray) J.L. Reveal & R.M. King: Dwarf Desertpeony**

SYNONYMY: *Perezia nana* A. Gray. COMMON NAMES: Ban Auppa-ga (Gila River Pima), Desert Holly, Desert-holly, Dwarf Desertpeony. DESCRIPTION: Terrestrial perennial forb/herb (2 to 10 inches in height, plants 4 to 5 inches in height and 3 to 6 inches in width were reported); the holly-like leaves are pale grayish-green or olive-green; the flowers may be cream, pale lavender-pink, lavender, lavender-pink, maroon and white, pale pink-lavender, pink, pink-purple, purple, white or white-pink; flowering generally takes place between late March and early June (additional records: one for late January, one for late February, one for early July, one for late July, one for early August, one for mid-August, one for early September, two for late September, one for mid-October, one for mid-November and two for mid-December). HABITAT: Within the range of this species it has been reported from rocky mountains; sandy mesas; gravelly-loamy canyons; talus slopes; rocky foothills; rocky and gravelly hills; rocky and gravelly hillsides; bouldery, rocky, stony, gravelly, gravelly-sandy and sandy slopes; bajadas; amongst boulders and rocks; gravelly breaks; gravelly plains; rocky, gravelly, gravelly-sandy, sandy, sandy-loamy and clayey flats; basins; basin bottoms; rocky valley floors; valley bottoms; gravelly-loamy roadsides; arroyos; bottoms of arroyos; rocky gullies; gravelly-loamy creekbeds; riverbeds; within gravelly, gravelly-sandy and sandy-clayey washes; drainage ways; playas; sandy-loamy, sandy-clayey-loamy and clayey-loamy swales; clayey-loam banks of washes; benches; gravelly and sandy terraces; floodplains; mesquite mosques; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground, and sandy clay and clay ground often in the shade of trees and shrubs, occurring from 1,200 to 7,100 feet (one record for 8,500 feet) in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Consider using Desert Holly as a ground cover under larger shrubs and trees. The flowers give off a fragrance similar to that of violets or lilacs. *Acourtia nana* is native to southwest-central and southern North America. \*5, 6, 15, 16, 28 (color photograph), 43 (110809), 46 (recorded as *Perezia nana* Gray, Page 957), 58, 63 (110809 - color presentation), 77, 85 (110909 - color presentation), 115 (color presentation), **WTK** (July 4, 2005)\*

### ***Ambrosia ambrosioides* (A.J. Cavanilles) W.W. Payne: Ambrosia Leaf Bur Ragweed**

SYNONYMY: *Franseria ambrosioides* A.J. Cavanilles. COMMON NAMES: Ambrosia Bursage, Ambrosia Leaf Bur Ragweed, Ambrosia Leaf Burr Ragweed, Big Bursage, Burr Sage, Bur-sage, Bursage, Canyon Ragweed, Chicura (Hispanic), Giant Bursage, Leaf Burr Ragweed, Nu Nu Ju Its (Tohono O'odham), Tinkl (Seri). DESCRIPTION: Terrestrial perennial cold- and drought-deciduous subshrub or shrub (1 to 7 feet in height, one plant was described as being 3 feet in height and 6 feet in width); the branches are reddish-brown with white hairs; the leaves are dull gray-green or green; the flowers are yellowish or yellowish-green; flowering generally takes place between mid-February and early May (additional records: two for mid-January, one for late May, one for early June, one for mid-June, one for early July and one for mid-September), the fruits are burrs. HABITAT: Within the range of this species it has been reported from rocky mountains; mesas; rocky canyons; canyon walls; rocky, gravelly and gravelly-sandy canyon bottoms; bases of cliffs; crevices in rocks; foothills; rocky hills; rocky hillsides; rocky and sandy slopes; rocky outcrops; sandy soil pockets in rocks; plains; basins; silty valleys; along coasts; coastal plains; along rocky-sandy roadsides; arroyos; arroyo bottoms; along seeping streams; along streams; rocky and sandy streambeds; along creeks; creekbeds; along rivers; riverbeds; along and in rocky, gravelly, gravelly-silty and sandy washes; along and in sandy drainages; along and in cobbly and sandy drainage ways; around waterholes; rocky and sandy banks of lakes; sandy edges of washes; riparian areas, and disturbed areas growing in dry rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam and sandy-clayey loam ground, and gravelly silty and silty ground, occurring from sea level to 4,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native

habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Ambrosia ambrosioides* is native to southwest-central and southern North America. \*5, 6, 13, 15, 28 (color photograph), 43 (111009 - *Ambrosia ambrosioides* (Delpino) W.W. Payne), 46 (recorded as *Franseria ambrosioides* Cav., Page 895), 63 (111009), 77 (color photograph #67), 85 (111009 - color presentation), 91, 115 (color presentation), 127, **WTK** (July 4, 2005)\*

***Ambrosia confertiflora* A.P. de Candolle: Weakleaf Bur Ragweed**

SYNONYMY: *Franseria confertiflora* (A.P. de Candolle) P.A. Rydberg. COMMON NAMES: Altamisa de Playa, Bur Ragweed, Bur-sage, Bursage Ragweed, Bur-weed, Chi'ichivo (Yaqui), Estafiate (Mexican), Field Ragweed, Istafiate (northern Sinaloa, Mexico), Mo?otatk Juich (Gila River Pima), Slender Ragweed, Slimleaf Bursage, Slimleaf Ragweed, Weak-leaf Burr-ragweed, Weakleaf Bur Ragweed, Weakleaf Burr Ragweed, Weak-leaved Burweed. DESCRIPTION: Terrestrial perennial forb/herb (4 inches to 5 feet in height and may be procumbent and up to 6 feet in width in higher elevations); the leaves are gray, gray-green or whitish; the flowers are greenish, tan-yellow, white, yellow, yellow-brown or yellow-green; flowering generally takes place between late April and mid-December (additional records: one for early January, one for mid-March, one for late March and one for early April). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyons; along sandy canyon bottoms; bases of cliffs; crevices in rock faces; knolls; rocky ridgetops; sandy meadows; foothills; rocky-gravelly-loamy hills; hilltops; rocky hillsides; rocky, rocky-loamy, rocky-clayey, gravelly, gravelly-loamy, gravelly-clayey and sandy-loamy slopes; bajadas; piedmonts; shaley-sandy outcrops; prairies; sandy-silty plains; clayey flats; rocky-silty, gravelly-sandy and sandy valley floors; coastal plains; along clayey roadsides; arroyos; ravines; seeps; springs; along streams; streambeds; along rivers; sandy riverbeds; along and in gravelly, gravelly-sandy, gravelly-sandy-silty and sandy washes; rocky drainages; within rocky drainage ways; around ponds; around lakes; playas; depressions; silty swales; along banks of creeks, rivers and washes; gravelly-sandy edges of washes; beaches; rocky benches; terraces; grassy bottomlands; floodplains; mesquite bosques; fencerows; canal banks; ditches; riparian areas; waste places, and disturbed areas growing in dry rocky, shaley-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, gravelly loam, sandy loam and sandy-clayey loam ground; rocky clay, gravelly clay and clay ground, and rocky silty, gravelly silty, gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 8,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The flowers are reported to be fragrant. *Ambrosia confertiflora* is native to south-central and southern North America. \*5, 6, 15, 16, 43 (061309), 46 (recorded as *Franseria confertiflora* (DC.) Rydb., Page 895), 58, 63 (111009), 68, 77, 85 (111009 - color presentation), 115 (color presentation), **WTK** (July 4, 2005)\*

***Ambrosia deltoidea* (J. Torrey) W.W. Payne: Triangle Bur Ragweed**

SYNONYMY: *Franseria deltoidea* J. Torrey. COMMON NAMES: Burrobush, Bur-sage, Bursage, Chamizo Forrajero, Chicurilla, Rabbit Bush, Kokomak Segoi (Pima), Shegoi (Pima), Todshag (Papago), Triangle Bur Ragweed, Triangle Burr Ragweed, Triangle Bursage, Triangle-leaf Bursage, Triangle-leaved Bursage, Triangle-leaf Burr Ragweed. DESCRIPTION: Terrestrial perennial evergreen (or drought-deciduous) subshrub or shrub (1 to 4 feet in height, one plant was described as being 2 feet in height and width); the leaves are gray, gray-green or green; the flowers are greenish, greenish-yellow, purple, white or yellow; flowering generally takes place between early January and early May (additional records: three for late May; flowering as late as July has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; rocky canyons; canyon bottoms; bases of cliffs; buttes; ridges; rocky foothills; rocky hills; rocky hillsides; rocky, gravelly and gravelly-clayey slopes; bajadas; lava flows; dunes; sandy plains; rocky, stony-chalky, gravelly and sandy flats; basins; rocky valley floors; along rocky-sandy roadsides; shallow arroyos; runnels; riverbeds; along and in stony-gravelly, gravelly and sandy washes; within drainages; rocky and sandy banks of creeks and washes; edges of dry lakes (playas); margins of washes; gravelly terraces; bottomlands; floodplains; riparian areas,

and disturbed areas growing in moist and dry desert pavement; rocky, rocky-gravelly, rocky-sandy, stony-gravelly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam and loam ground; rocky clay, gravelly clay and sandy clay ground, and stony chalky ground, occurring from 100 to 4,000 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and may be useful in the restoration of disturbed habitat. It may live to be about 50 years of age. The Triangleleaf Bursage serves as a nurse plant for Saguaro (*Carnegiea gigantea*), Ocotillo (*Fouquieria splendens*), Foothill Paloverde (*Parkinsonia microphylla*) and other woody plants. The Triangleleaf Bursage is one of the first plants to colonize in open spaces. *Ambrosia deltoidea* is native to southwest-central and southern North America. \*5, 6, 13, 15, 16, 28 (color photograph), 43 (070910), 46 (recorded as *Franseria deltoidea* Torr., Page 896), 63 (111009 - color presentation), 77 (color photograph #68), 85 (111009 - color presentation), 91, 115 (color presentation), **WTK** (July 4, 2005)\*

***Ambrosia dumosa* (A. Gray) W.W. Payne: Burrobush**

SYNONYMY: *Franseria dumosa* A. Gray. COMMON NAMES: Burro Bush, Burrobush, Burro Weed, Burro-weed, Burroweed, Bur Sage, Bur-sage, Chamizo, Chicurilla, Hierba del Burro, White Bursage, White Bursage, White Burrobush, Xcactz (Seri). DESCRIPTION: Terrestrial perennial cold- and drought-deciduous subshrub or shrub (7 to 40 inches in height, one low mound-shaped plant was reported to be 40 inches in width); the branches may be gray, tan or white; the leaves are blue-green-gray, gray-green or white-tomentose; the flowers are cream, cream-yellow, greenish, green-yellow or yellow with yellowish anthers; flowering generally takes place between mid-January and late June and again between late September and late June; the fruits are spiny burs. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; gravelly mesas; sandstone cliffs; rocky canyons; sandy canyon bottoms; gorges; talus slopes; buttes; along ridges; bouldery ridge tops; rocky-sandy foothills; rocky hills; rocky and gravelly hillsides; bouldery, rocky, rocky-sandy, gravelly, gravelly-loamy, sandy and sandy-silty slopes; rocky alluvial fans; sandy and sandy-silty bajadas; bouldery and rocky outcrops; amongst boulders; lava fields; sand hills; sand dunes; blow-sand deposits; gravelly and sandy plains; rocky, gravelly, gravelly-sandy, sandy and sandy-loamy flats; sand sheets; gravelly-sandy and sandy valley floors; valley bottoms; shifting beach dunes; along gravelly and sandy roadsides; within sandy arroyos; along and in gravelly, gravelly-sandy and sandy washes; drainages; along drainage ways; silty playas; banks of streambeds and washes; sandy edges of washes and lakes; benches; sandy bottomlands; floodplains; canal banks; sandy and sandy-silty riparian areas, and disturbed areas growing in dry desert pavement; bouldery, rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and clayey loam ground, and sandy silty ground, occurring from sea level to 4,600 feet in elevation in the desertscrub ecological formation. NOTES: This plant may be an attractive component of a restored native habitat, and may live to be more than 100 years of age with an estimated average longevity of 35.7 years. This plant is a host for the parasitic Sand Root (*Pholisma sonora*). In the revegetation of disturbed sites more success may be achieved through the use of transplanted plants than from over-seeding. White Bursage serves as a nurse plant for Creosote Bush (*Larrea tridentata*), Foothill Paloverde (*Parkinsonia microphylla*) and other woody plants. White Bursage is an early colonizer of disturbed sites and open spaces. *Ambrosia dumosa* is native to southwest-central and southern North America. \*5, 6, 13, 15, 16, 28 (color photograph), 43 (111109), 46 (recorded as *Franseria dumosa* Gray, Page 895), 63 (111109 - color presentation), 77, 85 (111109 - color presentation), 91, **HR**\*

*Aplopappus tenuisectus* (see footnote 46 under *Isocoma tenuisecta*)

***Baccharis sarothroides* A. Gray: Desertbroom**

COMMON NAMES: Amargo, Broom Baccharis, Caasot Caocl (Seri), Desert Broom, Desertbroom, Desertbroom, Escoba, Greasewood, Groundsel, Hierba del Pasma, Mexican Broom, Romerillo, Rosin Brush, Rosin-brush, Rosin Bush, Shooshk Vakch ("Wet Shoes" - Pima), Soosk Vaks ("Wet Shoes" - questionably Maricopa), Wet Shoes. DESCRIPTION: Terrestrial perennial deciduous shrub (3 to 10 feet

in height, one plant was described as being 40 inches in height and 40 inches in width, one plant was described as being 7 feet in height and 8 feet in width); the foliage is bright green or yellow-green; the disc (no ray flowers) flowers (dioecious) are cream, golden, rust, white or yellow; flowering generally takes place between mid-September and late February (additional records: one for mid-March, two for late March, two for mid-April, one for late April, one for mid-July, one for early August and one for late August). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon bottoms; chasms; ridges; foothills; silty-clayey hills; rocky hillsides; rocky slopes; bajadas; debris fans; sandy plains; rocky flats; valley floors; coastal plains; along rocky, rocky-gravelly-sandy-clayey-loamy, rocky-gravelly-sandy-silty-clayey-loamy and sandy roadsides; along arroyos; along sandy and clayey bottoms of arroyos; draws; gulches; gullies; springs; along streams; streambeds; along gravelly-sandy creeks; gravelly and sandy creekbeds; along rivers; along bouldery-cobbly-sandy, rocky-sandy, gravelly and sandy riverbeds; along and in cobbly, gravelly and sandy washes; along drainages; along drainage ways; waterholes; playas; oases; along gravelly and sandy banks of arroyos, rivers and washes; edges of washes; beaches; sandy benches; terraces; bottomlands; floodplains; lowlands; mesquite bosques; along canals; along ditches; muddy and sandy riparian areas, and disturbed areas growing in muddy and damp and dry bouldery-cobbly-sandy, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy-clayey loam and rocky-gravelly-sandy-silty-clayey loam ground; silty clay and clay ground, and sandy silty ground, occurring from sea level to 6,200 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, consider planting only male plants to eliminate seed production. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial beverage and/or fiber crop; it was also noted as having been used for making tools and as a drug or medication. *Baccharis sarothroides* is native to Southwestern and southern North America. \*5, 6, 13, 15, 16, 18, 26 (color photograph), 28 (color photograph), 43 (111209), 46 (Page 883), 48, 58, 63 (111209), 77, 85 (111309 - color presentation), 115 (color presentation), 127, **WTK** (July 4, 2005)\*

***Conyza canadensis* (C. Linnaeus) A.J. Cronquist var. *canadensis*: Canadian Horseweed**

SYNONYMY: *Erigeron canadensis* C. Linnaeus. COMMON NAMES: Blood Stanch, Canada Fleabane, Canadian Fleabane, Canadian Horseweed, Horsetail Conyza, Horseweed, Horseweed Fleabane, Mare's Tail, Mares Tail. DESCRIPTION: Terrestrial annual or biennial forb/herb (3 inches to 7 feet in height); the stem and leaves are a dull light olive-green; the disk flowers are greenish, green-yellow or yellow; the ray flowers may be cream, pink or white; flowering generally takes place between mid-June and late November. HABITAT: Within the range of this species it has been reported from mountains; canyons; bluffs; roadsides; creekbeds; along rivers; riverbeds; washes; banks of lakes; floodplains; riparian areas; waste places, and disturbed areas growing in dry sandy ground, occurring from 100 to 9,200 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: **Exotic** Plant? This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food and as a drug or medication. *Conyza canadensis* var. *canadensis* is native to northern, central and southern North America and Central America, its native range in South America is obscure. \*5, 6, 15, 43 (061609), 46 (recorded as *Erigeron canadensis* L.), 63 (111909 - color presentation), 68, 77, 85 (112009), 101 (color photograph of the species), 127, **HR**\*

*Erigeron canadensis* (see *Conyza canadensis* var. *canadensis*)

*Filago arizonica* (see *Logfia arizonica*)

*Franseria ambrosioides* (see *Ambrosia ambrosioides*)

*Franseria confertiflora* (see *Ambrosia confertiflora*)

*Franseria deltoidea* (see *Ambrosia deltoidea*)

*Franseria dumosa* (see *Ambrosia dumosa*)

***Gaillardia arizonica* A. Gray: Arizona Blanketflower**

SYNONYMY: *Gaillardia arizonica* A. Gray var. *arizonica* A. Gray, *Gaillardia arizonica* A. Gray var. *pringlei* (P.A. Rydberg) S.F. Blake, *Gaillardia pringlei* P.A. Rydberg. COMMON NAMES: Arizona Blanket Flower, Arizona Blanketflower, Pringle Blanketflower, Pringle's Blanketflower. DESCRIPTION: Terrestrial annual forb/herb (4 to 8 inches in height); the foliage is dark green; the disc flowers are gold, orange-yellow or yellow; the ray flowers are gold, orange-yellow or yellow; flowering generally takes place between early March and mid-May. HABITAT: Within the range of this species it has been reported from mountains; clayey-loamy mountainsides; mesas; gravelly and sandy canyons; foothills; hills; stony-clayey, slopes; bajadas; alluvial plains; sandy plains; sandy flats; gravelly valley floors; gravelly roadsides; grassy arroyos; draws; along and in gravelly-sandy, sandy and sandy-silty washes; depressions; gravelly-sandy-loamy terraces; mesquite bosques, and riparian areas growing in dry desert pavement; gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, gravelly-clayey loam and clayey loam ground; stony clay and sandy clay ground, and sandy silty ground, occurring from 600 to 5,200 feet in elevation in the desertscrub ecological formation. NOTES: This plant may be an attractive component of a restored native habitat. *Gaillardia arizonica* is native to southwest-central and southern North America. \*5, 6, 16, 43 (112709), 46 (Page 930), 48 (genus), 63 (112709), 77, **85** (112709 - color presentation of dried material)\*

*Gaillardia arizonica* var. *arizonica* (see *Gaillardia arizonica*)

*Gaillardia arizonica* var. *pringlei* (see *Gaillardia arizonica*)

*Gaillardia pringlei* (see *Gaillardia arizonica*)

*Haplopappus tenuisectus* (see *Isocoma tenuisecta*)

*Heterotheca psammophila* (see *Heterotheca subaxillaris*)

***Heterotheca subaxillaris* (J.B. de Lamarck) N.L. Britton & H.H. Rusby: Camphorweed**

SYNONYMY: *Heterotheca psammophila* B.L. Wagenknecht. COMMON NAMES: Camphor Daisy, Camphor Weed, Camphor-weed, Camphorweed, Golden Aster, Gordolobo, Telegraph Plant. DESCRIPTION: Terrestrial annual forb/herb (6 inches to 6 feet in height); the leaves are light green and sticky; the disk flowers are orange or yellow; the ray flowers are yellow or yellow-orange; flowering generally takes place between mid-May and late December (additional records: two for late January, two for early March and two for early April). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon bottoms; sandy ridgetops; sandy meadows; sandy foothills; sandy hilltops; rocky hillsides; rocky, gravelly and gravelly-sandy slopes; alluvial fans; bajadas; sand dunes; sandy prairies; rocky-loamy, gravelly, gravelly-sandy, sandy and clayey flats; valley floors; along railroad right-of-ways; along gravelly, gravelly-sandy, gravelly-sandy-clayey-loamy and sandy roadsides; along arroyos; ravines; along streams; rocky creekbeds; rocky-gravelly-sandy and rocky-sandy creekbeds; riverbeds; along and in sandy and clayey washes; in drainages; around ponds; sandy depressions; along banks of rivers; along gravelly and sandy-loamy shores of ponds and lakes; benches; terraces; clayey bottomlands; floodplains; along and in ditches; ditch banks; sandy riparian areas, and disturbed areas growing in moist and dry rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam and sandy loam ground, and gravelly clay and clay ground, occurring from sea level to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations.

NOTES: The foliage is strongly scented with crushed leaves smelling like camphor. *Heterotheca subaxillaris* is native to south-central and southern North America. \*5, 6, 15, 16, 28 (color photograph), 43 (061909), 46 (Page 854, with an additional note on Page 1071 in the supplement), 58, 63 (120109 - color presentation), 68, 77, 85 (120209 - color presentation), 101 (color photograph), 115 (color presentation), **HR\***

***Isocoma tenuisecta* E.L. Greene: Burroweed**

SYNONYMY: *Haplopappus tenuisectus* (E.L. Greene) S.F. Blake. COMMON NAMES: Burro Weed, Burro-weed, Burrow Goldenweed, Burroweed, Hierba del Burrow, Shrine Jimmyweed. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (6 to 40 inches in height and 12 to 40 inches in width); the bark is gray or whitish; the leaves are gray, green, silvery or yellow-green; the flowers are cream, tawny-yellow or yellow; flowering generally takes place between late July and mid-November (additional records: two for late June, one for early July, three for early December and one for late December). HABITAT: Within the range of this species it has been reported from rocky mountains; mesas; canyons; along canyon bottoms; rocky-loamy foothills; rocky hills; rocky and gravelly hillsides; rocky and gravelly slopes; bajadas; rocky outcrops; amongst rocks; rocky-clayey plains; gravelly, gravelly-clayey, sandy and clayey flats; along gravelly roadsides; sandy arroyos; draws; gulches; sandy bottoms of ravines; around streams; along and in sandy and sandy-silty washes; drainages; within clayey drainage ways; clayey playas; rocky, gravelly-sandy and sandy banks of arroyos and washes; mudflats; alluvial terraces; gravelly floodplains; mesquite bosques; ditch banks; gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in dry rocky, gravelly, gravelly-sandy and sandy ground; rocky loam ground; rocky clay, gravelly clay and clay ground, and sandy silty ground, occurring from 2,000 to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Isocoma tenuisecta* is native to southwest-central and southern North America. \*5, 6, **13**, 15, 16, 28 (note under *Isocoma wrightii*), 43 (062009), 46 (recorded as *Aplopappus tenuisectus* (Greene) Blake, Page 862), 58, 63 (120209), **68**, 77, **80** (This species is listed as a Major Poisonous Range Plant. "The poisonous principle of burroweed is the alcohol, tremetol. All parts of the plant are poisonous, although the dried flowers are most often eaten. ... Burroweed produces the affliction called "trembles." Poisoned animals tremble violently when exercised and usually lie down in the normal position. Upon arising, the trembling recurs. Appetite is markedly depressed, and the severely poisoned animal eventually stays down until it dies. Acetonemia, characterized by the odor of acetone in the urine and on the breath, is also a product of burroweed poisoning. ... Burroweed is generally low in palatability, but is eaten in quite large amounts when better forage is not available. Special precautions must be taken with new animals brought into burroweed-infested areas as they are more likely to graze the plants. Native livestock apparently become sickened from eating the plant and tend to avoid it. An adequate supply of good feed during harsh times when livestock might be more prone to consume burroweed, may reduce its consumption." See text for additional information.), 85 (120309 - color presentation), 115 (color presentation), **WTK** (July 4, 2005)\*

***Logfia arizonica* (A. Gray) J. Holub: Arizona Cottonrose**

SYNONYMY: *Filago arizonica* A. Gray. COMMON NAMES: Arizona Cottonrose, Arizona Filago, Arizona Fluffweed, Arizona Herba Impia. DESCRIPTION: Terrestrial annual forb/herb (2 to 6 inches in height); the leaves are gray, grayish or green; the disc flowers are brownish or yellowish; flowering generally takes place between mid-February and mid-May (additional records: one for early January, one for mid-June and one for early September). HABITAT: Within the range of this species it has been reported from mountains; mesas; escarpments; canyons; gravelly and sandy-loamy canyon bottoms; sandy bases of buttes; crevices in rocks; ridges; rocky hills; rocky, clayey and silty-clayey hillsides; rocky and gravelly-clayey slopes; gravelly bajadas; amongst rocks; lava fields; gravelly and sandy plains; rocky, gravelly, gravelly-sandy, sandy and clayey flats; valley floors; valley bottoms; rocky coastal bluffs; along sandy roadsides; arroyos; along streams; riverbeds; along and in rocky-silty, gravelly,

gravelly-sandy and sandy washes; drainage ways; rocky-clayey soils in and about vernal pools; shores of lakes; depressions; beaches; clayey terraces; floodplains; sandy-silty edges of stock tanks (charcos); gravelly-sandy riparian areas, and disturbed areas growing in dry bouldery, rocky, gravelly, gravelly-sandy, sandy ground; cobbly-sandy loam, sandy loam and clayey loam ground; rocky clay, gravelly clay and clay ground; rocky silty, gravelly-sandy silty and sandy silty ground, and chalky ground, occurring from sea level to 4,400 feet in elevation in the scrub, grassland, desertscrub and wetland ecological formation. NOTE: *Logfia arizonica* is native to southwest-central and southern (Baja California) North America. \*5, 6, 16 (recorded as *Filago arizonica* Gray), 43 (120509), 46 (recorded as *Filago arizonica* Gray, Page 886), 63 (120509 - color presentation), 77 (recorded as *Filago arizonica* Gray), **85** (120509 - color presentation)\*

***Malacothrix fendleri* A. Gray: Fendler's Desertdandelion**

COMMON NAMES: Desert Dandelion, Fendler Desert Dandelion, Fendler Desertdandelion, Fendler's Dandelion, Fendler's Desert Dandelion Fendler's Desertdandelion. DESCRIPTION: Terrestrial annual forb/herb (3 to 14 inches in height); the leaves are grayish-green; the flowers (to 1 inch in diameter) have yellow disks and green, white or yellow rays; the anthers are yellow; flowering generally takes place between mid-March and early June (additional record: one for mid-July). HABITAT: Within the range of this species it has been reported from mountains; rocky, gravelly and sandy mesas; canyon rims; canyons; along canyon sides; buttes; sandy foothills; rolling hills; rocky hillsides; rocky, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey and sandy-loamy slopes; gravelly pediment fans; sandy alluvial fans; bajadas; sandy lava flows; sand dunes; rocky and gravelly outwash aprons; gentle breaks; sandy plains; sandy, sandy-loamy and clayey flats; sandy valley floors; along gravelly road beds; along gravelly, gravelly-sandy, sandy, sandy-loamy and sandy-clayey-loamy roadsides; sandy arroyos; around springs; sandy creekbeds; riverbeds; along and in gravelly-sandy and sandy washes; within drainages; along gravelly-loamy banks of streambeds and creeks; edges of creeks and rivers; along margins of cienegas; sandy benches; bottom lands; sandy floodplains; sandy mesquite woodlands; stock tanks; riparian areas; waste places, and disturbed areas growing in dry desert pavement; rocky, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, sandy-clayey loam and clayey loam ground; gravelly clay and clay ground, and sandy silty ground occurring from 1,000 to 9,800 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Malacothrix fendleri* is native to southwest-central and southern North America. \*5, 6, 15, 28 (color photograph), 43 (081010), 46 (Page 963), 58, 63 (081010 - color presentation), 77, **85** (081010 - color presentation of dried material), 127\*

*Perezia nana* (see *Acourtia nana*)

***Psilostrophe cooperi* (A. Gray) E.L. Greene: Whitestem Paperflower**

COMMON NAMES: Cooper Paperflower, Paper Daisy, Paper-daisy, Paper Flower, Paper-flower, Paperflower, Whitestem Paperflower, Yellow Paper Daisy. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (4 to 32 inches in height, one plant was described as being 32 inches in height and 40 inches in width); the stems are white; the leaves may be blue-green, gray, gray-green, green, greenish-gray or white; the disk flowers are yellow, the ray flowers are lemon-yellow, pale yellow or yellow fading to cream or white and persisting on plant when dry; flowering generally takes place between early January and early December. HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; bouldery canyons; along canyon bottoms; buttes; rocky and chalky ridges; ridgelines; foothills; rocky, stony-gravelly, cobbly-gravelly-loamy and clayey hills; rocky and gravelly hillsides; bouldery, rocky, rocky-gravelly-clayey, stony, gravelly-sandy-silty, gravelly-clay and sandy-silty slopes; sandy bajadas; amongst boulders and rocks; lava fields; plains; gravelly and sandy flats; basins; sandy valley floors; rocky embankments; in roadbeds; along rocky-sandy-loamy, gravelly-sandy, sandy and clayey roadsides; arroyos; along streams; along and in rocky, rocky-sandy, gravelly, gravelly-sandy

and sandy washes; drainages; sandy along rocky drainage ways; sandy depressions; gravelly-silty edges of draws; along sandy banks of arroyos, rivers and washes; mudflats; rocky benches; gravelly terraces; sandy bottomlands; floodplains; sandy riparian areas, and disturbed areas growing in moist and dry desert pavement; bouldery, rocky, rocky-sandy, stony, stony-gravelly, cindery, gravelly, gravelly-sandy, sandy and chalky ground; rocky-sandy loam, cobbly-gravelly loam, sandy-clayey loam and sandy-silty loam ground; rocky-gravelly clay, gravelly clay and clay ground, and gravelly silty, gravelly-sandy silty and sandy silty ground, occurring from 500 to 5,200 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Psilostrophe cooperi* is native to southwest-central and southern North America. \*5, 6, 13 (color photograph), 15, 16, 18, 28 (color photograph), 43 (121209 - *Psilostrophe cooperi* Greene), 46 (Page 914), 48 (genus), 63 (121209 - color presentation), 77, 80 (This species is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. “This showy, low-growing shrub is widespread in Arizona. No losses have been documented, but it may cause some poisoning similar to the other paperflowers.”), 85 (121209 - color presentation), 86 (color photograph), 115 (color presentation), **WTK** (July 4, 2005)\*

