AN INVENTORY OF THE VASCULAR PLANTS OF AMISTAD NATIONAL RECREATION AREA, VAL VERDE CO., TEXAS

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Abstract: Amistad National Recreation Area is a 23,186 ha property in Val Verde County, Texas. A floral inventory was conducted in 2003–2004, producing a checklist of 699 taxa with 99 infraspecific taxa, 686 species, 402 genera, and 106 families. There are 651 native taxa and 48 introduced. No federally or state listed plants were documented. Seventeen species of conservation concern were verified within the park. Thirteen taxa endemic to Texas were recorded. Plant communities were also noted and compared to those previously reported for the site.

Amistad National Recreation Area (Amistad NRA) is located in southwest Texas along the U.S.-Mexico border near the town of Del Rio, Texas. The recreation area extends along the Rio Grande from above Langtry to just above Del Rio, and up two tributaries of the Rio Grande, the Pecos, and Devils Rivers, for dozens of miles. The recreation area was created after the construction of Amistad Dam that was built in 1969 below the confluence of the Rio Grande and the Devils River. Lake Amistad International Reservoir has approximately 1,432 km (890 mi) of shoreline with numerous coves and inlets, 869 km (540 mi) in the United States and 563 km (350 mi) in Mexico. The park’s boundary is mostly unfenced. Amistad NRA is located in Val Verde County, Texas (Figure 1) and consists of 23,186 ha (57,294 ac), including areas covered by the reservoir (NPS 2006). Except for some upland areas beyond the main body of the reservoir (including five Hunt Areas), the actual land area of the NRA fluctuates with changing reservoir levels. The national recreation area’s boundary is generally defined as the reservoir surface and shore area up to the 348.8-meter (1,144.3-foot) elevation contour above mean sea level, with a pool conservation level contour of 340.5 meter (1,117 feet) above mean sea level. Water in the reservoir is used for municipal and irrigation purposes for communities downstream along the Rio Grande (NPS 2004).

The climate of Amistad NRA is semiarid, with hot summers and mild dry winters (Golden et al., 1982; Natural Fibers Information Center 1987). Rainfall occurs primarily in two time periods: April through June and September through October, with >80% of the annual precipitation occurring from April to October. Average annual precipitation in Del Rio is 469 mm (18.5 in). However, precipitation tends to fall erratically, with monthly and yearly totals often straying far from the average. During the August 1998 flood, 432 mm (17.02 in) of rain, almost the average annual rainfall, fell during one day, in contrast to the average annual precipitation in 1956 that was only 110.2 mm (4.34 in). During the field sessions of this study (April 2002 to October 2003), a year long drought was broken, and precipitation was above average most months. Average monthly temperatures vary from 10°C (50°F) in winter to 27°C (81°F) in summer. Temperatures can be quite hot, especially in the summer, with an average of 124 days over 32°C (90°F). Freezing temperatures occur on average only 19 days a year (National Weather Service 2003).

Geologically Amistad NRA is fairly homogeneous (Bureau of Economic Geology 1977). Most of the outcropping and underlying rock is Cretaceous limestone. The Salmon Peak and Buda limestones are the most common, while the Del Rio clay (calcareous and gypsiferous clay), is locally
common at some sites. Along the narrow Rio Grande corridor of the park, upstream from the confluence with the Pecos River, the Devils River limestone replaces the others as the most common rock type. Some minor outcrops of the Eagle Ford formation (shales, siltstones, and limestone) and the Pliocene or Pleistocene Uvalde gravel formation also occur within Amistad NRA boundaries.

Most of the soils within Amistad NRA are shallow, rocky and alkaline (Golden et al. 1982). The rivers and drainages that have not been permanently flooded contain primarily riparian type soils. Along the Rio Grande, the soils (Rio Grande Series) are deep, loamy and silty. Near the end of the Amistad NRA boundary along the Devils River, the soils are unstabilized, nearly barren, sandy, gravelly, rocky sediments (Riverwash soil map unit) that wash in from the surrounding limestone hills. Areas of exposed limestone bedrock also occur. The rest of the Devils River within the recreation area as well as the drainages of San Pedro Creek are in the Dev Series (very gravelly clay loams). The Pecos River (within the recreation area boundary) has little soil development, and is mapped as Langtry-Rock outcrop association. Although the association is mostly composed of limestone rock outcrops, Langtry soils are rocky clay loams.

The upland soils of Amistad NRA also vary by location. From the park’s uppermost reaches on the Rio Grande to Langtry, the soils are primarily the Mariscal-Lozier association (shallow, rocky loams) and the Lozier-Shumla association (shallow loamy to gravelly loamy soils). From Langtry to Seminole Canyon, the soils are the same as those along the Pecos, the Langtry-Rock outcrop association. Below Seminole Canyon to Evans Creek, the Langtry-Rock

Fig. 1. Amistad National Recreation Area with plot locations.
outcrop association is still frequent, but other soils such as the Felipe and Zorra soil association (shallow gravelly clays and stony loams, respectively), the Valverde silty clay loam (a deep soil), and the Zorra-Rock outcrop complex (mostly Zorra soils but some rock outcrops) are also common. The soils of the uplands within the Amistad NRA boundary along the Devils River are primarily Langtry-Rock outcrop and Zorra-Rock outcrop as are Hunt Areas 1 and 3. The rest of Amistad NRA is a mix of mainly Felipe and Zorra soils, Zorra-rock outcrop, Valverde silty clay loam, and the Olmos very gravelly loam (a shallow soil).

Topographically Amistad NRA consists of rolling hills and plateaus dissected by numerous small drainages and steep-sided canyons. Three major drainage systems (Rio Grande, Devils, and Pecos Rivers) cut through the area. The confluence of the Rio Grande, Devils River, and San Pedro, Evans and California Creeks form a large basin with a more gently rolling topography, but this area is now submerged beneath the reservoir. Vertical relief within the recreation area varies depending on location and lake level, but most of the hill and plateaus rise 15–46 m (50–150 ft) above the surrounding terrain. Sheer cliffs occur along the Rio Grande, Devils and Pecos Rivers. Indian Cliffs (see cover) along the Devils River rises 61 m (200 ft) above the river. Elevation within Amistad NRA varies little, due to the elevational boundary. However elevation does range from a low of 284 m AGL (930 ft) along the Rio Grande below the dam to a high of 373 m AGL (1224 ft) in Hunt Area 1.

The primary source of groundwater in the park is from the Edwards-Trinity aquifer. Most of the major springs within Amistad NRA have been permanently covered or occasionally flooded. Goodenough Springs was the third largest spring in Texas (Brune 1981), and despite being covered with over 40 m (131 ft) of water, still manages to produce a small flow. Aside from photographs, there is little record of what the vegetation was like. The springs at the mouth of Big Satan Canyon along the Devils River maintain one of the more interesting wetland plant communities found within Amistad NRA, probably due to their escape from inundation. The same is true for Dead Man Springs along the Pecos River. Indian Springs has recently resurfaced with a drop in lake level, but it will take decades, or more likely centuries, for the vegetation to return to pre-lake composition and structure. Likewise the vegetation that has been subjected to fluctuating lake levels has been drastically changed. Most recently emergent sites are vegetated by a combination of non-native and primary successional native species. Even the substrate and soil have been highly altered, with soils washed away leaving bare, exposed, cracked limestone. Thus, there is probably little hope for these sites to return to their former species composition.

Climate, geology, soils, topography and hydrology are the major influences on plant communities. Three Texas ecoregions, South Texas Plains (also referred to as Tamaulipan Brushland), Edwards Plateau and Trans-Pecos (or Chihuahuan Desert), converge within Amistad NRA (Hatch et al. 1990). From the south, South Texas Plains mixed shrublands of blackbrush (Acacia rigidula), guajillo (Acacia berlandieri) and Texas bermometer bush (Leucophyllum frutescens) mingle with the oak (Quercus spp.)-juniper (Juniperus spp.) woodlands of the Edwards Plateau which are primarily found north and east of the park. And from the west, creosote bush (Larrea tridentata) and lechuguilla (Agave lechuguilla), indicator species of the Chihuahuan Desert (Trans-Pecos ecoregion), blend with both of the aforementioned ecoregions. The semi-arid nature of this landscape is tempered somewhat by the presence of springs, rivers, and the human-created reservoir. These water features provide wetter microhabitats, allowing the presence of more mesic vegetation than would normally be encountered in this region.
Land-use history has also shaped the vegetation. Fire suppression may have led to an increase in woody vegetation. Cattle, sheep, and goat ranching were common throughout the area. Bulldozing, root-plowing, chaining and hand-clearing of woody, native vegetation were often employed to “improve” forage. Sites with deeper soils may have been plowed and seeded with non-native grasses, such as King Ranch bluestem (*Bothriochloa ischaemum var. songarica*), Bermuda grass (*Cynodon dactylon*), and buffelgrass (*Pennisetum ciliare*). Irrigated row crop agriculture may have also occurred in the bottomland areas that are now flooded.

Val Verde County, and in particular, the area encompassing Amistad NRA, have been of interest to botanists for many years. Yet, only one floristic inventory (at the Air Force’s Laughlin Recreation Area) has been done within Amistad NRA (Texas Natural Heritage Program 1995), and no comprehensive vascular plant inventory of the entire park had been conducted. As part of the National Park Service’s (NPS) Inventory and Monitoring Program, a thorough floral inventory of Amistad NRA was proposed (NPS 2001). In addition, the park’s previous list of plant communities was expanded.

**METHODS**

The objective of this study was to conduct as complete a vascular plant inventory as possible. Thus, random selection of sampling locations was deemed too time-consuming, costly, not physically possible in some cases, and inadequate to capture more than a small percentage of the flora. Other factors that influenced selection of sampling locations included the long and contorted boundary of Amistad NRA, the difficulty of access, the constantly changing lake level, and the disturbed nature of the exposed inundation zone. Sampling locations were instead determined by David Larson, the former park biologist for Amistad NRA, and the author, based on prior experience with the recreation area and the flora, as well as topographic and hydrologic features. Using this methodology, 106 potential sampling sites were identified. From these, 69 sites were identified as highest priority for sampling due to their botanical diversity or size and location above the inundation zone. The remaining 47 sites (primarily small canyons along the Rio Grande and Devils River) were assigned a lower priority; however, 10 were randomly selected for investigation.

A list of plant species potentially occurring within the recreation area was compiled from floristic inventories at Seminole Canyon State Historic Site (Labus 1989, Hedges and Poole 2002) and Devils River State Natural Area (Poole and Hedges 1999), as well as various literature references and herbarium specimens (Worthington 2002). This excellent summary was abetted by searches of the online University of Texas at Austin Plant Resources Center database and the Digital Flora of Texas database maintained at Texas A&M University. Additionally NPS contractors surveyed the Sul Ross State University Herbarium for specimens collected within the vicinity of Amistad NRA. A small collection of plant specimens made by an interpretive specialist Elisabeth Armijo, Vidal Davila, and Emery Leonard at Amistad NRA during the 1970s provided several unusual records. Collections were also made by David Larson and an intern during 2001. A survey of Laughlin Recreation Area (leased to the Air Force by the NPS) conducted by the Texas Natural Heritage Program in 1993 and 1994 also supplied additional species for the list (Texas Natural Heritage Program 1995).

All these sources formed the basis of a master plant list that was used in the field. When species were encountered, they were noted by site and frequency. When species were encountered that had not been previously vouchered, they were collected if in good shape (i.e., necessary amount of material such as leaves, flowers, and/or fruits to permit identification). Whenever possible
two specimens were collected to deposit at The University of Texas at Austin and Sul Ross State University herbaria. Specimens in good shape were also collected when positive identification could not be made in the field. All specimens were identified at The University of Texas at Austin herbarium, using the following primary sources: *The Manual of the Vascular Plants of Texas* (Correll and Johnston 1970), *Trees and Shrubs of the Trans-Pecos and Adjacent Areas* (Powell 1998), *Grasses of the Trans-Pecos and Adjacent Areas* (Powell 1994), and *Cacti of Texas and Neighboring States: a field guide* (Weniger 1984). After specimens were keyed out, they were compared to the herbarium collections to check accuracy and range. Range was also checked in *Atlas of the Vascular Plants of Texas* (Turner et al. 2003). In addition to the previously mentioned references, the following field guides were also used for quick plant identification in the field: *Wildflowers of the Big Bend Country* (Warnock 1970), *Wildflowers of the Guadalupe Mountains and the Sand Dune Country, Texas* (Warnock 1974), *Wildflowers of the Davis Mountains and Marathon Basin, Texas* (Warnock 1977), *Wildflowers of the Texas Hill Country* (Enquist 1987), *Woody Plants of the Lower Rio Grande Valley, Texas* (Lonard et al. 1991), and *Trees, Shrubs and Cacti of South Texas* (Everitt and Drawe 1993). Nomenclature, both scientific and common names, primarily follows that used by Worthington (2002) with additions or updates from Hatch et al. (1990), Jones et al. (1997), Flora of North America (1993+), and the USDA PLANTS database (http://plants.usda.gov/, accessed on 8/23/2012).

**Results**

Sixty-one sites were visited, some more than once, during the two year survey (Figure 1). Of the original list of 69 survey sites, 12 were not surveyed. Eight of these sites on the Pecos River or upper Rio Grande were not surveyed due to either high or low water which made access extremely difficult or impossible. Two randomly chosen sites were also not surveyed because it was felt that they would not add new species or habitats to the project. One site, Panther Canyon along the Rio Grande, had vertical walls down to the water line and was inaccessible. Finally another canyon that was mistaken for the selected Twin Canyon (in spite of the use of GPS and maps), and three additional sites visited were surveyed before the contract was finalized, for a total of 61 sites.

A total of 583 vascular plant taxa were encountered during the survey. An additional 116 taxa were confirmed as being collected within the Amistad NRA boundary, but were not observed during the course of the study (Appendix A: Documented Flora). Forty taxa were found that had never been reported before for the park or general vicinity. Although no threatened or endangered species were found, two potential Tobusch fishhook cactus (*Sclerocactus brevifolius subsp. tobuschii*), a Federal and State of Texas endangered species, were encountered. However, precise identification could not be made as the plants were not in flower. Seventeen species of conservation concern were documented in the park (see Table 1), and are indicated by a “C” in Appendix A. Thirteen species endemic to Texas were also found and are indicated by an “E” in Appendix A. Forty-one non-native species were observed, and another seven non-natives have been documented within Amistad NRA but were not seen during the course of the study.

At the request of the National Park Service, a list of potential species for Amistad NRA was compiled from Worthington (2002) and other sources at the beginning of the study. Of those species, 116 were ascertained not to occur within the park or even have a remote chance of occurring there (Poole 2004). Specimen misidentifications and taxonomic changes accounted for most of the taxa within the excluded flora. However, some specimens reported as being...
from Amistad NRA could not be found in the various online databases, and some species were only represented by sight records. In these cases if the available range information in the online databases, various floras and checklists was outside of Val Verde County, these records were considered misidentifications, and excluded from the Amistad NRA plant list.

A total of 76 plant communities were identified at Amistad NRA (Appendix B). These communities were more finely drawn than the original 10 plant associations identified by Larson (2002). In fact, 48 of these more finely delineated communities would fit within the broader delimitations defined by Larson. Of the other 28 communities, not accounted for by Larson (2002), many are disturbance and/or wetland/aquatic communities.

A quick visual estimate of species’ frequency was recorded for each species observed during site visits (Table 2; Poole 2004). Frequency categories were based on professional judgement. As sites were sometimes visited multiple times, and often separate lists were made for vegetatively disparate parts of the site (for example uplands vs. inundation zones), a list was developed combining the frequencies of the same species within the same overall site (Poole 2004). When the temporal or ecological frequencies varied during different visits, the more common frequency was selected for the site.

Additionally an overall frequency level was determined for each species for Amistad NRA as a whole. Overall frequency was determined primarily by park frequency (number of sites occupied) and modified by site frequency (Table 2). Most of the plants at Amistad NRA (80% of the species) occur at very low frequencies. Sixty-three percent of the flora fell into the park-wide rare category, and 17% was labeled as infrequent. Only 16% of the flora fell into one of the common categories. The remaining 4% of the flora was equally split between the frequent and abundant categories.

**DISCUSSION**

Despite the major human-induced disturbances to which the Amistad NRA flora has been subjected (i.e., dam construction, flooding, fluctuating water levels, overgrazing, and browsing by large populations of goats and feral non-native exotic game species), the park flora is still quite diverse. More plant taxa (699) have been documented at Amistad NRA than have been recorded at Devils River State Natural Area (DRSNA) and Dolan Falls Preserve (DFP) combined (565 plant taxa) (Poole and Hedges 1999).

