

**A BOTANICAL INVENTORY
OF
SAN ANTONIO MISSIONS NATIONAL HISTORICAL PARK**

PART I
FOR THE PORTION IN BEXAR COUNTY, TEXAS

**RESULTS OF A 2001-2002 BOTANICAL INVENTORY
AND RELATED RESEARCH AND REVIEWS**

**FINAL REPORT
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REPORT PREPARED BY

WILLIAM R. CARR, BOTANIST

**TEXAS CONSERVATION DATA CENTER
THE NATURE CONSERVANCY**

Submitted under cooperative agreement number H5028 01 0268 to
U.S. National Park Service by

Mark Gallyoun
Program Coordinator
Texas Conservation Data Center
The Nature Conservancy
P.O. Box 1440
San Antonio, Texas 78295-1440

TABLE OF CONTENTS

THE NATIONAL PARK SERVICE INVENTORY AND MONITORING PROGRAM	1
SETTING	1
MACROHABITATS	2
OLD FIELD	2
UPLAND WOODLAND	3
RIPARIAN WOODLAND	3
OTHER HABITATS	4
SAMPLING METHODS	4
RESULTS AND ANALYSIS	5
CONCLUSION	6
SELECTED REFERENCES	7
APPENDIX 1: ANNOTATED LIST OF THE VASCULAR PLANTS OF SAN ANTONIO MISSIONS NATIONAL HISTORICAL PARK, BEXAR COUNTY, TEXAS	12
LITERATURE CITED IN APPENDIX 1	51
APPENDIX 2. TABULAR LIST OF THE VASCULAR PLANTS OF SAN ANTONIO MISSIONS NATIONAL HISTORICAL PARK, BEXAR COUNTY, TEXAS	52
LITERATURE CITED IN APPENDIX 2	80

LIST OF TABLES

Table 1. Soils of San Antonio Missions National Historical Park. Source: Taylor, Hailey & Richmond, 1962; information about classification was taken from Batte (1984), Taylor (1977) and Werchan, Lowther & Ramsey (1974).....	8
Table 2. Transects, macrohabitats represented, and dates of surveys. Locations of transects are indicated in Figure 1.....	9

LIST OF FIGURES

Figure 1. Location of 23 transects utilized during botanical survey of San Antonio Missions National Historical Park	11
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THE NATIONAL PARK SERVICE INVENTORY AND MONITORING PROGRAM

The National Park Service (NPS) Inventory and Monitoring (I&M) Program seeks to obtain baseline inventories of biotic and abiotic natural resource elements represented within each National Park Service unit. The inventories have 12 components and include such features as occurrence and distribution of vertebrate and invertebrate animals, soils, hydrology, and geology. Padre Island National Seashore (PAIS), Palo Alto Battlefield National Historic Site (PAAL), and San Antonio Missions National Historical Park (SAAN) are all included as part of the Gulf Coast Inventory and Monitoring Network (GCN). Under a cooperative agreement, the NPS has contracted the Texas Conservation Data Center (TxCDC) of The Nature Conservancy to conduct a comprehensive vascular plant species inventory for SAAN, and baseline herpetofaunal inventories for PAIS, PAAL, and SAAN. Two sections of this report address the plant inventory at SAAN, and a separate report addresses the herpetofaunal inventories.

The botanical inventory of SAAN was undertaken from July 2001 through October 2002 following the protocol outlined in the cooperative agreement. An inventory of the Rancho de las Cabras site, an administrative attachment of SAAN, was conducted concurrently. The results of that inventory are reported separately.

SETTING

SAAN is a discontinuous collection of small tracts located along a six-mile stretch of the San Antonio River, on the southern side of the city of San Antonio in south central Bexar County, Texas. The area lies on the San Antonio East and Southton quadrangles (both USGS, 1973). The park is focused around four eighteenth-century Spanish missions: Mission San José y San Miguel de Aguayo (built during the 1720's), Mission Nuestra Señora de la Purísima Concepción de Acuña (built early 1730's); Mission San Juan Capistrano (early 1730's), and Mission San Francisco de la Espada (early 1730's) (Torres, undated). In addition to the grounds of these four missions, the park includes considerable acreage of picnic grounds, abandoned cropland, homeless camps, and urban wastelands.

A separate unit of SAAN is the Rancho de las Cabras, also located along the San Antonio River but quite removed from the urban park. It occupies about 99 acres along the southwest bank of the river just south of Floresville in west-central Wilson County, Texas. The site is closed to the public except during occasional guided tours.

SAAN is located almost entirely on Quaternary alluvium of the historic and contemporary floodplains of the San Antonio River. This part of Bexar County is located southeast of (coastward from) the Cretaceous deposits that characterize the Edwards Plateau to the north and west, and no limestone outcrops occur within the park. Surface geology just beyond the river floodplain consists instead of Eocene mudstones, clays, and sandstones of the Wilcox and Midway groups, but outcrops of these rocks are scarce within the park proper. The Leona Formation, a collection of gravels and other outwash alluvium from Quaternary streams draining the Edwards Plateau, mantles a few higher spots along the edge of the floodplain (Brown, et al., 1983).

Topography in the area is more or less level except within the immediate vicinity of old river channels. (The current channel has been highly modified for flood control and is maintained by the San Antonio River Authority; it is not part of the park.) Elevation ranges from about 500 feet above mean sea level along an old river channel near Mission Espada to about 600 feet on the grounds of Mission Concepción, the northernmost of the missions.

Soils of the park are mapped on sheets 63 and 71 of the soil survey of Bexar County (Taylor, Hailey & Richmond, 1962). A small portion of an old athletic field west of Mission Concepción may lie on the northeast corner of sheet 62. Seven mapping units representing four range sites have been identified (Table 1). Soils in closest proximity to the river are mapped as Frio clay loam, a deep, friable, limy soil that is well drained except locally in depressions of old stream channels. This mapping unit is assigned to the Loamy Bottomland range site. Soils of older floodplain terraces are mapped as Lewisville silty clay, 1 to 3 percent slopes; Venus clay loam, 0 to 1 percent slopes or 1 to 3 percent slopes; or Karnes loam, 3 to 5 percent slopes. All are deep, well drained, calcareous soils assigned to the Clay Loam range site. Patrick soils, 3 to 5 percent slopes, are found on low escarpments between primary and secondary terraces along the river. These are shallow, dark, calcareous soils with a surface layer that varies from loam to gravelly loam or silty clay; they are assigned to the Shallow range site. The last mapping unit, Hilly gravelly land, is restricted to abandoned channels that presumably represent outwash of the Leona Formation; these channels occur on higher positions on the Missions area landscape. The unit consists of beds of caliche and strongly calcareous loamy soils; it is assigned to the Shallow Ridge range site.

MACROHABITATS

For the purposes of this survey, three macrohabitats were recognized: Old Field, Upland Woodland, and Riparian Woodland. Each is described below.

Old Field

This term applies to various agricultural fields on deep alluvial soils (primarily Frio clay loam and Venus clay loam) of essentially level river terraces. Most have probably been in some sort of cultivation or another for most of the last 200 years. Most are currently utilized as exotic hay meadow rather than cropland; most are planted to Bermudagrass (*Cynodon dactylon*) or Johnsongrass (*Sorghum halepense*) or both, and are harvested on an irregular basis. Some have not been harvested in several years and are now invaded by woody legumes, most notably mesquite (*Prosopis glandulosa*) and huisache (*Acacia minuate*), and other trees and shrubs such as hackberry (*Celtis laevigata* sensu lato). During early summer months, idle fields can support fruiting sockbane (*Torilis arvensis*) in such abundance that forced sampling results in the total loss of wardrobe. Other characteristic weeds include rescuegrass (*Bromus catharticus*), Japanese brome (*Bromus japonicus*), least snoutbean (*Rhynchosia minima*), quelite or Palmer amaranth (*Amaranthus palmeri*), silverleaf nightshade (*Solanum elaeagnifolium*) and firewheels (*Gaillardia pulchella*).

Included within this macrohabitat are several abandoned athletic fields near Mission Concepción and Mission San José. A modern soil survey would probably describe the soils in these sites as "urban," since they are quite compacted and probably contain considerable fill material. King Ranch

bluestem (*Bothriochloa ischaemum*) is the dominant species in these fields, although many natives tolerant of city life are also present.

Upland Woodland

This macrohabitat occupies calcareous clay loam (primarily Frio and Venus series) on alluvial terraces along the San Antonio River, i.e., the same sites that support Old Field macrohabitat when recently plowed and Riparian Woodland macrohabitat when ignored for forty or fifty years. The category of Upland Woodland macrohabitat was erected at the suggestion of NPS staff who needed something for sites with transitional vegetation dominated by huisache and mesquite, as happens when the area's old fields are not harvested or mown for a few years. To some eyes, the abundance of these two thorny legumes makes the vegetation resemble South Texas brush (Tamaulipan thornscrub), and the occasional presence of granjeno (*Celtis pallida*), desert yaupon (*Schaefferia cuneifolia*), brasil (*Condalia hookeri*) and pricklypear (*Opuntia engelmannii*) certainly enhances that look. But with time hackberry, the dominant tree of riparian woodlands, eventually overtops these tall shrubs, and most older examples of upland woodland also contain numerous pecan (*Carya illinoensis*) saplings. Pecan trees are never a component of Tamaulipan thornscrub. Nonetheless, surveying these sites was useful in that as transitional zones they contained species typical of the vegetation at either end of the successional spectrum. As such they are difficult to typify, since each site is different.

Riparian Woodland

This macrohabitat occupies deep, calcareous loamy clays on alluvial terraces and banks along old channels of the San Antonio River and its tributaries, such as Piedras (Sixmile) Creek. It usually occurs as a narrow strip paralleling the stream and terminating upstream at an artificial border created by agricultural field, parking lot or residential yard. Most riparian woodland sites are flooded at least briefly during and following heavy rains. Vegetation is a deciduous forest or woodland with a closed or nearly closed canopy dominated by sugar hackberry (*Celtis laevigata* var. *laevigata*), Chinaberry (*Melia azedarach*), pecan, and a few other trees. Box-elder maple (*Acer negundo*) reaches the canopy in some examples; black willow (*Salix nigra*) is locally frequent on stream banks. Where present, the shrub layer is usually dominated the exotic Japanese ligustrum (*Ligustrum japonicum*), but the native roughleaf dogwood (*Cornus drummondii*) is often frequent; vines such as peppervine (*Ampelopsis arborea*), Japanese honeysuckle (*Lonicera japonica*) and trumpet-creeper (*Campsis radicans*) are usually conspicuous. The ground layer in better examples contains large quantities of two native perennial bunchgrasses, Virginia wildrye (*Elymus virginicus*) and creek oats (*Chasmanthium latifolium*), and various sedges (*Carex* spp.). During spring months, woodland wildflowers such as widow's tears (*Tinantia anomala*), blue eyes (*Nemophila phacelioides*), and Canada wild-onion (*Allium canadense* var. *canadense*) are locally common; purple leatherflower (*Clematis pitcheri*) and Turks's cap (*Malvaviscus arboreus* var. *drummondii*) become conspicuous a bit later. In early summer, sockbane (*Torilis arvensis*) is common particularly in woodlands with no shrub layer, along margins and in light gaps. Giant ragweed (*Ambrosia trifida*) dominates such sites later in the year, while much of the ground layer in undisturbed sites is dormant.

Other Habitats

Most botanical inventories are limited to surveys of natural (feral) vegetation in macrohabitats such as those mentioned above, as well as microhabitats that might harbor oddities not found in the larger matrices. This project took inventories to a new level by also requiring a survey of cultivated plants, specifically those of the gardens on the grounds of each of the four missions. A survey of the natural vegetation of a managed area can be useful as a benchmark against which successional changes might be measured, but only if similar surveys are conducted at intervals in future years. A survey of the garden vegetation can detect change on a monthly basis. In fact, the survey of the Missions gardens detected just such a change. At Mission Concepción, a spot occupied one month by an old pomegranate (*Punica granatum*) was occupied the next month by a planting of numerous small cacti whose origin may well have been the garden department of a nearby discount store. Twenty years of conducting and reporting on botanical surveys on the wild lands of North America had not prepared the principal investigator for garden work of this sort, and what to report remains something of a mystery. Perhaps the most interesting aspect of the gardens of the San Antonio Missions is the horticultural history they reflect. Older gardens on Missions grounds tend to be dominated by a small suite of exotic trees, shrubs, vines and perennials that are almost impossible to kill, whether in or out of the central Texas garden landscapes; crepe-myrtle (*Lagerstroemia indica*), oleander (*Nerium oleander*), nandina (*Nandina domestica*) and chaste-bush (*Vitex agnus-castus*) are typical of this tradition. Recent plantings tend to use species that are promoted as "native," even though most are either exotic (from another country) or don't occur naturally in this part of Bexar County; autumn sage (*Salvia greggii*), red false-yucca (*Hesperaloe parviflora*), cenizo (*Leucophyllum frutescens*), rosemary (*Rosmarinus officinalis*), Mexican white oak (*Quercus polymorpha*) and showy caesalpinia (*Caesalpinia pulcherrima*) are characteristic of the new millenium garden at the Missions.

In addition to gardens, two other "microhabitats" were recognized during this survey. One microhabitat is the lawns (rather than gardens) of missions grounds, which are consistently planted to Bermudagrass. The admirable reluctance of the NPS to irrigate these lawns has allowed the incursion of various native and exotic lawn weeds, among which the native and showy hairy tube-tongue (*Justicia pilosella*) deserves mention as being particularly well adapted to conditions of fairly heavy foot traffic. Other common lawn weeds are quelite, verdolago de puerco (*Alternanthera caracasana*), straggler daisy (*Calypocarpus vialis*), southern pepperweed (*Lepidium austrinum*) and threelobe false-mallow (*Malvastrum coromandelianum*).

The other Missions-area microhabitat worthy of mention is an aquatic system, one involving the two channels of the San Antonio River and the acequias (canals) that move water from the old channels to the labores (farm fields) at the southern end of the park area. This system provides the only habitat for true aquatic plant species on the Missions properties. Notable among submersed aquatics is hydrilla (*Hydrilla verticillata*), a federal Noxious Weed; the dominant floating aquatic is water-hyacinth (*Eichhornia crassipes*), an equally aggressive (but not officially Noxious) weed.

SAMPLING METHODS

The project scope of work specified two monthly requirements: 1) the "entire grounds" of each of the four missions (Concepción, Espada, San José, and San Juan) were to be walked each month

during the growing season and every species, including garden plants, recorded; and 2) a total of 1000 meters of transects through each of the three macrohabitats (in undeveloped areas beyond the mission grounds) were to be walked each month during the growing season, which was defined as March through November, and each species noted. The agreement specified that each plant species would be photographed and the point of photograph documented by geographic coordinates (GPS points.) At the onset of the project, the NPS staff requested that those photographs be taken with a digital camera. That decision was later reversed by NPS, so photographs were taken as old-fashioned 35 mm slides instead. In late March 2002 (halfway through the project), Brett Carré of the SAAN staff cancelled the photo requirement altogether after deciding that documentation would be better accomplished with voucher specimens. These changes considerably increased the amount of time and effort required completing the project.

RESULTS AND ANALYSIS

Fieldwork was conducted on a total of 45 days over the two-year period. The gardens and grounds of the four missions were walked every month from July through October 2001 and March through October 2002. Twenty-three transect sites were utilized (Figure 1). Eight transects were placed in Old Field macrohabitat, nine transects ran through Upland Woodland macrohabitat, and six transects were in Riparian Woodland macrohabitat (Table 2). Because of the small size of park properties, several transects in different areas had to be combined in order to meet the 1000-meter monthly requirement for each macrohabitat. Every plant taxon growing along each transect was noted each month.

A total of 487 plant taxa were detected, including 412 wild (native or naturalized) taxa that were observed on transects through macrohabitats and 75 taxa that were observed only in gardens. This information is presented in two fashions in appendices to this report. Appendix 1 is an annotated list of the flora of the missions area containing, among other things, scientific names, naming authorities, synonymy, habitat descriptions, estimates of local abundance, and specimen voucher / photo voucher citations. Appendix 2 omits most of this information but places the taxa in a table that indicates the macrohabitats in which they occur.

An earlier survey of the flora of the missions properties reported 290 plant taxa (Van Auken, 1981). The lower number of taxa reported in that survey can be explained by the fact that field work was conducted only in the spring; the investigators never had a chance to observe and add summer- and fall-blooming taxa. Of those 290 taxa, 63 were not observed during the current survey. Any number of factors might explain this apparent loss of species: alteration of gardens and removal of old cultivated plant material, destruction of wetlands in an old river channel near Mission Espada, natural succession from old field to riparian woodland, among others.

In order to satisfy the photography component of the agreement, slides representing 593 taxa were delivered to the National Park Service in conjunction with this report. This number includes plant taxa found on the Missions grounds and associated areas in San Antonio, on the Rancho de las Cabras west of Floresville, or at both sites.

About 481 voucher specimens were collected from the Missions and were originally deposited at the Plant Resources Center of The University of Texas at Austin (TEX-LL). The NPS recently

indicated that those specimens will be withdrawn from that public herbarium and housed elsewhere. Label data from each of the 481 specimens will be provided to the NPS in the ANCS+ database in conjunction with this report.

Plant families containing the largest number of taxa in the Missions area are the sunflower family (Asteraceae), with 62 taxa encountered in wild (non-garden) areas; the grass family (Poaceae), with 61 taxa encountered in wild (non-garden) areas; the legume family (Fabaceae), with 16 taxa encountered in wild (non-garden) areas; and the spurge family (Euphorbiaceae), with 13 taxa encountered in wild (non-garden) areas. These are the same families that Van Auken (1981) reported as best represented.

None of the 412 wild plant taxa is of federal concern, nor are any of the 75 taxa that were observed only in gardens. No federally-listed Threatened or Endangered plant taxa are known from Bexar County, and none occur in the immediate vicinity. Texas wild rice (*Zizania texana*), a federally-listed Endangered aquatic grass, occurs about 55 miles to the northeast, in the cool spring water of the San Marcos River in Hays County; the closest population of Tobusch fishhook cactus (*Sclerocactus brevihamatus* var. *tobuschii*), also an Endangered taxon, lies about 75 miles to the west-northwest in western Bandera County. None of the rare plants of Texas can be expected to occur in any of the habitats provided at SAAN. The previous botanical survey of the park came to the same conclusion (Van Auken, 1981).

None of the 412 wild plant taxa is ranked G3/T3 or rarer by the TxCDC and/or NatureServe. In other words, none of the plant taxa in the missions area is of conservation concern to The Nature Conservancy or NatureServe.

Of the 412 wild members of the missions area flora, only 2 taxa—Drummond ruellia (*Ruellia drummondiana*) and hill prickly-poppy (*Argemone aurantiaca*), a mere 0.4 percent of the flora—are endemic to (found only in) Texas. This is a very low percentage, but it is not unexpected given the weedy nature of the missions area flora. Compare this percentage to the flora of Travis County, in which 5 percent of the taxa (78 of 1501 overall) are endemic to the state.

Of the 412 taxa observed in the wild, about 320 (78 percent) are native to the area and 91 (22 percent) are exotic, i.e., naturally occurring but not native to the area. The large percentage of exotic species is typical of disturbed sites in urban areas.

CONCLUSION

Two detailed assessments of the flora of SAAN have been conducted during the last 25 years. The first survey concluded that the vegetation of the missions area is in various stages of secondary succession due to the many disturbances to which the area had been subjected, and that its flora consists of plant taxa typical of disturbed sites (Van Auken, 1981). The first survey reported that no endangered or threatened plant taxa were found on the missions properties (Van Auken, 1981). The current survey employed 45 days of fieldwork (and twice as many days of office and herbarium work) to come to the same conclusions. Hopefully the question of whether the SAAN supports any vegetation or plant taxa of interest can now be laid to rest.

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Table 1. Soils of San Antonio Missions National Historical Park. Source: Taylor, Hailey & Richmond, 1962; information about classification was taken from Batte (1984), Taylor (1977) and Werchan, Lowther & Ramsey (1974).

Symbol	Mapping Unit	Classification	Range Site
Fr	Frio clay loam	Cumulic Haplustolls	Loamy Bottomland
HgD	Hilly gravelly land	n/a	Shallow Ridge
KaC	Karnes loam, 3 to 5 percent slopes	Typic Ustochrepts	Clay Loam
LvB	Lewisville silty clay, 1 to 3 percent slopes	Typic Haplustolls	Clay Loam
PaC	Patrick soils, 3 to 5 percent slopes	Typic Calciustolls	Shallow
VcA	Venus clay loam, 0 to 1 percent slopes	Typic Calciustolls	Clay Loam
VcB	Venus clay loam, 1 to 3 percent slopes	Typic Calciustolls	Clay Loam

Table 2. Transects, macrohabitats represented, and dates of surveys. Locations of transects are indicated in Figure 1.

No.	Macrohabitat	Dates Surveyed
1	Riparian Woodland	6 Jun 2001, 2 Aug 2001, 20 Sep 2001, 19 Mar 2002, 26 Apr 2002, 16 May 2002, 12 Jun 2002, 22 Jul 2002, 6 Aug 2002, 4 Sep 2002, 25 Oct 2002
2	Upland Woodland	6 Jun 2001, 20 Sep 2001, 19 Oct 2001, 19 Mar 2002, 26 Apr 2002, 16 May 2002, 12 Jun 2002, 22 Jul 2002, 17 Sep 2002
3	Riparian Woodland	11 Jul 2001, 13 Sep 2001, 16 Oct 2001, 14 Mar 2002, 24 Apr 2002, 12 Jun 2002, 10 Jul 2002, 1 Aug 2002, 17 Sep 2002, 7 Oct 2002
4	Upland Woodland	12 Jul 2001, 25 Apr 2002
5	Riparian Woodland	12 Jul 2001, 7 Aug 2001, 16 Oct 2001, 15 Mar 2002, 25 Apr 2002, 16 May 2002, 18 Jun 2002, 10 Jul 2002, 7 Aug 2002, 4 Sep 2002, 7 Oct 2002
6	Old Field	12 Jul 2001, 1 Aug 2001, 23 May 2002, 12 Jun 2002, 23 Jul 2002
7	Upland Woodland	12 Jul 2001
8	Riparian Woodland	12 Jul 2001, 7 Aug 2001, 15 Mar 2002, 25-26 Apr 2002, 11 Jun 2002, 10 Jul 2002
9	Upland Woodland	12 Jul 2001, 9 Aug 2001, 19 Jun 2002, 9 Aug 2002, 25 Oct 2002
10	Old Field	17 Jul 2001, 1 Aug 2001, 5 Sep 2001, 15 Mar 2002, 24 Apr 2002, 12 Jun 2002, 9 Jul 2002, 23 Jul 2002, Aug 2002, 4 Sep 2002, 4 Oct 2002
11	Riparian Woodland	17 Jul 2001, 15 May 2002
12	Old Field	19 Jul 2001, 26 Apr 2002, 10 Jul 2002
13	Upland Woodland	19 Jul 2001, 26 Apr 2002, 10 Jul 2002
14	Riparian Woodland	19 Jul 2001, 3 Aug 2001, 15 Mar 2002, 18-19 Jun 2002
15	Old Field	20 Jul 2001, 16 Oct 2001, 20 Mar 2002, 25 Apr 2002, 9 Jul 2002, 17 Sep 2002
16	Old Field	23 Jul 2001, 19 Mar 2002, 15 May 2002
17	Old Field	23 Jul 2001

No.	Macrohabitat	Dates Surveyed
18	Old Field	31 Jul 2001, 22 Aug 2001, 19 Oct 2001, 19 Mar 2002, 24 Apr 2002, 1 Aug 2002, 17 Sep 2002
19	Upland Woodland	31 Jul 2001
20	Old Field	9 Aug 2001
21	Upland Woodland	13 Aug 2001
22	Upland Woodland	13 Aug 2001, 16 Oct 2001, 20 Mar 2002, 25 Apr 2002, 6 Aug 2002, 20 Sep 2002
23	Upland Woodland	20 Mar 2002, 12 Jun 2002

Figure 1. Location of 23 transects utilized during botanical survey of San Antonio Missions National Historical Park.

Appendix 1: Annotated List of the Vascular Plants of San Antonio Missions National Historical Park, Bexar County, Texas

This list includes all plant taxa observed on properties of the San Antonio Missions National Historical Park by Dr. W. O. Van Auken in 1981 (preceded by asterisks) and/or by the current author between July 2001 and October 2002. Scientific names of naturally occurring plants follow Jones, Wipff & Montgomery (1997); pertinent synonyms, particularly those used in Correll & Johnston (1970) and/or Van Auken (1981), are provided in brackets. Scientific names of cultivated plants follow Bailey Hortorium (1976). Common names follow Diggs, Lipscomb, & O'Kennon (1999); Hatch, Gandhi & Brown (1990); and various other sources.

FERNS AND FERN ALLIES

Equisetaceae -- Horsetail Family

**Equisetum laevigatum* A. Braun. Horsetail. Native perennial. Rare in area but locally common on bank of old river channel upstream from old Espada Dam in Espada Park. Voucher: Carr 19881. Photo: SAM-205. Line drawing: Diggs et al. (1999), p. 177.

Pteridaceae -- Maidenhair Fern Family

**Adiantum capillus-veneris* L. Maidenhair-fern. Native perennial. Rare in area but conspicuous in a few wet spots, such as the face of Espada Dam and leak zones on Espada Aqueduct; also in alluvial soil on bank of Sixmile (Piedras) Creek just downstream from aqueduct. Voucher: Carr 20810. Photo: SAM-837. Line drawing: Diggs et al. (1999), p. 197.

Astrolepis sinuata (Lag. ex Swartz) Benham & Windham [*Notholaena sinuata* (Lag. & Segura ex Swartz) Kaulf.] Wavyleaf cloakfern. Native perennial. Rare, one plant about 7 ft. up on N-facing rock wall on inside of SW corner of Mission San Juan compound, at N29°19.916', W098°27.319' +/- 42.8 ft. Observed in desiccated condition on 3 August 2001, removed by maintenance crew later that month; not seen in 2002. Photo: SAM-408.

Cheilanthes alabamensis (Buckl.) Kunze. Alabama lipfern. Native perennial. Rare in area, noted only on cemented alluvium exposed on walls of shallow box canyon (or old quarry?) on N side of I-410 just W of San Antonio River floodplain, at N29°19.397', W098°27.211' +/- 25.0 ft. Voucher: Carr 21362. Photo: SAM-1169. Line drawing: Diggs et al. (1999), p. 197.

Cheilanthes horridula Maxon. Hairy lipfern. Native perennial. Rare, noted only on rock and mortar of walls of Mission Concepción. Voucher: Carr & Benesh 19811. Photo: SAM-429. Line drawing: Diggs et al. (1999), p. 197.

Cheilanthes lindheimeri Hook. Lindheimer lipfern. Native perennial. Rare, noted only on rock wall at SE corner of Mission Concepción, where plants were in desiccated condition during 2001; presumably removed during restoration in 2002. Voucher: Carr & Benesh 19810. Photo: SAM-230.

Thelypteridaceae -- Shield-fern Family

**Thelypteris ovata* St. John var. *lindheimeri* (Christensen) A. R. Smith [*Thelypteris kunthii* of Texas authors, in part]. Lindheimer shield-fern, river fern. Native perennial. Occasional on banks of Acequia de Espada at Espada Aqueduct and N of Ashley Rd. Voucher: Carr 20926. Photo: SAM-897. Line drawing: Diggs et al. (1999), p. 205.

CONIFERS

Cupressaceae -- Cypress Family

Juniperus ashei Buchh. Ashe juniper. Native tree or large shrub. One planted shrub at Mission San Juan and another shrub in an old field on Villamain Rd. appear to be this species. Voucher: Carr 21284. Photo: SAM-255. Line drawing: Diggs et al. (1999), p. 205.

**Juniperus virginiana* L. Eastern red cedar. Native tree. One planted tree at Mission Concepción appears to be this species; absent from natural landscapes. Photo: SAM-226. Line drawing: Diggs et al. (1999), p. 205.

Taxodiaceae -- Baldcypress Family

**Taxodium distichum* (L.) Rich. Baldcypress. Native tree. Rare in area. One large tree along old river channel at Espada Park near old Espada Dam; at least three small trees along old river channel just NE of Mission Espada, at N29°19.157', W098°27.020'; recently planted at Mission San José. Voucher: Carr & Benesh 20913. Photo: SAM-208. Line drawing: Diggs et al. (1999), p. 209.

FLOWERING PLANTS

Acanthaceae -- Acanthus Family

Carlowrightia texana J. Henrickson & T. Daniel. Texas carlowrightia. Native perennial. Occasional in old fields, athletic fields and other open areas. Vouchers: Carr 19769; Carr 19847; Carr 21125. Photo: SAM-117. Line drawing: Diggs et al. (1999), p. 215.

Dicliptera brachiata (Pursh) Spreng. Dicliptera. Native perennial. Occasional in riparian woodlands. Vouchers: Carr & Gallyoun 20351; Carr 21361. Photo: SAM-564. Line drawing: Diggs et al. (1999), p. 215.

Justicia brandegeana Wasm. & Smith [*Beloperone guttata* Brandegee]. Shrimp plant. Introduced perennial. Planted in landscapes at Mission Concepción, Mission Espada, Mission San Juan. Photo: SAM-961.

**Justicia pilosella* (Nees) Hilsenbeck [*Siphonoglossa pilosella* Nees]. Hairy tubetongue. Native perennial. Common in lawns, athletic fields and other open areas. Voucher: Carr 19864. Photo: SAM-148. Line drawing: Diggs et al. (1999), p. 217.

Justicia spicigera Schlect. Orange justicia, mohintli. Introduced shrub (or hardy perennial). One large shrub or hardy perennial in front of restrooms on north side of church, Mission San José, at N29°21.754', W098°28.783' +/- 22.2 ft. Photo: SAM-349.

Ruellia brittoniana E. Leonard. Britton ruellia, Britton wild-petunia. Introduced perennial. In garden in front of visitor center at Mission San José. In addition to the typical tall form, the dwarf "Katie's" cultivar is also present. Photo: SAM-187. Line drawing: Diggs et al. (1999), p. 215.

Ruellia drummondiana (Nees) Gray. Drummond wild-petunia. Native perennial. Rare in riparian woodlands. Voucher: Carr 21224. Photo: SAM-1083. Line drawing: Diggs et al. (1999), p. 217.

Ruellia metzae Tharp. Sister Mary Claire Metz's wild-petunia, white ruellia. Native perennial. Apparently rare in area, noted only in old field on San Juan Dam tract. Voucher: Carr 21159. Photo: SAM-965. Line drawing: Diggs et al. (1999), p. 217.

Ruellia nudiflora (Gray) Urban var. *runyonii* (Tharp & Barkley) B. L. Turner [*Ruellia runyonii* Tharp & Barkley]. Runyon ruellia. Native perennial. Common in upland woodlands and old fields. Vouchers: Carr 19807; Carr 19836; Carr 19856. Photo: SAM-046.

**Ruellia yucatana* (Leonard) Tharp & Barkley [*Ruellia nudiflora* (Engelm. & Gray) Urban var. *yucatana* Leonard]. Yucatan wild-petunia. Native perennial. Reported by Van Auken (1981) from all mission

tracts. According to Turner (1991), *Ruellia yucatana* is restricted to the southern tip of Texas, south of a line between Laredo and Corpus Christi.

Aceraceae -- Maple Family

- **Acer negundo* L. var. *texanum* F. Pax. Box-elder maple. Native tree. Common in riparian woodlands. Voucher: Carr 19874. Photo: SAM-505. Line drawing: Diggs et al. (1999), p. 223.

Agavaceae -- Agave Family

- Agave* sp. (*Agave americana* L.?). Introduced shrub. One shrub (near old home site?) in mesquite woodland on N side of I-410 just W of San Antonio River, at N29°19.393', W098°27.218' +/- 23.6 ft. Photo: SAM-679.
- Agave* sp. (*Agave lophantha* Schiede?). Introduced shrub. Planted in landscapes at Mission Concepción, Mission San Juan and Mission San José. Photo: SAM-343.
- Agave* sp. (*Agave scabra* Salm-Dyck?). Introduced shrub. Planted in garden at Mission San José. Photo: SAM-1052.
- Agave* sp. Agave. Introduced shrub. Small (at present?) species; leaves grayish, concave in cross-section (not flat), with scattered dark slender recurved spines along margins. Planted in front of church at Mission San Juan. GPS point: N29°19.948', W098°27.321' +/- 35.7 ft. Photo: SAM-254.
- Agave* sp. Agave. Introduced shrub. Larger than preceding species; leaves greener, flat and erect in lower portion, slightly convex and curved outward at apex, with smooth margins (at least on upper half). Planted in front of church at Mission San Juan. GPS point: N29°19.948', W098°27.324' +/- 26.1 ft. Photo: SAM-251.
- **Dasyllirion texanum* Scheele. Sotol. Shrub, native to western Bexar County and westward, introduced here. Planted in garden and landscape at Mission San José. Photo: SAM-975.
- **Hesperaloe parviflora* (Torr.) Coult. Red-flower yucca. Introduced shrub. Planted in landscapes at Mission Concepción, Mission Espada and Mission San José. Photo: SAM-276. Line drawing: Diggs et al. (1999), p. 1081.
- Yucca baccata* Torr. Datil yucca. Introduced shrub. According to the flora-and-fauna binder at the visitor center, this species is planted in front of the convento at Mission San José. Not observed during this survey.
- Yucca constricta* Buckl. Buckley yucca. Native shrub. An essentially acaulescent yucca with a rosette of numerous leaves to ca. 4 dm long and to ca. 2 cm wide (usually ca. 1-1.5 cm wide), with white corneous margins sporting curling white fibers; scapes usually at least 2 m tall; inflorescence a panicle (rather than a raceme). Occasional in upland woodlands and old fields. None of these plants bore fruit during 2001. Voucher: Carr 20928. Photo: SAM-041.
- Yucca pallida* McKelvey. Pallid yucca, blue yucca. Introduced shrub. Planted in newer garden at Mission San José; absent from the natural landscape. Photo: SAM-247. Line drawing: Diggs et al. (1999), p. 1085.
- **Yucca treculeana* Carr. Spanish dagger. Native shrub. Occasional in upland woodlands. Some of the "Spanish daggers" planted in landscapes around various missions could also be this species, or they may be *Yucca torreyi* Shafer, a similar plant native to western Texas. Photo: SAM-322. Line drawing: Diggs et al. (1999), p. 1089.
- **Yucca tenuistyla* Trel. White-rim yucca. Native shrub. Reported by Van Auken (1981) from Mission San José and Mission Espada.
- Yucca* sp. Flaccid-leaf yucca. Introduced shrub. Acaulescent; leaves flaccid, to ca. 6 cm wide and .75 m long. Planted in landscape at Mission San José and Mission Concepción.. According to flora and fauna binder at visitor center, these plants are *Yucca recurvifolia* Salisb. They might also be *Yucca gloriosa* L. Photo: SAM-1097.

Yucca sp. *Yucca*, Spanish dagger. Introduced shrub. A trunked yucca, usually branched above, to 3-4 meters tall. Planted on grounds on S side of Mission San José compound, NW of visitor center. GPS point: N29°21.637', W098°28.826' +/- 21.3 ft. Photo: SAM-282.

Alismaceae -- Arrowleaf Family

**Sagittaria graminea* Michx. Grassy arrowhead. Native perennial. Reported by Van Auken (1981) from Mission Espada and Espada / Acequia Park.

Sagittaria platyphylla (Engelm.) J. G. Smith. Delta arrowleaf. Native perennial. Occasional in Acequia de Espada just N and S of Ashley Rd. and at Mission Espada. Vouchers: Carr 19833; Carr 21156. Photo: SAM-964. Line drawing: Diggs et al. (1999), p. 1091.

Aloeaceae -- Aloe Family

Aloe sp. *Aloe*. Introduced perennial. Planted in front of chapel at Mission San Juan. Photo: SAM-940.

Amaranthaceae -- Amaranth Family

**Alternanthera caracasana* H. B. K. Verdolago de puerco, mat chaff-flower. Native perennial. Common weed in unshaded lawns. Voucher: Carr 19772. Photo: SAM-256. Line drawing: Diggs et al. (1999), p. 223.

**Alternanthera philoxeroides* (Mart.) Grisebach. Alligator-weed. Naturalized perennial. Occasional along Acequia de Espada at Espada Park and near Espada Aqueduct; also in San Antonio River in general vicinity. Voucher: Carr & Benesh 21051. Photo: SAM-905. Line drawing: Diggs et al. (1999), p. 223.

**Amaranthus crassipes* Schlecht. Pigweed. Native annual. Reported by Van Auken (1981) from all mission sites.

**Amaranthus palmeri* S. Wats. Careless-weed, redroot. Native annual. Frequent to common in old fields and other open disturbed sites. Vouchers: Carr 19780; Carr 19803. Photo: SAM-034. Line drawing: Diggs et al. (1999), p. 229.

Amaranthus polygonoides L. [*Amaranthus berlandieri* (Moq.) Uline & Bray; *Amaranthus polygonoides* L. var. *berlandieri* (Moq.) Thell.] Berlandier amaranth, tropical amaranth. Native annual. Frequent in dry open disturbed sites, particularly at Mission San José. Vouchers: Carr 19890; Carr 19779. Photo: SAM-941. Line drawing: Diggs et al. (1999), p. 229.

Celosia nitida Vahl. Albahaca. Native perennial. Rare in riparian woodlands, noted in only a few spots along Espada Aqueduct. Voucher: Carr & Benesh 21054. Photo: SAM-898.

Anacardiaceae -- Pistachio Family

Rhus lanceolata (Gray) Britt. [*Rhus copallina* L. var. *lanceolata* Gray]. Flameleaf sumac. Introduced tree. One planted tree at head of San Juan Woodland Trail near SW corner of Mission San Juan complex. Photo: SAM-176. Line drawing: Diggs et al. (1999), p. 235.

**Toxicodendron radicans* (L.) Kuntze [*Toxicodendron rydbergii* (Small ex Rydb.) Greene; *Rhus radicans* var. *vulgaris* (Michx.) A. DC.]. Poison ivy. Native woody vine. Common in riparian and upland woodlands. Voucher: Carr 20776. Photo: SAM-826.

Apiaceae (Umbelliferae) -- Carrot Family

**Ammi majus* L. Bishop's-weed. Introduced perennial. Rare along margins of riparian woodlands; more common, at least during April 2002, on graded banks of new channel of San Antonio River.

- Reported by Van Auken (1981) from Espada / Acequia Park. Vouchers: Carr 20813; Carr 20822. Line drawing: Diggs et al. (1999), p. 237.
- Bowlesia incana* Ruiz & Pav. Hoary bowlesia. Native annual. Occasional to frequent in shaded sites in riparian woodlands, but also in drier, sunnier sites on mission lawns. Vouchers: Carr 20451; Carr 20475. Photo: SAM-694. Line drawing: Diggs et al. (1999), p. 245.
- Chaerophyllum tainturieri* Hook. var. *dasycarpum* Hook. ex Wats. Hairyfruit chervil. Native annual. Common during spring in riparian woodlands, old fields and disturbed sites. Voucher: Carr 20462. Photo: SAM-576. Line drawing: Diggs et al. (1999), p. 247.
- Chaerophyllum tainturieri* Hook. var. *tainturieri*. Chervil. Native annual. Common during spring in riparian woodlands. Voucher: Carr 20550. Photo: see SAM-576. Line drawing: Diggs et al. (1999), p. 247.
- Cicuta maculata* L. var. *maculata* [incl. *Cicuta mexicana* Coult. & Rose]. Water hemlock. Native perennial. Rare along partially shaded bank of old river channel above old Espada Dam in Espada Park. Voucher: Carr 19792. Photo: SAM-913. Line drawing: Diggs et al. (1999), p. 247.
- **Coriandrum sativum* L. Cilantro, coriander. Introduced annual. Reported by Van Auken (1981) from Mission Espada. Line drawing: Diggs et al. (1999), p. 251.
- **Daucus pusillus* Michx. Little carrot, rattlesnake weed. Native annual. Occasional in old fields and upland woodlands; reported by Van Auken (1981) from Mission Espada. Photo: SAM-773. Line drawing: Diggs et al. (1999), p. 251.
- **Hydrocotyle umbellata*. Water-penny. Native perennial. Reported by Van Auken (1981) from Espada / Acequia Park, perhaps erroneously. All *Hydrocotyle* observed during this survey belong to the next species. Line drawing: Diggs et al. (1999), p. 257.
- Hydrocotyle verticillata* Thunb. var. *triradiata* (Rich.) Fern. Whorled water-penny. Native perennial. Occasional on banks of waterways, e.g., along creek at old Espada Dam and along Sixmile (Piedras) Creek below Espada Aqueduct. Vouchers: Carr 20768; Carr & Benesh 21052. Photo: SAM-893. Line drawing: Diggs et al. (1999), p. 257.
- Sanicula canadensis* L. Canada snakeroot. Native perennial. Rare in riparian woodlands along San Juan Woodland Trail and Acequia de Espada. Voucher: Carr 20927. Line drawing: Diggs et al. (1999), p. 261.
- Scandix pecten-veneris* L. Venus'-comb, shepherd's-needle. Naturalized annual. Occasional to frequent during spring in riparian woodlands. Vouchers: Carr 20446; Carr 20458. Photo: SAM-598. Line drawing: Diggs et al. (1999), p. 261.
- Spermolepis inermis* (Nutt. ex DC.) Math. & Const. Smooth scaleseed. Native annual. Detected only in bluestem grassland at 9243 Villamain, but doubtless present elsewhere. Voucher: Carr 20757. Line drawing: Diggs et al. (1999), p. 261.
- **Torilis arvensis* (Huds.) Link. Tall sockbane, hedge-parsley. Naturalized annual. Abundant in upland woodlands; common in old fields and on mission lawns; frequent to common in more open parts of riparian woodlands. Voucher: Carr 20821. Photo: SAM-801. Line drawing: Diggs et al. (1999), p. 263.
- Torilis nodosa* (L.) Gaertn. Low sockbane, knotted hedge-parsley. Naturalized annual. Occasional in old fields; also a weed in lawn near parking lot at Mission Concepción. Vouchers: Carr 20536; Carr 20757. Photo: SAM-713. Line drawing: Diggs et al. (1999), p. 263.

Apocynaceae -- Dogbane Family

- Catharanthus roseus* (L.) G. Don. Rose periwinkle. Introduced annual or perennial. Planted in garden in front of church at Mission Espada. Photo: SAM-301. Line drawing: Diggs et al. (1999), p. 267.
- **Nerium oleander* L. Oleander. Introduced shrub. Planted in landscapes at several missions. Photo: SAM-830.
- Trachelospermum asiaticum* (Siebold & Zucc.) Nakai. Asian jasmine. Introduced creeping shrub. Planted in new gardens at Mission San José. Photo: SAM-274. Line drawing: Diggs et al. (1999), p. 267.

Vinca major L. Big-leaf periwinkle. Introduced woody vine. Rare in project area, a few feral plants in riparian woodland on slope just N of Mission Espada. Observed on 15 March 2002; absent from site on 19 June 2002, perhaps due to removal. Line drawing: Diggs et al. (1999), p. 271.

Aquifoliaceae -- Holly Family

Ilex decidua Walt. Possum haw, deciduous holly, winterberry. Native shrub. Rare in riparian woodlands; planted at Mission Concepción. Voucher: Carr & Benesh 21055. Photo: SAM-899. Line drawing: Diggs et al. (1999), p. 271.

Ilex vomitoria Ait. Yaupon. Native shrub. Planted in new gardens between parking lot and visitor center at Mission San José (some of these plants are dwarf cultivars); also planted at Mission Concepción. Photo: SAM-278. Line drawing: Diggs et al. (1999), p. 271.

Araceae -- Arum Family

**Colocasia esculenta* L. Elephant-ears. Naturalized perennial. Locally abundant on banks of old river channel above Espada Dam, just upstream from San Juan Woodland Trail (where possibly increasing in abundance), and at various locations along Acequia de Espada. Voucher: Carr & Gallyoun 20355. Photo: SAM-210. Line drawing: Diggs et al. (1999), p. 1097.

Araliaceae -- Aralia Family

Hedera canariensis Willd. Algerian ivy. Introduced woody vine. Climbing on stone wall of shrine (and into nearby pecan) NW of Mission Concepción. Identification courtesy of flora and fauna booklet at visitor center; very similar to English ivy (*Hedera helix* L.). Photo: SAM-239.

Arecaceae (Palmae) -- Palm Family

**Sabal minor* (Jacq.) Pers. Dwarf palmetto. Native shrub. Reported by Van Auken (1981) from Mission San Juan and Espada / Acequia Park. All *Sabal* observed in the Missions area during this survey, both as specimen trees in landscapes and as escapes in riparian woodlands, are a trunked species presumed to be *Sabal mexicana*. Line drawing: Diggs et al. (1999), p. 1097.

**Sabal mexicana* Mart. Sabal palm. Naturalized tree. Planted in landscapes around various missions; escaped into riparian woodlands along old river channel just NW of Mission San Juan and along old river channel just NE of Mission Espada. Juvenile plants likely to be mistaken for *Sabal minor*. Photo: SAM-264.

Aristolochiaceae -- Birthwort Family

Aristolochia erecta L. [*Aristolochia longiflora* Engelm. & Gray]. Swanflower, grassleaf pipevine. Native perennial. Rare in mission lawns, athletic fields, and old fields with relatively short or sparse cover. Photo: SAM-123.

Asclepiadaceae -- Milkweed Family

Asclepias curassavica L. Butterflyweed, butterfly milkweed. Introduced perennial. Planted in garden at Mission Concepción. Photo: SAM-924.

Asclepias oenotheroides (Cham.) Schlecht. Hierba de zizotes. Native perennial. Occasional in old fields. Voucher: Carr & Price 20988. Photo: SAM-390. Line drawing: Diggs et al. (1999), p. 279.

- Cynanchum barbigerum* (Scheele) Shinn. Bearded swallow-wort. Native herbaceous perennial vine. Rare in upland woodlands. Voucher: Carr 21200. Photo: SAM-794. Line drawing: Diggs et al. (1999), p. 281.
- Cynanchum racemosum* (Jacq.) Jacq. var. *unifarium* (Scheele) Sundell [*Cynanchum unifarium* (Scheele) Woodson]. Tayalote. Native herbaceous perennial vine. Occasional in upland woodland along W side of San Antonio River both N and S of Ashley / Mission Rd.; weed in garden at Mission San José. Voucher: Carr 21223. Photo: SAM-1082. Line drawing: Diggs et al. (1999), p. 281.
- **Matelea reticulata* (Engelm. ex Gray) Woodson. Pearl milkvine. Native herbaceous perennial vine. Occasional in riparian and upland woodlands. Voucher: Carr & Carré 20779. Photo: SAM-753. Line drawing: Diggs et al. (1999), p. 286.

Asteraceae (Compositae) -- Sunflower Family

- **Acmella oppositifolia* (Lam.) Jansen [*Spilanthes americana* (Mutis) Hieron.]. American spotflower. Native perennial. Locally common along old river channel at Espada Park; rare along bank of Acequia de Espada N of Ashley Rd. Vouchers: Carr 20795; Carr & Benesh 21352. Photo: SAM-1156. Line drawing: Diggs et al. (1999), p. 311.
- Amblyolepis setigera* DC. Huisache daisy. Native annual. Rare along margins of upland woodlands. Voucher: Carr 20474. Photo: SAM-626. Line drawing: Diggs et al. (1999), p. 311.
- Ambrosia confertiflora* A. DC. Field ragweed. Native perennial. Common in upland woodlands and old fields; also a frequent weed in mission lawns. Voucher: Carr & Gallyoun 20358. Photo: SAM-980. Line drawing: Diggs et al. (1999), p. 311.
- Ambrosia psilostachya* DC. [*Ambrosia cumanensis* Kunth in H. B. K.] Western ragweed. Native perennial. Occasional in upland woodlands and old fields. Voucher: Carr 19882. Photo: SAM-202. Line drawing: Diggs et al. (1999), p. 311.
- **Ambrosia trifida* L. Giant ragweed. Native annual. Common to locally abundant in riparian woodlands; occasional to common in upland woodlands. Voucher: Carr 21197. Photo: SAM-377. Line drawing: Diggs et al. (1999), p. 311.
- Aphanostephus ramosissimus* DC. Lazy daisy. Native annual. Occasional in lawns, athletic fields and old field sites. Vouchers: Carr 19764; Carr 20540; Carr 20555; Carr 20737. Photo: SAM-727. Line drawing: Diggs et al. (1999), p. 313.
- Artemisia ludoviciana* Nutt. Western mugwort. Native perennial. Rare, one plant observed under *Celtis reticulata* sapling growing from crack at base of small concrete foundation at baseball diamonds on S side of Theo Ave. W of Mission Concepción, at N29°23.353', W098°29.695'. Voucher: Carr 21274. Photo: SAM-1117. Line drawing: Diggs et al. (1999), p. 317.
- Aster ericoides* L. [*Symphyotrichum ericoides* (L.) Nesom]. Heath aster. Native perennial. Occasional in old fields and along margins of upland woodlands. Voucher: Carr & Gallyoun 20347. Photo: SAM-549. Line drawing: Diggs et al. (1999), p. 317.
- Aster lanceolatus* Willd. [*Symphyotrichum lanceolatum* (Willd.) Nesom] Woodland aster. Native perennial. Occasional in and along margins of riparian woodlands and hackberry strips along edges of old fields. Vouchers: Carr & Benesh 21346; Carr & Benesh 21349; Carr 21364. Photo: SAM-561. Line drawing: Diggs et al. (1999), p. 317.
- Aster subulatus* Michx. var. *ligulatus* Shinn. [*Symphyotrichum divaricatum* (Nutt.) Nesom]. Hierba del marrano. Native perennial. Rare on banks of acequias and in depressional areas in old fields. Voucher: Carr 21279. Photo: SAM-1123. Line drawing: Diggs et al. (1999), p. 323.
- Astranthium integrifolium* (Michx.) Nutt. Western daisy. Native annual. Rare in openings in upland woodlands. Voucher: Carr & Carré 20781-B. Photo: SAM-785. Line drawing: Diggs et al. (1999), p. 323.