***Verbesina encelioides* (A.J. Cavanilles) G. Bentham & J.D. Hooker f. ex A. Gray subsp. *exauriculata* (B.L. Robinson & J.M. Greenman) J.R. Coleman: Golden Crownbeard**

SYNONYMY: *Verbesina encelioides* (A.J. Cavanilles) G. Bentham & J.D. Hooker f. ex A. Gray var. *exauriculata* B.L. Robinson & J.M. Greenman. COMMON NAMES: Butter-daisy, Cow Pasture Daisy, Cowpen Daisy, Crownbeard, Girasolillo, Golden Crownbeard, Hierba de la Bruja. DESCRIPTION: Terrestrial annual forb/herb (4 inches to 5 feet in height, plants 8 inches in height and 12 inches in width were reported); the foliage is bluish-green or gray-green, green or silvery; the disk flowers are gold or yellow; the ray flowers are gold, orange-yellow, yellow or yellow-orange; flowering generally takes place between early March and mid-December (additional records: one for late January and one for mid-February). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; canyons; talus; gravelly and clayey canyon bottoms; bouldery knobs; sandy-loamy meadows; rolling foothills; stony hills; hilltops; rocky-sandy hillsides; canyons; rocky, cindery, sandy, sandy-loamy, loamy and silty-clayey slopes; gravelly bajadas; rocky outcrops; sand hills; sand dunes; plains; cindery, gravelly, sandy and sandy-loamy flats; valley floors; along bouldery-gravelly, rocky, cindery, gravelly, gravelly-sandy-clayey-loamy, gravelly-loamy, sandy-clayey-loamy and sandy-loamy roadsides; along arroyos; sandy bottoms of arroyos; along draws; bottoms of draws; springs; along creeks; gravelly creekbeds; along gravelly-sandy rivers; along and in sandy-loamy riverbeds; within rocky, stony and sandy washes; within drainage ways; around ponds; around lakes; cienegas; sandy swales; sandy and silty banks of rivers; along gravelly-sandy edges of washes and swales; sandy beaches; terraces; sandy bottomlands; lowlands; sandy floodplains; mesquite bosques; silty-loamy stock tanks; along shores of impoundments; along ditches; sandy riparian areas; waste places, and disturbed areas growing in wet, moist and dry bouldery, bouldery-gravelly, rocky, rocky-gravelly, stony, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, gravelly-sandy-clayey loam, sandy loam, sandy-clayey loam, silty loam and loam ground; silty clay and clay ground, and silty ground, occurring from sea level to 10,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant has a rank odor. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication, insecticide, protection, ceremonial items and as a commodity used in personal hygiene. *Verbesina encelioides* subsp. *exauriculata* is native to south-central and southern North America. \*5, 6, 15, 28 (color photograph of the species), 43 (062409), 46 (Page 907), 63 (122409 - color presentation), 68 (*Verbesina encelioides* var. *exauriculata* is reported to be an exotic and native to the Old World; however, no other source used reported it as being an exotic.), 80 (This plant is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. This annual forb has been reported to accumulate toxic levels of

nitrate.), 85 (122409 - color presentation), 86 (color photograph of the species), 115 (color presentation of species), 127, **WTK** (July 4, 2005)\*

*Verbesina encelioides* var. *exauriculata* (see *Verbesina encelioides* subsp. *exauriculata*)

## Brassicaceae (Cruciferae): The Mustard Family

### ***Brassica tournefortii* A. Gouan: Asian Mustard**

COMMON NAMES: African Mustard, Asian Mustard, Desert Mustard, Mediterranean Mustard, Mediterranean Turnip, Moroccan Mustard, Mostaza, Mostaza Africana, Mostaza del Sahara, Mustard, Pale Cabbage, Prickly Turnip, Sahara Mustard, Tournefort's Birdrape, Turnip Weed, Wild Turnip. DESCRIPTION: Terrestrial annual forb/herb (1 to 4 feet in height, a plant 22 inches in height and 40 inches in width was observed and reported, plants 24 to 30 inches in height and 18 inches in width at the base were observed and reported), the large and serrated green leaves form in a basal rosette clasping on the stem, the flowers are green-white, ivory, white, pale yellow, yellow or yellow-cream, flowering generally takes place between mid-January and late May (additional records: one for mid-November, three for early December and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; clayey canyons; rocky canyon bottoms; bases of cliffs; bluffs; rocky and rocky-clayey ridgetops; rocky hills; bouldery hillsides; bouldery, rocky, gravelly-sandy, gravelly-sandy-loamy, pebbly-sandy and sandy slopes; alluvial fans; gravelly bajadas; volcanic dikes and plugs; sand hills; sand shelves; sand dunes; sand hummocks; blow-sand deposits; sand sheets; rocky-sandy outwash fans; gravelly-sandy-loamy and silty plains; gravelly-sandy, sandy and silty flats; sandy and silty valley floors; along rocky-clayey, gravelly, gravelly-sandy-loamy and sandy roadsides; arroyos; gullies; about springs; creekbeds; along rivers; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; along drainages; within sandy drainage ways; depressions; gravelly-sandy banks of rivers and washes; sandy edges of arroyos, rivers, washes and playas; sandy margins of washes and ponds; sandy beaches; benches; rocky strands; sandy terraces; loamy bottomlands; floodplains; sandy levees; canal banks; along ditches; recently burned areas of coastal sage scrub; bouldery-cobbly-sandy, gravelly-sandy and sandy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-cobbly-sandy, rocky, rocky-sandy, shaley, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; gravelly-sandy loam, sandy loam and loam ground; rocky clay and clay ground, and silty ground, occurring from sea level to 6,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. Sahara Mustard is usually a very large and robust plant. *Brassica tournefortii* is native to southern Europe; western, central and southern Asia, and northern Africa. \*5, 6, 15, 16, 22, 28, 43 (010410), 46 (Supplement Page 1051), 63 (010410 - color presentation), 77, **80** (The genus *Brassica* is listed as both a Rarely Poisonous and Suspected Poisonous Range Plant "Mustards, both native and escaped, may cause several diseases including goiter and gastroenteritis." and a Poisonous Cropland and Garden Plant "Cultivated mustards may cause numerous diseases including gastroenteritis, blindness, goiter, emphysema, redwater disease, nitrate poisoning, anemia, and photosensitization."), 85 (010410 - color presentation of dried and fresh material), 115 (color presentation), **WTK** (July 4, 2005)\*

### ***Lesquerella gordonii* (A. Gray) S. Watson (var. *gordonii* is the variety reported as occurring in Arizona): Gordon's Bladderpod**

SYNONYMY: (for *L.g.* var. *gordonii*: *Physaria gordonii* (A. Gray) S.L. O'Kane & I.A. Al-Shehbaz). COMMON NAMES: Arizona Bladderpod Mustard, Bead-pod, Bladder Pod, Bladderpod Mustard, Gordon Bladder Pod, Gordon Bladder-pod, Gordon Bladderpod, Gordon's Bladderpod, Yellow Bladderpod. DESCRIPTION: Terrestrial annual, biennial or perennial forb/herb (3 inches to 24 inches in height); the foliage is green; the flowers are yellow; flowering generally takes place between early February and mid-May (additional records: one for mid-January, two for early June, one for late June and

one for mid-September). HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; canyons; gravelly canyon bottoms; ridges; rocky hills; hilltops; rocky and rocky-gravelly hillsides; rocky, rocky-gravelly and gravelly slopes; bajadas; rocky outcrops; rocky-sandy alluvial fans; sandy bajadas; sandy, sandy-loamy and clayey-loamy plains; rocky, gravelly and sandy flats; basins; valley floors; along rocky, gravelly, gravelly-loamy and sandy roadsides; bottoms of arroyos; draws; rocky ravines; streambeds; sandy creekbeds; gravelly riverbeds; along and in bedrock-bouldery, gravelly, sandy and silty washes; along and in drainage ways; banks of creeks and washes; margins of washes; benches; terraces; sandy floodplains; mesquite bosques; along ditches; gravelly-sandy riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and clayey loam ground; clayey ground; silty ground, and chalky ground, occurring from 100 to 7,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Lesquerella gordonii* is native to southwest-central and southern North America. \*5, 6, 15, 16, 28 (color photograph), 34 (genus), 43 (011310), 46 (Page 343), 48 (genus), 58, 63 (011310 - color presentation), 68, 77, **85** (011310 - color presentation), 86 (note under Fendler's Bladderpod), 115 (color presentation)\*

*Physaria gordonii* (see *Lesquerella gordonii* var. *gordonii*)

### ***Sisymbrium irio* C. Linnaeus: London Rocket**

COMMON NAMES: London Rocket, Londonrocket, Pamita, Pamiton, Rocket Mustard, Tumble Mustard. DESCRIPTION: Terrestrial annual forb/herb (8 inches to 5 feet in height, plants 8 inches in height and 6 inches in width were reported); the flowers are golden-yellow, white, pale yellow or yellow; the anthers are cream; flowering generally takes place between mid-December and mid-June (additional records: one for early July, one for late July, one for early August, one for mid-August, two for late August, one for mid-September, one for late September, one for early October, one for mid-October, one for early November, one for mid-November and four for late November). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; plateaus; canyons; along bouldery-gravelly-sandy and sandy canyon bottoms; rocky buttes; rock ledges; ridges; ridgetops; clayey meadows; foothills; rocky hills; rocky hillsides; bouldery, rocky, rocky-sandy, gravelly-sandy, sandy and sandy-loamy slopes; rocky alluvial fans; bajadas; rocky outcrops; amongst boulders and rocks; sandy lava flows; sand dunes; berms; plains; rocky, gravelly, sandy and sandy-silty flats; basins; valley floors; loamy valley bottoms; railroad right-of-ways; gravelly-sandy roadbeds; gravelly, sandy and clayey roadsides; within rocky arroyos; along bottoms of arroyos; bottoms of ravines; seeps; springs; along streams; streambeds; along creeks; bouldery-rocky and rocky creekbeds; along rivers; rocky and rocky-cobbly-sandy riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-loamy washes; within sandy drainage ways; silty lakebeds; bogs; sandy-loamy and silty depressions; along cobbly-sandy, gravelly-sandy and sandy banks of streams, rivers and washes; rocky edges of springs, streams, creeks, washes and ponds; margins of washes; sandy beaches; sandy benches; terraces; sandy and loamy bottomlands; floodplains; mesquite bosques; margins of stock tanks; canal edges and walls; along ditches; riparian areas; waste places; recently burned areas of woodland and desertscrub, and disturbed areas growing in muddy and wet, moist, damp and dry bouldery, bouldery-gravelly-sandy, rocky, rocky-cobbly; rocky-cobbly-sandy, rocky-sandy, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly-sandy loam, sandy loam and loam ground; sandy clay and clay ground, and sandy silty ground, occurring from sea level to 10,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used food, beverage and as a drug or medication. *Sisymbrium irio* is native to middle and southern Europe; western, central, eastern and southern Asia, and northern Africa. \*5, 6, 15, 16, 22, 28 (color photograph), 43 (011410), 46 (Page 336), 58, 63 (011410 - color presentation), 68, 77, 85 (011510 - color presentation), 101 (color photograph), 115 (color presentation), 127\*

*Sisymbrium irio* C. Linnaeus: **London Rocket**, Pamita, Pamiton, Rocket Mustard (*terrestrial annual herb; within range reported from rocky and gravelly flats, roadsides, floodplains and disturbed areas below 4,500 feet elevation.* EXOTIC Invasive Plant), **WTK** (July 4, 2005)\*

## Cactaceae: The Cactus Family

### ***Carnegiea gigantea* (G. Engelmann) N.L. Britton & J.N. Rose: Saguaro**

SYNONYMY: *Cereus giganteus* G. Engelmann. COMMON NAMES: Giant Cactus, Giant Cereus, Ha:sa:n (Tohono O'odham), Ha Shun (Pima), Mashad (Tohono O'odham), Pitahaya (Spanish Conquistadors), Sage-of-the-desert, Saguaro (Spanish), Sahuaro. DESCRIPTION: Terrestrial perennial stem-succulent tree (erect stems 5 to 60 feet in height and 6 to 30 inches in diameter); the plants are green; the spines are yellow or reddish-brown aging to gray or gray-black; the flowers (2 to 3 inches in diameter) are a waxy creamy-white opening at about 8 p.m. and closing at about 5 p.m. the next day with around four blooms opening per day over a 30 day period; flowering generally takes place between late April and mid-June (additional records: one for late March, one for early July, one for mid-July, two for early September and one for early October), the ripe fruits (2¼ to 3 inches in length and 1 to 1½ inches in diameter) split into 2 to 6 segments that curl back to reveal the red inner lining of the rinds which are sometimes mistakenly thought to be red flowers. HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon walls; buttes; ridges; ridgelines; rocky foothills; rocky and gravelly hills; rocky hilltops; rocky hillsides; rocky, gravelly, gravelly-loamy and sandy-clayey-loamy slopes; rocky and gravelly bajadas; rocky outcrops; amongst boulders and rocks; stabilized sandy and sandy-powdery dunes; plains; gravelly and sandy flats; valley floors; along arroyos; along and in riverbeds; within sandy washes; drainages; floodplains, and mesquite bosques growing in dry desert pavement; bouldery, rocky, gravelly, sandy and sandy-powdery ground, and gravelly loam and sandy-clayey loam ground, occurring from sea level to 5,100 feet in elevation in the scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder (seeds), beverage and/or fiber crop; it was also noted as having been used as tools, ceremonial items and musical instruments, and as an indicator of the changing of the seasons (with the Saguaro harvest marking the beginning of a new year). Saguaros are very slow to establish, a 5 year old plant may be no more than ¼ to ½ inch in height. The growth rate of Saguaros is extremely variable. William G. McGinnies in his book "Discovering the Desert" reports that a plant 36 inches in height may be from 20 to 50 years of age, he also presents a table of typical growth rates reporting the following: 4 inches - 8.0 years, 8 inches - 12.5 years, 16 inches - 19.1 years, 32 inches - 27.3 years, 3.3 feet - 30.3 years, 6.6 feet - 40.5 years, 10 feet - 47.5 years, 13 feet - 54 years, 16 feet - 60.0 years, 18 feet - 74.0 years, 20 feet - 83.0 years, 25 feet - 107.0 years, 30 feet - 131.0 years, and 35 feet - 157.0 years. The growth rate of propagated and cultivated saguaros is much faster. One of the largest known saguaros, located in Saguaro National Monument, was reported to be 52 feet in height, had 52 arms, weighed an estimated 10 tons and was thought to be 235 years of age. Cristate forms have been reported. The Broad-billed Hummingbird (*Cyanthus latirostris*), Broad-tailed Hummingbird (*Selasphorus platycercus*), Costa's Hummingbird (*Calypte costae*), Curved-billed Thrasher (*Toxostoma curvirostre*), Lesser Long-nosed Bat (*Leptonycteris curasoae* subsp. *yerbabuena*) and Rufous Hummingbird (*Selasphorus rufus*) have been observed visiting the flowers. Coyotes (*Canis latrans*), Desert Mule Deer (*Odocoileus hemionus* subsp. *crooki*), Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*), Javelina (*Peccari tajacu*) and White-winged Doves (*Zenaida asiatica*) as well as other animals and birds feed on the saguaro fruit and seeds. the Gila Woodpecker (*Melanerpes uropygialis*) and Gilded Flicker (*Colaptes chrysoides*) make holes in this plant for their nests which are later utilized by the Ash-throated Flycatcher (*Myiarchus cinerascens*), Cactus Wren (*Campylorhynchus brunneicapillus*), Elf Owl (*Micrathene whitneyi*), House Finch (*Carpodacus mexicanus*), Lucy's Warbler (*Vermivora luciae*), Purple Martin (*Progne subis*) and Cactus Wren

(*Campylorhynchus brunneicapillus*). Red-tailed Hawks (*Buteo jamaicensis*), White-winged Doves (*Zenaida asiatica*) and other birds nest on the arms of the plant. *Carnegiea gigantea* is native to southwest-central and southern North America. \*5, 6, 12 (recorded as *Cereus giganteus* Engelm., Pages 108-111, color photographs including habitat), 13 (color photographs including habitat with associated species: Plates C.2 and D.3), 15 (color photograph on Page 77 includes habitat and associated species), 16, 18, 26 (color photograph), 27 (recorded as *Cereus giganteus*, Pages 64-65, color photographs: Plates 39, 39A & 39B, Page 102), 28 (recorded as *Cereus giganteus*, color photograph), 38 (color photograph), 43 (011610), 45 (color photograph), 46 (Page 569), 48 (recorded as *Cereus giganteus*), 52 (recorded as *Cereus giganteus*, color photograph), 53 (recorded as *Cereus giganteus* Engelm.), 58 (recorded as *Cereus giganteus* Engelm.), 63 (011610 - color presentation), 77 (color photograph #63), 85 (011610 - color presentation), 86 (recorded as *Cereus gigantea*, color photograph), 91, 107, 115 (color presentation), 119, 127, 134, **WTK** (July 4, 2005)\*

*Cereus giganteus* (see *Carnegiea gigantea*)

*Cereus greggii* var. *transmontanus* (see *Peniocereus greggii* var. *transmontanus*)

***Cylindropuntia fulgida* (G. Engelmann) F.M. Knuth var. *fulgida*: Jumping Cholla**

SYNONYMY: *Opuntia fulgida* G. Engelmann, *Opuntia fulgida* G. Engelmann var. *fulgida*.  
COMMON NAMES: Chain Cholla, Chain-fruit Cholla, Cholla, Cholla Brincadora, Choya, Jumping Cahin-fruit Cholla, Jumping Cholla, Sonora Jumping Cholla, Velas de Ccoyote. DESCRIPTION: Terrestrial perennial stem-succulent shrub or tree (3 to 15 feet in height, one plant was reported as being 4¼ feet in height and 40 inches in width, one plant was reported as being 4¼ feet in height and 8¼ feet in width, one plant was reported as being 6½ feet in height and 5 feet in width, one plant was reported as being 10 feet in height and 13 feet in width); the stems are green or purple; the spines are golden-yellow turning brown with age; the flowers (¾ to 1 inch in diameter) are cream-yellow, pink, pink-purple, purple, purple-pink, red-purple, rose-pink or yellow tinged with pink; the anthers are white; flowering generally takes place between mid-April and mid-September (additional record: one for early December); the smooth fleshy fruits (¾ to 2 inches in length and ¾ to 1 inch in diameter) are gray-green, green or purple forming clusters or pendulant “chains”. HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; ledges; ridges; hills; hillsides; rocky, gravelly-loamy and sandy slopes; gravelly bajadas; plains; rocky-gravelly, gravelly, sandy and sandy-silty flats; along valley floors; along rocky-gravelly and sandy roadsides; along creeks; along and in washes; banks of streams, creeks and washes; edges of washes; terraces, and floodplains growing in dry desert pavement; rocky, rocky-gravelly, gravelly and sandy soils; gravelly loam and silty-clayey loam ground; clay ground, and sandy silty ground, occurring from 800 to 4,100 feet in elevation in the grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Each year, following flowering, additional fruits are added to the end of the chains. Chain-fruit Chollas may live to be from 40 to 80 years of age. The Chain-fruit Cholla is a preferred nesting site of the Cactus Wren (*Campylorhynchus brunneicapillus*). The Costa’s Hummingbird (*Calypte costae*) has been observed visiting the flowers. Deer and Javelina feed on the fruits. The change in nomenclature in USDA NRCS has not been recognized in BONAP, species remains as *Opuntia fulgida* (accessed 041806). *Cylindropuntia fulgida* var. *fulgida* is native to southwest-central and southern North America. \*5, 6, 12 (recorded as *Opuntia fulgida* Engelm. var. *fulgida*, Pages 49-52), 15 (recorded as *Opuntia fulgida* Engelm. var. *fulgida*), 16 (recorded as *Opuntia fulgida* Engelm.), 26 (genus, recorded as *Opuntia*), 27 (species, Pages 10-11, color photograph: Plate 10, Page 96), 28 (recorded as *Opuntia fulgida*, color photograph), 43 (011810), 45 (species, color photograph of species), 46 (recorded as *Opuntia fulgida* Engelm., Page 585), 48 (genus, recorded as *Opuntia*), 52 (recorded as *Opuntia fulgida*, color photograph), 53 (recorded as *Opuntia fulgida* Engelm.), 63 (011810 - color presentation), 77 (recorded as *Opuntia fulgida* Engelm. var. *fulgida*), 85 (011810 - color

presentation), 91 (recorded as *Opuntia fulgida* Engelm. var. *fulgida*), 115 (color presentation of species), 119 (recorded as *Opuntia fulgida* Engelm.), 127, **WTK** (July 4, 2005)\*

***Cylindropuntia spinosior* (G. Engelmann) F.M. Knuth: Walkingstick Cactus**

SYNONYMY: *Opuntia spinosior* (G. Engelmann) J.W. Toumey. COMMON NAMES: Cane Cholla, Cardenche, Handgrip Cholla, Spiny Cholla, Tasajo, Tourney-cane Cholla (Arizona), Walkingstick Cactus, Walking Stick Cholla. DESCRIPTION: Terrestrial perennial stem-succulent shrub (16 inches to 10 feet in height, one plant was described as being 6½ feet in height and 5 to 6½ feet in width, one plant was described as being 6½ feet in height and 10 feet in width); the stems may be brown-green, grayish-maroon, grayish-purple, green, purple or purplish-green; the spines may be brown, gray, pale pink, pink, purplish-gray, reddish-gray or tan; the glochids may be tan, yellow or yellowish-white aging to gray; the flowers (1¾ to 2 inches in diameter) may be bronze-purple, brown, greenish-yellow, magenta, magenta-red, maroon, orange, pink, dark pink, light purple, purple, purple-pink, red, dark red, red-purple, red & yellow, saffron, salmon-pink, terra-cotta, white or yellow; the anthers are yellow; flowering generally takes place between early April and early August (additional records: three for early January, two for early February and one for late September); the fleshy ripe fruits (1 to 1¾ inches in length and ¾ to 1 inch in diameter) are bright lemon-yellow, red, bright yellow, pale yellow, yellow, yellow-green, yellowish-green or yellow with a reddish cast and remain on the plant for some time. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mountainsides; mesas; rocky canyons; canyon bottoms; talus, ridgelines; foothills; rocky hills; rocky hillsides; along rocky, rocky-sandy and sandy slopes; bajadas; rock outcrops; amongst rocks; plains; gravelly, gravelly-sandy and silty flats; grassy valley floors; roadsides; arroyos; rocky draws; springs; along creeks; creekbeds; along sandy washes; drainages; along drainage ways; sandy flood channels; terraces; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; silty-clayey loam, silty loam and loam ground, and silty ground, occurring from 900 to 7,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. The Cactus Wren (*Campylorhynchus brunneicapillus*) nests in the branches. The change in nomenclature in USDA NRCS has not been recognized in BONAP, species remains as *Opuntia spinosior* (accessed 041806). *Cylindropuntia spinosior* is native to southwest-central and southern North America. \*5, 6, 12 (recorded as *Opuntia spinosior* (Engelm.) Toumey, Pages 39-43, color photograph), 15 (recorded as *Opuntia spinosior* (Engelm.) Toumey), 16 (recorded as *Opuntia spinosior* (Engelm.) Toumey), 26 (genus, recorded as *Opuntia*), 27 (Page 14, color photograph: Plate 12, Page 96), 28 (color photograph), 43 (063009), 45 (color photographs), 46 (recorded as *Opuntia spinosior* (Engelm. & Bigel.) Toumey, Page 585), 48 (genus, recorded as *Opuntia*), 53, 58 (recorded as *Opuntia spinosior* (Engelm.) Toumey), 63 (011910 - color presentation), 77 (recorded as *Opuntia spinosior* (Engelm.) Toumey), 85 (012010 - color presentation), 115 (color presentation), 119, 127, **WTK** (July 4, 2005)\*

*Echinocactus wislizeni* (see *Ferocactus wislizeni*)

***Ferocactus wislizeni* (G. Engelmann) N.L. Britton & J.N. Rose: Candy Barrelcactus**

SYNONYMY: *Echinocactus wislizeni* G. Engelmann. COMMON NAMES: Arizona Barrel Cactus, Barrel Cactus, Bisnaga, Biznaga, Biznaga de Agua (Spanish), Biznagre, Candy Barrel, Candy Barrel Cactus, Candy Barrelcactus, Compass Barrel, Compass Plant, Fish-hook Barrel, Fishhook Barrel Cactus, Fishhook Cactus, Southwest Barrel Cactus, Southwestern Barrel Cactus, Visnaga, Viznaga Hembra (Spanish), Wislizenus Barrel, Yellow-spined Barrel Cactus. DESCRIPTION: Terrestrial perennial stem-succulent shrub or tree (1 to 11 feet in height and 8 to 40 inches in diameter); the stem is green or blue-gray-green; the central spines and larger radial spines are gray, dull pink, reddish or tan; the smaller radial spines are white; the flowers (1½ to 2½ inches in diameter) are orange, orange-yellow,

orange-red, orange-yellow, parchment, pinkish-red, reddish, red-orange, yellow or yellow-orange; flowering generally takes place between mid-July and mid-October (additional records: one for early January, three for early March, five for mid-March, two for late March, one for early April, one for mid-April, one for late April and two for early June); the mature fruits (1¼ to 2 inches in length and 1 to 1½ inches in diameter) are greenish-brown, bright yellow or yellow-green and may remain on the plant until the next flowering period. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky canyons; canyon walls; sandy canyon bottoms; bluffs; foothills; bouldery, rocky, gravelly and sandy hills; hillsides; rocky, cobbly and clayey-loamy slopes; rocky, gravelly and sandy alluvial fans; bajadas; rocky outcrops; plains; rocky, gravelly and sandy flats; valley floors; along roadsides; arroyos; sandy bottoms of arroyos; along washes; rocky, gravelly and sandy margins of washes; floodplains, and mesquite bosques growing in dry desert pavement; bouldery, rocky, cobbly, gravelly and sandy ground, and sandy-clayey loam and clayey loam ground, occurring from 500 to 5,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop; it was also noted as having been used as a tool (the spines were heated and used to make fishing hooks). Fishhook Barrel Cacti are very slow to establish. A 4 year old plant may be no more than 1½ inches in height and 2 inches in width, and an 8 year old plant may be no more than 4¼ inches in height and 4¾ inches in width. The growth rate of propagated and cultivated barrel cacti is much faster. The life-span of Fishhook Barrel Cacti is reported to be from 50 to over 130 years of age. Some plants tend to lean to the south with age. Cristate forms have been reported. The fruits are eaten by Mule Deer (*Odocoileus hemionus*), Javelina (*Peccari tajacu*) and other animals, and the seeds are eaten by birds and rodents. *Ferocactus wislizeni* is native to southwest-central and southern North America. \*5, 6, 12 (Pages 166-170, color photograph), 15, 16, 18, 26 (genus, color photograph of genus), 27 (Page 120, color photographs: Plates 60, 60A, 60B & 60C Pages 106), 28, 43 (063009 - *Ferocactus wislizeni* Britton & Rose), 45 (color photograph), 46 (Page 573), 48 (genus), 58, 63 (012210 - color presentation), 77 (color photograph #10), 85 (012210 - color presentation, also recorded as *Ferocactus wislizeni* var. *wislizeni*), 91, 115 (color presentation), 119, 127, **HR\***

*Ferocactus wislizeni* var. *wislizeni* (see footnote 85 under *Ferocactus wislizeni*)

*Opuntia discata* (see *Opuntia engelmannii* var. *engelmannii*)