There are several reasons for the higher number of species at Amistad NRA. Although the park is slightly smaller acreage-wise than DRSNA/DFP, the more or less linear configuration of Amistad NRA, extending for approximately 80.5 km (50 mi) along the Rio Grande, from north of Del Rio to west of Langtry, and for 24–32 km

<table>
<thead>
<tr>
<th>Taxon name</th>
<th>Global and state rank</th>
</tr>
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<tbody>
<tr>
<td>Acleisanthes wrightii</td>
<td>G2S2</td>
</tr>
<tr>
<td>Astragalus wrightii</td>
<td>G3S3</td>
</tr>
<tr>
<td>Cirsium turneri</td>
<td>G3S3</td>
</tr>
<tr>
<td>Cuscuta exalata</td>
<td>G3S3</td>
</tr>
<tr>
<td>Euphorbia peplidion</td>
<td>G3S3</td>
</tr>
<tr>
<td>Flyriella parryi</td>
<td>G3S3</td>
</tr>
<tr>
<td>Galium correllii</td>
<td>G2S1</td>
</tr>
<tr>
<td>Hesperaloe parviflora</td>
<td>G3S3</td>
</tr>
<tr>
<td>Matelea sagittifolia</td>
<td>G3S3</td>
</tr>
<tr>
<td>Pediomelum humble</td>
<td>G1S1</td>
</tr>
<tr>
<td>Perityle angustifolia</td>
<td>G3G4S3</td>
</tr>
<tr>
<td>Polygala palmeri</td>
<td>G3S2</td>
</tr>
<tr>
<td>Prunus minutiflora</td>
<td>G3S3</td>
</tr>
<tr>
<td>Seymeria texana</td>
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</tr>
<tr>
<td>Streptanthus platycarpus</td>
<td>G3S3</td>
</tr>
<tr>
<td>Vitis rupestris</td>
<td>G3S1</td>
</tr>
<tr>
<td>Yeatesia platystegia</td>
<td>G3S2</td>
</tr>
</tbody>
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Global and state ranks are assigned by NatureServe. See http://www.natureserve.org/explorer for rank definition and assignment process.
(15–20 mi) up the Pecos and Devils Rivers, covers a greater longitudinal area. Both sites contain elements of three ecoregions (South Texas Plains, Edwards Plateau, and Trans-Pecos). The DRSNA/DFP is more heavily weighted toward Edwards Plateau and South Texas Plains ecoregions, while Amistad NRA contains more South Texas Plains and Trans-Pecos (Chihuahuan Desert) elements. Influence from the Edwards Plateau vegetation associations are found primarily along the Devils River portion. Perhaps the relative contributions of the three ecoregions make a difference in the total number of taxa. While the flora of DRSNA/DFP is 97% native (18 non-native species), the Amistad NRA flora has almost three times as many non-native species (41 observed and another 7 previously vouchered but not seen during this study), but non-natives still only account for 7% of the flora.

Most of the plant taxa (63%) encountered at Amistad NRA were quite rare (i.e., fewer than 10 individuals or patches at a site, and occurring at less than 10 sites). Reasons for this are not clear, but the extreme fluctuations in the climate (frequent drought/flood, high summer temperatures), the past human impacts, and the present heavy grazing/browsing pressure may all be contributing factors. Since most species occur at low or localized levels, this pattern may not be significant.

The 10 most common species (found at 50 or more sites, and fairly common at these sites) are all native, perennial plants. However, within the group of the next 10 most common species are two, locally frequent non-native grasses, King Ranch bluestem and Bermuda grass. These two species comprise much of the grasslands in the inundation zone. Although high profile species such as salt cedar (Tamarix ramosissima), giant cane (Arundo donax), hydrilla (Hydrilla verticillata), buffelgrass, and Lehmann lovegrass (Eragrostis lehmanniana) receive more attention, these two aforementioned grasses probably cover more area, and perhaps do more harm to the native plant diversity.

Plant communities at Amistad NRA are highly influenced by soils, geology, topography, conditions, vegetation, and various biotic factors. The flora of the park is diverse and vibrant, supporting a wide range of wildlife species. It is a place of beauty and tranquility, offering a glimpse into the natural diversity of the region. The park contractors have continued to maintain the natural resources and vegetation, ensuring the preservation of this unique ecosystem.
geography, climate, and perhaps most of all, by anthropogenic forces (i.e., past land use history). Many of the plant communities identified at Amistad NRA are directly related to human-caused disturbances, particularly those associated with the rise and fall of Lake Amistad.

Larson (2002) identified 10 preliminary plant alliances occurring in the park. These alliances were rather broadly drawn. During the course of this floristic inventory, more narrowly delimited plant communities (more along the association level) were determined. Appendix B (Plant Community List) provides a list of these communities, and which of the more broadly defined alliances that they might fall within.

The most widespread alliance was the *Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri* shrubland. This type was encountered at almost every upland site at Amistad NRA, and 26 more narrowly defined community types fell within it (see Appendix B). While these are almost exclusively non-inundation zone communities, at Blackbrush Point where *Acacia rigidula* dominates the landscape, it does occur with *Baccharis neglecta* in the inundation zone.

Another geographically widespread alliance, the *Acacia farnesiana* woodland/shrubland, correlated with seven narrowly defined community types. The *Acacia farnesiana* woodland/shrubland communities are exclusively inundation zone communities although their component species may sometimes be present outside the inundation zone. These communities usually occur in upper reaches of former inundation zones where exposure has occurred for a certain length of time. Non-native species such as salt cedar, King Ranch bluestem, and Bermuda grass are often common in this disturbed environment.

Another geographically widespread alliance, the *Prosopis glandulosa* woodland/shrubland was separated into six narrowly defined community types. The group contains both upland and former inundation zone communities. Those types that are found within the former inundation at its uppermost reaches probably represent the highest successional status that the former inundation zone is currently able to obtain.

The *Phragmites australis* herbaceous vegetation broadly defined as occurring along riparian areas of the Rio Grande, Pecos, and Devils Rivers, was subdivided into 5 smaller types. These communities occur along the river’s edge, or, particularly in the case of *Arundo donax*, along the reservoir edge or slightly inland.

The Rock outcrop/butte sparse vegetation, defined by Larson (2002) as occurring on the Zorro-Rock Outcrop complex, was divided into three associations (it should be noted that many of the *Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri* shrubland types are found on this formation as well). Two of these communities (*Porophyllum scoparium* sparsely vegetated rock outcrop and *Porophyllum scoparium-Heterotheca fulcrata-Penstemon baccharifolius* Sparsely Vegetated Rock Outcrop) are found only above the inundation zone. The other (*Phyla nodiflora-Nicotiana glauca-Vitex agnus-castus* Rock Outcrop Sparse Vegetation) occurs only in the inundation zone either on formerly inundated cliff faces or on large slabs of limestone rock broken by inundation and wave action.

There was a one-to-one correlation between two Larson and Poole community types. There was a one-to-one correspondence between the *Quercus pungens-Celtis laevigata* woodland and the *Quercus fusiformis* woodland. The Open Cliff Sparse Vegetation and the *Acacia berlandieri-Quercus pungens var. vasyana-Q. fusiformis-Porophyllum scoparium-Perityle lindheimeri* Open Cliff Very Sparse Vegetation also appeared to be correlated. However this latter community may relate better to the *Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri* Shrubland alliance. It occurs exclusively above the inundation zone.

No examples of Larson’s *Hilaria belangeri-Bouteloua curtipendula* Herbaceous Vegetation were found. In fact *H. belangeri* was seen at only two sites (Lowry Springs...
and Diablo East Viewpoint picnic area), and only at an infrequent level. However, eight other grassland communities were identified during this survey. Almost all were composed either of non-native species, or native species of poor livestock forage quality. This indicates that the lands within the boundary of Amistad NRA have been severely over-utilized.

An additional 28 communities were described that did not fit well into any of the Larson categories. Most of these were wetland, aquatic, or intermittently flooded types. Perhaps the most ubiquitous community at Amistad NRA (next to the *Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri* Shrubland) is the *Phyla nodiflora-Cynodon dactylon-Bacopa monnieri* Herbaceous Vegetation. This wetland community type is a pioneer of the most recently exposed substrate within the inundation zone. More natural wetland types such as the *Eleocharis* spp. Herbaceous Vegetation and the *Schoenoplectus californicus* Herbaceous Vegetation were only found outside of the reservoir’s influence.

At slightly higher elevations in the inundation zone and on the successional scale are the various communities dominated by *Baccharis neglecta*. Within the inundation zone, this native species often teams with non-native species such as *Bothriochloa ischaemum* var. *songarica* or *Tamarix ramossima*. However it also occurs in riparian sites rarely inundated by the lake with other native species (for example, *Baccharis neglecta-Indigofera lindheimeri* Shrubland, *Baccharis neglecta-Phragmites australis* Shrubland). Also another species of *Baccharis, B. salicifolia*, forms similar community types. Both *Baccharis* species, although native, are adapted to riparian disturbances, and thus are able to thrive in both the inundation zone and other, more natural riparian habitats.

Other species have also adapted to life in the riparian disturbance zone. *Cephalanthus occidentalis* communities and the *Indigofera lindheimeri-Senna lindheimeri* Shrubland can be found both in and out of the inundation zone. The *Chilopsis linearis-Indigofera lindheimeri* Shrubland occurs only in non-inundation areas while the *Opuntia engelmannii var. lindheimeri-Salvia farinacea* Shrubland was only encountered in an intermittent drainage within the inundation zone.

There are few truly aquatic communities at Amistad NRA, but the highly invasive, non-native species *Hydrilla verticillata* forms one within the reservoir. The extent of this noxious plant is not known, but should be determined and the species eradicated. A native aquatic plant community, the *Justicia americana* Emergent Aquatic Vegetation, is common in the upper Devils River.

On the western side of Amistad NRA, communities more common to the Chihuahuan Desert were found. The *Agave lechuilla-Dasylirion texanum* Shrubland and the *Fouquieria splendens* Shrubland were represented by a few, small and poorly formed examples.

The only truly unique community for the United States, although it is more common in Mexico, is the *Quercus graveolens* Woodland. This community occurs at very few sites within the park boundary and should be protected.

**CONCLUSION**

The flora of Amistad NRA is quite botanically diverse, despite the fact that many of the collection areas of the pre-dam era have been dramatically and irreversibly altered by temporary or permanent inundation. The remaining flora is highly threatened by non-native plant and animal species. The sheer numbers of free-ranging livestock, almost exclusively Spanish goats, and exotic wildlife such as aoudads, is staggering. At some sites goat pellets are the most frequently encountered ground cover, surpassing rocks and any vegetation. Because Amistad NRA is not fenced along most of its boundary, livestock and wildlife wander at will. Unless this situation is
addressed, plant diversity will likely decline within the park boundaries.

Non-native plants pose a different threat to the native flora. As long as the inundation zone continues to fluctuate, non-native plant species will have a strong foothold at Amistad NRA. These species thrive on the disturbance that the rising and falling reservoir levels provide. As these species invade the less disturbed upland sites, their highly competitive nature will allow them to crowd out the native species. Concentrations of these non-native species in upland areas should be identified and eliminated although it will be a constant battle.

There are many areas of botanical interest within Amistad NRA. The Devils River from Indian Cliffs Canyon upstream contains many species rarely if at all seen in other areas of the park. Satan Canyon has both wetland and upland canyon areas that are quite unique. The Plateau live oak grove areas such as those in Satan Canyon, Lowry Springs, Live Oak Creek, Seminole Canyon and Oak Motte in Hunt Area 4 represent communities at the edge of their range. They should be monitored, and in the case of Oak Motte, fenced to exclude livestock and restored. The Quercus gravesii-Pistacia mexicana community in Pink Cave Cove and other sites that were not observed during this study is very rare in the United States, and should also be monitored. The upper portion of the Pecos River above the reservoir’s influence deserves to be restored (i.e., removal of non-native species) as this area is quite unique as is the upland and cliff face area of the Pecos River picnic and boat launch area. Amistad NRA’s property below the dam, although somewhat disturbed, contains many interesting wetlands that may harbor rare species. Restoration (removal of non-native species) is also needed here.

To delimit fully the natural plant communities in the park, additional work is needed. The plant community list provided with this report represents an educated guess based upon single (usually) observations of a site. Undoubtedly the plant community list will be refined with more intensive work. As more vegetation surveys are completed, high quality examples of even the common, upland communities should be sought out and protected. Monitoring of these examples would provide a gauge of the overall natural health of Amistad NRA.

The rarest species that are well-documented at Amistad NRA, such as cliff bedstraw (Galium correllii) and cliff thistle (Cirsium turneri) occur in Mile Canyon and in the canyon of the Pecos River. These two species should be monitored on an annual basis. The possible occurrence of Tobusch fishhook cactus (Sclerocactus brevihamatus ssp. tobuschii) should be checked during flowering season to determine the true identities of the plants. The documented, but not recently verified occurrence of the Rydberg’s scurfpea (Pediomelum humile) should also be searched for when the other local populations are in flower. Staff should become familiar with these species as well as other rare plants such as Texas trumpets (Acleisanthes crassifolia), Wright’s trumpets (A. wrightii), and Correll’s false dragonhead (Physostegia correllii), that may eventually be found within the park, as well as the other species indicated as being of conservation concern in Appendix A.

Amistad NRA presents a rare opportunity to protect and preserve a sizeable amount (ca. 10%) of the floral diversity of Texas. Although many individual plants may have been destroyed by inundation, and many more are threatened by non-native animals and plants, the NPS has been presented a challenge to conserve this unique environment and the plants within it.

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LITERATURE CITED


APPENDIX A

DOCUMENTED FLORA OF AMISTAD NATIONAL RECREATION AREA

This list is composed of taxa either collected or seen by the author, or from other vouchered collections at various herbaria (noted by their abbreviations in bold in parentheses) that were determined to occur (based on their locational information) within the boundaries of Amistad NRA. Nomenclature, both scientific and common names, primarily follows that of used by Worthington (2002) with additions or updates from Hatch et al. (1990), Jones et al. (1997), Flora of North America (1993+), and the USDA PLANTS database (http://plants.usda.gov/, accessed on 8/23/2012). The alphabetic codes that follow the taxa’s common name represent species of conservation concern (C), Texas endemic (E), and non-native taxa (I).

FERNS AND FERN ALLIES

SELAGINELLACEAE

*Selaginella lepidophylla* (Hook. & Grev.) Spring  
resurrection plant  
Rare on rock outcrops  
Correll 12989, 6/27/1946 (LL); Correll 14919, 10/7/1952 (LL); Labus 046, 11/22/1989 (TEX)

*Selaginella underwoodii* Hieron.  
Underwood’s spikemoss  
Not seen during this study; canyon rims in Seminole Canyon State Park  
Labus 15, 11/22/1987 (TEX); Labus 56, 11/22/1987 (TEX)

*Selaginella wrightii* Hieron.  
Wright’s spikemoss  
Very locally common on rock outcrops  
Poole 4604, 6/27/2002 (TEX-NPS); Correll 12902, 6/27/1946 (LL); Correll 14916, 10/7/1952 (LL); Warnock 22729, 8/10/1967 (SRSC)

ANEMIACEAE

*Anemia mexicana* Klotzsch  
Mexican fern  
Rare in Seminole Canyon and mouth of Pecos River  
Turner s.n., 9/13/1948 (SRSC)

EQUISETACEAE

*Equisetum hyemale* L. *subsp. affine* (Engelm.) Calder & Roy L. Taylor  
scouring-rush horsetail  
Not seen during this study; along Rio Grande between Langtry and mouth of Pecos River  
Warnock 11960, 3/29/1954 (SRSC)

This specimen may be misidentified as a duplicate at LL is identified as *E. laevigatum*. However, according to Turner et al. (2003), *E. hyemale* does occur in the vicinity.