- **Baccharis neglecta* Britt. Poverty weed, Roosevelt weed, baccharis. Native shrub. Occasional in old fields and upland woodlands. Voucher: Carr 21229. Photo: SAM-414. Line drawing: Diggs et al. (1999), p. 323.
- Bidens laevis* (L.) B.S.P. Smooth beggar's-ticks. Native annual. Local on banks of old river channel at and above Espada Dam. Voucher: Carr & Benesh 21348. Photo: SAM-1153. Line drawing: Diggs et al. (1999), p. 327.
- **Calyptocarpus vialis* Less. Prostrate lawnflower, straggler daisy. Native perennial. Common lawn weed at all missions; also common in riparian woodlands and upland woodlands; occasional in old fields. Voucher: Carr 20893. Photo: SAM-507. Line drawing: Diggs et al. (1999), p. 331.
- Centaurea americana* Nutt. American basketflower. Native annual. Rare, one plant with immature heads observed on lawn at Mission Espada, 25 April 2002; a chance introduction that was mown before setting seed. Line drawing: Diggs et al. (1999), p. 333.
- Centaurea melitensis* L. Yellow star-thistle. Naturalized annual. Occasional in old fields, roadbeds, and weedy open upland woodlands. Voucher: Carr 20762. Photo: SAM-812. Line drawing: Diggs et al. (1999), p. 333.
- Chaptalia texana* Greene [*Chaptalia nutans* (L.) Polák var. *texana* (Greene) Burkhart]. Nodding lettuce. Native perennial. Rare in area, encountered only in upland woodland on N side of I-410 just W of San Antonio River floodplain. Voucher: Carr & Carré 20783. Photo: SAM-691. Line drawing: Diggs et al. (1999), p. 337.
- Cirsium texanum* Buckl. Texas thistle. Native annual. Occasional in old fields and upland woodlands. Voucher: Carr 21102. Photo: SAM-745. Line drawing: Diggs et al. (1999), p. 343.
- Conyza canadensis* (L.) Cronq. Horseweed. Native annual. Robust individuals rare along margins of woodlands; much smaller plants occasional as weeds of garden beds and rock walls of Mission Concepción. Voucher: Carr 21180. Photo: SAM-001. Line drawing: Diggs et al. (1999), p. 343.
- Coreopsis tinctoria* Nutt. [*Coreopsis cardaminifolia* (DC.) T. & G.] Plains coreopsis. Native annual. Occasional in dry beds of acequias and along margins of woodlands. Vouchers: Carr 20747; Carr 20907. Photo: SAM-845. Line drawing: Diggs et al. (1999), p. 343.
- **Coreopsis wrightii* (Gray) Parker [*Coreopsis basalis* (Dietr.) Blake var. *wrightii* (Gray) Blake. Wright coreopsis. Native annual. Reported by Van Auken (1981) from Mission San José and Mission Espada. Line drawing: Diggs et al. (1999), p. 343.
- **Dyssodia tenuiloba* (DC.) Robinson var. *tenuiloba* [*Thymophylla tenuiloba* (DC.) Small var. *tenuiloba*]. Bristleleaf dogweed. Native annual. Occasional in old fields; reported by Van Auken (1981) from Mission San José. Voucher: Carr 20761. Photo: SAM-815. Line drawing: Diggs et al. (1999), p. 425.
- Echinacea* sp. Purple coneflower. Introduced perennial cultivar. Planted in gardens at Mission Concepción and Mission San José. Flora and fauna book at visitor center identifies this as a cultivar of *Echinacea purpurea* (L.) Moench. Photo: SAM-354.
- Eclipta prostrata* (L.) L. [*Eclipta alba* (L.) Hassk.] Yerba del tago. Native annual. Occasional on banks of waterways. Voucher: Carr 21155. Photo: SAM-963. Line drawing: Diggs et al. (1999), p. 349.
- **Engelmannia pinnatifida* Gray ex Nutt. [*Engelmannia persisteria* (Raf.) Goodman & C. A. Lawson]. Engelmann's daisy. Native perennial. Locally frequent in old field on San Juan Dam tract. Voucher: Carr 19846. Photo: SAM-089. Line drawing: Diggs et al. (1999), p. 351.
- Erigeron philadelphicus* L. Philadelphia fleabane. Native perennial. Locally common in riparian woodland along Sixmile (Piedras) Creek at N29°19.886', W098°27.575' +/- 16.8 ft.; scattered in similar woodlands along Acequia de Espada. Photo: SAM-605. Line drawing: Diggs et al. (1999), p. 355.
- Evax verna* Raf. [*Evax multicaulis* DC.] Roundhead rabbit-tobacco. Native annual. Occasional around bare spots in lawn at Mission San José; occasional in roadbeds at undeveloped sites. Voucher: Carr 20729; Carr & Price 20986. Photo: SAM-814. Line drawing: Diggs et al. (1999), p. 357.
- Fleischmannia incarnata* (Walt.) King & Robinson [*Eupatorium incarnatum* Walt.]. Scandent thoroughwort. Native perennial herbaceous vine. Rare in area but locally frequent in brushy upland woodland ca.

- 100-500 N of I-410 ft. from points 0.2-0.4 mi W of its bridges over San Antonio River, in Labores de Espada. Voucher: Carr 21359. Photo: SAM-1130. Line drawing: Diggs et al. (1999), p. 355.
- Florestina tripteris* DC. [*Palafoxia tripteris* (DC.) Shinnery] White palafoxia. Native annual. Rare in old field in Labores de Espada and on baseball diamonds W of Mission Concepción. Voucher: Carr 20371. Photo: SAM-528.
- **Gaillardia pulchella* Foug. Firewheels, Indian blanket. Native annual. Common or at least conspicuous in upland woodlands and unmown old fields. Voucher: Carr 20746. Photo: SAM-782. Line drawing: Diggs et al. (1999), p. 361.
- **Gamochaeta falcata* (Lam.) Cabrera [*Gnaphalium falcatum* Lam.] Falcate cudweed. Naturalized annual. Reported by Van Auken (1981) from Mission San José. Line drawing: Diggs et al. (1999), p. 361.
- Gamochaeta pensylvanica* (Willd.) Cabrera [*Gnaphalium pensylvanicum* Willd.] Pennsylvania cudweed. Native annual. Rare on mission lawns. Voucher: Carr 20771. Line drawing: Diggs et al. (1999), p. 361.
- Grindelia squarrosa* (Pursh) Dun. Gumweed. Native annual. Occasional in upland woodlands. Vouchers: Carr 19796; Carr 20925. Photo: SAM-856. Line drawing: Diggs et al. (1999), p. 363.
- Gutierrezia texana* (A. DC.) T. & G. [*Xanthocephalum texanum* (A. DC.) Shinnery]. Broomweed. Native annual. Occasional in upland woodlands and old fields. Voucher: Carr 21282. Photo: SAM-1103. Line drawing: Diggs et al. (1999), p. 367.
- Hedypnois cretica* (L.) Dum. Cours. Cretan composite. Naturalized annual. Rare on mission lawns; more frequent in disturbed soils along margin of hike-and-bike trail along San Antonio River near Mission Concepción. Voucher: Carr 20467. Photo: SAM-654. Line drawing: Diggs et al. (1999), p. 367.
- **Helianthus annuus* L. Common sunflower. Native annual. Occasional in dry open disturbed sites. Voucher: Carr 20896. Photo: SAM-038. Line drawing: Diggs et al. (1999), p. 371.
- Helianthus debilis* Nutt. subsp. *cucumerifolius* (T. & G.) Heiser. Weak sunflower. Native annual. Occasional in upland woodlands toward S end of Labores de Espada. Voucher: Carr 19785. Photo: SAM-311. Line drawing: Diggs et al. (1999), p. 371.
- Helianthus maximiliani* Schrad. Maximilian sunflower. Native perennial. One small colony in Labores de San Juan, W side of Villamain Rd. ca. 0.3 mi S of road to parking lot for Mission San Juan, at N29°19.715', W098°27.023' +/- 17.4.; another on E side of South Presa St., ca. 100-300 ft. N of Graf Rd. Voucher: Carr 21280. Photo: SAM-524. Line drawing: Diggs et al. (1999), p. 371.
- Heterotheca subaxillaris* (Lam.) Britt. & Rusby [*Heterotheca latifolia* Buckl.]. Camphor goldenaster. Native annual. Rare in old fields and upland woodlands. Voucher: Carr 21281. Photo: SAM-491. Line drawing: Diggs et al. (1999), p. 373.
- Hymenopappus scabiosaeus* L'Her. var. *corymbosus* (T. & G.) B. L. Turner. Old plainsman. Native biennial. Locally common in decent grassland at 9243 Villamain; rare in old fields elsewhere in Labores de Espada; also rare in upland woodlands. Voucher: Carr 20754. Photo: SAM-810. Line drawing: Diggs et al. (1999), p. 377.
- Iva annua* L. Eggleaf sumpweed. Native annual. Locally frequent along old river channel at Espada Park. Voucher: Carr 21286. Photo: SAM-1127. Line drawing: Diggs et al. (1999), p. 379.
- Lactuca floridana* (L.) Gaertn. Florida wild-lettuce. Native annual. Locally common in woodland along Acequia de Espada N of Ashley Rd. Voucher: Carr 19876. Photo: SAM-1025. Line drawing: Diggs et al. (1999), p. 383.
- Lactuca ludoviciana* (Nutt.) Ridd. Louisiana wild-lettuce. Native biennial. Frequent in and along margins of riparian and upland woodlands. Voucher: Carr 19787. Photo: SAM-895. Line drawing: Diggs et al. (1999), p. 383.
- Lactuca serriola* L. Prickly lettuce. Naturalized annual or biennial. Occasional in old fields, along woodland margins and in disturbed areas. Voucher: Carr 19849. Photo: SAM-088. Line drawing: Diggs et al. (1999), p. 383.
- Lindheimera texana* Gray & Engelm. Texas star. Native annual. Occasional in upland woodlands and old fields. Voucher: Carr 20472. Photo: SAM-669. Line drawing: Diggs et al. (1999), p. 385.

- Lygodesmia texana* (T. & G.) Greene. Texas skeletonplant. Native perennial. Rare in old fields. Voucher: Carr 21176. Photo: SAM-733. Line drawing: Diggs et al. (1999), p. 385.
- Mikania scandens* (L.) Willd. Climbing hempweed. Native perennial herbaceous vine. Local on unshaded banks of old river channel upstream from old Espada Dam; along Acequia de Espada upstream from (N of) Ashley Rd. culvert; and at Espada Aqueduct. Voucher: Carr 20099. Photo: SAM-416. Line drawing: Diggs et al. (1999), p. 389.
- **Parthenium confertum* Gray. Lyreleaf parthenium. Native perennial. Reported by Van Auken (1981) from all mission sites.
- Parthenium hysterophorus* L. False ragweed. Native annual. Common in lawns and other disturbed open upland sites. Vouchers: Carr 19872; Carr 21154. Photo: SAM-008. Line drawing: Diggs et al. (1999), p. 395.
- Pluchea odorata* (L.) Cass [*Pluchea purpurascens* (Sw.) DC.] Camphor marsh-elder, purple march-fleabane. Native perennial. Apparently rare in area, a few plants among wetland vegetation in impoundment upstream from Old Espada Dam. Voucher: Carr 21195. Photo: SAM-1030. Line drawing: Diggs et al. (1999), p. 397.
- **Pyrrhopappus pauciflorus* (D. Don) DC. [*Pyrrhopappus multicaulis* DC.]. False dandelion. Native annual. Occasional in old fields and open parts of various woodlands. Voucher: Carr 20805. Photo: SAM-620. Line drawing: Diggs et al. (1999), p. 401.
- **Ratibida columnifera* (Nutt.) Woot. & Standl. [*Ratibida columnaris* (Sims) D. Don]. Mexican hats. Native annual. Occasional in upland woodlands and old fields. Voucher: Carr 20891. Photo: SAM-091. Line drawing: Diggs et al. (1999), p. 401.
- Rudbeckia hirta* L. var. *angustifolia* (Moore) Perdue. Black-eyed Susan. Native annual. Apparently rare in area, noted only in partially shaded dry bed of Acequia de San Juan. Voucher: Carr 20899. Photo: SAM-788. Line drawing: Diggs et al. (1999), p. 401.
- Simsia calva* (Engelm. & Gray) Gray. Bush sunflower. Native perennial. Rare, noted only along margin of upland woodland just NE of Espada Rd. bridge over Sixmile (Piedras) Creek. Vouchers: Carr 19818; Carr 20806. Photo: SAM-446. Line drawing: Diggs et al. (1999), p. 407.
- Solidago canadensis* T. & G. [*Solidago altissima* L.] Common goldenrod. Native perennial. Locally common along Acequia de Espada just downstream from Espada Aqueduct and along impoundment upstream from Espada Dam in Espada Park. Vouchers: Carr & Gallyoun 20349; Carr 21283; Carr 21347. Photo: SAM-1124. Line drawing: Diggs et al. (1999), p. 407.
- Solidago gigantea* Ait. Giant goldenrod. Native perennial. Locally abundant in one old field in Labores de Espada. Voucher: Carr 20377. Photo: SAM-520. Line drawing: Diggs et al. (1999), p. 411.
- **Sonchus asper* (L.) Hill. Sow-thistle. Naturalized annual. Occasional throughout. Voucher: Carr 19866. Photo: SAM-101. Line drawing: Diggs et al. (1999), p. 417.
- Sonchus oleraceus* L. Sow-thistle. Naturalized annual. Occasional throughout. Voucher: Carr 21160. Photo: SAM-972. Line drawing: Diggs et al. (1999), p. 419.
- **Taraxacum officinale* Weber. Dandelion. Naturalized perennial. Occasional weed of mission lawns and roadbeds. Voucher: Carr 21194. Photo: SAM-614. Line drawing: Diggs et al. (1999), p. 419.
- Thelesperma filifolium* (Hook.) Gray. Slender greenthread. Native perennial. Rare in old fields on San Juan Dam Tract and Labores de Espada. Vouchers: Carr 20732; Carr 21201. Photo: SAM-1040. Line drawing: Diggs et al. (1999), p. 423.
- Verbesina virginica* L. Frostweed. Native perennial. Occasional in riparian and upland woodlands. Voucher: Carr 21199. Photo: SAM-1044. Line drawing: Diggs et al. (1999), p. 429.
- Viguiera dentata* (Cav.) Spreng. Plateau goldeneye. Native perennial. Frequent along margins of upland and riparian woodlands, often spreading into adjacent old fields. Vouchers: Carr 19765; Carr & Benesh 19814; Carr 19834; Carr & Gallyoun 20357; Carr 20376. Photo: SAM-502. Line drawing: Diggs et al. (1999), p. 431.
- **Xanthium strumarium* L. Abrojo, cocklebur, porcupine eggs. Native annual. Reported by Van Auken (1981) from Mission San José. Line drawing: Diggs et al. (1999), p. 431.

Berberidaceae -- Barberry Family

- **Berberis trifoliolata* Moric. [*Mahonia trifoliolata* (Moric.) Fedde] Agarito. Native shrub. Occasional in upland woodlands; occasionally utilized in landscapes around missions (e.g., at Mission San José). Voucher: Carr & Carré 20786. Photo: SAM-671. Line drawing: Diggs et al. (1999), p. 435.
- **Nandina domestica* Thunb. Heavenly bamboo. Naturalized shrub. Planted in landscape at Mission San José; one escaped plant in riparian woodland behind Mission San Juan. Voucher: Carr 21183. Photo: SAM-1051. Line drawing: Diggs et al. (1999), p. 435.

Bignoniaceae -- Catalpa Family

- Bignonia capreolata* L. Crossvine. Woody vine, native to parts of Texas but perhaps only escaped from cultivation in this area. Rare in San Juan Woodland (upland woodland just W of Mission San Juan), at N29°19.904', W098°27.363' +/- 15.1 ft.; planted a few hundred yards to N, on fence along S side of Ashley Road at W end of Berg's Mill Bridge. Voucher: Carr 21072. Photo: SAM-943. Line drawing: Diggs et al. (1999), p. 447.
- **Campsis radicans* (L.) Seeman ex Bureau. Trumpet creeper. Native woody vine. Common in riparian woodlands; also planted in landscape around missions. Voucher: Carr 21097. Photo: SAM-200. Line drawing: Diggs et al. (1999), p. 447.
- Chilopsis linearis* (Cav.) Sweet. Desert willow. Introduced shrub (native to west Texas but planted here). Planted in newer garden plots at Mission San José; recently planted along E bank of San Antonio River on or near NW edge of San Juan Dam tract. Photo: SAM-268. Line drawing: Diggs et al. (1999), p. 447.

Boraginaceae -- Borage Family

- **Ehretia anacua* (Terán & Berl.) I. M. Johnst. Anaqua. Native tree. Occasional in upland woodlands, rare in riparian woodlands; more common as shade tree in landscapes around missions. Voucher: Carr 20801. Photo: SAM-142.
- **Lappula occidentalis* (S. Wats.) Greene var. *cupulata* (Gray) Higgins [*Lappula texana* (Scheele) Britt; *Lappula redowskii* (Hornem.) Greene var. *texana* (Scheele) Brand.] Texas cupseed. Native annual. Reported by Van Auken (1981) from Mission Concepción. Line drawing: Diggs et al. (1999), p. 451.
- **Lithospermum arvense* L. [*Buglossoides arvense* (L.) I. M. Johnston]. Bugloss. Naturalized annual. Occasional in old fields and disturbed soils. Voucher: Carr 20466. Photo: SAM-666. Line drawing: Diggs et al. (1999), p. 447.
- Onosmodium bejariense* A. DC. var. *bejariense*. Bexar marbleseed. Native perennial. Local in riparian woodland along Acequia de Espada N of Ashley Rd., at GPS point N29°22.222', W098°27.582' +/- 21.8 ft. Voucher: Carr 19874. Line drawing: Diggs et al. (1999), p. 455.

Brassicaceae (Cruciferae) -- Mustard Family

- Capsella bursa-pastoris* (L.) Medik. Shepherd's purse. Naturalized winter annual. Common weed in lawns at all missions. Voucher: Carr 20541. Line drawing: Diggs et al. (1999), p. 463.
- Draba platycarpa* T. & G. Broadpod draba. Native annual. Rare in bare areas in old fields and roadbeds. Voucher: Carr 20455. Photo: SAM-596. Line drawing: Diggs et al. (1999), p. 469.
- Lepidium austrinum* Small. Southern pepperweed. Native annual. Occasional in lawns and upland old fields. Voucher: Carr & Benesh 20922. Photo: SAM-706. Line drawing: Diggs et al. (1999), p. 471.
- **Lepidium densiflorum* Schrad. Prairie pepperweed. Native annual. Reported by Van Auken (1981) from all mission sites. Line drawing: Diggs et al. (1999), p. 471.

Rapistrum rugosum (L.) All. Yellow rocket. Naturalized annual. Locally common in upland woodlands and old fields. Voucher: Carr 20743. Photo: SAM-591. Line drawing: Diggs et al. (1999), p. 477.

**Rorippa nasturtium-aquaticum* (L.) Hayek [*Nasturtium officinale* R. Br.]. Water cress. Naturalized perennial. Reported by Van Auken (1981) from Mission Espada and Espada / Acequia Park. Line drawing: Diggs et al. (1999), p. 477.

**Sisymbrium irio* L. London rocket. Naturalized annual. Occasional to common weed in mission lawns and old fields, often in partial shade. Voucher: Carr 20456. Photo: SAM-570. Line drawing: Diggs et al. (1999), p. 481.

Bromeliaceae -- Bromeliad Family

**Tillandsia recurvata* L. Ballmoss. Native perennial epiphyte. Occasional in trees throughout. Voucher: Carr & Benesh 20917. Photo: SAM-326. Line drawing: Diggs et al. (1999), p. 1097.

Buxaceae -- Boxwood Family

Buxus sempervirens L. Common boxwood. Introduced shrub. Planted near shrine on NW side of Mission Concepción and in front of convento at Mission San José. Photo: SAM-243.

Cactaceae -- Cactus Family

Ferocactus setispinus (Engelm.) Benson [*Thelocactus setispinus* (Engelm.) E. F. Anderson]. Hedgehog cactus, fish-hook cactus. Native shrub. Rare in area, several clusters under mesquite in upland woodland on N side of I-410 just W of cleared San Antonio River floodplain, at N29°19.437', W098°27.276' +/- 15.8 ft. and elsewhere. Voucher: Carr 21186. Photo: SAM-993. Line drawing: Diggs et al. (1999), p. 495.

**Opuntia engelmannii* Salm-Dyck var. *lindheimeri* (Engelm.) Parfitt & Pinkava [*Opuntia lindheimeri* Engelm.]. Lindheimer pricklypear. Native shrub. Occasional in old fields and upland woodlands. Photo: SAM-325. Line drawing: Diggs et al. (1999), p. 493.

Opuntia imbricata (Haw.) DC. Cholla. Introduced shrub. Planted in landscape at Mission San José. Photo: SAM-974.

**Opuntia leptocaulis* DC. Tasajillo, Christmas cactus, pencil cactus. Native shrub. Occasional in upland woodlands at Labores de Espada; one plant (possibly introduced) at head of San José Woodland Trail. Photo: SAM-869. Line drawing: Diggs et al. (1999), p. 493.

Opuntia sp. Prickly-pear. Introduced shrub (cultivar?). A *Platyopuntia* species with conspicuous brown glochids. Planted in landscape at Mission San José, at N29°21.647' W098°28.768' +/- 14.4 ft. Photo: SAM-024.

Opuntia sp. Prickly-pear. Introduced cultivar shrub. Plants forming massive clumps several meters wide and sometimes 2 meters tall; pads large, with crenate margins. Planted at several locations on grounds of Mission Espada, most notably at foot of cross in middle of mission grounds. GPS point: N29°19.982', W098°27.291' +/- 10.5 ft. Photo: SAM-168.

Opuntia sp. Prickly-pear. Introduced shrub (cultivar?). A nearly spineless form. Planted in front of chapel at Mission San Juan. GPS point: N29°19.945', W098°27.325' +/- 25.8 ft. Photo: SAM-260.

Campanulaceae -- Bellflower Family

Triodanis perfoliata (L.) Nieuw. var. *biflora* (Ruiz & Pav.) T. R. Bradley [*Triodanis biflora* (Ruiz & Pav.) Greene]. Venus' looking-glass. Native annual. Occasional in old fields, perhaps also on mission lawns. Voucher: Carr 20730. Photo: SAM-804. Line drawing: Diggs et al. (1999), p. 505.

Triodanis perfoliata (L.) Nieuw. var. *perfoliata*. Venus' looking-glass. Native annual. Occasional in old fields and on mission lawns. Voucher: Carr 20773. Photo: see SAM-804. Line drawing: Diggs et al. (1999), p. 505.

Cannaceae -- Canna Family

**Canna indica* L. Canna-lily, Indian-shot. Introduced perennial. Reported by Van Auken (1981) from Mission Espada.

Capparidaceae -- Caper Family

Polanisia dodecandra (L.) DC. subsp. *trachysperma* (T. & G.) Iltis. Clammyweed. Native annual. Apparently rare in area; one plant observed at edge of pile of old shingles in Johnsongrass hay-meadow at 9243 Villamain, 1 August 2002. Voucher: Carr 21181. Photo: SAM-1009. Line drawing: Diggs et al. (1999), p. 509.

Caprifoliaceae -- Honeysuckle Family

**Lonicera japonica* Thunb. Japanese honeysuckle. Naturalized woody vine. Common in riparian woodland along Acequia de Espada N of Ashley Rd; less common in woodland along Acequia de Espada at Espada Aqueduct and in riparian woodland along Acequia de San Juan on E side of South Presa St. just N of Graf Rd. Voucher: Carr 20778. Photo: SAM-825. Line drawing: Diggs et al. (1999), p. 509.

Lonicera sempervirens L. Coral honeysuckle. Introduced woody vine. Planted in landscape around information center at Mission Concepción. Photo: SAM-357. Line drawing: Diggs et al. (1999), p. 509.

**Sambucus canadensis* L. var. *canadensis*. Elderberry. Native shrub. Locally common in riparian woodlands, usually on banks of acequias or old river channels. Voucher: Carr 21068. Photo: SAM-914. Line drawing: Diggs et al. (1999), p. 515.

Caryophyllaceae -- Pink Family

Polycarpon tetraphyllum (L.) L. Fourleaf manyseed. Naturalized annual. Rare, noted only in sandy soil at base of wall of Mission San José. Voucher: Carr & Price 20985. Photo: SAM-776. Line drawing: Diggs et al. (1999), p. 523.

**Silene antirrhina* L. Sticky catchfly, sleepy catchfly. Native annual. Occasional in old fields; reported by Van Auken (1981) from all mission sites. Voucher: Carr 20731. Line drawing: Diggs et al. (1999), p. 527.

Stellaria media (L.) Vill. Common chickweed. Naturalized annual. Occasional weed in lawns; also in riparian woodlands. Voucher: Carr 20549. Photo: SAM-721. Line drawing: Diggs et al. (1999), p. 527.

Celastraceae -- Staff-tree Family

Schaefferia cuneifolia Gray. Desert yaupon, panalero. Native shrub. Rare in area but locally frequent in brushy upland woodland ca. 100-500 N of I-410 ft. from points 0.2-0.4 mi W of its bridges over San Antonio River, in Labores de Espada. Vouchers: Carr 19898; Carr & Gallyoun 20345; Carr 21360. Photo: SAM-514.

Ceratophyllaceae -- Hornwort Family

Ceratophyllum demersum L. Common hornwort. Native annual submersed aquatic. Locally common in Acequia de Espada from Ashley/Mission Rd. bridge downstream to beyond Espada Aqueduct. Vouchers: Carr 21102; Carr 21133. Photo: SAM-938. Line drawing: Diggs et al. (1999), p. 531.

Chenopodiaceae -- Goosefoot Family

**Chenopodium album* L. Lamb's-quarters. Naturalized annual. Reported by Van Auken (1981) from four mission sites. Line drawing: Diggs et al. (1999), p. 537.

Chenopodium berlandieri Moq. Berlandier goosefoot. Native annual. Occasional in upland woodlands and disturbed sites. Vouchers: Carr & Benesh 19815; Carr 20109; Carr 21202. Photo: SAM-1042. Line drawing: Diggs et al. (1999), p. 537.

Monolepis nuttallianus (Schult.) Greene. Nuttall's monolepis. Native annual. Rare in area, noted only around bare spot on lawn within compound at Mission Espada, at N29°19.065', W098°27.056' +/- 12.3 ft., on 25 April 2002. Voucher: Carr 20772. Line drawing: Diggs et al. (1999), p. 541.

Commelinaceae -- Dayflower Family

Commelina erecta L. var. *angustifolia* (Michx.) Fern. Common dayflower. Native perennial. Frequent to common in upland woodlands and old fields. Voucher: Carr 19861. Photo: SAM-373. Line drawing: Diggs et al. (1999), p. 1099.

Commelina erecta L. var. *erecta*. Common dayflower. Native perennial. Occasional in upland woodlands. Voucher: Carr 20894. Photo: see SAM-073. Line drawing: Diggs et al. (1999), p. 1099.

**Commelina erecta* L. var. *deamiana* Fern. Deam's dayflower. Native perennial. Reported by Van Auken (1981) from all mission sites.

Setcreasea purpurea Boom or *Setcreasea pallida* Rose "Purple Heart". Purple wandering Jew. Introduced perennial cultivar. Planted at landscapes at Mission San Juan and Mission Concepción. Photo: SAM-224.

**Tinantia anomala* (Torr.) C. B. Clarke [*Commelinantia anomala* (Torr.) Tharp]. Widow's tears, false dayflower. Native annual. Common to locally abundant during spring in riparian woodlands. Voucher: Carr 20464. Photo: SAM-574. Line drawing: Diggs et al. (1999), p. 1103.

**Tradescantia occidentalis* (Britt.) Smyth. Western spiderwort. Native perennial. Reported by Van Auken (1981) from four mission sites. Line drawing: Diggs et al. (1999), p. 1105.

Tradescantia sp. [not *T. occidentalis*]. Spiderwort. Native perennial. Frequent on mission lawns; occasional in old fields and both upland and riparian woodlands. Voucher: Carr 20537. Photo: SAM-822.

Unknown. Introduced perennial with gray-green foliage. Planted around rocks in shaded depression (old quarry pit) on W side of lawn in front of Mission Concepción, at N29°23.439', W098°29.534' +/- 16.3 ft.

Convolvulaceae -- Morning-glory Family

Convolvulus arvensis L. Field bindweed. Naturalized perennial. Scattered in old fields, lawns and athletic fields; large colony in mown lawn on S side of Mission San José at N29°21.545', W098°28.765'. Vouchers: Carr 19775; Carr 21162; Carr 21182. Photo: 179. Line drawing: Diggs et al. (1999), p. 553.

**Convolvulus equitans* Benth. Common bindweed. Native perennial herbaceous vine. Occasional in upland old fields and lawns. Vouchers: Carr 19827; Carr 19848. Photo: SAM-080. Line drawing: Diggs et al. (1999), p. 553.

**Dichondra carolinensis* Michx. Carolina ponyfoot. Native perennial. Occasional in mission lawns and along margins of riparian woodlands. Voucher: Carr 20815; Carr & Benesh 20920. Photo: SAM-653. Line drawing: Diggs et al. (1999), p. 553.

Ipomaea carnea Jacq. var. *fistulosa* (Choisy) Austin. Shrubby morning-glory. Introduced shrub. One large individual on south side of building in southwest corner of Mission Espada complex, at N29°19.076', W098°27.071' +/- 13.7 ft. Photo: SAM-144.

**Ipomaea cordatotriloba* Dennstaedt [*Ipomaea trichocarpa* Ell. var. *trichocarpa*; *Ipomaea trichocarpa* Ell. var. *australis* O'Donnell; *Ipomaea trichocarpa* Ell. var. *torreyana* (Gray) Shinnery]. Common morning-glory. Native perennial herbaceous vine. Occasional in upland woodlands and on lawns and athletic fields. Voucher: Carr 20890. Photo: SAM-181. Line drawing: Diggs et al. (1999), p. 557.

Ipomaea hederacea Jacq. Ivy-leaf morning-glory. Native annual vine. Rare in area, one patch on fenceline on N side of paved road toward N end of San Juan Dam tract. Voucher: Carr 21275. Photo: SAM-1119. Line drawing: Diggs et al. (1999), p. 557.

**Merremia dissecta* (Jacq.) Hall. f. [*Ipomaea dissecta* (Jacq.) Pers.; *Ipomaea sinuata* Ort.] Alamo-vine, correhuela de las doce. Native perennial herbaceous vine. Frequent in old fields and upland woodlands; also utilized in landscapes around missions. Voucher: Carr 21067. Photo: SAM-1094. Line drawing: Diggs et al. (1999), p. 559.

Cornaceae -- Dogwood Family

**Cornus drummondii* C. A. Mey. Roughleaf dogwood. Native shrub. Common in riparian woodlands. Voucher: Carr 20794. Photo: SAM-816. Line drawing: Diggs et al. (1999), p. 563.

Cucurbitaceae -- Gourd Family

Cucumis melo L. Muskmelon. Naturalized annual. One colony in graded unshaded area along top of slope along W side of new channel of San Antonio River, E edge of hike-and-bike trail just N of first footbridge N of I-410, at GPS point N29°19.471', W098°27.289'; also in woodland to W (clearly NPS property) but not flowering in that setting. Voucher: Carr & Gallyoun 20344. Photo: SAM-519. Line drawing: Diggs et al. (1999), p. 567.

**Cucurbita foetidissima* Kunth. Stinking gourd. Native annual herbaceous vine. Rare to locally abundant in old fields near Mission Concepción and in disturbed areas at Mission San José. Voucher: Carr 20816. Photo: SAM-413. Line drawing: Diggs et al. (1999), p. 567.

Ibervillea lindheimeri (Gray) Greene. Balsam gourd, Lindheimer balsam-apple. Native perennial herbaceous vine. Occasional in upland woodlands. Voucher: Carr 20808. Photo: SAM-775. Line drawing: Diggs et al. (1999), p. 571.

**Melothria pendula* L. Melonette, meloncito. Native annual herbaceous vine. Occasional in riparian woodlands. Voucher: Carr 20102. Photo: SAM-417. Line drawing: Diggs et al. (1999), p. 571.

Cyperaceae -- Sedge Family

Carex bulbostylis Mack. Globose caric-sedge. Native perennial. Rare in riparian woodlands. Vouchers: Carr 20459; Carr 20766; Carr 20796; Carr 20818. Line drawing: Diggs et al. (1999), p. 1117.

Carex emoryi Dew. Emory sedge. Native perennial. Rare in area, local along E bank of Acequia de Espada ca. 0.4 mi (by trail) N of Ashley Rd., at N29°20.410', W098°27.668' +/- 23.0 ft. Voucher: Carr 20820. Photo: SAM-1157. Line drawing: Diggs et al. (1999), p. 1121.

Carex leavenworthii Dewey. Leavenworth sedge. Native perennial. A few plants in shade of tall trees on N and E sides of Mission Concepción; also locally common on partially shaded lawn on S side of Ashley Rd. just E of bridge over old channel of San Antonio River, on NW corner of grounds of Mission San Juan. Voucher: Carr 20540. Photo: SAM-708. Line drawing: Diggs et al. (1999), p. 1125.

**Carex muhlenbergii* Schkuhr. Muhlenberg sedge. Native perennial. Reported by Van Auken (1981) from all mission sites. Line drawing: Diggs et al. (1999), p. 1127.

- Carex tetrastachya* Scheele [*Carex brittoniana* Bailey]. Britton sedge. Native perennial. Locally abundant in sewage swale on San Juan Dam Tract; a small colony on moist clay bank of Acequia de Espada ca. 2000 ft. N of Ashley Rd. Voucher: Carr 20744. Photo: SAM-806. Line drawing: Diggs et al. (1999), p. 1129.
- Cyperus erythrorhizos* Muhl. Redroot umbrellasedge. Native annual. Rare in area, noted only on piles of clay dredged in 2002 from Acequia de Espada north of Mission / Ashley Rd. Voucher: Carr 21226. Photo: SAM-1086. Line drawing: Diggs et al. (1999), p. 1137.
- **Cyperus ochraceus* Vahl. Umbrella-sedge. Native perennial. Occasional along waterways. Voucher: Carr 19789. Photo: SAM-219.
- **Cyperus odoratus* L. Common umbrellasedge. Native annual. Rare on unshaded bank of Acequia de Espada at W edge of Mission Espada. Voucher: Carr 21277. Photo: SAM-1121. Line drawing: Diggs et al. (1999), p. 1139.
- **Cyperus papyrus* L. Papyrus. Introduced perennial. Reported by Van Auken (1981) from Mission Concepción.
- Cyperus rotundus* L. Purple nutsedge. Naturalized perennial. Common weed in old fields, mission lawns and garden beds. Voucher: Carr 21161. Photo: SAM-404. Line drawing: Diggs et al. (1999), p. 1141.
- **Eleocharis montevidensis* Kunth. Montevideo spikesedge. Native perennial. Occasional on bank of old river channel upstream from old Espada Dam; a few plants in wet spot at foot of W end of Espada Aqueduct. Voucher: Carr 20544. Photo: SAM-717. Line drawing: Diggs et al. (1999), p. 1149.
- **Schoenoplectus tabermaemontani* (Gmel.) Palla [*Scirpus validus* Vahl; *Scirpus tabermaemontani* Gmel.]. Softstem bulrush. Native perennial. Local, one large colony in pond upstream from old Espada Dam in Espada Park, at N29°20.837', W098°28.070' +/- 21.6 ft. Also reported by Van Auken (1981) from Mission Espada. Voucher: Carr 19795. Photo: SAM-495. Line drawing: Diggs et al. (1999), p. 1159.

Ebenaceae -- Ebony Family

- **Diospyros texana* Scheele. Texas persimmon. Native shrub. Occasional in upland woodlands. Voucher: Carr & Carré 20787. Photo: SAM-310. Line drawing: Diggs et al. (1999), p. 583.

Elaeagnaceae -- Russian-Olive Family

- Elaeagnus macrophylla* Thunb. Silverberry. Introduced shrub. One shrub ca. 5 m tall in riparian woodland along San Juan Woodland Trail, at N29°19.918', W098°27.394' +/- 16.1 ft.; escape from cultivation? Voucher: Carr 19784. Photo: SAM-171.

Euphorbiaceae -- Spurge Family

- **Acalypha lindheimeri* Muell. Arg. [*Acalypha phleoides* Cav.] Lindheimer copperleaf. Native perennial. Rare, noted only in baseball diamonds on S side of W. Theo Ave. W of Mission Concepción. Voucher: Carr 19870. Photo: SAM-113. Line drawing: Diggs et al. (1999), p. 587.
- Acalypha ostryifolia* Riddell. Hornbeam copperleaf. Native annual. Occasional along woodland margins and in disturbed sites. Vouchers: Carr 20381; Carr 21152. Photo: SAM-501. Line drawing: Diggs et al. (1999), p. 587.
- Argythamnia humilis* (Engelm & Gray) Muell. Arg. var. *humilis* [*Ditaxis humilis* (Engelm. & Gray) Pax var. *humilis*]. Low wild-mercury. Native perennial. Rare in old field at San Juan Dam tract. Voucher: Carr 19808. Photo: SAM-949. Line drawing: Diggs et al. (1999), p. 603.
- **Croton monanthogynus* Michx. One-seed croton, prairie tea. Native annual. Occasional in old fields. Voucher: Carr 19858. Photo: SAM-1000. Line drawing: Diggs et al. (1999), p. 603.

- **Euphorbia albomarginata* T. & G [*Chamaesyce albomarginata* (T. & G.) Small. White-margin matspurge. Native perennial. Reported by Van Auken (1981) from Mission Espada. Line drawing: Diggs et al. (1999), p. 591.
- **Euphorbia cyathophora* Murr. [*Poinsettia cyathophora* (Murr.) Kl. & Gke. Wild poinsettia. Native annual. Reported by Van Auken (1981) from Espada / Acequia Park. Line drawing: Diggs et al. (1999), p. 607.
- **Euphorbia dentata* Michx. [*Poinsettia dentata* (Michx.) Kl. & Gke.] Toothed spurge. Native annual. Occasional in old fields and dry disturbed sites. Voucher: Carr 19850. Photo: SAM-371. Line drawing: Diggs et al. (1999), p. 607.
- Euphorbia hirta* L. [*Chamaesyce hirta* (L.) Millsp.] Introduced annual. Apparently a greenhouse weed that persists in outdoor gardens after introduction with nursery stock. Voucher: Carr 19879. Line drawing: Diggs et al. (1999), p. 595.
- Euphorbia nutans* Lag. [*Chamaesyce nutans* (Lag.) Small] Eyebane, nodding spurge. Native annual. Occasional in old fields and in gravel in creekbeds. Voucher: Carr 19851. Photo: SAM-997. Line drawing: Diggs et al. (1999), p. 597.
- Euphorbia prostrata* Ait. [*Chamaesyce prostrata* (Ait.) Small] Prostrate matspurge. Native annual. Occasional in dry disturbed sites at Mission San José. Vouchers: Carr 19782; Carr 19889; Carr 21185. Photo: SAM-462. Line drawing: Diggs et al. (1999), p. 597.
- Euphorbia serpens* H.B.K. [*Chamaesyce serpens* (H.B.K.) Small] Smooth matspurge. Native annual. Rare in old fields. Voucher: Carr 20759; Carr 21179. Photo: SAM-1006. Line drawing: Diggs et al. (1999), p. 597.
- Euphorbia spathulata* Lam. [*Tithymalus spathulatus* (Lam.) Weber] Warty spurge. Native annual. Rare in old fields and upland woodlands. Voucher: Carr 20804. Line drawing: Diggs et al. (1999), p. 609.
- Euphorbia* sp. Introduced annual. Rare, noted only under boxwood (*Buxus sempervirens*) shrubs planted in heavily irrigated garden boxes in front of convento at Mission San José, 11 June 2002. Voucher: Carr & Benesh 21061. Photo: SAM-875.
- Phyllanthus polygonoides* Spreng. Knotweed leaf-flower. Native perennial. Occasional in old fields and openings in upland woodlands. Voucher: Carr 20807. Photo: SAM-919. Line drawing: Diggs et al. (1999), p. 613.
- **Sapium sebiferum* (L.) Roxb. Chinese tallow. Naturalized tree. Rather rare in area: a few trees along Sixmile (Piedras) Creek between Espada Rd. bridge and hike-and-bike trail downstream; a few trees (mostly small) along impoundment behind old Espada Dam at Espada Park; one sapling along Acequia de Espada N of Mission/Ashley Rd. Reported by Van Auken (1981) from Mission San José but apparently not extant at that site. Voucher: Carr & Benesh 20916. Photo: SAM-861. Line drawing: Diggs et al. (1999), p. 615.
- Tragia brevispica* Engelm. & Gray. Climbing noseburn. Native perennial. Occasional in old fields at Labores de San Juan. Vouchers: Carr 19823; Carr 20912. Photo: SAM-1100. Line drawing: Diggs et al. (1999), p. 615.
- Tragia ramosa* Torr. Common noseburn. Native perennial. Occasional in old fields at Labores de San Juan. Voucher: Carr 19845. Line drawing: Diggs et al. (1999), p. 615.

Fabaceae (Leguminosae) -- Legume Family

- **Acacia minuata* (M. E. Jones) Beauchamp [*Acacia smallii* Isely; *Acacia farnesiana* of Texas authors]. Huisache. Native tree or large shrub. Common in upland and riparian woodlands; also utilized in landscapes around missions and in city parks along San Antonio River. Voucher: Carr 19837. Photo: SAM-930. Line drawing: Diggs et al. (1999), p. 627.
- **Albizia julibrissin* Dur. Silktree mimosa. Introduced tree or large shrub. One declining tree (stump sprouts 2 ft. tall in July 2002) on lawn N of visitor center at Mission San José. Photo: SAM-928. Line drawing: Diggs et al. (1999), p. 627.

Astragalus nuttallianus DC. var. *trichocarpus* T. & G. Annual milkvetch. Native annual. Rare in old fields along Villamain. Voucher: Carr 20473. Photo: SAM-670. Line drawing: Diggs et al. (1999), p. 633.

Astragalus nuttallianus DC. var. ?? Milkvetch. Native annual. Rare on lawn just outside low wall at E edge of Mission Espada. Voucher: Carr 20553. Photo: SAM-725.

Caesalpinia pulcherrima L. Pride-of Barbados, dwarf poinciana, showy caesalpinia. Introduced shrub. Planted in landscape at Mission San José. Photo: SAM-188.

**Cercis canadensis* L. var. *texensis* (S. Wats.) M. Hopk. Texas redbud. Native tree. Reported by Van Auken (1981) from three mission sites. Line drawing: Diggs et al. (1999), p. 641.

Cercis canadensis L. var. *mexicanus* (Rose) Hopkins. Mexican redbud. Introduced tree. Planted in landscape at Mission San José. Photo: SAM-245.

**Desmanthus illinoensis* (Michx.) MacM. Illinois bundleflower. Native perennial. Reported by Van Auken (1981) from Espada / Acequia Park. Line drawing: Diggs et al. (1999), p. 653.

**Desmanthus virgatus* (L.) Willd. var. *depressus* (Humb. & Bonpl.) B. L. Turner. Sharp-pod bundleflower. Native perennial. Frequent in old fields and athletic fields; reported by Van Auken (1981) from all mission sites. Vouchers: Carr 19771; Carr 19786; Carr 19825. Photo: SAM-137. Line drawing: Diggs et al. (1999), p. 653.

**Eysenhardtia texana* Scheele. Texas kidneywood. Native shrub. Rare in upland woodlands. Voucher: Carr 20929. Photo: SAM-447. Line drawing: Diggs et al. (1999), p. 659.

**Gleditsia triacanthos* L. Honey locust. Introduced tree. Reported by Van Auken (1981) from three mission sites. Line drawing: Diggs et al. (1999), p. 661.

**Leucaena leucocephala* (Lam.) de Wit. Popinac, lead-tree. Introduced tree. Reported by Van Auken (1981) from Mission San José. A cultivated species of *Leucaena* is still present on the grounds, but its identity is unknown. Photo: SAM-872.

**Medicago polymorpha* L. var. *vulgaris* (Benth.) Shinn. Burclover. Naturalized annual. Occasional weed in mission lawns and old fields. Voucher: Carr 20465. Line drawing: Diggs et al. (1999), p. 675.

**Melilotus albus* Medic. White sweet-clover. Naturalized annual. Rare in upland woodlands at Labores de Espada on W side of San Antonio River; more common on disturbed banks of channelized sections of San Antonio River (not NPS property). Voucher: Carr & Benesh 21056 (taken ca. 50 outside NPS property). Photo: SAM-900. Line drawing: Diggs et al. (1999), p. 675.

**Mimosa latidens* (Small) B. L. Turner [*Schrankia latidens* (Small) Schum.]. Sensitive briar. Native perennial. Occasional in upland old fields. Vouchers: Carr 19770; Carr 19844. Photo: SAM-841. Line drawing: Diggs et al. (1999), p. 681.

Neptunia lutea (Leavenw.) Benth. Yellowpuff. Native perennial. Occasional in mown lawns at Mission San José. Voucher: Carr 19776. Photo: SAM-330. Line drawing: Diggs et al. (1999), p. 681.

**Parkinsonia aculeata* L. Retama. Native tree or large shrub. Occasional in upland woodlands and old fields. Voucher: Carr 20892. Photo: SAM-844. Line drawing: Diggs et al. (1999), p. 685.

**Prosopis glandulosa* Torr. var. *glandulosa*. Honey mesquite. Native tree. Common but inconspicuous in old fields, becoming more apparent as these succeed to upland woodlands; old native trees retained in landscapes around missions. Voucher: Carr 19871. Photo: SAM-353. Line drawing: Diggs et al. (1999), p. 689.

**Rhynchosia minima* (L.) DC. Least snoutbean. Perennial herbaceous vine, perhaps introduced. Occasional to common in upland woodlands and old fields. Vouchers: Carr 20379; Carr 20911. Photo: SAM-1005. Line drawing: Diggs et al. (1999), p. 693.

Rhynchosia senna Hook. var. *texana* (T. & G.) M. C. Johnst. [*Rhynchosia texana* T. & G.] Texas snoutbean. Native perennial herbaceous vine. Rare in old field and upland woodlands. Voucher: Carr 21131. Photo: SAM-933. Line drawing: Diggs et al. (1999), p. 693.

Sesbania herbacea (Mill.) McVaugh [*Sesbania macrocarpa* Muhl.; *Sesbania exaltata* (Raf.) Hill]. Bequilla, coffee-bean sesbania. Native annual. Rare in dry bed of Acequia de San Juan on San Juan Dam Tract. Voucher: Carr 20905. Photo: SAM-848. Line drawing: Diggs et al. (1999), p. 699.

- Sophora affinis* T. & G. Eve's necklace. Native tree or large shrub. Rare, one small tree noted along old road in Labores de Espada, at GPS point N29°19.683', W098°27.489' +/- 15.7 ft. Voucher: Carr 19892. Photo: SAM-289. Line drawing: Diggs et al. (1999), p. 699.
- **Sophora secundiflora* (Ort.) DC. Texas mountain-laurel. Native shrub. Planted in landscapes at Mission San José and Mission Concepción and in wildscape behind Mission San Juan, but apparently not a member of the local native flora. Photo: SAM-873. Line drawing: Diggs et al. (1999), p. 699.
- Strophostyles helvula* (L.) Britt. Wildbean, sidebeak pencil-flower. Native perennial herbaceous vine. Local in opening in riparian woodland along Acequia de Espada ca. 1/4 mi N of Ashley / Mission Rd.; rare in this area in 2001, locally abundant on piles of clay dredged from acequia in 2002. Vouchers: Carr 20103; Carr 21225. Photo: SAM-1085. Line drawing: Diggs et al. (1999), p. 699.
- **Trifolium dubium* Sibth. Small hop-clover. Naturalized annual. Reported by Van Auken (1981) from Espada / Acequia Park. Line drawing: Diggs et al. (1999), p. 703.
- **Vicia ludoviciana* Nutt. subsp. *leavenworthii* (T. & G.) Lasseter & Gunn [*Vicia leavenworthii* T. & G.] Leavenworth vetch. Native annual herbaceous vine. Rare in riparian woodlands and old fields. Line drawing: Diggs et al. (1999), p. 709.
- **Wisteria sinensis* (Sims) Sweet. Chinese wisteria. Introduced woody vine. Reported by Van Auken (1981) from Mission San José. Line drawing: Diggs et al. (1999), p. 709.