***Opuntia engelmannii* J.F. Salm-Reifferscheid-Dyck ex G. Engelmann var. *engelmannii*: Cactus Apple**

SYNONYMY: *Opuntia discata* D. Griffiths, *Opuntia phaeacantha* G. Engelmann var. *discata* (D. Griffiths) L.D. Benson & D.L. Walkington. COMMON NAMES: Abrojo, Cactus Apple, Desert Pricklypear Cactus, Engelmann Prickly Pear, Engelmann's Prickly-pear, Engelmann Pricklypear, Flaming Pricklypear, Joconostle, Nopal, Prickly Pear, Vela de Coyote. DESCRIPTION: Terrestrial perennial stem-succulent shrub (forms clumps 20 inches to 8 feet in height and 20 inches to 10 feet or more in width, one plant was reported as being 20 inches in height and 8¼ feet in width, one plant was reported as being 3 feet in height and 4½ feet in width, one plant was reported as being 3 feet in height and 6 to 12 feet in width, one plant was reported as being 3 feet in height and 8 feet in width, one plant was reported as being 40 inches in height and 79 inches in width, one plant was reported to be 40 inches in height and 10 feet in width); the paddle-shaped stems (8 to 16 inches in length and 6½ to 12 inches in width) are bluish-green, gray-green, green, dark green or yellow-green; the spines are brown-red, chalky-white, pale straw or pale yellow-brown usually with red or red-brown bases aging to black or gray; the glochids are yellow; the flowers (2¼ to 3½ in diameter) may be lemon-yellow, pink, pink-red, red-pink, rose-red, salmon, tannish-yellow, yellow, light yellow-orange, yellow-orange or yellow-peach turning to orange, orange-yellow or pink-orange with age; the anthers are yellow; the stigma lobes are lime green; flowering

generally takes place between mid-March and late June (additional records: one for early January, two for mid-February, one for mid-July, two for mid-August, one for early September, six for mid-September, three for early October and one for late December); the mature fruits (also known as tunas are 2½ to 3¼ in length and 1¼ inches in diameter) are magenta-rose, purple, red or reddish-purple. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy mountainsides; bedrock mesas; edges of cliffs; canyons; canyon bottoms; talus slopes; ledges; ridges; rocky ridgetops; rocky hills; bouldery, rocky and gravelly hillsides; bouldery, rocky, rocky-gravelly and sandy slopes; bajadas; rocky outcrops; amongst boulders and rocks; lava beds; breaks; steppes; plains; rocky, gravelly and sandy and silty flats; basins; valley floors; along roadsides; along and in gravelly and gravelly-humusy arroyos; gullies; along streams; along creeks; creekbeds; along and in washes; along and in gravelly-sandy drainages; banks of rivers; benches; shelves; terraces; sandy floodplains; amongst mesquites; ditches, and gravelly-sandy and sandy riparian areas growing in dry bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, gravelly, gravelly-sandy and sandy ground; clayey ground; silty ground, and gravelly humusy ground, occurring from 1,000 to 7,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Opuntia engelmannii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, cooking agent or paint crop; it was also noted as having been used as a tool, as a lubricant (var. *engelmannii*) and as a drug or medication. The flowers open around 8 AM and remaining open for one or two days, and may live to be 30 or more years of age. The juicy fruits (tunas) with edible pulp are fed on by many browsing animals, including Black Bear (*Ursus americanus amblyceps*), Coyote (*Canis latrans mearnsi*), Javelina (*Peccari tajacu sonoriensis*) and Desert Tortoise (*Gopherus agassizi*) among others, and birds. The plant provides cover for many desert animals. *Opuntia engelmannii* var. *engelmannii* is native to southwest-central and southern North America. \*5, 6, 12 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) Benson & Walkington “This is the largest and, in especially southern Arizona, one of the best-known native prickly pears of the Southwestern Deserts of the United States. It is variable in habit of growth, shape and size of joints, and size and distribution of spines. It is almost always found growing with var. *major*, which has longer brown spines restricted largely to the upper part of the narrower joint. Almost everywhere there are intergrading forms with many character recombinations. Var. *discata* is rarely stable but apparently a fringe-population extreme tied in closely with the more abundant and wide-ranging var. *major*.”), Pages 99 & 101-103, color photograph), 15 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) Benson & Walkington), 16 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) L. Benson - “Rocky slopes and gravelly flats; common; intergrading with *O. p.* var. *major*.”), 26 (species), 27 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) L. Benson, Pages 53 & 99-100, color photographs: Plates 30 & 30A, Pages 99 & 100), 28 (color photograph), 43 (063009), 45 (species, color photograph), 46 (species, Page 583), 48 (genus), 58 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) Benson & Walk.), 63 (0123110 - color presentation), 77 (recorded as *Opuntia phaeacantha* var. *discata* (Griffiths) Benson & Walkington, color photograph #14 labeled as *Opuntia phaeacantha*), 85 (012310 - color presentation), 91 (recorded together with *Opuntia engelmannii* Salm-Dyck. *Opuntia phaeacantha* var. *discata* (Griffiths) Benson & Walkington / *Opuntia phaeacantha* var. *major* Engelm.: “Both species are sympatric throughout much of their range and often can be found together.”), 115 (color presentation of the species), 119 (recorded as *Opuntia discata* Griffiths), 127 (variety *engelmannii* and species), **WTK** (July 4, 2005)\*

*Opuntia fulgida* (see *Cylindropuntia fulgida* var. *fulgida*)

*Opuntia fulgida* var. *fulgida* (see *Cylindropuntia fulgida* var. *fulgida*)

*Opuntia phaeacantha* var. *discata* (see *Opuntia engelmannii* var. *engelmannii*)

*Opuntia spinosior* (see *Cylindropuntia spinosior*)

***Peniocereus greggii* (G. Engelmann) N.L. Britton & J.N. Rose var. *transmontanus* (G. Engelmann) C. Backeberg: Nightblooming Cereus**

SYNONYMY: *Cereus greggii* G. Engelmann var. *transmontanus* G. Engelmann. COMMON NAMES: Arizona Night-blooming Cereus, Arizona Queen-of-the-night, Chaparral Cactus, Deer-horn Cactus, Desert Night-blooming Cereus, Desert Threadcereus, Nightblooming Cereus, Queen of the Night, Queen-of-the-night, Reina-de-la-noche. DESCRIPTION: Terrestrial perennial root- and stem-succulent shrub (1 to 8 feet in height and ¼ to ½ inch in width), the large white flowers (2 to 5 inches in diameter and 6 to 8½ inches in length) open after dusk and last only one night, flowering generally takes place between late May and early July (additional records: one for early January, two for mid-March and one for early December), the ripe fruits (1¼ to 4 inches in length and ¾ to 2 inches in diameter) are orange red or bright red. HABITAT: Within the range of this species it has been reported from mountains; mesas; ridges; ridge crests; rocky hillsides; rocky and gravelly slopes; gravelly bajadas; sand dunes; gravelly-sandy plains; gravelly flats; valley floors; arroyos; along sandy washes; drainages; edges of washes, and bottomlands growing in dry desert pavement; rocky, gravelly and sandy ground, and gravelly loam, gravelly-sandy loam, sandy loam and clayey loam ground, occurring from 800 to 3,500 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are fragrant. The plant, *Peniocereus greggii* var. *greggii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop; it was also noted as having been used as a drug or medication. Plant with other desert shrubs and trees, such as the Creosote Bush (*Larrea tridentata* var. *tridentata*), Foothill Paloverde (*Parkinsonia microphylla*) and Velvet Mesquite (*Prosopis velutina*), that will provide support and protection. Birds feed on the fruit and seeds. *Peniocereus greggii* is native to southwest-central and southern North America. \*5, 6, 12 (recorded as *Cereus greggii* Engelm. var. *transmontanus* Engelm., Pages 112 & 118, color photograph Fig. 2.5), 15, 27 (species, recorded as *Cereus greggii* Engelmann, Pages 61, color photograph: Plates 36 & 36A, Page), 28 (color photograph), 43 (012310), 45 (color photograph of species), 46 (species, Page 568), 48, 63 (012310), 85 (012310 - color presentation of dried material), 86, 115 (color presentation of the species), 119 (species), 127 (records found under *Peniocereus greggii* var. *greggii*), **HR\***

Chenopodiaceae: The Goosefoot Family

***Atriplex canescens* (F.T. Pursh) T. Nuttall: Fourwing Saltbush**

COMMON NAMES: Atahi'xp (Seri), Cenizo (Spanish), Chamere (Spanish), Chamiso (preferred usage over Chamise), Chamiso Cenizo, Chamiza, Chamizo (Spanish), Costilla de Vaca, Diwoozhii Ibehi (Navajo), Four-wing Salt-bush, Four-wing Saltbush, Fourwing Saltbush, Ke'ma:we (Zuni - "salt weed" refers to the salty taste of the flowers), Narrow-leaf Saltbush, Narrowleaf Wingscale, Thinleaf Fourwing Saltbush, Grey Sage Brush, Orache, Saladillo, Sha'ashkachk Iibatkam (River Pima), Shadscale, Wngscale, Yup (Seri). DESCRIPTION: Terrestrial perennial evergreen (winter-deciduous in cold climates) shrub (1 to 10 feet in height, one plant was reported to be 4½ feet in height and 4½ feet in width, one plant was reported to be 40 inches in height and 5 feet in width, plants were reported that were 6 ½ feet in height and width, one plant was reported to be 5 feet in height and width, plants were reported that were 6 ½ feet in height and width, one plant was reported to be 7 feet in height and 13 feet in width, plants were reported that were 8 feet in height and 15 feet in width); the leaves are gray, gray-green, light green or green; the flowers (male and female flowers are usually borne on separate plants) are brown, cream, green, greenish, greenish-white, greenish-yellow, white-brown, pale yellow, yellow or yellowish; flowering generally takes place between early February and late October (additional records: one for mid-January, four for mid-November, one for late November and one for early December); the mature four-winged fruits (0.4 to 1 inch square bracts) are green or yellow-green drying to pale brown or tan.

**HABITAT:** Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky plateaus; along rocky, rocky-sandy and sandy rims; cliffs; rocky, sandy and clayey canyons; sandy canyon walls; sandy and clayey canyon bottoms; gorges; rocky scree; talus slopes; along gravelly-sandy bluffs; knolls; rocky ledges; rocky ridges; rocky-sandy, rocky-loamy and sandy ridgetops; meadows; foothills; rocky, gravelly-sandy and silty-loamy hills; rocky-gravelly hilltops; bouldery, rocky, gravelly and clayey hillsides; bedrock, bouldery, rocky, rocky-sandy, shaley, stony-loamy, cindery, sandy, sandy-loamy, sandy-loamy-silty-powdery, sandy-clayey, sandy-silty, clayey and silty-loamy slopes; alluvial fans; sandy bajadas; rocky and gypsum outcrops; amongst rocks; sandy lava flows; sand hills; sand dunes; blow-sand deposits; bouldery debris flows; sandy and sandy-loamy plains; rocky, gravelly, gravelly-loamy, sandy, sandy-loamy and clayey flats; basins; sandy and sandy-loamy valley floors; coastal dunes; sandy coastal plains; coastal flats; coastal saltmarshes; along rocky, gravelly, gravelly-sandy, sandy and sandy-loamy roadsides; arroyos; bottoms of arroyos; draws; gulches; ravines; seeps; around springs; streambeds; along creeks; along sandy creekbeds; along rivers; sandy riverbeds; along rocky and sandy washes; along and in drainages; lakebeds; playas; freshwater and saltwater marshes; around and in swamps; depressions; clayey pans; sinks; swales; along gravelly-sandy, sandy and clayey banks of arroyos, rivers and drainages; cindery edges of washes, ponds, lakes and salt marshes; margins of drainages; gravel bars; beaches; sandy and clayey benches; sandy-loamy terraces; sandy bottomlands; Galleta lowlands; floodplains; mesquite bosques; ditches; sandy riparian areas, and disturbed areas growing in muddy and moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, stony loam, gravelly loam, sandy loam, clayey loam, silty loam and loam ground; sandy clay and clay ground; rocky silty, sandy silty and silty ground, and sandy-loamy-silty powdery ground, occurring from sea level to 8,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. **NOTES:** This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder, cooking agent (ashes used in place of baking soda and also to give a greenish-blue color to dough), spice and/or dye crop; it was also noted as having been used as tools, as a drug or medication, to make ceremonial items (including prayer sticks - pahos) and as a commodity used in personal hygiene. The life span of the Fourwing Saltbush has been reported to be from 29 to over 100 years. Fourwing Saltbush may be useful in controlling erosion. Mule Deer (*Odocoileus hemionus*), White-tailed Deer (*Odocoileus virginianus*), Elk (*Cervus elaphus*), Black-tailed Jackrabbits (*Lepus californicus*), Pronghorn (*Antilocapra americana*), and Bighorn Sheep (*Ovis canadensis*); as well as, other small mammals browse this plant, and Grouse, Gray Partridge (*Perdis perdix*), Scaled Quail (*Callipepla squamata*) and other birds as well as Kangaroo Rats, Pocket Mice and other small rodents feed on the seeds. This plant is a larval food plant for the Pygmy Blue (*Brefidium exile*). Possible predation was reported by the exotic Puncturevine Seed Weevil (*Microlarinus lareynii*). The keying out of Four-wing Saltbushes may be difficult due to intraspecific variation and introgression with other saltbush species. *Atriplex canescens* is native to west-central and southern North America. \*5, 6, 13, 15, 16, 18, 26 (color photograph), 28 (color photograph), 43 (012710), 46 (Page 259), 48, 63 (012710 - color presentation), 77, 82, 85 (012710 - color presentation), 91 (“As a secondary or facultative absorber of selenium, *Atriplex canescens* can be mildly poisonous to livestock where selenium occurs in the soil.”), 115 (color presentation), 127, **WTK** (July 4, 2005)\*

***Atriplex polycarpa* (J. Torrey) S. Watson: Cattle Saltbush**

**COMMON NAMES:** All-scale, Cattle Saltbush, Cattle Spinach, Cattle-spinach, Cenizo, Chamizo, Chamiso Cenizo, Cow Spinach, Desert Sage, Desert Saltbush, Desert Salt-bush, Kokomaki Sha'l (Pima), Littleleaf Saltbush, Sage, Sagebrush, Shadscale. **DESCRIPTION:** Terrestrial perennial deciduous shrub (1 to 6½ feet in height, one plant was reported to be a round bush 2 feet in height, plants were described as being 5 feet in height and 6½ feet in width); the leaves are gray, gray-green, gray-white, silvery, silvery-gray or silvery-green; the inconspicuous flowers (male and female flowers may be borne on separate plants) are greenish, greenish-white, yellow or yellowish; the anthers are yellow; flowering

generally takes place between early September and early November (additional records: two for early January, one for late January, two for early February, two for mid-February, one for late February, one for mid-March, one for late March, two for early April, two for late April, one for late May, three for late June, one for early July, two for early August and one for late December); the ripe fruits are orange. HABITAT: Within the range of this species it has been reported from mountains; foothills; rocky canyons; along sandy canyon bottoms; talus slopes; foothills; hills; hilltops; bedrock, rocky, gravelly, gravelly-loamy and sandy slopes; alluvial fans; gravelly and gravelly-sandy bajadas; amongst rocks; sand dunes; sand hummocks; sandy plains; gravelly and sandy flats; gravelly-sandy valley floors; valley bottoms; coastal dunes; coastal plains; along railroad right-of-ways; along silty roadsides; bottoms of arroyos; silty springs; along rivers; riverbeds; along and in gravelly, gravelly-sandy, gravelly-loamy and sandy washes; along drainages; clayey playas; sinks; on gravelly-loamy and sandy banks of washes; edges of washes and playas; gravelly and sandy margins of seeps, washes and playas; along shores of lakes; rocky benches; terraces; bottomlands; sandy floodplains; canal right-of-ways; sandy riparian areas; waste places, and disturbed areas growing in dry rocky, gravelly, gravelly-sandy and sandy ground; gravelly loam and silty loam ground; clay ground, and silty ground, occurring from sea level to 6,100 feet in elevation in the grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, it is relatively drought resistant. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication. *Atriplex polycarpa* is native to southwest-central and southern North America. \*5, 6, 13, 18, 28 (note under *Atriplex canescens*), 43 (012810 - *Atriplex polycarpa* S. Watson), 46 (Page 258-259), 48, 63 (012810 - color presentation of seeds), 77, 85 (012810 - color presentation), 91, 127, 135, **HR\***

***Chenopodium* C. Linnaeus: Goosefoot**

COMMON NAME: Goose-foot, Goosefoot \*43 (081010), 46 (Pages 251-254), 63 (081010), **WTK** (July 4, 2005)\*

*Salsola australis* (see *Salsola tragus*)

*Salsola iberica* (see *Salsola tragus*)

*Salsola kali* (see *Salsola tragus*)

*Salsola kali* subsp. *tenuifolia* (see *Salsola tragus*)

*Salsola kali* L. var. *tenuifolia* (see *Salsola tragus*)

*Salsola kali* subsp. *tragus* (see *Salsola tragus*)

***Salsola tragus* C. Linnaeus: Prickly Russian Thistle**

SYNONYMY: *Salsola australis* R. Brown, *Salsola iberica* (f. Sennen & C. Pau) V.P. Botschantzev ex S.K. Czerepanov, *Salsola kali* C. Linnaeus, *Salsola kali* C. Linnaeus subsp. *tenuifolia* C.H. Moquis-Tandon, *Salsola kali* C. Linnaeus var. *tenuifolia* I.F. Tausch, *Salsola kali* C. Linnaeus subsp. *tragus* (C. Linnaeus) L.J. Čelakovský. COMMON NAMES: Cardo Ruso, Chamiso, Chamiso Valador, Ci Sha Peng (transcribed Chinese), Coast Saltwort, Common Russian Thistle, Hari Hijikii (transcribed Japanese), Leap the Field; Prickly Russian Thistle, Russian-cactus, Russian Thistle, Russian-thistle, Russian Tumbleweed, Soude Epineuse (French), Soude Roulante (French), Spineless Saltwort, Tumbleweed, Tumbling Thistle, Ukraine Salzkraut (German), Volador, Wind Witch. DESCRIPTION: Terrestrial annual forb/herb (2 inches to 7 feet in height, plants were observed that were 4 feet in height and 3 feet in width); the foliage may be blue-green, green, grayish-green, purple or red striped, reddish-purple or yellow-green; the inconspicuous flowers (without petals) are brown, pale green, green, green-

red, pink, white, whitish, whitish-green, white-pink, white-yellow or yellowish-green; flowering generally takes place between late April and mid-November (additional records: one for early February, one record for early April and one for mid-March); the fruit is a reddish top-shaped pod with papery wings. HABITAT: Within the range of this species it has been reported from mountains; gravelly mountainsides; sandy mesas; plateaus; canyon rims; cliffs; rocky and sandy canyons; bouldery-gravelly-sandy, rocky and sandy canyon bottoms; rocky-sandy rims of craters; rocky, sandy and sandy-loamy ridges; rocky-clayey foothills; hills; rocky, gravelly and sandy hillsides; sandy bases of escarpments; rocky, cindery, gravelly, gravelly-loamy, gravelly-sandy-loamy, sandy, sandy-loamy, clayey and silty slopes; bajadas; rocky outcrops; sand dunes; prairies; sandy plains; gravelly, sandy-loamy and silty flats; basins; gravelly, gravelly-sandy and sandy valley floors; valley bottoms; coastal dunes; sandy coastal beaches; coastal salt marshes; along gravelly-clayey railroad right-of-ways; gravelly roadbeds; along gravelly, gravelly-sandy, sandy and sandy-loamy roadsides; sandy arroyos; bottoms of arroyos; draws; gravelly gullies; seeps; along streams; along streambeds; along cobbly-loamy, sandy and sandy-silty creekbeds; along rivers; along rocky-sandy and sandy riverbeds; along bouldery, sandy, sandy-loamy and sandy-clayey washes; within clayey drainages; pondbeds; around lakes; sandy-loamy playas; marshes; gravelly and gravelly-sandy swales; sandy and clayey-loamy banks of springs, rivers and washes; sandy edges of creeks and marshes; shores of lakes; sandy-clayey beaches; sandy and clayey benches; gravelly terraces; sandy-clayey bottomlands; along sandy and sandy-clayey floodplains; mesquite bosques; along fencelines; around stock tanks; shores of reservoirs; along ditches; along sandy ditch banks; bouldery-cobbly-sandy, gravelly and sandy riparian areas; waste places, and disturbed areas growing in wet and dry desert pavement; bouldery, bouldery-cobbly-sandy, bouldery-gravelly-sandy, rocky, rocky-sandy, cindery, gravelly, gravelly-pebbly, gravelly-sandy and sandy ground; cobbly loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam, silty loam and loam ground; rocky clay, gravelly clay, sandy clay and clay ground, and silty ground, occurring from sea level to 8,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, fodder and as a drug or medication. Russian Thistle is a host plant of the Beet Leafhopper which transmits the Curly Top Virus to Sugarbeets *Salsola tragus* is native to northern, central, eastern and southern Europe; Asia, and northern Africa. \*5, 6, 15 (recorded as *Salsola iberica* Sennen & Pau), 16 (recorded as *Salsola iberica* Sennen & Pau), 28 (recorded as *Salsola iberica*, color photograph), 43 (070309), 46 (recorded as *Salsola kali* L. and *Salsola kali* L. var. *tenuifolia* Tausch, Page 264), 58 (recorded as *Salsola iberica* Sennen & Pau), 63 (013010 - color presentation), **68** (of *Salsola kali* L. var. *tenuifolia* Tausch, “It is a host plant for the sugarbeet leafhopper which carries the virus causing curly top in beets. It is also the source of “blight” in other crop plants such as tomatoes, spinach and beans. ... May store toxic amounts of nitrates after periods of fast growth.”), 77 (recorded as *Salsola australis* R. Br.), **80** (*Salsola kali* L. var. *tenuifolia* is listed as a Major Poisonous Range Plant. “Russian thistle is capable of storing up toxic quantities of nitrate, particularly during the flush period of growth. *Salsola* has also been suspected of causing oxalate poisoning in Australia. ... Large-scale control can best be accomplished through range improvement to replace the thistle with grass.” See text for additional information.), 85 (013010 - color presentation, J.J. Thornber reported on August 8, 1913, that Russian Thistle (*Salsola kali* L.) was recently introduced and rapidly spreading at a population observed in the Rillito bottomlands east of Tucson,)), 101 (recorded as *Salsola iberica* Sennen, color photograph), 115 (color presentation), 127, **WTK** (July 4, 2005)\*

#### Cucurbitaceae: The Cucumber Family

##### ***Cucurbita digitata* A. Gray: Fingerleaf Gourd**

COMMON NAMES: Calabachilla, Chichi Coyota, Coyote Gourd, Coyote Melon, Finger Leaf Gourd, Finger-leafed Gourd, Fingerleaf Gourd, Finger-leaved Gourd. DESCRIPTION: Terrestrial perennial forb/herb or vine (climbing, sprawling or trailing stems 3 to 40 feet in length); the palmate

leaves are dark blue-green, gray-green, grayish-green or green; the large funnel-shaped flowers (1½ to 2 inches in length) are greenish-yellow, orange or yellow; flowering generally takes place between mid-May and mid-October (additional records: one for mid-February and one for mid-November); the striped gourd-like fruits (2 to 3½ inches in diameter) are green aging to pale yellow or yellowish-green. HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon bottoms; foothills; hills; sandy hilltops; rocky slopes; banks; plains; gravelly and sandy flats; basins; gravelly-sandy valley floors; along gravelly, gravelly-sandy-silty and sandy roadsides; within sandy arroyos; bottoms of arroyos; gulches; along streambeds; sandy creekbeds; along rivers; sandy riverbeds; along and in gravelly-sandy, gravelly-loamy, sandy and silty washes; sandy banks of arroyos, rivers and washes; sandy benches; floodplains; along canal banks; riparian areas; waste places, and disturbed areas growing in dry rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam ground, and gravelly-sandy silty and silty ground, occurring from 100 to 5,700 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. One record reported that the flowers opened at dawn and closed in the afternoon. *Cucurbita digitata* is native to southwest-central and southern North America. \*5, 6, 15, 16, 28 (color photograph), 43 (070409), 46 (Page 822), 48 (genus), 58, 63 (020110 - color presentation of seed), 68, 77, 85 (020110 - color presentation), 115 (color presentation), 127, **WTK** (July 4, 2005)\*

#### Euphorbiaceae: The Spurge Family

##### ***Argythamnia neomexicana* J. Müller Argoviensis: New Mexico Silverbush**

SYNONYMY: *Ditaxis neomexicana* (J. Müller Argoviensis) A.A. Heller. COMMON NAMES: Common Ditaxis, Common Silverbush, Ditaxis, New Mexico Ditaxis, New Mexico Silverbush, New Mexico Wild Mercury, Silverbush. DESCRIPTION: Terrestrial annual or perennial forb/herb (2 to 32 inches in height, clumps described as being 4 inches in height and 12 inches in width were reported); the leaves are gray-green or green; the small flowers are cream, cream-yellow, green, white, whitish, white-pale yellow, white-yellowish, white with a yellow center or yellowish; flowering generally takes place between early January and late December. HABITAT: Within the range of this species it has been reported from rocky mountains; rocky and gravelly mesas; rocky-loamy canyons; bouldery canyon walls; canyon bottoms; talus slopes; rocky ridges; rocky ridgetops; foothills; rocky, rocky-sandy, cindery and gravelly-sandy hills; rocky and rocky-sandy hillsides; cinder cones; rocky, rocky-loamy, gravelly-sandy, sandy and sandy-silty slopes; bouldery-rocky-cobbly and rocky alluvial fans; gravelly, gravelly-sandy and sandy bajadas; rocky outcrops; amongst boulders and rocks; sand dunes; sandy plains; rocky, gravelly, sandy, clayey and silty flats; gravelly-sandy and sandy valley floors; coastal sand dunes; coastal terraces; coastal flats; bouldery-cobbly coastal beaches; along clayey roadsides; within rocky and sandy arroyos; along rocky and sandy bottoms of arroyos; rivulets; along creeks; along and in creekbeds, riverbeds; along and in bouldery, rocky, gravelly-sandy, gravelly-sandy-silty, sandy and silty washes; sandy drainage ways; depressions; banks of arroyos and washes; sandy edges of arroyos and washes; along sandy margins of washes; mudflats; beaches; along rocky benches; rocky terraces; sandy floodplains; ditches; gravelly, gravelly-sandy and sandy riparian areas, and disturbed areas growing in dry desert pavement; bedrock, bouldery, bouldery-rocky-cobbly, bouldery-cobbly, rocky, rocky-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly-sandy loam and clayey loam ground; clay ground, and gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 5,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Argythamnia neomexicana* is native to southwest-central and southern North America. \*5, 6, 15, 16, 43 (020210), 46 (recorded as *Ditaxis neomexicana* (Müll.Arg.) Heller, Page 506), 58, 63 (020210), 77 (recorded as *Ditaxis neomexicana* (Müll.Arg.) Heller), **85** (020210 - color presentation)\*

*Ditaxis neomexicana* (see *Argythamnia neomexicana*)

Fabaceae (Leguminosae): The Pea Family

***Acacia constricta* G. Bentham: Whitethorn Acacia**

SYNONYMY: *Vachellia constricta* (G. Bentham) D.S. Seigler & J.E. Ebinger. COMMON NAMES: All-thorn Acacia, Chaparo Prieta, Chaparro Prieto, Common Whitethorn, Garabato, Gidag (Tohono O'odham), Gigantillo, Huisache, Largoncillo, Mescat Acacia, Twinthorn Acacia, Vara Prieta, Vinorama, Whitethorn Acacia, White Thorn, Yellow Cat Claw. DESCRIPTION: Terrestrial perennial deciduous (drought and cold) shrub or tree (1 to 20 feet in height with crowns to about the same in width, one plant was described as being 8 feet in height with a crown 8 feet in width); the bark may be light gray, mahogany or nearly black; the stems may be red; the spines on the branches and stems are gray or white; the small pinnate leaves are green; the small flowers have been described as being golden, golden-yellow, orange-yellow, light yellow, yellow or yellowish-orange; flowering generally takes place between late March and late October (additional records: two for early March and one for late December); the seedpods are brown, purple-red, reddish or rusty-brown. HABITAT: Within the range of this species it has been reported from mountains; mesas; cliffs; canyons; canyon sides; sandy canyon bottoms; sandy ridges; foothills; rocky and gravelly hills; bouldery hilltops; rocky and gravelly hillsides; escarpments; rocky, rocky-clayey-loamy and clayey-loamy slopes; gravelly bajadas; rocky outcrops; amongst boulders; sandy-loamy plains; gravelly flats; valley floors; coastal plains; along rocky, rocky-gravelly-loamy, rocky-gravelly-clayey loam, rocky-clayey-loamy, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-sandy-clayey-loamy, gravelly-loamy, gravelly-clayey loam and sandy roadsides; along and in rocky arroyos; bottoms of arroyos; rocky gulches; along streambeds; creeks; along and in sandy creekbeds; rivers; along and in gravelly, gravelly-sandy, sandy and silty-clayey washes; drainages; swales; along gravelly-sandy and sandy banks of streams, creeks, rivers and washes; along edges of washes; rocky margins of arroyos and washes; mudflats; benches; alluvial terraces; sandy bottomlands; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-gravelly-clayey loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam and loam ground, and silty clay ground, occurring from 1,100 to 6,500 feet (infrequently as low as 500 feet and as high as 9,200 feet) in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, plants may live to be more than 72 years of age and the flowers may be fragrant. Whitethorn Acacia is used for food (but not extensively) by the Desert Mule Deer (*Odocoileus hemionus*) and Scaled Quail (*Callipepla squamata*), Merriam's Kangaroo Rats (*Dipodomys merriami*), Bailey's Pocket Mice (*Chaetodipus baileyi*) and Rock Pocket Mice (*Chaetodipus intermedius*) as well as a variety of other birds and mammals feed on the seeds. *Acacia constricta* is native to southwest-central and southern North America. \*5, 6, 13 (color photograph), 15, 16, 18, 26 (color photograph), 28 (color photograph), 43 (080409), 46 (Page 399), 48, 53 (note under *Acacia farnesiana*), 63 (020710 - color presentation), 68, 77, 80 (This species is listed as a Major Poisonous Range Plant. "The plants are high in cyanide forming-compounds and have been reported to cause death of cattle in Arizona. In general, the plants are not palatable to livestock although the pods are grazed. However, in the fall of the year at or near frost time, when the range grasses become less palatable, cattle may eat heavily of these plants and death is likely to result. ... Animals should be removed from heavily infested areas during the early frost period or considerable death losses may occur." See text for additional information.), 85 (020710 - color presentation), 91, 115 (color presentation), 134, **WTK** (July 4, 2005)\*

*Acacia greggii* var. *arizonica* (see *Acacia greggii* var. *greggii*)