*Equisetum laevigatum* A. Braun  
smooth scouring-rush  
Not seen during this study; along the Rio Grande between Langtry and mouth of Pecos  
Warnock 11960, 3/29/1954 (LL)
MARSILEACEAE

*Marsilea vestita* Hook. & Grev. subsp. *vestita*  
narrowleaf pepperwort

Rare in silty clay soils in inundation zone  
*Poole 4832, 6/20/2003 (TEX-NPS)*

PTERIDACEAE

*Adiantum capillus-veneris* L.  
southern maidenhair

Rare in seeps or springs  
*Ferris s.n., 1903 (US); Warnock 11970, 3/28/1954 (LL, SRSC); Warnock 21392, no date (SRSC)*

*Argyrochosma microphylla* (Mett. ex Kuhn) Windham  
littleleaf cliffbrake

(Rare on rock outcrops or rocky soils  
*Correll 12907, 6/27/1946 (LL); Parks 232, 4/10/1949 (SRSC); Warnock 22727, 8/10/1967 (SRSC); Warnock 47202, 3/29/1947 (SRSC, TEX)*

*Astrolepis cochisensis* (Goodd.) D. Benham & Windham  
Cochise scaly cloakfern

(Rare on rock outcrops or rocky soils  
*Parks 278, 4/10/1949 (SRSC)*

*Astrolepis integerrima* (Hook.) D. Benham & Windham  
wavyleaf cloakfern

(Rare on rock outcrops or rocky soils  
*Poole 4463, 4/17/2002 (TEX-NPS); Correll 12897, 6/27/1946 (LL); Correll 14922, 10/7/1952 (LL); Holmes 5723, 5/10/1992 (TEX); Warnock 22726, 8/10/1967 (SRSC); Warnock 47224, 3/29/1947 (SRSC)*

*Astrolepis sinuata* (Lag. ex Sw.) D. Benham & Windham subsp. *sinuata*  
bulp lipfern

(Rare on rock outcrops or rocky soils  
*Poole 4545, 5/22/2002 (TEX-NPS); Correll 12919, 6/28/1946 (LL); Correll 13482, 7/27/1946 (LL); Saxman 225, 4/9/1939 (TEX)*

*Astrolepis windhamii* D. Benham  
Windham’s scaly cloakfern

Not seen during this study; canyon rims  
*Correll 12903, 6/27/1946 (LL); Labus 37, 11/22/1987 (TEX)*

*Cheilanthes aemula* Maxon  
Texas lipfern

Not seen during this study; canyons  
*Correll 12910, 6/27/1946 (LL); Warnock 47173, 3/29/1947 (SRSC)*

*Cheilanthes alabamensis* (Buckley) Kunze  
Alabama lipfern

Infrequent in shaded mesic environments  
*Poole 4696, 10/29/2002 (TEX-NPS); Correll 12914, 6/27/1946 (LL); Parks 220, 4/10/1949 (SRSC); Warnock 22079, 8/10/1967 (SRSC)*

*Cheilanthes horridula* Maxon  
prickly lipfern

Rare in canyons on rock outcrops and rocky soil  
*Correll 12901, 6/27/1946 (LL); Correll 12918, 6/28/1946 (LL); Correll 14917, 10/7/1952 (LL); Correll 14920, 10/7/1952 (LL); Labus 049, 11/22/1987 (TEX); Mears 2587, 4/17/1968 (TEX)*

*Notholaena copelandii* C. C. Hall  
Copeland cloakfern

(N. candida (M. Martens & Galeotti) Hook. var. *copelandii* (C. C. Hall) R. M. Tryon)  
Rare in canyons of rock outcrops and rocky soils
Notholaena nealleyi Seaton ex J. M. Coult. Nealley's cloakfern
(N. schaffneri (E. Fourn.) Underw. ex Davenp. var. nealleyi (Seaton ex J. M. Coult.) Pic. Serm.)
Rare on rock outcrops and rocky soils
Correll 12899, 6/27/1946 (LL); Correll 13475, 7/26/1946 (LL); Correll 14918, 10/7/1952 (LL); Correll 14975, 10/9/1952 (LL); Parks 277, 4/10/1949 (SRSC); Stangel 1, 2/20/1982 (SPLIT)

Notholaena neglecta Maxon
Maxon's cloakfern
Not seen during this study; canyon of the Rio Grande, Langtry
Correll 12900, 6/27/1946 (LL)

Notholaena standleyi Maxon
star cloakfern
Rare on rock outcrops and rocky slopes
Correll 128986, 6/27/1946, (LL)

Pellaea ovata (Desv.) Weath.
zigzag cliffbrake
Rare on rock outcrops and rocky slopes
Correll 12917, 6/28/1946 (LL); Warnock 47216, 3/27/1947 (SRSC)

THELYPTERIDACEAE

Thelypteris ovata R. P. St. John var. lindheimeri (C. Chr.) A. R. Sm.
Lindheimer's maiden fern
Rare in mesic drainages
Mears 2585, 4/27/2968 (TEX); Turner s.n., 9/13/1948 (SRSC); Warnock 21393, 7/29/1967 (SRSC, TEX); Warnock 22732, 8/10/1967 (SRSC); Warnock 40107, 5/24/1966 (SRSC); Warnock 47207, 3/29/1947 (LL, SRSC)

GYMNOSPERMS

CUPRESSACEAE

Juniperus ashei J. Buchholz
Ashe juniper
Infrequent on slopes or disturbed environments
Poole 4903, 10/7/2003 (TEX-NPS)

Juniperus pinchotii Sudw.
redberry juniper
Rare on uplands
Powell 3414, 3/31/1979 (SRSC)

EPHEDRACEAE

Ephedra antisypilitica Berland. ex C. A. Mey.
clap-weed, popote
Infrequent on rocky slopes and uplands
Labus 070a, 3/19/1988 (TEX); Amistad NRA Interpretive Collection

Ephedra aspera Engel. ex S. Watson
boundary ephedra
Rare on rocky slopes and uplands
Poole 4706, 2/19/2003 (TEX-NPS); Poole 4723, 2/21/2003 (TEX-NPS); Correll 23577, 4/15/1961 (LL)

Ephedra pedunculata Engel. ex S. Watson
vine joint-fir
Not seen during this study; dry banks of Devil’s River near Del Rio
Albers 46151, 8/30/1949 (TEX)
DICOTYLEDONS
ACANTHACEAE

Carlowrightia torreyana  Wassh. Torrey’s wrightwort
Infrequent on rocky slopes and uplands
Poole 4601, 6/27/2002 (TEX-NPS); Correll 19399, 7/7/1958 (LL); Turner 902, 5/22/1949 (TEX); Warnock 21390, 7/29/1967 (SRSC); Warnock 47135, 3/29/1947 (SRSC)

Dyschoriste linearis  (Torr. & A. Gray) Kuntze narrowleaf dyschoriste
Rare along drainages
McVaugh 10588, 5/22/1949 (US)

Justicia americana  (L.) Vahl American waterwillow
Rare in shallow water (locally common in the Devil’s River)
Poole 4655, 7/1/2002 (TEX-NPS); Correll 27776, 6/14/1963 (LL)

Ruellia corzoi  B. Tharp & F. A. Barkley Corzo’s wild petunia
Not seen during this study; rocky slopes and hills
McVaugh 8235, 5/9/1947 (TEX); Powell 3398, 10/27/1978 (SRSC)

Ruellia humilis  Nutt. fringeleaf wild petunia
Not seen during this study. Laughlin Air Force Base marina
Freeman s.n., 4/30/1977 (UTEP)

Ruellia nudiflora  (Engelm. & A. Gray) Urb. var. nudiflora violet wild petunia
Rare in flood plains (rarely frequent in uplands)
Poole 4656, 7/12/2002 (TEX-NPS); Amistad NRA Interpretive Collection

Ruellia runyonii  (Tharp & F. A. Barkley)  B.L. Turner
Runyon’s wild petunia
Rare in shaded canyons and along drainages
Correll 19401, 7/7/1958 (LL); Crutchfield 3394, 7/13/1967 (LL); Turner 915, 5/22/1949 (SRSC, TEX); Warnock 21389, 7/29/1967 (SRSC)

Ruellia occidentalis  (A. Gray) Tharp & F. A. Barkley western wild petunia
Rare (occasionally locally common) in understory in canyons and uplands
Poole 4680, 10/10/2002 (TEX-NPS); Poole 4822, 2/21/2003 (TEX-NPS); Poole 4914, 10/9/2003 (TEX-NPS); Skiles 4, 6/26/1952 (SRSC)

Ruellia parryi  A. Gray Parry’s wild petunia
Infrequent in canyons and uplands
Poole 4489, 4/17/2002 (TEX-NPS); Warnock 287, 4/10/1949 (SRSC); Warnock 22712, 8/10/1967 (SRSC); Warnock 47170, 3/19/1947 (SRSC)

Siphonoglossa pilosella  (Nees) Torr. hairy tubetongue
Infrequent in canyons and uplands
Poole 4538a, 5/22/2002 (TEX-NPS); Poole 4600, 6/27/2002 (TEX-NPS); Poole 4621, 7/11/2002 (TEX-NPS); Warnock 235, 4/10/1949 (SRSC); Warnock 47166, 3/29/1947 (SRSC)

Yeatesia platystegia  (Torr.) Hilsenb. Montell bractspike (C)
Rare in canyons
Poole 4640, 7/11/2002 (TEX-NPS)

AMARANTHACEAE

Alternanthera caracasana  Kunth mat chaff-flower
Rare in disturbed areas
Poole 4131, 9/6/1994 (TEX); Poole 4524, 5/21/2002 (TEX-NPS); Poole 4829, 6/20/2003 (TEX-NPS)
**Amaranthus palmeri** S. Watson  
Palmer’s amaranth  
Not seen during this study; Laughlin Air Force Base Recreation Area  
*Poole 4132, 9/6/1994 (TEX)*

**Amaranthus scleropoides** E. Uline & W. L. Bray  
bonebract amaranth  
Rare in rocky soils on slopes or uplands  
*Poole 4531, 5/22/2002 (TEX-NPS)*

**Froelichia arizonica** Thornber ex Standl.  
Arizona snakecotton  
Rare in canyons and on slopes  
*Poole 4547, 5/22/2002 (TEX-NPS)*

**Froelichia gracilis** (Hook.) Moq.  
slender snakecotton  
Not seen during this study; Seminole Canyon State Historical Park  
*Labus 374, 10/16/1988 (SWT)*

**ANACARDIACEAE**

**Pistacia mexicana** Kunth  
(T. texana Swingle)  
Texas pistachio  
Rare in canyons  
*Powell 1403, 4/17/1966 (SRSC); Powell 3055, 2/18/1977 (SRSC); Warnock 11805, 11/14/1953 (LL, SRSC)*

**Rhus microphylla** Engel. ex A. Gray  
littleleaf sumac  
Rare in canyons and uplands  
*Poole 4733, 3/25/2003 (TEX-NPS)*

**Rhus virens** L. ex A. Gray var. virens  
evergreen sumac  
Infrequent in canyons and uplands  
*Poole 4902, 10/7/2003 (TEX-NPS)*

**Toxicodendron radicans** (L.) Kuntze  
poison ivy  
Infrequent in mesic areas  
*Powell 1404, 4/17/1966 (SRSC); Traverse 2146, 5/10/1961 (LL)*

**APIACEAE**

**Ammoselinum butleri** (Engelm. ex S. Watson) J. M. Coulter & Rose  
Butler’s sand parsley  
Rare along river banks  
*Poole 4811, 5/20/2003 (TEX-NPS)*

**Ammoselinum popei** Torr. & A. Gray  
Pope’s sand parsley  
Infrequent in drainages and disturbed areas  
*Poole 4753, 3/27/2003 (TEX-NPS); Mears 2494, 4/16/1968 (TEX); Parks 256, 4/10/1949 (LL, SRSC); Powell 3442, 3/31/1979 (SRSC); Turner 914, 5/22/1949 (SRSC); Warnock 47169, 3/29/1947 (SRSC)*

**Bowlesia incana** Ruiz & Pav.  
hoary bowlesia  
Rare along intermittent drainages, creek and river banks  
*Whitehouse 11336, 4/1/1933 (SRSC)*

**Chaerophyllum tainturieri** Hook.  
chervil  
Rare in disturbed areas  
Observed once at the head of the south fork of San Pedro Creek but not collected  
*Crutchfield 3406, 7/13/1967 (LL)*

**Ciclospermum leptophyllum** (Pers.) Sprague ex Britton & P. Wilson  
slimlobe celery (I)  
(Apium leptophyllum (Pers.) F. Muell. ex Benth.)  
Not seen during this study; sandy loam river banks on Devil’s River (now inundated)  
*Crutchfield 3406, 7/13/1967 (LL)*
**Cicuta maculata** L.  
spotted water hemlock  
Not seen during this study; mud along Devil’s River bank (now inundated)  
*Crutchfield 3401, 7/13/1967 (LL)*

**Daucus pusillus** Michx.  
southwestern carrot  
Infrequent in disturbed areas  
*Poole 4764, 3/28/2003 (TEX-NPS)*

**Eryngium diffusum** Torr.  
bushy eryngo  
Rare in disturbed areas  
*Poole 4634, 3/27/2003 (TEX-NPS)*

**Eryngium leavenworthii** Torr. & A. Gray  
Leavenworth’s eryngo  
Rare on river banks and terraces in Devil’s River area  
*Poole 4634, 7/11/2002 (TEX-NPS)*

**Hydrocotyle verticillata** Thunb.  
whorled pennywort  
Rare in shallow water (locally common in Devil’s River area)  
*Poole 4587, 6/26/2002 (TEX-NPS); Correll 25082-A, 5/2/1962 (LL); Crutchfield 3409, 7/13/1967 (LL)*

**Spermolepis inermis** (Nutt. ex DC.) Mathias & Constance  
smooth scaleseed  
Locally common in intermittent drainages or other gravelly soil areas  
*Casaday 3, no date (Amistad NRA collection)*

**Torilis arvensis** (Huds.) Link  
sockbane (I)  
Infrequent in disturbed areas  
*Poole 4750, 3/27/2003 (TEX-NPS)*

**APOCYNACEAE**

**Amsonia longiflora** Torr. var. *salpignantha* (Woodson) McLaughlin  
trumpet slimpod  
Rare in rocky areas in canyons and drainages  
*Poole 4758, 3/28/2003 (TEX-NPS); Johnston 12435, 3/17/1976 (LL)*

**Telosiphonia macrosiphon** (Torr.) Henrickson  
plateau rock trumpet  
(Macroisiphonia macrosiphon (Torr.) A. Heller)  
Rare on rocky slopes and uplands  
*Freeman s.n., 4/30/1977 (UTEP); Thompson 214, 9/17/1958 (TEX)*

**ARISTOLOCHIACEAE**

**Aristolochia coryi** I.M. Johnst.  
Cory’s pipevine  
Infrequent on rocky slopes and rock outcrops  
*Poole 4131a, 9/6/1994 (TEX); Poole 4577, 5/24/2002 (TEX-NPS); Correll 32604, 4/21/1966 (LL); Turner 99-217, 5/1/1999 (SRSC, TEX); Wright 567, 7/17 & 7/25/1849 (GH)*

**ASCLEPIADACEAE**

**Asclepias oenotheroides** Schltdl. & Cham.  
longhorn milkweed  
Rare in grasslands  
*Poole 4515, 5/21/2002 (TEX-NPS); Poole 4820, 6/19/2003 (TEX-NPS)*

**Cynanchum barbigerum** (Scheele) Shinners  
bearded swallowwort  
Rare vine on shrubs on rocky slopes and flats  
*Poole 4915, 10/9/2003 (TEX-NPS)*
**Cynanchum maccartii** Shinners
Infrequent vine on shrubs on rocky slopes and flats
*Poole 4562, 5/22/2002 (TEX-NPS)*

**Cynanchum racemosum** (Jacq.) Jacq. var. *unifarium* (Scheele) Sundell
talyote
Rare vine on shrubs on rocky slopes and flats
*Poole 4568, 5/23/2002 (TEX-NPS); Correll 27777, 6/14/1963 (LL); Thompson 192, 9/17/1958 (TEX); Warnock 21375, 7/29/1967 (SRSC, TEX)*

**Matelea reticulata** (Engelm. ex A. Gray) Woodson
pearl milkvine
Rare vine on shrubs in canyons
*Poole 4642 & 4654, 7/11/2002 (TEX-NPS); Warnock 197, 4/10/1949 (LL)*

**Matelea sagittifolia** (A. Gray) Woodson ex Shinners
arrowleaf milkvine (C)
Not seen during this study; rocky hills
*McVaugh 7727, 3/31/1947 (TEX)*

**Sarcostemma crispum** Benth.
wavyleaf twinevine
Rare vine on shrubs on rocky slopes and flats
*Warnock 22878, 5/22/1969 (SRSC)*

**Ageratina havanensis** (Kunth) R. M. King & H. Rob.
shrubby boneset
*(Eupatorium havanense* Kunth)*
Rare on cliffs and rock outcrops
*Poole 4698, 10/30/2002 (TEX-NPS); Powell 3396, 10/27/1978 (SRSC, TEX)*