Fagaceae -- Beech Family

- **Quercus buckleyi* Nixon & Dorr [*Quercus texana* of Correll & Johnston (1970), not Buckl. Texas oak, Spanish oak. Introduced tree, native elsewhere in Texas but apparently not in the Missions area, where naturally occurring oaks of all sorts are scarce or essentially absent. Newly planted small trees at Mission Espada, Mission San Juan, in the San Juan Woodland landscape, and at various other sites may be this species; *Quercus shumardii* Buckl. could also be present. Photo: SAM-942. Line drawing: Diggs et al. (1999), p. 715.
- Quercus macrocarpa* Michx. Bur oak. Introduced tree, native to other parts of Texas. At least two trees planted in landscape on E side of new channel of San Antonio River near fenced compound around stone building on San Juan Dam Tract; this site may lie on property of the San Antonio River Authority rather than the National Park Service. Photo: SAM-1003. Line drawing: Diggs et al. (1999), p. 715.
- Quercus muhlenbergii* Engelm. Chinkapin oak. Introduced tree, native to other parts of Texas. Several trees planted in landscape on E side of new channel of San Antonio River near fenced compound around stone building on San Juan Dam Tract; this site may lie on property of the San Antonio River Authority rather than the National Park Service. Photo: SAM-1004. Line drawing: Diggs et al. (1999), p. 717.
- Quercus polymorpha* Schlecht. & Cham. Monterrey oak. Introduced tree. Small trees recently planted in landscapes at Mission Concepción, Mission San José and Mission Espada. Photo: SAM-155.
- **Quercus virginiana* Mill. Live oak. Presumably native tree. Occasional in cultivated landscapes around some missions; rare in the natural landscape in riparian woodlands and as seedlings in old fields. Voucher: Carr 21066. Photo: SAM-977. Line drawing: Diggs et al. (1999), p. 721. The identity of these plants is problematic; if native, they may be *Quercus virginiana* Mill. var. *virginiana*, *Quercus virginiana* Mill. var. *fusiformis* (Small) Sarg., or members of a hybrid swarm. If introduced, they could be any number of species.

Fumariaceae -- Fumitory Family

- **Corydalis curvisiliqua* Engelm. var. *curvisiliqua*. Scrambled eggs. Native annual. Occasional in old fields and riparian woodlands; reported by Van Auken (1981) from Mission San José. Voucher: Carr 20454. Photo: SAM-597. Line drawing: Diggs et al. (1999), p. 721.

Fumaria officinalis L. Common fumitory. Naturalized annual. Occasional on mown lawns of missions. Voucher: Carr 20445. Photo: SAM-571. Line drawing: Diggs et al. (1999), p. 725.

Garryaceae -- Silk-tassel Family

**Garrya ovata* Benth. subsp. *lindheimeri* (Torr.) Dahling [*Garrya lindheimeri* Torr.] Lindheimer silk-tassel. Native shrub. Reported by Van Auken (1981) from Espada / Acequia Park. Line drawing: Diggs et al. (1999), p. 725.

Geraniaceae -- Geranium Family

Erodium cicutarium (L.) L'Hér. Pin clover, alfilaria. Naturalized annual. Common winter weed of mission lawns. Voucher: Carr 20539. Photo: SAM-566. Line drawing: Diggs et al. (1999), p. 731.

**Erodium texanum* Gray. Texas stork's-bill. Native annual. Curiously rare in area, noted only on lawn at Mission Concepción. Voucher: Carr 20538. Photo: SAM-567. Line drawing: Diggs et al. (1999), p. 731.

**Geranium carolinianum* L. Carolina wild-geranium. Native annual. Occasional on mission lawns, in old fields and various disturbed sites. Voucher: Carr 20468. Photo: SAM-672. Line drawing: Diggs et al. (1999), p. 731.

Hydrocharitaceae -- Frog's-bit Family

Hydrilla verticillata (L. f.) Royle. Hydrilla. Naturalized submersed aquatic perennial; a "federally listed" noxious weed. Local in Acequia de Espada ca. 500 ft. S of Ashley Rd., where it is mixed with *Ceratophyllum demersum*. Vouchers: Carr 19791; Carr 21132. Photo: SAM-939. Line drawing: Diggs et al. (1999), p. 1171.

Hydrophyllaceae -- Waterleaf Family

Nama jamaicense L. Fiddleleaf nama. Native annual. Occasional on mission lawns, in old fields, on roadbeds, and in openings in various woodlands. Voucher: Carr & Benesh 20921. Photo: SAM-235. Line drawing: Diggs et al. (1999), p. 745.

**Nemophila phacelioides* Nutt. Blue eyes. Native annual. Common in riparian woodlands. Voucher: Carr 20461. Photo: SAM-604. Line drawing: Diggs et al. (1999), p. 745.

**Phacelia congesta* Hook. Blue curls. Native annual. Occasional in and along margins of riparian and upland woodlands. Voucher: Carr & Carré 20784-B. Photo: SAM-828. Line drawing: Diggs et al. (1999), p. 745.

Iridaceae -- Iris Family

**Iris* sp. Iris. Introduced perennial. A few plants in garden at Mission Concepción during 2001; removed during summer 2002. Reported by Van Auken (1981) from Mission Espada. Photo: SAM-978.

Sisyrinchium langloisii Greene [incl. *Sisyrinchium pruinsum* Bickn.] Blue-eyed grass. Native perennial. Rare in old field at 9243 Villamain. Voucher: Carr 20468. Photo: SAM-674. Line drawing: Diggs et al. (1999), p. 1777.

Juglandaceae -- Walnut Family

- **Carya illinoensis* (Wang) K. Koch. Pecan. Native tree. Common in riparian and upland woodlands; a principal shade tree of parks along San Antonio River where all competing trees have been removed. Voucher: Carr & Benesh 20915. Photo: SAM-212. Line drawing: Diggs et al. (1999), p. 751.
- **Juglans nigra* L. Black walnut. Native tree. Reported by Van Auken (1981) from all mission sites. Noted during these surveys on slope NE of Mission Espada, where large old trees are fairly common in a somewhat natural habitat; fruit on these trees is 4.0 cm in diameter when fresh. A walnut is planted at the NE corner of Mission Concepción; it may or may not be the same species. Voucher: Carr 19877. Photo: SAM-150. Line drawing: Diggs et al. (1999), p. 757.

Juncaceae -- Rush Family

- **Juncus torreyi* Cov. Torrey rush. Native perennial. Reported by Van Auken (1981) from Espada / Acequia Park. Line drawing: Diggs et al. (1999), p. 1185.

Lamiaceae (Labiatae) -- Mint Family

- Hedeoma drummondii* Benth. Limoncillo. Native perennial. Rare in area but locally common in decent grassland remnant at 9243 Villamain Rd. and in openings in upland woodland on N side of I-410 W of river. Vouchers: Carr 20370; Carr 20756. Photo: SAM-1041. Line drawing: Diggs et al. (1999), p. 761.
- Hedeoma hispida* Pursh. Rough hedeoma. Native annual. Rare in openings in upland woodlands on N side of I-410 immediately W of San Antonio River. Photo: SAM-1010. Line drawing: Diggs et al. (1999), p. 761.
- Lamium amplexicaule* L. Henbit. Naturalized annual. Occasional winter weed of mission lawns and other disturbed open sites. Voucher: Carr 20453. Photo: SAM-588. Line drawing: Diggs et al. (1999), p. 761.
- **Marrubium vulgare* L. Common horehound. Naturalized perennial. Reported by Van Auken (1981) from Mission San José. Line drawing: Diggs et al. (1999), p. 763.
- Monarda citriodora* Cerv. var. *citriodora*. Horsemint. Native annual. Common in upland woodlands and old fields. Photo: SAM-854. Vouchers: Carr 19766; Carr 20774; Carr 20908; Carr & Price 20987. Photo: SAM-854. Line drawing: Diggs et al. (1999), p. 767.
- **Monarda pectinata* Nutt. Plains beebalm, prostrate pink horsemint. Reported by Van Auken (1981) from three mission sites. This species occurs (in Texas) mostly on the Panhandle and is absent from the south-central Texas. Perhaps the Van Auken record is based on plants that were cultivated in gardens of the time. Line drawing: Diggs et al. (1999), p. 771.
- Rosmarinus officinalis* L. Rosemary. Introduced shrub. Planted in gardens at Mission Espada, Mission San Juan and Mission San José. Photo: SAM-1024.
- **Salvia coccinea* Buch. Scarlet sage, tropical sage. Native annual. Rare on bank of Sixmile (Piedras) Creek at Espada Aqueduct and along margin of strip of hackberry woodland along abandoned acequia segment at Mission Espada. Voucher: Carr 21153. Photo: SAM-1163. Line drawing: Diggs et al. (1999), p. 775.
- **Salvia farinacea* Benth. Mealy sage. Native perennial. Reported by Van Auken (1981) from Mission Espada. Line drawing: Diggs et al. (1999), p. 777.
- Salvia greggii* Gray. Gregg salvia, autumn sage. Introduced shrub/cultivar. Planted in landscapes at Mission Concepción, Mission Espada, and Mission San José. Photo: SAM-025. Line drawing: Diggs et al. (1999), p. 775.
- Salvia leucantha* Cav. Mexican bush sage. Introduced perennial. Planted in gardens at Mission Espada and Mission San José. Photo: SAM-250.
- Salvia* sp. Indigo spires. Introduced perennial cultivar. Planted in landscape at Mission San José. Photo: SAM-535.

Scutellaria drummondii Benth. Annual skullcap. Native annual. Rare in old fields. Photo: SAM-635. Line drawing: Diggs et al. (1999), p. 781.

Scutellaria sp. Red skullcap. Introduced perennial. In garden bed at Mission Espada. Photo: SAM-159.

Stachys crenata Raf. Shade betony. Native annual. Rare in upland woodlands. Voucher: Carr & Carré 20782. Line drawing: Diggs et al. (1999), p. 785.

**Teucrium canadense* L. American germander. Native perennial. Rare along E bank of old river channel above old Espada Dam. Voucher: Carr & Benesh 20914. Photo: SAM-859. Line drawing: Diggs et al. (1999), p. 785.

Teucrium cubense Jacq. var. *cubense* [*Trichostema cubense* Jacq. subsp. *chamaedrifolium* (Miller) Epling]. Cuban germander. Native annual. Rare in area, locally frequent in young open hackberry-soapberry woodland in Labores de Espada, at GPS point N29°19.617', W098°27.503' and vicinity. Vouchers: Carr 19891; Carr 21203. Photo: SAM-1043. Line drawing: Diggs et al. (1999), p. 785.

Lemnaceae -- Duckweed Family

Lemna aequinotialis. Duckweed. Native annual floating aquatic. Local in Acequia de Espada ca. 500 ft. S of Ashley Rd. and ca. 2000 ft. N of Ashley Rd. Voucher: Carr 19790. Photo: SAM-216. Line drawing: Diggs et al. (1999), p. 1189.

Liliaceae -- Lily Family

Allium canadense L. var. *canadense*. Canada wild onion. Native perennial. Occasional to locally common in riparian woodlands. Voucher: Carr 20551. Photo: SAM-720. Line drawing: Diggs et al. (1999), p. 1195.

**Asparagus officinalis* L. Asparagus. Introduced perennial. Reported by Van Auken (1981) from Mission San José. Line drawing: Diggs et al. (1999), p. 1199.

**Cooperia drummondii* Herb. [*Zephyranthes chlorosolen* (Herb.) Dietr.] Drummond rain-lily, cebolleta. Native perennial. Common in old fields, athletic fields, mission lawns, etc., after summer rains. Voucher: Carr 20052. Photo: SAM-374. Line drawing: Diggs et al. (1999), p. 1203.

**Cooperia pedunculata* Herb. [*Zephyranthes drummondii* D. Don in Sweet] Giant rain-lily, broadleaf rain-lily. Native perennial. Occasional in old fields and on mission lawns; rare in riparian woodlands. Photo: SAM-690. Line drawing: Diggs et al. (1999), p. 1203.

Crinum sp. Introduced perennial. Planted in landscape around shaded depression (old quarry pit) on W side of lawn in front of Mission Concepción. Photo: SAM-399. According to flora and fauna binder at visitor center, these plants may be *Crinum x powellii* Hort. ex Bak. A *Crinum* species is also planted at the E edge of the grounds at Mission Espada; perhaps it is the same cultivar.

**Hymenocallis caroliniana* (L.) Herb. Spider-lily. Introduced perennial. Reported by Van Auken (1981) from Mission Espada. Line drawing: Diggs et al. (1999), p. 1205.

Nothoscordum bivalve (L.) Britt. Crow-poison. Native perennial. Occasional in old fields and lawns. Voucher: Carr 21231. Photo: SAM-1095. Line drawing: Diggs et al. (1999), p. 1209.

Unknown Liliaceae. Naturalized perennial. Locally common in riparian woodland along Sixmile (Piedras) Creek from bridge upstream from Espada Aqueduct downstream to hike-and-bike trail. Voucher: Carr 20799.

Lythraceae -- Loosestrife Family

Ammannia coccinea Rottb. Scarlet ammannia. Native annual. One plant in Acequia de Espada at culvert under Espada Rd. at SW corner of Mission Espada grounds, at N29°19.030', W098°27.087' +/- 13.2 ft. Photo: SAM-010. Line drawing: Diggs et al. (1999), p. 801.

**Lagerstroemia indica* L. Crepe myrtle. Introduced shrub. Planted on grounds of Mission San José. One shrub, either an escape or a very old planting, in woodland on bank of Acequia de San Juan on San Juan Dam tract. Photo: SAM-011. Line drawing: Diggs et al. (1999), p. 801.

Malpighiaceae -- Malpighia Family

Malpighia glabra L. Barbados cherry, manzanita. Introduced shrub. One large individual (ca. 2 meters tall) along interior west wall of mission compound, at N29°21.716', W098°28.848' +/- 20.1 ft. Photo: SAM-351.

Mascagnia sp. Purple orchid vine. Introduced woody vine. Climbing on trellis in front of visitor center at Mission Concepción. Flora and fauna booklet at visitor center identifies this species as *Mascagnia lilacina* [authorship unknown]. Photo: SAM-1110.

Malvaceae -- Mallow Family

**Abutilon fruticosum* Guillemain & Perrottet [*Abutilon incanum* (Link.) Sweet]. Texas Indian-mallow. Native perennial. Occasional in upland woodlands and old fields. Vouchers: Carr 19838; Carr 19852. Photo: SAM-533. Line drawing: Diggs et al. (1999), p. 803.

**Callirhoe leiocarpa* Martin. Poppy mallow, wine-cups. Native annual. Common in upland woodlands; reported by Van Auken (1981) from Mission Espada. Voucher: Carr & Carré 20785. Photo: SAM-827. Line drawing: Diggs et al. (1999), p. 809.

**Malva parviflora* L. Cheeseweed, little mallow. Naturalized annual. Common weed in mission lawns and old fields. Voucher: Carr 20457. Photo: SAM-594. Line drawing: Diggs et al. (1999), p. 813.

**Malvastrum coromandelianum* (L.) Gke. Threelobe false-mallow. Native perennial. Common in lawns, old fields and athletic fields. Voucher: Carr 20900. Photo: SAM-262. Line drawing: Diggs et al. (1999), p. 813.

**Malvaviscus arboreus* Cav. var. *drummondii* (T. & G.) Schery. Turk's cap. Native perennial. Occasional to locally common in riparian woodlands; occasional in upland woodlands. Voucher: Carr & Benesh 21053. Photo: SAM-003. Line drawing: Diggs et al. (1999), p. 817.

Pavonia lasiopetala Scheele [*Pavonia wrightii* Gray]. Rose pavonia. Shrub native to western Texas, introduced in Missions area. Planted in landscapes at Mission Concepción and Mission San José; no naturally-occurring (wild) plants seen. Photo: SAM-166. Line drawing: Diggs et al. (1999), p. 819.

**Rhynchosida physocalyx* (Gray) Fryxell [*Sida physocalyx* Gray]. Spearleaf sida. Native perennial. Common in lawns and old fields. Vouchers: Carr 19826; Carr 20724. Photo: SAM-094. Line drawing: Diggs et al. (1999), p. 819.

**Sida abutifolia* H. B. K. [*Sida filicaulis* T. & G.]. Creeping yellow sida. Native perennial. Occasional but omnipresent in mown lawns, athletic fields, old fields and other open areas. Voucher: Carr 19869. Photo: SAM-1033. Line drawing: Diggs et al. (1999), p. 819.

Sida spinosa L. Prickly sida. Native perennial. Rare in old fields and upland woodlands. Vouchers: Carr 19820; Carr 20108. Photo: SAM-988. Line drawing: Diggs et al. (1999), p. 819.

Meliaceae -- Mahogany Family

**Melia azedarach* L. Chinaberry. Naturalized tree. Common in riparian and upland woodlands; also planted in landscapes at missions. A current target of control measures on property of NPS; hundreds of trees were cut during the course of this survey. Voucher: Carr 20742. Photo: SAM-395. Line drawing: Diggs et al. (1999), p. 825.

Menispermaceae -- Moonseed Family

Cocculus carolinus (L.) DC. Carolina snailseed. Native woody vine. Common in riparian and upland woodlands. Voucher: Carr & Benesh 19812. Photo: SAM-240. Line drawing: Diggs et al. (1999), p. 825.

Cocculus diversifolius DC. Orientvine, correhuela. Native woody vine. Locally common in shrubs on grounds of Mission San José. A species of deep South Texas and northern Mexico, the occurrence of which in the Missions area is rather curious, perhaps a result of introduction with landscape plants. Vouchers: Carr 19777; Carr 19832. Photo: SAM-280.

Moraceae -- Mulberry Family

**Broussonetia papyrifera* (L.) Vent. Paper mulberry. Naturalized tree. Locally common in woodland along E side of South Presa St. just N of Graf Rd.; rare in woodland along N margin of Mission Espada. Voucher: Carr 19895. Photo: SAM-308. Line drawing: Diggs et al. (1999), p. 829.

Fatoua villosa (Thunb.) Nakai. [No common name.] Introduced annual. Weed in garden beds at Mission Concepción and Mission Espada. Vouchers: Carr 19774; Carr 19878. Photo: SAM-161. Line drawing: Diggs et al. (1999), p. 829.

**Ficus carica* L. Common fig. Naturalized shrub. Occasional in landscapes around missions; escaped into riparian woodlands at various spots. Voucher: Carr 20897. Photo: SAM-152. Line drawing: Diggs et al. (1999), p. 829.

**Morus alba* L. White mulberry, Asian mulberry. Naturalized tree. Common in riparian woodlands; occasional in upland woodlands. Voucher: Carr 19800. Photo: SAM-174. Line drawing: Diggs et al. (1999), p. 833.

**Morus rubra* L. Red mulberry. Native tree. Although most of the mulberries in the project area appear to be the exotic *Morus alba*, a few seem to be the native *Morus rubra*. Voucher: Carr 20812. Photo: SAM-1147. Line drawing: Diggs et al. (1999), p. 833.

Myricaceae -- Wax-myrtle Family

Myrica sp. Wax-myrtle. Introduced shrub. Planted in landscape at Mission San José. According to flora and fauna binder in visitor center, this is dwarf wax-myrtle (*Myrica pusilla* Raf.). Photo: SAM-029.

Nyctaginaceae -- Four-o'clock Family

Acleisanthes longiflora Gray. Angel trumpets. Native perennial. Rare in area, noted in cleared grassy area along W side of hike & bike trail immediately N of Mission Espada and in upland woodland N of I-410 nearby. Voucher: Carr 21232. Photo: SAM-489.

Acleisanthes obtusa (Choisy) Standl. Berlandier trumpets. Native perennial. Locally common in compacted soil in barish spots in lawn on east side of Mission Espada complex; rare to locally common in upland woodlands. Vouchers: Carr 19880; Carr & Gallyoun 20352. Photo: SAM-459.

**Boerhavia diffusa* L. [*Boerhavia coccinea* Mill.] Scarlet spiderling. Native perennial. Common weed in lawns, athletic fields, old fields and other open disturbed sites. Voucher: Carr 19862. Photo: SAM-392. Line drawing: Diggs et al. (1999), p. 837.

Boerhavia erecta L. Erect spiderling. Native annual. Relatively rare in area, occurring mostly as a wide of cracks in pavement of streets and sidewalks. Voucher: Carr 19819. Photo: SAM-1079. Line drawing: Diggs et al. (1999), p. 841.

Bougainvillea sp. Bougainvillea. Introduced shrub. Planted in landscape at Mission San Juan; apparently died during winter of 2002. Also in pots at Mission Espada. Photo: SAM-1023.

Mirabilis albida (Walt.) Heimerl. Whitestem four o'clock. Native perennial. Rare in area, encountered only in upland woodland on N side of I-410 immediately W of hike & bike trail on W side of river. Voucher: Carr 21192. Photo: SAM-1020. Line drawing: Diggs et al. (1999), p. 841.

- **Mirabilis jalapa* L. [*Mirabilis lindheimeri* (Standl.) Shinnery]. Common four-o'clock. Naturalized perennial. Occasional in riparian and upland woodlands and along woodland margins; also planted in landscapes around missions (e.g., at Mission San José). Voucher: Carr 21101. Photo: SAM-503. Line drawing: Diggs et al. (1999), p. 843.
- Mirabilis linearis* (Pursh) Heimerl. Slenderleaf four-o'clock, umbrella-wort. Native perennial. Locally frequent in old field on San Juan Dam Tract. Voucher: Carr 19843. Photo: SAM-369. Line drawing: Diggs et al. (1999), p. 843.
- **Nyctaginea capitata* Choisy. Scarlet muskflower. Native perennial. Occasional but unduly conspicuous (when flowering) in old fields and upland woodlands. Voucher: Carr 19763. Photo: SAM-016. Line drawing: Diggs et al. (1999), p. 843.

Oleaceae -- Olive Family

- **Forestiera angustifolia* Torr. Panalero, narrowleaf elbowbush, desert olive. Reported by Van Auken (1981) from Espada / Acequia Park.
- Fraxinus berlandieriana* DC. Fresno, ash. Native tree. Occasional in riparian woodlands. Voucher: Carr 19799. Photo: SAM-847.
- Fraxinus velutina* Torr. Arizona ash. Introduced tree. Planted in landscape at Mission San José. Photo: SAM-882.
- Jasminum mesnyi* Hance. Yellow jasmine, primrose jasmine. Introduced shrub. Several large shrubs planted in a row on southeast side of church at Mission San José, at N29°21.725', W098°28.784' +/- 14.4 ft. Photo: SAM-346.
- Ligustrum japonicum* Thunb. Japanese ligustrum, waxleaf ligustrum. Naturalized shrub. Common in riparian and upland woodlands; also utilized in landscapes around missions. Voucher: Carr 19797. Photo: SAM-394. Line drawing: Diggs et al. (1999), p. 851.
- **Ligustrum quihoui* Carrière. Ligustrum. Naturalized shrub. Reported by Van Auken (1981) from four mission sites. Line drawing: Diggs et al. (1999), p. 851.
- Ligustrum sinense* Lour. Chinese ligustrum. Naturalized shrub. Rare in riparian woodlands. Voucher: Carr 21094. Photo: SAM-915. Line drawing: Diggs et al. (1999), p. 851.
- **Menodora heterophylla* (Moric.) DC. Redbud menodora. Native perennial. Occasional in openings in upland woodlands and in old field on San Juan Dam Tract; reported by Van Auken (1981) from Mission San José. Voucher: Carr 20728. Photo: SAM-756. Line drawing: Diggs et al. (1999), p. 853.

Onagraceae -- Evening-Primrose Family

- Gaura coccinea* Pursh. Scarlet gaura. Native perennial. Frequent in upland woodlands and old fields. Vouchers: Carr 19767; Carr 19831; Carr 19860. Photo: SAM-070. Line drawing: Diggs et al. (1999), p. 857.
- **Gaura drummondii* (Spach) T. & G. [*Gaura odorata* Lag.]. Wild honeysuckle. Native annual. Reported by Van Auken (1981) from four mission sites. Line drawing: Diggs et al. (1999), p. 857.
- **Gaura parviflora* Doug. Smallflower gaura. Native annual. Common in upland woodlands; occasional in old fields. Vouchers: Carr 19867; Carr 20745. Photo: SAM-790. Line drawing: Diggs et al. (1999), p. 857.
- Gaura sinuata* Nutt ex. Ser. Wavyleaf gaura. Native perennial. Frequent in same habitats as *Gaura coccinea*, but blooming earlier in season. Vouchers: Carr 20726; Carr 20910. Line drawing: Diggs et al. (1999), p. 857.
- Ludwigia octovalvis* (Jacq.) Raven. Tall water-primrose. Native annual. Occasional along acequias and old river channels. Voucher: Carr 20098. Photo: SAM-1031. Line drawing: Diggs et al. (1999), p. 861.
- Oenothera rosea* Ait. Evening-primrose. Native annual. Rare on mudflat along impoundment behind old Espada Dam in Espada Park. Voucher: Carr 20546. Photo: SAM-716.

**Oenothera speciosa* Nutt. Pink evening-primrose. Native perennial. Occasional in old fields and upland woodlands. Voucher: Carr 20727. Photo: SAM-673. Line drawing: Diggs et al. (1999), p. 867.

Oenothera triloba Nutt. Stemless evening-primrose. Native perennial. Occasional on exterior lawns at Mission San José and Mission Espada; numerous plants in northwest corner of lawn at Mission Concepción. Voucher: Carr 20554. Photo: SAM-572. Line drawing: Diggs et al. (1999), p. 867.

Oxalidaceae -- Wood-Sorrel Family

**Oxalis dillenii* Jacq. [*Oxalis stricta* L.] Yellow sour-clover. Native annual. Occasional in upland woodlands and old fields. Voucher: Carr 20750. Photo: SAM-393. Line drawing: Diggs et al. (1999), p. 871.

Oxalis drummondii Gray. Drummond wood-sorrel. Native perennial. Locally common in shaded lawns at Mission San Juan and Mission Espada. Voucher: Carr 20072. Photo: SAM-403. Line drawing: Diggs et al. (1999), p. 871.

Oxalis sp. Wood-sorrel. Introduced perennial. Locally common under anacuas around old quarry pit at Mission Concepción.

Papaveraceae -- Poppy Family

**Argemone albiflora* Hornem. subsp. *texanum* Ownbey. White prickly-poppy. Native annual or biennial. Reported by Van Auken (1981) from Mission Espada. Line drawing: Diggs et al. (1999), p. 875.

Argemone aurantiaca G. Ownbey. Hill prickly-poppy. Native annual or biennial. Occasional in old fields and other dry open disturbed sites. Voucher: Carr 19829. Photo: SAM-111. Line drawing: Diggs et al. (1999), p. 875.

Passifloraceae -- Passionflower Family

Passiflora foetida L. var. *gossypifolia* (Desv. ex Hamilt.) Masters. Corona de Cristo, white passionflower. Native annual vine. Occasional along margins of upland woodlands and in athletic fields at Mission San José and W of Mission Concepción. In flower and early fruit, 1 August 2001; flowers closed at noon. Voucher: Carr 19873. Photo: SAM-119.

**Passiflora incarnata* L. Blue passionflower, maypop, passionaria. Native perennial herbaceous vine. Reported by Van Auken (1981) from Espada / Acequia Park. Line drawing: Diggs et al. (1999), p. 879.

Passiflora tenuiloba Engelm. Spread-lobe passionflower, albatross passionflower. Native perennial herbaceous vine. Apparently rare in area, noted only in older-growth thornscrub at S end of Labores de Espada. Photo: SAM-739. Line drawing: Diggs et al. (1999), p. 879.

Phytolaccaceae -- Pokeweed Family

**Phytolacca americana* L. Pokeweed. Native annual. Reported by Van Auken (1981) from Mission Concepción. Line drawing: Diggs et al. (1999), p. 885.

**Rivina humilis* L. Pigeonberry. Native perennial. Occasional in riparian woodland along Acequia de Espada N of Ashley Rd.; also in gardens at some missions, where apparently planted. Vouchers: Carr 20924; Carr 21149. Photo: SAM-1137. Line drawing: Diggs et al. (1999), p. 885.

Plantaginaceae -- Plantain Family

**Plantago major* L. Major plantain. Naturalized perennial. Rare on E bank of old river channel above old Espada Dam; during 2001-2002, the one or two plants in this area were repeatedly trampled by fishermen, rendering impossible the collection of a useful voucher specimen. Vegetative rosettes

observed in March and April 2002 along the San Antonio River near Mission San Juan disappeared before flowering. Photo: SAM-858. Line drawing: Diggs et al. (1999), p. 887.

**Plantago rhodosperma* Dcne. Redseed plantain. Native annual. Occasional in old fields and upland woodlands. Voucher: Carr 20797. Photo: SAM-700. Line drawing: Diggs et al. (1999), p. 887.

Platanaceae -- Plane-tree Family

**Platanus occidentalis* L. Eastern sycamore. Native tree. Essentially absent from area. Reported by Van Auken (1981) from Mission San José; not seen in 2001-2002. Several recently-planted small trees were observed in 2001 along San Antonio River near San Juan Dam; these trees were dead by fall 2002. Line drawing: Diggs et al. (1999), p. 889.

Poaceae (Gramineae) -- Grass Family

**Aristida purpurea* Nutt. var. *purpurea*. Purple threeawn. Native perennial. Occasional in old fields and compacted soils of athletic fields and missions grounds. Vouchers: Carr 19804; Carr 20380. Photo: SAM-922. Line drawing: Diggs et al. (1999), p. 1245.

**Aristida purpurea* Nutt. var. *longiseta* (Steud.) Vasey [*Aristida longiseta* Steud.]. Longawn threeawn. Native perennial. Occasional in old fields; reported by Van Auken (1981) from Mission Espada. Line drawing: Diggs et al. (1999), p. 1245.

**Aristida purpurea* Nutt. var. *wrightii* (Nash) Allred [*Aristida wrightii* Nash]. Wright threeawn. Native perennial. Reported by Van Auken (1981) from three mission sites. Line drawing: Diggs et al. (1999), p. 1245.

**Arundo donax* L. Giant cane. Naturalized perennial. Common on banks of waterways and in riparian woodlands. Voucher: Carr & Benesh 21353. Photo: SAM-1158. Line drawing: Diggs et al. (1999), p. 1245.

Avena sativa L. Oats. Introduced annual. Occasional volunteer in old field S of Mission San Juan. Voucher: Carr 20775. Photo: SAM-796. Line drawing: Diggs et al. (1999), p. 1249.

**Bothriochloa ischaemum* (L.) Keng var. *songarica* (Rupr.) Celerier & Harlan. King Ranch bluestem. Naturalized perennial. Planted in athletic fields and lawns around some missions; locally common in some old fields. Voucher: Carr 20375. Photo: SAM-969. Line drawing: Diggs et al. (1999), p. 1249.

**Bothriochloa laguroides* (DC.) Herter subsp. *torreyana* (Steud.) Allred & Gould [*Bothriochloa saccharoides* (Sw.) Rydb. var. *torreyana* (Steud.) Gould]. Silver bluestem. Native perennial. Occasional along margins of upland woodlands, in old fields, athletic fields and lawns. Voucher: Carr 20923. Photo: SAM-534. Line drawing: Diggs et al. (1999), p. 1249.

Bouteloua curtipendula (Michx.) Rydb. Sideoats grama. Native perennial. Rare in area, a few plants at edge of garden in front of visitor center at Mission San José, at GPS point N29°21.622', W098°28.803' +/- 12.7 ft. Perhaps introduced with garden stock. Photo: SAM-344. Line drawing: Diggs et al. (1999), p. 1249.

**Bromus catharticus* Vahl [*Bromus unioloides* (Willd.) Kunth]. Rescuegrass. Naturalized annual. Common in all habitats, one of the most ubiquitous elements of the spring flora. Voucher: Carr 20809. Photo: SAM-678. Line drawing: Diggs et al. (1999), p. 1251.

Bromus japonicus Thunb. ex Murr. Japanese brome. Naturalized annual. Occasional in old fields and upland woodlands. Voucher: Carr & Carré 20784. Line drawing: Diggs et al. (1999), p. 1255.

Buchloe dactyloides (Nutt.) Engelm. Buffalograss. Native perennial. Occasional in old field on San Juan Dam Tract and on lawn at Mission Espada. Voucher: Carr 20740. Photo: SAM-1139. Line drawing: Diggs et al. (1999), p. 1255.

**Cenchrus spinifex* Cav. [*Cenchrus incertus* Curtis]. Sandburggrass. Native perennial. Occasional in lawns and old fields. Voucher: Carr & Price 20989. Photo: SAM-452. Line drawing: Diggs et al. (1999), p. 1255.

- **Chasmanthium latifolium* (Michx.) Yates. Creek oats, inland sea oats. Native perennial. Occasional to common in riparian woodlands. Voucher: Carr 20898. Photo: SAM-125. Line drawing: Diggs et al. (1999), p. 1257.
- Chloris ciliata* Sw. Fringed chloris. Native perennial. Occasional in upland woodlands. Vouchers: Carr 20106; Carr 20378; Carr 21205. Photo: SAM-1061.
- Chloris cucullata* Bisch. Hooded windmillgrass. Native perennial. Occasional in lawns, old fields and upland woodlands. Voucher: Carr 19805. Photo: SAM-153. Line drawing: Diggs et al. (1999), p. 1257.
- **Chloris x subdolichostachya* Mueller [*Chloris cucullata* x *Chloris verticillata*] Windmillgrass. Native perennial. Reported by Van Auken (1981) from Mission Espada. Line drawing: Diggs et al. (1999), p. 1257.
- Chloris verticillata* Nutt. Tumble windmillgrass. Native perennial. Occasional in openings in upland woodlands. Voucher: Carr 20095. Photo: SAM-1063. Line drawing: Diggs et al. (1999), p. 1257.
- **Cynodon dactylon* (L.) Pers. var. *dactylon*. Bermudagrass. Naturalized perennial. The common lawn grass throughout; also seeded in hay meadows (old fields), persisting as these fields succeed to mesquite woodlands. Voucher: Carr 20895. Photo: SAM-033. Line drawing: Diggs et al. (1999), p. 1261.
- Dichanthium annulatum* (Forsk.) Stapf. var. *annulatum*. Kleberg bluestem. Naturalized perennial. Planted on cleared slopes along San Antonio River and escaped into upland woodlands and old fields. Vouchers: Carr 19828; Carr 20054. Photo: SAM-956. Line drawing: Diggs et al. (1999), p. 1265.
- Dichanthium aristatum* Stapf. Angleton bluestem. Naturalized perennial. Rare in area, noted only on bank of Acequia de Espada at W edge of grounds of Mission Espada. Voucher: Carr 21278. Photo: SAM-1122.
- Dichanthium sericeum* (R. Br.) A. Camus. Silky bluestem. Naturalized perennial. Occasional in old fields. Voucher: Carr 20369. Photo: SAM-362.
- Digitaria ciliaris* (Retz.) Koel. [*Digitaria adscendens* (H.B.K.) Henrard]. Southern crabgrass. Naturalized perennial. Rare in area, a few plants at edge of garden in front of visitor center at Mission San José. Voucher: Carr 21128. Photo: SAM-929. Line drawing: Diggs et al. (1999), p. 1265.
- Digitaria cognata* (Schult.) Pilger subsp. *cognata* [*Leptoloma cognatum* (Schult.) Chase]. Fall witchgrass. Native perennial. Rare in old fields. Voucher: Carr 20367. Photo: SAM-950. Line drawing: Diggs et al. (1999), p. 1265.
- Echinochloa colona* (L.) Link. Junglerice. Naturalized annual. Weed in garden beds at Mission Espada. Line drawing: Diggs et al. (1999), p. 1267.
- Echinochloa crus-galli* (L.) Beauv. Barnyardgrass. Naturalized annual. Occasional on banks of acequias and in drier disturbed sites. Photo: SAM-028. Line drawing: Diggs et al. (1999), p. 1267.
- Echinochloa walteri* (Pursh) Heller. Walter's echinochloa. Native annual. Rare in area, noted only on bank of Acequia de Espada ca. 1/2 mi N of Ashley / Mission Rd. Voucher: Carr & Benesh 21350. Photo: SAM-1154. Line drawing: Diggs et al. (1999), p. 1267.
- Eleusine indica* (L.) Gaertn. Goosegrass. Naturalized annual. Weed in lawn at Mission Concepción, Mission Espada and Mission San Juan; larger plants occasional along old river channel at Espada Park. Voucher: Carr 19773; Carr 19883. Photo: SAM-1126. Line drawing: Diggs et al. (1999), p. 1267.
- **Elymus canadensis* L. Canada wild-rye. Native perennial. Reported by Van Auken (1981) from five mission tracts; not observed during surveys of 2001-2002. Line drawing: Diggs et al. (1999), p. 1271.
- Elymus virginicus* L. var. *virginicus*. Virginia wildrye. Native perennial. Frequent in riparian woodlands. Voucher: Carr 20767. Photo: SAM-765. Line drawing: Diggs et al. (1999), p. 1271.
- Eragrostis barrelieri* Daveau. Mediterranean lovegrass. Naturalized annual. Local in unpaved roadbeds and other unshaded sites offering minimal competition. Voucher: Carr 19853. Photo: SAM-1053. Line drawing: Diggs et al. (1999), p. 1271.
- Eragrostis curtispedicellata* Buckl. Gummy lovegrass. Native perennial. Rare in old fields. Voucher: Carr 21177. Photo: SAM-1002. Line drawing: Diggs et al. (1999), p. 1271.
- Eragrostis intermedia* A. S. Hitchc. Plains lovegrass. Native perennial. Occasional in old fields. Vouchers: Carr 20374; Carr 21124; Carr 21178; Carr 21188. Photo: SAM-923. Line drawing: Diggs et al.

- (1999), p. 1273. Some of these specimens approach *Eragrostis hirsuta* (Michx.) Nees (bigtop lovegrass), another native perennial.
- Hordeum leporinum* L. Hare barley. Naturalized annual. Noted only on lawn within compound at Mission San Juan. Voucher: Carr 20765. Photo: SAM-820. Line drawing: Diggs et al. (1999), p. 1279.
- **Hordeum pusillum* Nutt. Little barley, southwestern barley. Native annual. Common in old fields and on mission lawns. Voucher: Carr 20721. Photo: SAM-787. Line drawing: Diggs et al. (1999), p. 1279.
- Leersia oryzoides* (L.) Swartz. Rice cut-grass. Native perennial. Rare in area, noted only along margin on impoundment upstream from Old Espada Dam. Voucher: Carr & Gallyoun 20354. Photo: SAM-863. Line drawing: Diggs et al. (1999), p. 1283.
- Leptochloa dubia* (Kunth) Nees. Green sprangletop. Native perennial. Apparently rare in area, noted only on embankment along hike & bike trail along W side of San Antonio River ca. 0.2 trailmiles N of I-410 bridges, where perhaps seeded. Voucher: Carr 21233. Photo: SAM-1099. Line drawing: Diggs et al. (1999), p. 1283.
- Leptochloa mucronata* (Michx.) Kunth [*Leptochloa filiformis* (Lam.) Beauv.] Red sprangletop. Native annual. Rare in area, noted only in old field at 9243 Villamain. Voucher: Carr 21228. Photo: SAM-1091. Line drawing: Diggs et al. (1999), p. 1283.
- Limnodea arkansana* (Nutt.) L. H. Dewey. Ozarkgrass. Native annual. Ubiquitous during spring, common in old fields and lawns but also in shaded woodland sites. Voucher: Carr 20725. Photo: SAM-730. Line drawing: Diggs et al. (1999), p. 1283.
- **Lolium perenne* L. [*Lolium multiflorum* Lam.] English rye. Naturalized annual or perennial. Seeded along San Antonio River and escaping into upland and riparian woodlands. Voucher: Carr 20790. Line drawing: Diggs et al. (1999), p. 1285.
- Miscanthus* sp. Fountain grass, maiden grass. Introduced perennial. Planted in landscapes at Mission Concepción and Mission San José. According to flora and fauna booklet at visitor center, these plants are *Miscanthus sinensis* Anderss. Photo: SAM-021. Line drawing: Diggs et al. (1999), p. 1285.
- Muhlenbergia lindheimeri* Hitchc. Lindheimer muhly. Native perennial. Planted in landscape at Mission San José; no naturally-occurring (wild) plants observed. Photo: SAM-246. Line drawing: Diggs et al. (1999), p. 1287.
- **Nassella leucotricha* (Trin. & Rupr.) Pohl [*Stipa leucotricha* Trin. & Rupr.]. Texas wintergrass, speargrass. Native perennial. Common in upland woodlands and some old fields. Voucher: Carr 20722. Photo: SAM-971. Line drawing: Diggs et al. (1999), p. 1289.
- Panicum antidotale* Retz. Blue panicum. Naturalized perennial. Rare in area, noted only along hike and bike trail on E side of Labores de Espada. Voucher: Carr 21204. Photo: SAM-1060. Line drawing: Diggs et al. (1999), p. 1297.
- Panicum capillare* L. Witchgrass. Native annual. Rare in area, noted only in unshaded bed of access road along acequia de Espada N of Ashley / Mission Rd. after dredging operation of 2002. Voucher: Carr & Benesh 21351. Photo: SAM-1155. Line drawing: Diggs et al. (1999), p. 1299.
- Panicum dichotomiflorum* Michx. Spreading witchgrass. Native annual. Occasional along margins of riparian woodlands. Voucher: Carr & Gallyoun 20356. Photo: SAM-500. Line drawing: Diggs et al. (1999), p. 1299.
- **Panicum hallii* Vasey. Hall's panicum. Native perennial. Occasional to locally common in old fields and upland woodlands. Vouchers: Carr 20053; Carr 20107; Carr 20372; Carr 20373; Carr 21175. Photo: SAM-370. Line drawing: Diggs et al. (1999), p. 1301. Some specimens may be *Panicum hallii* var. *filipes* (Scribn.) Waller [*Panicum diffusum* Swartz], which was reported from Espada / Acequia Park by Van Auken (1981).
- Panicum maximum* Jacq. Guineagrass. Naturalized perennial. Several colonies: on recently regraded clay slope along new street that crosses San Antonio River immediately E of Mission Espada, ca. 2000 ft. S of I-410 bridge, at N29°19.127', W098°26.947'; in upland woodland along W side of Acequia de Espada ca. 100 ft. N of Ashley Rd.; another colony along margin of riparian woodland along old

- river channel below Old Espada Dam. Vouchers: Carr & Benesh 19816; Carr 20096. Photo: SAM-1060.
- **Panicum oligosanthes* Schult. [*Dichanthelium oligosanthes* (Scribn.) Gould]. Fewflower panicgrass. Native perennial. Rare in riparian woodlands. Vouchers: Carr 20819 (vernal form); Carr & Benesh 21357 (autumnal form). Line drawing: Diggs et al. (1999), p. 1303.
- **Paspalum dilatatum* Poir. Dallisgrass. Naturalized perennial. Occasional weed in lawns and old fields. Voucher: Carr 19854. Photo: SAM-197. Line drawing: Diggs et al. (1999), p. 1307.
- Paspalum distichum* L. Knotgrass. Native perennial. Local on flat along San Antonio River near San Juan Dam, a site that probably lies on property of the San Antonio River Authority rather than the National Park Service. Voucher: Carr 19887. Photo: SAM-220. Line drawing: Diggs et al. (1999), p. 1307.
- Paspalum langei* (Fourn.) Nash. Rustyseed paspalum. Native perennial. Rare in riparian woodlands. Voucher: Carr 20104. Photo: SAM-1047. Line drawing: Diggs et al. (1999), p. 1307.
- Paspalum lividum* Trin. Longtom. Native perennial. Locally common on shaded bank of old river channel upstream from Espada Dam in Espada Park. Voucher: Carr 19793. Photo: SAM-945.
- Paspalum pubiflorum* Fourn. Hairyseed paspalum. Native perennial. Occasional in upland woodlands. Voucher: Carr 20901. Photo: SAM-440. Line drawing: Diggs et al. (1999), p. 1309.
- Paspalum urvillei* Steud. Vaseygrass. Naturalized perennial. Occasional on banks of waterways. Voucher: Carr 21096. Line drawing: Diggs et al. (1999), p. 1309.
- Pennisetum ciliare* (L.) Link [*Cenchrus ciliaris* L.]. Buffelgrass. Naturalized perennial. Rare, two plants in crack in asphalt at east end of parking lot at Mission San José, at N29°21.504', W098°28.708' +/- 11.2 ft. Photo: SAM-340.
- Pennisetum setaceum* (Forsk.) Chiovenda. Purple fountain-grass. Introduced perennial. Planted in gardens at Mission San José. Photo: SAM-340.
- Phyllostachys aurea* Carrière ex Rivière & Rivière. Bamboo. Naturalized perennial. Dense stand on E side of Acequia de San Juan on S and W sides of San Juan Dam tract, from GPS point N29°21.426', W098°27.999' to N29°21.379', W098°27.907'. Voucher: Carr 21221. Photo: SAM-386. Line drawing: Diggs et al. (1999), p. 1313.
- Poa annua* L. Annual bluegrass. Naturalized annual. Common on mission lawns and in old fields; occasional in riparian woodlands. Voucher: Carr 20447. Photo: SAM-580. Line drawing: Diggs et al. (1999), p. 1313.
- **Polypogon monspeliensis* (L.) Desf. Rabbitfootgrass. Naturalized annual. Reported by Van Auken (1981) from Espada / Acequia Park. Line drawing: Diggs et al. (1999), p. 1317.
- Schizachyrium scoparium* (Michx.) Nash [*Andropogon scoparius* Michx.]. Little bluestem. Native perennial. Rare on properties; locally common in narrow strip of "old field" perhaps not recently plowed, in Labores de San Juan, W side of Villamain Rd. ca. 0.25-0.3 mi S of road to parking lot for Mission San Juan, at GPS point N29°19.735', W098°27.134'. Voucher: Carr 20368. Photo: SAM-526. Line drawing: Diggs et al. (1999), p. 1321.
- Setaria leucopila* (Scribn. & Merr.) K. Schum. Plains bristlegrass. Native perennial. Occasional in upland woodland and old fields. Voucher: Carr 19806. Photo: SAM-951. Line drawing: Diggs et al. (1999), p. 1321.
- **Setaria parviflora* (Poir.) Kerg. [*Setaria geniculata* Beauv.] Knotroot bristlegrass. Native perennial. Reported by Van Auken (1981) from Espada / Acequia Park. Line drawing: Diggs et al. (1999), p. 1321.
- Setaria scheelei* (Steud.) Hitchc. Southwestern bristlegrass. Native perennial. Frequent in upland and riparian woodlands. Vouchers: Carr 21134; Carr 21148. Photo: SAM-175. Line drawing: Diggs et al. (1999), p. 1323.
- **Setaria viridis* (L.) Beauv. Green bristlegrass, green foxtailgrass. Naturalized annual. Reported by Van Auken (1981) from all mission sites. Line drawing: Diggs et al. (1999), p. 1323.

- **Sorghum halepense* (L.) Pers. Johnsongrass. Naturalized perennial. Common in old fields and upland woodlands. Voucher: Carr 20889. Photo: SAM-037. Line drawing: Diggs et al. (1999), p. 1325.
- Sorghum* sp. Grain sorghum. Naturalized perennial. Occasional in old fields, where presumably seeded. Voucher: Carr 20748.
- Sporobolus cryptandrus* (Torr.) Gray. Sand dropseed. Native perennial. Rare in old fields and upland woodlands. Vouchers: Carr 20105; Carr 21126. Photo: SAM-921. Line drawing: Diggs et al. (1999), p. 1325.
- **Stenotaphrum secundatum* (Walt.) Kuntze. St. Augustine grass. Naturalized perennial. Rare in riparian woodlands, usually simply spreading downslope from sodded park lawn plantings, e.g., at Espada Park. Voucher: Carr 21095. Photo: SAM-1029. Line drawing: Diggs et al. (1999), p. 1331.
- Trichloris pluriflora* Fourn. [*Chloris pluriflora* (Fourn.) Clayton] Manyflower false-Rhodesgrass. Native perennial. Rare in area, noted only on lawn of Mission San Juan. Voucher: Carr 20073. Photo: SAM-994.
- Tridens albescens* (Vasey) Woot. & Standl. White tridens. Native perennial. Occasional in old field on San Juan Dam tract. Voucher: Carr 19855. Photo: SAM-798. Line drawing: Diggs et al. (1999), p. 1331.
- Tridens eragrostoides* (Vasey & Scribn.) Nash. Lovegrass tridens. Native perennial. Rare in area, noted only in dense mesquite-brasil-colubrina shrubland at S end of Labores de Espada, just N of I-410, where locally common. Vouchers: Carr & Gallyoun 20346; Carr 21187; Carr 21234. Photo: SAM-1056.
- Tridens muticus* (Torr.) Nash var. *elongatus* (Buckl.) Shinn. Rough tridens. Native perennial. Rare in area, noted only in old field on San Juan Dam tract. Voucher: Carr 21276. Photo: SAM-1120. Line drawing: Diggs et al. (1999), p. 1331.
- **Tridens texanus* (S. Wats.) Nash. Texas tridens. Native perennial. Occasional in old fields and upland woodlands. Voucher: Carr 21189. Photo: SAM-467. Line drawing: Diggs et al. (1999), p. 1333.
- Urochloa fasciculata* (Swartz) Webster [*Brachiaria fasciculata* (Swartz) Parodi; *Panicum fasciculatum* Swartz]. Browntop signalgrass. Native annual. Occasional to locally common in garden beds, old fields and other disturbed sites. Vouchers: Carr 19801; Carr 21198. Photo: SAM-382. Line drawing: Diggs et al. (1999), p. 1333.
- **Zizaniopsis miliacea* (Michx.) Doell. & Asch. Marshmillet. Native perennial. Rare, local on E bank of old river channel ca. 500-1000 ft. upstream from (N of) Old Espada Dam. Voucher: Carr 20789. Photo: SAM-195. Line drawing: Diggs et al. (1999), p. 1341.