***Acacia greggii* A. Gray var. *greggii*: Catclaw Acacia**

SYNONYMY: *Acacia greggii* A. Gray var. *arizonica* D. Isely. COMMON NAMES: Acacia, Algarroba, Arizona Acacia (applied to var. *greggii*), Cat Claw, Cat Claw Acacia, Catclaw, Catclaw Acacia, Cat's-claw, Devil's Catclaw, Devil's Claw, Devil's-claw, Devilsclaw, Di:s (Seri), Gatuno, Gregg Catclaw, Gregg's Acacia, Tearblanket, Tepame, Tesota, Texas Catclaw, Texas Mimosa, Una de Gato, Wait-a-minute, Wait-a-minute Bush. DESCRIPTION: Terrestrial perennial winter-deciduous shrub or tree (40 inches to 25 feet in height with a broad crown); the bark is gray-black or red-brown; the leaves are gray-green or green; the flowers may be cream, cream-white, cream-yellow, green, greenish-yellow, lemon-yellow, white, yellow, yellow-cream or yellow-green in catkins; flowering generally takes place between early March and mid-July (additional record: one for mid-October); the mature fruits (straight or twisted pods) are brown or brownish-red. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; canyons; rocky and sandy canyon bottoms; rocky bluffs; rocky and sandy ridges; ridgetops; hillsides; rocky, rocky-clayey-loamy, sandy and loamy slopes; amongst boulders; alluvial fans; sandy flats; valley floors; gravelly-sandy-clayey-loamy and sandy roadsides; sandy edges of arroyos; draws; ravines; along streams; along creeks; along rivers; along gravelly and sandy washes; within drainages; along banks of rivers and washes; along edges of washes; margins of arroyos; floodplains; mesquite bosques, and riparian areas growing in dry bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-clayey loam, gravelly-sandy-clayey loam, sandy loam and clayey loam ground, and gravelly clay ground, occurring from slightly above sea level to 5,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat; the flowers are fragrant, it may live to be up to 120 years of age. The species, *Acacia greggii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder and/or fiber crop; it was also noted as having been used as a fuel, tool and for making perfumed sachets. Catclaw Acacia provides food, shelter, protection, shade, nesting sites, roosting sites and nesting material to a wide variety of species of wildlife. *Acacia greggii* var. *greggii* is native to southwest-central and southern North America. \*5, 6, 13 (color photograph of species, species), 16 (recorded as *Acacia greggii* Gray var. *arizonica* Isely), 18 (species), 26 (species, color photograph of species), 28 (species, color photograph of species), 43 (020710), 46 (species, "This is probably the most heartily disliked plant in the state, the sharp, strong prickles tearing the clothes and lacerating the flesh."), 48 (species - "A good honey plant but a poisonous weed on range lands.", Page 398), 52 (species) 53, (species), 63 (020710), 80 (The species is listed as a Secondary Poisonous Range Plant. "Plants contain cyanide-forming compounds and symptoms are typical of cyanide poisoning. The new foliage is relished by cattle in the early spring. It also may be grazed considerably during dry seasons or drouth periods when other feed is short. Plants are most dangerous in the fall during first frosts. Cattle are most often poisoned, but losses in Arizona are not heavy. Poisoning may be prevented by deferring heavily infested areas during the early frost periods." See text for additional information.), 85 (020710), 91 (species), 115 (color presentation of the species), 127 (species), **WTK** (July 4, 2005)\*

*Cercidium floridum* (see *Parkinsonia florida*)

*Cercidium floridum* subsp. *floridum* (see *Parkinsonia florida*)

***Lupinus concinnus* J.G. Agardh: Bajada Lupine**

COMMON NAMES: Annual Lupine, Bajada Lupine, Bluebonnet, Elegant Lupine, Lupine, Scarlet Lupine. DESCRIPTION: Terrestrial annual forb/herb (3 to 18 inches in height); the woolly herbage is grayish or gray-green; the flowers may be blue, blue-magenta, blue-purple, blue & white, blue & light yellow, deep blue-purple & white, cream & purple, cream & rose-purple, pale lavender, dark lavender, lavender-pink, lavender-purple, lavender-rose, lavender & white, magenta-lavender, pink, pinkish-blue, pink-lavender, pink-purple & white-cream, pink-purple & white tinged with lavender, pink & white, light purple & yellow, purple, purplish, purple-lavender, purple-magenta, purple-magenta &

white, purple-pink, purple & white, purple & yellow, red-purple, reddish-purple, violet, white rimed with pink, yellow & pink or yellowish-purplish; flowering generally takes place between late February and late June. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; gravelly, sandy and sandy-clayey-loamy mesas; rocky canyons; rocky and sandy canyon bottoms; chasms; bases of cliffs; clayey ridges; sandy ridgetops; ridgelines; openings in forests; sandy foothills; rocky hills; sandy hillsides; along bouldery, rocky, rocky-gravelly-sandy, gravelly, clayey-loamy and clayey slopes; rocky-sandy alluvial fans; bajadas; amongst boulders and rocks; blow-sand deposits; sandy banks; sandy and sandy-silty plains; gravelly and sandy flats; basins; sandy-silty valley floors; along gravelly, gravelly-sandy and sandy roadsides; within arroyos; gulches; around streams; rocky streambeds; along creeks; along and in gravelly-sandy and gravelly-silty creekbeds; along rivers; sandy riverbeds; along and in rocky-sandy, gravelly, gravelly-sandy and sandy washes; within rocky drainage ways; sandy banks of arroyos, creeks, rivers and washes; along cobbly edges of rivers and washes; along margins of washes; gravelly and sandy benches; sandy terraces; gravelly and loamy bottomlands; rocky-sandy, cobbly-sandy, gravelly and sandy floodplains; along ditches; along gravelly-clayey-loamy banks of ditches; rocky-sandy, gravelly-sandy and sandy riparian areas; recently burned areas in woodlands, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly-sandy, rocky-sandy, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky clay, cobbly clay, loamy clay and clay ground, and gravelly silty and sandy silty ground, occurring from 200 to 7,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Lupinus concinnus* is native to southwest-central and southern North America. \*5, 6, 16, 18 (genus), 28 (color photograph), 43 (021110), 46 (Page 417), 48 (genus), 58, 63 (021110 - color presentation), 77 (color photograph #80), 80 (Some, but not all, species of the genus *Lupinus* are considered to be Secondary Poisonous Range Plants. "The lupines contain numerous poisonous alkaloids. They are mostly dangerous to sheep but cattle, goats, horses, hogs and deer have also been poisoned. The seeds and pods are most poisonous but both young and dried plants may be dangerous. However, not all species are poisonous and some may furnish moderately palatable and nutritious forage for sheep. ... Animals will seldom eat a toxic dose if desirable forage is available. Losses can generally be avoided by good range management to improve forage, by keeping animals away from dense lupine patches (particularly in late summer or on the trail), or by grazing with cattle." See text for additional information.), 85 (021210 - color presentation), 115 (color presentation)\*

***Parkinsonia florida* (G. Bentham ex A. Gray) S. Watson: Blue Paloverde**

SYNONYMY: *Cercidium floridum* G. Bentham, *Cercidium floridum* G. Bentham var. *floridum*. COMMON NAMES: Blue Palo Verde, Blue Palo-verde, Blue Paloverde, Caro (Mayo), Palo Verde (Spanish for Green Pole, Green Stick or Green Tree), Paloverde, Stedak U'us (Pima), Studuk U'us (Bajo Pima). DESCRIPTION: Terrestrial perennial deciduous shrub or tree (40 inches to 40 feet in height); the bark may be blue-green, green, yellow or yellow-green, and gray on the older trunks; the leaves are blue-green; the flowers ( $\frac{3}{4}$  to 1 inch in width) are yellow or seldom white; flowering generally takes place between early March and mid-June (additional records: two for early February, two for mid-August, two for early September, one for late September, one for early October, two for mid-October, one for late October, two for early November, one for mid-November and one for early December); the mature fruits (1½ to 4 inches in length) are light brown. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; along canyons; canyon walls; sandy canyon bottoms; buttes; gravelly-clayey ridges; foothills; rocky, rocky-sandy, gravelly-loamy and sandy hills; bajadas; rocky, rocky-sandy and sandy slopes; sand hills; sand dunes; rocky-sandy, cindery, sandy and sandy-silty flats; valley floors; valley bottoms; coastal slopes; along rocky-gravelly-sandy, gravelly-sandy and sandy roadsides; along gravelly arroyos; along sandy bottoms of arroyos; rocky draws; seeps; streambeds; creekbeds; along rivers; along riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; watercourses; playas; along rocky and sandy banks of arroyos, rivers and washes; edges of draws and washes; margins of rivers and washes; gravelly sand bars; benches; gravelly

terraces; loamy bottomlands; clayey lowlands; sandy-loamy floodplains; mesquite bosques; fencerows; catchments; stock tanks; along canals; along canal banks; gravelly-sandy riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly-sandy, rocky-sandy, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and loam ground; gravelly clay and clay ground, and sandy silty ground, occurring from sea level to 5,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, it has a very showy display of yellow flowers in very showy in late March and April. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used for shelter and for tools. The Blue Paloverde may be useful in controlling erosion. Bighorn Sheep (*Ovis canadensis*), Mule Deer (*Odocoileus hemionus*) and other wildlife browse the fruits, leaves and twigs and the seeds are eaten by birds and rodents and used by Bruchid Beetles. *Parkinsonia florida* is native to southwest-central and southern North America. \*5, 6, 13 (recorded as *Cercidium floridum* Bentham, color photograph of habitat Plate S.2), 15, 16 (recorded as *Cercidium floridum* Benth.), 18, 26 (recorded as *Cercidium floridum*, color photograph), 28 (recorded as *Cercidium floridum*, color photograph), 43 (021310 - *Cercidium floridum* Benth. ex A. Gray, *Parkinsonia florida* S. Watson), 46 (recorded as *Cercidium floridum* Benth., Page 407), 48, 52 (recorded as *Cercidium floridum* Benth. ex Gray, color photograph), 53 (recorded as *Cercidium floridum* Benth.), 58, 63 (021310 - color presentation), 77 (recorded as *Cercidium floridum* Benth.), 85 (021410 - color presentation), 86 (recorded as *Cercidium floridum*, color photograph), 91 (recorded as *Cercidium floridum* Benth.), 115 (color presentation), 127, **WTK** (July 4, 2005)\*

*Prosopis juliflora* var. *velutina* (see *Prosopis velutina*)

***Prosopis velutina* E.O. Wooton: Velvet Mesquite**

SYNONYMY: *Prosopis juliflora* (O. Swartz) A.P. de Candolle var. *velutina* (E.O. Wooton) C.S. Sargent. COMMON NAMES: Algarroba, Chachaca, Fluweelprosopis (Afrikaans), Kvi (or possibly Kui - Tohono O'odham), Mesquite, Mezquite, Mizquitl, Velvet Mesquite. DESCRIPTION: Terrestrial perennial deciduous shrub or tree (2 to 56 feet in height, one plant was reported to be 6½ feet in height with a canopy 6½ feet in width, one plant was reported to be 13 feet in height with a canopy 16½ feet in width, one tree was reported to be 20 feet in height and 40 feet in width); the bark on the trunk and older branches is dark brown, dark brownish-green or dark gray; the leaves are gray-green; the flowers (cylindrical spikes 2 to 5 inches in length) are cream, cream-yellow, green-yellow, greenish-white, pale yellow, yellow, yellow-green or yellowish-green; flowering generally takes place between mid-March and late August (additional records: one for early October and one for early November); the mature seedpods (3 to 8 inches in length) are red, tan, yellow or mottled. HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; canyons; along sandy canyon bottoms; rocky bases of cliffs; buttes; rocky and sandy ridges; foothills; rocky hills; rocky hillsides; rocky and rocky-loamy slopes; alluvial fans; gravelly bajadas; rocky outcrops; rocky plains; gravelly and sandy flats; sandy valley floors; valley bottoms; along rocky-gravelly-loamy, gravelly-clayey-sandy-loamy and silty-clayey roadsides; along and in sandy arroyos; rocky-gravelly-loamy draws; seeps; springs; around seeping streams; along streams; along rocky streambeds; along creeks; creekbeds; along rivers; along rocky-sandy riverbeds; along and in rocky, gravelly-sandy and sandy washes; along drainages; within drainage ways; playas; cienegas; banks of streams, creeks and rivers; gravelly and sandy edges of rivers, washes and ponds; sandy-loamy benches; gravelly and gravelly-sandy terraces; bottomlands; floodplains; mesquite bosques; along fencelines; around stock tanks; around reservoirs; along canals; canal banks; ditches; along ditch banks; riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, gravelly-clayey-sandy loam, sandy loam, clayey loam and loam ground; silty clay ground, and sandy silty, clayey silty and silty ground, occurring from 100 to 6,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native

habitat, it may live to be more than several hundred years of age. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, fiber and/or dye or paint (boiled resin used as a pottery paint) crop; it was also noted as having been used as fuel, as a tool, as toys, as a drug or medication and as a guide for determining a planting season. The Velvet Mesquite is a common “nurse plant” of the Saguaro or Giant Cactus (*Carnegiea gigantea*). Much of the mesquite forest (bosques) originally found along the desert water courses have been lost to fuel wood cutting and clearing for agricultural fields and commercial and residential development. Velvet Mesquite Bosques were small, open, park-like woodlands with the Velvet Mesquite often occurring in nearly pure stands and interspersed with other common species such as the Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Mexican Elder (*Sambucus nigra* subsp. *canadensis*), Desert Hackberry (*Celtis ehrenbergiana*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Wolfberry (*Lycium* spp.), Four-wing Salt-bush (*Atriplex canescens*) and Vine Mesquite Grass (*Panicum obtusum*). The Velvet Mesquite provides food and shelter for many species of wildlife. The plant is a food source for quail, Desert Mule Deer (*Odocoileus hemionus crooki*) and Desert Bighorn Sheep (*Ovis canadensis mexicana*). Coyotes (*Canis latrans*), Round-tailed Ground Squirrels (*Spermophilus tereticaudus*), Desert Cottontails (*Sylvilagus audubonii*) and many other wild animals feed on the seed pods. Velvet Mesquite is the host for a Drywood Termite (*Incisitermes banksi*). Bruchid Beetles feed on the fruits and seeds. *Prosopis velutina* is native to southwest-central and southern North America. \*5, 6, 13 (recorded as *Prosopis juliflora* (Swartz) DC. var. *velutina* (Wootton) Sarg., color photograph), 15, 16, 18, 26 (color photograph), 28 (color photograph), 43 (071609), 46 (recorded as *Prosopis juliflora* (Swartz) DC. var. *velutina* (Wootton) Sarg., Page 402), 48, 52 (color photograph), 53 (species: recorded as *Prosopis juliflora* (Sw.) DC.), 58, 63 (021610), 68, 77, 80 (This species is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. “Heavy, long-continued consumption of pods and leaves of these common desert shrubs may cause rumen impaction and poisoning.”), 85 (021610 - color presentation), 91, 115 (color presentation), 127, 134, ADS (Arizona Daily Star, Sunday, July 26, 2009, Tucson & Region, B1: Mesquite Pods are of Consuming Interest), **WTK** (July 4, 2005)\*

*Vachellia constricta* (see *Acacia constricta*)

#### Hydrophyllaceae: The Waterleaf Family

##### ***Phacelia arizonica* A. Gray: Arizona Phacelia**

SYNONYMY: *Phacelia popei* J. Torrey & A. Gray var. *arizonica* (A. Gray) J.W. Voss.  
COMMON NAMES: Arizona Phacelia, Arizona Scorpion-weed, Arizona Scorpionweed, Caterpillar Weed. DESCRIPTION: Terrestrial perennial forb/herb (1 to 16 inches in height); the flowers may be light blue, pale bluish-purple, blue-purple, blue-purplish, pale lavender, lavender, lavender-white, pale pink-lavender, pink, pale purple, pale purplish, purple, dusty rose, pale violet, white, whitish, white with a lavender tinge or white with a pale maroon center; the filaments are mauve; the anthers are blue; flowering generally takes place between late February and mid-May (additional records: one for early February, one for early June, two for mid-July, three for early September and one for mid-September). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; gravelly canyons; sandy canyon bottoms; ledges; foothills; rocky hills; hilltops; rocky and gravelly slopes; rocky-sandy and sandy alluvial fans; bajadas; amongst grasses; lava flows; plains; sandy flats; valley floors; rocky-sandy, gravelly, gravelly-sandy, gravelly-sandy-silty, sandy and loamy roadsides; gravelly bottoms of arroyos; gravelly streambeds; along creeks; along rivers; riverbeds; along rocky-gravelly, gravelly and sandy washes; drainages; cobbly-sandy-loamy swales; sandy banks of washes; gravel bars; terraces; lowlands; along sandy floodplains; sandy mesquite woodlands; sandy riparian areas; waste places, and disturbed areas growing in dry rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; cobbly-sandy loam, gravelly-sandy, clayey loam and loam ground, and gravelly-sandy silty ground, occurring from 1,500 to 6,700 feet in elevation in the woodland, scrub, grassland, desertscrub and

wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Phacelia arizonica* is native to southwest-central and southern North America. \*5, 6, 15, 16, 43 (072209), 46 (Page 703), 58, 63 (022210 - color presentation), 77, 85 (022210 - color presentation)\*

*Phacelia popei* var. *arizonica* (see *Phacelia arizonica*)

#### Malvaceae: The Mallow Family

##### ***Abutilon incanum* (J.H. Link) R. Sweet: Pelotazo**

SYNONYMY: *Abutilon incanum* (J.H. Link) R. Sweet subsp. *incanum* (J.H. Link) R. Sweet, *Abutilon incanum* (J.H. Link) R. Sweet subsp. *pringlei* (B.P. Hochreutiner) R.S. Felger & R.T. Lowe, *Abutilon pringlei* B.P. Hochreutiner. COMMON NAMES: Hoary Abutilon, Hoary Indian Mallow, Indian Mallow, Pelotazo (Spanish), Pelotazo Chico, Pringle Abutilon, Pringle's Abutilon, Pringle Indian Mallow, Shrubby Indian Mallow, Tronadora. DESCRIPTION: Terrestrial perennial evergreen forb/herb or subshrub (8 inches to 7 feet, sometimes up to 13 feet, in height, one plant was reported to be 8 inches in height with a crown 8 inches in width, one plant was reported to be 12 inches in height with a crown 16 inches in width, one plant was reported to be 30 inches in height with a crown 30 inches in width); the stems are gray, the leaves are grayish or gray-green; the flowers may be cream, cream & red, lavender, pale orange, orange, orange-red, orange-yellow, orange-yellowish, peach & maroon, light pink, pink, dark red, salmon, white, white & pink, yellow-orange, yellowish-pink, yellow, yellow-gold or yellow-salmon sometimes with dark crimson, maroon, deep maroon, purple, red dark red centers (basal spots); flowering may take place throughout the year between early January and late December. HABITAT: Within the range of this species it has been reported from bouldery and rocky mountains; mountaintops; bases and lower slopes of mountains; rocky crags; rocky mesas; rocky crags; rocky cliffs; rocky canyons; along bouldery, bouldery-sandy and rocky canyon bottoms; rocky and clayey-loamy talus slopes; crevices in rocks; buttes; knolls; ridgetops; rocky ridgelines; foothills; rocky and stony hills; rocky and gravelly hillsides; bouldery-rocky-sandy, rocky, rocky-sandy, gravelly and gravelly-sandy slopes; volcanic plugs; rocky outcrops; amongst boulders; gravelly plains; gravelly and sandy flats; basins; valley floors; coastal plains; gravelly roadsides; along rocky arroyos; rocky bottoms of arroyos; around seeping streams; along and in rocky streambeds; along and in gravelly, sandy and clayey-loamy washes; within drainages; swales; banks of lakes; beaches; benches; mesquite bosques; riparian areas, and disturbed areas growing in wet and dry bouldery, bouldery-rocky-sandy, bouldery-sandy, rocky, rocky-sandy, stony, gravelly, pebbly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam and clayey loam ground, and rocky clay and clay ground, occurring from sea level to 6,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Abutilon incanum* is native to southwest-central and southern North America and possibly to the North-central Pacific Islands (Hawaii). \*5, 6, 13, 15, 16 (recorded as *Abutilon incanum* (Link.) Sweet subsp. *pringlei* (Hochr.) Felger & Lowe), 18 (genus), 28 (color photograph), 43 (030410 - *Abutilon incanum* subsp. *pringlei* (Hochr.) Felger), 46 (recorded as *Abutilon pringlei* Hochr., Page 539 and *Abutilon incanum* (Link) Sweet, Page 539), 63 (030410 - color presentation), 77 (recorded as *Abutilon incanum* (Link.) Sweet ssp. *pringlei* (Hochr.) Felger & Lowe), 85 (030410 - color presentation), 91, 115 (color presentation), 127\*

*Abutilon incanum* subsp. *incanum* (see *Abutilon incanum*)

*Abutilon incanum* subsp. *pringlei* (see *Abutilon incanum*)

*Abutilon pringlei* (see *Abutilon incanum*)

***Anoda pentaschista* A. Gray: Field Anoda**

COMMON NAME: Field Anoda. DESCRIPTION: Terrestrial annual herb (20 to 80 inches in height); the flowers may be pale apricot, apricot, orange, orange-yellow, peach-yellow, pumpkin fading to pink, purplish, violet, pale yellow or yellow sometimes fading pink or reddish; flowering generally takes place between early August and late November (additional records: one for early January, one for late May, one for late June, one for mid-July and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; clayey knolls; meadows; foothills; rocky bases of foothills; hills; clayey hilltops; rocky, rocky-clayey, stony-clayey and clayey slopes; clayey flats; valley floors; sandy railroad right-of-ways; along rocky and loamy-clayey roadsides; arroyos; riverbeds; along washes; poolbeds; playas; cienegas; silty swampy areas; rocky depressions; swales; bottomlands; floodplains, and disturbed areas growing in muddy and moist and dry rocky and sandy ground; rocky clay, stony clay, loamy clay and clay ground, and silty ground, occurring from sea level to 5,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Anoda pentaschista* is native to southwest-central and southern North America. \*5, 6, 16, 43 (030410), 46 (Page 552), 63 (030410), 77, **85** (030410 - color presentation)\*

***Malvella sagittifolia* (A. Gray) P.A. Fryxell: Arrowleaf Mallow**

SYNONYMY: *Sida lepidota* A. Gray var. *sagittaeifolia* A. Gray. COMMON NAMES: Arrowleaf Mallow, Scurfy Sida. DESCRIPTION: Terrestrial perennial forb/herb (prostrate, spreading or trailing stems 6 to 18 inches in height/length); the flowers are cream, orange, pale pink, pink, purple, rose, white or white with a rose tint; flowering generally takes place between early March and mid-May and between mid-August and mid-October (additional records: two for mid-June and three for late November, it has been reported that flowering may take place throughout the year). HABITAT: Within the range of this species it has been reported from clayey mesas; bajadas; plains; silty flats; clayey valley floors; loamy valley bottoms; sandy-loamy and sandy-silty roadsides; clayey and clayey-loamy washes; sandy, clayey and silty playas; depressions; silty mudflats; floodplains; bosques; ditches, and disturbed areas growing in dry sandy ground; gravelly loam, sandy loam, clayey loam and loam ground; silty clay and clay ground, and sandy silty and silty ground, occurring from 400 to 6,000 feet in elevation in the grassland, desertscrub and wetland ecological formations. NOTE: This plant may be an attractive component of a restored native habitat. *Malvella sagittifolia* is native to southwest-central and southern North America. \*5, 6, 43 (030510 - *Sida lepidota* var. *sagittaeifolia* A. Gray), 46 (recorded as *Sida lepidota* Gray var. *sagittaeifolia* Gray, Page 550), 63 (030510 - color presentation), **85** (030510 - color presentation of dried material)\*

*Sida lepidota* var. *sagittaeifolia* (see *Malvella sagittifolia*)

***Sphaeralcea ambigua* A. Gray: Desert Globemallow**

COMMON NAMES: Apricot Globemallow (for *Sphaeralcea ambigua* subsp. *ambigua*), Apricot Mallow (for subsp. *ambigua*), Apricot-mallow, Coyóco (Seri), Desert Globemallow, Desert Hollyhock, Desert-hollyhock, Desert Mallow, Desert-mallow, Globe Mallow, Globemallow, Mal de Ojo, Mountain Apricot Mallow (for subsp. *ambigua*), Plantas Muy Malas (very bad plants), Rose Globemallow (for subsp. *rosacea*), Sore-eye Poppy. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (16 to 78 inches in height, one plant was reported to be 2 feet in height and 2 feet in width, one plant was reported to be 3 feet in height and 2 feet in width); the stems are silvery, tan, whitish or yellow; the leaves are grayish or silvery; the flowers (½ to 1½ inches in width) may be apricot-coral, apricot-reddish, brick-red, coral-orange, grenadine, grenadine-red, lavender, magenta, orange, orange-peach, orange-red, deep orange, orangish, light pink-lavender, pink, pink-lavender, pink-orange, plum-blue, purple, purplish-pink, red, red-orange, reddish-salmon, rose, rose-pink, salmon, salmon-orange, salmon-pink, scarlet or white; flowering generally takes place between late January and late July (additional records: one for mid-August, two for late August, three for mid-September, two for late September, two for early October, six for mid-October, one for late October, three for early November, four for mid-November, one for late

November, two for mid-December, one for late December, it has been reported that flowering may take place throughout the year). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mesas; sandy plateaus; cliffs; stony-cobbly-sandy, gravelly and sandy canyons; sandy canyon bottoms; talus slopes; bluffs; ridges; bouldery ridgetops; cindery cinder cones; foothills; bouldery, rocky and gravelly hills; bouldery-sandy and rocky hillsides; bouldery-rocky, rocky, gravelly, gravelly-loamy, gravelly-silty and sandy slopes; alluvial fans; bajadas; rock and sandy outcrops; amongst rocks; lava hills; sand dunes; sandy plains; cobbly-clayey, gravelly and sandy flats; basins; sandy and loamy valley floors; roadbeds; along rocky, rocky-gravelly, rocky-gravelly-silty, gravelly, gravelly-loamy and sandy roadsides; within arroyos; rocky ravines; seeps; along springs; along streams; along creeks; along rocky-sandy and gravelly-sandy creekbeds; along rivers; riverbeds; along and in bouldery, rocky, gravelly, gravelly-sandy and sandy washes; along sandy drainages; playas; depressions; sandy and silty-loamy banks of creekbeds, washes and lakes; edges of washes; sandy margins of washes; shores of lakes; gravel bars; sandy beaches; rocky and sandy benches; shelves; sandy bottomlands; floodplains; gravelly-sandy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-rocky, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-gravelly, stony-cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, silty loam and loam ground; cobbly clay ground, and rocky-gravelly silty and gravelly silty ground, occurring from sea level to 8,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted that it was used as a drug or medication. The Desert Globemallow is browsed by Bighorn Sheep (*Ovis canadensis*). *Sphaeralcea ambigua* is native to southwest-central and southern North America. \*5, 6, 18, 28 (color photograph), 43 (030710), 46 (Page 543), 48 (genus), 63 (030710 - color presentation), 68 (genus), 77 (color photograph #85), **85** (030710 - color presentation), 86 (color photograph), 115 (color presentation), 127\*

***Sphaeralcea hastulata* J. Torrey ex A. Gray: Spear Globemallow**

SYNONYMY: *Sphaeralcea subhastata* J.M. Coulter. COMMON NAMES: Globe Mallow, Mal de Ojo, Spear Globemallow, Spreading Globemallow, Wrinkled Globe Mallow. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (prostrate, ascending or erect stems 8 inches to 2 feet inches in height with a dome-shaped crown); the leaves are gray-green; the flowers may be grenadine, lavender-pink, orange, orange-pink (salmon), orange-red, peach-orange, light pink, pink-orange, red or red-orange; the anthers are purple, purplish or yellow; the stigmas are lavender, purple or red; flowering generally takes place between mid-March and mid-November (additional record: two for early December). HABITAT: Within the range of this species it has been reported from mountains; bases of mountains; mesas; canyons; canyon bottoms; sandy crevices; ledges; rocky and rocky-sandy ridges; foothills; gravelly-clayey hilltops; rocky hillsides; clayey gravelly slopes; bajadas; sandy lava flows; lava beds; sandy plains; clayey flats; basin bottoms; sandy valley floors; along railroad right-of-ways; along gravelly roadsides; bottoms of arroyos; ravines; gravelly washes; along rocky drainages; depressions; sandy-clayey swales; banks of rivers and washes; bottomlands; waste places, and disturbed areas growing in dry rocky, rocky-sandy, gravelly and sandy ground; gravelly-clayey loam, sandy loam and loam ground, and gravelly clay, sandy clay and clay ground occurring from 400 to 8,400 feet in elevation in the forest, woodland, grassland and desertscrub ecological formations. NOTE: *Sphaeralcea hastulata* is native to southwest-central and southern North America. \*5, 6, 18 (genus), 43 (072110 - *Sphaeralcea hastulata* A. Gray), 46 (recorded as *Sphaeralcea subhastata* Coult., Page 545), 48 (genus), 63 (072110), 68 (genus), 77, **85** (080810 - color presentation of dried material)\*

*Sphaeralcea subhastata* (see *Sphaeralcea hastulata*)

***Boerhavia coulteri* (J.D. Hooker) S. Watson var. *palmeri* (S. Watson) R.W. Spellenberg: Spiderling**

SYNONYMY: *Boerhavia spicata* J.D. Choisy var. *palmeri* S. Watson. COMMON NAMES: Spiderling, Mochi. DESCRIPTION: Terrestrial annual forb/herb (decumbent to ascending stems 8 inches to 5 feet in height/length); the flowers are pale pink, pink, purple-pink or white with a slight pink tinge; based on few records locate, flowering generally takes place between mid-July and early October (flowering records: one for mid-July, one for late August, one for early September, two for late September and three for early October). HABITAT: Within the range of this species it has been reported from mountains; canyons; gravelly-sandy and sandy-loamy bajadas; plains; valley floors; washes; sandy floodplains, and stock tanks growing in dry rocky, gravelly-sandy and sandy ground; sandy loam ground, and clay ground, occurring from sea level to 5,200 feet in elevation in the grassland and desertscrub ecological formations. NOTE: *Boerhavia coulteri* var. *palmeri* is native to southwest-central and southern North America. \*43 (031110 - *Boerhavia coulteri* (Hook.f.) S. Watson var. *palmeri* (S. Watson) Spellenb.), 46 (species: *Boerhavia coulteri* and *Boerhavia spicata*, Page 276), 63 (081010 - species), **85** (081010)\*

*Boerhavia spicata* var. *palmeri* (see *Boerhavia coulteri* var. *palmeri*)

Onagraceae: The Evening-primrose Family

***Oenothera arizonica* (P.A. Munz) W.L. Wagner: California Evening Primrose**

SYNONYMY: *Oenothera californica* (S. Watson) S. Watson subsp. *arizonica* (P.A. Munz) W.M. Klein, *Oenothera deltoides* J. Torrey & J.C. Frémont var. *arizonica* P.A. Munz. COMMON NAMES: Arizona Primrose, California Evening Primrose, California Evening-primrose. DESCRIPTION: Terrestrial annual forb/herb (2 to 12 inches in height with stems 4 to 40 inches in length); the flowers are white aging to a pale pink or pinkish; flowering generally takes place between early February and early July. HABITAT: Within the range of this species it has been reported from mountains; rocky ridges; sand dunes; sandy and clayey flats; sandy valley floors; beach dunes; railroad right-of-ways; along sandy roadsides; along rivers; sandy riverbeds; washes; sandy banks of rivers; sandy bottomlands; riparian areas, and disturbed areas growing in dry rocky and sandy ground and clay ground, occurring from sea level to 5,000 feet in elevation in the desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are reportedly fragrant. The White-lined Sphinx Moth (*Hyles lineata*) has been observed visiting the flowers. *Oenothera arizonica* is native to southwest-central and southern North America. \*5, 6, 18 (genus), 43 (071410 - *Oenothera californica* Greene subsp. *arizonica* (P.A. Munz) W.M. Klein), 46 (recorded as *Oenothera deltoides* Torr. & Frém. var. *arizonica* Munz, Pages 596-597), 48 (genus - *Oenothera* spp.), 63 (071410), **85** (071410)\*