**Aphanostephus ramosissimus** DC. lazy daisy
Infrequent in grasslands or disturbed areas
*Poole 4596, 6/26/2002 (TEX-NPS); Poole 4664, 7/12/2002 (TEX-NPS)*

**Aphanostephus riddellii** Torr. & A. Gray
Riddell’s lazy daisy
Not seen during this study; Mile Canyon
*Warnock 261, 4/10/1949 (SRSC)*

**Artemisia dracunculus** L.
false tarragon sagewort
*(A. glauca* Pall. ex Willd.)*
Rare in disturbed areas
Observed once in the middle fork of San Pedro Creek but not collected

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**ASTERACEAE**

**Ageratina havanensis** (Kunth) R. M. King & H. Rob.
shrubby boneset
*(Eupatorium havanense* Kunth)*
Rare on cliffs and rock outcrops
*Poole 4698, 10/30/2002 (TEX-NPS); Powell 3396, 10/27/1978 (SRSC, TEX)*

**Amblyolepis setigera** DC. huisache daisy
Rare in grasslands
*Warnock 222, 4/10/1949 (SRSC)*

**Ambrosia artemisiifolia** L. common ragweed
Rare in disturbed areas
*Poole 4912, 7/21/1970 (TEX); Seigler DS-2757, 7/21/1970 (TEX)*

**Ambrosia psilostachya** DC. western ragweed
Infrequent in disturbed areas
*Poole 4596, 6/26/2002 (TEX-NPS); Poole 4664, 7/12/2002 (TEX-NPS)*

**Aphanostephus ramosissimus** DC. var. *ramosissimus*
lazy daisy
Infrequent in grasslands or disturbed areas
*Poole 4596, 5/22/2002 (TEX-NPS); Casaday 16, 5/4/2001 (Amistad NRA collection); Larson 9, no date (Amistad NRA collection); Mears 2500, 4/16/1968 (TEX); Warnock 259, 4/10/1949 (LL)*

**Aphanostephus riddellii** Torr. & A. Gray
Riddell’s lazy daisy
Not seen during this study; Mile Canyon
*Warnock 261, 4/10/1949 (SRSC)*
**Baccharis neglecta** Britton  
Abundant in the inundation zone, along drainages, creek, rivers, and disturbed areas  
Poole 4904, 10/7/2003 (TEX-NPS); Henrickson 22622, 10/9/1999 (TEX)

**Baccharis salicifolia** (Ruiz & Pav.) Pers.  
Seepwillow  
(B. glutinosa Pers.)  
Infrequent along drainages, creeks, and rivers  
Crutchfield 3414, 7/13/1967 (LL)

**Bahia absinthifolia** Benth. var. *dealbata* (A. Gray) A. Gray  
hairy-seed bahia  
Rare (locally common at a few sites) in rocky soils  
Poole 3768, 11/3/1993 (TEX-NPS); Poole 4685, 10/11/2002 (TEX-NPS); Casaday 6, no date (Amistad NRA collection); Warnock 47163, 3/29/1947 (LL, SRSC)

**Baileya multiradiata** Harv. & A. Gray  
Desert marigold  
Rare on rocky soils  
Amistad NRA Interpretive Collection; Tharp 8885, 6/14/1931 (TEX)

**Brickellia eupatorioides** (L.) Shinners var. *chlorolepis* (Wooton & Standl.) B. L. Turner  
Southwest kuhnia  
Rare in rocky, intermittent drainages  
Poole 4598, 6/26/2002 (TEX-NPS)

**Brickellia laciniata** A. Gray  
Sliptleaf brickellbush  
Infrequent in rocky, intermittent drainages  
Rear 4697, 10/29/2002 (TEX-NPS); Casaday 42, 6/18/2001 (Amistad NRA collection); Labus 373, 10/16/1988 (SWT)

**Calyptocarpus vialis** Less.  
Straggler daisy  
Infrequent (locally common in a few sites) along creek or river banks or disturbed sites  
McVaugh 8246, 5/9/1947 (TEX); Thompson 188, 9/17/1958 (TEX); Turner 884, 5/22/1949 (TEX)

**Carduus tenuiflorus** Curtis  
Slender bristlethistle (I)  
Rare along river banks  
Poole 4810, 5/20/2003 (TEX-NPS)

**Centaurea americana** Nutt.  
American basketflower  
Rare in disturbed gravelly soils  
Poole 4806, 5/14/2003 (TEX-NPS); Amistad NRA Interpretive Collection

**Centaurea melitensis** L.  
Yellow star-thistle (I)  
Common in disturbed areas  
Poole 4749, 3/27/2003 (TEX-NPS)

**Chaetopappa bellidifolia** (A. Gray & Engelm.) Shinners  
Hairy leasdtaisy (E)  
Infrequent in gravelly soils along intermittent drainages  

**Chaetopappa belliioides** (A. Gray) Shinners  
Manyflower leasdtaisy  
Infrequent in gravelly soils on slopes, rock outcrops, and uplands  
Poole 3272, 5/6/1993 (TEX); Poole 4492, 4/17/2002 (TEX-NPS); Poole 4531a, 5/22/2002 (TEX-NPS); Poole 4565, 5/22/2002 (TEX-NPS); Casaday 2, no date (Amistad NRA collection); Johnston 26, 4/1/1958 (TEX); Parks 228, 4/10/1949 (TEX); Powell 3451, 3/21/1979 (SRSC); Scuday 689, 7/1/1979 (SRSC); Warnock 47152, 3/29/1947 (SRSC); Worthington 8249, 5/17/1982 (UTEP); Worthington 12043, 6/2/1984 (UTEP)
Chaptalia texana Greene  
(C. nutans (L.) Pol. var. texana (Greene) Burkart)  
Rare on loamy soils in partial shade on slopes and uplands  
*Poole 4913, 10/9/2003 (TEX-NPS); Labus 336, 10/8/1988 (SWT)*

Chloracantha spinosa (Benth.) G. L. Nesom  
(spiny aster)  
(Aster spinosus Benth.; Erigeron ortegae S. F. Blake; Leucosyris spinosa (Benth.) Greene)  
Rare (locally common at a few sites) in disturbed mesic areas  
*Poole 4671, 10/9/2002 (TEX-NPS)*

Chrysactinia mexicana A. Gray  
damianita  
Rare on rocky soils and rock outcrops  
Observed at Laughlin Air Force Base Recreation Area and along Live Oak Creek but not collected

Cirsium texanum Buckley  
Texas thistle  
Infrequent in disturbed areas  
*Poole 4771, 4/9/2003 (TEX-NPS)*

Cirsium turneri Warnock  
Turner’s cliff thistle (C)  
Rare on cliffs  
*Poole 4901, 10/7/2003 (TEX-NPS)*

Conyza canadensis (L.) Cronquist var. canadensis  
horsetail conyza  
Rare in disturbed areas  
*Poole 4784, 4/11/2003 (TEX-NPS)*

Conyza coulteri A. Gray  
Coulter’s conyza  
Rare in disturbed areas  
*Poole 4729, 3/25/2003 (TEX-NPS); Reed 2252, 5/31/2001 (TAMU)*

Eclipta prostrata (L.) L.  
false daisy  
Not seen during this study; canyons along lower Devil’s River and Rio Grande between Langtry and the mouth of the Pecos River  
Warnock 11693, 9/26/1953 (SRSC); Warnock 11969, 3/28/1954 (SRSC)

Erigeron colomexicanus A. Nelson  
running fleabane  
Not seen during this study; Mile Canyon  
*Parks 249, 4/10/1949 (TEX)*

Erigeron modestus A. Gray  
Plains fleabane  
Infrequent on rocky soils, rock outcrops, and cliffs  
*Poole 4468, 4/17/2002 (TEX-NPS); Poole 4528, 5/12/2002 (TEX-NPS); Poole 4576, 5/24/2002 (TEX-NPS); Parks 249, 4/10/1949 (SRSC); Worthington 8252, 5/17/1982 (TEX, UTEP); Worthington 12030, 7/2/1984 (TEX, UTEP)*

Eupatorium greggii A. Gray  
Gregg’s eupatorium  
(Conoclinium dissectum A. Gray; C. greggii (A. Gray) Small)  
Rare in gravelly silty soils in drainages  
*Poole 4791, 5/8/2003 (TEX-NPS); Labus 397, 12/17/1988 (SWT, TEX)*

Eupatorium serotinum Michx.  
white boneset  
Rare (locally common in Big Satan Canyon) on rock outcrops and rocky soils  
*Poole 3763, 11/3/1993 (TEX); Poole 4628, 7/11/2002 (TEX-NPS); Thompson 185, 9/17/1958 (TEX)*

Evax prolifera Nutt. ex DC.  
flathead rabbit tobacco  
Infrequent in shallow soils and disturbed areas  
Observed at Big Satan Canyon, Hunt Areas 1, 2, 4 & 5, San Pedro Creek, Diablo East, and Live Oak Creek but not collected.
Evax verna Raf.  
(roundhead rabbit tobacco)  
*(Diaperia verna* (Raf.) Morefield)  
Infrequent (locally common at some sites) in shallow soils and disturbed areas  
*Labus 181, 5/11/1988 (SWT); Larson 3, 4/19/2002 (Amistad NRA collection); Mears 2497, 4/16/1968 (TEX); Parks 234, 4/10/1949 (LL, SRSC); Powell 3441, 3/3/1979 (SRSC); Reed 11965, 5/31/2001 (TAMU); Tharp 49332, 4/16/1949 (TEX); Warnock 11965, 3/28/1954 (SRSC)*

Florestina tripteris DC.  
sticky palafoxia

Flourensia cernua DC.  
tarbush

Flyriella parryi (A. Gray) R. M. King & H. Robs.  
(Shinner’s brickellbush (C))  
(Rickellia shineri M. E. Jones ex Flyr)  
Rare (locally common in Seminole Canyon & Pink Cave Cove) on cliffs & boulders  
*Poole 4465, 4/17/2002 (TEX-NPS); Correll 32610, 4/21/1966 (LL); Labus 142, 5/10/1988 (SWT)*

Gaillardia coahuilensis B. L. Turner  
Coahuila Indian blanket  
(misapplied as G. mexicana A. Gray)  
Rare on gravelly soils in disturbed areas or on rock outcrops  
*Poole 4579, 5/24/2002 (TEX-NPS); Turner 15681, 5/31/1987 (SRSC, TEX)*

Gaillardia pinnatifida Torr.  
slender gaillardia

Rare on gravelly soils in intermittent drainages  
Observed in small canyon along Devil’s River but not collected.

Gaillardia pulchella Foug. var. pulchella  
Indian blanket

Gaillardia suavis (Englem. & A. Gray) Britton & Rusby  
rayless gaillardia

Rare on rocky soils  
*Parks 203, 4/10/1949 (SRSC)*

Gochnatia hypoleuca (DC.) A. Gray  
chomonque

Rare on rocky slopes  
*Poole 4687, 10/11/2002 (TEX-NPS); Amistad Interpretive Collection*

Gutierrezia microcephala (DC.) A. Gray  
threadleaf snakeweed  
(Xanthocephalum microcephalum (DC.) Shinners)  
Infrequent (locally at some sites) on gravelly silty soils or rock outcrops in inundation zone  
*Poole 4600a, 6/27/2002 (TEX-NPS); Poole 4909, 10/7/2003 (TEX-NPS); Labus 287, 8/24/1988 (SWT)*

Gutierrezia sarothrae (Pursh) Britton & Rusby  
broom snakeweed  
(Xanthocephalum sarothrae (Pursh) Shinners)  
Not seen during this study; Laughlin Air Force Base Recreation Area  
Observed but not collected (Texas Natural Heritage Program 1995)

Gutierrezia sphaerocephala A. Gray  
roundleaf snakeweed  
Rare in disturbed areas  
*Poole 4136, 9/7/1994 (TEX); Thompson 208, 9/17/1958 (TEX)*

Gymnosperma glutinosa Less.  
tatalencho

Common on rocky soils and rock outcrops  
Observed at numerous locations but not collected
**Haploesthes greggii** A. Gray var. *texana* (J. M. Coulter) I. M. Johnst. false broomweed
Not seen during this study; Eagle Cave Canyon & Hwy 90 bridge over Amistad Reservoir
Correll 32607, 4/21/1966 (LL); Worthington 8247, 5/17/1982 (UTEP)

**Helenium elegans** DC. var. *elegans* pretty sneezeweed
Not seen during this study; Laughlin Air Force Base Recreation Area
Observed but not collected (Texas Natural Heritage Program 1995)

**Helenium microcephalum** DC. var. *microcephalum* smallhead sneezeweed
Infrequent on gravelly slopes in inundation zone
*Poole 4517, 5/21/2002 (TEX-NPS); Larson 19, 6/19/2001 (Amistad NRA collection);
Warnock 919, 5/22/1949 (SRSC); Worthington 2035, 7/12/1984 (UTEP)*

**Helianthus annuus** L. common sunflower
Rare in disturbed areas
*Poole 4930, 10/10/2003 (TEX-NPS)*

**Heterotheca fulcrata** (Greene) Shinners rocky goldaster
Rare (locally common at most sites) on gravelly soils
*Poole 4581, 5/24/2002 (TEX-NPS); Warnock 21379, 7/29/1967 (SRSC); Warnock 22717, 8/10/1967 (SRSC)*

**Heterotheca subaxillaris** (Lam.) Britton & Rusby camphorweed
Rare (locally common at most sites) on rock outcrops and cliffs
*Warnock W853, 10/12/1940 (SRSC, TEX)*

**Hymenoxys odorata** DC. fragrant bitterweed
Rare on rocky silty soils on flats and slopes in inundation zone
*Poole 4563, 5/22/2002 (TEX-NPS); Warnock 47177, 3/29/1947 (SRSC)*

**Lactuca serriola** L. wild lettuce (I)
Infrequent in rocky slopes in inundation zone & disturbed areas
*Poole 4523, 5/21/2002 (TEX-NPS); Reed 2247, 5/31/2001 (TAMU)*

**Lindheimera texana** A. Gray & Engelm. Texas star
Not seen during this study; Devil’s River dam (now inundated)
*McVaugh 7735, 3/31/1947 (TEX)*

**Machaeranthera pinnatifida** (Hook.) Shinners var. *pinnatifida* lacy tansyaster
Rare (locally common at one site) in rocky caliche soils on gentle slopes
*Poole 4519, 5/21/2002 (TEX-NPS)*

**Melampodium cinereum** DC. var. *hirtellum* Stuessy blackfoot daisy
Rare in gravelly soils
*Warnock 47155, 3/28/1947 (SRSC)*

**Melampodium leucanthum** Torr. & A. Gray plains blackfoot daisy
Rare in gravelly, silty soils along intermittent drainages
*Freeman s.n., 4/30/1977*

**Palafoxia callosa** (Nutt.) Torr. & A. Gray small palafoxia
Rare (locally common at one site) on rock slopes & outcrops
*Poole 3767, 11/3/1993 (TEX); Poole 4690, 10/29/2002 (TEX-NPS); Labus 133, 5/10/1988 (SWT)*

**Palafoxia texana** DC. var. *texana* Texas palafoxia
Rare on gravelly soils
*Warnock 22887, 4/1/1969 (SRSC)*

**Parthenium confertum** A. Gray lyreleaf parthenium
Common on gravelly slopes
*Poole 4488, 4/17/2002 (TEX-NPS); Labus 107, 4/23/1988 (SWT); Larson 40, 6/18/2001 (Amistad NRA collection);
Thompson 206, 9/17/1958 (TEX); Warnock 685, 4/30/1949 (SRSC)
Parthenium hysterophorus L.  
ragweed parthenium  
Not seen during this study; Laughlin Air Force Base Recreation Area  
Observed but not collected (Texas Natural Heritage Program 1995)

Parthenium incanum Kunth  
mariola  
Infrequent in gravelly intermittent drainages

Poole 4703, 10/31/2002 (TEX-NPS); Labus 11, 11/22/1987 (SWT); Labus 324, 10/1/1988 (SWT)

Perityle angustifolia (A. Gray) Shinners narrowleaf rockdaisy (C, E)  
Infrequent (locally common in some sites) on cliffs and rock outcrops

Labus 233, 5/23/1988 (SWT); Skiles 7, 6/26/1952 (SRSC); Turner 280-5, 9/13/1948 (SRSC); Warnock 11755, 9/26/1953 (SRSC); Warnock 22705, 8/10/1967 (SRSC); Warnock 23612, 5/24/1966 (SRSC); Worthington 12027, 6/2/1984 (UTEP)