Polemoniaceae -- Phlox Family

- Gilia incisa* Benth. Cutleaf gilia. Native perennial. Rare in area, encountered only in upland woodland on N side of I-410 immediately W of hike & bike trail on W side of river. Voucher: Carr 21191. Photo: SAM-729. Line drawing: Diggs et al. (1999), p. 889.

Polygonaceae -- Knotweed Family

- Antigonon leptopus* Hook. & Arn. Coralvine, queen's wreath, coamecatl. Naturalized perennial herbaceous vine. Planted in several areas (e.g., Mission San José); escaped into San Juan Woodland just W of Mission San Juan and onto curblawns and woodlands S and NE of Mission San José, as well as in woodland on slope N of Mission Espada. Voucher: Carr 21070. Photo: SAM-510. Line drawing: Diggs et al. (1999), p. 901.
- **Polygonum densiflorum* Meisn. [*Persicaria densiflora* (Meisn. Moldenke)]. Stout smartweed. Native perennial. Occasional along waterways; locally abundant in Acequia de Espada at Mission Espada, summer 2002. Vouchers: Carr 19788; Carr 19794; Carr 21154. Photo: SAM-962. Line drawing: Diggs et al. (1999), p. 903.
- Rumex chrysocarpus* Moris. Amanastla, dock. Native perennial. Occasional along acequias and other wet spots. Vouchers: Carr 20764; Carr 20903; Carr 20918. Photo: SAM-850.

- **Rumex crispus* L. Curly dock. Naturalized perennial. Reported by Van Auken (1981) from three mission sites. Line drawing: Diggs et al. (1999), p. 907.
- **Rumex pulcher* L. Fiddle dock. Naturalized perennial. Rare along acequias; reported by Van Auken (1981) from three mission sites. Voucher: Carr 20919. Line drawing: Diggs et al. (1999), p. 907.

Pontederiaceae -- Pickerelweed Family

- **Eichhornia azurea* (Swartz) Kunth. Peacock water-hyacinth. Introduced floating aquatic perennial. Reported by Van Auken (1981) from Mission Espada. This species is not reported for Texas in Jones, Wipff & Montgomery (1997), even as a cultivated plant.
- **Eichhornia crassipes* (Mart.) Solms-Laubach. Water-hyacinth. Naturalized floating aquatic perennial. Locally common in ponded area upstream from old Espada Dam and at various locations in Acequia de Espada. Voucher: Carr 21193. Photo: SAM-493. Line drawing: Diggs et al. (1999), p. 1341.
- **Pontederia cordata* L. Pickerelweed. Native perennial. Reported by Van Auken (1981) from Mission Espada and Espada / Acequia Park. Line drawing: Diggs et al. (1999), p. 1341.

Portulacaceae -- Portulaca Family

- Portulaca oleracea* L. Common purslane. Native annual. Occasional in lawns and unshaded disturbed areas. Voucher: Carr & Benesh 21060. Line drawing: Diggs et al. (1999), p. 909.
- Portulaca pilosa* L. [*Portulaca mundula* I. M. Johnston] Chisme, shaggy portulaca. Native perennial. Rare on lawn of Mission San Jose. Voucher: Carr 21184. Photo: SAM-1118. Line drawing: Diggs et al. (1999), p. 909.
- Talinum aurantiacum* Engelm. [*Talinum angustissimum* (Gray) Woot. & Standl.] Orange flameflower. Native perennial. Rare in openings in upland woodlands. Voucher: Carr 21130. Photo: SAM-466. Line drawing: Diggs et al. (1999), p. 909.
- Talinum paniculatum* (Jacq.) Gaertn. Flame-flower. Native perennial. Rare in area but locally occasional in older-growth thornscrub on upland at S end of Labores de Espada. Voucher: Carr & Gallyoun 20348. Photo: SAM-1014.

Primulaceae -- Primrose Family

- **Anagallis arvensis* L. Scarlet pimpernel. Naturalized annual. Rare in old fields. Reported by Van Auken (1981) from Espada / Acequia Park. Voucher: Carr 21129. Photo: SAM-777. Line drawing: Diggs et al. (1999), p. 915.
- Samolus valerandi* L. var. *parviflorus* (Raf.) Hultén [*Samolus parviflorus* Raf.] Littleflower brook-primrose. Native annual. Rare, local on stones on dripping face of Espada Aqueduct and in wet spots around open sewer pipes in woodland on E bank downstream. Voucher: Carr 20798. Photo: SAM-894. Line drawing: Diggs et al. (1999), p. 915.

Punicaceae -- Pomegranate Family

- **Punica granatum* L. Pomegranate. Introduced shrub. Planted in landscapes at Mission Concepción, Mission Espada and Mission San José. Photo: SAM-871.

Ranunculaceae -- Crowfoot Family

- Anemone berlandieri* Pritz. [*Anemone heterophylla* Nutt.] Tenpetal anemone. Native perennial. Occasional during spring in old fields and on mission lawns. Photo: SAM-668. Line drawing: Diggs et al. (1999), p. 919.

- **Clematis drummondii* T. & G. Old man's beard, barba de chivato. Native perennial herbaceous vine. Common to abundant in upland old fields and woodlands and on fencelines; occasional just about anywhere elsewhere. Voucher: Carr 19868. Photo: SAM-285. Line drawing: Diggs et al. (1999), p. 919.
- **Clematis pitcheri* T. & G. Purple leatherflower. Native perennial herbaceous vine. Occasional to locally common in riparian woodlands. Voucher: Carr 20101. Photo: SAM-421. Line drawing: Diggs et al. (1999), p. 919.
- Clematis terniflora* DC. [*Clematis dioscoreifolia* H. Lev. & Vaniot]. Sweet-autumn clematis. Naturalized perennial herbaceous vine. Rare in area, noted only along edge of riparian woodland along Acequia de Espada ca. 50-75 ft. N of Mission / Ashley Rd. and along E bank of old channel of San Antonio River just N of San Juan Woodland Trail. Vouchers: Carr 21222; Carr 21285. Photo: SAM-1081. Line drawing: Diggs et al. (1999), p. 923.
- Consolida ajacis* (L.) Schur [*Consolida ambigua* (L.) Ball & Heywood; *Delphinium ajacis* L.] Annual larkspur. Planted in landscape at Mission San José. Line drawing: Diggs et al. (1999), p. 923.
- Ranunculus muricatus* L. Roughseed buttercup. Naturalized perennial. Occasional on streambanks and wet spots in riparian woodlands. Vouchers: Carr 20448; Carr 20552. Photo: SAM-606. Line drawing: Diggs et al. (1999), p. 927.
- Ranunculus sceleratus* L. Blister buttercup, cursed buttercup. Native annual. Rare in area, noted only among Colocasia on mudflats along impoundment behind old Espada Dam in Espada Park. Voucher: Carr 20791.

Rhamnaceae -- Buckthorn Family

- **Colubrina texensis* (T. & G.) Gray var. *texensis*. Texas colubrina, hog plum. Native shrub. Occasional in upland woodlands. Voucher: Carr & Carré 20788. Photo: SAM-738. Line drawing: Diggs et al. (1999), p. 935.
- **Condalia hookeri* M. C. Johnston var. *hookeri*. Brasil, bluewood condalia. Native tree or tall shrub. Occasional in upland woodlands. Voucher: Carr 19817. Photo: SAM-314. Line drawing: Diggs et al. (1999), p. 935.
- **Ziziphus obtusifolius* (Hook. ex T. & G.) Gray. Lotebush. Native shrub. Occasional in upland woodlands. Voucher: Carr 21064. Photo: SAM-312. Line drawing: Diggs et al. (1999), p. 939.
- **Ziziphus zizyphus* (L.) G. Karsten [*Ziziphus jujuba* Mill.] Jujube. Introduced shrub or small tree. Reported by Van Auken (1981) from Mission San José. Line drawing: Diggs et al. (1999), p. 939.

Rosaceae -- Rose Family

- **Crataegus* sp. Hawthorn. Introduced tree or shrub. Reported by Van Auken (1981) from Mission Concepción.
- **Eriobotrya* sp. Loquat. Introduced shrub. Planted on grounds of Mission Concepción, Mission San José, and Mission San Juan. Photo: SAM-944.
- **Prunus* sp. Peach. Introduced tree. Reported by Van Auken (1981) from Mission Espada.
- **Pyrus* sp. Prairie crabapple. Introduced tree or shrub. Reported by Van Auken (1981) from Mission San José.
- Rosa banksiae* Ait f. Lady Banks' rose. Introduced shrub. One large sprawling shrub planted on N side of visitor center at Mission Concepción. Photo: SAM-927.
- **Rosa* sp. Yellow rose. Introduced shrub. One shrub in garden in front of church at Mission San Juan, at GPS point: N29°19.949', W098°27.323' +/- 25.2 ft. Photo: SAM-258. Van Auken (1981) observed three *Rosa* species at Mission San José and Mission Espada.

**Rubus riograndis* Bailey [*Rubus trivialis* Michx.] Southern dewberry. Native woody shrub. Common in riparian woodlands; occasional in upland woodlands. Voucher: Carr 21065. Photo: SAM-701. Line drawing: Diggs et al. (1999), p. 957.

Rubiaceae -- Madder Family

Cephalanthus occidentalis L. var. *californicus* Benth. Common buttonbush. Native shrub. Occasional on banks of Acequia de Espada. Voucher: Carr 21069. Photo: SAM-880. Line drawing: Diggs et al. (1999), p. 963.

**Galium aparine* L. Clingon bedstraw, cleavers. Native annual. Occasional to locally abundant in upland and riparian woodlands. Voucher: Carr 20463. Photo: SAM-1146. Line drawing: Diggs et al. (1999), p. 963.

**Galium virgatum* Nutt. Wand bedstraw. Native annual. Frequent in old fields; reported by Van Auken (1981) from Mission San Juan. Voucher: Carr 20735. Photo: SAM-735. Line drawing: Diggs et al. (1999), p. 965.

**Hedyotis nigricans* (Lam.) Fosb. var. *nigricans* [incl. *Hedyotis nigricans* var. *filifolia* (Chapm.) Shinnery]. Prairie bluets. Native perennial. Rare in decent grassland remnant at 9243 Villamain; reported by Van Auken (1981) from Mission San José. Voucher: Carr 20755. Photo: SAM-811. Line drawing: Diggs et al. (1999), p. 965.

Houstonia parviflora Holzinger ex Greenman [*Hedyotis greenmanii* Fosberg]. Greenman's bluet. Native annual. Rare in less disturbed part of old field at 9243 Villamain. Voucher: Carr 20469. Photo: SAM-667. Line drawing: Diggs et al. (1999), p. 969.

Rutaceae -- Citrus Family

**Citrus* sp. Citrus. Introduced shrub or small tree. Reported by Van Auken (1981) from Mission San José.

**Ptelea trifoliata* L. subsp. *trifoliata* var. *mollis* T. & G. Wafer ash. Native tree. Occasional to frequent in riparian and upland woodlands. Voucher: Carr 19898. Photo: SAM-751. Line drawing: Diggs et al. (1999), p. 977.

Thamnosma texanum (Gray) Torr. Texas desert-rue, Dutchman's breeches. Native perennial. Rare in upland woodland on N side of I-410 just W of San Antonio River. Voucher: Carr 20476. Photo: SAM-680. Line drawing: Diggs et al. (1999), p. 977.

Salicaceae -- Willow Family

**Populus deltoides* Bart. ex Marsh. subsp. *deltoides*. Eastern cottonwood. Native tree. Rare, local along acequias and old river channels. Voucher: Carr 20817. Photo: SAM-134. Line drawing: Diggs et al. (1999), p. 977.

**Salix nigra* Marsh. Black willow. Native tree. Occasional along acequias and old river channels. Voucher: Carr 20543. Photo: SAM-715. Line drawing: Diggs et al. (1999), p. 981.

Sapindaceae -- Soapberry Family

Cardiospermum halicacabum L. Balloonvine. Native annual vine. Rare, one plant noted along margin of upland woodland during wet fall of 2002. Probably present in bed of channel of San Antonio River somewhere in area. Voucher: Carr & Benesh 21354. Photo: SAM-1159. Line drawing: Diggs et al. (1999), p. 981.

**Sapindus saponaria* L. var. *drummondii* (Hook. & Arn.) L. Benson [*Sapindus drummondii* Hook. & Arn.]. Western soapberry. Native tree. Occasional in riparian woodlands; more common in early to mid-

successional "upland" woodlands. Voucher: Carr 19892. Photo: SAM-286. Line drawing: Diggs et al. (1999), p. 985.

Ungnadia speciosa Endl. Mexican buckeye. Shrub native to general area but introduced here. Recently planted on grounds of Mission San José and in woodland on slope north of Mission Espada, as well as in wildscape behind Mission San Juan. Absent from the native local flora. Photo: SAM-874. Line drawing: Diggs et al. (1999), p. 985.

Sapotaceae -- Sapodilla Family

**Sideroxylon lanuginosum* Michx. [*Bumelia lanuginosa* (Michx.) Pers.] Coma, gum bumelia, woolly-bucket bumelia. Native shrub or small tree. Occasional in riparian and upland woodlands. According to Van Auken (1981), these plants are subsp. *oblongifolium* (Nutt.) Pennington [*Bumelia lanuginosa* var. *albicans* Sarg.]. Voucher: Carr 19857 (vegetative). Photo: SAM-316. Line drawing: Diggs et al. (1999), p. 985.

Scrophulariaceae -- Figwort Family

Agalinis strictifolia (Benth.) Penn. [*Gerardia strictifolia* Benth.] Longstalk gerardia. Native perennial. Occasional in old fields and along margin of upland woodlands. Voucher: Carr 19842. Photo: SAM-456.

Bacopa monnieri (L.) Pennell. Water-hyssop. Native perennial. Rare on bank of Piedras (Sixmile) Creek near Acequia de Espada. Photo: SAM-217. Line drawing: Diggs et al. (1999), p. 997.

Castilleja indivisa Engelm. Annual paintbrush. Native annual. Rare in area, noted only in opening in upland woodland on N side of I-410 just W of San Antonio River. Voucher: Carr & Carré 20780. Photo: SAM-624. Line drawing: Diggs et al. (1999), p. 997.

**Leucophyllum frutescens* (Berl.) I. M. Johnst. Cenizo. Native shrub. Planted in landscapes around missions, e.g. Mission Concepción and Mission San José; no naturally-occurring (wild) plants observed. Photo: SAM-027.

Maurandya antirrhiniflora Willd. Snapdragonvine. Native perennial herbaceous vine. Rare in upland woodlands. Voucher: Carr 20793. Photo: SAM-749. Line drawing: Diggs et al. (1999), p. 1005.

**Veronica agrestis* L. [*Veronica polita* Fries]. Wayside speedwell. Naturalized annual. Rare in lawn at Mission Espada; reported by Van Auken (1981) from Mission Concepción. Voucher: Carr 20449. Line drawing: Diggs et al. (1999), p. 1011.

Veronica anagallis-aquatica L. Water speedwell. Naturalized perennial. Rare on creekbanks in riparian woodlands. Voucher: Carr 20545. Photo: SAM-611. Line drawing: Diggs et al. (1999), p. 1013.

Veronica arvensis L. Common speedwell. Naturalized annual. Occasional during spring on lawn at Mission San Juan. Voucher: Carr 20548. Line drawing: Diggs et al. (1999), p. 1013.

Veronica peregrina L. Wandering veronica. Native annual. Occasional on shaded banks of old river channel; rare on mission lawns. Voucher: Carr 20542. Photo: SAM-696. Line drawing: Diggs et al. (1999), p. 1013.

Veronica persica Poir. Persian speedwell. Naturalized annual. Rare on bank of old channel of San Antonio River just below Old Espada Dam. Voucher: Carr 20460. Photo: SAM-609. Line drawing: Diggs et al. (1999), p. 1013.

Simaroubaceae -- Quassia Family

**Ailanthus altissima* (Mill.) Swingle. Ghetto palm, tree-of-heaven. Naturalized tree. Rare in upland woodland along E side of Acequia de Espada N of Ashley/Mission Rd. and in riparian/upland woodland behind drive-in theater NE of Mission San Juan; reported by Van Auken (1981) from Mission San José and Espada / Acequia Park. Voucher: Carr 21150. Photo: SAM-954. Line drawing: Diggs et al. (1999), p.

1019. On 22 July 2002, the population near Acequia de Espada consisted of about 20 trunks in a 25-foot circle at N29°20.253', W098°27.573'; the largest was 20-25 ft. tall and 4-5 in. dbh.

Smilacaceae -- Greenbriar Family

- **Smilax bona-nox* L. Saw greenbriar. Native woody vine. Occasional in riparian and upland woodlands. Voucher: Carr 20752. Photo: SAM-809. Line drawing: Diggs et al. (1999), p. 1347.
- **Smilax rotundifolia* L. Common greenbriar. Native woody vine. Reported by Van Auken (1981) from Espada / Acequia Park. Line drawing: Diggs et al. (1999), p. 1347. This is a species of East Texas that is probably absent from the Missions area.

Solanaceae -- Nightshade Family

- **Capsicum annum* L. var. *aviculare* (Dierb.) D'Arcy & Eschbaugh [*Capsicum annum* L. var. *glabriusculum* (Dun.) Heiser & Pickersgill]. Chilipiquín, bird pepper. Native shrub. Occasional in upland woodlands; planted(?) at Mission San José. Vouchers: Carr 20094; Carr 21151. Photo: SAM-1050. Line drawing: Diggs et al. (1999), p. 1019.
- Chamaesaracha coronopus* (Dun.) Gray. False ground-cherry. Native annual. Rare, noted only in compacted silt in driveway at Mission Espada, at N29°19.024', W098°26.988' +/- 13.7 ft. Voucher: Carr & Benesh 19813. Photo: SAM-1107. Line drawing: Diggs et al. (1999), p. 1021.
- Lycium berlandieri* Dun. Berlandier wolf-berry. Native shrub. Occasional in upland woodlands. Voucher: Carr & Gallyoun 20350. Photo: SAM-517.
- **Nicotiana repanda* Willd. ex Lehm. Fiddleleaf tobacco. Native annual. Apparently rare, noted on chunk of honeycombed limestone in quarry pit at Mission Concepción; on lawn at NE corner of compound at Mission Espada; and in upland woodland on Labores de Espada. Reported by Van Auken (1981) from three mission tracts. Voucher: Carr 20800. Photo: SAM-832. Line drawing: Diggs et al. (1999), p. 1025.
- **Physalis cinerascens* (Dun.) Hitch. var. *cinerascens* [*Physalis viscosa* L. var. *cinerascens* (Dun.) Waterfall]. Clammy ground-cherry. Native annual. Occasional in upland woodlands and old fields. Vouchers: Carr 19830; Carr 20055. Photo: SAM-378. Line drawing: Diggs et al. (1999), p. 1025.
- Solanum dimidiatum* Raf. Western horse-nettle. Native perennial. Apparently rare in area, a few plants on bermudagrass lawn along margin of riparian woodland along Acequia de San Juan on San Juan Dam Tract; these plants were repeatedly mown during 2002, and thus both the voucher and photo are of vegetative material. Voucher: Carr 21219. Photo: SAM-995. Line drawing: Diggs et al. (1999), p. 1033.
- **Solanum elaeagnifolium* Cav. Silverleaf nightshade. Native perennial. Common to locally abundant in old fields, athletic fields and other open sites; less common in upland woodlands. Voucher: Carr 19859. Photo: SAM-328. Line drawing: Diggs et al. (1999), p. 1033.
- Solanum ptychanthum* Dun. [*Solanum americanum* of authors, not Mill; *Solanum nigrum* of authors, not L.] American nightshade, hierba mora negra. Native annual. Voucher: Carr 21196. Photo: SAM-1032. Line drawing: Diggs et al. (1999), p. 1033.
- Solanum rostratum* Dun. Buffalo-bur. Native annual. Apparently rare in old fields. Vouchers: Carr 19821; Carr 21163. Photo: SAM-979. Line drawing: Diggs et al. (1999), p. 1033.
- **Solanum triquetrum* Cav. Texas nightshade. Native shrub. Occasional in riparian woodlands and in fencelines at some mission sites. Voucher: Carr & Benesh 21355. Photo: SAM-439. Line drawing: Diggs et al. (1999), p. 1033.

Sterculiaceae -- Cacao Family

Hermannia texana Gray. Mexican mallow. Native perennial. Rare in area, noted only in occasionally mown bed of access road under power lines on N side of I-410 just W of San Antonio River floodplain; this site is probably immediately adjacent to rather than on NPS property. Voucher: Carr 21358. Photo: SAM-946.

Melochia pyramidata L. Anglepod melochia. Native perennial. Occasional in mown lawns and old fields. Voucher: Carr 19824. Photo: SAM-185. Line drawing: Diggs et al. (1999), p. 1037.

Tamaricaceae -- Salt-cedar Family

**Tamarix* sp. Salt-cedar. Introduced shrub. Planted along San José Drive at Mission San José. Also reported by Van Auken (1981) from Espada / Acequia Park. Photo: SAM-409. Line drawing: Diggs et al. (1999), p. 1037.

Tiliaceae -- Basswood Family

Corchorus hirtus L. Orinoco jute. Native perennial (or annual in this area?). Present in a variety of early- to mid-successional habitats yet rare in all of them. Voucher: Carr 21227. Photo: SAM-1090.

Typhaceae -- Cat-tail Family

Typha domingensis Pers. Narrowleaf cat-tail. Native perennial. One large colony in impoundment upstream from Espada Dam in Espada Park. Voucher: Carr & Benesh 21058. Photo: SAM-203. Line drawing: Diggs et al. (1999), p. 1351.

Ulmaceae -- Elm Family

**Celtis laevigata* Willd. var. *laevigata*. Sugar hackberry. Native tree. Common in riparian and upland woodlands, locally dominant during some successional stages. Many or most individuals in the area cannot be distinguished at a glance from members of the next-listed taxon below. Vouchers: Carr 19897; Carr 20547; Carr 20753. Photo: SAM-385. Line drawing: Diggs et al. (1999), p. 1037.

Celtis laevigata Willd. var. *reticulata* (Torr.) Benson [*Celtis reticulata* Torr.]. Netleaf hackberry. Occasional in upland woodlands. Voucher: Carr 19896. Photo: SAM-936. Line drawing: Diggs et al. (1999), p. 1037.

**Celtis lindheimeri* Engelm. Lindheimer hackberry. Native tree. Reported by Van Auken (1981) from Mission Espada and Espada / Acequia Park.

**Celtis pallida* Torr. Granjeno, spiny hackberry. Native tree or large shrub. Frequent in upland woodlands; occasional in riparian woodlands. Voucher: Carr 20777. Photo: SAM-306.

Ulmus americana L. American elm. Native tree. Rare in riparian woodlands; one large old tree among pecans at N end of picnic area in Espada Park. Voucher: Carr 21098. Photo: SAM-892. Line drawing: Diggs et al. (1999), p. 1041.

**Ulmus crassifolia* Nutt. Cedar elm. Native tree. Occasional in riparian and upland woodlands; also newly planted in landscapes around several missions. Voucher: Carr 21063. Photo: SAM-338. Line drawing: Diggs et al. (1999), p. 1041.

**Ulmus rubra* Muhl. Slippery elm. Native tree. Reported by Van Auken (1981) from Mission San José. One recently-planted smallish tree in garden in front of visitor center at Mission San José may be this species. Photo: SAM-271. Line drawing: Diggs et al. (1999), p. 1041.

Urticaceae -- Nettle Family

- Boehmeria cylindrica* (L.) Sw. False nettle. Native perennial. Locally frequent in moist soils at several locations along Acequia de Espada. Voucher: Carr 20100. Photo: SAM-423. Line drawing: Diggs et al. (1999), p. 1045.
- Parietaria pensylvanica* Muhl. ex Willd. Cucumberweed, rock pellitory. Occasional during spring in riparian woodlands and other shaded sites. Voucher: Carr 20811. Photo: SAM-601. Line drawing: Diggs et al. (1999), p. 1045.
- Pilea microphylla* (L.) Liebm. Artillery-plant. Naturalized annual. Rare in area, noted only on mortar and stone of walls of Mission Concepción and on low wall at Mission San José. Vouchers: Carr 19762; Carr & Benesh 19809. Photo: SAM-232.

Valerianaceae -- Valerian Family

- Valerianella radiata* (L.) Dufr. Common corn-salad. Native annual. Rare in early spring along margins of riparian woodlands. Photo: SAM-683. Line drawing: Diggs et al. (1999), p. 1047.

Verbenaceae -- Vervain Family

- **Aloysia gratissima* (Gill. & Hook.) Troncoso. Whitebrush. Native shrub. Occasional in upland woodlands. Voucher: Carr 20792. Photo: SAM-792. Line drawing: Diggs et al. (1999), p. 1051.
- Callicarpa americana* L. American beautyberry. Shrub, native to Texas but introduced in area. Planted in new landscape around molino at Mission San Jose. No wild plants observed. Photo: SAM-1096. Line drawing: Diggs et al. (1999), p. 1051.
- **Glandularia bipinnatifida* (Nutt.) Nutt. [*Verbena bipinnatifida* Nutt.] Dakota vervain. Native perennial. Occasional in old fields, mission lawns and other disturbed unshaded sites. Voucher: Carr 20749. Photo: SAM-807. Line drawing: Diggs et al. (1999), p. 1051.
- Glandularia pumila* (Rydb.) Umber [*Verbena pumila* Rydb.]. Pink vervain, low vervain. Native annual. Occasional on lawns at Mission Concepción, Mission San Juan and Mission Espada. Voucher: Carr 20460. Photo: SAM-573. Line drawing: Diggs et al. (1999), p. 1051.
- Glandularia quadrangulata* (Heller) Umber. White vervain. Native annual. Occasional on mission lawns. Voucher: Carr 20469. Photo: SAM-628.
- Lantana camara* f. *hybrida* "New Gold". Yellow lantana. Introduced cultivar shrub. Planted in gardens at Mission Concepción and Mission San José. Photo: SAM-355. Line drawing: Diggs et al. (1999), p. 1057.
- Lantana montividenensis* (Spreng.) Briq. Purple lantana, weeping lantana. Introduced shrub. Planted in landscapes around Mission Concepción and Mission San José. Photo: SAM-269.
- **Lantana urticoides* von Hayek [*Lantana horrida* of Texas authors, not Kunth]. Texas lantana. Native shrub. Rare in old fields and upland woodlands; reported by Van Auken (1981) from four mission tracts. Voucher: Carr 21071. Photo: SAM-450. Line drawing: Diggs et al. (1999), p. 1057.
- **Phyla nodiflora* (L.) Greene [*Lippia nodiflora* (L.) Michx.; incl. *Phyla incisa* Small]. Fogfruit or frogfruit. Native perennial. Occasional in a broad spectrum of open habitats. Voucher: Carr 20902. Photo: SAM-852. Line drawing: Diggs et al. (1999), p. 1057.
- Verbena brasiliensis* Vell. Brazilian vervain. Naturalized perennial. Occasional along waterways. Voucher: Carr & Benesh 21057. Photo: SAM-901. Line drawing: Diggs et al. (1999), p. 1059.
- Verbena canescens* Kunth. Gray vervain. Native perennial. Occasional in old fields and on mission lawns. Voucher: Carr 20760. Photo: SAM-932. Line drawing: Diggs et al. (1999), p. 1059.
- Verbena halei* Small [*Verbena officinalis* L. subsp. *halei* (Small) Barber]. Texas vervain. Native perennial. Occasional in upland woodlands and old fields. Voucher: Carr 19863. Photo: SAM-786. Line drawing: Diggs et al. (1999), p. 1059.
- **Verbena litoralis* Kunth. Seashore vervain. Introduced perennial. Reported by Van Auken (1981) from all mission tracts.

- **Verbena neomexicana* (Gray) Small var. *hirtella* Perry. New Mexico vervain. Native perennial. Reported by Van Auken (1981) from three mission tracts. Line drawing: Diggs et al. (1999), p. 1059.
- Verbena x hybrida* Voss [*Verbena x hortensis* Hort.] Red vervain, garden vervain. Annual or perennial cultivar. Planted in garden in front of visitor center at Mission Concepción. Photo: SAM-244.
- **Vitex agnus-castus* L. Chaste-bush. Naturalized shrub. Planted in landscape around Mission Concepción; escaped along Acequia de San Juan on San Juan Dam tract. Voucher: Carr 20904. Photo: SAM-851. Line drawing: Diggs et al. (1999), p. 1063.

Violaceae -- Violet Family

- Hybanthus verticillatus* (Ort.) Baill. var. *verticillata*. Whorled green-violet. Native perennial. Rare in old field on San Juan Dam Tract and in athletic fields W of Mission Concepción. Vouchers: Carr 19768; Carr 29723. Photo: SAM-770. Line drawing: Diggs et al. (1999), p. 1063.
- **Viola sororia* Willd var. *missouriensis* (Greene) McKinney [*Viola missouriensis* Greene]. Missouri violet. Reported by Van Auken (1981) from Mission Espada and Espada / Acequia Park. Line drawing: Diggs et al. (1999), p. 1063.

Viscaceae -- Mistletoe Family

- **Phoradendron tomentosum* (DC.) Gray subsp. *tommentosum*. Mistletoe. Native woody parasite. Occasional, usually on mesquite in upland woodlands and in mission landscapes. Voucher: Carr 21158. Photo: SAM-249. Line drawing: Diggs et al. (1999), p. 1067.

Vitaceae -- Grape Family

- **Ampelopsis arborea* (L.) Koehne. Peppervine. Native woody vine. Occasional to locally abundant in riparian woodlands. Voucher: Carr & Benesh 21059. Photo: SAM-191. Line drawing: Diggs et al. (1999), p. 1076.
- **Cissus incisa* (Nutt.) Des Moul. Ivy tree-bine, cow-itch. Native woody vine. Occasional in riparian and upland woodlands. Voucher: Carr 21062. Photo: SAM-833. Line drawing: Diggs et al. (1999), p. 1067.
- **Parthenocissus quinquefolia* (L.) Planch. Virginia creeper. Native woody vine. Rather common in riparian woodlands; scattered elsewhere. Voucher: Carr 20906. Photo: SAM-846. Line drawing: Diggs et al. (1999), p. 1071.
- **Vitis cinerea* Engelm. ex Millardet var. *helleri* (Bailey) M. O. Moore [*Vitis berlandieri* Planch.]. Sweet grape, winter grape. Native woody vine. Occasional in riparian and upland woodlands. Vouchers: Carr 19802; Carr 20823. Photo: SAM-013. Line drawing: Diggs et al. (1999), p. 1073.
- **Vitis mustangensis* Buckl. Mustang grape. Native woody vine. Common in riparian and upland woodlands. Voucher: Carr 20814. Photo: SAM-881. Line drawing: Diggs et al. (1999), p. 1073.

Zygophyllaceae -- Caltrop Family

- Kallstroemia parviflora* Nort. Warty caltrop. Native annual. Locally common in compacted barren areas on lawns around missions. Voucher: Carr 19781. Photo: SAM-989. Line drawing: Diggs et al. (1999), p. 1075.
- **Tribulus terrestris* L. Puncture-vine, abrojo de flor amarilla. Naturalized annual. Locally common in compacted barren areas on lawns around missions; also in old fields and other open disturbed areas. Voucher: Carr 19865. Photo: SAM-099. Line drawing: Diggs et al. (1999), p. 1075.

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Appendix 2. Tabular List of the Vascular Plants of San Antonio Missions National Historical Park, Bexar County, Texas

This list includes all plant taxa observed on properties of the San Antonio Missions National Historical Park by Dr. W. O. Van Auken in 1981 and/or by the current author between July 2001 and October 2002. Scientific names of naturally occurring plants follow Jones, Wipff & Montgomery (1997); scientific names of cultivated plants follow Bailey Hortorium (1976). Common names follow Diggs, Lipscomb & O'Kennon (1999), Hatch, Gandhi & Brown (1990) and various other sources.

Symbols:

Nativity column. N = native; E = exotic (naturalized); I = introduced (either cultivated or escaped from cultivation but not naturalized).

Life form column. A = annual (or biennial); AV = annual vine; P = herbaceous perennial; PV = herbaceous perennial vine; S = shrub; T = tree; WV = woody vine.

Habitat columns. Macrohabitats: RW = riparian woodlands; UW = upland woodlands (transitional/successional woodlands); OF = old fields. Other habitats: G = gardens; L = lawns; A = aquatic.

* = Reported by Van Auken (1981) but not seen during these surveys. For these taxa, macrohabitat columns are blank.

** = Reported in flora and fauna booklets at Mission San José and/or Mission Concepción but not seen during these surveys.

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Acanthaceae	Carlowrightia texana	Texas carlowrightia	N	P			x			
Acanthaceae	Dicliptera brachiata	dicliptera	N	P	x					
Acanthaceae	Justicia brandegeana	shrimp plant	I	P				x		
Acanthaceae	Justicia pilosella	hairy tube-tongue	N	P			x		x	
Acanthaceae	Justicia spicigera	orange justicia, mohintli	I	P				x		
Acanthaceae	Ruellia brittoniana	Britton wild-petunia	I	P				x		
Acanthaceae	Ruellia brittoniana "Katie's"	Katie wild-petunia	I	P				x		
Acanthaceae	Ruellia drummondiana	Drummond wild-petunia	N	P	x					
Acanthaceae	Ruellia metzae	white wild-petunia	N	P			x			
Acanthaceae	Ruellia nudiflora var. runyonii	wild-petunia	N	P			x		x	

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Acanthaceae	*Ruellia yucatana	wild-petunia	N	P						
Aceraceae	Acer negundo var. texanum	box-elder maple	N	T	x					
Agavaceae	Agave sp. (A. americana?)	agave	I	S		x				
Agavaceae	Agave sp. (A. lophantha?)	agave	I	S				x		
Agavaceae	Agave sp. (A. scabra?)	agave	I	S				x		
Agavaceae	Agave sp.	agave	I	S				x		
Agavaceae	Agave sp.	agave	I	S				x		
Agavaceae	Dasyilirion texanum	sotol	I	S				x		
Agavaceae	Hesperaloe parviflora	red-flower yucca	I	S				x		
Agavaceae	**Yucca baccata	datil yucca	I	S						
Agavaceae	Yucca constricta	narrowleaf yucca	N	S		x	x			
Agavaceae	Yucca pallida	pallid yucca	I	S				x		
Agavaceae	Yucca rupicola	twistleaf yucca	I	S				x		
Agavaceae	Yucca treculeana	Spanish dagger	N	S		x		x		
Agavaceae	*Yucca tenuistyla	whiterim yucca	N	S						
Agavaceae	Yucca sp. (Y. recurvifolia or Y. glorioso?)	flaccid-leaf yucca	I	S				x		
Agavaceae	Yucca sp.	Spanish dagger	I	S				x		
Alismaceae	*Sagittaria graminea	grassy arrowhead	N	P						x
Alismaceae	Sagittaria platyphylla	arrowhead	N	P						x
Aloeaceae	Aloe sp.	aloe	I	P				x		
Amaranthaceae	Alternanthera caracasana	verdolago de puerco	N	P					x	

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Amaranthaceae	<i>Alternanthera philoxeroides</i>	alligator-weed	E	P						x
Amaranthaceae	* <i>Amaranthus crassipes</i>	pigweed	N	A						
Amaranthaceae	<i>Amaranthus palmeri</i>	careless-weed	N	A		x	x	x	x	
Amaranthaceae	<i>Amaranthus polygonoides</i>	Berlandier amaranth	N	A			x		x	
Amaranthaceae	<i>Celosia nitida</i>	albahaca	N	P	x					
Anacardiaceae	<i>Rhus lanceolata</i>	flameleaf sumac	N	T				x		
Anacardiaceae	<i>Toxicodendron radicans</i>	poison ivy	N	WV	x	x				
Apiaceae	<i>Ammi majus</i>	bishop's weed	I	P					x	x
Apiaceae	<i>Bowlesia incana</i>	hoary bowlesia	N	A	x				x	
Apiaceae	<i>Chaerophyllum tainturieri</i> var. <i>dasycarpum</i>	hairyfruit chervil	N	A	x					
Apiaceae	<i>Chaerophyllum tainturieri</i> var. <i>tainturieri</i>	chervil	N	A	x					
Apiaceae	<i>Cicuta maculata</i> var. <i>maculata</i>	water hemlock	N	P						x
Apiaceae	* <i>Coriandrum sativum</i>	cilantro, coriander	I	A						
Apiaceae	<i>Daucus pusillus</i>	little carrot	N	A						
Apiaceae	* <i>Hydrocotyle umbellata</i>	water-penny	N	P						
Apiaceae	<i>Hydrocotyle verticillata</i>	water-penny	N	P	x					x
Apiaceae	<i>Sanicula canadensis</i>	Canada snakeroot	N	P	x					
Apiaceae	<i>Scandix pecten-veneris</i>	Venus'-comb	E	A	x					
Apiaceae	<i>Spermolepis inermis</i>	smooth scaleseed	N	A			x			
Apiaceae	<i>Torilis arvensis</i>	tall sockbane	E	A	x	x	x	x	x	
Apiaceae	<i>Torilis nodosa</i>	short sockbane	E	A					x	

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Apocynaceae	Catharanthus roseus	rose periwinkle	I	P				x		
Apocynaceae	Nerium oleander	oleander	I	S				x		
Apocynaceae	Trachelospermum asiaticum	Asian jasmine	I	S				x		
Apocynaceae	Vinca major	large periwinkle	E	WV	x					
Aquifoliaceae	Ilex decidua	possum haw	N	S	x			x		
Aquifoliaceae	Ilex vomitoria	yaupon	N	S				x		
Araceae	Colocasia esculenta	elephant-ears	E	P						x
Araliaceae	Hedera canariensis	Algerian ivy	I	WV				x		
Arecaceae	*Sabal minor	dwarf palmetto	N	S						
Arecaceae	Sabal mexicana	Mexican sabal palm	I	T	x			x		
Aristolochiaceae	Aristolochia erecta	swanflower	N	P					x	
Asclepiadaceae	Asclepias curassavica	butterflyweed	N	P				x		
Asclepiadaceae	Asclepias oenotheroides	hierba de zizotes	N	P			x			
Asclepiadaceae	Cynanchum barbigerum	bearded swallow-wort	N	PV		x				
Asclepiadaceae	Cynanchum racemosum var. unifarium	tayalote	N	PV					x	
Asclepiadaceae	Matelea reticulata	pearl milkvine	N	PV	x	x				
Asteraceae	Acmella oppositifolia	American spotflower	N	P						x
Asteraceae	Amblyolepis setigera	huisache daisy	N	A		x				
Asteraceae	Ambrosia confertiflora	field ragweed	N	P		x	x			
Asteraceae	Ambrosia psilostachya	western ragweed	N	P		x	x			
Asteraceae	Ambrosia trifida	giant ragweed	N	A	x	x	x			

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Asteraceae	Aphanostephus ramosissimus	lazy daisy	N	A		x	x		x	
Asteraceae	Artemisia ludoviciana	western mugwort	N	P						
Asteraceae	Aster ericoides	heath aster	N	P	x	x	x			
Asteraceae	Aster lanceolatus	white woodland aster	N	P	x					
Asteraceae	Aster subulatus var. ligulatus	hierba del marrano	N	P					x	
Asteraceae	Astranthium integrifolium	western daisy	N	A		x				
Asteraceae	Baccharis neglecta	Poverty weed, Roosevelt weed, baccharis	N	S		x	x			
Asteraceae	Bidens laevis	beggar's ticks	N	A						x
Asteraceae	Calyptracarpus vialis	straggler daisy	N	P	x	x	x	x	x	
Asteraceae	Centaurea americana	American basketflower	N	A					x	
Asteraceae	Centaurea melitensis	Yellow star-thistle	E	A		x				
Asteraceae	Chaptalia texana	nodding lettuce	N	P		x				
Asteraceae	Cirsium texanum	Texas thistle	N	A		x	x			
Asteraceae	Conyza canadensis	horseweed	N	A		x	x		x	
Asteraceae	Coreopsis tinctoria	plains coreopsis	N	A		x	x			
Asteraceae	*Coreopsis wrightii	Wright coreopsis	N	A						
Asteraceae	Dyssodia tenuiloba	dogweed	N	P						
Asteraceae	Echinacea sp.	purple coneflower	I	P				x		
Asteraceae	Eclipta prostrata	yerba de tago	N	A						x
Asteraceae	Engelmannia pinnatifida	Engelmann daisy	N	A		x	x			

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Asteraceae	<i>Erigeron philadelphicus</i>	Philadelphia fleabane	N	P	x					
Asteraceae	<i>Evax verna</i>	roundhead rabbit-tobacco	N	A			x		x	
Asteraceae	<i>Fleischmannia incarnata</i>	scandent thoroughwort	N	P		x				
Asteraceae	<i>Florestina tripteris</i>	white palafoxia	N	A			x			
Asteraceae	<i>Gaillardia pulchella</i>	firewheels, Indian blanket	N	A		x	x			
Asteraceae	* <i>Gamochaeta falcata</i>	falcate cudweed	E	A						
Asteraceae	<i>Gamochaeta pensylvanica</i>	Pennsylvania cudweed	N	A					x	
Asteraceae	<i>Grindelia squarrosa</i>	gumweed	N	A		x	x			
Asteraceae	<i>Gutierrezia texana</i>	Texas broomweed	N	A		x	x			
Asteraceae	<i>Hedypnois cretica</i>	Cretan composite	E	A					x	
Asteraceae	<i>Helianthus annuus</i>	common sunflower	N	A		x	x	x		
Asteraceae	<i>Helianthus debilis</i> ssp. <i>cucumerifolius</i>	cucumberleaf sunflower	N	A		x	x			
Asteraceae	<i>Helianthus maximiliani</i>	Maximilian sunflower	N	P			x			
Asteraceae	<i>Heterotheca subaxillaris</i>	camphor goldenaster	N	A		x	x			
Asteraceae	<i>Hymenopappus scabiosaeus</i> var. <i>corymbosus</i>	old plainsman	N	B			x			
Asteraceae	<i>Iva annua</i>	eggleaf sumpweed	N	A	x					
Asteraceae	<i>Lactuca floridana</i>	Florida wild-lettuce	N	A	x					
Asteraceae	<i>Lactuca ludoviciana</i>	Louisiana wild-lettuce	N	A	x	x				
Asteraceae	<i>Lactuca serriola</i>	prickly lettuce	E	A	x	x	x		x	
Asteraceae	<i>Lindheimera texana</i>	Texas star	N	A		x	x			
Asteraceae	<i>Lygodesmia texana</i>	Texas skeletonplant	N	P			x			

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Asteraceae	Mikania scandens	climbing hempweed	N	PV	x					x
Asteraceae	*Parthenium confertum	lyreleaf parthenium	N	P						
Asteraceae	Parthenium hysterophorus	false ragweed	N	A						
Asteraceae	Pluchea odorata	camphor marsh-elder	N	P						x
Asteraceae	Pyrrhopappus pauciflorus	false dandelion	N	A						
Asteraceae	Ratibida columnifera	Mexican hats	N	A		x	x			
Asteraceae	Rudbeckia hirta var. angustifolia	black-eyed Susan	N	A	x					
Asteraceae	Simsia calva	bush sunflower	N	P		x				
Asteraceae	Solidago canadensis	common goldenrod	N	P	x	x	x			
Asteraceae	Solidago gigantea	giant goldenrod	N	P		x				
Asteraceae	Sonchus asper	sow-thistle	E	A	x	x	x		x	
Asteraceae	Sonchus oleraceus	sow-thistle	E	A	x	x	x		x	
Asteraceae	Taraxacum officinale	dandelion	E	P					x	
Asteraceae	Thelesperma filifolium	slender greenthread	N	P			x			
Asteraceae	Verbesina virginica	frostweed	N	P	x					
Asteraceae	Viguiera dentata	plateau goldeneye	N	P	x	x	x			
Asteraceae	*Xanthium strumarium	abrojo, cocklebur, porcupine eggs	N	A						
Berberidaceae	Berberis trifoliolata	agarito	N	S		x		x		
Berberidaceae	Nandina domestica	nandina, heavenly-bamboo	E	S	x			x		
Bignoniaceae	Bignonia capreolata	crossvine	N	WV	x					

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Bignoniaceae	Campsis radicans	trumpet creeper	N	WV	x			x		
Bignoniaceae	Chilopsis linearis	desert willow	I	S				x		
Boraginaceae	Ehretia anacua	anacua	N	T	x	x		x		
Boraginaceae	*Lappula occidentalis var. cupulata	Texas cupseed	N	A						
Boraginaceae	Lithospermum arvense	bugloss	E	A						
Boraginaceae	Onosmodium bejariense var. bejariense	Bexar marbleseed	N	P	x					
Brassicaceae	Capsella bursa-pastoris	shepherd's purse	E	A					x	
Brassicaceae	Draba platycarpa	broadpod draba	N	A			x			
Brassicaceae	Lepidium austrinum	southern pepperweed	N	A			x		x	
Brassicaceae	*Lepidium densiflorum	denseflower pepperweed	N	A						
Brassicaceae	Rapistrum rugosum	yellow rocket	E	A	x	x	x		x	
Brassicaceae	*Rorippa nasturtium-aquaticum	water cress								
Brassicaceae	Sisymbrium irio	London rocket	E	A						
Bromeliaceae	Tillandsia recurvata	ballmoss	N	P	x	x		x		
Buxaceae	Buxus sempervirens	boxwood	I	S				x		
Cactaceae	Ferocactus setispinus	fish-hook cactus	N	S		x				
Cactaceae	Opuntia engelmannii var. lindheimeri	Lindheimer's pricklypear	N	S		x	x	x		
Cactaceae	Opuntia imbricata	cholla	I	S				x		
Cactaceae	Opuntia leptocaulis	tasajillo, pencil cactus	N	S		x	x	x		
Cactaceae	Opuntia sp. [planted at Mission San José, at N29°21.647' W098°28.768'+/- 14.4 ft.; see photo 024]	pricklypear	I	S				x		

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Cactaceae	Opuntia sp. [planted at several locations at Mission Espada; see photo 168]	pricklypear	I	S				x		
Cactaceae	Opuntia sp. [planted at Mission San Juan at N29°19.945', W098°27.325' +/- 25.8 ft.; see photo 260]	pricklypear	I	S				x		
Campanulaceae	Triodanis perfoliata var. biflora	Venus' looking-glass	N	A			x			
Campanulaceae	Triodanis perfoliata var. perfoliata	Venus' looking-glass	N	A			x		x	
Cannaceae	*Canna indica	canna-lily	I	P						
Capparidaceae	Polanisia dodecandra subsp. trachysperma	clammyweed	N	A			x			
Caprifoliaceae	Lonicera japonica	Japanese honeysuckle	E	WV	x	x				
Caprifoliaceae	Lonicera sempervirens	coral honeysuckle	I	WV				x		
Caprifoliaceae	Sambucus canadensis	elderberry	N	S	x					
Caryophyllaceae	Polycarpon tetraphyllum	fourleaf manyseed	E	A					x	
Caryophyllaceae	*Silene antirrhina	sticky catchfly	E	A						
Caryophyllaceae	Stellaria media	common chickweed	E	A	x	x	x		x	
Celastraceae	Schaefferia cuneifolia	Desert yaupon, panalero	N	S		x				
Ceratophyllaceae	Ceratophyllum demersum	common hornwort	N	A						x
Chenopodiaceae	*Chenopodium album	lamb's-quarters	E	A						
Chenopodiaceae	Chenopodium berlandieri	Berlandier goosefoot	N	A					x	
Chenopodiaceae	Monolepis nuttallianus	Nuttall's monolepis	N	A					x	
Commelinaceae	Commelina erecta var. angustifolia	erect dayflower	N	P		x	x		x	
Commelinaceae	Commelina erecta var. erecta	erect dayflower	N	P	x	x	x		x	

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Commelinaceae	Setcreasea purpurea	purple spiderwort	I	P				x		
Commelinaceae	Tinantia anomala	widow's tear	N	A	x					
Commelinaceae	*Tradescantia occidentalis	western spiderwort	N	P						
Commelinaceae	Tradescantia sp.	spiderwort	N	P	x	x	x		x	
Convolvulaceae	Convolvulus arvensis	field bindweed	E	PV					x	
Convolvulaceae	Convolvulus equitans	common bindweed	N	P		x	x		x	
Convolvulaceae	Dichondra carolinensis	Carolina ponyfoot	N	P	x					
Convolvulaceae	Ipomaea carnea ssp. fistulosa	shrubby morning-glory	I	S				x		
Convolvulaceae	Ipomaea cordatotriloba	common morning-glory	N	PV		x	x		x	
Convolvulaceae	Ipomaea hederacea	common morning-glory	N	AV			x			
Convolvulaceae	Merremia dissecta	alamo-vine, correhuela de las doce	N	PV		x	x		x	
Cornaceae	Cornus drummondii	roughleaf dogwood	N	S	x					
Cucurbitaceae	Cucumis melo	muskmelon	E	A			x			
Cucurbitaceae	Cucurbita foetidissima	stinking gourd	N	A			x		x	
Cucurbitaceae	Ibervillea lindheimeri	Lindheimer balsam-gourd	N	PV		x				
Cucurbitaceae	Melothria pendula	melonette	N	PV	x					
Cupressaceae	Juniperus ashei	Ashe juniper	N	T			x	x		
Cupressaceae	Juniperus virginiana	eastern red cedar	N	T				x		
Cyperaceae	Carex bulbostylis	globose caric-sedge	N	P	x					
Cyperaceae	Carex emoryi	Emory sedge	N	P						x