*Oenothera californica* subsp. *arizonica* (see *Oenothera arizonica*)

*Oenothera deltoides* var. *arizonica* (see *Oenothera arizonica*)

Plantaginaceae: The Plantain Family

***Plantago* C. Linnaeus: Plantain**

COMMON NAMES: Indian-wheat, Plantain. \*43 (052010), 46 (Pages 802-805and Supplement Page 1070), 63 (032907), **WTK** (July 4, 2005)\*

***Plantago rhodosperma* J. Decaisne.: Redseed Plantain**

COMMON NAME: Plantain, Redseed Indianwheat, Redseed Plantain. DESCRIPTION: Terrestrial annual forb/herb (5 to 13 inches in height); the flowers are buff-orange, cream or white;

flowering generally takes place between early March and late May (additional records: one for early July and one for early September). HABITAT: Within the range of this species it has been reported from mountains; canyons; canyon bottoms; foothills; chalky hills; hillsides; rocky, sandy, loamy and clayey slopes; rocky outcrops; sand dunes; prairies; clayey-loamy plains; sandy and sandy-clayey flats; valley floors; along rocky roadsides; rocky arroyos; bottoms of arroyos; silty-clayey draws; springs; along streams; streambeds; along creeks; gravelly-sandy creekbeds; riverbeds; within rocky washes; drainages; depressions; clayey swales; along banks of streambeds and washes; edges of seeps and streams; benches; floodplains; stock tanks; reservoirs; ditches; ditch banks; gravelly-sandy and clayey riparian areas, and disturbed areas growing in moist, damp and dry rocky, gravelly-sandy and sandy ground; clayey loam and loam ground; sandy clay, silty clay and clay ground; silty ground, and chalky ground, occurring from 1,000 to 7,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Plantago rhodosperma* is native to south-central and southern North America. \*5, 6, 16, 43 (031810), 46 (Page 804), 48 (genus), 63 (031810 - color presentation), 77, **85** (031810 - color presentation of dried material)\*

#### Polemoniaceae: The Phlox Family

*Gilia bigelovii* (see *Linanthus bigelovii*)

#### ***Linanthus bigelovii* (A. Gray) E.L. Greene: Bigelow's Linanthus**

SYNONYMY: *Gilia bigelovii* A. Gray. COMMON NAMES: Bigelow Desert Trumpet, Bigelow *Gilia*, Bigelow *Linanthus*, Bigelow's Deserttrumpets, Bigelow's *Linanthus*. DESCRIPTION: Terrestrial annual forb/herb (2 inches to 1 foot in height); the flowers may be bluish, cream, cream-white, lavender-blue, mahogany-tinged cream, cream-white, lavender-blue, white, white-blue-lavender, white-lavender or white-pink; flowering generally takes place between early February and late May. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; gravelly and sandy mesas; plateaus; cliffs; rocky canyons; canyon bottoms; ledges; ridgetops; rocky-sandy meadows; along gravelly cinder cones; rocky foothills; rocky hills; rocky hillsides; along cinder cones; bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, shaley, cobbly, gravelly, gravelly-loamy, and sandy slopes; rocky-sandy alluvial fans; gravelly bajadas; rocky outcrops; amongst boulders, rocks and gravels; lava flows; lava fields; sand dunes; cobbly and gravelly-loamy breaks; benchlands; rocky-sandy plains; rocky, gravelly and sandy flats; basins; cindery and sandy valley floors; valley bottoms; along gravelly, gravelly-sandy and sandy roadsides; draws; gulches; around seeping streams; along streams; along creeks; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; in sandy drainages; bouldery, rocky-sandy and gravelly-sandy benches; sandy terraces; loamy bottomlands; sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-clayey loam and loam ground, and gravelly-sandy silty ground, occurring from 200 to 6,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Linanthus bigelovii* is native to southwest-central and southern North America. \*5, 6, 15, 16, 43 (032010 - *Linanthus bigelovii* E.L. Greene), 46 (Page 687), 63 (032010), 77, **85** (031020 - color presentation)\*

#### Ranunculaceae: The Buttercup Family

#### ***Clematis drummondii* J. Torrey & A. Gray: Drummond's Clematis**

COMMON NAMES: Barba de Chivo, Barba de Viejo (Spanish), Barbas de Chivato (Spanish), Chiva'ato Himsita Saila (Yaqui - Brother of Goat's Moustache), Drummond Clematis, Drummond's Clematis, Old Man's Beard, Old-man's-beard, Pipe-stem, Texas-virgin Bower, Texas Virgin Bower, Texas Virgin's Bower, Virgin's Bower. DESCRIPTION: Terrestrial perennial deciduous vine (10 to 40 feet in

length); the trifoliate leaves are grayish-green or medium green; the flowers are cream, cream-white, green & yellow-green, white, yellow, yellow-white, yellowish-green-white or yellowish-white; flowering generally takes place between early March and late October (additional records: one for early January, one for late January and two for early December). HABITAT: Within the range of this species it has been reported from mountains; cliffs; rocky canyons; canyon bottoms; chasms; bases of cliffs; crevices; bluffs; foothills; rocky hills; rocky hillsides; rocky and sandy slopes; bajadas; rocky outcrops; amongst boulders and rocks; sandy lava flows; lava beds; plains; sandy flats; basins; valley floors; railroad right-of-ways; along roadsides; within bouldery and gravelly-sandy and sandy arroyos; rocky bottoms of arroyos; around springs; along streams; along streambeds; along creeks; along creekbeds; along rivers; riverbeds; along and in gravelly, gravelly-sandy and sandy washes; drainages; within sandy drainage ways; around ponds; around lakes; along rocky and gravelly-sandy banks of creeks, rivers and washes; edges of creeks, washes and lakes; terraces; bottomlands; floodplains; mesquite bosques; fencerows; edges of stock tanks (charcos); along canals; riparian areas, and disturbed areas growing in moist, damp and dry bouldery, rocky, gravelly, gravelly-sandy and sandy ground; gravelly loam ground, and sandy silty and silty ground often reported as growing in shrubs and trees, occurring from sea level to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This woody vine may be an attractive component of a restored native habitat. *Clematis drummondii* is native to southwest-central and southern North America. \*5, 6, 13, 15, 16, 18 (genus), 28 (color photograph), 43 (042010), 46 (Page 312), 58, 63 (042010 - color presentation), 77, 80 (Species in the genus *Clematis* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "These climbing, perennial forbs contain toxins that have been suspected of causing losses in other countries but none have been reported in the United States. Some species do cause dermatitis."), 85 (042010 - color presentation), 115 (color presentation), **WTK** (July 4, 2005)\*

#### Rhamnaceae: The Buckthorn Family

*Condalia lycioides* var. *canescens* (see *Ziziphus obtusifolia* var. *canescens*)

#### ***Ziziphus obtusifolia* (W.J. Hooker ex J. Torrey & A. Gray) A. Gray var. *canescens* (A. Gray) M.C. Johnston: Lotebush**

SYNONYMY: *Condalia lycioides* (A. Gray) A. Weberbauer var. *canescens* (A. Gray) W. Trelease. COMMON NAMES: Abrojo, Bachata, Barbachatas, Buchthorn, Clepe, Garrapata, Garumbullo, Gray-leafed Abrojo, Gray-leaved Abrojo, Gray-thorn, Greythorn, Gumdrop Tree, Lotebush, Oschuvapat (Pima), Palo Blanco, Southwestern Condalia, White Crucillo. DESCRIPTION: Terrestrial perennial drought deciduous shrub or tree (3 to 13 feet in height, one plant was reported to be 40 inches in height with a crown 18 inches in width, one was reported to be plant 7 feet in height with a crown 7 feet in width, one plant was reported to be 10 feet in height with a crown 10 feet in width, one plant was reported to be 13 feet in height with a crown 13 feet in width); the stems are bluish, gray, gray-green, green or whitish with the twigs ending in stout thorns; the leaves are gray-green, green or yellow-green, the inconspicuous flowers are cream, green, greenish-white, yellow, yellow-green or whitish-green; flowering generally takes place between mid-May and late November (additional records: one for late January, one for mid-March, one for late March, one for mid-April and one for late April); the ripe fruits are black, blue-purple, dark blue or purple. HABITAT: Within range of this species it has been reported from mountains; mesas; rocky canyons; along canyon bottoms; scree; talus slopes; bases of cliffs; crevices in rocks; buttes; ridges; ridgelines; foothills; rocky hills; hilltops; rocky hillsides; rocky and gravelly slopes; rocky alluvial fans; gravelly bajadas; amongst boulders, rocks and gravels; sandy-silty plains; rocky and gravelly flats; basins; rocky valley floors; gravelly and gravelly-loamy roadsides; arroyos; bottoms of arroyos; gulches; ravines; bouldery bottoms of ravines; seeps; in clay around springs; rivulets; along streams; along rocky streambeds; along creeks; along gravelly-sandy creekbeds; along gravelly and gravelly-sandy rivers; riverbeds; along and in rocky and sandy washes; drainages; marshes; along rocky

banks of streams, creeks, rivers and washes; gravelly-sandy edges of arroyos and creeks; beaches; sandy benches; terraces; bottomlands; floodplains; mesquite bosques; along fencerows; along canals; gravelly-sandy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, gravelly, gravelly-sandy and sandy ground; cobbly-gravelly loam, gravelly loam and gravelly-clayey loam ground; sandy clay and clay ground, and sandy silty ground, occurring from sea level to 5,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder and/or beverage (*Ziziphus obtusifolia*) crop; it was also noted as having been used as a tool, as a drug or medication and as a commodity used in personal hygiene. The flowers are visited by orange-winged Spider Wasps. Gray Foxes (*Urocyon cinereoargenteus*), Raccoons (*Procyon lotor*), Ringtails (*Bassariscus astutus*), Gambel's Quail (*Callipepla gambelii*), Scaled Quail (*Callipepla squamata*), Mockingbirds (*Mimus polyglottos*), Northern Orioles (*Icterus bullockii*), Phainopeplas (*Phainopepla nitens*), Band-tailed Pigeons (*Columba fasciata*), White-necked Ravens (*Corvus cryptoleucus*), Curved-billed Thrashers (*Toxostoma curvirostre*), Golden-fronted Woodpeckers (*Melanerpes aurifrons*), White-winged Doves (*Zenaida asiatica*) and other birds feed on the fruit. The plants numerous spines provide an impenetrable refuge for birds and many species of birds make use of the Lotebush as a preferred nesting site. *Ziziphus obtusifolia* var. *canescens* is native to southwest-central and southern North America. \*5, 6, 13 (color photograph), 15, 16, 28 (species, color photograph of species), 43 (042210), 46 (recorded as *Condalia lycioides* (Gray) Weberb. var. *canescens* (Gray) Trel., Page 530), 58, 63 (042210), 77, 85 (042310 - color presentation of dried material), 91, 127, **WTK** (July 4, 2005)\*

#### Solanaceae: The Potato Family

##### ***Lycium* C. Linnaeus: Desert-thorn**

COMMON NAMES: Desert-thorn, Lycium, Thornbush, Wolfberry. \*43 (052010), 46 (Pages 749-752), 63 (040207), **WTK** (July 4, 2005)\*

##### ***Nicotiana obtusifolia* M. Martens & H.G. Galeotti var. *obtusifolia*: Desert Tobacco**

SYNONYMY: *Nicotiana trigonophylla* M.F. Dunal. COMMON NAMES: Coyote Tobacco, Desert Tobacco, Punche (a Punch), Tabaquillo (Little Tobacco), Tabaquillo de Coyote, Wo'i Viva (Yaqui). DESCRIPTION: Terrestrial annual, biennial or perennial forb/herb or subshrub (1 to 3½ feet in height); the leaves are gray-green or dark green; the flowers may be cream, cream & pale green, cream-green, cream-white, cream-yellow, greenish, greenish-white, greenish-yellow, deep purple, lemon-yellow, pale white, white, yellow, yellow-cream, yellow-green, yellow-white or yellowish-greenish; flowering generally takes place between late February and early November (additional records: one for mid-January, one for late November, one for mid-December and one for late December, flowering probably takes place throughout the rest of the year). HABITAT: Within the range of this species it has been reported from mountains; bouldery and rocky-gravelly mountaintops; plateaus; along rims; cliffs; rocky and gravelly-loamy canyons; canyon walls; along canyon bottoms; gorges; talus slopes; bases of cliffs; along crevices in boulders and rocks; rocky bluffs; rocky buttes; rocky ledges; bouldery ridges; bouldery ridgetops; edges of meadows; craters; cinder cones; foothills; rocky hills; hilltops; bouldery-rocky and rocky hillsides; bouldery escarpments; bouldery, bouldery-rocky, bouldery-gravelly, rocky, rocky-gravelly-sandy-clayey, cindery, gravelly-sandy, sandy-loam and sandy-clayey slopes; bajadas; rocky outcrops; amongst boulders, rocks and stones; bases of boulders and rocks; sandy lava flows; dunes; debris fans; rocky plains; sandy flats; basins; valley floors; valley bottoms; rocky-sandy coastal shores; along railroad right-of-ways; along rocky, rocky-gravelly-sandy-clayey-loamy, gravelly, gravelly-sandy, gravelly-sandy-clayey-loamy and sandy roadsides; along sandy-loamy arroyos; arroyo walls; arroyo bottoms; in sand and loam around springs; along streams; along gravelly-sandy and sandy streambeds; rocky creeks; sandy

creekbeds; bouldery-sandy and sandy riverbeds; along and in bedrock, rocky, rocky-sandy, gravelly-sandy and sandy washes; drainages; bouldery drainage ways; sandy waterholes; marshy areas; rocky, cobbly, sandy and silty banks of creeks, rivers and washes; edges of lakes; rocky-sandy shores of lakes; mudflats; gravelly and sandy terraces; bottomlands; floodplains; ditches; ditch banks; sandy riparian areas; waste places, and disturbed areas growing in moist, damp and dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy-clayey loam, gravelly loam, gravelly-sandy-clayey loam, sandy loam, clayey loam and loam ground; rocky-gravelly-sandy clay and sandy clay ground, and silty ground, occurring from sea level to 6,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant tends to be weedy; however, consideration could be given to using some plants in your project because the flowers are used by hummingbirds when other nectar-rich sources are not available. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, beverage and/as a as a drug or medication. *Nicotiana obtusifolia* var. *obtusifolia* is native to southwest-central and southern North America. \*5, 6, 15 (recorded as *Nicotiana trigonophylla* Dunal), 16 (recorded as *Nicotiana trigonophylla* Dunal), 28 (recorded as *Nicotiana trigonophylla*, color photograph), 43 (050310), 46 (recorded as *Nicotiana trigonophylla* Dunal, Page 761), 58 (recorded as *Nicotiana trigonophylla* Dunal), 63 (050310 - color presentation), 68, 77 (recorded as *Nicotiana trigonophylla* Dunal), 80 (This species is listed as a Secondary Poisonous Range Plant. “The poisonous principle is the highly toxic nicotine and other alkaloids which are poisonous to all classes of livestock and to humans. The plants are generally unpalatable to range livestock but frequent losses have been reported. ... Since wild tobaccos are generally unpalatable and grow predominantly in waste places, range improvement to reduce waste areas and to provide ample forage is the best means of preventing losses.”), 85 (050310 - color presentation), 86 (recorded as *Nicotiana trigonophylla*, color photograph), 115 (color presentation of the species), 127, **WTK** (July 4, 2005)\*

*Nicotiana trigonophylla* (see *Nicotiana obtusifolia* var. *obtusifolia*)

*Physalis lobata* (see *Quincula lobata*)

*Physalis lobata* var. *albiflora* (see *Quincula lobata*)

### ***Quincula lobata* (J. Torrey) C.S. Rafinesque-Schmaltz: Chinese Lantern**

SYNONYMY: *Physalis lobata* J. Torrey, *Physalis lobata* J. Torrey var. *albiflora* U.T. Waterfall. COMMON NAMES: Chinese Lantern, Chinese-lantern, Ground Cherry, *Physalis* (Portuguese), Purple *Quincula*, Purple Ground Cherry, Purple Ground-cherry, Purple Groundcherry, Purpleflower Groundcherry. DESCRIPTION: Terrestrial perennial forb/herb (6 to 16 inches in height); the leaves are green or dark green; the flowers may be blue, blue-violet, dark lavender, magenta, pink-white, pale purple, purple, dark purple, rose-pink, light violet or violet; the anthers are yellow; flowering generally takes place between mid-February and early June and again between mid-July and late November (flowering probably continues from mid-June through early July but no flowering records were located for this time period). HABITAT: Within the range of this species it has been reported from mountains; mesas; gravelly cliffs; canyons; ridges; foothills; clayey hills; rocky hillsides; rocky slopes; alluvial fans; sandy bajadas; clayey banks; prairies; sandy plains; gravelly, sandy, sandy-clayey, clayey and silty flats; valley floors; along rocky, gravelly, gravelly-loamy, sandy and sandy-loamy roadsides; springs; along and in gravelly, gravelly-sandy-silty and sandy washes; drainages; lakebeds; sandy, clayey and silty playas; edges of playas; mudflats; bottomlands; lowlands; sandy-clayey floodplains; mesquite bosques; stock tanks; riparian areas, and disturbed areas growing in moist and dry desert pavement; rocky, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and clayey loam ground; sandy clay and clay ground, and rocky silty, gravelly-sandy silty and silty ground, occurring from 400 to 6,400 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant

was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a toy or in games and as a drug or medication. *Quincula lobata* is native to southwest-central and southern North America. \*5, 6, 15, 16, 28 (color photograph, *Physalis lobata*), 43 (050510 - *Quincula lobata* Raf., *Physalis lobata* f. var. *albiflora* Waterf.), 46 (*Physalis lobata* Torr., Page 754), 63 (050510 - color presentation), 77 (*Physalis lobata* Torr.), 80 (Species of the genus *Physalis* are listed as being Rarely Poisonous and Suspected Poisonous Range Plants. "It has been suspected that animals have been poisoned by eating large quantities of the tops and unripe fruits of these forbs."), 85 (050510 - color presentation of dried material), 86 (color photograph, *Physalis lobata*), 115 (color presentation), 127\*

### ***Solanum elaeagnifolium* A.J. Cavanilles: Silverleaf Nightshade**

COMMON NAMES: Arrebenta-cavalo (Portuguese), Bull Nettle, Bull-nettle, Bullnettle, Desert Nightshade, Melãozinho-do-campo (Portuguese), Prairie-berry, Satansbos (Afrikaans), Silver Horse Nettle, Silver Horse-nettle, Silver Horsenettle, Silverleaf Bitter-apple, Silverleaf Nightshade, Silverleaf-nettle, Tomato Weed, Trompillo (Spanish), White Horse Nettle, White Horse-nettle, White Horsenettle. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (8 inches to 2 feet in height, plants were described as being 8 inches in height and 2 to 4 inches in width, plants were observed and described as being 10 to 12 inches in height and width, plants were observed and described as being 16 inches in height and 8 inches in width); the leaves are bluish-gray, gray, grayish-green, greenish-gray or silvery; the star-like flowers ( $\frac{3}{4}$  to  $1\frac{1}{2}$  inch in diameter) may be light blue, blue, blue-lavender, blue-purple, dark blue, bluish-purple, bluish-violet, lavender, lavender-purple, light purple, purple, dark purple, violet, deep violet, violet-purple or white; the anthers are yellow; flowering generally takes place between late March and early November (additional records: one for mid-February, one for early March and one for late November); the mature fruits ( $\frac{1}{3}$  to  $\frac{1}{2}$  inch in diameter) are a golden, golden-brown, orange, orange-yellow or yellow berry. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy mesas; sandy plateaus; tablelands; rocky-sandy rims of craters; rocky canyons; canyon sides; along bouldery-sandy, rocky and sandy canyon bottoms; chasms; rocky-sandy and sandy ridges; sandy-loamy bosques; sandy meadows; rocky foothills; hills; rocky and gravelly hillsides; along rocky, rocky-gravelly, gravelly-sandy and sandy slopes; sandy-clayey-loamy bajadas; sandy lava flows; sand dunes; prairies; plains; gravelly-loamy, sandy, loamy, clayey and silty flats; basins; shaley-silty valley floors; along railroad right-of-ways; in roadways; along rocky, gravelly, gravelly-sandy, gravelly-sandy-clayey-loamy, gravelly-loamy, sandy and clayey roadsides; arroyos; clayey bottoms of arroyos; silty bottoms of draws; springs; sandy streambeds; along creeks; rocky-gravelly-sandy and sandy creekbeds; along rivers; bouldery-cobbly-sandy and rocky-sandy riverbeds; along and in rocky, gravelly, gravelly-loamy and sandy washes; along pebbly-sandy, sandy and clayey-loamy drainages; along drainage ways; cienegas; swampy areas; swales; sandy and clayey banks of arroyos and rivers; clayey edges of playas and cienegas; margins of rivers; rocky-sandy, gravelly and sandy-loamy shores of ponds, lakes and playas; sandy beaches; benches; sandy terraces; sandy bottomlands; sandy floodplains; mesquite bosques; along stony fencelines; around stock tanks; clayey levees; along ditches; along stony ditch banks; bouldery-cobbly-sandy and sandy riparian areas; waste places, and disturbed areas growing in moist and dry bouldery-cobbly-sandy, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, stony, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; gravelly loam, gravelly-sandy-clayey loam, gravelly-clayey loam, gravelly-silty loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; sandy clay and clay ground, and rocky silty, shaley silty and silty ground, occurring from sea level to 7,200 feet in elevation in the woodland, scrub; grassland, desertscrub and wetland ecological formations. NOTES: The Silverleaf Nightshade may or may not be native to either Arizona or North America. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a food (berries used as a rennet to curdle milk), as a drug or medication and the dried berries were worn as jewelry. The green fruits may be poisonous. *Solanum elaeagnifolium* is native to southern South America. \*5, 6, 15, 16, 18 (genus), 28 (color photograph), 43 (073009), 46 (Page 758), 58, 63 (050610 - color presentation), 68, 77, 80 (This species is listed as a

**Secondary Poisonous Range Plant.** “The toxic principle in these species is a glycoalkaloid to which the name solanine is applied. The toxicity of a given species may vary considerably. ... Poisoning by *Solanum* species does not always terminate in death. In the acute poisoning, nervous symptoms rapidly build to a maximum, and death or recovery occurs within a few hours to one or two days. Death is the result of paralysis. ... Where the plants are known to exist, animals should be watched closely for symptoms. The best control is to grub out the plants and remove them from the area. This should be done prior to seed development to prevent additional seeding.”), 85 (050610 - color presentation), 86 (color photograph), 97, 101 (color photograph), 115 (color presentation), 127, **WTK** (July 4, 2005)\*

#### Viscaceae (Loranthaceae): The Christmas Mistletoe Family

##### ***Phoradendron californicum* T. Nuttall: Mesquite Mistletoe**

SYNONYMY: *Phoradendron californicum* T. Nuttall var. *distans* W. Trelease. COMMON NAMES: American Mistletoe, Desert Mistletoe, Mesquite American Mistletoe, Mesquite Mistletoe, Toji, Western Dwarf Mistletoe. DESCRIPTION: Terrestrial perennial subshrub or shrub (8 inches to 5 feet in height, one clump was described as being 16 inches in length and 36 inches in width); the stems (16 to 40 inches in length) may be brown, green, green-reddish, dark olive-green, reddish, red-brown, yellow-green or yellowish; the fragrant flowers are greenish-yellow; flowering generally takes place between late July and early June (additional records: one record for late June and one record for early July); the fruits may be orange, orange-pink, pink, pink-red, pale red, reddish, red-orange, white, white-pink or white-reddish with the older berries turning brown-red or red. HABITAT: Partial parasite observed growing on Velvet Mesquite, and commonly reported as growing on: *Acacia* spp. (*Acacia constricta*, Whitethorn Acacia; *Acacia farnesiana*, Sweet Acacia, and *Acacia greggii*, Catclaw Acacia); *Condalia* spp. (*Condalia globosa*, Bitter Snakewood and *Condalia warnockii*, Kearney Snakewood); *Larrea tridentata*, Creosote Bush; *Olneya tesota*, Desert Ironwood; *Parkinsonia* spp. (*Parkinsonia aculeata*, Jerusalem Thorn; *Parkinsonia florida*, Blue Palo Verde; *Parkinsonia microphylla*, Yellow Palo Verde, and *Parkinsonia praecox*, Sonoran Palo Verde); *Prosopis* spp. (*Prosopis glandulosa*, Honey Mesquite; *Prosopis pubescens*, Screwbean Mesquite, and *Prosopis velutina*, Velvet Mesquite); *Simmondsia chinensis*, Jojoba, and *Ziziphus obtusifolia*, Lotebush, occurring from sea level to 5,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: When removing the Mesquite Mistletoe from the trees and shrubs on your property consider leaving some of the plants for wildlife, Verdins nest in the stems and the Phainopepla (*Phainopepla nitens*) feeds on the berries. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a food (berries) and as a drug or medication. *Phoradendron californicum* is native to southwest-central and southern North America. \*5, 6, 13 (color photograph), 15, 16, 28 (color photograph), 43 (051710 - *Phoradendron californicum* var. *distans* Trel. in Trel.), 46 (recorded as *Phoradendron californicum* Nutt., Page 224 and *Phoradendron californicum* Nutt. var. *distans* Trelease, Page 224), 58, 63 (051410 - color presentation), 77, 80 (Species of the genus *Phoradendron* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. “Cattle may be killed by browsing these parasitic forbs, but plants are unpalatable and poisoning is rare. Also children may be poisoned by eating the berries.”), 85 (051410 - color presentation), 97, 115 (color presentation), 127, **WTK** (July 4, 2005)\*

*Phoradendron californicum* var. *distans* (see *Phoradendron californicum*)

#### Zygophyllaceae: The Creosote-bush Family

##### ***Kallstroemia grandiflora* J. Torrey ex A Gray: Arizona Poppy**

COMMON NAMES: Arizona Caltrop, Arizona Poppy, Arizona-poppy, Arizona Summer Poppy, Baiborin, Caltrop, Desert Poppy, Desert-poppy, Mexican Poppy, Mexican-poppy, Orange Caltrop,

Summer Poppy, Summer-poppy. DESCRIPTION: Terrestrial annual forb/herb (spreading prostrate, decumbent and/or ascending stems 4 inches to 1 foot in height and to 4 feet in length); the stems may be reddish-orange; the leaves gray-green or green; the flowers ( $\frac{1}{2}$  to  $1\frac{1}{4}$  inches in diameter) may be apricot-orange, harvest-moon-orange, melon-orange, light orange, orange, orange with a crimson or red center, orangish-yellow, pink-orange, yellow-orange or yellowish-orange; the anthers are orange; flowering generally takes place between late June and early November (additional records: one for mid-May, one for late November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon bottoms; rocky ridgetops; foothills; sandy hills; rocky hillsides; sandy escarpments; rocky, gravelly, gravelly-loamy, sandy and silty slopes; gravelly bajadas; rocky outcrops; lava flows; llanos; plains; rocky, gravelly and gravelly-sandy flats; basins; valley floors; along sandy railroad right-of-ways; along rocky-gravelly, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, gravelly-clayey, sandy and loamy roadsides; sandy arroyos; streambeds; creeks; sandy creekbeds; along and in rocky, gravelly, gravelly-sandy-silty and sandy washes; drainages; along banks of rivers; benches; sandy terraces; bottomlands; floodplains; mesquite bosques; around stock tanks; ditches; sandy riparian areas, and disturbed areas growing in moist and dry rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, sandy loam and loam ground; gravelly clay and sandy clay ground, and gravelly-sandy silty and silty ground, occurring from sea level to 6,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Arizona Poppy is a food plant of doves, quail and Whitetail Deer (*Odocoileus virginianus* subsp. *couesi*). *Kallstroemia grandiflora* is native to southwest-central and southern North America. \*5, 6, 16, 28 (color photograph), 43 (073109), 46 (Page 492), 48, 58, 63 (051510 - color presentation), 68, 77, 80 (Species of the genus *Kallstroemia* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Animals must be forced to eat large amounts of this unpalatable, annual forb before poisoning occurs."), 85 (051510 - color presentation), 86 (color photograph), 115 (color presentation), **WTK** (July 4, 2005)\*

*Larrea divaricata* (see *Larrea tridentata* var. *tridentata*)

*Larrea divaricata* subsp. *tridentata* (see *Larrea tridentata* var. *tridentata*)