Perityle lindheimeri (A. Gray) Shinners Lindheimer rockdaisy  
Rare (locally common in Big Satan Canyon) on cliffs and rock outcrops

Observed at several sites (Devil’s River, San Pedro Creek area, & Blackbrush Point) but not collected

Pinaropappus roseus (Less.) Less. rock lettuce  
Common on rocky soils, often in disturbed sites

Powell 3438, 3/31/1979 (SRSC); Warnock 47149, 3/29/1947 (SRSC)

Pluchea odorata (L.) Cass. purple pluche  
Rare along creek or riverbanks or associated wetlands

Poole 3760, 11/2/1993 (TEX); Hanks 2, 10/5/1980 (SRSC)

Porophyllum scoparium A. Gray poreleaf  
Common on rocky soils, rock outcrops, and cliffs

Poole 4234, 9/6/1994 (TEX)

Pseudognaphalium luteoalbum (L.) Hilliard & B. L. Burtt Jersey cudweed (I)  
Rare in rocky to silty soils on flats or rocky slopes in inundation zone

Poole 4550, 5/22/2002 (TEX-NPS); Poole 4614, 6/28/2002 (TEX-NPS)

Psilostrophe gnaphalodes DC. cudweed paperflower  
Rare (locally common at one site) on rocky slopes

Poole 4503, 5/21/2002 (TEX-NPS); Labus 26, 11/11/1987 (SWT); Labus 349, 10/9/1988 (SWT)

Psilostrophe tagetina (Nutt.) Greene var. cerifera (A. Nelson) B. L. Turner hairy paperflower  
Not seen during this study; bluffs of Rio Grande, Langtry

Worthington 12044, 6/2/1984 (UTEP)

Pyrrhopappus pauciflorus (D. Don) DC. manystem false dandelion  
Not seen during this study

Worthington 22896, 4/11/1969 (SRSC)

Ratibida columnifera (Nutt.) Wooton & Standl. Mexican hat  
Infrequent (locally common at some sites) in grasslands and disturbed sites

Freeman s.n., 4/30/1977 (UTEP); Labus 93, 4/23/1988 (SWT); Labus 192, 5/10/1988 (SWT); Reed 2262, 5/31/2001 (TAMU)

Senecio flaccidus Less. var. flaccidus threadleaf groundsel  
(S. douglasii DC. var. jamesii (Torr. & A. Gray) Ediger ex Correll & M. C. Johnst.; S. douglasii DC. var. longilobus (Benth.) L. D. Benson)  
Common in grasslands and rocky slopes in inundation zone

Poole 4713, 2/20/2003 (TEX-NPS); Labus 5, 11/22/1987 (SWT); Labus 68, 3/19/1988 (SWT)

Simsia calva (Engelm. & A. Gray) A. Gray bush sunflower  
Infrequent on gravelly slopes

Poole 4480, 4/17/2002 (TEX-NPS); Poole 4508, 5/21/2002 (TEX-NPS); Powell 3445, 3/31/1979 (SRSC); Spooner 11739, 9/26/1953 (SRSC); Warnock 47137, 3/29/1947 (SRSC); Warnock 47182, 3/29/1947 (SRSC)
Solidago juliae G. L. Nesom  
Julia’s goldenrod  
Rare on rock outcrop in river  
Poole 4919, 10/19/2003 (TEX-NPS)

Sonchus oleraceus L.  
common sowthistle (1)  
Infrequent in disturbed sites  
Poole 4728, 3/7/2003 (TEX-NPS)

Symphyotrichum divaricatum (Nutt.) G. L. Nesom  
hierba del marrano (Aster subulatus Michx. var. ligulatus Shinners)  
Not seen during this study; Laughlin Air Force Base Recreation Area, Devil’s River hwy bridge, Pecos River east bank south of Hwy 90 high bridge  
Poole 3757, 11/2/1993 (TEX); Henrickson 22624, 10/9/1999 (TEX); Warnock 11674, 9/26/1953 (TEX)

Symphyotrichum expansum (Poepp. ex Spreng.) G. L. Nesom  
southwestern annual saltmarsh aster  
Not seen during this study; Devil’s River at hwy bridge & island west of Devil’s River channel  
Powell 3397, 10/27/1978 (SRSC); Warnock 11718, 9/26/1953 (SRSC)

Tetragonotheca texana A. Gray & Engelm.  
Plateau nerveray  
Rare on gravelly soils  
Observed once in Big Satan Canyon but not collected

Tetaneuris scaposa (DC.) Greene var. argyrocaulon (K. F. Parker) K. F. Parker  
clustered bitterweed  
Rare in caliche soils in disturbed areas  
Poole 4794, 5/8/2003 (TEX-NPS)

Thelesperma megapotamicum (Spreng.) Kuntze  
bighhead greenthread  
Rare in rocky intermittent drainages, rocky soils, and rock outcrops  
Observed in Big Satan Canyon & canyon 71 but not collected

Thelesperma simplicifolium A. Gray  
slender greenthread  
Infrequent on gravelly flats and slopes  
Poole 4485, 4/17/2002 (TEX-NPS); Poole 4510, 5/21/2002 (TEX-NPS); Labus 109, 226, 228, 4/23/1988 (SWT); Reed 2263, 5/31/2001 (TAMU)

Thymophylla acerosa (DC.) Strother  
needle dogweed (Dyssodia acerosa DC.)  
Infrequent (locally common at several sites) on rocky flats and slopes  
Poole 3758, 11/2/1993 (TEX); Poole 4511, 5/21/2002 (TEX-NPS); Larson 20, 6/19/2001 (Amistad NRA collection); Powell 3412, 3/31/1979 (SRSC)

Thymophylla micropoides (DC.) Strother  
woolly dogweed (Dyssodia micropoides DC.)  
Common on rocky flats  
Poole 4689, 10/11/2002 (TEX-NPS); Labus 2, 11/22/1987 (SWT); Powell 3432, 3/31/1979 (SRSC); Tharp 8825, 6/14/1931 (SWT); Warnock 11708, 9/26/1953 (SRSC); Warnock 47150, 3/29/1947 (SRSC); Worthington 8251, 5/17/1982 (UTEP); Worthington 26169, 3/16/1997 (UTEP)

Thymophylla pentachaeta (DC.) Small var. pentachaeta  
parralena (Dyssodia pentachaeta (DC.) B. L. Robs.)  
Infrequent (locally common at a few sites) on rocky flats and slopes, disturbed sites  
Poole 4521, 5/21/2002 (TEX-NPS); Poole 4745, 3/26/2003 (TEX-NPS); Casaday 19, 5/14/2001 (Amistad NRA collection)

Thymophylla setifolia Lag. var. radiata (A. Gray) Strother  
Texas pricklyleaf (Dyssodia setifolia (Lag.) B. L. Robs. var. radiata (A. Gray) Strother; D. setifolia (Lag.) B. L. Robs. var. greggii (A. Gray) M. C. Johnst.; D. greggii (A. Gray) B. L. Robs.; T. greggii A. Gray)
Rare (locally common at one site) on rocky slopes and flats, disturbed sites
Observed at Indian Cliffs canyon, San Pedro Creek area, Spur 454 campground, Blackbrush Point, and Hunt Area 2 but not collected

**Thymophylla tenuiloba** (DC.) Small var. *tenuiloba*  
(Dyssodia tenuiloba (DC.) B. L. Rob.)
Common on rocky flats and slopes, disturbed areas  
*Poole 4553, 5/22/2002 (TEX-NPS); Correll 27124, 3/31/1963 (LL); Warnock 11683, 9/26/1953 (LL)*

**Thymophylla tenuiloba** (DC.) Small var. *treculii* (A. Gray) Strother
Trecul’s bristleleaf dogweed  
(Dyssodia tenuiloba (DC.) B. L. Rob. var. *treculii* (A. Gray) Strother; *D. treculii* (A. Gray) B. L. Rob.)
Rare on rocky flats and slopes  
*Larsen 8, 4/19/2001 (Amistad NRA collection)*

**Verbesina encelioides** (Cav.) Benth. & Hook. f. ex A. Gray
Cowpen daisy  
Infrequent on gravelly flats and slopes, disturbed areas  
*Poole 4782, 4/10/2003 (TEX-NPS); Labus 162, 5/10/1988 (SWT); Labus 190, 5/11/1988 (SWT); Hanks 1, 11/8/1980 (SRSC); Warnock 279, 4/10/1949 (SRSC); Warnock 11759, 9/26/1953 (SRSC)*

**Viguiera stenoloba** S. F. Blake  
Skeletonleaf goldeneye  
Rare on thin rocky soils over bedrock  
*Poole 4931, 10/10/2003 (TEX-NPS); Warnock11682, 9/26/1953 (SRSC)*

**Wedelia acapulcensis** Kunth var. *hispida* (Kunth) Strother  
Hairy zexmenia  
(W. *hispida* Kunth; W. *texana* (A. Gray) B. L. Turner; Zexmenia *hispida* (Kunth) A. Gray)
Frequent on rocky flats and slopes, rock outcrops and disturbed areas  
*Labus 254, 5/23/1988 (SWT); McVaugh 10592, 5/22/1949 (SRSC); Warnock 11738, 9/26/1953 (SRSC); Worthington 12048, 6/2/1984 (UTEP)*

**Xanthium strumarium** L.  
Cocklebur  
Infrequent on silty floodplains and mesic areas in disturbed sites  
*Poole 4917, 10/9/2003 (TEX-NPS)*

**BERBERIDACEAE**

**Berberis trifoliolata** Moric.  
Agarita  
(Mahonia trifoliolata (Moric.) Fedde)
Common on upland rocky flats and slopes  
*Flyr 916, 3/26/1966 (TEX); Labus 71, 3/19/1988 (SWT, TEX, TAMU); Mears 2602, 4/17/1968 (TEX); Parks 201, 4/10/1949 (SRSC)*

**BIGNONIACEAE**

**Chilopsis linearis** (Cav.) Sweet  
Desert willow  
Rare on gravelly soils in intermittent drainages, on rocky outcrops and rocky slopes  
*Poole 4808, 5/19/2003 (TEX-NPS); Traverse 2145, 5/10/1961 (LL)*

**Tecoma stans** (L.) Juss. ex Kunth  
Yellow bells  
Rare (locally common at one site) on rocky slopes, rock outcrops, and cliffs  
Observed in Deadman’s Canyon but not collected
BORAGINACEAE

**Cryptantha mexicana** (Brandegee) I. M. Johnst.
Mexican cryptantha
Infrequent on rocky slopes
*Poole 3273, 5/6/1993 (TEX); Poole 3817, 4/11/1994 (TEX); Poole 4474, 4/17/2002 (TEX-NPS); Poole 4535, 5/22/2002 (TEX-NPS); Parks 252, 4/10/1949 (SRSC); Reed 2246, 5/31/2002 (TAMU); Warnock 47171, 3/29/1947 (SRSC)

**Cryptantha palmeri** (A. Gray) Payson
Palmer’s cryptantha
(C. coryi I. M. Johnst.)
Not seen during this study; Castle Canyon Island
*Powell 3429, 3/31/1979 (SRSC)

**Heliotropium confertifolium** (Torr.) Torr. ex A. Gray
leafy heliotrope
Rare on silty, rocky slopes in inundation zone
*Poole 4831, 6/20/2003 (TEX-NPS); Parks 231, 4/10/1949 (SRSC)

**Heliotropium curassavicum** L.
seaside heliotrope
Infrequent (locally common in inundation zone) on silty flats and gentle slopes
*Worthington 12038, 6/2/1984 (UTEP)

**Heliotropium procumbens** Mill.
fourspike heliotrope
Rare on rocky, silty soils in intermittent drainages
*Poole 4800, 5/9/2003 (TEX-NPS)

**Heliotropium torreyi** I. M. Johnst.
Torrey heliotrope
Frequent on gravelly flats and slopes
*Poole 4688, 10/11/2002 (TEX-NPS); Jones 8031, 3/16/1992 (UTEP); Powell 3389, 10/27/1978 (SRSC)

**Lappula occidentalis** (S. Watson)
Greene flatspine stickseed
(L. redowskii (Hornem.) Green)
Rare on gravelly slopes
*Poole 4490, 4/17/2002 (TEX-NPS)

**Lithospermum matamorense** DC.
rough gromwell
Rare on steep rocky outcrops
*Poole 4545a, 5/12/2002 (TEX-NPS); Mears 2564, 4/16/1968 (TEX)

**Lithospermum parksii** I. M. Johnst.
Parks’ gromwell
Not seen during this study; Laughlin Air Force Base Marina
*Freeman s.n., 4/30/1977 (UTEP)

**Omphalodes aliena** A. Gray
Mexico navelseed
Rare on rocky uplands
*Correll 30816, 4/3/1965 (LL); McVaugh 7699, 3/29/1947 (SRSC); Turner 528, 4/18/1949 (SRSC); Warnock 224, 4/10/1949 (SRSC); Warnock 47200, 3/27/1947 (SRSC); Worthington 26180, 3/16/1997 (UTEP)

**Tiquilia canescens** (A. DC.) A. T. Richardson
gray coldenia
Frequent on rocky flats, slopes, and uplands
*Larson 37, 6/19/2001 (Amistad NRA collection)

BRASSICACEAE

**Descurainia pinnata** (Walter) Britton
tansy mustard
Infrequent on silty flats and disturbed areas
*Poole 4717, 2/20/2003 (TEX-NPS); Correll 27139-A, 3/30/1963 (LL); Flyr 903, 3/26/1966 (TEX); Parks 270, 4/10/1949 (LL)
Draba cuneifolia Nutt. ex Torr. & A. Gray
Rare on rocky flats
Warnock 47138, 3/29/1947 (SRSC, TEX)

Lepidium austrinum Small
hairy peppergrass
(L. lasiocarpum Nutt. ex Torr. & A. Gray var. orbiculare (Thell.) C. L. Hitchc.)
Rare on gravelly clay flats and gentle slopes, inundation zone
Poole 4521a, 5/21/2002 (TEX-NPS); Flyr 889, 3/26/1966 (TEX); Flyr 971, 4/1/1966 (TEX);
Hinckley 411, 3/10/1950 (SRSC); Warnock 47148, 3/29/1947 (SRSC)

Lepidium lasiocarpum Nutt. ex Torr. & A. Gray var. wrightii (A. Gray) C. L. Hitchc.
hairypod peppergrass
Common on silty flats and rock outcrops
Poole 4718, 2/20/2003 (TEX-NPS); Poole 4801, 5/9/2003 (TEX-NPS); Flyr 339, 3/16/1965 (TEX);
Parks 272, 4/3/1953 (LL); Powell 3444, 3/31/1979 (SRSC); Warnock 214, 4/1/1949 (LL);
Warnock 3899 & 3900, 3/31/1959 (SRSC); Warnock 47184, 3/29/1947 (SRSC)

Lepidium virginicum L.
smooth pepperweed
Rare in disturbed areas
Observed at Rough Canyon Marina and a canyon near Rio Grande buoy 22S, but not collected

Nerisyrenia camporum (A. Gray) Greene
mesa greggii
Not seen during this study; west of Comstock on Rio Grande & Seminole Canyon State Historical Park
Johnston 8, 12/1958 (TEX); Labus 123, 4/23/1988 (SWT); Labus 224, 5/18/1988 (SWT)

Physaria argyrocaea (A. Gray) O’Kane & Al-Shehbaz
silver bladderpod
(Lesquerella argyrocaea (A. Gray) S. Watson)
Infrequent on rocky slopes
Poole 3814, 11/1/1994 (TEX); Poole 4573, 5/24/2003 (TEX-NPS); Poole 4716, 2/20/2003 (TEX-NPS);
Correll 27122, 3/31/1963 (LL); Larson 5, 4/19/2001 (Amistad NRA collection);
Rollins 6156, 4/15/1961 (LL)

Physaria fendleri (A. Gray) O’Kane & Al-Shehbaz
Fendler’s bladderpod
(Lesquerella fendleri (A. Gray) S. Watson)
Rare on silty or rocky soils on river banks or on rock outcrops or cliffs
Labus 124, 4/23/1988 (SWT); Labus 189, 5/11/1988 (SWT); McVaugh 7734, 3/31/1947 (TEX);
Neff 95-4-15-4, 4/15/1992 (TEX); Warnock 11959, 3/28/1954 (SRSC); Warnock 47133, 3/29/1947 (SRSC);
Worthington 55817, 3/16/1997 (UTEP)