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Cyperaceae	Carex leavenworthii	Leavenworth sedge	N	P					x	
Cyperaceae	*Carex muhlenbergii	Muhlenberg sedge	N	P						
Cyperaceae	Carex tetrastachya	Britton's sedge	N	P	x		x			
Cyperaceae	Cyperus erythrorhizos	redroot umbrellasedge	N	A	x					
Cyperaceae	Cyperus ochraceus	umbrellasedge	N	P	x					x
Cyperaceae	*Cyperus odoratus	common umbrellasedge	N	A						
Cyperaceae	*Cyperus papyrus	papyrus	I	P						
Cyperaceae	Cyperus rotundus	purple nutsedge	E	P				x	x	
Cyperaceae	Eleocharis montividentis	spikesedge	N	P						x
Cyperaceae	Schoenoplectus tabernaemontani	bulrush	N	P						x
Ebenaceae	Diospyros texana	Texas persimmon	N	S		x				
Elaeagnaceae	Elaeagnus macrophylla	silverberry	E	S	x					
Equisetaceae	Equisetum laevigatum	horsetail	N	P						x
Euphorbiaceae	Acalypha lindheimeri	Lindheimer copperleaf	N	P			x			
Euphorbiaceae	Acalypha ostryifolia	hornbeam copperleaf	N	A			x			
Euphorbiaceae	Argythamnia humilis var. humilis	low wildmercury	N	P			x			
Euphorbiaceae	Croton monanthogynus	oneseed croton, doveweed	N	A		x	x		x	
Euphorbiaceae	*Euphorbia albomarginata	white-margin matspurge	N	P						
Euphorbiaceae	*Euphorbia cyathophora	wild poinsettia	N	A						
Euphorbiaceae	Euphorbia dentata	toothed spurge	N	A			x		x	
Euphorbiaceae	Euphorbia hirta	hairy spurge	E	A				x		

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Euphorbiaceae	Euphorbia nutans	nodding spurge	N	A			x		x	
Euphorbiaceae	Euphorbia prostrata	matspurge	N	A			x		x	
Euphorbiaceae	Euphorbia serpens	smooth matspurge	N	A			x			
Euphorbiaceae	Euphorbia spathulata	warty spurge	N	A		x				
Euphorbiaceae	Euphorbia sp. (21061)	spurge	E	A				x		
Euphorbiaceae	Phyllanthus polygonoides	knotweed leaf-flower	N	P		x				
Euphorbiaceae	Sapium sebiferum	Chinese tallow	E	T	x			x		
Euphorbiaceae	Tragia brevispica	climbing noseburn	N			x	x			
Euphorbiaceae	Tragia ramosa	common noseburn	N	P		x	x			
Fabaceae	Acacia minута	huisache	N	T	x	x		x		
Fabaceae	Albizia julibrissin	silktree mimosa	I	T				x		
Fabaceae	Astragalus nuttallianus var. trichocarpus	milkvetch	N	A			x			
Fabaceae	Astragalus nuttallianus [var. undetermined; see 20553]	milkvetch	N	A					x	
Fabaceae	Caesalpinia pulcherrima	pride-of Barbados, dwarf poinciana, showy caesalpinia	I	S				x		
Fabaceae	Cercis canadensis var. mexicanus	Mexican redbud	I	T				x		
Fabaceae	*Cercis canadensis var. texensis	Texas redbud	N	T						
Fabaceae	*Desmanthus illinoensis	Illinois bundleflower	N	P						
Fabaceae	Desmanthus virgatus var. depressus	bundleflower	N	P		x	x		x	
Fabaceae	Eysenhardtia texana	Texas kidneywood	N	S		x				

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Fabaceae	*Gleditsia triacanthos	honey-locust	I	T						
Fabaceae	Leucaena leucocephala	popinac, lead-tree	I	T				x		
Fabaceae	Medicago polymorpha var. vulgaris	bur-clover	E	A					x	
Fabaceae	Melilotus albus	white sweet-clover	E	A		x				
Fabaceae	Mimosa latidens	sensitive-briar	N	P			x			
Fabaceae	Neptunia lutea	yellowpuff	N	P		x			x	
Fabaceae	Parkinsonia aculeata	retama	N	T		x	x			
Fabaceae	Prosopis glandulosa var. glandulosa	honey mesquite	N	T						
Fabaceae	Rhynchosia minima	least snoutbean	N	PV		x	x		x	
Fabaceae	Rhynchosia senna var. texana	Texas snoutbean	N	PV		x	x			
Fabaceae	Sesbania herbacea	bequilla	N	A						x
Fabaceae	Sophora affinis	Eve's necklace	N	T		x				
Fabaceae	Sophora secundiflora	Texas mountain-laurel	N	S				x		
Fabaceae	Strophostyles helvula	wildbean	N	PV	x					
Fabaceae	*Trifolium dubium	small hop-clover	E	A						
Fabaceae	*Vicia ludoviciana ssp. leavenworthii	Leavenworth vetch	N	AV						
Fabaceae	*Wisteria sinensis	Chinese wisteria	I	WV						
Fagaceae	Quercus buckleyi	Texas oak	I	T				x		
Fagaceae	Quercus macrocarpa	bur oak	I	T				x		
Fagaceae	Quercus muhlenbergii	chinkapin oak	I	T				x		
Fagaceae	Quercus polymorpha	Monterrey oak	I	T				x		

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Fagaceae	Quercus virginiana	live oak	N	T	x			x		
Fumariaceae	*Corydalis curvisiliqua var. curvisiliqua	scrambled eggs	N	A						
Fumariaceae	Fumaria officinalis	common fumitory	E	A					x	
Garryaceae	*Garrya ovata ssp. lindheimeri	Lindheimer silk-tassel	N	S						
Geraniaceae	Erodium cicutarium	pin-clover	E	A			x		x	
Geraniaceae	Erodium texanum	Texas stork's-bill	N	A						
Geraniaceae	Geranium carolinianum	Carolina wild-geranium	N	A						
Hydrocharitaceae	Hydrilla verticillata	hydrilla	E	P						x
Hydrophyllaceae	Nama jamaicense	fiddleleaf nama	N	A					x	
Hydrophyllaceae	Nemophila phacelioides	blue eyes	N	A						
Hydrophyllaceae	Phacelia congesta	blue curls	N	A						
Iridaceae	Iris sp.	iris	I	P						
Iridaceae	Sisyrinchium langloisii	blue-eyed grass	N	P			x			
Juglandaceae	Carya illinoensis	pecan	N	T						
Juglandaceae	Juglans nigra	black walnut	N	T	x			x		
Juncaceae	*Juncus torreyi	Torrey rush	N	P						
Lamiaceae	Hedeoma drummondii	limoncillo	N	P			x			
Lamiaceae	Hedeoma hispida	hedeoma	N	A		x	x			
Lamiaceae	Lamium amplexicaule	henbit	E	A	x	x	x	x	x	
Lamiaceae	*Marrubium vulgare	horehound	E	P						
Lamiaceae	Monarda citriodora var. citriodora	horsemint	N	A		x	x			

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Lamiaceae	* <i>Monarda pectinata</i>	beebalm	N	A						
Lamiaceae	<i>Rosmarinus officinalis</i>	rosemary	I	S				x		
Lamiaceae	<i>Salvia coccinea</i>	scarlet sage	N	A	x					
Lamiaceae	* <i>Salvia farinacea</i>	mealy sage	N	P						
Lamiaceae	<i>Salvia greggii</i>	Gregg salvia, autumn sage	I	S				x		
Lamiaceae	<i>Salvia leucantha</i>	Mexican bush sage	I	P				x		
Lamiaceae	<i>Salvia</i> sp.	indigo spires	I	P				x		
Lamiaceae	<i>Scutellaria drummondii</i>	annual skullcap	N	A			x			
Lamiaceae	<i>Scutellaria</i> sp.	red skullcap	I	S				x		
Lamiaceae	<i>Stachys crenata</i>	shade betony	N	A		x				
Lamiaceae	<i>Teucrium canadense</i>	American germander	N	P	x					
Lamiaceae	<i>Teucrium cubense</i>	Cuban germander	N	A		x				
Lemnaceae	<i>Lemna aequinoctialis</i>	duckweed	N	A						x
Liliaceae	<i>Allium canadense</i> var. <i>canadense</i>	Canada wild-onion	N	P	x	x				
Liliaceae	* <i>Asparagus officinalis</i>	asparagus	I	P						
Liliaceae	<i>Cooperia drummondii</i>	cebolleta	N	P			x		x	
Liliaceae	<i>Cooperia pedunculata</i>	rain lily	N	P						
Liliaceae	<i>Crinum</i> sp.	crinum	I	P				x		
Liliaceae	* <i>Hymenocallis caroliniana</i>	spider lily	I	P						
Liliaceae	<i>Nothoscordum bivalve</i>	crow-poison	N	P	x		x		x	
Liliaceae	unknown [<i>Allium</i> sp.?; see 20799]		E	P	x					

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Lythraceae	Ammannia coccinea	scarlet ammannia	N	A						x
Lythraceae	Lagerstroemia indica	crepe myrtle	I	S				x		
Malpighiaceae	Malpighia glabra	Barbados cherry, manzanita	I	S				x		
Malpighiaceae	Mascagnia sp.	purple orchid vine	I	WV				x		
Malvaceae	Abutilon fruticosum	Texas Indian-mallow	N	P						
Malvaceae	Callirhoe leiocarpa	poppy mallow, tall wine-cup	N	A						
Malvaceae	Malva parvifolia	cheeses	E	A					x	
Malvaceae	Malvastrum coromandelianum	threelobe false-mallow	N	P		x	x		x	
Malvaceae	Malvaviscus arboreus var. drummondii	Turk's cap	N	P	x	x		x		
Malvaceae	Pavonia lasiopetala	rose pavonia	N	S				x		
Malvaceae	Rhynchosida physocalyx	spearleaf sida	N	P		x	x		x	
Malvaceae	Sida abutifolia	spreading sida	N	P			x		x	
Malvaceae	Sida spinosa	prickly sida	N	P			x			
Meliaceae	Melia azedarach	Chinaberry	E	T	x	x	x	x		
Menispermaceae	Cocculus carolinus	Carolina snailseed	N	WV	x	x	x		x	
Menispermaceae	Cocculus diversifolius	orientvine	N	WV				x	x	
Moraceae	Broussonetia papyrifera	paper mulberry	E	T	x	x				
Moraceae	Fatoua villosa	fatoua	E	A				x		
Moraceae	Ficus carica	common fig	E	S	x			x		
Moraceae	Morus alba	white mulberry	E	T						

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Moraceae	Morus rubra	red mulberry	N	T						
Myricaceae	Myrica sp. (M. pusilla?)	wax myrtle	E	S				x		
Nyctaginaceae	Acleisanthes longiflora	angel trumpets	N	P					x	
Nyctaginaceae	Acleisanthes obtusa	Berlandier trumpets	N	P					x	
Nyctaginaceae	Boerhavia diffusa	scarlet spiderling	N	P		x	x	x		
Nyctaginaceae	Boerhavia erecta	erect spiderling	N	P			x		x	
Nyctaginaceae	Bougainvillea sp.	bougainvillea	I	S				x		
Nyctaginaceae	Mirabilis albida	whitestem four-o'clock	N	P		x				
Nyctaginaceae	Mirabilis jalapa	common four-o'clock	E	A	x	x		x		
Nyctaginaceae	Mirabilis linearis	slenderleaf four-o'clock	N	P			x			
Nyctaginaceae	Nyctaginea capitata	scarlet muskflower	N	P			x			
Oleaceae	Forestiera angustifolia	panalero, narrowleaf elbowbush	N	S		x				
Oleaceae	Fraxinus berlandieriana	fresno	N	T	x					
Oleaceae	Fraxinus velutina	Arizona ash	I	T				x		
Oleaceae	Jasminum mesnyi	yellow jasmine, primrose jasmine	E	S				x		
Oleaceae	Ligustrum japonicum	Japanese ligustrum, waxleaf ligustrum	E	S	x	x	x	x		
Oleaceae	*Ligustrum quihoui	ligustrum	E	S						
Oleaceae	Ligustrum sinense	Chinese ligustrum	E	S	x					
Oleaceae	Menodora heterophylla	redbud menodora	N	P			x		x	

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Onagraceae	Gaura coccinea	scarlet gaura	N	A		x	x		x	
Onagraceae	*Gaura drummondii	Drummond gaura, wild honeysuckle	N	A						
Onagraceae	Gaura parviflora	smallflower gaura	N	A		x	x			
Onagraceae	Gaura sinuata	wavyleaf gaura	N	A		x	x		x	
Onagraceae	Ludwigia octovalvis	tall water-primrose	N	A						x
Onagraceae	Oenothera rosea	evening-primrose	N	A	x					
Onagraceae	Oenothera speciosa	showy evening-primrose	N	P		x	x			
Onagraceae	Oenothera triloba	stemless evening-primrose	N	P					x	
Oxalidaceae	Oxalis dillenii	yellow sour-clover	N	A		x	x		x	
Oxalidaceae	Oxalis drummondii	Drummond wood-sorrel	N	P					x	
Oxalidaceae	Oxalis sp.	wood sorrel	I	P					x	
Papaveraceae	*Argemone albiflora var. texanum	white prickly-poppy	N	A						
Papaveraceae	Argemone aurantiaca	hill prickly-poppy	N	A		x	x		x	
Passifloraceae	Passiflora foetida var. gossypifolia	Corona de Cristo	N	AV			x		x	
Passifloraceae	*Passiflora incarnata	blue passionflower	N	PV						
Passifloraceae	Passiflora tenuiloba	spreadlobe passionflower	N	PV		x				
Phytolaccaceae	*Phytolacca americana	pokeweed	N	P						
Phytolaccaceae	Rivina humilis	pigeonberry	N	P	x			x		
Plantaginaceae	Plantago major	major plantain	E	P	x					
Plantaginaceae	Plantago rhodosperma	redseed plantain	N	A	x	x	x		x	

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Platanaceae	Platanus occidentalis	eastern sycamore	N	T				x		
Poaceae	Aristida purpurea var. purpurea	threeawn	N	P			x		x	
Poaceae	Aristida purpurea var. longiseta	threeawn	N	P			x			
Poaceae	*Aristida purpurea var. wrightii	threeawn	N	P						
Poaceae	Arundo donax	giant cane	E	P	x	x				x
Poaceae	Avena sativa	oats	E	A			x			
Poaceae	Bothriochloa ischaemum var. songarica	King Ranch bluestem	E	P		x	x		x	
Poaceae	Bothriochloa laguroides ssp. torreyana	silver bluestem	N	P		x	x		x	
Poaceae	Bouteloua curtipendula	sideoats grama	N	P				x		
Poaceae	Bromus catharticus	rescuegrass	E	A						
Poaceae	Bromus japonicus	Japanese brome	E	A		x	x			
Poaceae	Buchloe dactyloides	buffalograss	N	P			x		x	
Poaceae	Cenchrus spinifex	sandburgrass	N	P			x		x	
Poaceae	Chasmanthium latifolium	creek oats, inland sea oats	N	P	x					
Poaceae	Chloris ciliata	fringed chloris	N	P			x			
Poaceae	Chloris cucullata	hooded windmillgrass	N	P		x	x		x	
Poaceae	*Chloris x subdolichostachya	windmillgrass	N	P						
Poaceae	Chloris verticillata	tumble windmillgrass	N	P			x			
Poaceae	Cynodon dactylon var. dactylon	Bermudagrass	E	P	x	x	x		x	
Poaceae	Dichanthium annulatum	Kleberg bluestem	E	P		x	x			
Poaceae	Dichanthium aristatum	Angleton bluestem	E	P					x	

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Poaceae	Dichanthium sericeum	silky bluestem	E	P			x			
Poaceae	Digitaria ciliaris	southern crabgrass	E	P					x	
Poaceae	Digitaria cognata subsp. cognata	fall witchgrass	N	P			x			
Poaceae	Echinochloa colona	junglerice	N	A	x					x
Poaceae	Echinochloa crus-galli	barnyardgrass	E	A						x
Poaceae	Echinochloa walteri	Walter's echinochloa	N	A						x
Poaceae	Eleusine indica	goosegrass	E	A						x
Poaceae	*Elymus canadensis	Canada wildrye	N	P						
Poaceae	Elymus virginicus var. virginicus	Virginia wildrye	N	P						
Poaceae	Eragrostis barrelieri	Mediterranean lovegrass	E	P			x		x	
Poaceae	Eragrostis curtipedicellata	gummy lovegrass	N	P			x			
Poaceae	Eragrostis intermedia	plains lovegrass	N	P			x			
Poaceae	Hordeum pusillum	little barley, southwestern barley	N	A						
Poaceae	Hordeum leporinum	hare barley	E	A					x	
Poaceae	Leersia oryzoides	rice cutgrass	N	P						x
Poaceae	Leptochloa dubia	green sprangletop	N	P		x				
Poaceae	Leptochloa mucronata	red sprangletop	N	A			x			
Poaceae	Limnodea arkansana	Ozarkgrass	N	A	x	x	x			
Poaceae	Lolium perenne	English rye	E	P	x				x	
Poaceae	Miscanthus sp.	Fountain grass, maiden grass	I	P				x		

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Poaceae	Muhlenbergia lindheimeri	Lindheimer muhly	N	P				x		
Poaceae	Nassella leucotricha	Texas wintergrass, speargrass	N	P	x	x	x			
Poaceae	Panicum capillare	witchgrass	N	A	x					
Poaceae	Panicum dichotomiflorum	spreading witchgrass	N	A	x					x
Poaceae	Panicum hallii	filly panicum	N	P		x	x			
Poaceae	Panicum maximum	guineagrass	E	P	x	x				
Poaceae	Panicum oligosanthes	fewflower panicgrass								
Poaceae	Paspalum dilatatum	dallisgrass	E	P	x	x	x		x	x
Poaceae	Paspalum distichum	knotgrass	N	P						x
Poaceae	Paspalum langei	rustyseed paspalum	N	P	x					
Poaceae	Paspalum lividum	longtom	N	P	x					x
Poaceae	Paspalum urvillei	Vaseygrass	N	P						x
Poaceae	Paspalum pubiflorum	hairyseed paspalum	N	P		x				
Poaceae	Pennisetum ciliare	buffelgrass	E	P					x	
Poaceae	Pennisetum setaceum	purple fountain-grass	I	P				x		
Poaceae	Phyllostachys aurea	bamboo	E	P	x					
Poaceae	Poa annua	annual bluegrass	E	A	x	x	x		x	
Poaceae	*Polypogon monspeliensis	rabbitfootgrass	E	A						
Poaceae	Schizachyrium scoparium	little bluestem	N	P		x				
Poaceae	Setaria leucopila	plains bristlegass	N	P		x	x			

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Poaceae	*Setaria parviflora	knotroot bristlegrass	N	P						
Poaceae	Setaria scheelei	southwestern bristlegrass	N	P						
Poaceae	*Setaria viridis	green bristlegrass, green foxtailgrass	E	A						
Poaceae	Sorghum halepense	Johnsongrass	E	P	x	x	x		x	
Poaceae	Sorghum sp.	grain sorghum	E	A			x			
Poaceae	Sporobolus cryptandrus	sand dropseed	N	P		x				
Poaceae	Stenotaphrum secundatum	St. Augustine grass	E	P	x				x	
Poaceae	Trichloris pluriflora	manyflower false-Rhodesgrass	N	P					x	
Poaceae	Tridens albescens	white tridens	N	P			x			
Poaceae	Tridens eragrostoides	lovegrass tridens	N	P		x				
Poaceae	Tridens muticus var. elongatus	rough tridens	N	P			x			
Poaceae	Tridens texanus	Texas tridens	N	P		x	x			
Poaceae	Urochloa fasciculata	browntop signalgrass	N	A		x	x		x	
Poaceae	Zizaniopsis miliacea	marshmillet	N	P						x
Polemoniaceae	Gilia incisa	cutleaf gilia	N	P		x				
Polygonaceae	Antigonon leptopus	coralvine, queen's wreath, coamecatl	E	V	x			x	x	
Polygonaceae	Polygonum densiflorum	smartweed	N	A						x
Polygonaceae	Rumex chrysocarpus	amanastla	N	P	x					x
Polygonaceae	*Rumex crispus	curly dock	E	P						

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Polygonaceae	Rumex pulcher	fiddle dock	E	P	x					x
Pontederiaceae	*Eichhornia azurea	peacock water-hyacinth	I	P						
Pontederiaceae	Eichhornia crassipes	water-hyacinth	E	P						x
Pontederiaceae	*Pontederia cordata	pickerelweed	N	P						
Portulacaceae	Portulaca oleracea	common purslane	N	A					x	
Portulacaceae	Portulaca pilosa	chisme	N	A					x	
Portulacaceae	Talinum aurantiacum	orange flameflower	N	P		x				
Portulacaceae	Talinum paniculatum	flameflower	N	P		x				
Primulaceae	*Anagallis arvensis	scarlet pimpernel	E	A						
Primulaceae	Samolus valerandi var. parviflorus	littleflower brook-primrose	N	A	x					
Pteridaceae	Adiantum capillus-veneris	maidenhair fern	N	P	x					
Pteridaceae	Astrolepis sinuata ¹	wavyleaf cloakfern	N	P						
Pteridaceae	Cheilanthes alabamensis	Alabama lipfern	N	P		x				
Pteridaceae	Cheilanthes horridula ¹	hairy lipfern	N	P						
Pteridaceae	Cheilanthes lindheimeri ¹	Lindheimer lipfern	N	P						
Punicaceae	Punica granatum	pomegranate	I	S				x		
Ranunculaceae	Anemone berlandieri	tenpetal anemone	N	P	x	x	x		x	
Ranunculaceae	Clematis drummondii	old man's beard	N	PV	x	x	x	x	x	
Ranunculaceae	Clematis pitcheri	Pitcher leatherflower	N	PV	x					
Ranunculaceae	Clematis terniflora	sweet-autumn clematis	I	PV	x					
Ranunculaceae	Consolida ajacis	garden delphinium, larkspur	I	A				x		

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Ranunculaceae	Ranunculus muricatus	roughseed buttercup	E	P	x					
Ranunculaceae	Ranunculus sceleratus	blister buttercup	N	A						x
Rhamnaceae	Colubrina texensis var. texensis	Texas colubrina, hog plum	N	S		x				
Rhamnaceae	Condalia hookeri var. hookeri	brasil, bluewood condalia	N	S		x				
Rhamnaceae	Ziziphus obtusifolius	lotebush	N	S		x				
Rhamnaceae	*Ziziphus zizyphus	jujube	E	S						
Rosaceae	*Crataegus sp.	hawthorn	I	T						
Rosaceae	Eriobotrya sp.	loquat	I	T				x		
Rosaceae	*Prunus sp.	peach	I	T						
Rosaceae	*Pyrus sp.	prairie crabapple	I	S						
Rosaceae	Rosa banksiae	Lady Banks' rose	I	S				x		
Rosaceae	Rosa sp.	yellow rose	I	S				x		
Rosaceae	Rubus riograndis	southern dewberry	N	S	x	x	x			
Rubiaceae	Cephalanthus occidentalis var. californicus	buttonbush	N	S	x					x
Rubiaceae	Galium aparine	clinton bedstraw, cleavers	N	A	x	x				
Rubiaceae	Galium virgatum	wand bedstraw	N	A						
Rubiaceae	Hedyotis nigricans var. nigricans	prairie bluets	N	P						
Rubiaceae	Houstonia parviflora	Greenman's bluet	N	A			x			
Rutaceae	*Citrus sp.	citrus	I	T						
Rutaceae	Ptelea trifoliata	wafer ash	N	T/S						
Rutaceae	Thamnosma texanum	Texas desert-rue	N	P		x				

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Salicaceae	Populus deltoides	eastern cottonwood	N	T	x					
Salicaceae	Salix nigra	black willow	N	T	x					
Sapindaceae	Cardiospermum halicacabum	balloon-vine	N	AV			x			
Sapindaceae	Sapindus saponaria var. drummondii	western soapberry	N	T	x	x				
Sapindaceae	Ungnadia speciosa	Mexican buckeye	N	S				x		
Sapotaceae	Sideroxylon lanuginosum	coma, gum bumelia, woolly-bucket bumelia	N	T/S	x	x	x			
Scrophulariaceae	Agalinis strictifolia	gerardia	N	P			x			
Scrophulariaceae	Bacopa monnieri	water-hyssop	N	P						x
Scrophulariaceae	Castilleja indivisa	annual paintbrush	N	A		x				
Scrophulariaceae	Leucophyllum frutescens	cenizo	N	P				x		
Scrophulariaceae	Maurandya antirrhiniflora	snapdragonvine	N	PV		x				
Scrophulariaceae	Veronica agrestis	wayside speedwell	E	A					x	
Scrophulariaceae	Veronica anagallis-aquatica	water speedwell	E	P						x
Scrophulariaceae	Veronica arvensis	common speedwell	E	A					x	
Scrophulariaceae	Veronica peregrina	wandering veronica	N	A	x					
Scrophulariaceae	Veronica persica	Persian speedwell	E	A					x	
Simaroubaceae	Ailanthus altissima	ghetto-palm, tree-of-heaven	E	T		x				
Smilacaceae	Smilax bona-nox	saw greenbriar	N	WV	x	x	x			
Smilacaceae	*Smilax rotundifolia	roundleaf greenbriar	N	WV						
Solanaceae	Capsicum annuum	chilipiquín, bird pepper	N	S		x		x		

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Solanaceae	Chamaesaracha coronopus	false ground-cherry	N	A					x	
Solanaceae	Lycium berlandieri	Berlandier wolfberry	N	S		x				
Solanaceae	Nicotiana repanda	fiddleleaf tobacco								
Solanaceae	Physalis cinerascens var. cinerascens	ground-cherry	N	A			x			
Solanaceae	Solanum dimidiatum	western horsenettle	N	P			x			
Solanaceae	Solanum elaeagnifolium	silverleaf nightshade	N	P			x		x	
Solanaceae	Solanum ptychanthum	American nightshade	N	A					x	
Solanaceae	Solanum rostratum	buffalo-bur	N	A			x			
Solanaceae	Solanum triquetrum	Texas nightshade	N	S						
Sterculiaceae	Hermannia texana	Mexican mallow	N	P		x				
Sterculiaceae	Melochia pyramidata	anglepod melochia	N	P			x		x	
Tamaricaceae	Tamarix sp.	salt-cedar	E	S				x		
Taxodiaceae	Taxodium distichum	baldcypress	N	T	x					
Thelypteridaceae	Thelypteris ovata var. lindheimeri	Lindheimer shield-fern	N	P	x					
Tiliaceae	Corchorus hirtus	Orinoco jute	N	P			x			
Typhaceae	Typha domingensis	cat-tail	N	P						x
Ulmaceae	Celtis laevigata var. laevigata	sugar hackberry	N	T	x	x	x			
Ulmaceae	Celtis laevigata var. reticulata	netleaf hackberry	N	T		x	x			
Ulmaceae	*Celtis lindheimeri	Lindheimer hackberry	N	T						
Ulmaceae	Celtis pallida	granjeno, spiny hackberry	N	T/S	x	x	x			
Ulmaceae	Ulmus americana	American elm	N	T	x					

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Ulmaceae	<i>Ulmus crassifolia</i>	cedar elm, olmo	N	T	x	x				
Ulmaceae	<i>Ulmus rubra</i>	slippery elm	N	T				x		
Urticaceae	<i>Boehmeria cylindrica</i>	false nettle	N	P						x
Urticaceae	<i>Parietaria pensylvanica</i>	cucumberweed	N	A					x	
Urticaceae	<i>Pilea microphylla</i>	artillery-plant ¹	I	A						
Valerianaceae	<i>Valerianella radiata</i>	common corn-salad	N	A	x					
Verbenaceae	<i>Aloysia gratissima</i>	whitebrush	N	S		x				
Verbenaceae	<i>Callicarpa americana</i>	American beautyberry	I	S					x	
Verbenaceae	<i>Glandularia bipinnatifida</i>	Dakota vervain	N	A			x		x	
Verbenaceae	<i>Glandularia pumila</i>	pink vervain	N	A			x		x	
Verbenaceae	<i>Glandularia quadrangulata</i>	white vervain	N	A					x	
Verbenaceae	<i>Lantana camara</i> f. <i>hybrida</i> "New Gold"	yellow lantana	I	S				x		
Verbenaceae	<i>Lantana montividentis</i>	purple lantana	I	S				x		
Verbenaceae	<i>Lantana urticoides</i>	Texas lantana	N	S		x		x		
Verbenaceae	<i>Phyla nodiflora</i>	fogfruit, frogfruit	N	P	x		x		x	
Verbenaceae	<i>Verbena brasiliensis</i>	Brazilian vervain	E	P	x					x
Verbenaceae	<i>Verbena canescens</i>	gray vervain	N	P			x		x	
Verbenaceae	<i>Verbena halei</i>	Texas vervain	N	P			x			
Verbenaceae	* <i>Verbena litoralis</i>	seashore vervain	I	P						
Verbenaceae	* <i>Verbena neomexicana</i> var. <i>hirtella</i>	New Mexico vervain	N	P						
Verbenaceae	<i>Verbena</i> x <i>hybrida</i>	red vervain	I	A				x		

Family	Scientific Name	Common Name	N	F	Macrohabitats			Other Habitats		
					RW	UW	OF	G	L	A
Verbenaceae	Vitex agnus-castus	chaste-bush	E	S	x			x		
Violaceae	Hybanthus verticillatus var. verticillatus	whorled green-violet	N	P			x			
Violaceae	*Viola sororia var. missouriensis	Missouri violet	N	P						
Viscaceae	Phoradendron tomentosum	mistletoe	N	S	x	x				
Vitaceae	Ampelopsis arborea	peppervine	N	WV	x					
Vitaceae	Cissus incisa	ivy treebine	N	WV	x	x				
Vitaceae	Parthenocissus quinquefolia	Virginia creeper	N	WV	x					
Vitaceae	Vitis cinerea var. helleri	sweet grape	N	WV	x	x				
Vitaceae	Vitis mustangensis	Mustang grape	N	WV	x	x	x			
Zygophyllaceae	Kallstroemia parviflora	warty caltrop	N	A			x		x	
Zygophyllaceae	Tribulus terrestris	puncture-vine	E	A			x		x	

¹. These plants occur only on rock walls of missions, a microhabitat that doesn't fit into any of the recognized macrohabitats.

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**A BOTANICAL INVENTORY
OF
SAN ANTONIO MISSIONS NATIONAL HISTORICAL PARK**

PART II
FOR THE PORTION IN WILSON COUNTY, TEXAS

**RESULTS OF A 2001-2002 BOTANICAL INVENTORY
AND RELATED RESEARCH AND REVIEWS**

**FINAL REPORT
24 DECEMBER, 2003**

REPORT PREPARED BY

WILLIAM R. CARR, BOTANIST

**TEXAS CONSERVATION DATA CENTER
THE NATURE CONSERVANCY**

Submitted under cooperative agreement number H5028 01 0268 to
U.S. National Park Service by

Mark Gallyoun
Program Coordinator
Texas Conservation Data Center
The Nature Conservancy
P.O. Box 1440
San Antonio, Texas 78295-1440

TABLE OF CONTENTS

NATIONAL PARK SERVICE INVENTORY AND MONITORING PROGRAM.....	1
SETTING	1
MACROHABITATS	2
OLD FIELD	2
UPLAND WOODLAND	3
UPPER-SLOPE SHRUBLAND	3
RIPARIAN WOODLAND OR FOREST	4
SAMPLING METHODS	5
RESULTS AND ANALYSIS	5
CONCLUSION	7
SELECTED REFERENCES	7
APPENDIX 1: ANNOTATED LIST OF THE VASCULAR PLANTS OF THE RANCHO DE LAS CABRAS UNIT, SAN ANTONIO MISSIONS NATIONAL HISTORICAL PARK, WILSON COUNTY, TEXAS - DECEMBER 2003	15
LITERATURE CITED FOR APPENDIX 1	45
APPENDIX 2: TABULAR LIST OF THE VASCULAR PLANTS OF THE RANCHO DE LAS CABRAS UNIT, SAN ANTONIO MISSIONS NATIONAL HISTORICAL PARK, WILSON COUNTY, TEXAS	46
LITERATURE CITED FOR APPENDIX 2	64

LIST OF TABLES

Table 1. Soils of the Rancho de las Cabras, San Antonio Missions National Historical Park. Source: Taylor (1977).....	9
Table 2. County records resulting from plant inventory of the Rancho de las Cabras unit of San Antonio Missions National Historical Park. These taxa are not reported from Wilson County in either the atlas of the Texas flora (Turner et al., 2003) or the Flora of Texas Consortium web sites (www.biosci.utexas.edu/prc/databases.html; www.csdl.tamu.edu/FLORA).....	10

LIST OF FIGURES

Figure 1. The Rancho de las Cabras Site, San Antonio Missions National Historical Park. Base map: Dewees 7.5' Quadrangle (USGS, 1961).....	8
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NATIONAL PARK SERVICE INVENTORY AND MONITORING PROGRAM

The National Park Service (NPS) Inventory and Monitoring (I&M) Program seeks to obtain baseline inventories of biotic and abiotic natural resource elements represented within each NPS unit. The inventories have 12 components and include such features as occurrence and distribution of vertebrate and invertebrate animals, soils, hydrology, and geology. Padre Island National Seashore (PAIS), Palo Alto Battlefield National Historic Site (PAAL), and San Antonio Missions National Historical Park (SAAN) are all included as part of the Gulf Coast Inventory and Monitoring Network (GCN). Under a cooperative agreement, the NPS has contracted the Texas Conservation Data Center (TxCDC) of The Nature Conservancy to conduct a comprehensive vascular plant species inventory for SAAN, and baseline herpetofaunal inventories for PAIS, PAAL, and SAAN. Two sections of this report address the plant inventory at SAAN, and a separate report provides an address of the herpetofaunal inventories.

The botanical inventory of SAAN was undertaken from July 2001 through October 2002 following the protocol outlined in the cooperative agreement. The inventory of the Rancho de las Cabras site, an administrative attachment of SAAN, was conducted concurrently. The results of that inventory are reported here. The results of the inventory of the mission grounds and surrounding areas in San Antonio (Bexar County) are reported separately.

SETTING

The 99-acre Rancho de las Cabras property is located along the west bank of the San Antonio River at the mouth of Picos Creek, roughly 0.8-1.3 air miles south-southeast of the Texas Route 97 bridge over the river, just south of Floresville in west-central Wilson County, Texas (Figure 1). Access is via a gate on the east side of County Road 144, 0.8 miles south of its junction with Texas Route 97; this junction is one mile southwest of the highway bridge over the San Antonio River. The entire tract lies on the Dewees 7.5' Quadrangle (USGS, 1961).

The western part of the tract is an access easement roughly 0.7 miles long and about 100 feet wide. This easement crosses more or less level terrain between cultivated fields. The eastern part of the tract includes an expanded continuation of this level upland, to the east of which are fairly steep, eroded slopes leading down to the terraces of Picos Creek and the San Antonio River. A high, flat terrace between the creek and a bend in the river is in cultivation. The San Antonio River in this area is deeply entrenched between steep slopes of sandy alluvium. Picos Creek is intermittent but remains muddy throughout most of the year. Elevation on the tract ranges from about 420 feet above mean sea level at the gate along the county road to about 330 feet along the San Antonio River.

Surface geology of the area is mapped on the San Antonio Sheet of the Geologic Atlas of Texas (Brown et al., 1983). The site is underlain entirely by the Weches Formation, a curious collection of greensands, ironstones, sands and clays of Eocene age. It is presumably the Weches Formation that was quarried from what is now a large pit just east of (downslope from) the site's mission-era ruins. However, many parts of the tract are mantled by recent alluvium.

Soils are mapped on sheet 33 of the Wilson County soil survey (Taylor, 1977). Five series representing four range sites have been identified (Table 1). Mapped at the southwestern end of the entrance easement is Wilco loamy fine sand, 0 to 3 percent slopes. These are deep, well drained, noncalcareous soils that developed over the Weches Formation, the only soils at Rancho de las Cabras that clearly developed from this stratum. Wilco soils have a surface layer of medium acid loamy fine sand and subsoils of sandy clay, sandy clay loam and fine sandy loam, the lower of which are calcareous and moderately alkaline. At the southern tip of the tract is a small mapped area of Saspamco fine sandy loam, 3 to 5 percent slopes. These are deep, friable, well drained, calcareous, moderately alkaline soils that developed on uplands or high terraces. Saspamco soils have a surface layer of fine sandy loam and subsoils of fine sandy loam and loamy fine sand. The soil that covers the most of the site is Colibro sandy clay loam, 3 to 5 percent slopes. It is mapped along the northeastern two-thirds of the entrance easement and on almost all of the upland above the river, including the deeply eroded slope on the west side of Picos Creek. These are deep, friable, well drained, moderately alkaline, calcareous soils that developed on old alluvial terraces. They have a surface layer of sandy clay loam and subsoils of sandy clay loam and loamy fine sand. Lower on the landscape, on a broad flat terrace on the east side of Picos Creek, is an area of Aransas clay. These are deep, poorly drained, moderately alkaline calcareous soils of alluvial origin; they have surface and subsurface layers of clay. Terraces along both Picos Creek and the San Antonio River, the lowest points on the local landscape, are mapped as Loire and Frio soils, frequently flooded. Loire soils are deep, friable, well drained, moderately alkaline, calcareous soils that formed in recent alluvium. The surface layer and upper subsoils are silty clay loam; deeper subsoils are fine sandy loam. Frio soils are very similar. In the field, the soils of terraces along the creek seem to differ radically from those of terraces along the river. The former soils are decidedly clayey and remain muddy for much of the year, while the latter are much sandier and dry more quickly.

MACROHABITATS

For the purposes of this survey, four macrohabitats were recognized: old field, upland woodland, upper-slope shrubland, and riparian woodland or forest. Each is described below.

Old Field

This macrohabitat is found on the level to undulating upland along the area's entrance easement. Soils on the northeastern two-thirds of the easement are mapped as Colibro sandy clay loam, 3 to 5 percent slopes; soils at the southwestern tip are mapped as Wilco loamy fine sand, 0 to 3 percent slopes. Most or all of the easement was undoubtedly cultivated in the past, when the easement was part of adjacent cropland. More recently, it was converted to exotic hay meadow planted to Bermudagrass (*Cynodon dactylon*) and Johnsongrass (*Sorghum halepense*). During the survey period, grass was harvested infrequently from the northwestern end and not at all from the southwestern end, where the few invading mesquites (*Prosopis glandulosa*) grew from seedling / stump-sprout size to small shrubs about 1 meter tall. Although exotic grasses dominate most of the site, several native species are common, including western ragweed (*Ambrosia psilostachya*), sand dropseed (*Sporobolus cryptandrus*), browntop signalgrass (*Urochloa fasciculata*) and Texas signalgrass (*Urochloa texana*). More than a few interesting plant species also occur in this area,

most of them in the area of Wilco soils near the gate on the county road. Three Texas endemic species, crown coreopsis (*Coreopsis nuecensis*), low spurge (*Euphorbia peplidion*) and Texas almond (*Prunus minutiflora*), none common from the global perspective, were detected in this area and nowhere else on the tract. The immediate vicinity of the gate at this end of the easement is regularly mown for cosmetic reasons, resulting in a "shortgrass" grassland dominated by purple threeawn (*Aristida purpurea* var. *purpurea*) and red lovegrass (*Eragrostis secundiflora*). This small, specially managed area supports a number of low-growing areniphilic species that were not detected in the taller, denser vegetation on the balance of the easement. Arkansas lazy-daisy (*Aphanostephus skirrhobasis*), juniperleaf (*Polypremum procumbens*), prairie-clover (*Dalea emarginata*), prairie rose-gentian (*Sabatia campestris*), fringed signalgrass (*Urochloa ciliatissima*), and Drummond phlox (*Phlox drummondii*) are a few examples.

Another patch of some kind of old field macrohabitat occupies a broad flat terrace on the point of land between Picoso Creek and the San Antonio River, on soils mapped as Aransas clay. This area was in active cultivation, as it had been for decades, at the beginning of the project in 2001, and thus was not examined. Toward the end of the project, the arrangement between the NPS and the neighboring landowner was modified, a fence was erected between NPS property and that of the neighbor, and cultivation was discontinued. No effort was made to survey this new "old field."

Upland Woodland

This macrohabitat is geologically and edaphically identical to the northeastern old field macrohabitat at the northeast end of the access easement area; it occupies a more or less level upland area underlain by shallow alluvium over the Weches Formation, on soils mapped as Colibro sandy clay loam, 3 to 5 percent slopes. It differs only in the successional state of its vegetation. While the adjacent old field now supports exotic hay-meadow grassland that is harvested annually, this old field has been abandoned for so long that it now supports an early-successional woodland composed of fairly large mesquite and any number of weeds. Most of the mesquite are young, with multiple stems 10 to 15 feet tall; a few larger, much older trees persist around the ruins area which was apparently not cultivated as recently as the balance of the upland. Tree cover is about fifty percent in typical areas. A shrub layer is present in most areas, although individuals usually occur in openings between the tree canopy, rather than under cover of mesquite; Texas persimmon (*Diospyros texana*), lotebush (*Ziziphus obtusifolius*) and granjeno (*Celtis pallida*) are all fairly common. Bermudagrass is dominant in the ground layer in some areas, probably persisting from a time when the area was cleared and seeded to pasture. Another exotic perennial grass, King Ranch bluestem (*Bothriochloa ischaemum*), is dominant in some openings. Texas broomweed (*Gutierrezia texana*), oneseed croton (*Croton monanthogynus*) and field ragweed (*Ambrosia confertiflora*) are among the most common forbs in openings; hairy tubetongue (*Justicia pilosella*) and angel trumpets (*Acleisanthes longiflora*) are common in the shade of mesquite.

Upper-slope Shrubland

This macrohabitat occupies the upper two thirds of the east-facing slope along the west side of Picoso Creek. Degree of slope is variable, ranging from slight in upper parts of the habitat to steep in the lower part; sheer "cliffs" of eroded soil, some as much as 15 feet high, line the major gullies.

Rock exposures are few and unpredictable due to mantling by alluvium; they are more often encountered at the top of the landscape than on slopes or on gully sides. Soils are mapped as Colibro sandy clay loam, 3 to 5 percent slopes; i.e., they are not mapped as distinct from those of the Upland Woodland and most of the Old Field macrohabitats. Vegetation is a medium to tall shrubland very similar to thornscrub that occurs on caliche ridges and other shallow-soil uplands in South Texas and northern Tamaulipas. Important species include blackbrush (*Acacia rigidula*), Texas kidneywood (*Eysenhardtia texana*), brasil (*Condalia hookeri*), Texas colubrina (*Colubrina texensis*), guayacán (*Guaiacum angustifolium*), granjeno, agarito (*Berberis trifoliolata*) and Texas persimmon. Mesquite is present but it is not a dominant shrub as in the upland woodland macrohabitat; also comparatively uncommon is prickly pear (*Opuntia* sp.). Curiously, wafer ash (*Ptelea trifoliata*) is locally frequent, particularly around gully headers. Prairie baccharis (*Baccharis texana*), one of central Texas' most overlooked shrubs, is locally common on what may be Saspanco soils at the southern tip of the tract. Less common Tamaulipan thornscrub elements in the shrub layer include Gregg's acacia (*Acacia greggii*), mejorana (*Salvia ballotiflora*), wolfberry (*Lycium berlandieri*) and desert yaupon (*Schaefferia cuneifolia*). This shrub layer is impenetrable in many areas, particularly on steep lower slopes; transects were generally walked along the more open areas at the upper edge of the gully headers and along old roadbeds and fencelines. The ground layer in the densest shrub thickets is generally sparse, consisting usually of clumps of cedar sedge (*Carex planostachys*) and few other species. Cover and diversity are both high in the more open areas, at least during wetter seasons. King Ranch bluestem may be the most common grass in much of the site, particularly on deeper soils. But on shallower soils and at rockier sites native species such as meadow dropseed (*Sporobolus asper* var. *drummondii*) and various grammas (*Bouteloua* spp.) tend to outnumber the exotic species. Common forbs include bush sunflower (*Simsia calva*), Riddell's lazy-daisy (*Aphanostephus riddellii*), blazingstar (*Liatris mucronata*), Texas zexmenia (*Wedelia texana*), and limoncillo (*Hedeoma drummondii*). Tamaulipan thornscrub species in this layer include Coulter's tetraclea (*Tetraclea coulteri*), Mexican mallow (*Hermannia texana*), ponyfoot oxalis (*Oxalis dichondrifolia*), Berlandier trumpets (*Acleisanthes obtusa*) and a yellow-flowered puccoon, (*Lithospermum mirabile*).

Riparian Woodland or Forest

This macrohabitat occupies deep alluvial soils of terraces along Picos Creek and the San Antonio River; it also extends upslope a short distance on the west side of Picos Creek, where it grades into Upper-slope Shrubland. The terrace along Picos Creek is generally lower than that along the river, and is submerged under backwater when the river is in flood stage. Consequently, its soils are finer in texture than those of river terraces, which usually have at least some sand in the surface layer. Therefore, the vegetation of the two portions of the tract's bottomlands is variable. Clayey terraces along Picos Creek support a deciduous forest or woodland in which cedar elm (*Ulmus crassifolia*) is clearly the dominant species. Live oak (*Quercus virginiana*) is represented by a relatively small number of large old trees that make up a disproportionately large portion of the canopy, which is nearly closed at between 50 and 75 feet except in the light gap over the creek. The shrub layer is open, either due to shading or because of past clearing. Gum bumelia (*Sideroxylon lanuginosum*) is surprisingly common, although the woody vine trumpet creeper (*Campsis radicans*) is perhaps more conspicuous. The ground layer is dominated in the spring by sedges (*Carex* spp.) and in the summer and fall by Virginia wild-rye (*Elymus virginicus*) and straggler-daisy (*Calyptracarpus vialis*). Herbaceous diversity in this portion of the community is low due to heavy grazing by a

neighbor's cattle, who come to the site for its shade and water and tend to linger. Grazing pressure is somewhat lower on the river terrace, perhaps because steep banks prevent access to the river water. But certainly, the sandy soils are the major reason that diversity is higher in this part of the riparian forest. Unfortunately, this portion of the site was inaccessible during most of this survey, at first by a temporary electric fence installed by the grazer and later by persistent high backwater (in the creek) as a result of a series of major rainfall events in the upper part of the San Antonio / Medina river watersheds during 2002. Large cottonwoods (*Populus deltoides*) are conspicuous here, as are black willows (*Salix nigra*) along the river edge. Curiously absent is eastern sycamore (*Platanus occidentalis*). The noxious exotic Chinaberry (*Melia azedarach*) was rare at the time of this survey. The understory here includes box-elder maple (*Acer negundo*), a hawthorn (*Crataegus* cf. *mollis*) and roughleaf dogwood (*Cornus drummondii*). Numerous herbaceous species were detected, but dominance could not be determined.

SAMPLING METHODS

The project scope of work specified that a 1000-meter transect be walked through each macrohabitat during each month of the growing season, which was defined as March through October, for two years. After an initial introductory visit in May 2001, confusion about the status of the cooperative agreement resulted in a delay of commencement of field surveys until July 2001; fieldwork then continued until October 2001. During 2002, the site was visited every month from March through October. The scope of work specified that each "new" plant species be photographed; halfway through the project (in late March 2002), this wording was interpreted by the NPS to mean that every plant taxon should be represented by a voucher of a regular herbarium specimen. This difference of opinion was not fully resolved, so the principal investigator elected to do both, i.e., collect voucher specimens and produce photographs of each plant taxon at spots from which a GPS point and other data was collected. Because the agreement called for a focus on macrohabitats, microhabitats were not examined except as a result of the investigator's own curiosity. Some taxa, particularly those restricted to vertical walls of gully headers, may thus have been overlooked.

RESULTS AND ANALYSIS

A total of 358 plant taxa were detected during this survey. This information is presented in two fashions in this report. Appendix 1 is an annotated list of the taxa containing, among other things, scientific names, naming authorities, synonymy, habitat descriptions, estimates of local abundance, and specimen voucher / photo voucher citations. Appendix 2 omits most of this information but places the taxa in a table that indicates the macrohabitats in which the taxa occur.

About 386 voucher specimens were collected. These vouchers were originally deposited at the Plant Resources Center of The University of Texas at Austin (TEX-LL), but they may be removed and stored elsewhere by NPS. Photos (slides) of about 90 percent of the taxa will be delivered to NPS in conjunction with this report.

None of the 358 plant taxa encountered at Rancho de las Cabras is of federal concern. No federally listed Threatened or Endangered plant taxa are known from Wilson or the five surrounding counties (Atascosa, Bexar, Gonzales, Guadalupe and Karnes), and none was encountered during this survey.

The best-represented plant families in the site's flora are the grass family (Poaceae) with 56 taxa (16 percent of the total flora) and the sunflower family (Asteraceae) with 54 taxa (15 percent). Also well represented are the legume family (Fabaceae) with 22 taxa (6 percent) and the spurge family (Euphorbiaceae) with 16 taxa (4 percent).

Thirty-one taxa (9 percent of the total flora) are considered exotic, i. e., not native to the area. This is a low percentage of exotic species for this part of the world. However, two of those 31 exotic taxa, Bermudagrass (*Cynodon dactylon*) and King Ranch bluestem (*Bothriochloa ischaemum*), are quite common on the property and have replaced many native species, and both would be difficult if not impossible to eradicate.