***Larrea tridentata* (A.P. de Candolle) F.V. Coville var. *tridentata*: Creosote Bush**

SYNONYMY: *Larrea divaricata* auct. non A.J. Cavanilles, *Larrea divaricata* A.J. Cavanilles subsp. *tridentata* (A.P. de Candolle) R.S. Felger & C.H. Lowe. COMMON NAMES: Chaparral, Coville Creosotebush, Creosote Bush, Creosote-bush, Creosotebush, Gobernadora, Greasewood (erroneously called), Guamis, Hediondilla (Spanish - for Little Bad Smeller). DESCRIPTION: Terrestrial perennial evergreen shrub (20 inches to 13 feet in height and about the same in width); the bark is gray; the leaves are bright glossy green or yellow-green; the flowers ( $\frac{1}{2}$  to 1 inch in diameter) are yellow or yellow-white; flowering takes place throughout the year with the peak blooming periods occurring in the spring, between March and April, and then again between November and December; the round, fuzzy fruits ( $\frac{1}{4}$  inch in diameter) are gray, reddish, white or rust colored. HABITAT: Within the range of this species it has been reported from mountains; rocky, gravelly and sandy mesas; plateaus; rims of canyons; sandy canyons; canyon bottoms; talus slopes; sandy pockets of soil; rocky ridges; foothills; hills; hillsides; rocky and gravelly slopes; alluvial fans; gravelly and sandy bajadas; rocky outcrops; amongst boulders and rocks; sand dunes; sandy plains; cindery-gravelly, gravelly and sandy flats; valley floors; sandy roadsides; arroyos; bottoms of arroyos; riverbeds; along and in gravelly-sandy and sandy washes; sandy banks of streams, creeks and rivers; edges of washes; gravelly and sandy terraces; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam and clayey loam ground; sandy clay ground, and rocky-sandy silty and silty ground, occurring from below sea level to 5,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by

native peoples of North America; it was noted as having been used as a building material, as tools, in the making of brooms, brushes and musical instruments, as a drug or medication and in body art. Older stems of the Creosote Bush may be 40 to 90 years of age. Using Creosote Bush in the restoration of disturbed sites may increase water infiltration and storage, transplants recommended over spot-seeding and rodent protection for the transplanted seedlings is necessary. When planting a Creosote Bush consider planting a small Desert Night-blooming Cereus (*Peniocereus greggii* var. *transmontanus*) at the base of the plant. The branches will provide support and the roots will protect the tuber of the cereus from hungry Javelinas. The Creosote Bush is the characteristic plant of the southwestern deserts in North America with its distribution very closely delineating the desert regions. As the Creosote Bush ages the older central stems of the plant die off and new stems form at the outer edge of the crown. New stems are not created at the center of the plant. As the crown of the plant expands a “clonal ring”, made up of genetically identical individual shrublets, develops which continues the outward expansion of the ring eventually reaching several yards in diameter. It has been estimated that some of the older rings approach from 9,400 to 11,700 years of age. The Creosote Bush provides cover for many animals; Lac Scale insects (*Tachardiella larreae*), jackrabbits, desert woodrats and other small mammals feed on this plant; stem galls are produced in response to the Creosote Gall midge (*Asphondylia* sp.), and the Desert Tortoise (*Gopherus agassizi*) often digs its shelter under the base of the plant where the roots help to stabilize the soil. *Larrea tridentata* var. *tridentata* is native to southwest-central and southern North America. \*5, 6, 13 (color photograph), 16, 18, 26 (species, recorded as *Larrea tridentata*, color photograph of species), 28 (species, recorded as *Larrea tridentata*, color photograph of species), 43 (051710 - *Larrea tridentata* Coville, *Larrea divaricata* Cav. subsp. *tridentata* (Sessé & Moc. ex DC.) Felger), 46 (species, recorded as *Larrea tridentata* (DC.) Coville: “An outstanding xerophyte and a very important element of the perennial desert flora in southern and western Arizona. ... Creosote-bush has a strong characteristic odor, especially noticeable when the foliage is wet. The plant is ordinarily not touched by livestock, although it is reported that sheep, especially pregnant ewes, have been killed by partaking of it. This plant is reported to cause dermatitis in exceptional persons who are allergic to it.”, Page 491), 48, 63 (051610 - color presentation), 77 (color photograph #101), 80 (This species is listed under Rarely Poisonous and Suspected Poisonous Range Plants. “Early reports accusing this common desert shrub of being poisonous have been proven wrong.”), 85 (051610 - color presentation), 91, 101 (species, color photograph of species), 107, 115 (color presentation), 127, **HR**, **WTK** (July 4, 2005)\*

## LISTING OF ANIMALS

STRICTLY ENFORCED LAWS PROTECT MANY OF ARIZONA'S NATIVE  
ANIMALS FROM COLLECTION AND FROM BEING DISTURBED OR KILLED

Operation GAME THIEF: 602-942-3000

Kingdom Animalia: The Animal Kingdom  
Subkingdom Metazoa: The Multicellular Animals  
Section Deuterostomia: The Deuterostomes  
Phylum Chordata: The Chordates  
Subphylum Vertebrata: The Vertebrates

CLASS MAMMALIA: The MAMMALS

Antilocapridae: The Pronghorn Family

***Antilocapra americana* G. Ord: Pronghorn**

COMMON NAMES: American Pronghorn, “Antelope”, Chihuahuan Pronghorn, Chihuahuan Pronghorn Antelope, Prong-horn, Pronghorn, Pronghorn Antelope, Prong-horned Antelope, Sonoran Pronghorn, Sonoran Pronghorn Antelope. HABITS: Feeds on cacti, forbs, grasses and shrubs. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14 (113006 - subsp. *americana* (Ord), *mexicana* Merriam and *sonoriensis* Goldman), 55 (recorded as *Antilocapra americana* Ord. Prong-horned Antelope. Formerly widely distributed in grassland areas throughout the state; presently restricted to areas of favorable habitat.), 65, 73, 106 (052806), 100 (color photograph), 110 (Historic Range: Southwest Arizona, south of the Bill Williams River and east to the Santa Cruz River. In Mexico, the northern part of the State of Sonora.), 118 (recorded as *Antilocapra americana americana* (Ord) - Distribution: mapping and records for northeastern and northwestern Arizona; *Antilocapra americana mexicana* Merriam - Distribution: Southeastern Arizona, and *Antilocapra americana sonoriensis* Goldman - Distribution: Southwestern Arizona. Figure 111, Page 255)\*

***Antilocapra americana* subsp. *mexicana* C.H. Merriam: Chihuahuan Pronghorn**

COMMON NAMES: “Antelope”, Chihuahuan Pronghorn, Chihuahuan Pronghorn Antelope, Prong-horn, Pronghorn, Pronghorn Antelope, Prong-horned Antelope. HABITS: The species feeds on cacti, forbs, grasses and shrubs. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. NOTES: EXTIRPATED from southeastern Arizona, several reintroductions have taken place. \*8 (Historically throughout south-eastern and south-central Arizona.), 14 (113006 - historically occurred in grass-shrub valleys and grasslands of southeastern and south-central Arizona), 55 (species: recorded as *Antilocapra americana* Ord. Prong-horned Antelope. Formerly widely distributed in grassland areas throughout the state; presently restricted to areas of favorable habitat.), 65 (species), 73 (species), 100 (color photograph of species), 106 (052806 - species), 118 (recorded as *Antilocapra americana mexicana* Merriam - Distribution: Southeastern Arizona. Figure 111, Page 255)\*

Bovidae: The Cow, Sheep and Allies Family

***Ovis canadensis* G. Shaw: Rocky Mountain Bighorn Sheep**

COMMON NAMES: Berrego Cimarron (Hispanic), Bighorn, Bighorn Sheep, Desert Bighorn, Desert Bighorn Sheep, Mountain Sheep, Rocky Mountain Bighorn Sheep. HABITS: Feeds on agave, brittle bush, bursage, bush muhly, cacti, catclaw, cholla, coffeeberry, desert fluffgrass, desert ironwood, desert thorn, fairy duster, filaree, galleta, grama, jojoba, mesquite, mallow, Nevada joint fir, plantain, prickly-pear, ratany, ricegrass, saguaro, saltbush, threeawn and turpentine broom. Young are dropped in small scraped out depressions located in protected places on inaccessible peaks. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14, 55 (recorded as *Ovis canadensis* Shaw. Bighorn. Probably formerly statewide in mountainous or rocky situations; presently restricted to scattered low desert mountains.), 65, 73, 100 (color photograph), 106 (052906), 118 (recorded as *Ovis canadensis mexicana* Merriam - Distribution: Probably formerly statewide in mountainous situations. Figure 112, Page 257), HR\*

***Ovis canadensis* subsp. *mexicana* C.H. Merriam: Desert Bighorn Sheep**

COMMON NAMES: Berrego Cimarron (Hispanic), Berrego Cimarron del Desierto (Hispanic), Bighorn, Bighorn Sheep, Desert Bighorn, Desert Bighorn Sheep, Mountain Sheep, Rocky Mountain Bighorn Sheep. HABITS: The species feeds on agave, brittle bush, bursage, bush muhly, cacti, catclaw, cholla, coffeeberry, desert fluffgrass, desert ironwood, desert thorn, fairy duster, filaree, galleta, grama, jojoba, mesquite, mallow, Nevada joint fir, plantain, prickly-pear, ratany, ricegrass, saguaro, saltbush, threeawn and turpentine broom; young are dropped in small scraped out depressions located in protected places on inaccessible peaks. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14, 55 (species: recorded as *Ovis canadensis* Shaw. Bighorn. Probably formerly statewide in mountainous or rocky situations; presently restricted to scattered low desert mountains.”), 65 (species), 73 (species), 100 (color photograph of species, species record), 106 (072306), 118 (recorded as *Ovis canadensis mexicana* Merriam - Distribution: Probably formerly statewide in mountainous situations. Figure 112, Page 257)\*

Canidae: The Dog and Allies Family

***Canis latrans* T. Say: Coyote**

COMMON NAME: Coyote, Prairie Wolf. HABITS: Feeds on amphibians, berries, birds, carrion, fruits, gophers, insects, mice, rabbits, reptiles and squirrels. The young are born in dens that may be dug in the ground or located in caves. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14, 55 (recorded as *Canis latrans* Say. Coyote. Statewide (120 - 9,100 feet.), 65 (color photograph), 73, 100 (color photograph), 106 (052906), 118 (recorded as *Canis latrans mearnsi* Merriam - Distribution: Statewide. Figure 87, Page 217)\*

***Canis latrans* subsp. *mearnsi* Merriam: Coyote**

COMMON NAME: Coyote. HABITS: The species feeds on amphibians, berries, birds, carrion, fruits, gophers, insects, mice, rabbits, reptiles and squirrels. The young are born in dens that may be dug in the ground or located in caves. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (species), 55 (species: recorded as *Canis latrans* Say. Coyote. Statewide (120 - 9,100 feet.), 65 (color photograph of species, species record), 73 (species), 100 (color photograph of species, species record), 106 (052906 - species), 118 (recorded as *Canis latrans mearnsi* Merriam - Distribution: Statewide. Figure 87, Page 217)\*

***Urocyon cinereoargenteus* (J.C. von Schreber): Common Gray Fox**

COMMON NAMES: Common Gray Fox, Gray Fox, Zorra Gris (Hispanic). HABITS: The species feeds on birds, desert cottontails, hackberry and prickly-pear fruits, grasses, insects (crickets and grasshoppers), juniper berries, lizards, manzanita berries, nuts, small rodents and snakes. Nests are made of bark, grasses and leaves and located in underground burrows, small caves, piles of rock, amongst boulders, crevices in cliffs and in hollows in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The Gray Fox climbs trees. \*14 (082608 - subsp. *scottii* (Mearns)), 55 (recorded as *Urocyon cinereoargenteus* (Schreber). Gray Fox. Statewide with the possible exception of the northeast portion (120 - 5,800 feet.), 65 (species, color photograph), 73, 100 (color photograph), 106 (052906 - species with a listing of 16 subspecies), 118 (recorded as *Urocyon cinereoargenteus scottii* Mearns - Distribution: Probably statewide. Figure 90, Page 222)\*

***Urocyon cinereoargenteus* subsp. *scottii* Mearns: Common Gray Fox**

COMMON NAMES: Common Gray Fox, Gray Fox, Zorra Gris (Hispanic). HABITS: The species feeds on birds, desert cottontails, hackberry and prickly-pear fruits, grasses, insects (crickets and grasshoppers), juniper berries, lizards, manzanita berries, nuts, small rodents and snakes. Nests are made of bark, grasses and leaves and located in underground burrows, small caves, piles of rock, amongst boulders, crevices in cliffs and in hollows in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The Gray Fox climbs trees. \*14 (082608 - subsp. *scottii* (Mearns)), 55 (species: recorded as *Urocyon cinereoargenteus* (Schreber). Gray Fox. Statewide with the possible exception of the northeast portion (120 - 5,800 feet).), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (052906 - species with a listing of 16 subspecies), 118 (recorded as *Urocyon cinereoargenteus scottii* Mearns - Distribution: Probably statewide. Figure 90, Page 222)\*

***Vulpes macrotis* C.H. Merriam: Kit Fox**

COMMON NAMES: Kit Fox, Zorra del Desierto (Hispanic). HABITS: Feeds on berries, birds, cottontail rabbits, crickets, grasses, grasshoppers, ground squirrels, jack rabbits, kangaroo rats, lizards and pocket mice. The young are born in dens in underground burrows that have been excavated in soft soils. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Vulpes velox* (T. Say): The Swift Fox is generally considered a separate species by most authors. \*14 (050907 - subspp. *macrotis* Merriam and *neomexicanus* Merriam), 55 (recorded as *Vulpes macrotis* Merriam. Kit Fox. Widely distributed at lower elevations throughout the southern part of the state (120 - 5,000 feet).), 65, 73, 78, 100 (color photograph), 106 (052906), 118 (recorded as *Vulpes macrotis arispus* Elliot - Distribution: Lower elevations in western and southern part of the state. *Vulpes macrotis neomexicana* Merriam - Distribution: Extreme southeastern Arizona. Figure 89, Page 220)\*

***Vulpes macrotis* subsp. *arispus* Elliot: Kit Fox**

COMMON NAMES: Kit Fox, Zorra del Desierto (Hispanic). HABITS: The species feeds on berries, birds, cottontail rabbits, crickets, grasses, grasshoppers, ground squirrels, jack rabbits, kangaroo rats, lizards and pocket mice. The young are born in dens in underground burrows that have been excavated in soft soils. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Vulpes velox* (T. Say): The Swift Fox is generally considered a separate species by most authors. \*14 (050907 - subspp. *macrotis* Merriam and *neomexicanus* Merriam), 55 (species: recorded as *Vulpes macrotis* Merriam. Kit Fox. Widely distributed at lower elevations throughout the southern part of the state (120 - 5,800 feet).) 65 (species), 73 (species), (100 - color photograph), 106 (052906), 118 (recorded as *Vulpes macrotis arispus* Elliot - Distribution: Lower elevations in western and southern part of the state. Figure 89, Page 220)\*

*Vulpes velox* (see Note under *Vulpes macrotis*)

Cervidae: The Deer and Allies Family

***Odocoileus hemionus* (C.S. Rafinesque-Schmaltz): Mule Deer**

COMMON NAMES: Black-tailed Deer, Burro, Desert Mule Deer, Mule Deer, Venado Pardo (Hispanic). HABITS: Feeds on acorns, beans, branches, fruits, leaves or needles, nuts, seeds and/or twigs of aspen, barberry, bitterbrush, blackberry, buckbrush, buckwheat, calliandra, ceanothus, catclaw, cedar, cliffrose, dogwood, Douglas fir, huckleberry, joint fir, jojoba, juniper, mountain mahogany, mountainlover, oak, pinyon, ponderosa pine, poplar, sagebrush, saltbush, serviceberry, thimbleberry, white fir, wild cherry, willow and yew, and grasses lupines, mistletoe, moss, mushrooms, salal, sedges and spurges. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14, 55 (recorded as

*Odocoileus hemionus* (Rafinesque). Black-tailed or Mule Deer. Statewide, but not of uniform distribution (250 - 9,000 feet.), 65, 73, 100 (color photograph), 106 (052906), 118 (recorded as *Odocoileus hemionus crooki* (Mearns) - Distribution: Northeastern, central and southeastern part of the state. Figure 109, Page 252)\*

***Odocoileus hemionus* subsp. *crooki* (Mearns): Mule Deer**

COMMON NAMES: Black-tailed Deer, Burro, Desert Mule Deer, Mule Deer, Venado Pardo (Hispanic). HABITS: The species feeds on acorns, beans, branches, fruits, leaves or needles, nuts, seeds and/or twigs of aspen, barberry, bitterbrush, blackberry, buckbrush, buckwheat, calliandra, ceanothus, catclaw, cedar, cliffrose, dogwood, Douglas fir, huckleberry, joint fir, jojoba, juniper, mountain mahogany, mountainlover, oak, pinyon, ponderosa pine, poplar, sagebrush, saltbush, serviceberry, thimbleberry, white fir, wild cherry, willow and yew, and grasses lupines, mistletoe, moss, mushrooms, salal, sedges and spurges. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (species), 55 (species: recorded as *Odocoileus hemionus* (Rafinesque) Black-tailed or Mule Deer. Statewide, but not of uniform distribution (250 - 9,000 feet.), 65, 73 (species), 100 (species, color photograph of species), 106 (052906 - species), 118 (recorded as *Odocoileus hemionus crooki* (Mearns) - Distribution: Northeastern, central and southeastern part of the state. Figure 109, Page 252)\*

***Odocoileus virginianus* (Zimmermann): Coues' White-tailed Deer**

COMMON NAMES: Arizona Whitetail, Coues' Deer, Coues' White-tailed Deer, Desert Whitetail, Maso (Yaqui), Fantail, Sonora White-tailed Deer, Sonoran Fantail, Venado Cola Blanca (Hispanic), Virginia Deer, Whitetail, White-tailed Deer, Whitetail Deer. HABITS: The species feeds on fungi, grass and acorns, branches, buds, cones, fruits, leaves, mast, needles and /or twigs of alder, barberry, buckbrush, calliandra, catclaw acacia, Emory and scrub oaks and other evergreen oaks, hackberry, hemlock, holly-leaf buckthorn, juniper, mesquite, mountainlover, Oregon-grape, pinyon, ratany, sagebrush, skunkbush, spiderwort, spruce, willow, yellow-leaf silktassel. Young are generally dropped along ridges and hillsides. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14, 55 (recorded as *Odocoileus virginianus* (Zimmermann). White-tailed Deer. Southeastern Arizona (1,200 - 9,000 feet.), 65, 73, 100 (color photograph), 106 (052906), 118 (recorded as *Odocoileus virginianus couesi* (Coues & Yarrow) - Distribution: Southern Arizona. Figure 110, Page 254)\*

***Odocoileus virginianus* subsp. *couesi* (E. Coues & Yarrow): Coues' White-tailed Deer**

COMMON NAMES: Arizona Whitetail, Coues' Deer, Coues' White-tailed Deer, Desert Whitetail, Fantail, Maso (Yaqui), Sonora White-tailed Deer, Sonoran Fantail, Venado Cola Blanca (Hispanic), Virginia Deer, Whitetail, White-tailed Deer, Whitetail Deer. HABITS: The species feeds on fungi, grass and acorns, branches, buds, cones, fruits, leaves, mast, needles and /or twigs of alder, barberry, buckbrush, calliandra, catclaw acacia, Emory and scrub oaks and other evergreen oaks, hackberry, hemlock, holly-leaf buckthorn, juniper, mesquite, mountainlover, Oregon-grape, pinyon, ratany, sagebrush, skunkbush, spiderwort, spruce, willow, yellow-leaf silktassel. Young are generally dropped along ridges and hillsides. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14, 55 (species: recorded as *Odocoileus virginianus* (Zimmermann). White-tailed Deer. Southeastern Arizona (1,200 - 9,000 feet.), 65, 73 (species), 100 (species, color photograph of species), 106 (052906 - species), 118 (recorded as *Odocoileus virginianus couesi* (Coues & Yarrow) - Distribution: Southern Arizona. Figure 110, Page 254)\*

***Felis concolor* (C. Linnaeus): Mountain Lion**

SYNONYMY: *Puma concolor* (C. Linnaeus). COMMON NAMES: American Lion, Brown Tiger, California Lion, Cat-a-Mountain, Catamount, Catamount Cat (a mountain Red Tiger), Cougar, Deer Tiger, El Leon (Mexico), Florida Panther, Ghost Cat, Indian Devil, King Cat, Leon de Montana (Hispanic), Mexican Lion, Mountain Lion, Mountain Screamer, Painted Cat, Painter, Panther; *Puma* (Indian), Ted Tiger (Belize), Silver Lion, Sneak Cat, Sucuarana (Brazil), Yuma Mountain Lion. HABITS: Feeds on beavers, bighorn sheep, birds, black bears, bobcats, cottontail rabbits, coyotes, deer (its major prey species in Arizona), elk, jackrabbits, javelina, livestock, porcupines, pronghorn, raccoons, skunks and small mammals. Kittens are born in dens located in protected areas such as shallow caves, crevices, downed logs, rock shelters and impenetrable thickets. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Running should be curtailed in areas where Mountain Lions are known to frequent, a person running may elicit an attack response from a nearby Mountain Lion. Mountain Lions are extremely agile and have great jumping power and have been reported as being able to leap to a height of 18 feet into a tree. \*8 (*Puma concolor* (Linnaeus)), 14 (091108 - *Puma concolor* subsp. *azteca* (Merriam); *hippolestes* (Merriam); *kaibabensis* (Nelson and Goldman), and *stanleyana* (Goldman). The Yuma Mountain Lion (*Felis concolor browni*) is included as a separate record.), 55 (recorded as *Felis concolor* Linnaeus. Mountain Lion. Statewide (200 - 8,000 feet.), 65, 73, 100 (color photograph), 106 (052906), 118 (recorded as *Felis concolor azteca* Merriam - Distribution: Statewide except extreme western and northwestern parts; *Felis concolor browni* (Merriam) - Distribution: Southwestern part of the state, and *Felis concolor kaibabensis* Nelson and Goldman - Distribution: Northwestern Arizona, north and west of the Colorado River. Figure 105, Page 245)\*

*Felis onca* subsp. *arizonensis* (see *Panthera onca* subsp. *arizonensis*)

*Felis pardalis* subsp. *sonoriensis* (see *Leopardus pardalis* subsp. *sonoriensis*)

*Felis rufus* (see *Lynx rufus*)

*Felis rufus* subsp. *baileyi* (see *Lynx rufus* subsp. *baileyi*)

***Leopardus pardalis* subsp. *sonoriensis* Goldman: Ocelot**

SYNONYMY: (*Felis pardalis* Linnaeus, *Felis pardalis* subsp. *sonoriensis* Goldman). COMMON NAMES: Jaguatirica (Brazil), Manigordo (Costa Rica), McKenney's Wildcat, Ocelot, Painted Leopard, Tigrillo. HABITS: (Feeds on amphibians, lesser anteaters, armadillos, birds, fish, insects, land crabs, small to medium-sized mammals (including mice, rats and rabbits among others) and reptiles (including lizards, snakes and land tortoises). Kittens are born in a nest lined with grass or other materials located in rocky bluffs, caves, rocky dens, hollow logs or dense thickets. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: EXTIRPATED. \*8 (species), 14 (091108 - subsp. *sonoriensis*), 55 (species: recorded as *Felis pardalis* Linnaeus. Ocelot. Formerly southeastern Arizona as far north as Fort Verde; no recent records.), 100 (species, color photograph of species), 106 (091108 - includes a listing with location of subspecies), 118 (recorded as *Felis pardalis* subsp. *sonoriensis* Goldman - Distribution: Formerly southeastern Arizona as far north as Ft. Verde. Figure 104, Page 244)\*

***Lynx rufus* (J.C. von Schreber): Bobcat**

SYNONYMY: *Felis rufus* (J.C. von Schreber). COMMON NAMES: Bobcat, Gato Montes (Hispanic), Wildcat. HABITS: Feeds on almost any meat source available including ground nesting birds, carrion, domestic cats, cottontail rabbits, deer, foxes, jackrabbits, lizards, small mammals, opossums, porcupines, raccoons, reptiles, rodents, bighorn sheep, skunks and woodchucks. Shelter may be taken in a rock cleft, thickets or on the branches of trees. Young are born in dens located in rocky

caves, rock shelters, recesses and protected areas with nests made of leaves and other dry plant material. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (091108 - *Lynx rufus baileyi* Schreber), 55 (recorded as *Lynx rufus* (Schreber). Bobcat. Statewide (120 - 9,300 feet.), 65, 73, 100 (color photograph), 106 (052906), 118 (recorded as *Lynx rufus baileyi* Merriam - Distribution: Statewide. Figure 106, Page 247)\*

***Lynx rufus* subsp. *baileyi* Merriam: Bobcat**

SYNONYMY: *Felis rufus* subsp. *baileyi* Elliot. COMMON NAMES: Bobcat, Gato Montes (Hispanic), Wildcat. HABITS: Feeds on almost any meat source available including ground nesting birds, carrion, domestic cats, cottontail rabbits, deer, foxes, jackrabbits, lizards, small mammals, opossums, porcupines, raccoons, reptiles, rodents, bighorn sheep, skunks and woodchucks. Shelter may be taken in a rock cleft, thickets or on the branches of trees. Young are born in dens located in rocky caves, rock shelters, recesses and protected areas with nests made of leaves and other dry plant material. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (091108 - *Lynx rufus baileyi* Schreber), 55 (species: recorded as *Lynx rufus* (Schreber). Bobcat. Statewide (120 - 9,300 feet.), 65, 73 (species), 100 (species, color photograph of species), 106 (052906 - spies), 118 (recorded as *Lynx rufus baileyi* Merriam - Distribution: Statewide. Figure 106, Page 247)\*

***Panthera onca* subsp. *arizonensis* Goldman: Jaguar**

SYNONYMY: *Felis onca* subsp. *arizonensis* Goldman. COMMON NAMES: Black Panther, Blank Panther, Jaguar, Jaguar (Hispanic), Jaguarete (Spanish), Yaguar. HABITS: Feeds on armadillos, birds, caiman, capybaras, deer, fish, frogs, livestock, pacas, peccaries (javelina), mice, rabbits, tapirs, turtles and other vertebrates. Young are born in dens located in caves, rocky areas, dense brush and thickets. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: EXTIRPATED from Arizona. \*8, 14 (091008 - *Panthera onca* subsp. *arizonensis* Goldman), 55 (species: recorded as *Felis onca* Linnaeus. Jaguar. Probably formerly rare throughout the state. Today an occasional individual is found in the southern part of the state.), 65 (species), 100 (species, color photograph of species), 106 (052906), 118 (recorded as *Felis onca arizonensis* Goldman - Distribution: Probably formerly rare throughout the state. Today an occasional individual found in the southern part of the state. Figure 104, Page 244)\*

*Puma concolor* (see *Felis concolor*)

*Puma yaguarondi* (see *Herpailurus yaguarondi*)

Geomyidae: The Pocket Gopher Family

***Thomomys bottae* subsp. *modicus* Goldman: Botta's Pocket Gopher**

COMMON NAMES: Botta's Pocket Gopher, Southwestern Pocket Gopher, Tuza de Botta (Hispanic), Valley Pocket Gopher. HABITS: The species feeds on bulbs, grasses, herbaceous plants, roots and tubers. Young are born in nests in underground burrows. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (051107 - species, several varieties listed), 55 (species: recorded as *Thomomys bottae* (Eydox and Gervais). Valley Pocket Gopher. Widely distributed throughout the state at all elevations.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (052906 - species), 118 (recorded as *Thomomys bottae modicus* Goldman - Distribution: Known from the Santa Cruz and Altar Valleys. Figure 46, Page 107)\*

Heteromyidae: The Kangaroo Rat and Pocket Mouse Family

***Chaetodipus baileyi* subsp. *baileyi* C.H. Merriam: Bailey's Pocket Mouse**

SYNONYMY: *Perognathus baileyi* subsp. *baileyi* C.H. Merriam. COMMON NAMES: Bailey's Pocket Mouse, Raton de Bailey (Hispanic). HABITS: The species feeds on vegetation, and fruits and seeds of cacti, grasses and other herbs. Nests are located underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, and desertscrub ecological formations. \*14 (082508 - subsp. *baileyi* Merriam), 55 (species: recorded as *Perognathus baileyi* Merriam. Bailey's Pocket Mouse. Widely distributed in the southern part of the state (900 - 4,700 feet.), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (082508), **118** (recorded as *Chaetodipus baileyi baileyi* Merriam - Distribution: Grasslands of southeastern Arizona. Figure 51, Page 133)\*

***Chaetodipus hispidus* subsp. *conditi* Allen: Hispid Pocket Mouse**

SYNONYMY: *Perognathus hispidus* subsp. *conditi* Allen S.F. Baird. COMMON NAME: Hispid Pocket Mouse. HABITS: The species feeds on insects (grasshoppers), leaves and seeds. Nests are constructed of grasses and located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (082508 - subsp. *conditi*), 55 (species: recorded as *Perognathus hispidus* Baird. Hispid Pocket Mouse. Locally common in grasslands of southeastern part of the state; an isolated population occurs near Camp Verde (3,200 - 5,000 feet.), 65 (genus), 73 (species), 100 (species), 106 (082508 - species), **118** (recorded as *Perognathus hispidus conditi* Allen - Distribution: Grasslands of southeastern Arizona. Figure 51, Page 132)\*

***Chaetodipus intermedius* subsp. *intermedius* C.H. Merriam: Rock Pocket Mouse**

SYNONYMY: *Perognathus intermedius* subsp. *intermedius* C.H. Merriam. COMMON NAMES: Raton de Rocas de Bosla (Hispanic), Rock Pocket Mouse. HABITS: The species feeds on seeds. Burrows are dug in soil near to or under rocks. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (051007), 55 (species: recorded as *Perognathus intermedius* Merriam. Rock Pocket Mouse. Widely distributed in rocky areas in the Colorado River valley, western and southern Arizona (120 - 6,000 feet.), 65 (genus), 73 (species - recorded as *Perognathus intermedius*), 100 (species), 106 (051007 - species), **118** (recorded as *Chaetodipus intermedius intermedius* Merriam - Distribution: Known from Mohave County southward and eastward, across most of the state to Cochise County. Figure 54, Page 141)\*

***Chaetodipus penicillatus* subsp. *pricei* (S.W. Woodhouse): Desert Pocket Mouse**

SYNONYMY: *Perognathus penicillatus* subsp. *pricei* S.W. Woodhouse). COMMON NAMES: Desert Pocket Mouse, Raton de Desierto (Hispanic), Sonoran Desert Pocket Mouse. HABITS: The species feeds on seeds of creosote bush, grass, greythorn, herbs and mesquite. The nest is made in underground burrows. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. \*14 (051007), 55 (species: recorded as *Perognathus penicillatus* Woodhouse. Desert Pocket Mouse. Widely distributed in desert and low grasslands of southern and western Arizona (120 - 5,200 feet.), 65 (genus), 73 (species, *Perognathus penicillatus*), 100 (species, color photograph of species), 106 (051007 - species), **118** (recorded as *Perognathus penicillatus pricei* Allen - Distribution: Known from south-central Arizona. Figure 53, Page 137)\*