Physaria gordonii (A. Gray) O’Kane & Al-Shehbaz
Gordon bladderpod
(Lesquerella gordonii (A. Gray) S. Watson)
Not seen during this study; Laughlin Air Force Base Marina
Freeman s.n., 4/30/1977 (UTEP)

Physaria gracilis (Hook.) O’Kane & Al-Shehbaz
spreading bladderpod
(Lesquerella gracilis (Hook.) S. Watson)
Rare on rocky soils
Powell 3439, 3/31/1979 (SRSC); Worthington 8248, 5/17/1982 (UTEP)

Physaria purpurea (A. Gray) O’Kane & Al-Shehbaz
rose bladderpod
(Lesquerella purpurea (A. Gray) S. Watson)
Not seen during this study; Mile Canyon and Pump Canyon
Correll 19408, 7/7/1958 (LL); Flyr 336, 3/6/1965 (TEX); Flyr 841, 11/20/1965 (TEX);
Flyr 1004, 4/3/1966 (TEX); Parks 280, 4/10/1949 (TEX); Rollins 6160, 4/15/1961 (LL)

Rorippa teres (Michx.) Stickney var. teres
southern marsh yellow cress
Not seen during this study; Mile Canyon
Parks 284, 4/10/1949 (TEX)
**Sisymbrium irio** L.  
London rocket (I)  
Rare on silty flats, disturbed areas  
*Poole 4719, 2/20/2003 (TEX-NPS); Warnock 47165, 3/29/1947 (LL, SRSC)*

**Streptanthus platycarpus** A. Gray  
broadpod twistflower (C)  
Rare on rocky slopes, rock outcrops, and cliffs  
*Hinckley 417, 3/10/1950 (SRSC, TEX); Turner 492, 4/18/1949 (SRSC); Warnock 11962, 3/28/1954 (SRSC); Warnock 47128, 3/28/1947 (SRSC, TEX)*

**CACTACEAE**

**Ancistrocactus breviamatus** (Engelm.) Britton & Rose  
rosy flowered fishhook cactus  
(Sclerocactus breviamatus (Engelm.) D. R. Hunt var. breviamatus)  
Infrequent on rocky slopes and flats  
*Poole 4712, 2/19/2003 (TEX-NPS)*

**Ancistrocactus uncinatus** (Galeotti ex Pfeiff.) L. D. Benson var. wrightii (Engelm.) L. D. Benson  
Chihuahuan fishhook cactus  
(Glandulicactus uncinatus (Galeotti ex Pfeiff.) Backeb. var. wrightii (Engelm.) Backeb.;  
Sclerocactus uncinatus (Galeotti ex Pfeiff.) N. P. Taylor var. wrightii (Engelm.) N. P. Taylor)  
Rare on rock outcrops, ledges, and cliffs  
Observe at Diablo East Viewpoint picnic area but not collected

**Ariocarpus fissuratus** (Engelm.) K. Schum.  
living rock  
Not seen during this study; hills near mouth of Pecos River  
*Bigelow s.n., 1852 (MO)*

**Coryphantha echinus** (Engelm.) Britton & Rose  
sea urchin cactus  
(C. cornifera (DC.) Lem. var. echinus (Engelm.) L. D. Benson)  
Rare on rocky soils and rock outcrops  
Observed at Rough Canyon, San Pedro Creek, Diablo East Viewpoint picnic area, Hunt Area 2, and Live Oak Creek but not collected

**Coryphantha pottsiana** (Poselger) A. D. Zimmerman  
Pott’s cory cactus  
Rare on rocky slopes and flats  
*Warnock 22845, 5/28/1969 (SRSC); Worthington 8260, 5/17/1982 (UTEP)*

**Coryphantha robertii** A. Berger var. wrightii (Engelm.) J. Schum.  
junior Tom Thumb cactus  
(Escobaria enskoevetieriana Borg)  
Infrequent (locally common at some sites) on rocky flats and slopes  
*Poole 4711, 2/19/2003 (TEX-NPS)*

**Coryphantha sulcata** (Engelm.) Britton & Rose  
pineapple cactus  
Infrequent on rocky soils and rock outcrops  
Observed at Rough Canyon, Hunt Areas 1, 4 & 5, Blackbrush Point, Diablo East, Governor’s Landing, & Rock Quarry campground but not collected

**Echinocactus horizonthalonius** (Lem.)  
eagle’s claw  
Rare in rocky soil  
Observed at Hunt Area 2 but not collected.

**Echinocactus texensis** Hopffer  
horsecrippler  
Rare in rocky soil.  
Observed at Hunt Areas 1, 2, 4 & 5, San Pedro Creek, & Governor’s Landing but not collected.
**Echinocereus enneacanthus** Engelm. var. *enneacanthus*  
*(E. enneacanthus Engelm. var. *dubius* (Engelm.) L. D. Benson)*  
Common on gravelly flats  
Poole 4827, 6/19/2003 (TEX-NPS)

**Echinocereus pectinatus** (Scheidw.) Engelm. var. *wenigeri* L. D. Benson  
Weniger’s hedgehog cactus  
Rare on rocky flats  
Observed at Hunt Area 2 but not collected.

**Echinocereus triglochidiatus** Engelm. var. *paucispinus* W. T. Marshall  
(*/E. coccineus* Engelm. var. *paucispinus* D. J. Ferguson)  
Infrequent on rocky flats, outcrops, ledges, and bluffs  
Poole 4779, 4/10/2003 (TEX-NPS)

**Epithelantha micromeris** (Engelm.) F. A. C. Weber ex Britton & Rose  
button cactus  
Rare on shallow gravelly soils over bedrock  
Poole 4710, 2/19/2003 (TEX-NPS)

**Ferocactus hamatocactus** (Muehlenpf.) Britton & Rose  
Turks’ head cactus  
Common on outcrops and cliffs  
Widespread throughout the area but not collected.

**Mammillaria heyderi** Muehlenpf. var. *heyderi*  
flattened mammillaria  
Infrequent on shallow, gravelly soils  
Observed at numerous sites but not collected

**Mammillaria prolifera** (Mill.) Haw. var. *texana* (Engelm.) Borg  
hair-covered cactus  
Rare on gravelly soils on gentle slopes and uplands  
Brady s.n., no date (SRSC)

**Neolloydia conoidea** (DC.) Britton & Rose  
Chihuahuan beehive  
Rare on rocky slopes  
Observed at Hunt Area 1, Rough Canyon on the Rio Grande & Live Oak Creek but not collected

**Opuntia atrispina** Griffiths  
Border pricklypear  
Common on shallow, rocky soils on flats and uplands  
Poole 4789, 5/8/2003 (TEX-NPS); Fields 2556, 4/15/1960 (TEX); Grant 77-32, 4/21/1978 (TEX)

**Opuntia engelmannii** Salm-Dyck ex Engelm. var. *lindheimeri* (Engelm.) B. D. Parfitt & Pinkava  
Lindheimer pricklypear  
(O. *lindheimeri* Engelm.)  
Abundant on rocky flats, slopes, rock outcrops, and ledges  
Poole 4789, 5/8/2003 (TEX-NPS); Zimmerman 2282, 9/7/1985 (SRSC)

**Opuntia leptocaulis** DC.  
tasajillo  
Abundant on rocky flats, slopes, rock outcrops, and disturbed areas  
Poole 4907, 10/7/2003 (TEX-NPS); Labus 29, 11/22/1987 (SWT, TEX)

**Opuntia phaeacantha** Engelm.  
brownspine pricklypear  
Infrequent on rocky flats, slopes, rock outcrops, and ledges  
Observed scattered throughout area but not collected

**Opuntia schottii** Engelm. var. *schottii*  
dog cholla  
Rare (locally abundant at one site) on shallow rocky soils on flats  
Schott s.n., 10/1853 (MO)

**Thelocactus setispinus** (Engelm.) E. F. Anderson  
twisted rib cactus  
(Ferocactus setispinus (Engelm.) L. D. Benson)  
Rare on gravelly flats  
Poole 4824, 6/19/2003 (TEX-NPS)
CAMPANULACEAE

*Lobelia berlandieri* A. DC. var. *brachypoda* (A. Gray) McVaugh
(L. *brachypoda* (A. Gray) Small)
Rare in shallow water or on rocky soils or ledges at edges of rivers
Correll 15995, 4/18/1957 (LL); Correll 25073, 5/21/1962 (LL); Turner 890, 5/22/1949 (SRSC); Warnock 23662, 5/24/1966 (SRSC)

*Triodanis coloradoensis* McVaugh
Colorado Venus’ looking-glass
Rare on rocky slopes, flats, and intermittent drainages
Freeman s.n., 4/30/1977 (UTEP); McVaugh 8239, 5/9/1947 (TEX)

*Triodanis leptocarpa* Nieuwl.
slimpod Venus’ looking-glass
Not seen during this study; Amistad Dam
Warnock 22873, 5/22/1959 (SRSC)

*Triodanis perfoliata* (L.) Nieuwl.
Venus’ looking-glass
Rare on rocky slopes, flats, and intermittent drainages
Turner 519, 4/18/1949 (SRSC); Turner 896, 5/22/1949 (TEX); Warnock 226, 4/10/1949 (SRSC)

CAPPARIDACEAE

*Koeberlinia spinosa* Zucc.
allthorn
Infrequent on rocky flats and slopes
Labus 194, 5/18/1988 (SWT); Labus 378, 10/16/1988 (SWT, TEX)

*Polanisia dodecandra* (L.) DC. var. *trachysperma* (Torr. & A. Gray) Iltis clammyweed
Rare in gravelly soils along intermittent drainages, creeks, and rivers
Poole 4626, 7/11/2002 (TEX-NPS); Flyr 765, 10/11/1965 (TEX); Amistad NRA Interpretive collection; Thompson 205, 9/17/1958 (TEX)

CARYOPHYLLACEAE

*Arenaria benthamii* Fenzl ex Torr. & A. Gray
Bentham sandwort
Infrequent on rocky soils
Poole 4755, 3/27/2003 (TEX-NPS); Mears 2596, 4/17/1968 (TEX); Parks 227, 4/10/1949 (SRSC); Warnock 47212, 3/19/1947 (SRSC)

*Paronychia jamesii* Torr. & A. Gray
James nailwort
Not seen during this study; Mile Canyon & Seminole Canyon State Historical Park
Labus 400, 12/17/1988 (SWT); Parks 223, 4/10/1949 (SRSC)

*Silene antirrhina* L.
sleepy catchfly
Not seen during this study; Mile Canyon
Parks 251, 4/10/1949 (LL, SRSC)

CELASTRACEAE

*Mortonia sempervirens* A. Gray
rough mortonia
Not seen during this study; bluffs along the Rio Grande around Langtry
Correll 34157, 5/19/1967 (LL); Tharp 49331, 4/16/1949 (LL); Worthington 12028, 6/2/1984 (UTEP)

*Schaefferia cuneifolia* A. Gray
desert yaupon
Common on rocky flats, slopes, and uplands
Labus 32, 11/22/1987 (TEX); McVaugh 7738, 3/331/1947 (TEX)
CHENOPODIACEAE

Chenopodium berlandieri Moq. var. berlandieri
Rare on gravelly soils along intermittent drainages, creeks and rivers
Poole 4639, 7/11/2002 (TEX-NPS)

Salsola tragus L.
Russian thistle (I)
Rare in disturbed areas
Poole 4921, 10/10/2003 (TEX-NPS)

Suaeda moquinii (Torr.) Greene
quelite salado
Not seen during this study; mouth of the Pecos River
Warnock 47197, 3/29/1947 (SRSC)

COCHLOSPERMACEAE

Amoreuxia wrightii A. Gray
yellow show
Rare on rocky flats and slopes, uplands
Warnock 22863, 5/22/1969 (SRSC)

CONVOLVULACEAE

Convolvulus arvensis L.
field bindweed (I)
Infrequent, trailing along ground or twining on low vegetation, rocky flats and slopes
Observed in several scattered sites but not collected

Convolvulus equitans Benth.
hoary bindweed
Infrequent, trailing along ground or on low vegetation, on rocky flats and slopes
Correll 27120, 27123, 27128, 3/31/1963 (LL); Reed 2242, 5/31/2001 (TAMU); Warnock 47139, 3/29/1947 (SRSC, TEX)

Dichondra micrantha Urb.
Asian ponyfoot
Rare on rocky flats and slopes
Cory 38063, 8/16/1941 (TAES, TEX); Warnock 11653, 9/26/1953 (LL, SRSC)

Evolvulus alsinoides (L.) L. var. hirticaulis Torr.
ojo de vibora
Rare in gravelly soils on flats and slopes
Correll 19405, 7/7/1958 (LL); Labus 331, 10/8/1988 (TEX); Skiles 2, 6/2/1952 (SRSC)

Evolvulus sericeus Sw.
silky evolvulus
Infrequent in gravelly soils on flats and slopes
Worthington 8253, no date (UTEP)

Ipomoea cordatotriloba Dennst.
tievine
(I. trichocarpa Elliott)
Rare, climbing on shrubs

Ipomoea costellata Torr.
crestrib morning glory
Rare in rocky clay soils in uplands
Observed in Pink Cave Cove but not collected

Ipomoea lindheimeri A. Gray
Lindheimer morning glory
Rare, twining on shrubs
Amistad NRA Interpretive collection; Skiles 8, 6/26/1952 (SRSC); Turner 500, 4/18/1949 (SRSC, TEX); Turner 531, 4/18/1949 (SRSC)

Ipomoea rupicola House
cliff morning glory
Not seen during this study; Goodenough Springs & New Island
Scudday 685, 6/30/1979 (SRSC); Warnock 11812, 11/14/1953 (SRSC)

Ipomoea sagittata Poir.
saltmarsh morning glory
Rare, climbing on shrubs
Poole 4905, 10/7/2003 (TEX-NPS)
**Merremia dissecta** (Jacq.) Hallier f. alamovine
Rare, climbing on shrubs or clambering over rock faces
*Amistad NRA Interpretive collection; Correll 25081, 5/2/1962 (LL); Traverse 2128, 5/10/1961 (TEX); Warnock 11669, 9/26/1953 (SRSC, TEX); Warnock 22860, 5/22/1969 (SRSC); Worthington 8244, 5/17/1982 (UTEP)

**CRASSULACEAE**

**Sedum wrightii** A. Gray Wright’s stonecrop
Rare on rock outcrops, boulders, ledges, and cliffs
*Poole 4599, 6/26/2002 (TEX-NPS); Correll 30669, 11/13/1964 (LL); Ulh 868, no date (BH); Warnock 11813, 11/14/1953 (LL)

**CUCURBITACEAE**

**Apodanthera undulata** A. Gray chile coyote
Not seen during this study; Seminole Canyon
*Labus 387, 12/17/1988 (SWT)

**Cucurbita foetidissima** Kunth buffalo gourd
Rare, trailing along ground primarily in disturbed areas such as inundation zone
*Poole 4814, 5/23/2003 (TEX-NPS)

**Ibervillea lindheimeri** (A. Gray) Greene Lindheimer globeberry
Rare, climbing on shrubs
*Labus 308, 8/24/1988 (SWT)

**Ibervillea tenuisecta** (A. Gray) Small slimlobe globeberry
Rare, climbing on shrubs
*Poole 4701, 10/31/2002 (TEX-NPS); Amistad NRA Interpretive collection

**Melothria pendula** L. creeping cucumber
Rare, climbing on shrubs or trees, or clambering over rock outcrops
*Poole 4669, 10/9/2003 (TEX-NPS)

**CUSCUTACEAE**

**Cuscuta exaltata** Engelm. oak dodder (C)
Rare, climbing on oak trees
Observed in Big Satan and Seminole canyons, but not collected

**Cuscuta indecora** Choisy var. indecora bigseed alfalfa dodder
Not seen during this study; along Devil’s River at highway bridge
*Warnock 11655, 9/26/1953 (SRSC)

**Cuscuta indecora** Choisy var. nepotetala (Engelm.) Hitchc. bigseed dodder
Infrequent, twining on herbaceous species and shrubs
*Poole 4505, 5/21/2002 (TEX-NPS)

**Cuscuta pentagona** Engelm. var. pubescens (Engelm.) Yunck. bushclover dodder
Rare, twining on herbaceous species and shrubs
*Poole 4491, 4/17/2002 (TEX-NPS)