Seven taxa (2 percent of the total flora) are endemic to Texas, i.e., found nowhere outside the state: Brazos rock-cress (*Arabis petiolaris*), crown coreopsis (*Coreopsis nuecensis*), Tharp's ponyfoot (*Dichondra recurvata*), low spurge (*Euphorbia peplidion*), Texas almond (*Prunus minutiflora*), Texas hiddenflower (*Cryptantha texana*) and Greenman's bluet (*Houstonia parviflora*). Three of those species, crown coreopsis, low spurge, and Texas almond, are currently ranked G3 by NatureServe, indicating that each species is known from only about 100 populations. All three occur on Wilco soils near the gate on the county road, but their populations are all so tiny and their prospects for expansion so dim that they should not be the cause of any particular excitement from a conservation perspective.

Most of the plants of Rancho de las Cabras are widespread taxa of sandy uplands and riparian woodlands. However, some are taxa of the Tamaulipan Thornscrub Ecoregion that occur here at the northern, or more often northeastern, limit of their ranges. One example is blackbrush (*Acacia rigidula*), a dominant species of the upper-slope shrubland. According to the new atlas of the flora of Texas (Turner et al., 2003), the northernmost record of *Acacia rigidula* on the coastal plain (*sensu lato*) is in DeWitt County, and the population at Rancho de las Cabras lies at about the same latitude. Other examples include panalero (*Forestiera angustifolia*), ponyfoot oxalis (*Oxalis dichondrifolia*), southern witchgrass (*Panicum capillarioides*) and manyflower false-Rhodesgrass (*Trichloris pluriflora*). Also of floristic interest are taxa found primarily on the Edwards Plateau and limestone areas to the west—taxa that occur here in a slightly disjunct fashion, mostly on calcareous soils on terraces of streams that drain from the Edwards Plateau. These include widow's tears (*Tinantia anomala*), velvet bundleflower (*Desmanthus velutinus*) and nodding lettuce (*Chaptalia texana*).

Of the 358 taxa encountered at Rancho de las Cabras, 192 (54 percent) can be considered "county records," i.e., the first reports from Wilson County (Table 2). None of these 192 taxa is reported from the county in the new atlas of the flora of Texas (Turner et al., 2003) or in on-line databases provided on the various Flora of Texas Consortium web sites. Botanists have historically very poorly inventoried Wilson County, but this survey helped fill a few gaps in the knowledge of the county flora.

CONCLUSION

No federally listed endangered plant species were encountered during this two-year botanical inventory of the Rancho de las Cabras. However, the site proved to be fairly diverse, supporting a flora of at least 358 taxa, including widespread plants as well as several regional endemic species and northern-limital taxa. Of the taxa encountered, more than half are county records, indicating that this project played an important role in helping to fill many gaps in the botanical knowledge of Texas.

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Figure 1. The Rancho de las Cabras Site, San Antonio Missions National Historical Park. Base map: Dewees 7.5' Quadrangle (USGS, 1961).

Table 1. Soils of the Rancho de las Cabras, San Antonio Missions National Historical Park. Source: Taylor (1977).

Symbol	Mapping Unit	Classification	Range Site
Ac	Aransas clay	Vertic Haplaquolls	Clayey Bottomland
CbC	Colibro sandy clay loam, 3 to 5 percent slopes	Typic Ustochrepts	Gray Sandy Loam
Lf	Loire and Frio soils, frequently flooded.	Typic Ustifluvents	Loamy Bottomland
SpC	Saspamco fine sandy loam, 3 to 5 percent slopes	Typic Ustochrepts	Gray Sandy Loam
ScB	Wilco loamy fine sand, 0 to 3 percent slopes	Udic Paleustalfs	Loamy Sand

Table 2. County records resulting from plant inventory of the Rancho de las Cabras unit of San Antonio Missions National Historical Park. These taxa are not reported from Wilson County in either the atlas of the Texas flora (Turner et al., 2003) or the Flora of Texas Consortium web sites (www.biosci.utexas.edu/prc/databases.html; www.csd.tamu.edu/FLORA).

Family	Taxon
Acanthaceae	<i>Carlowrightia texana</i>
Aceraceae	<i>Acer negundo</i>
Agavaceae	<i>Yucca constricta</i>
Agavaceae	<i>Yucca treculeana</i>
Amaranthaceae	<i>Alternanthera philoxeroides</i>
Amaranthaceae	<i>Amaranthus polygonoides</i>
Amaranthaceae	<i>Celosia nitida</i>
Apiaceae	<i>Torilis arvensis</i>
Apocynaceae	<i>Apocynum cannabinum</i>
Asclepiadaceae	<i>Asclepias oenotheroides</i>
Asclepiadaceae	<i>Cynanchum barbigerum</i>
Asclepiadaceae	<i>Matelea reticulata</i>
Asclepiadaceae	<i>Sarcostemma cynanchoides</i>
Asteraceae	<i>Ambrosia confertiflora</i>
Asteraceae	<i>Aphanostephus ramosissimus</i>
Asteraceae	<i>Aphanostephus riddellii</i>
Asteraceae	<i>Aster ericoides</i> (<i>Symphyotrichum ericoides</i>)
Asteraceae	<i>Aster lanceolatus</i> (<i>Symphyotrichum lanceolatum</i>)
Asteraceae	<i>Aster subulatus</i> var. <i>ligulatus</i> (<i>Symphyotrichum divaricatum</i>)
Asteraceae	<i>Baccharis texana</i>
Asteraceae	<i>Centaurea melitensis</i>
Asteraceae	<i>Chaptalia texana</i> (<i>C. nutans</i> var. <i>texana</i>)
Asteraceae	<i>Chloracantha spinosa</i> var. <i>spinosa</i> (<i>Aster spinosus</i> ; <i>Erigeron ortegae</i> var. <i>spinosa</i>)
Asteraceae	<i>Coreopsis wrightii</i> (<i>C. basalis</i> var. <i>wrightii</i>)
Asteraceae	<i>Dyssodia pentachaeta</i>
Asteraceae	<i>Erigeron philadelphicus</i>
Asteraceae	<i>Eupatorium serotinum</i>
Asteraceae	<i>Evax verna</i> (<i>E. multicaulis</i>)
Asteraceae	<i>Florestina tripteris</i>
Asteraceae	<i>Gamochaeta pensylvanica</i> (<i>Gnaphalium pensylvanicum</i>)
Asteraceae	<i>Gutierrezia texana</i> (<i>Xanthocephalum texanum</i>)
Asteraceae	<i>Helenium microcephalum</i>
Asteraceae	<i>Heterotheca subaxillaris</i> (<i>Heterotheca latifolia</i>)
Asteraceae	<i>Lactuca</i> sp.
Asteraceae	<i>Liatris mucronata</i>
Asteraceae	<i>Parthenium confertum</i>
Asteraceae	<i>Parthenium hysterophorus</i>

Asteraceae	<i>Pinaropappus roseus</i>
Asteraceae	<i>Rudbeckia hirta</i> var. <i>angustifolia</i>
Asteraceae	<i>Simsia calva</i>
Asteraceae	<i>Sonchus asper</i>
Asteraceae	<i>Tetraneuris scaposa</i> (<i>Hymenoxys scaposa</i>)
Asteraceae	<i>Verbesina encelioides</i>
Asteraceae	<i>Wedelia texana</i> (<i>W. hispida</i> ; <i>Zexmenia hispida</i>)
Asteraceae	<i>Xanthium strumarium</i>
Berberidaceae	<i>Berberis trifoliolata</i> (<i>Mahonia trifoliolata</i>)
Bignoniaceae	<i>Campsis radicans</i>
Boraginaceae	<i>Heliotropium indicum</i>
Boraginaceae	<i>Lithospermum mirabile</i>
Cactaceae	<i>Ferocactus setispinus</i>
Cactaceae	<i>Opuntia macrorhiza</i>
Campanulaceae	<i>Triodanis perfoliata</i> var. <i>biflora</i> (<i>T. biflora</i>)
Caprifoliaceae	<i>Sambucus canadensis</i>
Caryophyllaceae	<i>Polycarpon tetraphyllum</i>
Caryophyllaceae	<i>Stellaria media</i>
Caryophyllaceae	<i>Stellaria prostrata</i>
Celastraceae	<i>Schaefferia cuneifolia</i>
Commelinaceae	<i>Tinantia anomala</i> (<i>Commelinantia anomala</i>)
Convolvulaceae	<i>Dichondra recurvata</i>
Cornaceae	<i>Cornus drummondii</i>
Cucurbitaceae	<i>Melothria pendula</i>
Cuscutaceae	<i>Cuscuta</i> sp.
Cyperaceae	<i>Carex bulbostylis</i>
Cyperaceae	<i>Carex planostachys</i>
Cyperaceae	<i>Carex tetrastachya</i> (<i>C. brittoniana</i>)
Cyperaceae	<i>Cyperus ochraceus</i>
Cyperaceae	<i>Cyperus rotundus</i>
Ebenaceae	<i>Diospyros texana</i>
Equisetaceae	<i>Equisetum laevigatum</i>
Euphorbiaceae	<i>Acalypha ostryifolia</i>
Euphorbiaceae	<i>Argythamnia humilis</i> var. <i>humilis</i> (<i>Ditaxis humilis</i> var. <i>humilis</i>)
Euphorbiaceae	<i>Euphorbia dentata</i> (<i>Poinsettia dentata</i>)
Euphorbiaceae	<i>Euphorbia glyptosperma</i> (<i>Chamaesyce glyptosperma</i>)
Euphorbiaceae	<i>Euphorbia spathulata</i> (<i>Tithymalus spathulatus</i>)
Euphorbiaceae	<i>Jatropha dioica</i>
Euphorbiaceae	<i>Phyllanthus polygonoides</i>
Euphorbiaceae	<i>Tragia brevispica</i>
Fabaceae	<i>Acacia rigidula</i>
Fabaceae	<i>Astragalus nuttallianus</i> var. <i>trichocarpus</i>
Fabaceae	<i>Dalea pogonathera</i>
Fabaceae	<i>Desmanthus velutinus</i>
Fabaceae	<i>Eysenhardtia texana</i>

Fabaceae	<i>Medicago lupulina</i>
Fabaceae	<i>Medicago polymorpha</i>
Fabaceae	<i>Rhynchosia senna</i> var. <i>texana</i> (<i>R. texana</i>)
Fabaceae	<i>Senna pumilio</i> (<i>Cassia pumilio</i>)
Fabaceae	<i>Sesbania</i> sp.
Fabaceae	<i>Vicia ludoviciana</i> var. <i>leavenworthii</i> (<i>V. leavenworthii</i>)
Geraniaceae	<i>Geranium texanum</i>
Hydrophyllaceae	<i>Nama jamaicense</i>
Juglandaceae	<i>Carya illinoensis</i>
Lamiaceae	<i>Hedeoma hispida</i>
Lamiaceae	<i>Lamium amplexicaule</i>
Lamiaceae	<i>Salvia ballotiflora</i>
Lamiaceae	<i>Scutellaria ovata</i>
Lamiaceae	<i>Stachys crenata</i>
Lemnaceae	<i>Lemna aequinoctialis</i>
Liliaceae	<i>Allium drummondii</i>
Liliaceae	<i>Habranthus tubispathus</i> (<i>Habranthus texanus</i> ; <i>Zephyranthes texana</i>)
Malvaceae	<i>Abutilon wrightii</i>
Malvaceae	<i>Malvastrum coromandelianum</i>
Malvaceae	<i>Rhynchosida physocalyx</i> (<i>Sida physocalyx</i>)
Malvaceae	<i>Sida abutifolia</i> (<i>S. filicaulis</i>)
Malvaceae	<i>Sida spinosa</i>
Molluginaceae	<i>Mollugo verticillata</i>
Moraceae	<i>Morus alba</i>
Moraceae	<i>Morus rubra</i>
Nyctaginaceae	<i>Mirabilis linearis</i>
Nyctaginaceae	<i>Nyctaginea capitata</i>
Oleaceae	<i>Forestiera angustifolia</i>
Oleaceae	<i>Fraxinus berlandieriana</i>
Onagraceae	<i>Gaura parviflora</i>
Oxalidaceae	<i>Oxalis dichondrifolia</i>
Oxalidaceae	<i>Oxalis drummondii</i>
Passifloraceae	<i>Passiflora tenuiloba</i>
Phytolaccaceae	<i>Rivina humilis</i>
Plantaginaceae	<i>Plantago hookeriana</i>
Plantaginaceae	<i>Plantago wrightiana</i>
Poaceae	<i>Aristida purpurea</i> var. <i>longiseta</i>
Poaceae	<i>Avena sativa</i>
Poaceae	<i>Bothriochloa ischaemum</i> var. <i>songarica</i>
Poaceae	<i>Bothriochloa laguroides</i> subsp. <i>torreyana</i> (<i>B. saccharoides</i> var. <i>torreyana</i>)
Poaceae	<i>Bouteloua curtipendula</i>
Poaceae	<i>Bouteloua trifida</i>
Poaceae	<i>Bromus catharticus</i> (<i>B. unioloides</i>)
Poaceae	<i>Bromus japonicus</i>

Poaceae	<i>Chasmanthium latifolium</i>
Poaceae	<i>Chloris ciliata</i>
Poaceae	<i>Chloris verticillata</i>
Poaceae	<i>Dichanthium annulatum</i> var. <i>annulatum</i>
Poaceae	<i>Dichanthium sericeum</i>
Poaceae	<i>Digitaria ciliaris</i> (<i>D. adscendens</i>)
Poaceae	<i>Elymus virginicus</i>
Poaceae	<i>Eriochloa sericea</i>
Poaceae	<i>Leptochloa dubia</i>
Poaceae	<i>Limnodea arkansana</i>
Poaceae	<i>Panicum hallii</i>
Poaceae	<i>Paspalum langei</i>
Poaceae	<i>Paspalum pubiflorum</i>
Poaceae	<i>Phalaris caroliniana</i>
Poaceae	<i>Setaria leucopila</i>
Poaceae	<i>Setaria ramiseta</i>
Poaceae	<i>Sorghum halepense</i>
Poaceae	<i>Sporobolus compositus</i> var. <i>compositus</i> (<i>Sporobolus asper</i> var. <i>drummondii</i>)
Poaceae	<i>Sporobolus cryptandrus</i>
Poaceae	<i>Trichloris pluriflora</i> (<i>Chloris pluriflora</i>)
Poaceae	<i>Urochloa ciliatissima</i> (<i>Brachiaria ciliatissima</i>)
Polemoniaceae	<i>Gilia incisa</i>
Polygalaceae	<i>Polygala alba</i>
Polygalaceae	<i>Polygala lindheimeri</i>
Polygonaceae	<i>Polygonum ramosissimum</i>
Polygonaceae	<i>Rumex pulcher</i>
Portulacaceae	<i>Portulaca pilosa</i> (<i>Portulaca mundula</i>)
Portulacaceae	<i>Talinum aurantiacum</i> (<i>Talinum angustissimum</i>)
Primulaceae	<i>Anagallis arvensis</i>
Rosaceae	<i>Prunus texana</i>
Rosaceae	<i>Rubus riograndis</i> (<i>Rubus trivialis</i>)
Rubiaceae	<i>Cephalanthus occidentalis</i>
Rubiaceae	<i>Galium aparine</i>
Rubiaceae	<i>Houstonia nigricans</i> (<i>Hedyotis nigricans</i>)
Rubiaceae	<i>Houstonia parviflora</i> (<i>Hedyotis greenmanii</i>)
Rubiaceae	<i>Richardia tricocca</i> (<i>Diodia tricocca</i>)
Rutaceae	<i>Ptelea trifoliata</i>
Rutaceae	<i>Thamnosma texanum</i>
Rutaceae	<i>Zanthoxylum hirsutum</i>
Sapindaceae	<i>Cardiospermum halicacabum</i>
Sapindaceae	<i>Sapindus saponaria</i> var. <i>drummondii</i>
Scrophulariaceae	<i>Agalinis strictifolia</i> (<i>Gerardia strictifolia</i>)
Scrophulariaceae	<i>Maurandya antirrhiniflora</i>
Scrophulariaceae	<i>Veronica peregrina</i>

Smilacaceae	<i>Smilax bona-nox</i>
Solanaceae	<i>Bouquetia erecta</i>
Solanaceae	<i>Capsicum annuum</i> var. <i>aviculare</i> (<i>Capsicum annuum</i> var. <i>glabriusculum</i>)
Solanaceae	<i>Lycium berlandieri</i>
Solanaceae	<i>Physalis angulata</i>
Solanaceae	<i>Solanum elaeagnifolium</i>
Sterculiaceae	<i>Hermannia texana</i>
Ulmaceae	<i>Celtis laevigata</i> var. <i>laevigata</i>
Ulmaceae	<i>Celtis laevigata</i> var. <i>reticulata</i>
Ulmaceae	<i>Ulmus americana</i>
Ulmaceae	<i>Ulmus crassifolia</i>
Verbenaceae	<i>Glandularia quadrangulata</i> (<i>Verbena quadrangulata</i>)
Verbenaceae	<i>Phyla nodiflora</i> (<i>P. incisa</i>)
Verbenaceae	<i>Tetradlea coulteri</i>
Verbenaceae	<i>Verbena canescens</i>
Violaceae	<i>Viola</i> sp.
Vitaceae	<i>Ampelopsis arborea</i>
Vitaceae	<i>Cissus incisa</i>
Vitaceae	<i>Parthenocissus quinquefolia</i>
Zygophyllaceae	<i>Guaiaacum angustifolium</i> (<i>Porlieria angustifolia</i>)
Zygophyllaceae	<i>Kallstroemia parviflora</i>
Zygophyllaceae	<i>Tribulus terrestris</i>

Appendix 1: Annotated List of the Vascular Plants of the Rancho de Las Cabras unit, San Antonio Missions National Historical Park, Wilson County, Texas - December 2003

This list is based on observations during surveys conducted between May 2001 and October 2002. Scientific names follow Jones, Wipff & Montgomery (1997); pertinent synonyms, particularly those used in Correll & Johnston (1970), are provided in brackets. Common names follow Diggs, Lipscomb & O'Kennon (1999), Hatch, Gandhi & Brown (1990) and various other sources. It should be noted that the botanical inventory done by Van Auken (1981) did not address the property at the Rancho de las Cabras, which was not under the jurisdiction of NPS at that time.

FERNS AND FERN ALLIES

Equisetaceae -- Horsetail Family

Equisetum laevigatum A. Braun. Horsetail. Native perennial. Absent from most of riparian woodland but locally common on sandy bank of San Antonio River in NE corner of property. Voucher: Carr, Benesh & Gallyoun 21085. Photo: SAM-205. Line drawing: Diggs et al. (1999), p. 177.

Marsileaceae -- Water-clover Family

Marsilea macropoda Engelm. ex A. Br. Water-clover. Native perennial. Occasional colonies in clay in bed and on banks of Picos Creek ca. 0.2-0.3 mi N of its mouth at San Antonio River; conspicuous only after rains. Voucher: Carr 19904. Photo: SAM-435. Line drawing: Diggs et al. (1999), p. 187.

Pteridaceae -- Maidenhair Fern Family

Cheilanthes alabamensis (Buckl.) Kunze. Alabama lipfern. Native perennial. Rare on crumbly siltstone and sandstone exposures in gully heads. Voucher: Carr & Westlund 20649. Photo: SAM-748. Line drawing: Diggs et al. (1999), p. 197.

Pellaea atropurpurea (L.) Link. Purple cliffbrake. Native perennial. Rare on crumbly siltstone exposures in gully heads. Voucher: Carr & Westlund 20648. Photo: SAM-750. Line drawing: Diggs et al. (1999), p. 199.

FLOWERING PLANTS

Acanthaceae -- Acanthus Family

Carlowrightia texana J. Henrickson & T. Daniel. Texas carlowrightia. Native perennial. Rare in opening in upper-slope shrublands. Voucher: Carr & Candee 20969-B. Photo: SAM-117. Line drawing: Diggs et al. (1999), p. 215.

Dicliptera brachiata (Pursh) Spreng. Dicliptera. Native perennial. Rare in riparian woodlands. Voucher: Carr 20401. Photo: SAM-508. Line drawing: Diggs et al. (1999), p. 215.

- Dyschoriste linearis* (T. & G.) O. Ktze. Snake-herb. Native perennial. Rare, local in upper-slope shrublands at N29°06.002', W098°10.017' +/- 11.3 ft. Voucher: Carr 21213. Photo: SAM-1072. Line drawing: Diggs et al. (1999), p. 215.
- Justicia pilosella* (Nees) Hilsenbeck [*Siphonoglossa pilosella* Nees]. Hairy tubetongue. Native perennial. Quite common in upland woodlands and openings; frequent in upper-slope shrublands; occasional elsewhere. Voucher: Carr 20239. Photo: SAM-148. Line drawing: Diggs et al. (1999), p. 217.
- Ruellia nudiflora* (Engelm. ex Gray) Urban var. *nudiflora*. Wild-petunia. Native perennial. Locally common on banks and terraces along Picos Creek. Voucher: Carr & Carré 19841. Photo: SAM-046. Line drawing: Diggs et al. (1999), p. 217.

Aceraceae -- Maple Family

- Acer negundo* L. var. *texanum* F. Pax. Box-elder maple. Native tree. Frequent in deciduous woodlands on river terraces. Voucher: Carr & Candee 20943. Photo: SAM-505. Line drawing: Diggs et al. (1999), p. 223.

Agavaceae -- Agave Family

- Manfreda maculosa* (Hook.) Rose [*Polianthes maculosa* (Hook.) Shinnery]. Spotted false-aloe. Native perennial. Rare in upper-slope shrublands. Voucher: Carr & Candee 20956. Photo: SAM-865. Line drawing: a similar species, *Manfreda virginica*, appears on p. 1081 of Diggs et al. (1999).
- Yucca constricta* Buckl. Buckley yucca. Native shrub. Occasional in upland woodlands and upper-slope shrublands. Voucher: Carr & Candee 20959. Photo: SAM-041. Line drawing: Diggs et al. (1999), p. 1081.
- Yucca treculeana* Carr. Spanish dagger. Native shrub. Occasional in upland woodlands and upper-slope shrublands. Voucher: Carr & Benesh 20511. Photo: SAM-322. Line drawing: Diggs et al. (1999), p. 1089.

Amaranthaceae -- Amaranth Family

- Alternanthera philoxeroides* (Mart.) Grisebach. Alligator-weed. Naturalized perennial. Rare on sunny sandy lower bank of San Antonio River, at and in vicinity of N29°05.960', W098°09.608'. Voucher: Carr, Benesh & Gallyoun 21084. Photo: SAM-905. Line drawing: Diggs et al. (1999), p. 223.
- Amaranthus polygonoides* L. [*Amaranthus berlandieri* (Moq.) Uline & Bray; *Amaranthus polygonoides* L. var. *berlandieri* (Moq.) Thell.] Berlandier amaranth, tropical amaranth. Native annual. Locally common (in July 2002) in parking area at monument. Voucher: Carr & Benesh 21172. Photo: SAM-941. Line drawing: Diggs et al. (1999), p. 229.
- Celosia nitida* Vahl. Albahaca. Native perennial. Rare on shaded gully slopes. Voucher: Carr 21368. Photo: SAM-898.
- Froelichia gracilis* (Hook.) Moq. Slender snake-cotton. Native annual. Rare (at least in spring 2002) in opening in upper-slope shrubland. Voucher: Carr 21142. Photo: SAM-767. Line drawing: Diggs et al. (1999), p. 229.

Anacardiaceae -- Pistachio Family

Toxicodendron radicans (L.) Kuntze [*Toxicodendron rydbergii* (Small ex Rydb.) Greene; *Rhus radicans* var. *vulgaris* (Michx.) A. DC.]. Poison ivy. Native woody vine. Occasional in riparian woodland along Picos Creek, more common in woodland along San Antonio River. Voucher: Carr, Benesh & Gallyoun 21088. Photo: SAM-826.

Apiaceae (Umbelliferae) -- Carrot Family

Bowlesia incana Ruiz & Pav. Hoary bowlesia. Native annual. Abundant during early spring in riparian woodlands, apparently shunned by cattle and increasing under current grazing regime. Voucher: Carr 20528. Photo: SAM-694. Line drawing: Diggs et al. (1999), p. 245.

Chaerophyllum tainturieri Hook. var. *tainturieri*. Chervil. Native annual. Occasional in riparian woodlands; also occasional in various upland sites. Voucher: Carr 20518. Photo: SAM-576. Line drawing: Diggs et al. (1999), p. 247.

Daucus pusillus Michx. Little carrot, rattlesnake weed. Native annual. Frequent in open areas on uplands and upper slopes. Voucher: Carr 20687. Photo: SAM-773. Line drawing: Diggs et al. (1999), p. 251.

Torilis arvensis (Huds.) Link. Tall sockbane, hedge-parsley. Naturalized annual. Occasional to locally common throughout. Photo: SAM-801. Line drawing: Diggs et al. (1999), p. 263.

Apocynaceae -- Dogbane Family

Apocynum cannabinum L. Dogbane. Native perennial. Rare, one colony of numerous plants along E bank of Picos Creek ca. 0.2 mi N of San Antonio River (within view of new N fenceline), at N029°05.969', W098°09.840' +/- 20.0 ft.; this colony was repeatedly and heavily disturbed by floods during the survey period, and flowering / fruiting did not occur. Line drawing: Diggs et al. (1999), p. 267.

Aristolochiaceae -- Birthwort Family

Aristolochia erecta L. [*Aristolochia longiflora* Engelm. & Gray]. Swanflower, grassleaf pipevine. Native perennial. Rare in old fields and openings in upland woodlands and upper-slope shrublands. Voucher: Carr 21141. Photo: SAM-123.

Asclepiadaceae -- Milkweed Family

Asclepias oenotheroides (Cham.) Schlecht. Hierba de zizotes. Native perennial. Rare in old fields and openings in upland woodlands. Voucher: Carr 20211. Photo: SAM-390. Line drawing: Diggs et al. (1999), p. 279.

Cynanchum barbigerum (Scheele) Shinnars. Bearded swallow-wort. Native herbaceous perennial vine. Occasional in upper-slope shrublands. Voucher: Carr 20227. Photo: SAM-794. Line drawing: Diggs et al. (1999), p. 281.

Matelea reticulata (Engelm. ex Gray) Woodson. Pearl milkvine. Native herbaceous perennial vine. Rare in woodlands and shrublands throughout. Voucher: Carr 20232. Photo: SAM-753. Line drawing: Diggs et al. (1999), p. 286.

Sarcostemma cynanchoides Dcne. [*Funastrum cynanchoides* (Dcne.) Schltr.] White twinevine. Native herbaceous perennial vine. Rare in old fields, upland woodlands and riparian woodlands. Voucher: Carr 20080. Photo: SAM-1101. Line drawing: Diggs et al. (1999), p. 285.

Asteraceae (Compositae) -- Sunflower Family

Amblyolepis setigera DC. Huisache daisy. Native annual. Common during spring in upland woodlands and upper-slope shrublands; locally abundant in roadbeds and mown firebreaks along fencelines. Voucher: Carr & Benesh 20495. Photo: SAM-626. Line drawing: Diggs et al. (1999), p. 311.

Ambrosia confertiflora A. DC. Field ragweed. Native perennial. Locally common in old fields, upland woodland and upper slope shrublands. Voucher: Carr 20396. Photo: SAM-980. Line drawing: Diggs et al. (1999), p. 311.

Ambrosia psilostachya DC. [*Ambrosia cumanensis* Kunth in H. B. K.] Western ragweed. Native perennial. Occasional to locally common in old fields, upland woodlands, upper slope shrublands. Voucher: Carr 21217. Photo: SAM-202. Line drawing: Diggs et al. (1999), p. 311.

Ambrosia trifida L. Giant ragweed. Native annual. Common in riparian woodlands and along drainages. Voucher: Carr 21236. Photo: SAM-377. Line drawing: Diggs et al. (1999), p. 311.

Aphanostephus ramosissimus DC. Plains lazy-daisy. Native annual. Occasional in old fields, upland woodlands, and upper-slope shrublands. Voucher: Carr & Benesh 20494. Photo: SAM-727. Line drawing: Diggs et al. (1999), p. 313.

Aphanostephus riddellii T. & G. Riddell's lazy-daisy. Native perennial. Frequent to locally abundant in open areas in upper slope shrublands. Vouchers: Carr 20405; Carr & Westlund 20668. Photo: SAM-742. Line drawing: Diggs et al. (1999), p. 313.

Aphanostephus skirrhobasis (DC.) Trel. Arkansas lazy-daisy. Native annual. Locally common on Wilco soils in regularly mown portions of old field, just inside gate along county road; likely absent from balance of tract. Voucher: Carr 20696. Line drawing: Diggs et al. (1999), p. 313.

Aster ericoides L. [*Symphotrichum ericoides* (L.) Nesom]. Heath aster. Native perennial. Rare in upland woodlands and upper slope shrublands. Voucher: Carr 20397. Photo: SAM-549. Line drawing: Diggs et al. (1999), p. 317.

Aster lanceolatus Willd. [*Symphotrichum lanceolatum* (Willd.) Nesom] Woodland aster. Native perennial. Rare in riparian woodlands. Voucher: Carr 20403. Photo: SAM-561. Line drawing: Diggs et al. (1999), p. 317.

Aster subulatus Michx. var. *ligulatus* Shinnery [*Symphotrichum divaricatum* (Nutt.) Nesom]. Hierba del marrano. Native perennial. Rare in old field. Voucher: Carr 21365. Photo: SAM-1123. Line drawing: Diggs et al. (1999), p. 323.

Astranthium integrifolium (Michx.) Nutt. Western daisy. Native annual. Rare (at least during dry spring of 2002) in mown areas on Wilco soils and in openings in upper-slope shrublands. Vouchers: Carr & Westlund 20664; Carr 20971. Photo: SAM-785.

Baccharis neglecta Britt. Roosevelt weed, jara dulce, willow baccharis. Native shrub. Rare on property, noted only in bottom of quarry and in fenceline along entrance easement. Voucher: Carr & Candee 21250. Photo: SAM-1089. Line drawing: Diggs et al. (1999), p. 323.

Baccharis texana (T. & G.) Gray. Prairie baccharis. Native shrub. Locally common in upper-slope shrublands; occasional in upland woodlands; rare in old fields. Vouchers: Carr 20082; Carr 20085; Carr 20215. Photo: SAM-464. Line drawing: Diggs et al. (1999), p. 323.

Calyptracarpus vialis Less. Prostrate lawnflower, straggler daisy. Native perennial. Frequent in riparian woodlands; occasional elsewhere. Vouchers: Carr 20706; Carr & Candee 20938. Photo: SAM-507. Line drawing: Diggs et al. (1999), p. 331.

Centaurea melitensis L. Malta star-thistle. Naturalized annual or biennial. Rare along roadbed through upland woodland. Vouchers: Carr 20711; Carr 20978. Photo: SAM-812. A line drawing, which makes this easily-overlooked weed appear to be some kind of monster thistle, appears on p. 331 of Diggs et al. (1999).

Chaptalia texana Greene [*Chaptalia nutans* (L.) Polák var. *texana* (Greene) Burkhardt]. Nodding lettuce. Native perennial. Occasional in upper-slope shrublands. Voucher: Carr 20513. Photo: SAM-691. Line drawing: Diggs et al. (1999), p. 337.

Chloracantha spinosa (Benth.) Nesom var. *spinosa* [*Aster spinosus* Benth.; *Erigeron ortegae* Blake var. *spinosa* (Benth.) Sundberg]. Spiny aster. Native perennial. Occasional on banks of Picos Creek; rare in riparian woodlands. Voucher: Carr 20402. Photo: SAM-436. Line drawing: Diggs et al. (1999), p. 337.

Cirsium texanum Buckl. Texas thistle. Native annual. Common in upland areas but also present on slopes and bottoms. Voucher: Carr & Westlund 20669. Photo: SAM-745. Line drawing: Diggs et al. (1999), p. 343.

Conyza canadensis (L.) Cronq. Horseweed. Native annual. Rare in old fields and openings in riparian woodlands on sandy soils. Voucher: Carr & Candee 20930. Photo: SAM-001. Line drawing: Diggs et al. (1999), p. 343.

Coreopsis nuecensis Heller. Crown coreopsis. Native annual. Rare, a few dozen plants observed on 23 April 2002 in one small area in old field on entrance easement, ca. 300-400 ft. NE of gate on county road, ca. 300 ft. SW of drainage that bisects easement, at N29°05.506', W098°10.641' +/- 13.7 ft. Voucher: Carr 20693. Photo: SAM-784.

Coreopsis wrightii (Gray) Smith [*Coreopsis basalis* (Dietr.) Blake var. *wrightii* (Gray) Blake]. Rock coreopsis. Native annual. Occasional on uplands and upper slopes. Voucher: Carr & Westlund 20639. Photo: SAM-763. Line drawing: Diggs et al. (1999), p. 343.

Dyssodia pentachaeta (DC.) Small [*Thymophylla pentachaeta* (DC.) Small] Parralena, dogweed. Native annual or short-lived perennial. Rare in upper-slope shrublands. Voucher: Carr 20407. Line drawing: Diggs et al. (1999), p. 425.

Dyssodia tenuiloba (DC.) B. L. Robinson [*Thymophylla tenuiloba* (DC.) Small]. Bristleleaf dyssodia, tiny Tim. Native annual or short-lived perennial. Rare, local in old fields. Vouchers: Carr 20389; Carr 20390. These vouchers seem to represent two varieties. Photo: SAM-815. Line drawing: Diggs et al. (1999), p. 425.

Erigeron philadelphicus L. Philadelphia fleabane. Native perennial. Occasional in riparian woodlands along San Antonio River. Voucher: Carr 20517. Photo: SAM-605. Line drawing: Diggs et al. (1999), p. 355.

Eupatorium serotinum Michx. Late boneset, late thoroughwort. Native perennial. Rare on bank of Picos Creek and along drainage crossing entrance easement. Voucher: Carr 21238. Photo: SAM-1102. Line drawing: Diggs et al. (1999), p. 357.

Evax verna Raf. [*Evax multicaulis* DC.] Roundhead rabbit-tobacco. Native annual. Occasional in open upland sites. Photo: SAM-814. Line drawing: Diggs et al. (1999), p. 357.

Fleischmannia incarnata (Walt.) King & Robinson [*Eupatorium incarnatum* Walt.]. Scandent thoroughwort. Native perennial herbaceous vine. Occasional under mesquite in upland woodlands, in shrub thickets on upper slopes, and in woodlands on terraces. Vouchers: Carr 20398; Carr 21336. Photo: SAM-1130. Line drawing: Diggs et al. (1999), p. 355.

Florestina tripteris DC. [*Palafoxia tripteris* (DC.) Shinnery] White palafoxia. Native annual. Rare in bed of road along N fenceline and in upland woodland near monument. Voucher: Carr & Candee 21245. Photo: SAM-528.

Gaillardia pulchella Foug. Firewheels, Indian blanket. Native annual. Frequent in upland sites. Voucher: Carr & Westlund 20656. Photo: SAM-782. Line drawing: Diggs et al. (1999), p. 361.

Gamochaeta pensylvanica (Willd.) Cabrera [*Gnaphalium pensylvanicum* Willd.] Pennsylvania cudweed. Native annual. Rare on sandy bank of San Antonio River. Voucher: Carr & Candee 20942. Line drawing: Diggs et al. (1999), p. 361.

Gutierrezia texana (A. DC.) T. & G. [*Xanthocephalum texanum* (A. DC.) Shinnery]. Broomweed. Native annual. Common to locally abundant in upland woodlands and on open upper slopes. Voucher: Carr 20214. Photo: SAM-1103. Line drawing: Diggs et al. (1999), p. 367.

Helenium microcephalum DC. Smallhead sneezeweed. Native annual. Locally common on partially unshaded clay slopes within riparian woodland along Picos Creek; less common on terraces of San Antonio River. Voucher: Carr, Benesh & Gallyoun 21075. Photo: SAM-888. Line drawing: Diggs et al. (1999), p. 367.

Helianthus annuus L. Common sunflower. Native annual. Occasional in dry, sunny, disturbed sites. Voucher: Carr 20237. Photo: SAM-038. Line drawing: Diggs et al. (1999), p. 371.

Heterotheca subaxillaris (Lam.) Britt. & Rusby [*Heterotheca latifolia* Buckl.]. Camphor goldenaster. Native annual. Rare in upland woodlands. Voucher: Carr 20236. Photo: SAM-491. Line drawing: Diggs et al. (1999), p. 373.

Krigia cespitosa (Raf.) K. L. Chambers [*Krigia oppositifolia* Raf.] Dwarf-dandelion. Native annual. Occasional during spring in old fields and road beds. Voucher: Carr & Benesh 20482. Line drawing: Diggs et al. (1999), p. 379.

Lactuca sp. Wild-lettuce. Native annual. Rare in riparian woodlands. Apparently heavily utilized by cattle on property; no flowering stalks were observed during survey period.

Liatris mucronata DC. Blazing star. Native perennial. Surprisingly frequent in shrublands on upper slopes. Voucher: Carr 20089. Photo: SAM-431. Line drawing: Diggs et al. (1999), p. 385.

Lygodesmia texana (T. & G.) Greene. Texas skeletonplant. Native perennial. Occasional in shrublands on upper slopes. Voucher: Carr & Westlund 20653. Photo: SAM-733. Line drawing: Diggs et al. (1999), p. 385.

Parthenium confertum Gray. Lyreleaf parthenium. Native perennial. Occasional in upper-slope shrublands. Voucher: Carr 21239. Photo: SAM-991.

Parthenium hysterophorus L. False ragweed. Native annual. Occasional in upland woodlands and upper-slope shrublands. Vouchers: Carr 20235; Carr 21338. Photo: SAM-008. Line drawing: Diggs et al. (1999), p. 395.

Pinaropappus roseus (Less.) Less. Rock-lettuce. Native perennial. Rare in upper-slope shrublands. Photo: SAM-649. Line drawing: Diggs et al. (1999), p. 395.

Pyrrhopappus pauciflorus (D. Don) DC. [*Pyrrhopappus multicaulis* DC.] Texas false-dandelion, pata de leon. Native annual. Frequent in old fields and upland woodlands. Voucher: Carr & Benesh 20490. Photo: SAM-620. Line drawing: Diggs et al. (1999), p. 401.

- Ratibida columnifera* (Nutt.) Woot. & Standl. [*Ratibida columnaris* (Sims) D. Don]. Mexican hats. Native annual. Occasional in upland woodlands. Photo: SAM-091. Line drawing: Diggs et al. (1999), p. 401.
- Rudbeckia hirta* L. var. *angustifolia* (Moore) Perdue. Black-eyed Susan. Native annual. Frequent in upland woodlands; occasional in old fields. Voucher: Carr & Candee 20931. Photo: SAM-788. Line drawing: Diggs et al. (1999), p. 401.
- Senecio ampullaceus* Hook. Texas groundsel. Native annual. Rare, noted only on pile of sandy soil in parking area near monument. Voucher: Carr 20530. Line drawing: Diggs et al. (1999), p. 405.
- Simsia calva* (Engelm. & Gray) Gray. Bush sunflower. Native perennial. Common in upper-slope shrublands. Voucher: Carr 20231. Photo: SAM-446. Line drawing: Diggs et al. (1999), p. 407.
- Sonchus asper* (L.) Hill. Sow thistle. Naturalized annual. Occasional in old fields, upland woodlands and riparian woodlands. Voucher: Carr 20535. Photo: SAM-101. Line drawing: Diggs et al. (1999), p. 417.
- Tetraneuris scaposa* (DC.) Greene [*Hymenoxys scaposa* DC.]. Stemless bitterweed. Native perennial. Occasional in upper-slope shrublands. Voucher: Carr & Benesh 20508. Photo: SAM-646.
- Thelesperma ambiguum* Gray. Greenthread. Native perennial. Rare in shrublands on upper slopes. Vouchers: Carr & Westlund 20652; Carr & Benesh 21173. Photo: SAM-740. Line drawing: Diggs et al. (1999), p. 423.
- Verbesina encelioides* (Cav.) Benth & Hook. f. ex Gray. Cowpen daisy. Native annual. Rare in upland old field. Voucher: Carr 20392. Photo: SAM-1129. Line drawing: Diggs et al. (1999), p. 429.
- Verbesina virginica* L. Frostweed, iceplant. Native perennial. Occasional in upland woodlands, upper-slope shrublands and riparian woodlands. Voucher: Carr 20230. Photo: SAM-1044. Line drawing: Diggs et al. (1999), p. 429.
- Wedelia texana* (Gray) B. L. Turner [*Wedelia hispida* of Texas authors; *Zexmenia hispida* of Texas authors]. Texas zexmenia. hairy zexmenia. Native perennial. Common in upper-slope shrublands; occasional in upland woodlands. Voucher: Carr 20225. Photo: SAM-448. Line drawing: Diggs et al. (1999), p. 431.
- Xanthisma texanum* DC. Sleepy-daisy. Native annual. Occasional in old fields on sandier soils. Voucher: Carr 20206. Photo: SAM-458. Line drawing: Diggs et al. (1999), p. 431.
- Xanthium strumarium* L. Abrojo, cocklebur, porcupine eggs. Native annual. Occasional in bed of Picoso Creek. Voucher: Carr & Candee 21255. Photo: SAM-1116. Line drawing: Diggs et al. (1999), p. 431.

Berberidaceae -- Barberry Family

- Berberis trifoliolata* Moric. [*Mahonia trifoliolata* (Moric.) Fedde] Agarito. Native shrub. Occasional in upland woodlands and upper-slope shrublands. Voucher: Carr & Benesh 20502. Photo: SAM-671. Line drawing: Diggs et al. (1999), p. 435.

Bignoniaceae -- Catalpa Family

Campsis radicans (L.) Seeman ex Bureau. Trumpet creeper. Native woody vine. Common in riparian woodlands, climbing into trees but also creeping through ground layer on heavily grazed portions with heavy clay soils along Picos Creek. Voucher: Carr, Benesh & Gallyoun 21080. Photo: SAM-200. Line drawing: Diggs et al. (1999), p. 447.

Boraginaceae -- Borage Family

Cryptantha texana (A. DC.) Greene. Texas hiddenflower. Native annual. Rare, noted only on pile of sandy soil in parking area near monument. Voucher: Carr 20531. Line drawing: Diggs et al. (1999), p. 449.

Heliotropium indicum L. India turnsole, alacrancillo. Naturalized annual. Rare in cracked clay exposed in dry bed of Picos Creek. Voucher: Carr 19902. Photo: SAM-889. Line drawing: Diggs et al. (1999), p. 451.

Lithospermum mirabile Small. Yellow puccoon. Native perennial. Rather frequent in upper-slope shrublands; occasional in upland woodlands. Voucher: Carr 20513. Photo: SAM-645.

Brassicaceae (Cruciferae) -- Mustard Family

Arabis petiolaris (Gray) Gray. Brazos rock-cress. Native annual. Rare in shrublands on upper slopes. Observed on 30 May 2001 (before official beginning of project); not encountered during 2002. Line drawing: Diggs et al. (1999), p. 461.

Capsella bursa-pastoris (L.) Medik. Shepherd's purse. Naturalized winter annual. Rare in riparian woodlands. Voucher: Carr 20527. Line drawing: Diggs et al. (1999), p. 463.

Descurainia pinnata (Walt.) Britt. Tansy mustard. Native annual. Rare in fencelines along edges of old fields. Voucher: Carr & Benesh 20478. Line drawing: Diggs et al. (1999), p. 467.

Lepidium austrinum Small. Southern pepperweed. Native annual. Occasional in upland woodlands and upper-slope shrublands. Voucher: Carr 20532. Photo: SAM-706. Line drawing: Diggs et al. (1999), p. 471.

Lesquerella argyrea (Gray) Wats. Bladderpod. Native annual. Rare in upper-slope shrublands. Voucher: Carr & Benesh 20507. Photo: SAM-651.

Bromeliaceae -- Bromeliad Family

Tillandsia recurvata L. Ballmoss. Native perennial epiphyte. Occasional in trees throughout, more common in riparian woodlands. Voucher: Carr & Candee 20969. Photo: SAM-326. Line drawing: Diggs et al. (1999), p. 1097.

Buddlejaceae -- Buddlejia Family

Polypremum procumbens L. Juniperleaf, polly-prim. Native perennial. Rare in old field on sandy soils near gate along county road. Voucher: Carr 20682. Photo: SAM-781. Line drawing: Diggs et al. (1999), p. 483.

Cactaceae -- Cactus Family

- Ferocactus setispinus* (Engelm.) Benson [*Thelocactus setispinus* (Engelm.) E. F. Anderson. Hedgehog cactus, fish-hook cactus. Native shrub. Rare in slope shrublands, noted only in old roadbed at N29°05.791', W098°09.927' +/- 21.4 ft. Photo: SAM-993. Line drawing: Diggs et al. (1999), p. 495.
- Opuntia engelmannii* Salm-Dyck var. *lindheimeri* (Engelm.) Parfitt & Pinkava [*Opuntia lindheimeri* Engelm.]. Lindheimer pricklypear. Native shrub. Occasional in upland woodlands and upper-slope shrublands. Photo: SAM-325. Line drawing: Diggs et al. (1999), p. 493.
- Opuntia leptocaulis* DC. Tasajillo, Christmas cactus, pencil cactus. Native shrub. Occasional in shrublands on upper slopes. Photo: SAM-869. Line drawing: Diggs et al. (1999), p. 493.
- Opuntia macrorhiza* Engelm. Plains pricklypear. Native shrub. Rare in old fields. Photo: SAM-870. Line drawing: Diggs et al. (1999), p. 493.

Campanulaceae -- Bellflower Family

- Triodanis perfoliata* (L.) Nieuw. var. *biflora* (Ruiz & Pav.) T. R. Bradley [*Triodanis biflora* (Ruiz & Pav.) Greene]. Venus' looking-glass. Native annual. Rare to occasional throughout. Vouchers: Carr & Benesh 20500; Carr 20679. Photo: SAM-804. Line drawing: Diggs et al. (1999), p. 505.

Caprifoliaceae -- Honeysuckle Family

- Sambucus canadensis* L. var. *canadensis*. Elderberry. Native shrub. Rare in riparian woodlands, mostly (only?) along San Antonio River. Voucher: Carr, Benesh & Gallyoun 21081. Photo: SAM-914. Line drawing: Diggs et al. (1999), p. 515.

Caryophyllaceae -- Pink Family

- Polycarpon tetraphyllum* (L.) L. Fourleaf manyseed. Naturalized annual. Rare, noted only in mown old field on Wilco soils along fenceline along county road. Voucher: Carr 20689. Photo: SAM-776. Line drawing: Diggs et al. (1999), p. 523.
- Silene antirrhina* L. Sticky catchfly, sleepy catchfly. Native annual. Rare in old fields and upland woodlands. Voucher: Carr 20684. Line drawing: Diggs et al. (1999), p. 526.
- Stellaria media* (L.) Vill. Common chickweed. Naturalized annual. Occasional in riparian woodlands. Voucher: Carr 20520. Photo: SAM-721. Line drawing: Diggs et al. (1999), p. 527.
- Stellaria prostrata* Baldw. Baldwin chickweed. Native annual. Rare in shaded gully headers. Voucher: Carr & Westlund 20650.

Celastraceae -- Staff-tree Family

- Schaefferia cuneifolia* Gray. Desert yaupon, panalero. Native shrub. Rare in upper slope shrublands around gully heads, e.g., at N29°05.860', W098°10.087' +/- 15.9 ft. Voucher: Carr 21138. Photo: SAM-514.

Chenopodiaceae -- Goosefoot Family

Chenopodium berlandieri Moq. Berlandier goosefoot. Native annual. Rare in upland woodlands and old fields. Vouchers: Carr & Carré 19839; Carr 21215. Photo: SAM-1042. Line drawing: Diggs et al. (1999), p. 537.

Commelinaceae -- Dayflower Family

Commelina erecta L. var. *angustifolia* (Michx.) Fern. Common dayflower. Native perennial. Rare in upper-slope shrublands and terrace woodlands. Voucher: Carr 20081. Photo: SAM-073. Line drawing: Diggs et al. (1999), p. 1099.

Tinantia anomala (Torr.) C. B. Clarke [*Commelinantia anomala* (Torr.) Tharp] Widow's tears, false dayflower. Native annual. Frequent in riparian woodlands. Voucher: Carr & Westlund 20643. Photo: SAM-574. Line drawing: Diggs et al. (1999), p. 1103.

Tradescantia sp. Spiderwort. Native perennial. Occasional along margins of old fields and in upland woodlands. Voucher: Carr & Benesh 20496. Photo: SAM-822.

Convolvulaceae -- Morning-glory Family

Convolvulus equitans Benth. Common bindweed. Native perennial herbaceous vine. Occasional in upland old fields and woodlands. Voucher: Carr & Westlund 20660. Photo: SAM-080. Line drawing: Diggs et al. (1999), p. 553.

Dichondra recurvata Tharp & M. C. Johnston. Tharp's ponyfoot. Native perennial. Occasional in old fields and upland woodlands. Vouchers: Carr & Benesh 20479; Carr 20704. Photo: SAM-1076. Line drawing: Diggs et al. (1999), p. 553.

Evolvulus sericeus Swartz var. *sericeus*. Silky evolvulus. Native perennial. Occasional to frequent in upland woodlands and upper-slope shrublands. Voucher: Carr 21135. Photo: SAM-746. Line drawing: Diggs et al. (1999), p. 557.

Ipomaea cordatotriloba Dennstaedt [*Ipomaea trichocarpa* Ell. var. *trichocarpa*; *Ipomaea trichocarpa* Ell. var. *australis* O'Donnell; *Ipomaea trichocarpa* Ell. var. *torreyana* (Gray) Shinnery]. Common morning-glory. Native perennial herbaceous vine. Occasional in old fields and upper-slope shrublands. Voucher: Carr 20972. Photo: SAM-181. Line drawing: Diggs et al. (1999), p. 557.