***Dipodomys merriami* subsp. *merriami* Mearns: Merriam's Kangaroo Rat**

COMMON NAMES: Merriam's Kangaroo Rat, Rata de Nopalera Merriam (Hispanic). HABITS: The species feeds on ants, green plant material and seeds of creosote bush, grama grass, mesquite, ocotillo

and purselane. Nests are made in underground burrows often located under bushes. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (051007), 55 (species: recorded as *Dipodomys merriami* Mearns. Merriam's Kangaroo Rat. Widely distributed in western and southern parts of the state (120 - 5,000 feet).), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (genus with a listing of species), **118** (recorded as *Dipodomys merriami merriami* Mearns - Distribution: Occurs throughout most of the western and southern part of the state. Figure 56, Page 145)\*

***Dipodomys spectabilis* subsp. *perblandus* Goldman: Banner-tailed Kangaroo Rat**

COMMON NAMES: Banner-tailed Kangaroo Rat, Kangaroo Rat, Rata de Nopalera (Hispanic). HABITS: The species feeds on grasses, forbs, succulent plants, insects, rodents and seeds. Nests are made up of chaff, stems and leaves of grass located in underground burrows in firm soils. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (051007), 55 (species: recorded as *Dipodomys spectabilis* Merriam. Banner-tailed Kangaroo Rat. Locally common in grasslands of southeastern Arizona (1,300 - 5,000 feet).), 65 (species, color photograph), 100 (species, color photograph), 106 (genus, listing of species), **118** (recorded as *Dipodomys spectabilis perblandus* Goldman - Distribution: Known from the grasslands of southern Pinal and Pima County. Figure 55, Page 143)\*

***Perognathus amplus* subsp. *taylori* Goldman: Arizona Pocket Mouse**

COMMON NAME: Arizona Pocket Mouse. HABITS: The species feeds on green plants, insects and seeds. Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. \*55 (species: recorded as *Perognathus amplus* Osgood. Arizona Pocket Mouse. Locally common in desert areas on south-central, western and north-central parts of the state (500 - 5,100 feet).), 65 (genus), 73 (species), 100 (species, color photograph of species), **118** (recorded as *Perognathus amplus taylori* Goldman. Distribution: Known from south central Arizona. Figure 50, Page 129)\*

*Perognathus baileyi* subsp. *baileyi* (see *Chaetodipus baileyi* subsp. *baileyi*)

*Perognathus hispidus* subsp. *conditi* (see *Chaetodipus hispidus* subsp. *conditi*)

*Perognathus intermedius* subsp. *intermedius* (see *Chaetodipus intermedius* subsp. *intermedius*)

***Perognathus longimembris* subsp. *pimensis* Huey: Little Pocket Mouse**

COMMON NAME: Little Pocket Mouse. HABITS: Feeds on greens and seeds. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. \*14 (082308), 55 (recorded as *Perognathus longimembris* (Coues). Little Pocket Mouse. Known from scattered localities in the western part of the state (500 - 4,500 feet).), 65 (genus), 73 (species), 85 (052906), 100 (species, color photograph of species), 106 (082308), **118** (recorded as

*Perognathus penicillatus* subsp. *pricei* (see *Chaetodipus penicillatus* subsp. *pricei*)

Leporidae: The Hare and Rabbit Family

***Lepus alleni* subsp. *alleni* Mearns: Antelope Jack Rabbit**

COMMON NAME: Antelope Jack Rabbit. HABITS: The species feeds on cacti, Catclaw Acacia, grasses, herbs and the bark, buds and leaves of mesquite. Young are born in a nest that is usually located above ground. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (species), 55 (species: recorded as *Lepus*

*alleni* (Mearns). Antelope Jack Rabbit. Occurs in the central third of the southern half of the state.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (052906 - species), **118** (recorded as *Lepus alleni* subsp. *alleni* Mearns - Distribution: Occurs in the central third of the southern half of the state. Figure 31, Page 68)\*

***Lepus californicus* (J.E. Gray): Black-tailed Jack Rabbit**

COMMON NAMES: Black-tailed Jack Rabbit, “Jackass Rabbit”. HABITS: Feeds on grass, mesquite leaves and prickly-pear cacti. Young are born in nests located either above or below ground in forms that have been lined with breast hair, after birth the young are moved to separate nests and cared for individually by the female. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14, **55** (recorded as *Lepus californicus* Gray. Black-tailed Jack Rabbit. Statewide.), 65, 73, 100 (color photograph), 106 (052906), **118** (recorded as *Lepus californicus deserticola* Mearns - Distribution: Occurs in the western half of the state; *Lepus californicus eremicus* J.A. Allen - Distribution: Southeastern Arizona, and *Lepus californicus texianus* Waterhouse - Distribution: Occurs in the northeastern quarter of the state. Figure 32, Page 69), **WTK** (July 4, 2005)\*

***Lepus californicus* subsp. *eremicus* J.A. Allen: Black-tailed Jack Rabbit**

COMMON NAMES: Black-tailed Jack Rabbit, “Jackass Rabbit”. HABITS: The species feeds on grass, mesquite leaves and prickly-pear cacti. Young are born in nests located either above or below ground in forms that have been lined with breast hair, after birth the young are moved to separate nests and cared for individually by the female. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (species), **55** (species: recorded as *Lepus californicus* Gray. Black-tailed Jack Rabbit. Statewide.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (052906 - species), **118** (recorded as *Lepus californicus eremicus* J.A. Allen - Distribution: Southeastern Arizona. Figure 32, Page 69)\*  
*Lepus californicus* subsp. *eremicus* J.A. Allen: Black-tailed Jack Rabbit

***Sylvilagus audubonii* (S.F. Baird): Desert Cottontail**

COMMON NAME: Desert Cottontail. HABITS: Feeds on green plants, cacti, bark and twigs. Young are born into nests lined with forbs, grasses and the female’s fur which are located on the ground and in brush piles, piles of rocks, and burrows abandoned by other animals. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14, **55** (recorded as *Sylvilagus audubonii* (Baird). Desert Cottontail. Common at elevations below 6,000 feet throughout the state.), 65, 73, 100 (color photograph), 106 (052906), **118** (recorded as *Sylvilagus audubonii arizonae* (J.A. Allen) - Distribution: Widely distributed at elevations up to 6,000 feet in the western half of the state; *Sylvilagus audubonii minor* (Mearns) - Distribution: Known only from the southeastern part of the state, and *Sylvilagus audubonii warreni* Nelson - Distribution: Known only from the northeastern part of the state. Figure 34, Page 74)\*

***Sylvilagus audubonii* (S.F. Baird) subsp. *arizonae*: Desert Cottontail**

COMMON NAME: Desert Cottontail. HABITS: The species feeds on green plants, cacti, bark and twigs. Young are born into nests lined with forbs, grasses and the female’s fur which are located on the ground and in brush piles, piles of rocks, and burrows abandoned by other animals. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (species), **55** (species: recorded as *Sylvilagus audubonii* (Baird). Desert Cottontail. Common at elevations below 6,000 feet throughout the state.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (052906 - species), **118** (recorded as *Sylvilagus audubonii arizonae* (J.A. Allen) - Distribution: Widely distributed at elevations up to 6,000 feet in the western half of the state. Figure 34, Page 74)\*

## Mephitidae: The Skunk Family

### ***Conepatus leuconotus* subsp. *venaticus* (Goldman): Common Hog-nosed Skunk**

SYNONYMY: *Conepatus mesoleucus* subsp. *venaticus* Goldman. COMMON NAMES: Common Hog-nosed Skunk, Hog-nosed Skunk, Hognose Skunk, Rooter Skunk, Zorrillo Nariz de Puerco (Hispanic). HABITS: The species feeds on arachnids, birds, insects, small mammals, mollusks, plant material, reptiles and worms. These skunks take refuge in caves, crevices in rocks and in the ground. Rocky areas are used for denning with the young born beneath rocks, grasses are used for nesting. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (072306 - subsp. *venaticus* (Goldman)), 55 (species: recorded as *Conepatus mesoleucus* Lichtenstein. Hog-nosed Skunk. Southeastern part of the state (2,000 - 6,000 feet.), 65 (species), 73 (species: *Conepatus mesoleucus*), 100 (species record (*Conepatus mesoleucus*), color photograph of species), 106 (072306 - genus), **118** (recorded as *Conepatus mesoleucus venaticus* Goldman - Distribution: South central and southeastern Arizona. Figure 102, Page 241)\*

*Conepatus mesoleucus* subsp. *venaticus* (see *Conepatus leuconotus* subsp. *venaticus*)

### ***Mephitis macroura* subsp. *milleri* (Mearns): Hooded Skunk**

COMMON NAMES: Hooded Skunk, Zorrillo (Hispanic). HABITS: The species feeds on small birds, insects and other invertebrates, rodents and plant material. The young are born in a dens located in burrows or among rocks. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (050807 - subsp. *milleri* (Mearns)), 55 (species: recorded as *Mephitis macroura* (Lichtenstein). Hooded Skunk. Southeastern part of the state (2,000 - 6,000 feet.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (053006 - genus), **118** (recorded as *Mephitis macroura milleri* (Mearns) - Distribution: South central and southeastern Arizona. Figure 101, Page 240)\*

### ***Mephitis mephitis* (J.C. von Schreber): Striped Skunk**

COMMON NAMES: Striped Skunk, Zorrillo Rayado (Hispanic). HABITS: Feeds on amphibians, berries, the eggs of ground nesting birds, carrion, crayfish, earthworms, fishes, fruits, insects (beetles, crickets and grasshoppers among others), mollusks, plant material, reptiles, rodents, snails and spiders. The young are born in nests made of dried grasses and leaves located in dirt banks, underground burrows abandoned by other animals, downed logs, pits and rock outcrops. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The Striped Skunk is most active dusk through dawn. This species is the chief carrier of rabies in the United States and those active during the daylight hours frequently being found to be rabid. \*14 (082308 - subsp. *estor* Merriam, *hudsonica* (Richardson) and *varians* (Gray)), **55** (recorded as *Mephitis mephitis* (Schreber). Striped Skunk. Statewide (300 - 9,000 feet.), 65 (color photograph), 73, **100** (color photograph), 106 (053006 - genus), 118 (recorded as *Mephitis mephitis estor* Merriam - Distribution: Statewide. Figure 100, Page 239)\*

### ***Mephitis mephitis* (J.C. von Schreber) subsp. *estor* Merriam: Striped Skunk**

COMMON NAMES: Striped Skunk, Zorrillo Rayado (Hispanic). HABITS: Feeds on amphibians, berries, the eggs of ground nesting birds, carrion, crayfish, earthworms, fishes, fruits, insects (beetles, crickets and grasshoppers among others), mollusks, plant material, reptiles, rodents, snails and spiders. The young are born in nests made of dried grasses and leaves located in dirt banks, underground burrows abandoned by other animals, downed logs, pits and rock outcrops. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The Striped Skunk is most active dusk through dawn. This species is the chief carrier of rabies in the United States and those active during the daylight hours

frequently being found to be rabid. \*14 (082308 - subsp. *estor* Merriam), 55 (species: recorded as *Mephitis mephitis* (Schreber). Striped Skunk. Statewide (300 - 9,000 feet).), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (053006 - genus), 118 (recorded as *Mephitis mephitis estor* Merriam - Distribution: Statewide. Figure 100, Page 239)\*

***Spilogale gracilis* Merriam: Western Spotted Skunk**

SYNONYMY: *Spilogale putorius* subsp. *gracilis* Merriam. COMMON NAMES: Spotted Skunk, Western Spotted Skunk, Zorillo Pinto (Hispanic). HABITS: Feeds on arachnids, berries, birds and bird eggs, carrion, fruits, insects, small mammals, scorpions and seeds. Dens are made in rock crevices and hollow logs. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (051107 - *Spilogale putorius* subsp. *gracilis* Merriam is a synonym for *Spilogale gracilis* C. Linnaeus the Western Spotted Skunk. *Spilogale putorius* subsp. *leucoparia* is a synonym for *Spilogale putorius* C. Linnaeus the Eastern Spotted Skunk), 55 (recorded as *Spilogale putorius* (Linnaeus). Spotted Skunk. Probably statewide (120 - 7,000 feet).), 65 (*Spilogale putorius*), 73 (recorded as *Spilogale gracilis*), 100 (recorded as *Spilogale gracilis*, color photograph), 106 (053006 - genus), 118 (recorded as *Spilogale putorius gracilis* Merriam - Distribution: Probably statewide. Figure 99, Page 237)\*

*Spilogale putorius* (see footnotes 14, 55, 65 and 85 under *Spilogale gracilis*)

*Spilogale putorius* subsp. *gracilis* (see *Spilogale gracilis*)

Molossidae: The Free-tailed Bat Family

***Eumops perotis* subsp. *californicus* (Merriam): Greater Western Mastiff Bat**

COMMON NAMES: Bonnet Bat, Greater Western Bonneted Bat, Greater Mastiff Bat, Greater Western Mastiff Bat, Mastiff Bat, Murcielago Mastiff (Hispanic), Western Mastiff Bat. HABITS: The species feeds on crickets, long-horned grasshoppers, moths and other small insects. Roosts in crevices and shallow caves in cliffs and rock walls at lower elevations. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14 (051107), 55 (species: recorded as *Eumops perotis* (Schinz). Western Mastiff Bat. Rare; in small colonies in rock crevices at lower elevations in the western and southern part of the state.), 65 (species), 73 (species), 92 (species), 100 (species, color photograph of species), 106 (053006 - family), 118 (recorded as *Eumops perotis californicus* (Merriam) - Distribution: Probably throughout southern Arizona in the Lower Sonoran Life Zone. Figure 29, Page 65)\*

***Nyctinomops femorosaccus* (C.H. Merriam): Pocketed Free-tailed Bat**

SYNONYMY: Also recorded as *Nyctinomops femorosacca* (C.H. Merriam), *Tadarida femorosacca* (Miller). COMMON NAMES: Pocketed Free-tailed Bat, Murcielago Cola en Bolsa (Hispanic). HABITS: Feeds on ants, leafhoppers, moths, wasps and other insects. Roosts in rocky crevices. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14, 55 (recorded as *Tadarida femorosacca* (Merriam). Pocketed Free-tailed Bat. Rare; found at lower elevations in the western and southern part of the state.), 100, 106 (053006 - family), 118 (recorded as *Tadarida femorosacca* (Miller) - Distribution: Probably occurs throughout the Lower Sonoran Life Zone of southern Arizona. Figure 27, Page 63)\*

***Nyctinomops macrotis* (J.E. Gray): Big Free-tailed Bat**

SYNONYMY: *Tadarida macrotis* (J.E. Gray), *Tadarida molossa* (Pallas). COMMON NAMES: Big Free-tailed Bat, Murcielago Cola Libre (Hispanic), Murcielago Cola Suelta Mayor (Spanish)

HABITS: Feeds on insects. Roosts in rocky cliffs, crevices, fissures, caves and holes in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14, 42 (053006), 55 (recorded as *Tadarida molossa* (Pallas). Big Free-tailed Bat. Rare; statewide, mainly at elevations below 5,000 feet.), 73, 100 (color photograph), 106 (053006 - family), 118 (recorded as *Tadarida molossa* (Pallas) - Distribution: Probably occurs throughout the Lower Sonoran Life Zone of Arizona. Figure 28, Page 64)\*

***Tadarida brasiliensis* (I.G. Saint-Hilaire) (subsp *mexicana* (Saussure) is the only subspecies reported as occurring in Arizona): Brazilian Free-tailed Bat**

COMMON NAMES: Brazilian Free-tailed Bat, Guano Bat, Mexican Free-tail Bat, Mexican Free-tailed Bat, Murcielago Braziliano (Hispanic). HABITS: Feeds on ants, beetles, leafhoppers, moths and other small insects. Roosts in caverns; caves; crevices in rocks; fissures in cliffs; buildings; mines, and under bridges. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14, 55 (recorded as *Tadarida brasiliensis* (I.Geof. St.-Hilaire). Mexican Free-tailed Bat. Locally abundant throughout the state, especially at elevations below 5,000 feet.), 65, 73, 92, 100 (color photograph), 106 (053006), 118 (recorded as *Tadarida brasiliensis mexicana* (Saussure) - Distribution: Probably statewide in some part of the year. Figure 26, Page 62)\*

***Tadarida brasiliensis* (I.G. Saint-Hilaire) subsp *mexicana* (Saussure): Brazilian Free-tailed Bat**

COMMON NAMES: Brazilian Free-tailed Bat, Guano Bat, Mexican Free-tail Bat, Mexican Free-tailed Bat, Murcielago Braziliano (Hispanic). HABITS: Feeds on ants, beetles, leafhoppers, moths and other small insects. Roosts in caverns; caves; crevices in rocks; fissures in cliffs; buildings; mines, and under bridges. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14, 55 (species: recorded as *Tadarida brasiliensis* (I.Geof. St.-Hilaire). Mexican Free-tailed Bat. Locally abundant throughout the state, especially at elevations below 5,000 feet.), 65 (species), 73 (species), 92 (species), 100 (species, color photograph of species), 106 (053006), 118 (recorded as *Tadarida brasiliensis mexicana* (Saussure) - Distribution: Probably statewide in some part of the year. Figure 26, Page 62)\*

*Tadarida femorosacca* (see *Nyctinomops femorosacca*)

*Tadarida macrotis* (see *Nyctinomops macrotis*)

*Tadarida molossa* (see *Nyctinomops macrotis*)

Muridae: The Mouse and Rat Family

***Neotoma albigula* subsp. *albigula* Hartley: White-throated Wood Rat**

COMMON NAMES: Packrat, White-throated Packrat, Trade Rat, White-throated Wood Rat. HABITS: The species feeds on cacti, forbs, fruits, juniper, leaves, mesquite beans, seeds and yucca. Nests are built under mesquite, cholla and prickly-pear cacti, or in rocky crevices using sticks, pieces of cholla and prickly-pear cacti, and rubbish, sometimes with underground burrows. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (051107 - subsp. *albigula*), 55 (species: recorded as *Neotoma albigula* Hartley. White-throated Wood Rat. Widely distributed at elevations below 7,000 feet throughout all of the state south of the Colorado River (120 - 8,000 feet.), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (053006 - genus), 118 (recorded as *Neotoma albigula albigula* Hartley - Distribution: Occurs commonly south of the Mogollon Rim. Figure 76, Page 193)\*

***Onychomys torridus* subsp. *torridus* (E. Coues): Southern Grasshopper Mouse**

COMMON NAMES: Raton Chapulinero del Sur (Hispanic), Scorpion Mouse, Southern Grasshopper Mouse. HABITS: The species feeds on arthropods, beetles, grasshoppers, insects, lizards, other species of mice, scorpions, seeds and small vertebrates. Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (020307 - subsp. *torridus*), 55 (species: recorded as *Onychomys torridus* (Coues). Southern Grasshopper Mouse. Widely distributed in the western and southern parts of the state (120 - 5,000 feet.), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (053006 - genus, listing of species), 118 (recorded as *Onychomys torridus torridus* (Coues) - Distribution: Southeastern quarter of the state. Figure 62, Page 161)\*

***Peromyscus eremicus* subsp. *eremicus* (S.F. Baird): Cactus Mouse**

COMMON NAMES: Cactus Mouse, Raton de Cactaceas (Hispanic). HABITS: The species feeds on flowers, small fruits, insects, green plant material and seeds. Nests are made within the abandoned burrows of other animals, clumps of cacti and among rocks. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (species), 55 (species: recorded as *Peromyscus eremicus* (Baird). Cactus Mouse. Widely distributed in western and southern Arizona (120 - 6,000 feet.), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (053006 - genus), 118 (recorded as *Peromyscus eremicus eremicus* (Baird) - Distribution: Almost all of the western and southern part of the state. Figure 67, Page 171)\*

***Peromyscus maniculatus* (Wagner): Deer Mouse**

COMMON NAMES: Deer Mouse, Raton Venado (Hispanic). HABITS: Feeds on bark, berries, bones, centipedes, earthworms, small fruits, fungi, insects, leaves, nuts and snails. Nests are built in buildings, underground burrows, rock crevices debris, in and under logs, and clumps of vegetation. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (050907 - subspp. *blandus* (Osgood) and *rufinus* (Merriam)), 55 (recorded as *Peromyscus maniculatus* (Wagner). Deer Mouse. Statewide (120 - 11,400 feet.), 65 (genus), 73, 100 (color photograph), 106 (053006 - genus), 118 (recorded as *Peromyscus maniculatus blandus* Osgood - Distribution: Extreme southeastern part of the state; *Peromyscus maniculatus rufinus* (Merriam) - Distribution: Higher elevations throughout the state, and *Peromyscus maniculatus sonoriensis* (Le Conte) - Distribution: Grasslands at lower elevations throughout the state. Figure 69, Page 177)\*

***Peromyscus maniculatus* subsp. *sonoriensis* (Le Conte): Deer Mouse**

COMMON NAMES: Deer Mouse, Raton Venado (Hispanic). HABITS: The species feeds on bark, berries, bones, centipedes, earthworms, small fruits, fungi, insects, leaves, nuts and snails. Nests are built in buildings, underground burrows, rock crevices debris, in and under logs, and clumps of vegetation. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (050907 - species, and subspp. *blandus* (Osgood) and *rufinus* (Merriam)), 55 (species: recorded as *Peromyscus maniculatus* (Wagner). Deer Mouse. Statewide (120 - 11,400 feet.), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (053006 - genus), 118 (recorded as *Peromyscus maniculatus sonoriensis* (Le Conte) - Distribution: Grasslands at lower elevations throughout the state. Figure 69, Page 177)\*

***Peromyscus merriami* subsp. *merriami* Mearns: Merriam's Mouse**

COMMON NAMES: Merriam's Mouse, Mesquite Mouse. HABITS: The species probably feeds on invertebrates and seeds. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. \*14 (082308), 55 (species: recorded as *Peromyscus merriami* Mearns. Merriam's Mouse. Known from scattered localities is Pinal, Pima and

Santa Cruz counties (1,600 - 3,600 feet.), 73 (note on species), 100 (species), 106 (072306 - genus, listing of species), **118** (recorded as *Peromyscus merriami merriami* Mearns - Distribution: Known from mesquite bosque situations in southern Arizona. Figure 68, Page 174)\*

***Reithrodontomys megalotis* (Baird): Western Harvest Mouse**

COMMON NAME: Western Harvest Mouse. HABITS: Feeds on arachnids, grasses, insects (larvae and adults) and seeds of grasses, forbs and shrubs. Spherical nests are made of woven plant material and lined with plant fibers and can be located near the ground or above the ground in dense vegetation. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (050907 - subsp. *arizonensis*; *aztecus* J.A. Allen, and *megalotis* (Baird)), **55** (recorded as *Reithrodontomys megalotis* (Baird). Western Harvest Mouse. Statewide (120 - 8,000 feet.), 73, 100 (color photograph), 106 (053006), 118 (recorded as *Reithrodontomys megalotis arizonensis* (Allen) - Distribution: Known only from the region of the type locality (Chiricahua Mountains); *Reithrodontomys megalotis aztecus* (Allen) - Distribution: Extreme northeastern part of state, and *Reithrodontomys megalotis megalotis* (Baird) - Distribution: At medium and low elevations statewide except extreme northeastern part of the state. Figure 64, Page 164)\*

***Reithrodontomys megalotis* subsp. *megalotis* (Baird): Western Harvest Mouse**

COMMON NAME: Western Harvest Mouse. HABITS: The species feeds on arachnids, grasses, insects (larvae and adults) and seeds of grasses forbs and shrubs. Spherical nests are made of woven plant material and lined with plant fibers and can be located near the ground or above the ground in dense vegetation. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (050907 - subsp. *megalotis* (Baird)), **55** (species: recorded as *Reithrodontomys megalotis* (Baird). Western Harvest Mouse. Statewide (120 - 8,000 feet.), 73 (species), 100 (species, color photograph of species), 106 (053006), **118** (recorded as *Reithrodontomys megalotis megalotis* (Baird) - Distribution: At medium and low elevations statewide except extreme northeastern part of the state. Figure 64, Page 164)\*

Mustelidae: The Weasel and Allies Family

***Taxidea taxus* (J.C. von Schreber): American Badger**

COMMON NAMES: American Badger, Badger, Badger Tejon (Hispanic). HABITS: Feeds on ground dwelling birds (and eggs), carrion, insects, rodents and snakes. Young are born in dens in underground burrows. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (050907 - subsp. *berlandieri* Schreber), **55** (recorded as *Taxidea taxus* (Schreber). Badger. Statewide (120 - 7,000 feet.), 65, 73, 100 (color photograph), 106 (053006), **118** (recorded as *Taxidea taxus* - Distribution: Statewide. Figure 98, Page 235)\*

Phyllostomidae: The Leaf-nosed Bat Family

***Leptonycteris curasoae* subsp. *yerbabuena* (Martinez & Villa-R.): Southern Long-nosed Bat**

SYNONYMY: *Leptonycteris nivalis sanborni* D.F. Hoffmeister, *Leptonycteris sanborni* (Saussure). COMMON NAMES: Lesser Long-nosed Bat, Little Long-nosed Bat, Mexican Long-nosed Bat, Murcielago de Sanborn (Hispanic), Sanborn's Long-nosed Bat, Sanborn's Southern Long-nosed Bat, Southern Long-nosed Bat. HABITS: The species feeds on insects, nectar, pollen and the nectar and soft-bodied fruits of agaves and cacti. Roosts are located in caves, rock crevices, abandoned mines and tunnels. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Long-nosed bats are pollinators of

Agaves, Cardons, Organ Pipe Cacti and Saguaros. \*8, 14 (050907 - **Populations may be compromised by roost-site disturbance, loss of food sources and direct killing by humans.**), 35 (**This species is vulnerable to disturbances at roosting sites by cave explorers.**), 55 (species: recorded as *Leptonycteris nivalis* (Saussure). Long-nosed Bat. Locally common in moist caves. Known from Pinal, Pima, Santa Cruz and Cochise Counties.), 92 (recorded as *Leptonycteris sanborni*), 100 (species, recorded as *Leptonycteris curasoae* and *Leptonycteris nivalis*, color photographs), 106 (053006), 110 (recorded as *Leptonycteris sanborni*), **118** (recorded as *Leptonycteris nivalis nivalis* (Saussure) - Distribution: Known only from the southeastern part of the state. Figure 9, Page 35)\*

*Leptonycteris nivalis* (see footnote 55 under *Leptonycteris curasoae* subsp. *yerbabuena*)

*Leptonycteris nivalis nivalis* (see footnote 118 under *Leptonycteris curasoae* subsp. *yerbabuena*)

*Leptonycteris nivalis sanborni* (see *Leptonycteris curasoae* subsp. *yerbabuena*)

*Leptonycteris sanborni* (see *Leptonycteris curasoae* subsp. *yerbabuena*)

### ***Macrotus californicus* S.F. Baird: California Leaf-nosed Bat**

COMMON NAMES: California Leaf-nosed Bat, Leaf-nosed Bat, Leafnose Bat, Waterhouse's Leaf-nosed Bat, Murcielago de California (Hispanic). HABITS: Feeds on beetles, butterflies, caterpillars, cicadas, crickets, dragonflies, grasshoppers, leafhoppers, moths and other insects. Roosts are located in caves and abandoned mine tunnels. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. \*8, 14 (050907 - subsp. *californicus* (Audubon & Bachman) and *stephensi* (Dalquest)), 55 (recorded as *Macrotus californicus* Baird. Leaf-nosed Bat. Locally common in shallow caves, mine tunnels and under bridges. Occurs widely at lower elevations in the western and southern parts of the state.), 73, 92, 100 (color photograph), 106 (053006), **118** (recorded as *Macrotus californicus* Baird - Distribution: Known from lower elevations in the southern and western parts of the state. Figure 7, Page 32)\*

## Procyonidae: The Raccoon and Allies Family

### ***Bassariscus astutus* (M.H. Lichenstein): Ringtail**

COMMON NAMES: Band-tailed Cat, Cacomistle, Civet Cat, Coon Cat Gato Minero (Hispanic), Miner's Cat, Ringtail, Ringtail Cat, Ring-tailed Cat. HABITS: Feeds on berries, birds, fruits, carrion, crickets, eggs, insects, lizards, small mammals, snakes and spiders. Nests are made of grass located in dens in underground burrows, caves, cliffs, rocky outcrops, cavities in logs, stumps and trees and man-made structures. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8 (subsp. *arizonensis*; *nevadensis*, and *yumanensis*), 14 (050907 - subsp. *arizonensis* Goldman; *flavus* Rhoads; *nevadensis*, and *yumanensis* Huey), **55** (recorded as *Bassariscus astutus* (Lichenstein). Ringtail. Statewide (120 - 6,500 feet).), 65 (color photograph), 73, 100 (color photograph), 106 (051107), 118 (recorded as *Bassariscus astutus arizonensis* Goldman - Distribution: Statewide except extreme southeastern and southwestern parts; *Bassariscus astutus flavus* Rhoads - Distribution: Extreme southeastern part of the state, and *Bassariscus astutus yumanensis* Huey - Distribution: Southwestern Arizona. Figure 93, Page 227)\*

### ***Bassariscus astutus* subsp. *arizonensis* Goldman: Ringtail**

COMMON NAMES: Band-tailed Cat, Cacomistle, Civet Cat, Coon Cat Gato Minero (Hispanic), Miner's Cat, Ringtail, Ringtail Cat, Ring-tailed Cat. HABITS: The species feeds on berries, birds, fruits, carrion, crickets, eggs, insects, lizards, small mammals, snakes and spiders. Nests are made of grass located in dens in underground burrows, caves, cliffs, rocky outcrops, cavities in logs, stumps and trees

and man-made structures. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14 (050907), 55 (species: recorded as *Bassariscus astutus* (Lichenstein). Ringtail. Statewide (120 - 6,500 feet.), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (053106 - species), **118** (recorded as *Bassariscus astutus arizonensis* Goldman - Distribution: Statewide except extreme southeastern and southwestern parts. Figure 93, Page 227)\*