**EBENACEAE**

**Diospyros texana** Scheele Texas persimmon
Frequent on rocky slopes, flats, rock outcrops and ledges
*Freeman s.n., 4/30/1977 (UTEP); Labus 59, 11/22/1987 (SWT, TEX); Parks 281, 4/10/1949 (SRSC); Powell 3061, 2/18/1977 (SRSC); Powell 3416, 3/31/1979 (SRSC); Reed 2301, 5/31/2001 (TAMU); Warnock 47161, 3/29/1947 (SRSC); Worthington 12042, 6/2/1984 (UTEP)
EUPHORBIAEAE

Acalypha monostachya Cav. *creeping copperleaf*  
(A. hederacea Torr.)  
Infrequent on rocky slopes, flats, boulders, ledges and cliffs  
Poole 4471, 4/17/2002 (TEX-NPS); Poole 4484, 4/17/2002 (TEX-NPS); Labus 92, 4/23/1988 (TEX); McVaugh 8256, 5/9/1947 (TEX); Thompson 203, 9/17/1958 (TEX); Warnock 47130, 3/29/1947 (SRSC); Worthington 8245, 5/17/1982 (UTEP)  

Acalypha phleoides Cav. *Lindheimer copperleaf*  
(A. lindheimeri Müll. Arg.)  
Rare on rocky intermittent drainages, rocky slopes and flats  
Poole 4625, 7/11/2002 (TEX-NPS); Turner 920, 5/22/1949 (SRSC); Warnock 11662, 9/26/1953 (LL, SRSC)  

Andrachne phyllanthoides (Nutt.) Müll. Arg.  
(Leptopus phyllanthoides (Nutt.) G. L. Webster)  
maidenbush  
Not seen during this study; mouth of the Pecos  
Harvard s.n., 10/1883 (US)  

Argythamnia neomexicana Müll. Arg. *New Mexico wildmercury*  
Rare on rocky or silty soils on flats or slopes  
Poole 4536, 5/22/2002 (TEX-NPS); Flyr 1067, 4/24/1966 (TEX); Thompson 207, 9/17/1958 (TEX)  

Bernardia myricifolia (Scheele) S. Watson *brush myrtlecreton*  
Infrequent on rocky slopes or flats  
Powell 3388, 10/27/1978 (SRSC); Scudday 692, 7/1/1979 (SRSC); Warnock 3895, 3/31/1959 (SRSC); Warnock 22723, 8/10/1967 (SRSC); Warnock 22728, 8/10/1967 (SRSC); Warnock 47126, 3/29/1947 (SRSC); Warnock 47162, 3/29/1947 (TEX)  

Bernardia obovata I. M. Johnst. *desert myrtlecreton*  
Infrequent on rocky slopes or flats  
Observed throughout the site but not collected  

Chamaesyce acuta Millsp. *pointed spurge*  
Not seen during this study; Seminole Canyon State Historical Park  
Labus 178, 5/11/1988 (TEX)  

Chamaesyce albomarginata (Torr. & A. Gray) Small *whitemargin spurge*  
Rare on gravelly soils in disturbed areas  
Poole 4533, 5/22/2002 (TEX-NPS)  

Chamaesyce angusta (Engelm.) Small *narrowleaf spurge*  
Rare on rocky slopes, rocky intermittent drainages, rock ledges, and outcrops  
Poole 4525, 5/21/2002 (TEX-NPS); Poole 4624, 7/11/2002 (TEX-NPS); Poole 4759, 3/28/2003 (TEX-NPS); Correll 32603, 4/12/1966 (LL); Hinckley 422, 3/10/1949 (SRSC); Parks 198, 4/10/1949 (SRSC, TEX); Reed 2296, 5/31/2001 (TAMU); Turner 508, 4/18/1949 (SRSC); Turner 99-219, 5/2/1999 (TEX); Warnock 22711, 8/10/1967 (SRSC); Warnock 47185, 3/26/1947 (SRSC, TEX)  

Chamaesyce cinerascens (Engelm.) Small *shy spurge*  
Rare on gravelly gentle slopes  
Poole 4525, 5/21/2002 (TEX-NPS); Casaday 35, 5/15/2001 (Amistad NRA collection); Correll 32601, 4/21/1996 (LL); Flyr s.n., 3/25/1966 (TEX); Warnock 3897, 3/31/1959 (SRSC)  

Chamaesyce glyptosperma (Engelm.) Small *ridgeseed spurge*  
Not seen during this study; canyon of Rio Grande at Langtry  
Hinckley 151, 7/3/1949 (SRSC, TEX)
**Chamaesyce hyssopifolia** (L.) Small
Not seen during this study; Devil’s River at hwy bridge
Warnock 11658, 9/26/1953 (SRSC, TEX)

**Chamaesyce maculata** (L.) Small
Rare on gravelly soils in intermittent drainages
Poole 4623, 7/11/2002 (TEX-NPS)

**Chamaesyce prostrata** (Aiton) Small
Rare on gravelly sand wash on bedrock in inundation zone
Poole 4821, 6/19/2003 (TEX-NPS)

**Chamaesyce serpens** (Kunth) Small
Rare on gravelly silty soils on flats or slopes or gravelly intermittent drainages
Poole 4570, 5/24/2002 (TEX-NPS); Poole 4646, 7/11/2002 (TEX-NPS); Poole 4825, 6/19/2003 (TEX-NPS); Labus 18, 11/11/1987 (TEX); Turner s.n., 9/13/1948 (SRSC); Turner 523, 4/18/1949 (SRSC); Warnock 47145, 3/29/1947 (SRSC)

**Chamaesyce capitata** Michx.
Not seen during this study; Laughlin Air Force Base Recreation Area
Poole 3764, 11/3/1993 (TEX)

**Croton dioicus** (Cav.)
Frequent on rocky flats, slopes, boulders, and cliffs
Poole 4473, 4/17/2002 (TEX-NPS); Poole 4504, 5/21/2002 (TEX-NPS); Correll 27778, 6/14/1963 (LL); Labus 39, 11/22/1987 (TEX); Labus 79, 4/23/1988 (TEX); Larson 35, 6/18/2001 (Amistad NRA collection); Larson 41, 6/18/2001 (LL, SRSC)

**Croton fruticulosus** Engelm. ex Torr.
Rare (locally common at one site) on rocky slopes
McVaugh 10597, 5/22/1949 (LL); Parks 206, 4/10/1949 (LL, SRSC)

**Croton incanus** Kunth
Infrequent (locally common at several sites) on rock outcrops and cliffs in canyons
Poole 4549, 5/22/2002 (TEX-NPS); Poole 4646, 7/11/2002 (TEX-NPS); Poole 4768, 4/8/2003 (TEX-NPS); Casaday 25, 5/22/2001 (Amistad NRA collection); Hinckley 423, 3/10/1950 (LL, SRSC); Labus 58, 11/22/1987 (TEX); Labus 207, 5/18/1988 (TAMU); Labus 290, 8/24/1988 (TAMU); Turner 502, 4/18/1949 (SRSC); Warnock 3905, 3/31/1959 (SRSC, TEX); Warnock 11316, 4/3/1953 (LL, SRSC); Warnock 47141, 3/29/1947 (LL, SRSC)

**Croton lindheimerianus** Scheele var. lindheimerianus
Tharp croton
Not seen during this study; Rio Grande Trail, Seminole Canyon State Historical Park
Labus 361, 10/9/1988 (TEX)

**Croton monanthogynus** Michx.
Infrequent on gravelly or silty flats or gentle slopes, disturbed areas
Poole 3765, 11/3/1993 (TEX); Labus 41, 11/22/1987 (TEX); Powell 3387, 11/27/1978 (SRSC)

**Croton pottsii** (Klotzsch) Müll. Arg.
Rare (locally common at two sites) on caliche flats or gentle slopes
Poole 4819, 6/19/2003 (TEX-NPS); Labus 361, 10/9/1988 (TEX)

**Euphorbia antisyphilitica** Zucc.
Rare on rocky flats and gentle slopes
Warnock 21391, 7/29/1967 (SRSC)
Euphorbia cyathophora Murray  
(Poinsettia cyathophora (Murray) Klotzsch & Garcke)
Rare in silty or rocky soils in intermittent drainages
McVaugh 8248, 5/19/1947 (TEX)

Euphorbia dentata Michx.
toothed spurge
(Poinsettia dentata (Michx.) Klotzsch & Garcke; E. dentata Michx. var. gracillima Millsp.)
Rare on silty or gravelly soils in intermittent drainages, rocky slopes, and ledges
Poole 4470, 4/17/2002 (TEX-NPS); Poole 4527, 5/21/2002 (TEX-NPS); Poole 4537, 5/22/2002 (TEX-NPS); McVaugh 10607, 5/22/1949 (LL); Parks 257, 4/10/1949 (SRSC); Warnock 11668, 9/26/1953 (LL, SRSC); Warnock 11808, 11/14/1953 (SRSC, TEX)

Euphorbia longicirris Scheele
longhorn spurge
Rare in rocky intermittent drainages.
Poole 4721, 2/20/2003 (TEX-NPS)

Euphorbia peplidion Engelm.
low euphorbia (C, E)
Rare in silty or rocky soils in along rivers or intermittent drainages
Warnock 47143, 3/29/1947 (SRSC)

Euphorbia pathulata Lam.
warty spurge
Not seen during this study; Hwy 90 & Devil’s River
Warnock 3901, 3/31/1959 (SRSC)

Jatropha dioica Cerv. var. dioica
leatherstem
Common on rocky soils on flats, slopes, rock outcrops, and ledges
Cory 38034, 8/16/1941 (TAES); Freeman s.n., 4/30/1977 (UTEP); Reed 2267, 5/31/2001 (TAMU); Warnock 22707, 8/10/1967 (SRSC); Warnock 22864, 5/22/1969 (SRSC)

Phyllanthus polygonoides Nutt. ex Spreng.
knotweed leafflower
Infrequent on rocky slopes, disturbed areas
Poole 4603, 6/27/2002 (TEX-NPS); Powell 3450, 3/31/1979 (SRSC); Warnock 3902, 3/31/1959 (SRSC); Warnock 9910, 4/8/1951 (SRSC); Warnock 47187, 3/29/1947 (SRSC)

Ricinus communis L.
castorbean (I)
Infrequent (locally common at several sites) on silty, rocky soils on creek or river banks
Hinckley 421, 3/10/1950 (TEX); Mears 2413, 4/16/1968 (TEX)

Stillingia treculiana (Mu¨ll. Arg.) I. M. Johnst.
Trecul stillingia
Rare on gravelly caliche flats
Poole 4567, 5/23/2002 (TEX-NPS); Ertter 5403, 5/18/1984 (TEX); Labus 28, 11/22/1987 (TAES, TAMU, TEX)

Tragia amblyodonta (Mu¨ll. Arg.) Pax & K. Hoffm.
dogtooth noseburn
Rare in gravelly soils in flats and gentle slopes
Parks 219, 4/10/1949 (SRSC)

Tragia ramosa Torr.
catnip noseburn
Common on silty or gravelly soils on flats and slopes
Poole 4497, 4/17/2002 (TEX-NPS)

Triadica sebifera (L.) Small
Chinese tallow tree (I)
(Sapium sebiferum (L.) Roxb.)
Rare, one mature tree on rocky slope in inundation zone
Poole 4534, 5/22/2002 (TEX-NPS)

FABACEAE

Acacia angustissima (Mill.) Kuntze var. hirta (Nutt.) B. L. Rob.
prairie acacia
Not seen during this study
Riley 1557, 4/29/1997 (TAMU)
**Acacia berlandieri** Benth.  
Abundant (community dominant) on rocky flats and slopes  
*Hill* 4000, 3/14/1976 (TAES); *Hogg* s.n., no date (UTEP); *Labus* 14, 11/22/1987 (TEX); *Labus* 401, 2/4/1989 (TEX); *Lieb* 802, 5/2/1987 (UTEP); *Mears* 2609, 4/17/1968 (TEX); *Melchert* 291, 6/1962 (TEX); *Traverse* 2134, 5/10/1961 (LL, SRSC)

**Acacia constricta** A. Gray  
White thorn acacia  
Rare (locally common at the only site) on silty floodplain  
Observed only below Amistad Dam but not collected

**Acacia farnesiana** (L.) Willd.  
Huisache  
(A. *smallii* Isley; *A. minuta* (M. E. Jones) R. M. Beauch. var. *minuta*)  
Abundant (community dominant) on silty or rocky soils in the inundation zone  
*Poole* 4731, 3/25/2003 (TEX-NPS)

**Acacia greggii** A. Gray  
Catclaw acacia  
Rare on silty and/or rocky soils along rivers, creeks, or intermittent drainages  
*Labus* 75, 4/23/1988 (SWT, TEX)

**Acacia neovernicosa** Isley  
Stickleaf acacia  
Rare on silty, rocky soils on flats and gentle slopes  
*Poole* 4793, 5/8/2003 (TEX-NPS); *Labus* 35, 4/23/1988 (TEX)

**Acacia rigidula** Benth.  
Blackbrush  
Abundant (community dominant) on rocky soils  
*Freeman* s.n., 4/30/1977 (UTEP); *Labus* 9, 11/22/1987 (SWT, TEX); *Labus* 72, 3/19/1988 (SWT, TEX); *Mears* 2623, 4/17/1968 (TEX); *Powell* 3390, 10/27/1978 (SRSC); *Powell* 3428, 3/31/1979 (SRSC); *Seigler* 8979, 3/23/1975 (ILL); *Traverse* 2136, 5/10/1961 (LL, SRSC); *Warnock* 3903, 3/31/1959 (SRSC); *Warnock* 47159, 3/29/1947 (SRSC)

**Acacia roemeriana** Scheele  
Roemer acacia  
Common on rocky soils on slopes and uplands, rock outcrops, and ledges  
*Poole* 4730, 3/25/2003 (TEX-NPS); *Correll* 38419, 4/10/1970 (LL); *Hill* 3976, 3/14/1976 (TAES); *Labus* 166, 5/10/1988 (SWT, TAMU, TEX)

**Acacia wrightii** Benth.  
Wright acacia  
(A. *greggii* A. Gray var. *wrightii* (Benth.) Isley)  
Rare on silty, gravelly soils in intermittent drainages  
*Poole* 4790, 5/8/2003 (TEX-NPS)

**Astragalus nuttallianus** DC. var. *austinus* (Small) Barneby  
Small flowered milkvetch  
(A. *austrinus* (Small) E. D. Schulz)  
Infrequent in thin gravelly soils on gentle slopes  
*Poole* 4478, 4/17/2002 (TEX-NPS); *Powell* 3424, 3/31/1979 (SRSC); *Warnock* 205, 4/10/1949 (LL); *Warnock* 11974, 3/28/1954 (LL)

**Astragalus wrightii** A. Gray  
Wright locoweed (C, E)  
Not seed during this study; Seminole Canyon State Historical Park  
*Labus* 211, 5/18/1988 (SWT)

**Calliandra conferta** Benth.  
Fairy duster  
Common (community dominant) on rocky slopes and flats on uplands  
*Labus* 43, 11/22/1987 (SWT, TEX); *Labus* 88, 4/23/1988 (SWT); McVaugh 10604, 5/22/1949 (LL); Scudday 682, 6/30/1979 (SRSC, TEX); *Warnock* 47215, 3/29/1947 (SRSC)

**Cercis canadensis** L. var. *texensis* (S. Watson) M. Hopkins  
Redbud  
Rare (locally common at one site) on rocky slopes or flats  
*Poole* 4724, 3/7/2003 (TEX-NPS)
**Dalea aurea** Nutt. ex Pursh
Golden dalea
Rare on rocky soils
Observed once at the Pecos River picnic area & boat launch but not collected

**Dalea formosa** Torr.
Feather dalea
Rare on rocky soils on flats and slopes on uplands
Labus 1, 11/22/1987 (SWT, TEX); Labus 88, 4/23/1988 (TAMU, TEX); Labus 392, 12/17/1988 (SWT, TEX)

**Dalea frutescens** A. Gray
Black dalea
Rare on rocky slopes and flats on uplands
Poole 4787, 5/8/2003 (TEX-NPS); Warnock 11702, 9/26/1953 (SRSC, TEX)

**Dalea nana** Torr. ex A. Gray
Dwarf dalea
Infrequent on gravelly soils on flats and slopes
Poole 4569, 5/23/2002 (TEX-NPS); Labus 391, 12/17/1988 (SWT); Parks 238, 4/10/1949 (SRSC); Warnock 23627, 5/24/1966 (SRSC)

**Dalea neomexicana** (A. Gray) Cory
New Mexico dalea
Not seen during this study; Seminole Canyon State Historical Park
Labus 271, 4/23/1988 (SWT)