Cornaceae -- Dogwood Family

Cornus drummondii C. A. Mey. Roughleaf dogwood. Native shrub. Occasional in riparian woodlands. Voucher: Carr & Candee 20937. Photo: SAM-816. Line drawing: Diggs et al. (1999), p. 563.

Cucurbitaceae -- Gourd Family

Ibervillea lindheimeri (Gray) Greene. Balsam gourd, Lindheimer balsam-apple. Native perennial herbaceous vine. Rare, one plant in fenceline at gate on county road and a few plants in upland woodlands. Voucher: Carr 20688. Photo: SAM-775. Line drawing: Diggs et al. (1999), p. 571.

Melothria pendula L. Melonette, meloncito. Native annual herbaceous vine. Rare in riparian woodlands. Voucher: Carr & Candee 20936. Photo: SAM-417. Line drawing: Diggs et al. (1999), p. 571.

Cuscutaceae -- Dodder Family

Cuscuta sp. Dodder. Native annual vine. Apparently rare in area, only a few plants noted during surveys of 2001-2002; parasitic on *Liatris mucronata* in openings in upper-slope shrublands. Voucher: Carr 21342. Photo: SAM-1142.

Cyperaceae -- Sedge Family

Carex bulbostylis Mack. Globose caric-sedge. Native perennial. Frequent in riparian woodlands, heavily grazed by cattle. Voucher: Carr & Westlund 20672. Line drawing: Diggs et al. (1999), p. 1117.

Carex planostachys Kunze. Cedar sedge. Native perennial. Frequent in upper-slope shrublands. Voucher: Carr & Benesh 20503. Line drawing: Diggs et al. (1999), p. 1129.

Carex tetrastachya Scheele [*Carex brittoniana* Bailey]. Britton sedge. Native perennial. Occasional to frequent in riparian woodlands. Voucher: Carr & Westlund 20673. Photo: SAM-806. Line drawing: Diggs et al. (1999), p. 1129.

Carex sp. [Sect. *Phaestoglochin*.] Sedge. Native perennial. Occasional in upland woodlands and upper-slope shrublands. Voucher: Carr & Westlund 20674.

Cyperus ochraceus Vahl. Umbrella-sedge. Native perennial. Rare in riparian woodlands. Photo: SAM-219.

Cyperus retroflexus Buckl. [*Cyperus uniflorus* T. & H.] One-flower flat-sedge. Native perennial. Occasional in old fields along easement road. Voucher: Carr & Benesh 21166. Photo: SAM-982. Line drawing: Diggs et al. (1999), p. 1141.

Cyperus rotundus L. Purple nutsedge. Naturalized perennial. Occasional in old fields along easement road. Voucher: Carr & Benesh 21187. Photo: SAM-404. Line drawing: Diggs et al. (1999), p. 1141.

Ebenaceae -- Ebony Family

Diospyros texana Scheele. Texas persimmon. Native shrub. Common in upper slope shrublands but also present in upland woodlands and terrace woodlands. Voucher: Carr & Benesh 20501. Photo: SAM-310. Line drawing: Diggs et al. (1999), p. 583.

Euphorbiaceae -- Spurge Family

Acalypha ostryifolia Riddell. Hornbeam copperleaf. Native annual. Rare in upland woodlands. Voucher: Carr 21216. Photo: SAM-501. Line drawing: Diggs et al. (1999), p. 587.

Argythamnia humilis (Engelm & Gray) Muell. Arg. var. *humilis* [*Ditaxis humilis* (Engelm. & Gray) Pax var. *humilis*]. Low wild-mercury. Native perennial. Occasional in small openings in upland woodland. Voucher: Carr 21140. Photo: SAM-949. Line drawing: Diggs et al. (1999), p. 603.

- Cnidoscolus texanus* (Muell. Arg.) Small. Texas bull-nettle. Native perennial. Rare in opening in upper-slope shrubland along upper margin of shallow drainage at N29°05.775', W098°10.008'. Voucher: Carr & Candee 21249. Photo: SAM-947. Line drawing: Diggs et al. (1999), p. 601.
- Croton capitatus* Michx. Hog croton. Native annual. Occasional in old fields, rare in upland woodlands and on clay bars in bed of Picoso Creek. Voucher: Carr, Benesh & Gallyoun 21078. Photo: SAM-455. Line drawing: Diggs et al. (1999), p. 601.
- Croton glandulosus* L. Toothed croton. Native annual. Rare in old fields and upland woodlands. Voucher: Carr & Benesh 21184. Photo: SAM-983. Line drawing: Diggs et al. (1999), p. 601.
- Croton monanthogynus* Michx. One-seed croton, prairie tea. Native annual. Common in old fields, upland woodlands, and upper-slope shrublands. Voucher: Carr 20206-B. Photo: SAM-1000. Line drawing: Diggs et al. (1999), p. 603.
- Euphorbia dentata* Michx. [*Poinsettia dentata* (Michx.) Kl. & Gke.] Toothed spurge. Native annual. Occasional throughout. Voucher: Carr 20223. Photo: SAM-371. Line drawing: Diggs et al. (1999), p. 607.
- Euphorbia glyptosperma* Engelm. [*Chamaesyce glyptosperma* (Engelm.) Small]. Ridgeseed spurge. Native annual. Occasional in sandy clay of roadbeds and openings in upland woodlands and upper-slope shrublands. Vouchers: Carr 19900; Carr 20715; Carr 20975; Carr 21244; Carr 21343. Line drawing: Diggs et al. (1999), p. 595.
- Euphorbia nutans* Lag. [*Chamaesyce nutans* (Lag.) Small] Eyebane, nodding spurge. Native annual. Curiously rare, one vegetative plant observed in clay exposed in dry bed of Picoso Creek, 13 June 2002. Photo: SAM-997. Line drawing: Diggs et al. (1999), p. 597.
- Euphorbia peplidion* Engelm. [*Tithymalus peplidion* (Engelm.) Small] Low spurge. Native annual. Rare on tract, noted only in fenceline along old field easement near gate. Voucher: Carr & Benesh 20489.
- Euphorbia prostrata* Ait. [*Chamaesyce prostrata* (Ait.) Small]. Hairy matspurge. Native annual. Frequent in roadbeds, rare in clay on dry bed of Picoso Creek. Vouchers: Carr 19903; Carr 20209; Carr 20238. Line drawing: Diggs et al. (1999), p. 597.
- Euphorbia serpens* Kunth [*Chamaesyce serpens* (Kunth) Small]. Smooth matspurge. Native annual. Apparently rare in old fields. Voucher: Carr 20391. Photo: SAM-1106. Line drawing: Diggs et al. (1999), p. 597.
- Euphorbia spathulata* Lam. [*Tithymalus spathulatus* (Lam.) Weber] Warty spurge. Native annual. Rare in riparian woodland, one moldy plant observed on 26 Mar 2002. Line drawing: Diggs et al. (1999), p. 609.
- Jatropha dioica* Cerv. Rubberstem, sangre de drago. Native shrub. Rare in upper-slope shrubland, noted only on old roadbed on ridge on E side of quarry pit, N29°05.791', W098°09.927' and vicinity. Voucher: Carr & Westlund 20640. Photo: SAM-054.
- Phyllanthus polygonoides* Spreng. Knotweed leaf-flower. Native perennial. Rare in old fields, more common in upper slope shrublands and openings in upland woodlands. Vouchers: Carr & Westlund 20647; Carr 20982. Photo: SAM-998. Line drawing: Diggs et al. (1999), p. 613.
- Tragia brevispica* Engelm. & Gray. Climbing noseburn. Native perennial herbaceous vine. Occasional in upper-slope shrublands; rare in fenceline along easement road. Vouchers: Carr 20229; Carr 21335. Photo: SAM-1100. Line drawing: Diggs et al. (1999), p. 615.

Fabaceae (Leguminosae) -- Legume Family

- Acacia greggii* Gray var. *greggii*. Gregg acacia. Native shrub. Occasional in shrublands on upper slopes, e.g. at N29°05.835', W098°10.027' +/- 11.5 ft. Voucher: Carr & Candee 20957. Photo: SAM-868.
- Acacia minuata* (M. E. Jones) Beauchamp [*Acacia smallii* Isely; *Acacia farnesiana* of Texas authors]. Huisache. Native tree or large shrub. Occasional in old fields and riparian woodlands. Voucher: Carr 21092. Photo: SAM-868. Line drawing: Diggs et al. (1999), p. 627.
- Acacia rigidula* Benth. Blackbrush, chaparro prieto. Native shrub. Frequent in shrublands on upper slopes. Voucher: Carr 21099. Photo: SAM-910.
- Astragalus nuttallianus* DC. var. *trichocarpus* T. & G. Nuttall's milkvetch. Native annual. Occasional in less recently plowed portions of old fields. Vouchers: Carr & Benesh 20477; Carr 20720. Photo: SAM-797.
- Astragalus nuttallianus* DC. var. ?? Nuttall's milkvetch. Native annual. Occasional in upper-slope shrublands. [Smaller in all respects than the preceding listed variety; in flower, 25 March 2002; never encountered in fruit, thus not identified.]
- Chamaecrista fasciculata* (Michx.) Greene [*Cassia fasciculata* Michx.] Partridge-pea. Native annual. Occasional in old fields along easement road. Voucher: Carr 20205. Photo: SAM-457. Line drawing: Diggs et al. (1999), p. 641.
- Dalea emarginata* (T. & G.) Shinnery [*Petalostemum emarginatum* T. & G.] Prairie-clover. Native perennial. Locally common in old field at southwest end of entrance easement, i.e., just inside gate along county road. Vouchers: Carr 20690; Carr 20882. Photo: SAM-780.
- Dalea pogonathera* Gray. Bearded dalea, hierba de corazo. Native perennial. Occasional in openings in upland woodlands and upper-slope shrublands. Voucher: Carr 20395. Photo: SAM-553.
- Desmanthus velutinus* Scheele. Velvet bundleflower. Native perennial. Rare in upland woodlands and upper-slope shrublands. Vouchers: Carr 20090; Carr & Candee 20962. Photo: SAM-887. Line drawing: Diggs et al. (1999), p. 653.
- Desmanthus virgatus* (L.) Willd. var. *depressus* (Humb. & Bonpl.) B. L. Turner. Sharp-pod bundleflower. Native perennial. Occasional in old fields. Voucher: Carr 20974. Photo: SAM-137. Line drawing: Diggs et al. (1999), p. 653.
- Eysenhardtia texana* Scheele. Texas kidneywood. Native shrub. Common in upper-slope shrublands; occasional in upland woodlands. Voucher: Carr 20219. Photo: SAM-447. Line drawing: Diggs et al. (1999), p. 659.
- Medicago lupulina* L. Black medick. Naturalized annual. Occasional in openings in riparian woodlands. Voucher: Carr 20516. Line drawing: Diggs et al. (1999), p. 675.
- Medicago polymorpha* L. California burclover. Naturalized annual. Occasional in roadbeds and openings in riparian woodlands. Vouchers: Carr & Benesh 20498; Carr 20515. Line drawing: Diggs et al. (1999), p. 675.
- Melilotus indicus* (L.) All. Yellow sweet-clover. Naturalized annual. Common in roadbeds and old fields; occasional in upland woodlands. Voucher: Carr & Benesh 20497. Photo: SAM-631. Line drawing: Diggs et al. (1999), p. 675.
- Mimosa borealis* Gray. Fragrant mimosa. Native shrub. Rare in upper-slope shrublands. Voucher: Carr 21367. Line drawing: Diggs et al. (1999), p. 679.

- Mimosa latidens* (Small) B. L. Turner [*Schrankia latidens* (Small) K. Schum.] Sensitive-briar. Native perennial. Rare in old fields and upper-slope shrublands. Voucher: Carr, Benesh & Gallyoun 21074. Photo: SAM-841.
- Prosopis glandulosa* Torr. var. *glandulosa*. Honey mesquite. Native tree. Common in upland woodlands; frequent in upper-slope shrublands, and present in terrace woodlands. Voucher: Carr 21100. Photo: SAM-353. Line drawing: Diggs et al. (1999), p. 689.
- Rhynchosia senna* Hook. var. *texana* (T. & G.) M. C. Johnst. [*Rhynchosia texana* T. & G.] Texas snoutbean. Native perennial herbaceous vine. Rare in upper-slope shrublands. Voucher: Carr & Candee 21248. Photo: SAM-933. Line drawing: Diggs et al. (1999), p. 693.
- Senna pumilio* (Gray) Irwin & Barneby [*Cassia pumilio* Gray]. Dwarf senna. Native perennial. Apparently rare, two plants observed in upper-slope shrubland on 22 April 2002, neither collected. Photo: SAM-754. Line drawing: Diggs et al. (1999), p. 695.
- Sesbania* sp. *Sesbania*. Native annual. Rare, local on clay exposed in dry bed of Picos Creek just S of northern fenceline. [Viewed in vegetative condition, 13 June 2002; subsequently disappeared.]
- Vicia ludoviciana* Nutt. subsp. *leavenworthii* (T. & G.) Lasseter & Gunn [*Vicia leavenworthii* T. & G.] Leavenworth vetch. Native annual herbaceous vine. Occasional in old fields, upland woodlands and upper-slope shrublands. Voucher: Carr & Benesh 20480. Line drawing: Diggs et al. (1999), p. 709.
- Vicia ludoviciana* Nutt. subsp. *ludoviciana*. Louisiana vetch. Native annual herbaceous vine. Occasional in riparian woodlands, particularly on sandy slopes along San Antonio River. Voucher: Carr 20521. Line drawing: Diggs et al. (1999), p. 709.

Fagaceae -- Beech Family

- Quercus* sp. (*Quercus virginiana* Mill. var. *virginiana*, *Quercus virginiana* Mill. var. *fusiformis* (Small) Sarg., or member of hybrid swarm). (Some kind of) Live oak. Native tree. Occasional but important in riparian woodlands; several large specimens along Picos Creek. Voucher: Carr & Candee 21247. Photo: SAM-977. Line drawing: Diggs et al. (1999), p. 721.

Fumariaceae -- Fumitory Family

- Corydalis* sp. Scrambled eggs. Native annual. Rare in riparian and upland woodlands. Photo: SAM-597. Line drawing: Diggs et al. (1999), p. 721.

Gentianaceae -- Gentian Family

- Sabatia campestris* Nutt. Prairie rose-gentian. Native annual. Rare in old field on Wilco soils near gate along county road. Voucher: Carr 20692. Photo: SAM-779. Line drawing: Diggs et al. (1999), p. 729.

Geraniaceae -- Geranium Family

Geranium texanum (Trel.) A. Heller. Texas wild-geranium. Native annual. Occasional throughout in early spring. Voucher: Carr & Benesh 20488. Photo: SAM-672. Line drawing: Diggs et al. (1999), p. 731.

Hydrophyllaceae -- Waterleaf Family

Nama hispidum Gray. Sandbell, rough nama. Native annual. Rare in old fields and openings in upper-slope shrublands. Line drawing: Diggs et al. (1999), p. 745.

Nama jamaicense L. Fiddleleaf nama. Native annual. Occasional throughout. Voucher: Carr 20710. Photo: SAM-235. Line drawing: Diggs et al. (1999), p. 745.

Nemophila phacelioides Nutt. Blue eyes. Native annual. Occasional in riparian woodlands. Voucher: Carr 20525. Photo: SAM-604. Line drawing: Diggs et al. (1999), p. 745.

Phacelia congesta Hook. Blue curls. Native annual. Rare in shrublands on upper slopes. Photo: SAM-828. Line drawing: Diggs et al. (1999), p. 745.

Iridaceae -- Iris Family

Sisyrinchium langloisii Greene [incl. *Sisyrinchium pruinatum* Bickn.] Blue-eyed grass. Native perennial. Apparently rare, noted only in fenceline along margin of old fields. Voucher: Carr & Benesh 20491. Photo: SAM-674.

Juglandaceae -- Walnut Family

Carya illinoensis (Wang) K. Koch. Pecan. Native tree. Occasional but important in riparian woodlands. Voucher: Carr & Candee 20948. Photo: SAM-212. Line drawing: Diggs et al. (1999), p. 751.

Krameriaceae -- Ratany Family

Krameria lanceolata Torr. Trailing ratany. Native perennial. Rare in openings in upper-slope shrublands. Voucher: Carr & Westlund 20665. Photo: SAM-768. Line drawing: Diggs et al. (1999), p. 757.

Lamiaceae (Labiatae) -- Mint Family

Hedeoma drummondii Benth. Limoncillo. Native perennial. Frequent in upland woodlands and upper-slope shrublands. Voucher: Carr & Westlund 20654. Photo: SAM-530. Line drawing: Diggs et al. (1999), p. 761.

Hedeoma hispida Pursh. Rough hedeoma. Native annual. Rare in upper-slope shrublands. Voucher: Carr & Westlund 20666. Photo: SAM-1010. Line drawing: Diggs et al. (1999), p. 761.

Lamium amplexicaule L. Henbit. Naturalized annual. Occasional during spring in riparian woodlands. Photo: SAM-588. Line drawing: Diggs et al. (1999), p. 761.

Monarda punctata L. Spotted beebalm. Native annual. Occasional in old fields, upland woodlands and upper-slope shrublands. Voucher: Carr 20691. Photo: SAM-778. Line drawing: Diggs et al. (1999), p. 771.

- Salvia ballotiflora* Benth. Mejorana, shrubby blue sage. Native shrub. Rare in upper slope shrublands. Voucher: Carr & Westlund 20641. Photo: SAM-760.
- Salvia coccinea* Buch. Scarlet sage, tropical sage. Native annual. Rare in riparian woodlands along Picos Creek. Photo: SAM-1163. Line drawing: Diggs et al. (1999), p. 775.
- Scutellaria drummondii* Benth. Annual skullcap. Native annual. Occasional in upland woodlands and upper-slope shrublands. Voucher: Carr 20705. Photo: SAM-635. Line drawing: Diggs et al. (1999), p. 781.
- Scutellaria ovata* Hill. Eggleaf skullcap. Native perennial. Rare in riparian woodlands. Voucher: Carr & Candee 20950. Line drawing: Diggs et al. (1999), p. 781.
- Stachys crenata* Raf. Shade betony. Native annual. Rare in riparian woodlands. Voucher: Carr 20529. Line drawing: Diggs et al. (1999), p. 785.

Lemnaceae -- Duckweed Family

- Lemna aequinoctialis* Welw. Duckweed. Native annual. Floating among flotsam on surface of Picos Creek 50-75 ft. N of confluence with San Antonio River. Voucher: Carr & Candee 21254. Photo: SAM-216. Line drawing: Diggs et al. (1999), p. 1188.

Liliaceae -- Lily Family

- Allium canadense* L. var. *canadense*. Canada wild-onion. Native perennial. Rare in riparian woodlands. Photo: SAM-720. Line drawing: Diggs et al. (1999), p. 1195.
- Allium drummondii* Regel. Drummond wild-garlic. Native perennial. Rare in upland woodlands and upper-slope shrublands. Voucher: Carr & Benesh 20510. Line drawing: Diggs et al. (1999), p. 1199.
- Cooperia drummondii* Herb. [*Zephyranthes chlorosolen* (Herb.) Dietr.] Drummond rain-lily, cebolleta. Native perennial. Occasional in old fields, upland woodlands and upper-slope shrublands. Voucher: Carr 20234. Photo: SAM-374. Line drawing: Diggs et al. (1999), p. 1203.
- Cooperia pedunculata* Herb. [*Zephyranthes drummondii* D. Don in Sweet] Giant rain-lily, broadleaf rain-lily. Native perennial. Occasional in upland woodlands, upper-slope shrublands and riparian woodlands. Voucher: Carr & Benesh 20512. Photo: SAM-690. Line drawing: Diggs et al. (1999), p. 1203.
- Habranthus tubispathus* (L'Her.) Traub [*Habranthus texanus* (Herb.) Steud., *Zephyranthes texana* Hook.] Copper rainlily, atamosco lily. Naturalized perennial. Rare in opening in upland woodland. Voucher: Carr 20216. Photo: SAM-465. Line drawing: Diggs et al. (1999), p. 1203.
- Nothoscordum bivalve* (L.) Britt. False garlic, crow poison. Native perennial. Occasional in upland woodlands and upper-slope shrublands. Voucher: Carr & Benesh 20509. Photo: SAM-1095. Line drawing: Diggs et al. (1999), p. 1209.
- Schoenocaulon drummondii* Gray. Drummond green-lily, Drummond sabadilla. Native perennial. Rare in upland woodlands at N29°05.941', W098°10.080' and N29°05.935', W098°10.081'; observed with leaves and green fruit, 30 Oct 2001 and 12 August 2002. Voucher: Carr 21214. Photo: SAM-552.

Linaceae -- Flax Family

Linum imbricatum (Raf.) Shinn. Shingle flax. Native annual. Occasional in old fields, upland woodlands and upper-slope shrublands. Voucher: Carr & Benesh 20505. Photo: SAM-638.

Malvaceae -- Mallow Family

Abutilon fruticosum Guillemin & Perrottet [*Abutilon incanum* (Link.) Sweet]. Texas Indian-mallow. Native perennial. Occasional in upper-slope shrublands. Photo: SAM-533. Line drawing: Diggs et al. (1999), p. 803.

Abutilon wrightii Gray. Wright abutilon. Native perennial. Rare in upper slope shrublands. Voucher: Carr & Candee 21246. Photo: SAM-1113.

Callirhoe leiocarpa Martin. Poppy mallow. Native annual. Occasional in upland woodlands and upper-slope shrublands. Vouchers: Carr, Benesh, Elliott & Carré 19754; Carr & Westlund 20657. Photo: SAM-827. Line drawing: Diggs et al. (1999), p. 809.

Malvastrum coromandelianum (L.) Gke. Threelobe false-mallow. Native perennial. Occasional throughout. Voucher: Carr, Benesh & Gallyoun 21086. Photo: SAM-262. Line drawing: Diggs et al. (1999), p. 813.

Malvaviscus arboreus Cav. var. *drummondii* (T. & G.) Schery. Turk's cap. Native perennial. Locally frequent in riparian woodlands; occasional in upland woodlands. Voucher: Carr 21218. Photo: SAM-003. Line drawing: Diggs et al. (1999), p. 817.

Rhynchosida physocalyx (Gray) Fryxell [*Sida physocalyx* Gray]. Spearleaf sida. Native perennial. Apparently rare on tract, noted only in roadbed through old fields on easement. Voucher: Carr 20717. Photo: SAM-094. Line drawing: Diggs et al. (1999), p. 819.

Sida abutifolia H. B. K. [*Sida filicaulis* T. & G.]. Creeping yellow sida. Native perennial. Occasional in old fields. Voucher: Carr & Candee 20967. Photo: SAM-1033. Line drawing: Diggs et al. (1999), p. 819.

Sida spinosa L. Prickly sida. Native perennial. Occasional in old fields. Vouchers: Carr & Carré 19840; Carr & Benesh 21188. Photo: SAM-988. Line drawing: Diggs et al. (1999), p. 819.

Meliaceae -- Mahogany Family

Melia azedarach L. Chinaberry. Naturalized tree. Apparently rather uncommon at present in riparian woodlands: rare along Picos Creek and only occasional along San Antonio River (e.g., at N29°05.903', W098°09.633', where 5-10 mature but small trees were observed on 13 June 2002). Voucher: Carr, Benesh & Gallyoun 21082. Photo: SAM-395. Line drawing: Diggs et al. (1999), p. 825.

Molluginaceae -- Carpetweed Family

Mollugo verticillata L. Green carpetweed. Native annual. Frequent in old fields and roadbeds on sandier soils; also on clay exposed in dry bed of Picos Creek. Vouchers: Carr 20222; Carr, Benesh & Gallyoun 21079; Carr 21243. Photo: SAM-1108. Line drawing: Diggs et al. (1999), p. 829.

Moraceae -- Mulberry Family

Morus alba L. White mulberry, Asian mulberry. Naturalized tree. Occasional in riparian woodlands. Voucher: Carr & Candee 20944. Photo: SAM-174. Line drawing: Diggs et al. (1999), p. 833.

Morus rubra L. Red mulberry. Native tree. Occasional in riparian woodlands. Voucher: Carr, Benesh, Elliott & Carré 19753. Photo: SAM-1147. Line drawing: Diggs et al. (1999), p. 833.

Nyctaginaceae -- Four-o'clock Family

Acleisanthes longiflora Gray. Angel trumpets. Native perennial. Common in upland woodlands and upper-slope shrublands. Voucher: Carr 20220. Photo: SAM-489. Line drawing: Diggs et al. (1999), p. 837.

Acleisanthes obtusa (Choisy) Standl. Berlandier trumpets. Native perennial. Occasional to locally common in upland woodlands and upper-slope shrublands. Vouchers: Carr & Candee 20111; Carr 20207. Photo: SAM-459.

Mirabilis linearis (Pursh) Heimerl. Slenderleaf four-o'clock, umbrella-wort. Native perennial. Rare in old fields. Voucher: Carr 20383. Photo: SAM-369. Line drawing: Diggs et al. (1999), p. 843.

Nyctaginea capitata Choisy. Scarlet muskflower. Native perennial. Occasional in old fields, upland woodlands and upper-slope shrublands. Voucher: Carr 20210. Photo: SAM-016. Line drawing: Diggs et al. (1999), p. 843.

Oleaceae -- Olive Family

Forestiera angustifolia Torr. Panalero, narrowleaf elbowbush, desert olive. Native shrub. Rather rare in upper-slope shrublands. Voucher: Carr & Candee 20963. Photo: SAM-1062.

Fraxinus berlandieriana DC. Fresno, ash. Native tree. Apparently rare in riparian woodland on terrace of San Antonio River; one mature tree and numerous seedlings at N29°05.837', W098°09.756 +/- 16.3 ft. Voucher: Carr & Candee 21252. Photo: SAM-847.

Menodora heterophylla (Moric.) DC. Redbud menodora. Native perennial. Occasional in old fields and along margins of upland woodlands. Voucher: Carr & Westlund 20641. Photo: SAM-756. Line drawing: Diggs et al. (1999), p. 853.

Onagraceae -- Evening-Primrose Family

Gaura brachycarpa Small. Shortfruit gaura. Native annual. Frequent in old fields, upland woodlands and upper-slope shrublands. Voucher: Carr 20694. Line drawing: Diggs et al. (1999), p. 853.

Gaura parviflora Doug. Smallflower gaura. Native annual. Occasional in old fields, upland woodlands and upper-slope shrublands. Voucher: Carr 20699. Photo: SAM-790. Line drawing: Diggs et al. (1999), p. 857.

Oenothera laciniata Hill. Cutleaf evening-primrose. Native annual. Rare in old fields. Voucher: Carr & Benesh 20485. Photo: SAM-621. Line drawing: Diggs et al. (1999), p. 867.

Oenothera speciosa Nutt. Pink evening-primrose. Native perennial. Occasional in old fields. Voucher: Carr & Benesh 20484. Photo: SAM-673. Line drawing: Diggs et al. (1999), p. 867.

Oxalidaceae -- Wood-Sorrel Family

- Oxalis dichondrifolia* Gray. Ponyfoot oxalis. Native perennial. Occasional in upper-slope shrublands. Voucher: Carr & Westlund 20659. Photo: SAM-636.
- Oxalis dillenii* Jacq. [*Oxalis stricta* L.] Yellow sour-clover. Native annual. Occasional throughout. Voucher: Carr & Candee 20939. Photo: SAM-393. Line drawing: Diggs et al. (1999), p. 871.
- Oxalis drummondii* Gray. Drummond wood-sorrel. Native perennial. Frequent in upland woodlands and upper-slope shrublands; occasional in riparian woodlands. Voucher: Carr 21237. Photo: SAM-402. Line drawing: Diggs et al. (1999), p. 871.

Papaveraceae -- Poppy Family

- Argemone sanguinea* Greene. Spiny prickly-poppy. Native annual. Occasional in openings in upland woodlands. Voucher: Carr 20712. Photo: SAM-640.

Passifloraceae -- Passionflower Family

- Passiflora tenuiloba* Engelm. Slimlobe passionflower. Native perennial herbaceous vine. Occasional in upper-slope shrublands. Vouchers: Carr 21210 (vegetative); Carr 21241 (flowering). Photo: SAM-1106. Line drawing: Diggs et al. (1999), p. 879.

Phytolaccaceae -- Pokeweed Family

- Rivina humilis* L. Pigeonberry. Native perennial. Rare in riparian woodlands. Voucher: Carr & Candee 20960. Photo: SAM-1137. Line drawing: Diggs et al. (1999), p. 885.

Plantaginaceae -- Plantain Family

- Plantago hookeriana* Fisch. & Mey. Hooker plantain. Native annual. Occasional in old fields and openings in upper-slope shrublands. Vouchers: Carr 20681. Photo: SAM-769. Line drawing: Diggs et al. (1999), p. 887.
- Plantago rhodosperma* Dcne. Redseed plantain. Native annual. Frequent in old fields, upland woodlands and riparian woodlands. Voucher: Carr 20519. Photo: SAM-700. Line drawing: Diggs et al. (1999), p. 887.
- Plantago wrightiana* Dcne. Wright plantain. Native annual. Rare in old fields. Vouchers: Carr & Westlund 20667; Carr 20695. Line drawing: Diggs et al. (1999), p. 889.

Poaceae (Gramineae) -- Grass Family

- Aristida purpurea* Nutt. var. *longiseta* (Steud.) Vasey [*Aristida longiseta* Steud.] Long-awn threeawn, dogtowngrass. Native perennial. Occasional to locally common in old fields and upper-slope shrublands. Vouchers: Carr 20384; Carr & Westlund 20655. Photo: SAM-1075. Line drawing: Diggs et al. (1999), p. 1245.

Aristida purpurea Nutt. var. *purpurea* [incl. *Aristida roemeriana* Scheele]. Purple threeawn. Native perennial. Occasional in upland woodlands and upper-slope shrublands. Vouchers: Carr 20387; Carr & Westlund 20670. Photo: SAM-922. Line drawing: Diggs et al. (1999), p. 1245.

Avena sativa L. Oats. Introduced annual. Occasional volunteer in old fields. Voucher: Carr 20719. Photo: SAM-796. Line drawing: Diggs et al. (1999), p. 1249.

Bothriochloa ischaemum (L.) Keng var. *songarica* (Rupr.) Celerier & Harlan. King Ranch bluestem. Naturalized perennial. Frequent to locally abundant in upland woodlands and upper-slope shrublands. Voucher: Carr 20226. Photo: SAM-969. Line drawing: Diggs et al. (1999), p. 1249.

Bothriochloa laguroides (DC.) Herter subsp. *torreyana* (Steud.) Allred & Gould [*Bothriochloa saccharoides* (Sw.) Rydb. var. *torreyana* (Steud.) Gould]. Silver bluestem. Native perennial. Occasional to frequent in old fields, upland woodlands and upper-slope shrublands. Voucher: Carr 20977. Photo: SAM-534. Line drawing: Diggs et al. (1999), p. 1249.

Bouteloua curtipendula (Michx.) Rydb. Sideoats grama. Native perennial. Frequent in upper-slope shrublands. Voucher: Carr 20228. Photo: SAM-344. Line drawing: Diggs et al. (1999), p. 1249.

Bouteloua rigidiseta (Steud.) Hitchc. Texas grama, mesquitegrass. Native perennial. Occasional in upland woodlands and upper-slope shrublands. Vouchers: Carr 20393; Carr & Westlund 20641. Photo: SAM-1068. Line drawing: Diggs et al. (1999), p. 1251.

Bouteloua trifida Thurb. Red grama. Native perennial. Locally frequent in upper-slope shrublands. Vouchers: Carr 21139; Carr 21345. Photo: SAM-1140. Line drawing: Diggs et al. (1999), p. 1251.

Bromus catharticus Vahl [*Bromus unioloides* (Willd.) Kunth]. Rescuegrass. Naturalized annual. Occasional to frequent throughout. Voucher: Carr 20534. Photo: SAM-678. Line drawing: Diggs et al. (1999), p. 1251.

Bromus japonicus Thunb. ex Murr. Japanese brome. Naturalized annual. Occasional in old fields. Voucher: Carr 20535. Line drawing: Diggs et al. (1999), p. 1255.

Buchloe dactyloides (Nutt.) Engelm. Buffalograss. Native perennial. Noted only in bottom of quarry but presumably also present, perhaps mixed with *Hilaria belangeri*, in upland sites. Voucher: Carr 21340. Photo: SAM-1139. Line drawing: Diggs et al. (1999), p. 1255.

Cenchrus spinifex Cav. [*Cenchrus incertus* Curtis]. Sandbur grass. Native perennial. Occasional in old fields and upland woodlands. Voucher: Carr 20202. Photo: SAM-452. Line drawing: Diggs et al. (1999), p. 1255.

Chasmanthium latifolium (Michx.) Yates. Creek oats, inland sea oats. Native perennial. Occasional in riparian woodlands. Voucher: Carr & Candee 20949. Photo: SAM-125. Line drawing: Diggs et al. (1999), p. 1257.

Chloris ciliata Sw. Fringed chloris. Native perennial. Occasional in openings in upland woodlands and upper-slope shrublands. Voucher: Carr 20086. Photo: SAM-1061.

Chloris cucullata Bisch. Hooded windmillgrass. Native perennial. Frequent in upland woodlands. Voucher: Carr 20201. Photo: SAM-153. Line drawing: Diggs et al. (1999), p. 1257.

Chloris verticillata Nutt. Tumble windmillgrass. Native perennial. Occasional in openings in upland woodlands. Voucher: Carr 20208. Photo: SAM-1063. Line drawing: Diggs et al. (1999), p. 1257.

- Cynodon dactylon* (L.) Pers. var. *dactylon*. Bermudagrass. Naturalized perennial. Common throughout except on slopes. Voucher: Carr & Candee 20946. Photo: SAM-033. Line drawing: Diggs et al. (1999), p. 1261.
- Dichanthium annulatum* (Forsk.) Stapf. var. *annulatum*. Kleberg bluestem. Naturalized perennial. Occasional in old fields, upland woodlands and upper-slope shrublands. Voucher: Carr 20224. Photo: SAM-956. Line drawing: Diggs et al. (1999), p. 1265.
- Dichanthium sericeum* (R. Br.) A. Camus. Silky bluestem. Naturalized perennial. Locally common in old fields. Voucher: Carr 20077. Photo: SAM-362.
- Digitaria ciliaris* (Retz.) Koel. [*Digitaria adscendens* (H.B.K.) Henrard]. Southern crabgrass. Naturalized perennial. Occasional in old fields, upland woodlands and riparian woodlands. Vouchers: Carr 20079; Carr 21235. Photo: SAM-929. Line drawing: Diggs et al. (1999), p. 1265.
- Digitaria cognata* (Schult.) Pilger subsp. *cognata* [*Leptoloma cognatum* (Schult.) Chase]. Fall witchgrass. Native perennial. Occasional in old fields and upper-slope shrublands. Voucher: Carr 20388. Photo: SAM-950. Line drawing: Diggs et al. (1999), p. 1265.
- Elymus virginicus* L. var. *virginicus*. Virginia wildrye. Native perennial. Common in riparian woodlands. Voucher: Carr & Westlund 20671. Photo: SAM-765. Line drawing: Diggs et al. (1999), p. 1271.
- Eragrostis barrelieri* Daveau. Mediterranean lovegrass. Naturalized annual. Rare in bed of road through entrance easement. Voucher: Carr 21366. Photo: SAM-1053. Line drawing: Diggs et al. (1999), p. 1271.
- Eragrostis curtipedicellata* Buckl. Gummy lovegrass. Native perennial. Occasional in old fields. Voucher: Carr 20076. Photo: SAM-1002. Line drawing: Diggs et al. (1999), p. 1271.
- Eragrostis intermedia* A. S. Hitchc. Plains lovegrass. Native perennial. Occasional in old fields, upland woodlands and upper-slope shrublands. Vouchers: Carr 20075; Carr 20385; Carr 20386. Photo: SAM-923. Line drawing: Diggs et al. (1999), p. 1273. Some of these specimens approach *Eragrostis hirsuta* (Michx.) Nees (bigtop lovegrass), another native perennial.
- Eragrostis secundiflora* Presl. subsp. *oxylepis* (Torr.) S. D. Koch [*Eragrostis oxylepis* (Torr.) Torr. Red lovegrass. Native perennial. Frequent in old fields on sandier soils. Voucher: Carr 20204. Photo: SAM-454. Line drawing: Diggs et al. (1999), p. 1275.
- Eragrostis sessilispica* Buckl. Tumble lovegrass. Native perennial. Rare, noted only in sandy outwash from old quarry pit. Voucher: Carr 20404. Photo: SAM-1138. Line drawing: Diggs et al. (1999), p. 1275.
- Eriochloa sericea* (Scheele) Munro. Silky cupgrass. Native perennial. Rare in upper-slope shrublands. Voucher: Carr 21337. Photo: SAM-1132. Line drawing: Diggs et al. (1999), p. 1275.
- Hilaria belangeri* (Steud.) Nash. Curlymesquite. Native perennial. Frequent in upper-slope shrublands; occasional in upland woodlands. Voucher: Carr 20394. Line drawing: Diggs et al. (1999), p. 1279.
- Hordeum pusillum* Nutt. Little barley, southwestern barley. Native annual. Occasional throughout. Voucher: Carr & Westlund 20697. Photo: SAM-787. Line drawing: Diggs et al. (1999), p. 1279.
- Leptochloa dubia* (Kunth) Nees. Green sprangletop. Native perennial. Apparently rare, noted only in shade of mesquite along top of gully header. Voucher: Carr 21341. Photo: SAM-1099. Line drawing: Diggs et al. (1999), p. 1283.

Limnodea arkansana (Nutt.) L. H. Dewey. Ozarkgrass. Native annual. Occasional to frequent in all habitats except heavily grazed riparian woodlands. Voucher: Carr & Westlund 20662. Photo: SAM-730. Line drawing: Diggs et al. (1999), p. 1283.

Nassella leucotricha (Trin. & Rupr.) Pohl [*Stipa leucotricha* Trin. & Rupr.]. Texas wintergrass, speargrass. Native perennial. Common in upland woodlands, occasional elsewhere. Voucher: Carr 20701. Photo: SAM-971. Line drawing: Diggs et al. (1999), p. 1289.

Panicum capillarioides Vasey. Southern witchgrass. Native perennial. Rare, noted only in mown parking area near monument. Voucher: Carr 21334. Photo: SAM-1128.

Panicum hallii Vasey. Hall's panicum. Native perennial. Occasional in old fields and openings in upper-slope shrublands. Vouchers: Carr 20088; Carr 20698. Photo: SAM-370. Line drawing: Diggs et al. (1999), p. 1301.

Panicum oligosanthos Schult. [*Dichanthelium oligosanthos* (Scribn.) Gould]. Fewflower panicgrass. Native perennial. Occasional in riparian woodlands, mostly on sandier soils of San Antonio River terraces. Voucher: Carr, Benesh & Gallyoun 21083. Line drawing: Diggs et al. (1999), p. 1303.

Paspalum langei (Fourn.) Nash. Rustyseed paspalum. Native perennial. Rare in riparian woodlands. Voucher: Carr & Candee 20932. Photo: SAM-1047. Line drawing: Diggs et al. (1999), p. 1307.

Paspalum pubiflorum Fourn. Hairyseed paspalum. Native perennial. Occasional in riparian woodlands. Voucher: Carr & Candee 20945. Photo: SAM-440. Line drawing: Diggs et al. (1999), p. 1309.

Paspalum urvillei Steud. Vaseygrass. Naturalized perennial. Occasional in riparian woodlands. Line drawing: Diggs et al. (1999), p. 1309.

Pennisetum ciliare (L.) Link [*Cenchrus ciliaris* L.]. Buffelgrass. Naturalized perennial. Rare, a few plants in old field immediately inside gate along county road. Voucher: Carr 20984. Photo: SAM-340.

Phalaris caroliniana Walt. Carolina canarygrass. Native annual. Common in old fields and upland woodlands; rare in grazed riparian woodlands. Voucher: Carr 20680. Photo: SAM-771. Line drawing: Diggs et al. (1999), p. 1313.

Setaria leucopila (Scribn. & Merr.) K. Schum. Plains bristlegrass. Native perennial. Occasional in upland woodlands and upper-slope shrublands. Voucher: Carr 20983. Photo: SAM-951. Line drawing: Diggs et al. (1999), p. 1321.

Setaria ramiseta (Scribn.) Pilg. [*Panicum ramisetum* Scribn.]. Bristlegrass. Native perennial. Rare in upland woodlands and upper-slope shrublands. Voucher: Carr 20714. Photo: SAM-985. Line drawing: Diggs et al. (1999), p. 1323.

Setaria scheelei (Steud.) Hitchc. Southwestern bristlegrass. Native perennial. Occasional in upland woodlands, upper-slope shrublands and riparian woodlands. Voucher: Carr 20221. Photo: SAM-175. Line drawing: Diggs et al. (1999), p. 1323.

Sorghum halepense (L.) Pers. Johnsongrass. Naturalized perennial. Common in old fields where probably planted as hay crop; also in upland woodlands. Voucher: Carr 20973. Photo: SAM-037. Line drawing: Diggs et al. (1999), p. 1325.

Sporobolus compositus (Poir.) Merr. var. *compositus* [*Sporobolus asper* (Michx.) Kunth var. *drummondii* (Trin.) Vasey] Meadow dropseed. Native perennial. Common in upper-slope shrublands. Voucher: Carr 21211. Photo: SAM-1069. Line drawing: Diggs et al. (1999), p. 1325.

- Sporobolus cryptandrus* (Torr.) Gray. Sand dropseed. Native perennial. Common in old fields on sandy soils; frequent in openings in upland woodlands and upper-slope shrublands. Vouchers: Carr 20074; Carr 20087. Photo: SAM-921. Line drawing: Diggs et al. (1999), p. 1325.
- Trichloris pluriflora* Fourn. [*Chloris pluriflora* (Fourn.) Clayton] Manyflower false-Rhodesgrass. Native perennial. Rare in upper-slope shrublands. Voucher: Carr & Candee 20952. Photo: SAM-994.
- Tridens albescens* (Vasey) Woot. & Standl. White tridens. Native perennial. Local in depressional areas in bottom of quarry. Voucher: Carr & Candee 21251. Photo: SAM-798. Line drawing: Diggs et al. (1999), p. 1331.
- Tridens eragrostoides* (Vasey & Scribn.) Nash. Lovegrass tridens. Native perennial. Rare in gully headers. Voucher: Carr 20406. Photo: SAM-1056.
- Tridens muticus* (Torr.) Nash var. *muticus* [*Triodia mutica* (Torr.) Scribn.] Slim tridens. Native perennial. Occasional in upper-slope shrublands. Voucher: Carr 21136. Photo: SAM-1067. Line drawing: Diggs et al. (1999), p. 1331.
- Tridens texanus* (S. Wats.) Nash [*Triodia texana* S. Wats.] Texas tridens. Native perennial. Common in upper-slope shrublands; occasional in upland woodlands. Voucher: Carr 20218. Photo: SAM-467. Line drawing: Diggs et al. (1999), p. 1333.
- Urochloa ciliatissima* (Buckl.) R. D. Webster [*Brachiaria ciliatissima* Buckl.]. Fringed signalgrass. Native perennial. Rare, local in old field on Wilco soils just inside gate along county road. Voucher: Carr 20678. Line drawing: Diggs et al. (1999), p. 1333.
- Urochloa fasciculata* (Swartz) Webster [*Brachiaria fasciculata* (Swartz) Parodi; *Panicum fasciculatum* Swartz]. Browntop signalgrass. Native annual. Common in old fields; occasional in upland woodlands. Voucher: Carr 20212. Photo: SAM-382. Line drawing: Diggs et al. (1999), p. 1333.
- Urochloa texana* (Buckl.) Webster [*Brachiaria texana* (Buckl.) Blake; *Panicum texanum* Buckl.] Texas signalgrass, Texas millet. Native annual. Common in old fields, particularly those on sandier soils; occasional in upland woodlands. Voucher: Carr 20078. Photo: SAM-451. Line drawing: Diggs et al. (1999), p. 1337.
- Vulpia octoflora* (Walt.) Rydb. Sixweeksgrass. Native annual. Rare in old field at gate. Line drawing: Diggs et al. (1999), p. 1337.

Polemoniaceae -- Phlox Family

- Gilia incisa* Benth. Cutleaf gilia. Native perennial. Occasional in upper-slope shrublands. Voucher: Carr & Westlund 20661. Photo: SAM-728. Line drawing: Diggs et al. (1999), p. 889.
- Phlox drummondii* Hook. Drummond phlox. Native annual. Rare, noted (in 2002) only along fenceline near gate. Voucher: Carr & Benesh 20483. Photo: SAM-617. Line drawing: Diggs et al. (1999), p. 893.

Polygalaceae -- Milkwort Family

- Polygala alba* Nutt. White milkwort. Native perennial. Occasional in upper-slope shrublands; local on rock outcrops in old quarry. Voucher: Carr & Westlund 20655-B. Photo: SAM-736. Line drawing: Diggs et al. (1999), p. 895.

Polygala lindheimeri Gray. Lindheimer milkwort. Native perennial. Rare in upper-slope shrublands. Voucher: Carr 21212. Photo: SAM-1071. Line drawing: Diggs et al. (1999), p. 895.

Polygonaceae -- Knotweed Family

Polygonum punctatum Ell. [*Persicaria punctata* (Ell.) Small] Dotted smartweed. Native annual. Locally abundant on banks of Picoso Creek. Voucher: Carr & Candee 20113. Photo: SAM-434. Line drawing: Diggs et al. (1999), p. 903.

Polygonum ramosissimum Michx. Knotweed. Native annual. Occasional on banks of Picoso Creek; in flower and early fruit, 14 Aug 2001, 21 Sep 2001. Voucher: Carr 19901. Line drawing: Diggs et al. (1999), p. 903.

Rumex pulcher L. Fiddle Dock. Naturalized perennial. Rare in bed of Picoso Creek and in minor drainages across entrance easement; also on sandy terrace of San Antonio River. Voucher: Carr 20970. Line drawing: Diggs et al. (1999), p. 907.

Portulacaceae -- Portulaca Family

Portulaca pilosa L. [*Portulaca mundula* I. M. Johnston] Chisme, shaggy portulaca. Native perennial. Rare in old field along easement road. Voucher: Carr 20203. Photo: SAM-1118. Line drawing: Diggs et al. (1999), p. 909.

Portulaca umbraticola H.B.K. Wingpod purslane, Chinese hat. Native annual. Rare along road through old field on entrance easement and around parking area at monument. Voucher: Carr & Benesh 21170. Photo: SAM-1170. Line drawing: Diggs et al. (1999), p. 909.

Talinum aurantiacum Engelm. [*Talinum angustissimum* (Gray) Woot. & Standl.] Orange flameflower. Native perennial. Occasional in mesquite-dominated upland woodlands. Voucher: Carr 20093. Photo: SAM-466. Line drawing: Diggs et al. (1999), p. 909.

Primulaceae -- Primrose Family

Anagallis arvensis L. Scarlet pimpernel. Naturalized annual. Occasional in old fields. All individuals observed in 2002 were of the form sporting a dark blue or violet (rather than salmon-colored) corolla. Voucher: Carr & Benesh 20481. Photo: SAM-777. Line drawing: Diggs et al. (1999), p. 915.

Ranunculaceae -- Crowfoot Family

Anemone berlandieri Pritz. [*Anemone heterophylla* Nutt.] Tenpetal anemone. Native perennial. Occasional in old fields, upland woodlands and upper-slope shrublands. Voucher: Carr 20702. Photo: SAM-668. Line drawing: Diggs et al. (1999), p. 919.

Clematis drummondii T. & G. Old man's beard. Native perennial herbaceous vine. Occasional throughout. Voucher: Carr & Candee 20966. Photo: SAM-285. Line drawing: Diggs et al. (1999), p. 919.

Clematis pitcheri T. & G. Purple leatherflower. Native perennial herbaceous vine. Occasional in riparian woodlands. Photo: SAM-421. Line drawing: Diggs et al. (1999), p. 919.

Delphinium carolinianum Walt. White delphinium, larkspur. Native perennial. Rare in openings in upper-slope shrublands and in fencelines along old fields. Voucher: Carr & Westlund 20663. Photo: SAM-766. Line drawing: Diggs et al. (1999), p. 925.

Rhamnaceae -- Buckthorn Family

Colubrina texensis (T. & G.) Gray var. *texensis*. Texas colubrina, hog plum. Native shrub. A common component of shrublands on upper slopes; occasional in other habitats. Vouchers: Carr 20220-B; Carr 20703. Photo: SAM-738. Line drawing: Diggs et al. (1999), p. 935.

Condalia hookeri M. C. Johnston var. *hookeri*. Brasil, bluewood condalia. Native tree or tall shrub. A common component of shrublands on upper slopes; occasional in other habitats. Voucher: Carr 20399. Photo: SAM-314. Line drawing: Diggs et al. (1999), p. 935.

Ziziphus obtusifolius (Hook. ex T. & G.) Gray. Lotebush. Native shrub. Occasional in upper-slope shrublands and upland woodlands. Voucher: Carr & Candee 20955. Photo: SAM-312. Line drawing: Diggs et al. (1999), p. 939.

Rosaceae -- Rose Family

Crataegus sp. Hawthorn. Native tree or large shrub. Similar to downy haw (*Crataegus mollis* Scheele). Occasional in riparian woodlands. Voucher: Carr & Carré 19840-B. Photo: SAM-047. Line drawing: Diggs et al. (1999), p. 943.