***Nasua narica* (C.H. Merriam): White-nosed Coati**

COMMON NAMES: Antoon, Chula, Chulo, Coati (Indian Name), Coatimundi, El Gato Solo (Los Gatos en Familia), Pizote, White-nosed Coati. HABITS: Feeds on the berries of juniper and manzanita, birds, carrion, eggs, fruits, insects (including among others crickets and grasshoppers) and other invertebrates, prickly pear fruit, lizards, small mammals, nuts, snakes, tubers, worms and yucca fruits. Young are born in dens located in caves, crevices in rocks, mines shafts and cavities among tree roots. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (091008), 55 (recorded as *Nasua narica* (Linnaeus). Coati. In woodland situations in the Graham, Chiricahua, Huachuca, Patagonia and Pena Blanca mountains (5,000 to 7,500 feet.), 65, 73, 100 (color photograph), 106 (053106), **118** (recorded as *Nasua narica pallida* Allen - Distribution: Mountains of southern and southeastern part of the state. Figure 95, Page 230)\*

***Procyon lotor subsp. mexicanus* Baird: Common Raccoon**

COMMON NAMES: Common Raccoon, Mexican Raccoon, Northern Raccoon, Raccoon, Racuno (Hispanic). HABITS: Feeds on annelid worms, berries, birds, nestlings and eggs, carrion, crayfishes, small fishes, frogs, fruits, insects, small mammals, nuts, shellfish, turtles and turtle eggs and vegetables. Nests are made of leaves located in dens in small caves, amongst boulders, rocky crevices in cliffs and cavities in trees. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Raccoons are never very far from permanent water. \*14 (090108 - subsp. *fuscipes* (Mearns); *hirus* (Nelson & Goldman); *mexicanus* (Baird), and *pallidus* (Merriam)), 55 (species: recorded as *Procyon lotor* (Linnaeus). Raccoon. Riparian situations along the Colorado, Little Colorado and Gila River systems and in the grasslands of the southeastern portion of the state (120 - 6,900 feet.), 65 (color photograph), 73 (species), 100 (species, color photograph of species), 106 (053106), **118** (recorded as *Procyon lotor mexicanus* Baird - Distribution: Southeastern Arizona. Figure 94, Page 229)\*

Sciuridae: The Squirrel and Allies Family

***Ammospermophilus harrisi* (J.J. Audubon & Bachman): Harris' Antelope Squirrel**

SYNONYMY: *Citellus harrisi* (J.J. Audubon & Bachman). COMMON NAMES: Ardilla de Tierra Harris (Hispanic), Harris Antelope Squirrel, Harris' Antelope Squirrel, Yuma Antelope Squirrel. HABITS: Feeds on fruits, insects, plants and seeds. Dens are located in underground burrows. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. \*14 (082308), 55 (recorded as *Citellus harrisi* (Audubon & Bachman). Harris Antelope Squirrel. Southern and western parts of the state at elevations below 6,500 feet.), 65 (color photograph), 73, 100 (color photograph), 106 (053106 - genus), **118** (recorded as *Citellus harrisi harrisi* (Audubon & Bachman) - Distribution: Southern and western Arizona except for most of Yuma County. *Citellus harrisi saxicola* (Mearns) - Distribution: Southwestern Arizona. Figure 38, Page 85)\*

*Citellus harrisi* (see *Ammospermophilus harrisi*)

*Citellus harrisi* subsp. *harrisi* (see footnote 118 under *Ammospermophilus harrisi*)

*Citellus harrisi* subsp. *saxicola* (see footnote 118 under *Ammospermophilus harrisi*)

*Citellus tereticaudus* (see *Spermophilus tereticaudus*)

*Citellus tereticaudus* subsp. *neglectus* (see footnote 118 under *Spermophilus tereticaudus*)

*Citellus variegatus* (see *Spermophilus variegatus*)

*Citellus variegatus* subsp. *grammurus* (see *Spermophilus variegatus* subsp. *grammurus*)

***Spermophilus tereticaudus* S.F. Baird: Round-tailed Ground Squirrel**

SYNONYMY: *Citellus tereticaudus* S.F. Baird. COMMON NAME: Round-tailed Ground Squirrel. HABITS: Feeds on buds of burweed and mesquite, cacti, green vegetation, insects, seeds of creosote bush, mesquite, flowers of ocotillo, paloverde, plantain, and saltbush, observed visiting road kill and taking scavenging Gambel's Quail chicks; nests are made of plant fibers and stems and located in dens in underground burrows. HABITAT: Within the range of this species it has been reported from the desertscrub ecological formation. \*14, 55 (recorded as *Citellus tereticaudus* Baird. Round-tailed Ground Squirrel. Lower Sonoran Life-zone of the western part of the state (below 3,200 feet.), 65, 73, 100 (color photograph), 106 (053106 - genus), 118 (recorded as *Citellus tereticaudus neglectus* (Merriam) - Distribution: Lower Sonoran Life Zone of southwestern Arizona. Figure 39, Page 90)\*

***Spermophilus variegatus* (Erxleben): Rock Squirrel**

SYNONYMY: *Citellus variegatus* (Erxleben). COMMON NAMES: Ardilla Coluda (Hispanic), Rock Squirrel. HABITS: Feeds on acorns, berries, small birds, chicks and eggs, carrion, insects, fruits, small mammals, nuts and seeds. Nests are made of leaves, pine needles and plant fibers and located in dens in underground burrows between boulders, rock crevices and talus. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14, 55 (recorded as *Citellus variegatus* (Erxleben). Rock Squirrel. Statewide, especially at elevations below 6,000 feet.), 65 (color photograph), 73, 100 (color photograph), 106 (053106 - genus), 118 (recorded as *Citellus variegatus grammurus* (Say) - Distribution: Statewide, especially common below 6000 feet. Figure 37, Page 82)\*

***Spermophilus variegatus* subsp. *grammurus* (Erxleben): Rock Squirrel**

SYNONYMY: *Citellus variegatus* subsp. *grammurus* (Say). COMMON NAMES: Ardilla Coluda (Hispanic), Rock Squirrel. HABITS: The species feeds on acorns, berries, small birds, chicks and eggs, carrion, insects, fruits, small mammals, nuts and seeds burrows. Nests are made of leaves, pine needles and plant fibers and located in dens in underground burrows between boulders, rock crevices and talus. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14, 55 (species: recorded as *Citellus variegatus* (Erxleben). Rock Squirrel. Statewide, especially at elevations below 6,000 feet.), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (053106 - genus), 118 (recorded as *Citellus variegatus grammurus* (Say) - Distribution: Statewide, especially common below 6000 feet. Figure 37, Page 82)\*

Soricidae: The Shrew Family

***Notiosorex crawfordi* (E. Coues): Crawford's Desert Shrew**

COMMON NAMES: Crawford's Desert Shrew, Crawford's Gray Shrew, Desert Shrew, Gray Shrew, Musarana del Deseirto Crawford (Hispanic). HABITS: Feeds on centipedes, insects, lizards,

small mice, scorpions, sowbugs and spiders. Nests are made of shredded bark and leaves and located in packrat dens or under dead agaves. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (050907 - subsp. *crawfordi* (Coues)), 55 (recorded as *Notiosorex crawfordi* (Coues). Desert Shrew. Locally common, widely distributed statewide at elevations below 6,000 feet, especially in riparian situations.), 65, 73, 100 (color photograph), 106 (051107), 118 (recorded as *Notiosorex crawfordi crawfordi* (Coues) - Distribution: Probably occurs statewide at elevations below 6000 feet. Figure 5, Page 30)\*

***Notiosorex crawfordi* subsp. *crawfordi* (E. Coues): Crawford's Desert Shrew**

COMMON NAMES: Crawford's Desert Shrew, Crawford's Gray Shrew, Desert Shrew, Gray Shrew, Musarana del Deseirto Crawford (Hispanic). HABITS: The species feeds on centipedes, insects, lizards, small mice, scorpions, sowbugs and spiders. Nests are made of shredded bark and leaves and located in packrat dens or under dead agaves. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (050907 - subsp. *crawfordi* (Coues)), 55 (species: recorded as *Notiosorex crawfordi* (Coues). Desert Shrew. Locally common, widely distributed statewide at elevations below 6,000 feet, especially in riparian situations.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (051107 - species), 118 (recorded as *Notiosorex crawfordi crawfordi* (Coues) - Distribution: Probably occurs statewide at elevations below 6000 feet. Figure 5, Page 30)\*

Tayassuidae: The Javelina Family

*Dicotyles tajacu* subsp. *sonoriensis* (see *Peccari tajacu* subsp. *sonoriensis*)

*Pecari angulatus* (see footnote 65 under *Peccari tajacu* subsp. *sonoriensis*)

***Peccari tajacu* subsp. *sonoriensis* (Mearns): Collared Peccary**

SYNONYMY: *Dicotyles tajacu* subsp. *sonoriensis* (Mearns), *Tayassu tajacu* subsp. *sonoriensis* (Mearns). COMMON NAMES: Collared Peccary, Jabalina (Hispanic), Javelina, "Musk Hog", Peccary. HABITS: The species feeds on agaves, amphibians, berries, bulbs, fruits, fungi, grasses, insects, mesquite beans, nuts, roots, palm nuts, succulent plants, prickly-pear and other cacti, reptiles, rodents, roots, sotol, tubers and worms. Javelina bed down during the day in thick brush and prickly-pear thickets and at night in burrows usually under the roots of trees. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (050907 - subsp. *sonoriensis* (Mearns)), 55 (species: recorded as *Tayassu tajacu* (Linnaeus). Javelina. Southeastern and central parts of the state (1,200 - 6,000 feet.), 65 (species, recorded as *Pecari angulatus*), 73 (species, recorded as *Dicotyles tajacu*), 100 (species, recorded as *Tayassu tajacu*, color photograph of species), 106 (051107 - species, recorded as *Tayassu tajacu*), 118 (recorded as *Tayassu tajacu sonoriensis* (Mearns) - Distribution: Southern part of the state. Figure 107, Page 249)\*

*Tayassu tajacu* subsp. *sonoriensis* (see see *Peccari tajacu* subsp. *sonoriensis*)

Ursidae: The Bear Family

***Ursus americanus* subsp. *amblyceps* (Baird): Black Bear**

SYNONYMY: *Euarctos americanus* subsp. *amblyceps* (Baird). COMMON NAMES: American Black Bear, Black Bear, Cinnamon Bear, Oso Negro (Hispanic). HABITS: The species feeds on acorns, ants, beetles, berries, buds, carrion, crickets, currants, fish, fruits, grapes, grubs, insects, leaves, pinyon nuts, prickly-pear fruit, raspberries, sprouts, small to medium-size mammals and other vertebrates and

twigs. Shelter is taken in dense cover and they climb trees to escape danger. Nests are made of grasses leaves, mud and sticks located in a den. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (050907 - subsp. *amblyceps* (Baird)), 55 (species: recorded as *Euarctos americanus* (Pallas). Black Bear. Formerly common throughout the mountainous areas of the state, now greatly reduced in numbers and distribution.), 73 (species), 100 (species, color photograph of species), 106 (050907 - includes a listing of subspecies and their distribution), **118** (recorded as *Euarctos americanus amblyceps* (Baird) - Distribution: Probably formerly occurred throughout the state, at least in mountainous areas. Figure 91, Page 224)\*

*Euarctos americanus* subsp. *amblyceps* (see *Ursus americanus* subsp. *amblyceps*)

### ***Ursus arctos* subsp. *horribilus* Ord: Grizzly Bear**

SYNONYMY: *Ursus horribilus* Ord. COMMON NAMES: Apache Grizzly, Arizona Grizzly, Grizzly Bear, Navajo Grizzly, New Mexico Grizzly, Oso Gris (Hispanic), Silvertip Bear, Sonora Grizzly, Texas Grizzly. HABITS: The species feeds on berries, carrion, fish (bass, salmon, trout), fungi, grasses, insects (Army Cutworm moths), leaves, large mammals (Bison, Black Bear, Caribou, Deer, Elk, Moose, Mountain Goats) and small mammals (rodents), nuts (Whitebark Pine nuts), roots and sprouts. The Grizzly Bear beds down in depressions in thickets. Dens are excavated from under rocks or located in caves, crevices or hollow trees. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The last confirmed "kill" in Arizona was made on the slopes of Mount Baldy (Apache County) in the summer of 1939. Grizzly Bears were killed-off by American immigrants because of the risks posed to humans and livestock. The Grizzly Bear has been EXTIRPATED from Arizona. \*14 (050907 - *Ursus arctos* subsp. *horriaeus* (Baird) and *perturbans* (Merriam)), 39 (*Ursus horribilus* - included the following note when referring to Grizzly Bears in the Tucson Area "Jack O'Connor told us of a kill in the Catalinas in 1915. Up until 1912, there were quite a few grizzly bears in the Catalinas and also the Galiuros. The Santa Cruz River bottom was a favorite hangout of these bears, all the way from Nogales to the Tucson area. We have a few authentic reports of desert grizzlies, but Jack talked with some old timers who hunted them in the river bottom." The following dates of last known "kills" were provided: Arizona on September 13, 1935 (however, there was a possible sighting in 1936); California in August 1922; New Mexico has two "last" kills one in the spring of 1923 and the other in 1933; Texas on November 2, 1890, and Utah on August 22, 1923. A grizzly bear was killed in the Sierra del Pinitos in Sonora Mexico, a few miles southeast of Nogales, Arizona, on June 18, 1955. This booklet included the listing of six subspecies taken in Arizona: *Ursus horribilus apache*, the Apache Grizzly; *Ursus horribilus arizonae-merriam*, the Arizona Grizzly; *Ursus horribilus baird*, the New Mexico Grizzly; *Ursus horribilus kennerlyi*, the Sonora Grizzly; *Ursus horribilus navajo*, the Navajo Grizzly, and *Ursus horribilus texensis*, the Texas Grizzly), 40 (*Ursus arctos* - Grizzly Bears were historically present in the Rincon and Santa Catalina Mountains and along the Santa Cruz River bottom from Nogales to Tucson), 55 (*Ursus horribilus* Ord. Grizzly Bear. Formerly throughout the mountainous areas of the state, now extinct in Arizona.), 73 (*Ursus horribilus*), 100 (species: *Ursus arctos*, color photograph), 106 (051207 - *Ursus arctos* subsp. *horribilus* Ord), **118** (*Ursus horribilus* - Distribution: Formerly statewide, now extinct in Arizona. Figure 92, Page 225)\*

*Ursus arctos* (see footnotes 14 and 100 under *Ursus arctos* subsp. *horribilus*)

*Ursus horribilus* (see *Ursus arctos* subsp. *horribilus*)

*Ursus horribilus apache* (see footnote 39 under *Ursus arctos* subsp. *horribilus*)

*Ursus horribilus arizonae-merriam* (see footnote 39 under *Ursus arctos* subsp. *horribilus*)

*Ursus horribilus baird* (see footnote 39 under *Ursus arctos* subsp. *horribilus*)

*Ursus horribilus kennerlyi* (see footnote 39 under *Ursus arctos* subsp. *horribilus*)

*Ursus horribilus navajo* (see footnote 39 under *Ursus arctos* subsp. *horribilus*)

*Ursus horribilus texensis* (see footnote 39 under *Ursus arctos* subsp. *horribilus*)

## Vespertilionidae: The Plain-nosed Bat Family

### ***Antrozous pallidus* (J.L. Le Conte): Pallid Bat**

COMMON NAMES: Murcielago Palid (Hispanic), Pallid Bat. HABITS: Feeds on flightless arthropods on the ground, insects, lizards and nectar. Roosts under bridges, buildings, in caves, crevices in cliffs, rocky outcrops, under slabs of rocks, hollow trees and tunnels. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14, **55** (recorded as *Antrozous pallidus* (Le Conte). Pallid Bat. Locally common throughout the state.), 73, 92 (color photograph), 100 (color photograph), 106 (053106), 118 (recorded as *Antrozous pallidus pallidus* (Le Conte) - Distribution: Statewide. Figure 25, Page 60)\*

### ***Antrozous pallidus* subsp. *pallidus* (J.L. Le Conte): Pallid Bat**

COMMON NAMES: Murcielago Pallid (Hispanic), Pallid Bat. HABITS: The species feeds on flightless arthropods on the ground, insects, lizards and nectar. Roosts under bridges, buildings, in caves, crevices in cliffs, rocky outcrops, under slabs of rocks, hollow trees and tunnels. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14, 55 (species: recorded as *Antrozous pallidus* (Le Conte). Pallid Bat. Locally common throughout the state.), 73 (species), 92 (species, color photograph of species), 100 (species, color photograph of species), 106 (053106 - species), **118** (recorded as *Antrozous pallidus pallidus* (Le Conte) - Distribution: Statewide. Figure 25, Page 60)\*

*Corynorhinus townsendii* (see *Plecotus townsendii*)

*Corynorhinus townsendii* subsp. *pallescens* (see *Plecotus townsendii* subsp. *pallescens*)

### ***Eptesicus fuscus* (Palisot de Beauvois): Big Brown Bat**

COMMON NAMES: Big Brown Bat, Murcielago Cafe' Grande (Hispanic). HABITS: The species feeds on insects. Roosts under bridges, in buildings, caves, crevices in cliff faces, mines and holes in saguaros and trees. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14, **55** (recorded as *Eptesicus fuscus* (Palisot de Beauvois). Big Brown Bat. Locally common throughout the state.), 73, 92 (color photograph), 100 (color photograph), 106 (053106), 118 (recorded as *Eptesicus fuscus pallidus* (Young) - Distribution: Statewide. Figure 20, Page 52)\*

### ***Eptesicus fuscus* subsp. *pallidus* (Young): Big Brown Bat**

COMMON NAMES: Big Brown Bat, Murcielago Cafe' Grande (Hispanic). HABITS: The species feeds on insects. Roosts under bridges, in buildings, caves, crevices in cliff faces, mines and holes in saguaros and trees. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14, 55 (species: recorded as *Eptesicus fuscus* (Palisot de Beauvois). Big Brown Bat. Locally common throughout the state.), 73 (species), 92 (species, color photograph of species), 100 (species, color photograph of species), 106

(053106 - species), **118** (recorded as *Eptesicus fuscus pallidus* (Young) - Distribution: Statewide. Figure 20, Page 52)\*

***Euderma maculatum* (J.A. Allen): Spotted Bat**

COMMON NAMES: Death's Head Bat, Jackass Bat, Murcielago Pinto (Hispanic), Pinto Bat, Spotted Bat. HABITS: Feeds on insects. Roosts in cracks and crevices in caves, cliffs and ledges, and under loose rock in rocky situations, possibly in close proximity to water. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: This bat is rarely encountered. Riparian habitats seem to be important. \*8, 14 (053007), 55 (recorded as *Euderma maculata* (J.A. Allen). Spotted Bat. Extremely rare; known from four specimens, Maricopa and Yuma counties.), 73, 92, 100 (color photograph), 106 (072306), **118** (recorded as *Euderma maculata* (J.A. Allen) - Distribution: Can be expected almost anywhere in the state although recorded from only four localities. Figure 23, Page 57)\*

***Lasionycteris noctivagans* (J.L. Le Conte): Silver-haired Bat**

COMMON NAMES: Murcielago Plateado (Hispanic), Silver-haired Bat. HABITS: Feeds on caddis flies, flies, moths and other insects. Uncommon tree dwelling bat found under bark, in bird nests, dead trees, fissures in rock ledges, tree hollows, and woodpecker holes. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14, 55 (recorded as *Lasionycteris noctivagans* (Le Conte). Silver-haired Bat. Uncommon solitary tree-dwelling bat found throughout the state at elevations above 5,000 feet), 73, 92 (color photograph), 100 (color photograph), 106 (053106 - family), **118** (recorded as *Lasionycteris noctivagans* (Le Conte) - Distribution: Probably statewide, at least during certain seasons of the year. Figure 18, Page 48)\*

***Lasiurus cinereus* (Palisot de Beauvois): Hoary Bat**

COMMON NAMES: Hoary Bat, Murcielago (Hispanic). HABITS: Feeds primarily on moths. Roosts in buildings, caves, mines, in dense foliage in shrubs and trees and under leaves on the ground. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14 (091308 - *Lasiurus cinereus cinereus* (Palisot de Beauvois)), **55** (recorded as *Lasiurus cinereus* (Palisot de Beauvois). Hoary Bat. Uncommon tree dwelling bat found throughout the state in the region of trees.), 73, 92 (color photograph), 100 (color photograph), 106 (genus - 053106), **118** (recorded as *Lasiurus cinereus cinereus* (Beauvois) - Distribution: Statewide. Figure 22, Page 55)\*

***Lasiurus cinereus* subsp. *cinereus* (Palisot de Beauvois): Hoary Bat**

COMMON NAMES: Hoary Bat, Murcielago (Hispanic). HABITS: Feeds primarily on moths. Roosts in buildings; caves; mines; in dense foliage in shrubs and trees, and under leaves on the ground. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14 (091308 - *Lasiurus cinereus cinereus* (Palisot de Beauvois)), 55 (species: recorded as *Lasiurus cinereus* (Palisot de Beauvois). Hoary Bat. Uncommon tree dwelling bat found throughout the state in the region of trees.), 73, 92 (species, color photograph of species), 100 (species, color photograph of species), 106 (053106 - genus), **118** (recorded as *Lasiurus cinereus cinereus* (Beauvois) - Distribution: Statewide. Figure 22, Page 55)\*

***Myotis californicus* (J.J. Audubon & Bachman): California Myotis Bat**

COMMON NAMES: California Bat, California Myotis, California Myotis Bat, Murcielago de California (Hispanic). HABITS: Feeds on arachnids and insects. Roosts in crevices and cracks in cliffs and canyon walls, caves, mine shafts and manmade shelters. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8 (*Myotis californicus* N. Miller), 14 (051007 - subsp. *californicus* (Audubon & Bachman)

and *stephensi* (Dalquest)), **55** (recorded as *Myotis californicus* Audubon & Bachman. California Myotis. Locally common throughout the state.), 73, 100 (color photograph), 106 (053106 - genus), 118 (recorded as *Myotis californicus californicus* (Audubon & Bachman) - Distribution: Eastern and southeastern Arizona, and *Myotis californicus stephensi* Dalquest - Distribution: Northern and western part of the state. Figure 16, Page 45)\*

***Myotis californicus* (J.J. Audubon & Bachman) subsp. *stephensi*: California Myotis Bat**

COMMON NAMES: California Bat, California Myotis, California Myotis Bat, Murcielago de California (Hispanic). HABITS: The species feeds on arachnids and insects. Roosts in crevices and cracks in cliffs and canyon walls, caves, mine shafts and manmade shelters. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8 (species: recorded as *Myotis californicus* N. Miller), 14 (051007 - subsp. *californicus* (Audubon & Bachman) and *stephensi* (Dalquest)), 55 (species: recorded as *Myotis californicus* Audubon & Bachman. California Myotis. Locally common throughout the state.), 73 (species), 100 (species), 106 (genus - 053106), **118** (recorded as *Myotis californicus stephensi* Dalquest - Distribution: Northern and western part of the state. Figure 16, Page 45)\*

***Myotis velifer* subsp. *brevis* Vaughan: Cave Myotis Bat**

COMMON NAMES: Cave Bat, Cave Myotis, Cave Myotis Bat, Mexican Brown Bat, Murcielago de Cueva (Hispanic), Southwestern Cave Myotis. HABITS: The species feeds on small moths and other small insects. Roosts in holes and pockets in caves, crevices, bridges, buildings, abandoned mine shafts, tunnels, and trees. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*14 (051007), 55 (species: recorded as *Myotis velifer* (J.A. Allen). Cave Myotis. Locally abundant in summer months at lower elevations (below 5,000 feet) throughout the southern and western parts of the state.), 73 (species), 92 (species), 100 (species, color photograph of species), 106 (053106 - genus), **118** (recorded as *Myotis velifer brevis* Vaughan - Distribution: Probably statewide. Figure 11, Page 37)\*

***Myotis yumanensis* (H. Allen): Yuma Myotis Bat**

COMMON NAMES: Murcielago de Yuma (Hispanic), Yuma Myotis, Yuma Myotis Bat. HABITS: Feeds on small insects. Roosts in caves, crevices and swallow nests in cliffs and rocky walls, tree cavities, under bridges and in buildings in close proximity to water. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14 (072306 - subsp. *yumanensis*), **55** (recorded as *Myotis yumanensis* (H. Allen). Yuma Myotis. Locally common, statewide in distribution.), 73, 100 (color photograph), 106 (072306 - genus with a listing of species), 118 (recorded as *Myotis yumanensis yumanensis* (H. Allen) - Distribution: Probably statewide at low and medium elevation. Figure 10, Page 36)\*

***Myotis yumanensis* subsp. *yumanensis* (H. Allen): Yuma Myotis Bat**

COMMON NAMES: Murcielago de Yuma (Hispanic), Yuma Myotis, Yuma Myotis Bat. HABITS: Feeds on small insects. Roosts in caves, crevices and swallow nests in cliffs and rocky walls, tree cavities, under bridges and in buildings in close proximity to water. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8, 14 (072306 - subsp. *yumanensis*), 55 (species: recorded as *Myotis yumanensis* (H. Allen). Yuma Myotis. Locally common, statewide in distribution.), 73 (species), 100 (species, color photograph of species), 106 (072306 - genus, listing of species), **118** (recorded as *Myotis yumanensis yumanensis* (H. Allen) - Distribution: Probably statewide at low and medium elevation. Figure 10, Page 36)\*

***Pipistrellus hesperus* (H. Allen): Western Pipistrelle Bat**

COMMON NAMES: Canyon Bat, Flittermouse, Murcielago del Poniente (Hispanic), Western Pipistrelle, Western Pipistrelle Bat. HABITS: Feeds on insects. Roosts in buildings, crevices in canyon walls, caves, cliffs, rocky outcrops, under rocks and in mine shafts. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8 (recorded as *Pipistrellus hesperus* N. Miller), 14 (051007 - subsp. *hesperus* (H. Allen) and *maximus* (Hatfield)), 55 (recorded as *Pipistrellus hesperus* (H. Allen). Western Pipistrelle. Common throughout the state.), 73, 100 (color photograph), 106 (053106 - genus), 118 (recorded as *Pipistrellus hesperus apus* Elliot - Distribution: Southeastern Arizona, and *Pipistrellus hesperus hesperus* (H. Allen) - Distribution: Northern and western Arizona. Figure 19, Page 49)\*

***Pipistrellus hesperus* (H. Allen) subsp. *apus* Elliot: Western Pipistrelle Bat**

COMMON NAMES: Canyon Bat, Flittermouse, Murcielago del Poniente (Hispanic), Western Pipistrelle, Western Pipistrelle Bat. HABITS: Feeds on insects. Roosts in buildings, crevices in canyon walls, caves, cliffs, rocky outcrops, under rocks and in mine shafts. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. \*8 (species: recorded as *Pipistrellus hesperus* N. Miller), 14 (051007), 55 (species: recorded as *Pipistrellus hesperus* (H. Allen). Western Pipistrelle. Common throughout the state.), 73 (species), 100 (species, color photograph of species), 106 (053106 - genus), 118 (recorded as *Pipistrellus hesperus apus* Elliot - Distribution: Southeastern Arizona. Figure 19, Page 49)\*

***Plecotus townsendii* (Cooper) (subsp. *pallescens* is the subspecies reported as occurring in Arizona): Pale Townsend's Big-eared Bat**

SYNONYMY: (for *P.t.* subsp. *pallescens*: *Corynorhinus townsendii* subsp. *pallescens* (Frost)). COMMON NAMES: Lump-nosed Bat, Mule-eared Bat, Murcielago de Townsend (Hispanic), Pale Townsend's Big-eared Bat, Western Big-eared Bat, Western Long-eared Bat, Western Lump-nosed Bat. HABITS: The species feeds on small moths and other small insects; roosts on open ceilings in caves and rock shelters, and under bridges and in water diversion tunnels, abandoned mines, mine tunnels and buildings. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: **The Pale Townsend's Big-eared Bat is a rather sedentary species that is extremely sensitive to human disturbance and the vandalism of roost caves.** \*14 (053007), 55 (recorded as *Plecotus townsendii* (Cooper). Lump-nosed Bat. Locally common throughout the state at elevations above 5,000 feet; rare at lower elevations.), 73, 92 (color photograph), 100 (color photograph), 118 (recorded as *Corynorhinus townsendii pallescens* Miller - Distribution: Probably more or less state wide but more abundant in the Upper Sonoran and Transitional Life Zones. Figure 24, Page 58)\*

***Plecotus townsendii* subsp. *pallescens* (Miller): Pale Townsend's Big-eared Bat**

SYNONYMY: *Corynorhinus townsendii* subsp. *pallescens* (Frost). COMMON NAMES: Lump-nosed Bat, Mule-eared Bat, Murcielago de Townsend (Hispanic), Pale Townsend's Big-eared Bat, Western Big-eared Bat, Western Long-eared Bat, Western Lump-nosed Bat. HABITS: The species feeds on small moths and other small insects; roosts on open ceilings in caves and rock shelters, and under bridges and in water diversion tunnels, abandoned mines, mine tunnels and buildings. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: **The Pale Townsend's Big-eared Bat is a rather sedentary species that is extremely sensitive to human disturbance and the vandalism of roost caves.** \*14 (053007), 55 (species: recorded as *Plecotus townsendii* (Cooper). Lump-nosed Bat. Locally common throughout the state at elevations above 5,000 feet; rare at lower elevations.), 73 (species), 92 (species, color photograph of species), 100 (species, color photograph of species), 118 (recorded as *Corynorhinus townsendii pallescens* Miller - Distribution: Probably more or less state wide but more abundant in the Upper Sonoran and Transitional Life Zones. Figure 24, Page 58)\*

## ACKNOWLEDGEMENTS

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(ANN) Anonymous

(JFW) John F. Wiens

(MBJ) Matthew B. Johnson, Program Manager and Curator of the Desert Legume Program - Boyce Thompson Southwestern Arboretum

(PCM) Personal Communication (Date)

(PDJ) Philip D. Jenkins, Assistant Curator of the University of Arizona Herbarium

(RGM) G. Meades

(TBL) Township Bird Listing

(WTK) William T. Kendall

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