Prunus texana Dietr. [*Prunus glandulosa* T. & G.] Texas peachbush. Native shrub. One individual with four shrubby clumps, the largest ca. 2 ft. tall, observed on 17 Sep 2001 and 23 April 2002, in old field on sandy soils, ca. 10-20 ft. SE of NE-SW road along entrance easement ca. 500 ft. NE of gate on County Rd. 144, at GPS point N029°05.537', W098°10.612' +/- 11.9 ft. Voucher: Carr 20083. Photo: SAM-449.

Rubus riograndis Bailey [*Rubus trivialis* Michx.] Southern dewberry. Native woody shrub. Occasional in riparian woodlands. Voucher: Carr 20524. Photo: SAM-701. Line drawing: Diggs et al. (1999), p. 957.

Rubiaceae -- Madder Family

Cephalanthus occidentalis L. var. *californicus* Benth. Common buttonbush. Native shrub. Occasional on banks of Picos Creek. Voucher: Carr, Benesh & Gallyoun 21087. Photo: SAM-880. Line drawing: Diggs et al. (1999), p. 963.

Galium aparine L. Clingon bedstraw, cleavers. Native annual. Occasional in riparian woodlands; rare along drainage through old fields. Vouchers: Carr 20523; Carr 20700. Photo: SAM-1146. Line drawing: Diggs et al. (1999), p. 963.

Galium virgatum Nutt. Wand bedstraw. Native annual. Occasional in old fields, upland woodlands and upper-slope shrublands. Voucher: Carr & Benesh 20487. Photo: SAM-735. Line drawing: Diggs et al. (1999), p. 965.

Hedyotis nigricans (Lam.) Fosb. var. *nigricans* [incl. *Hedyotis nigricans* var. *filifolia* (Chapm.) Shinnery]. Prairie bluets. Native perennial. Rare in upper-slope shrublands. Voucher: Carr & Candee 20961. Photo: SAM-811. Line drawing: Diggs et al. (1999), p. 965.

Houstonia parviflora Holzinger ex Greenman [*Hedyotis greenmanii* Fosberg]. Greenman's bluet. Native annual. Rare in upper-slope shrublands. Voucher: Carr & Benesh 20506. Photo: SAM-667.

Richardia tricocca (T. & G.) Standl. [*Diodia tricocca* T. & G.] Prairie buttonweed. Native annual. Rare in old field on Wilco soils and in bottom of quarry pit. Vouchers: Carr & Benesh 21185; Carr 21339. Photo: SAM-1135. Line drawing: Diggs et al. (1999), p. 971.

Rutaceae -- Citrus Family

Ptelea trifoliata L. Wafer ash. Native tree. Frequent in upper-slope shrublands and riparian woodlands. Voucher: Carr & Westlund 20651. Photo: SAM-751. Line drawing: Diggs et al. (1999), p. 977.

Thamnosma texanum (Gray) Torr. Texas desert-rue, Dutchman's breeches. Native perennial. Frequent in upper-slope shrublands; occasional in upland woodlands. Voucher: Carr & Benesh 20504. Photo: SAM-680. Line drawing: Diggs et al. (1999), p. 977.

Zanthoxylum hirsutum Buckl. Toothache tree, tickle-tongue. Native shrub or small tree. Rare, a few immature shrubs in fenceline along county road. Voucher: Carr 21090. Photo: SAM-981.

Salicaceae -- Willow Family

Populus deltoides Bart. ex Marsh. subsp. *deltoides*. Eastern cottonwood. Native tree. Occasional on high banks of San Antonio River and Picos Creek. Voucher: Carr & Candee 20934. Photo: SAM-134. Line drawing: Diggs et al. (1999), p. 977.

Salix nigra Marsh. Black willow. Native tree. Occasional on banks of San Antonio River. Voucher: Carr & Candee 20935. Photo: SAM-715. Line drawing: Diggs et al. (1999), p. 981.

Sapindaceae -- Soapberry Family

Cardiospermum halicacabum L. Balloonvine. Native annual vine. Rare on bank of Picos Creek; one plant observed on 14 Aug 2001. GPS point: N029°06.006', W098°09.832' +/- 21.7 ft. Photo: SAM-1159. Line drawing: Diggs et al. (1999), p. 981.

Sapindus saponaria L. var. *drummondii* (Hook. & Arn.) L. Benson [*Sapindus drummondii* Hook. & Arn.]. Western soapberry. Native tree. Occasional in riparian woodlands. Voucher: Carr & Benesh 21174. Photo: SAM-286. Line drawing: Diggs et al. (1999), p. 985.

Sapotaceae -- Sapodilla Family

Sideroxylon lanuginosum Michx. [*Bumelia lanuginosa* (Michx.) Pers.] Coma, gum bumelia, woolly-bucket bumelia. Native shrub or small tree. Occasional in upper-slope shrublands; fairly common as understory shrub in riparian woodlands. Voucher: Carr & Candee 20954. Photo: SAM-316. Line drawing: Diggs et al. (1999), p. 985.

Scrophulariaceae -- Figwort Family

- Agalinis strictifolia* (Benth.) Penn. [*Gerardia strictifolia* Benth.] South Texas gerardia. Native perennial. Frequent in old fields and upland woodlands; occasional in upper-slope shrublands. Voucher: Carr & Candee 20110. Photo: SAM-456.
- Castilleja indivisa* Engelm. Annual paintbrush. Native annual. Occasional in old fields, upper-slope shrublands and upland woodlands. Voucher: Carr & Benesh 20486. Photo: SAM-624. Line drawing: Diggs et al. (1999), p. 997.
- Maurandya antirrhiniflora* Willd. Snapdragonvine. Native perennial herbaceous vine. Occasional in upper-slope shrublands. Voucher: Carr & Candee 20964. Photo: SAM-749. Line drawing: Diggs et al. (1999), p. 1005.
- Nuttallanthus texanus* (Scheele) D. A. Sutton [*Linaria texana* Scheele]. Texas toadflax. Native annual. Rare in old fields. Voucher: D. Benesh s.n. Line drawing: Diggs et al. (1999), p. 1009.
- Veronica peregrina* L. Wandering veronica. Native annual. Occasional on mud bed of Picos Creek and on sandy slopes along San Antonio River. Voucher: Carr 20526. Photo: SAM-696. Line drawing: Diggs et al. (1999), p. 1013.

Smilacaceae -- Greenbriar Family

- Smilax bona-nox* L. Saw greenbriar. Native woody vine. Occasional in upper-slope shrublands and riparian woodlands. Voucher: Carr & Candee 20953. Photo: SAM-809. Line drawing: Diggs et al. (1999), p. 1347.

Solanaceae -- Nightshade Family

- Bouchetia erecta* DC. Erect bouchetia. Native perennial. Rare in opening in upper-slope shrubland. Voucher: Carr & Westlund 20644. Line drawing: Diggs et al. (1999), p. 1019.
- Capsicum annuum* L. var. *aviculare* (Dierb.) D'Arcy & Eschbaugh [*Capsicum annuum* L. var. *glabriusculum* (Dun.) Heiser & Pickersgill] Chilipiquín, bird pepper. Native shrub. Rare in upland woodlands, upper-slope shrublands and riparian woodlands. Voucher: Carr 20233. Photo: SAM-1050. Line drawing: Diggs et al. (1999), p. 1019.
- Chamaesaracha coronopus* (Dun.) Gray. Green false ground-cherry. Native perennial. Rare in openings in upland woodlands and upper-slope shrublands. Vouchers: Carr & Westlund 20645; Carr 20709; Carr 21242. Photo: SAM-1107.
- Lycium berlandieri* Dun. Berlandier wolf-berry. Native shrub. Occasional in upper-slope shrublands; also in gully thickets. Voucher: Carr, Benesh & Gallyoun 21073. Photo: SAM-517.
- Physalis angulata* L. Purplevein groundcherry. Native annual. Rare on clay exposed in dry bed of Picos Creek and on sandy unshaded lower banks of San Antonio River. Voucher: Carr, Benesh & Gallyoun 21076. Photo: SAM-890. Line drawing: Diggs et al. (1999), p. 1025.
- Physalis cinerascens* (Dun.) Hitch. var. *cinerascens* [*Physalis viscosa* L. var. *cinerascens* (Dun.) Waterfall]. Clammy ground-cherry. Native annual. Rare to occasional in old fields, upland woodlands and upper-slope shrublands. Voucher: Carr & Westlund 20658. Photo: SAM-378. Line drawing: Diggs et al. (1999), p. 1025.
- Solanum elaeagnifolium* Cav. Silverleaf nightshade. Native perennial. Locally common in old field on Colibro soils; occasional in upland woodlands and upper-slope shrublands. Voucher: Carr 21093. Photo: SAM-328. Line drawing: Diggs et al. (1999), p. 1033.

Solanum triquetrum Cav. Texas nightshade. Native shrub. Occasional in upland woodlands and upper-slope shrublands. Voucher: Carr 20217. Photo: SAM-439. Line drawing: Diggs et al. (1999), p. 1033.

Sterculiaceae -- Cacao Family

Hermannia texana Gray. Mexican mallow. Native perennial. Occasional in upper-slope shrublands. Vouchers: Carr 20091, Carr 20980. Photo: SAM-946.

Ulmaceae -- Elm Family

Celtis laevigata Willd. var. *laevigata*. Sugar hackberry. Native tree. Common in riparian woodlands; occasional elsewhere. Voucher: Carr & Candee 21253. Photo: SAM-385. Line drawing: Diggs et al. (1999), p. 1037.

Celtis laevigata Willd. var. *reticulata* (Torr.) Benson [*Celtis reticulata* Torr.]. Netleaf hackberry. Occasional in upland woodlands and gully headers. Voucher: Carr 21208. Photo: SAM-936. Line drawing: Diggs et al. (1999), p. 1037.

Celtis pallida Torr. Granjeno, spiny hackberry. Native tree or large shrub. Frequent in upland woodlands and upper-slope shrublands; occasional in riparian woodlands. Vouchers: Carr 20213; Carr 20708. Photo: SAM-306.

Ulmus americana L. American elm. Native tree. Rare in riparian woodlands; one large old tree on terrace along San Antonio River. Voucher: Carr & Candee 20933. Photo: SAM-892. Line drawing: Diggs et al. (1999), p. 1041.

Ulmus crassifolia Nutt. Cedar elm. Native tree. Common in riparian woodlands; rare in upper-slope shrublands. Voucher: Carr & Candee 20112. Photo: SAM-338. Line drawing: Diggs et al. (1999), p. 1041.

Urticaceae -- Nettle Family

Parietaria pensylvanica Muhl. Cucumberweed, pellitory. Native annual. Frequent in riparian woodlands; occasional elsewhere. Voucher: Carr 20713. Photo: SAM-601. Line drawing: Diggs et al. (1999), p. 1045.

Urtica chamaedryoides Pursh. Stinging nettle. Native annual. Rare in riparian woodlands. Voucher: Carr 20522. Photo: SAM-697. Line drawing: Diggs et al. (1999), p. 1045.

Verbenaceae -- Vervain Family

Aloysia gratissima (Gill. & Hook.) Troncoso. Whitebrush. Native shrub. Rare in upper-slope shrublands and upland woodlands. Voucher: Carr 20707. Photo: SAM-792. Line drawing: Diggs et al. (1999), p. 1051.

Glandularia bipinnatifida (Nutt.) Nutt. [*Verbena bipinnatifida* Nutt.] Dakota vervain. Native perennial. Occasional in old fields and upland woodlands. Voucher: Carr & Benesh 20493. Photo: SAM-807. Line drawing: Diggs et al. (1999), p. 1051.

Glandularia pumila (Rydb.) Umber [*Verbena pumila* Rydb.]. Pink vervain, low vervain. Native annual. Occasional in old fields and upland woodlands. Voucher: Carr 20718. Photo: SAM-573. Line drawing: Diggs et al. (1999), p. 1051.

- Glandularia quadrangulata* (Heller) Umber. [*Verbena quadrangulata* Heller]. Small white vervain. Native annual. Frequent in old fields and upland woodlands. Voucher: Carr & Benesh 20492. Photo: SAM-628.
- Lantana urticoides* von Hayek [*Lantana horrida* of Texas authors, not Kunth]. Texas lantana. Native shrub. Occasional in upper-slope shrublands. Voucher: Carr 20685. Photo: SAM-450. Line drawing: Diggs et al. (1999), p. 1057.
- Phyla nodiflora* (L.) Greene [*Lippia nodiflora* (L.) Michx.; incl. *Phyla incisa* Small]. Fogfruit or frogfruit. Native perennial. Occasional in riparian woodlands. Voucher: Carr & Candee 20947. Photo: SAM-852. Line drawing: Diggs et al. (1999), p. 1057.
- Tetradlea coulteri* Gray. Coulter tetradlea. Native perennial. Frequent in openings in upper-slope shrublands. Vouchers: Carr 20092; Carr 21344. Photo: SAM-433.
- Verbena canescens* Kunth. Gray vervain. Native perennial. Rare in upland woodlands and upper-slope shrublands. Photo: SAM-932. Line drawing: Diggs et al. (1999), p. 1059.
- Verbena halei* Small [*Verbena officinalis* L. subsp. *halei* (Small) Barber]. Texas vervain. Native perennial. Occasional in old fields, upland woodlands and openings in riparian woodlands. Voucher: Carr 20686. Photo: SAM-786. Line drawing: Diggs et al. (1999), p. 1059.
- Verbena plicata* Greene. Fanleaf vervain. Native perennial. Frequent in roadbeds, old fields, upland woodlands and upper-slope shrublands. Voucher: Carr & Benesh 20499. Photo: SAM-630. Line drawing: Diggs et al. (1999), p. 1059.

Violaceae -- Violet Family

- Hybanthus verticillatus* (Ort.) Baill. Whorled green-violet. Native perennial. Rare in old field on Wilco soils near gate along county road. Voucher: Carr 20683. Photo: SAM-770. Line drawing: Diggs et al. (1999), p. 1063.
- Viola* sp. Violet. Native perennial. Rare in riparian woodland on sandy soils of San Antonio River terrace near NE corner of tract.

Viscaceae -- Mistletoe Family

- Phoradendron tomentosum* (DC.) Gray subsp. *tommentosum*. Mistletoe. Native woody parasite. Occasional in trees throughout, most commonly in older mesquite. Voucher: Carr 20400. Photo: SAM-249. Line drawing: Diggs et al. (1999), p. 1067.

Vitaceae -- Grape Family

- Ampelopsis arborea* (L.) Koehne. Peppervine. Native woody vine. Occasional in riparian woodlands. Voucher: Carr & Candee 20940. Photo: SAM-191. Line drawing: Diggs et al. (1999), p. 1076.
- Cissus incisa* (Nutt.) Des Moul. Ivy tree-bine, cow-itch. Native woody vine. Rare in upper-slope shrublands and riparian woodlands. Voucher: Carr 21091. Photo: SAM-833. Line drawing: Diggs et al. (1999), p. 1067.
- Parthenocissus quinquefolia* (L.) Planch. Virginia creeper. Native woody vine. Occasional in riparian woodlands. Voucher: Carr & Candee 20941. Photo: SAM-846. Line drawing: Diggs et al. (1999), p. 1071.

Vitis mustangensis Buckl. Mustang grape. Native woody vine. Frequent in riparian woodlands; occasional upslope. Voucher: Carr & Candee 20965. Photo: SAM-881. Line drawing: Diggs et al. (1999), p. 1073.

Zygophyllaceae -- Caltrop Family

Guaiacum angustifolium Engelm. [*Porlieria angustifolia* (Engelm.) Gray]. Guayacán. Native shrub. Occasional in upper-slope shrublands and on slopes of gullies. Voucher: Carr & Westlund 20638. Photo: SAM-759. Line drawing: Diggs et al. (1999), p. 1075.

Kallstroemia parviflora Nort. Warty caltrop. Native annual. Locally common in disturbed soils in roadbeds and parking area near monument. Voucher: Carr & Benesh 21169. Photo: SAM-989. Line drawing: Diggs et al. (1999), p. 1075.

Tribulus terrestris L. Puncture-vine, abrojo de flor amarilla. Naturalized annual. Rare in parking area at monument. Voucher: Carr & Benesh 21171. Photo: SAM-099. Line drawing: Diggs et al. (1999), p. 1075.

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Appendix 2: Tabular List of the Vascular Plants of the Rancho de las Cabras unit, San Antonio Missions National Historical Park, Wilson County, Texas

This list is based on observations during surveys conducted between May 2001 and October 2002. Scientific names follow Jones, Wipff & Montgomery (1997). Pertinent synonyms, particularly those used in Correll & Johnston (1970), are provided in brackets. Common names follow Hatch, Gandhi & Brown (1990) or various other sources. Note that the surveys done by Van Auken (1981) for the San Antonio Missions national Historical Park did not address this unit, which was not at the time under the jurisdiction of NPS.

Symbols:

Nativity column. N = native; E = exotic (naturalized); I = introduced (either cultivated or escaped from cultivation but not naturalized).

Life form column. A = annual; AV = annual vine; P = herbaceous perennial; PV= herbaceous perennial vine; S = shrub; T = tree; WV = woody vine.

Macrohabitat / Abundance columns. Macrohabitats: OF = old field; UW = upland woodland; US = upper-slope shrubland; RW = riparian woodland (and imbedded microhabitats). Abundance: a = abundant; c = common; f = frequent; o = occasional; r = rare.

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Acanthaceae	Carlowrightia texana	Texas carlowrightia	N	P			r	
Acanthaceae	Dicliptera brachiata	dicliptera	N	P				r
Acanthaceae	Dyschoriste linearis	snake-herb	N	P			r	
Acanthaceae	Justicia pilosella	hairy tube-tongue	N	P		o	o	
Acanthaceae	Ruellia nudiflora var. nudiflora	wild-petunia	N	P		o	f	f
Aceraceae	Acer negundo	box-elder maple	N	T				f
Agavaceae	Manfreda maculosa	spotted false-aloe	N	P			r	
Agavaceae	Yucca constricta	narrowleaf yucca	N	S			o	
Agavaceae	Yucca treculeana	Spanish dagger	N	S			r	
Amaranthaceae	Alternanthera philoxeroides	alligator-weed	E	P				r
Amaranthaceae	Amaranthus polygonoides	Berlandier amaranth	N	A		r		
Amaranthaceae	Celosia nitida	albahaca	N	P				r

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Amaranthaceae	Froelichia gracilis	slender snake-cotton	N	P		r		
Anacardiaceae	Toxicodendron radicans	poison ivy	N	WV			o	c
Apiaceae	Bowlesia incana	hoary bowlesia	N	A				a
Apiaceae	Chaerophyllum tainturieri var. tainturieri	chervil	N	A				f
Apiaceae	Daucus pusillus	little carrot	N	A	o	f	f	
Apiaceae	Torilis arvensis	tall sockbane	E	A	o	c	c	c
Apocynaceae	Apocynum cannabinum	dogbane	N	P				r
Aristolochiaceae	Aristolochia erecta	swanflower	N	P	r		r	
Asclepiadaceae	Asclepias oenotheroides	hierba de zizotes	N	P	r	r		
Asclepiadaceae	Cynanchum barbigerum	bearded swallow-wort	N	PV			r	
Asclepiadaceae	Matelea reticulata	pearl milkvine	N	PV				r
Asclepiadaceae	Sarcostemma cynanchoides	white twinevine	N	PV		r		
Asteraceae	Amblyolepis setigera	huisache daisy	N	A		c	c	
Asteraceae	Ambrosia confertiflora	field ragweed	N	P		f		
Asteraceae	Ambrosia psilostachya	western ragweed	N	P	c	o	r	
Asteraceae	Ambrosia trifida	giant ragweed	N	A	o			c
Asteraceae	Aphanostephus ramosissimus	plains lazy-daisy	N	A	o	o	o	
Asteraceae	Aphanostephus riddellii	Riddell's lazy-daisy	N	P			f	
Asteraceae	Aphanostephus skirrhobasis	Arkansas lazy-daisy	N	A	f			
Asteraceae	Aster ericoides (Symphyotrichum ericoides)	heath aster	N	P		r	r	
Asteraceae	Aster lanceolatus (Symphyotrichum lanceolatum)	woodland aster	N	P				r

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Asteraceae	<i>Aster subulatus</i> var. <i>ligulatus</i> (<i>Symphyotrichum divaricatum</i>)	hierba del marrano	N	P	r			
Asteraceae	<i>Astranthium integrifolium</i>	western daisy	N	A	r		r	
Asteraceae	<i>Baccharis neglecta</i>	willow baccharis	N	S	r			
Asteraceae	<i>Baccharis texana</i>	prairie baccharis	N	P	o	o		
Asteraceae	<i>Calyptracarpus vialis</i>	straggler daisy	N	P	o	o	o	f
Asteraceae	<i>Centaurea melitensis</i>	Malta star-thistle	E	A		r		
Asteraceae	<i>Chaptalia texana</i> (<i>C. nutans</i> var. <i>texana</i>)	nodding lettuce	N	P			o	
Asteraceae	<i>Chloracantha spinosa</i> var. <i>spinosa</i> (<i>Aster spinosus</i>)	spiny aster	N	P				f
Asteraceae	<i>Cirsium texanum</i>	Texas thistle	N	A		c	o	o
Asteraceae	<i>Conyza canadensis</i>	horseweed	N	A	r			
Asteraceae	<i>Coreopsis nuecensis</i>	crown coreopsis	N	A	r			
Asteraceae	<i>Coreopsis wrightii</i>	rock coreopsis	N	A		o	o	
Asteraceae	<i>Dyssodia pentachaeta</i>	parralena	N	P			r	
Asteraceae	<i>Dyssodia tenuiloba</i>	tiny Tim	N	P	r			
Asteraceae	<i>Erigeron philadelphicus</i>	Philadelphia fleabane	N	P				o
Asteraceae	<i>Eupatorium serotinum</i>	late boneset, late thoroughwort	N	P				r
Asteraceae	<i>Evax verna</i>	roundhead rabbit-tobacco	N	A		o		
Asteraceae	<i>Fleischmannia incarnata</i>	scandent thoroughwort	N	P		o	o	r
Asteraceae	<i>Florestina tripteris</i>	white palafoxia	N	A		r		
Asteraceae	<i>Gaillardia pulchella</i>	firewheels, Indian blanket	N	A	o	f		

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Asteraceae	Gamochaeta pensylvanica	Pennsylvania cudweed	N	A				r
Asteraceae	Gutierrezia texana	Texas broomweed	N	A		c	o	
Asteraceae	Helenium microcephalum	smallhead sneezeweed	N	A				f
Asteraceae	Helianthus annuus	common sunflower	N	A	f	c	o	
Asteraceae	Heterotheca subaxillaris	camphor goldenaster	N	A	r	r		
Asteraceae	Krigia cespitosa	dwarf-dandelion	N	A	r			
Asteraceae	Lactuca sp.	wild lettuce	N	P				r
Asteraceae	Liatris mucronata	blazing-star	N	P			f	
Asteraceae	Lygodesmia texana	Texas skeletonplant	N	P			o	
Asteraceae	Parthenium confertum	false ragweed	N	P			o	
Asteraceae	Parthenium hysterophorus	false ragweed	E	A		o	o	
Asteraceae	Pinaropappus roseus	rock-lettuce	N	P			r	
Asteraceae	Pyrrhopappus pauciflorus	Texas false-dandelion	N	A	o	o		
Asteraceae	Ratibida columnifera	Mexican hats	N	A		o		
Asteraceae	Rudbeckia hirta var. angustifolia	black-eyed Susan	N	A	o	f		
Asteraceae	Senecio ampullaceus	Texas groundsel	N	A		r		
Asteraceae	Simsia calva	bush sunflower	N	P			c	
Asteraceae	Sonchus asper	sow-thistle	E	A	o	o		o
Asteraceae	Tetrameuris scaposa	stemless bitterweed	N	P			o	
Asteraceae	Thelesperma ambiguum	Navajo tea	N	P			r	
Asteraceae	Verbesina encelioides	cowpen daisy	N	A	r			

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Asteraceae	Verbesina virginica	frostweed	N	P				c
Asteraceae	Wedelia texana (Zexmenia hispida)	Texas zexmenia	N	P		o	c	
Asteraceae	Xanthisma texanum	sleepy daisy	N	A	r			
Asteraceae	Xanthium strumarium	abrojo, cocklebur, porcupine eggs	N	A				r
Berberidaceae	Berberis trifoliolata	agarito	N	S		o	o	
Bignoniaceae	Campsis radicans	trumpet creeper	N	WV				c
Boraginaceae	Cryptantha texana	Texas hiddenflower	N	A		r		
Boraginaceae	Heliotropium indicum	India turnsole	E	A				r
Boraginaceae	Lithospermum mirabile	yellow puccoon	N	P		o	f	
Brassicaceae	Arabis petiolaris	Brazos rock-cress	N	A	o		r	
Brassicaceae	Capsella bursa-pastoris	shepherd's purse	E	A				r
Brassicaceae	Descurainia pinnata	tansy mustard	N	A	r			
Brassicaceae	Lepidium austrinum	pepperweed	N	A	o	o	o	
Brassicaceae	Lesquerella argyrea	bladderpod	N	A			r	
Bromeliaceae	Tillandsia recurvata	ballmoss	N	P			o	o
Buddlejaceae	Polypremum procumbens	juniperleaf	N	P	r			
Cactaceae	Ferocactus setispinus	fish-hook cactus	N	S			r	
Cactaceae	Opuntia engelmannii var. lindheimeri	Lindheimer pricklypear	N	S	o	o	o	
Cactaceae	Opuntia leptocaulis	tasajillo, pencil cactus	N	S			o	
Cactaceae	Opuntia macrorhiza	plains pricklypear	N	S	r			
Campanulaceae	Triodanis perfoliata var. biflora	Venus' looking-glass	N	A	o	o	r	r

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Caprifoliaceae	Sambucus canadensis	elderberry	N	S				r
Caryophyllaceae	Polycarpon tetraphyllum	fourleaf manyseed	E	A	r			
Caryophyllaceae	Silene antirrhina	sticky catchfly	E	A	r	r		
Caryophyllaceae	Stellaria media	common chickweed	E	A				o
Caryophyllaceae	Stellaria prostrata	Baldwin chickweed	N	A				r
Celastraceae	Schaefferia cuneifolia	desert yaupon	N	S			r	
Chenopodiaceae	Chenopodium berlandieri	Berlandier goosefoot	N	A	r	r		
Commelinaceae	Commelina erecta	erect dayflower	N	P	r		r	r
Commelinaceae	Tinantia anomala (Commelinantia anomala)	widow's tear	N	A	r			f
Commelinaceae	Tradescantia sp.	spiderwort	N	P	o	o		
Convolvulaceae	Convolvulus equitans	common bindweed	N	PV		o		
Convolvulaceae	Dichondra recurvata	Tharp's ponyfoot	N	P	r			
Convolvulaceae	Evolvulus sericeus var. sericeus	silky evolvulus	N	P		o	o	
Convolvulaceae	Ipomaea cordatotriloba	common morning-glory	N	PV	r		r	
Cornaceae	Cornus drummondii	roughleaf dogwood	N	S				o
Cucurbitaceae	Ibervillea lindheimeri	Lindheimer balsam-gourd	N	PV	r			
Cucurbitaceae	Melothria pendula	melonette	N	AV				r
Cuscutaceae	Cuscuta sp.	dodder	N	AV		r		
Cyperaceae	Carex bulbostylis	sedge	N	P				f
Cyperaceae	Carex planostachys	cedar sedge	N	P			f	
Cyperaceae	Carex tetrastachya	Britton sedge	N	P				f

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Cyperaceae	Carex sp. (20674)	sedge	N	P		o	o	
Cyperaceae	Cyperus ochraceus	umbrella-sedge	N	P				r
Cyperaceae	Cyperus retroflexus	oneflower flatsedge	N	P	o			
Cyperaceae	Cyperus rotundus	purple nut-sedge	E	P	o			
Cyperaceae	Cyperus sp. (cf. globulosus)	umbrella-sedge	N	P	o			
Ebenaceae	Diospyros texana	Texas persimmon	N	S		o	c	o
Equisetaceae	Equisetum laevigatum	smooth horsetail	N	P				
Euphorbiaceae	Acalypha ostryifolia	hornbeam copperleaf	N	A		r		
Euphorbiaceae	Argythamnia humilis var. humilis (Ditaxis humilis var. humilis)	low wild-mercury	N	P		o		
Euphorbiaceae	Cnidoscolus texanus	Texas bull-nettle	N	P		r		
Euphorbiaceae	Croton capitatus	hog croton	N	A	o	r		
Euphorbiaceae	Croton glandulosus	toothed croton	N	A	r			
Euphorbiaceae	Croton monanthogynus	oneseed croton, doveweed	N	A	f	c	c	
Euphorbiaceae	Euphorbia dentata (Poinsettia dentata)	toothed spurge	N	A	r			
Euphorbiaceae	Euphorbia glyptosperma (Chamaesyce glyptosperma)	spurge	N	A	r			
Euphorbiaceae	Euphorbia nutans (Chamaesyce nutans)	nodding spurge	N	A				r
Euphorbiaceae	Euphorbia peplidion	low spurge	N	A	r			
Euphorbiaceae	Euphorbia prostrata (Chamaesyce prostrata)	hairy mat-spurge	N	A				r
Euphorbiaceae	Euphorbia serpens (Chamaesyce serpens)	smooth mat-spurge	N	A	r			
Euphorbiaceae	Euphorbia spathulata	warty spurge	N	A				r

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Euphorbiaceae	<i>Jatropha dioica</i>	rubberstem, sangre de drago	N	S			r	
Euphorbiaceae	<i>Phyllanthus polygonoides</i>	knotweed leaf-flower	N	P	r			
Euphorbiaceae	<i>Tragia brevispica</i>	climbing noseburn	N	PV	r			
Fabaceae	<i>Acacia greggii</i> var. <i>greggii</i>	Gregg acacia	N	S			o	
Fabaceae	<i>Acacia minuata</i> (<i>A. farnesiana</i> , <i>A. smallii</i>)	huisache	N	T	r			r
Fabaceae	<i>Acacia rigidula</i>	blackbrush, chaparro prieto	N	S			f	
Fabaceae	<i>Astragalus nuttallianus</i> var. <i>trichocarpus</i>	Nuttall's milkvetch	N	A	o			
Fabaceae	<i>Astragalus nuttallianus</i> [var. undetermined]	milkvetch	N	A			o	
Fabaceae	<i>Chamaecrista fasciculata</i> (<i>Cassia fasciculata</i>)	partridge pea	N	A				
Fabaceae	<i>Dalea emarginata</i> (<i>Petalostemum emarginatum</i>)	prairie-clover	N	P	f			
Fabaceae	<i>Dalea pogonathera</i>	bearded dalea	N	P		o	o	
Fabaceae	<i>Desmanthus velutinus</i>	velvet bundleflower	N	P		r		
Fabaceae	<i>Desmanthus virgatus</i> var. <i>depressus</i>	sharp-pod bundleflower	N	P	f	r	r	
Fabaceae	<i>Eysenhardtia texana</i>	Texas kidneywood	N	S		r	c	
Fabaceae	<i>Medicago lupulina</i>	black medick	E	A				o
Fabaceae	<i>Medicago polymorpha</i>	California burclover	E	A	o			o
Fabaceae	<i>Melilotus indicus</i>	yellow sweet-clover	E	A	c	o		
Fabaceae	<i>Mimosa borealis</i>	fragrant mimosa	N	S			r	
Fabaceae	<i>Mimosa latidens</i> (<i>Schrankia latidens</i>)	sensitive-briar	N	P			r	
Fabaceae	<i>Prosopis glandulosa</i> var. <i>glandulosa</i>	honey mesquite	N	T	o	c	f	o
Fabaceae	<i>Rhynchosia senna</i> var. <i>texana</i> (<i>R. texana</i>)	Texas snoutbean	N	PV		r		

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Fabaceae	<i>Senna pumilio</i> (<i>Cassia pumilio</i>)	dwarf senna	N	P			r	
Fabaceae	<i>Sesbania</i> sp.	sesbania	N	A				r
Fabaceae	<i>Vicia ludoviciana</i> var. <i>leavenworthii</i>	Leavenworth vetch	N	AV	o	o	o	
Fabaceae	<i>Vicia ludoviciana</i> var. <i>ludoviciana</i>	Louisiana vetch	N	AV				o
Fagaceae	<i>Quercus virginiana</i>	live oak	N	T				o
Fumariaceae	<i>Corydalis</i> sp.	scrambled eggs	N	A		r		r
Gentianaceae	<i>Sabatia campestris</i>	prairie rose-gentian	N	A	r			
Geraniaceae	<i>Geranium texanum</i>	Texas wild-geranium	N	A	o	o	o	o
Hydrophyllaceae	<i>Nama hispidum</i>	sand bells	N	A	r		r	
Hydrophyllaceae	<i>Nama jamaicense</i>	fiddleleaf nama	N	A	o	o	o	o
Hydrophyllaceae	<i>Nemophila phacelioides</i>	blue-eyes	N	A				o
Hydrophyllaceae	<i>Phacelia congesta</i>	blue curls	N	A			r	
Iridaceae	<i>Sisyrinchium langloisii</i>	blue-eyed grass	N	P	r			
Juglandaceae	<i>Carya illinoensis</i>	pecan	N	T				o
Krameriaceae	<i>Krameria lanceolata</i>	trailing ratany	N	P			r	
Lamiaceae	<i>Hedeoma drummondii</i>	limoncillo	N	P		f	f	
Lamiaceae	<i>Hedeoma hispida</i>	rough hedeoma	N	A			r	
Lamiaceae	<i>Lamium amplexicaule</i>	henbit	E	A				o
Lamiaceae	<i>Monarda punctata</i>	spotted beebalm	N	A	o	o	o	
Lamiaceae	<i>Salvia ballotiflora</i>	mejorana	N	S			r	
Lamiaceae	<i>Salvia coccinea</i>	scarlet sage	N	A				r

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Lamiaceae	Scutellaria drummondii	annual skullcap	N	A		f	f	
Lamiaceae	Scutellaria ovata	eggleaf skullcap	N	P				o
Lamiaceae	Stachys crenata	shade betony	N	A				r
Lemnaceae	Lemna aequinoctialis	duckweed	N	A				r
Liliaceae	Allium canadense var. canadense	Canada wild-onion	N	P				r
Liliaceae	Allium drummondii	Drummond wild-garlic	N	P		r	r	
Liliaceae	Cooperia drummondii (Zephyranthes chlorosolen)	Drummond rainlily	N	P	o	o	o	
Liliaceae	Cooperia pedunculata (Zephyranthes drummondii)	giant rainlily	N	P		o	o	o
Liliaceae	Habranthus tubispathus	copper rainlily	E	P		r		
Liliaceae	Nothoscordum bivalve	crow poison	N	P	r			
Liliaceae	Schoenocaulon drummondii	Drummond green-lily	N	P			r	
Linaceae	Linum imbricatum	shingle flax	N	A	o	o	o	
Malvaceae	Abutilon fruticosum (A. incanum)	Texas Indian-mallow	N	P			o	
Malvaceae	Abutilon wrightii	Wright Indian-mallow	N	P			r	
Malvaceae	Callirhoe leiocarpa	poppy mallow, tall wine-cup	N	A		r	r	
Malvaceae	Malvastrum coromandelianum	threelobe false-mallow	N	P	r	o		
Malvaceae	Malvaviscus arboreus var. drummondii	Turk's cap	N	P				f
Malvaceae	Rhynchosida physocalyx	spearleaf sida	N	P	r			
Malvaceae	Sida abutifolia	spreading sida	N	P	o			
Malvaceae	Sida spinosa	prickly sida	N	P	o			

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Marsileaceae	Marsilea macropoda	water-clover	N	P				r
Meliaceae	Melia azedarach	Chinaberry	E	T				r
Molluginaceae	Mollugo verticillata	green carpetweed	N	A	f			
Moraceae	Morus alba	white mulberry	E	T				o
Moraceae	Morus rubra	red mulberry	N	T				o
Nyctaginaceae	Acleisanthes obtusa	Berlandier trumpets	N	P		o	o	
Nyctaginaceae	Acleisanthes longiflora	angel trumpets	N	P		c	c	
Nyctaginaceae	Mirabilis linearis	slenderleaf four-o'clock	N	P	r			
Nyctaginaceae	Nyctaginea capitata	scarlet muskflower	N	P		r		
Oleaceae	Forestiera angustifolia	panalero, narrowleaf elbowbush	N	S			r	
Oleaceae	Fraxinus berlandieriana	fresno	N	T				r
Oleaceae	Menodora heterophylla	redbud menodora	N	P		o		
Onagraceae	Gaura brachycarpa	shortfruit gaura	N	A	f	f	f	
Onagraceae	Gaura parviflora	smallflower gaura	N	A	o	o	o	
Onagraceae	Oenothera laciniata	cutleaf evening-primrose	N	A	r			
Onagraceae	Oenothera speciosa	pink evening-primrose	N	P	o			
Oxalidaceae	Oxalis dichondrifolia	ponyfoot oxalis	N	P			r	
Oxalidaceae	Oxalis dillenii (O. stricta)	yellow sour-clover	N	A	o	o	o	o
Oxalidaceae	Oxalis drummondii	Drummond wood-sorrel	N	P		f	f	
Papaveraceae	Argemone sanguinea	prickly-poppy	N	A		o		
Passifloraceae	Passiflora tenuiloba	spreadlobe passionflower	N	PV		r	r	

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Phytolaccaceae	Rivina humilis	pigeonberry	N	P		o		r
Plantaginaceae	Plantago hookeriana	Hooker plantain	N	A	o	o		
Plantaginaceae	Plantago rhodosperma	redseed plantain	N	A	o	c	f	
Plantaginaceae	Plantago wrightiana	Wright plantain	N	A	r			
Poaceae	Aristida purpurea var. longiseta	threeawn	N	P	r			
Poaceae	Aristida purpurea var. purpurea	threeawn	N	P	f	o	o	
Poaceae	Avena sativa	wild oats	E	A	o			
Poaceae	Bothriochloa ischaemum var. songarica	King Ranch bluestem	E	P		o	c	
Poaceae	Bothriochloa laguroides subsp. torreyana	silver bluestem	N	P	o	f	o	
Poaceae	Bouteloua curtipendula	sideoats grama	N	P		f		
Poaceae	Bouteloua rigidiseta	Texas grama	N	P		o	o	
Poaceae	Bouteloua trifida	red grama	N	P			o	
Poaceae	Bromus catharticus (B. unioloides)	rescuegrass	E	A	o	f	o	c
Poaceae	Bromus japonicus	Japanese brome	E	A	o			
Poaceae	Buchloe dactyloides	buffalograss	N	P		r		
Poaceae	Cenchrus spinifex (Cenchrus incertus)	sandburgrass	N	P	o	o		
Poaceae	Chasmanthium latifolium	creek oats, inland sea oats	N	P				c
Poaceae	Chloris ciliata	fringed chloris	N	P	o	o		
Poaceae	Chloris cucullata	hooded windmillgrass	N	P	o	f		
Poaceae	Chloris verticillata	tumble windmillgrass	N	P		o		
Poaceae	Cynodon dactylon var. dactylon	Bermudagrass	E	P	a	c	o	c

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Poaceae	Dichanthium annulatum	Kleberg bluestem	E	P		o	o	
Poaceae	Dichanthium sericeum	silky bluestem	E	P	o			
Poaceae	Digitaria ciliaris	southern crabgrass	N	P	o	o		
Poaceae	Digitaria cognata subsp. cognata (Leptoloma cognatum)	fall witchgrass	N	P	r	r		
Poaceae	Elymus virginicus var. virginicus	Virginia wildrye	N	P				c
Poaceae	Eragrostis barrelieri	Mediterranean lovegrass	E	A	r			
Poaceae	Eragrostis curtipedicellata	gummy lovegrass	N	P	o			
Poaceae	Eragrostis intermedia	plains lovegrass	N	P	o	o	o	
Poaceae	Eragrostis secundiflora subsp. oxylepis	red lovegrass	N	P	f			
Poaceae	Eragrostis sessilispica	tumble lovegrass	N	P			r	
Poaceae	Eriochloa sericea	silky cupgrass	N	P			r	
Poaceae	Hilaria belangeri	curlymesquite	N	P		r	f	
Poaceae	Hordeum pusillum	little barley	N	A	o	o	o	o
Poaceae	Leptochloa dubia	green sprangletop	N	P			r	
Poaceae	Limnodea arkansana	Ozarkgrass	N	A	o	o	o	
Poaceae	Nassella leucotricha (Stipa leucotricha)	Texas wintergrass, speargrass	N	P	f	c	o	o
Poaceae	Panicum capillarioides	southern witchgrass	N	A		r		
Poaceae	Panicum hallii	Hall's panicum	N	P	o			
Poaceae	Panicum oligosanthos (Dichanthelium oligosanthos)	Scribner panicgrass	N	P				o
Poaceae	Paspalum langei	rustyseed paspalum	N	P				o

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Poaceae	Paspalum pubiflorum	hairyseed paspalum	N	P				o
Poaceae	Paspalum urvillei	Vaseygrass	E	P				r
Poaceae	Pennisetum ciliare (Cenchrus ciliaris)	buffelgrass	E	P	r			
Poaceae	Phalaris caroliniana	Carolina canarygrass	N	A	r			r
Poaceae	Setaria leucopila	plains bristlegrass	N	P		o	o	
Poaceae	Setaria ramiseta	bristlegrass	N	P		r	r	
Poaceae	Setaria scheelei	southwestern bristlegrass	N	P		o	o	
Poaceae	Sorghum halepense	Johnsongrass	E	P	a	c		
Poaceae	Sporobolus compositus var. compositus (S. asper var. drummondii)	meadow dropseed	N	P			c	
Poaceae	Sporobolus cryptandrus	sand dropseed	N	P	c	f	f	
Poaceae	Trichloris pluriflora	manyflower false-Rhodesgrass	N	P			r	
Poaceae	Tridens albescens	white tridens	N	P			r	
Poaceae	Tridens eragrostoides	lovegrass tridens	N	P			r	
Poaceae	Tridens muticus var. muticus	slim tridens	N	P			o	
Poaceae	Tridens texanus	Texas tridens	N	P		o	o	
Poaceae	Urochloa ciliatissima (Brachiaria ciliatissima)	fringed signalgrass	N	P	r			
Poaceae	Urochloa fasciculata (Brachiaria fasciculata)	browntop signalgrass	N	A	c			
Poaceae	Urochloa texana (Brachiaria texana)	Texas signalgrass	N	A	c			
Poaceae	Vulpia octoflora	sixweeksgrass	N	A	r			
Polemoniaceae	Gilia incisa	cutleaf gilia	N	P			o	
Polemoniaceae	Phlox drummondii	Drummond phlox	N	A	r			

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Polygalaceae	Polygala alba	white milkwort	N	P			r	
Polygalaceae	Polygala lindheimeri	Lindheimer milkwort	N	P			r	
Polygonaceae	Polygonum punctatum (Persicaria punctata)	dotted smartweed	N	A				c
Polygonaceae	Polygonum ramosissimum	knotweed	N	A				o
Polygonaceae	Rumex pulcher	fiddle dock	N	P				r
Portulacaceae	Portulaca pilosa	chisme	N	P	r			
Portulacaceae	Portulaca umbraticola	wingpod purslane	N	A	r			
Portulacaceae	Talinum aurantiacum	orange flameflower	N	P		o		
Primulaceae	Anagallis arvensis	scarlet pimpernel	E	A	o			
Pteridaceae	Cheilanthes alabamensis	Alabama lipfern	N	P			r	r
Pteridaceae	Pellaea atropurpurea	purple cliffbrake	N	P			r	
Ranunculaceae	Anemone berlandieri (A. heterophylla)	tenpetal anemone	N	P	o	o	o	
Ranunculaceae	Clematis drummondii	old man's beard	N	PV		o	o	o
Ranunculaceae	Clematis pitcheri	Pitcher leatherflower	N	PV				o
Ranunculaceae	Delphinium carolinianum	Carolina larkspur	N	P			r	
Rhamnaceae	Colubrina texensis	Texas colubrina, hog plum	N	S		o	c	o
Rhamnaceae	Condalia hookeri var. hookeri	brasil, bluewood condalia	N	S		o	c	o
Rhamnaceae	Ziziphus obtusifolia var. obtusifolia	lotebush	N	S	r		o	
Rosaceae	Crataegus sp. (C. mollis?)	hawthorn	N	T				f
Rosaceae	Prunus texana	Texas peachbush	N	S	r			
Rosaceae	Rubus riograndis (R. trivialis)	southern dewberry	N	S				o

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Rubiaceae	Cephalanthus occidentalis	buttonbush	N	S				r
Rubiaceae	Galium aparine	clinton bedstraw, cleavers	N	A				f
Rubiaceae	Galium virgatum	wand bedstraw	N	A	o	o	o	
Rubiaceae	Houstonia nigricans (Hedyotis nigricans)	prairie bluets	N	P			r	
Rubiaceae	Houstonia parviflora (Hedyotis greenmanii)	Greenman's bluets	N	A			r	
Rubiaceae	Richardia tricocca (Diodia tricocca)	prairie buttonweed	N	A	r			
Rutaceae	Ptelea trifoliata	wafer ash	N	T/S			f	f
Rutaceae	Thamnosma texanum	Texas desert-rue, Dutchman's breeches	N	P			r	
Rutaceae	Zanthoxylum hirsutum	toothache-tree, tickle-tongue	N	T/S	r			
Salicaceae	Populus deltoides	eastern cottonwood	N	T				o
Salicaceae	Salix nigra	black willow	N	T				o
Sapindaceae	Cardiospermum halicacabum	balloonvine	N	A				r
Sapindaceae	Sapindus saponaria var. drummondii	western soapberry	N	T				o
Sapotaceae	Sideroxylon lanuginosum	coma, gum bumelia, woolly-bucket bumelia	N	T/S			o	o
Scrophulariaceae	Agalinis strictifolia	gerardia	N	P	r	f	o	
Scrophulariaceae	Castilleja indivisa	annual paintbrush	N	A		o	o	
Scrophulariaceae	Maurandya antirrhiniflora	snapdragonvine	N	P			r	
Scrophulariaceae	Nuttallanthus texanus (Linaria texana)	Texas toadflax	N	A	r			
Scrophulariaceae	Veronica peregrina	wandering veronica	N	A				r
Smilacaceae	Smilax bona-nox	saw greenbrier	N	WV			o	o

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
Solanaceae	Bouchetia erecta	erect bouchetia	N	P			r	
Solanaceae	Capsicum annuum	chilipiquín, bird pepper	N	S			r	
Solanaceae	Chamaesaracha coronopus	false ground-cherry	N	P		r		
Solanaceae	Lycium berlandieri	Berlandier wolf-berry	N	S			o	r
Solanaceae	Physalis angulata	ground-cherry	N	A				r
Solanaceae	Physalis cinerascens var. cinerascens (P. viscosa var. cinerascens)	ground-cherry	N	A	r	r	r	
Solanaceae	Solanum elaeagnifolium	silverleaf nightshade	N	P	o	o	o	
Solanaceae	Solanum triquetrum	Texas nightshade	N	S		o		
Sterculiaceae	Hermannia texana	Mexican mallow	N	P			r	
Ulmaceae	Celtis laevigata var. laevigata	sugar hackberry	N	T				c
Ulmaceae	Celtis laevigata var. reticulata	netleaf hackberry	N	T		o	o	
Ulmaceae	Celtis pallida	granjeno, spiny hackberry	N	T/S	r	o	f	o
Ulmaceae	Ulmus americana	American elm	N	T				r
Ulmaceae	Ulmus crassifolia	cedar elm, olmo	N	T			r	c
Urticaceae	Parietaria pensylvanica	cucumberweed, pellitory	N	A			o	o
Urticaceae	Urtica chamaedryoides	stinging nettle	N	A				r
Verbenaceae	Aloysia gratissima	whitebrush	N	S			r	
Verbenaceae	Glandularia bipinnatifida (Verbena quadrangulata)	Dakota vervain	N	P	o	o		
Verbenaceae	Glandularia pumila (Verbena pumila)	low vervain	N	A	o	o		
Verbenaceae	Glandularia quadrangulata (Verbena	small white vervain	N	A	f	f		

Family	Scientific Name [Synonyms]	Common Name(s)	N	F	Habitat/Abundance			
					OF	UW	US	RW
	quadrangulata)							
Verbenaceae	Lantana urticoides (L. horrida)	Texas lantana	N	S			r	
Verbenaceae	Phyla nodiflora (P. incisa)	fogfruit	N	P				o
Verbenaceae	Tetradlea coulteri	Coulter tetradlea	N	P		f		
Verbenaceae	Verbena canescens	gray vervain	N	P		r		
Verbenaceae	Verbena halei	Texas vervain	N	P	r	r		
Verbenaceae	Verbena plicata	fanleaf vervain	N	P	f	f	f	
Violaceae	Hybanthus verticillatus	whorled green-violet	N	P	r			
Violaceae	Viola sp.	violet	N	P				r
Viscaceae	Phoradendron tomentosum	mistletoe	N	S		o	o	
Vitaceae	Ampelopsis arborea	peppervine	N	WV				r
Vitaceae	Cissus incisa	ivy treebine, cow-itch vine	N	PV			r	r
Vitaceae	Parthenocissus quinquefolia	Virginia creeper	N	WV				o
Vitaceae	Vitis mustangensis	Mustang grape	N	WV			o	f
Zygophyllaceae	Guaiacum angustifolium	guayacán	N	S			o	o
Zygophyllaceae	Kallstroemia parviflora	warty caltrop	N	A		o		
Zygophyllaceae	Tribulus terrestris	puncture-vine	E	A		r		

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