**Dalea pogonathera** A. Gray var. pogonathera
Bearded dalea
Rare on rocky soils on slopes and flats
Warnock 47147, 3/29/1947 (SRSC)

**Dalea pogonathera** A. Gray var. walkerae (Tharp & F. A. Barkley) B. L. Turner
Walker’s bearded dalea
Rare on rocky soils on slopes and flats
Poole 4481, 4/17/2002 (TEX-NPS); Larson 28, 6/19/2001 (Amistad NRA collection)

**Desmanthus obtusus** S. Watson
Bundleflower
Not seen during this study; Hwy 90 Pecos River turnoff & Seminole State Historical Park
Labus 188, 5/11/1988 (SWT); Luckow 3529, 7/25/1987 (SRSC)

**Desmanthus velutinus** Scheele
Hairy bundleflower
Not seen during this study, Seminole Canyon
Luckow 2719, 8/2/1985 (TEX)

**Desmanthus virgatus** (L.) Willd.
Wild tantan
Rare in grasslands
Poole 4925, 10/10/2003 (TEX-NPS)

**Eysenhardtia texana** Scheele
Texas kidneywood
Common on rocky slopes and flats, rock outcrops and ledges
Labus 165, 5/10/1988 (SWT, TAMU, TEX); Scudday 688, 7/1/1979 (SRSC); Warnock 11705, 9/26/1953 (SRSC); Warnock 22724, 8/10/1967 (SRSC); Worthington 12034, 6/2/1984 (UTEP)

**Galactia texana** (Scheele) A. Gray
Texas milkpea (E)
Rare, twining on trees and shrubs, on rock outcrops and cliffs
Poole 4645, 7/11/2002 (TEX-NPS)

**Hoffmannseggia glauca** (Ortega) Eifert
Sicklepod rushpea
Rare on rocky, gentle slopes
Poole 4506, 5/21/2002 (TEX-NPS); Mears 2520, 4/16/1968 (TEX)

**Hoffmannseggia oxycarpa** Benth.
Sharp pod rushpea
Not seen during this study; Castle Canyon Island & Seminole Canyon State Historical Park
Labus 120, 4/23/1988 (TEX); Powell 3417, 3/31/1979 (SRSC)
**Indigofera lindheimeriana** Scheele
creek indigo
Common in rocky intermittent drainages
Poole 4667, 7/12/2002 (TEX-NPS); Labus 237, 5/23/1988 (SWT); Thompson 183, 9/17/1958 (TEX)

**Leucaena retusa** Benth.
golden ball leadtree
Rare on rocky slopes, rock outcrops, and ledges
Labus 57, 11/22/1987 (SWT, TEX); Riley 156, 4/29/1997 (TAMU); Turner 515, 4/18/1949 (SRSC)

**Lupinus texana** Hook.
Texas bluebonnet
Rare in grasslands
Observed once at Seminole Canyon but not collected

**Medicago arabica** (L.) Huds.
spotted bur-clover (I)
Rare in disturbed areas
Warnock 47164, 3/29/1947 (SRSC)

**Melilotus indicus** (L.) All.
annual yellow sourclover (I)
Rare on rocky soils on uplands in disturbed areas
Poole 4740, 3/26/2003 (TEX-NPS)

**Mimosa aculeaticarpa** Ortega var. biuncifera (Benth.) Barneby
catclaw mimosa
Common on rocky intermittent drainages, slopes, flats, rocky outcrops and ledges
Poole 4770, 4/9/2003 (TEX-NPS); Poole 4775, 4/10/2003 (TEX-NPS); Reed 2293, 5/31/2001 (TAMU)

**Mimosa borealis** A. Gray
fragrant mimosa
Infrequent on rocky soils on slopes, flats, drainages, rocky outcrops, and ledges
Correll 34156, 5/9/1967 (LL); Labus 94, 4/23/1988 (SWT, TEX); Warnock 11711, 9/26/1953 (SRSC)

**Mimosa texana** (A. Gray) Small
taxas mimosa
Rare on rocky soils on flats and slopes, drainages, rocky outcrops and ledges
Poole 3274, 5/6/1993 (TEX); Ertter 5398, 5/18/1984 (TEX); McVaugh 10590, 5/22/1949 (LL, SRSC)

**Parkinsonia aculeata** L.
retama
Infrequent (locally common at some sites) on silty soils in inundation zone
Poole 4796, 5/8/2003 (TEX-NPS)

**Parkinsonia texana** (A. Gray) S. Watson var. texana
(Cercidium texanum A. Gray)
Texas paloverde
Rare (locally common at most sites) on rocky slopes, rocky outcrops, and uplands
Poole 4792, 5/8/2003 (TEX-NPS)

**Pediomelum humile** Rydb.
Rydberg scurfpea (C)
(Psoralea rydbergii Cory)
Not seen during this study; foot of Devil’s Lake & Castle Creek island
McVaugh 8261, 5/8/1947 (BRIT, DS, F, GH, MICH); Powell 3413, 3/31/1979 (SRSC)

**Prosopis glandulosa** Torr. var. glandulosa
mesquite
Abundant on gravelly and/or silty soils in flats, drainages, and slopes
Poole 4773, 4/9/2003 (TEX-NPS); Labus 81, 4/23/1988 (SWT, TEX)

**Prosopis glandulosa** Torr. var. torreyana
western honey mesquite
Rare on silty soils along rivers or drainages
Poole 4595a, 6/26/2002 (TEX-NPS)

**Rhynchosia senna** Gillies ex Hook. var. texana (Torr & A. Gray) M. C. Johnst.
(T. texana Torr & A. Gray)
Texas snoutbean
Rare on rocky flats, slope, rock outcrops, ledges, and bluffs
Correll 32600, 4/21/1966 (LL)
Senna bauhinioides (A. Gray) H. S. Irwin & Barneby
shrubby senna
(Cassia bauhinioides A. Gray)
Infrequent in rocky intermittent drainages, slopes, and rock outcrops
Poole 4495, 4/17/2002 (TEX-NPS); Labus 320, 10/1/1988 (SWT)

Senna lindheimeriana (Scheele) H. S. Irwin & Barneby
Lindheimer senna
(Cassia lindheimeriana Scheele)
Common on rocky flats, slopes, outcrops, and ledges
Labus 12 & 44, 11/22/1987 (SWT); Reed 2259, 5/31/2001 (TAMU); Thompson 200, 9/17/1958 (TEX)

Senna pumilio (A. Gray) H. S. Irwin & Barneby
dwarf senna
(Cassia pumilio A. Gray)
Rare on rocky slopes and flats
Poole 4777, 4/10/2003 (TEX-NPS)

Senna roemeriana (Scheele) H. S. Irwin & Barneby
two leaf senna
(Cassia roemeriana Scheele)
Rare on rocky and/or silty soils on slopes, drainages, flats, and ledges
Poole 4774, 4/9/2003 (TEX-NPS); Labus 73, 4/23/1988 (SWT); Labus 171, 5/11/1988 (SWT, TEX)

Sophora secundiflora (Ortega) Lag. ex DC.
Texas mountain laurel
Common on rocky flats, slope, outcrops, and ledges
Hanson s.n., 3/8/1919 (TEX); Labus 65, 3/19/1988 (SWT, TAMU, TEX); Warnock 47220, 3/29/1947 (SRSC); Worthington 12033, 6/2/1984 (UTEP)

Vicia leavenworthii Nutt. ex Torr. & A. Gray
Leavenworth’s vetch
(V. ludoviciana Nutt. ex Torr. & A. Gray subsp. leavenworthii (Nutt. ex Torr. & A. Gray) Lasseter & C. R. Gunn)
Infrequent on rocky slopes, flats, and intermittent drainages
Poole 4496, 4/17/2002 (TEX-NPS); Poole 4714, 2/20/2003 (TEX-NPS); Hinckley 414, 3/10/1950 (SRSC); McVaugh 7696, 3/29/1947 (TEX); Parks 229, 4/10/1949 (SRSC); Powell 3449, 3/31/1959 (SRSC); Warnock 3898, 3/29/1947 (SRSC)

FAGACEAE

Quercus fusiformis Small
Plateau liveoak
Infrequent (locally common, community dominant) on rocky slopes, flats, outcrops, drainages, creek and river banks
Poole 4920, 10/10/2003 (TEX-NPS); Hinckley 418, 3/10/1950 (LL, SRSC); Labus 292, 8/24/1988 (SWT); Powell 3057, 2/18/1977 (SRSC, TEX); Warnock 47201, 3/29/1947 (SRSC); Wendt 1141, 8/21/1975 (LL)

Quercus gravesii Suduw.
Graves oak
Rare (common in Pink Cave Cove) on rocky slopes and flats in intermittent drainages
Labus 341, 10/8/1988 (SWT, TEX); Lowrey s.n., 9/24/1988 (TEX); Powell 3056, 2/18/1977 (SRSC, TEX); Riskind 2293, 4/26/1978 (SRSC, TEX)

Quercus mohriana Buckley ex Rydib.
Mohr’s shin oak
Rare on rocky slopes and flats in intermittent drainages
Observed once in Mile Canyon but not collected

Quercus pungens Liebm. var. vaseyana (Buckley) C. H. Mull.
Vasey oak
Infrequent (locally common in a few sites) on rocky slopes, intermittent drainages, ledges, outcrops & cliffs
**FOUQUIERIACEAE**

*Fouquieria splendens* Engelm. *subsp. splendens* ocotillo
Infrequent (locally common at a few sites) on rocky flats, slopes, outcrops & ledges
Labus 61, 3/19/1988 (SWT, TAMU, TEX); Parks 225, 4/10/1949 (SRSC); Tharp 49330, 4/10/1949 (TEX)

**FUMARIACEAE**

*Corydalis curvisiliqua* Engelm. scrambled eggs
Rare on silty soils along river banks
Poole 4726, 3/7/2003 (TEX-NPS)

*Corydalis micrantha* (Engelm. ex A. Gray) A. Gray *subsp. texensis* G. B. Ownbey Texas corydalis (E)
Rare on shallow gravelly soils on gentle slopes
Poole 4482, 4/17/2002 (TEX-NPS)

**GENTIANACEAE**

*Centaurium calycosum* (Buckley) Fernald rosita
Rare on rock outcrops, rocky flats and ledges
Poole 4546, 5/22/2002 (TEX-NPS); Amistad NRA Interpretive Collection; Casaday 18, 5/14/2001 (Amistad NRA collection); Correll 25074, 5/2/1962 (TEX); Scudday 684-B, 6/30/1979 (SRSC); Skiles 3, 6/26/1952 (SRSC); Turner 888 & 891, 5/22/1949 (SRSC); Turner 15682, 5/31/1987 (TEX); Warnock 22720, 8/10/1967 (SRSC); Worthington 8250, 5/17/1982 (UTEP)

*Eustoma exaltatum* (L.) Salisb. ex G. Don prairie gentian
Rare on gravelly alluvium along intermittent creek in inundation zone
Poole 4627, 7/11/2002 (TEX-NPS)

**GERANIACEAE**

*Erodium cicutarium* (L.) L’Hér. ex Aiton alfilaria (I)
Rare on disturbed areas
Poole 4738, 3/26/2003 (TEX-NPS)

*Erodium texanum* A. Gray Texas stork’s bill
Infrequent on silty and/or gravelly soils on flats or river banks
Warnock 47160, 3/29/1947 (SRSC)

**HYDRANGEACEAE**

*Fendlera wrightii* (Engelm. & A. Gray) A. Heller cliff fendlerbush
Rare on rocky soils, slopes, rock outcrops or cliffs in intermittent drainages
Poole 4756, 3/28/2003 (TEX-NPS)
HYDROPHYLLACEAE

Nama havardii A. Gray
Havard’s fiddleleaf
Not seen during this study; Pump Canyon
Correll 19406, 7/7/1958 (LL)

Nama hispida A. Gray
rough nama
Infrequent on shallow gravelly soils on slopes and flats, disturbed areas
Poole 4475, 4/17/2002 (TEX-NPS); Parks 265, 4/10/1949 (SRSC); Reed 2244, 5/31/2001 (TAMU)

Nama jamaicensis L.
fiddleleaf nama
Rare on shallow rocky soils
Parks 230, 4/10/1949 (SRSC); Turner 918, 5/22/1949 (SRSC); Warnock 3896, 3/31/1959 (SRSC); Warnock 11968, 3/28/1954 (SRSC)

Nama parvifolia (Torr.) Greem.
small leaf fiddlehead
Rare on shallow rocky soils
Poole 3818, 4/11/1994 (TEX); Freeman s.n., 4/30/1977 (UTEP); Powell 3431, 3/31/1979 (SRSC)

Phacelia congesta Hook.
bluecurls
Infrequent on rocky slopes and intermittent drainages
Poole 4754, 3/27/2003 (TEX-NPS); Freeman s.n., 4/30/1977 (UTEP); Powell 3430, 3/31/1979 (SRSC); Warnock 47190, 3/29/1947 (SRSC)

Phacelia patuliflora (Engelm. & A. Gray) A. Gray var. teucriifolia (I. M. Johnst.)
Constance sand phacelia
Rare on rocky slopes, ledges, cliffs, and intermittent drainages
Poole 4769, 4/8/2003 (TEX-NPS); Warnock 1948, 3/28/1954 (SRSC); Warnock 47205, 3/29/1947 (SRSC)

JUGLANDACEAE

Carya illinoinensis (Wangenh.) K. Koch
pecan
Rare in silty soils along river banks
Flyr 972, 4/1/1966 (TEX)

Juglans microcarpa Berland.
little walnut
Rare (locally common at a few sites) in rocky intermittent drainages or rocky banks of creeks and rivers
Flyr 979, 4/1/1966 (TEX); Flyr 1005, 4/2/1966 (TEX); Labus 137, 5/10/1988 (SHST, SWT); Traverse 2140, 5/10/1961 (LL)

KRAMERIACEAE

Krameria bicolor S. Watson
white ratany
(K. grayi Rose & Painter)
Rare (locally common at one site) on rock outcrops and uplands
Poole 4561, 5/22/2002 (TEX-NPS)

Krameria ramosissima (A. Gray) S. Watson
calderona
Infrequent (locally rare at several sites) on rocky flats, slopes, and uplands
McVaugh 8237, 5/9/1947 (TEX); Powell 3419, 3/31/1979 (SRSC); Warnock 22862, 5/22/1969 (SRSC)

LAMIACEAE

Hedeoma acinoides Scheele
annual pennyroyal
Rare on rocky soils in intermittent drainages
McVaugh 7721, 3/31/1947 (TEX)
**Hedeoma drummondii** Benth. var. drummondii

Common on rocky slopes, flats, intervals, and intermittent drainages

Poole 4477, 4/17/2002 (TEX-NPS); Correll 38416, 4/10/1970 (LL); Johnston 24, 12/1958 (TEX); Reed 2257, 5/31/2001 (TAMU); Scudday 687, 7/1/1979 (SRSC); Turner 3792, 5/1/1955 (TEX); Warnock 11957, 5/29/1954 (SRSC); Warnock 47154, 5/29/1947 (SRSC)

**Hedeoma nana** (Torr.) Briq.

Rare in gravelly intermittent drainages or rocky slopes and flats

Casaday 33, 5/14/2001 (Amistad NRA collection); Correll 19394, 7/7/1958 (LL)

**Marrubium vulgare** L.

Common on silty and/or rocky soils on flats, inundation zone & disturbed areas

Poole 4732, 3/25/2003 (TEX-NPS)

**Monarda citriodora** Cerv. ex Lag.

Rare on rocky slopes, flats, outcrops, and ledges

Turner 921, 5/22/1949 (SRSC)

**Monarda punctata** L.

Not seen during this study; mouth of the Devil’s River (now inundated)

Cory 15234, 7/6/1935 (TEX)

**Salvia ballotiflora** Benth.

Common on rocky slopes, flats, rock outcrops, ledges, and intermittent drainages

Ertter 5412, 5/19/1984 (TEX); Turner 491, 4/13/1949 (SRSC, TEX); Warnock 196, 4/10/1949 (SRSC, TEX); Warnock 47214, 3/29/1947 (SRSC); Worthington 8254, 5/17/1984 (UTEP)

**Salvia farinacea** Benth. var. farinacea

Infrequent (locally common at several sites) on rocky flats, slopes, ledges, & intermittent drainages

Albers 46155, 8/30/1946 (TEX); Thompson 196, 9/17/1958 (TEX)

**Salvia roemeriana** Scheele

Not seen during this study; Pump Canyon, Rio Grande between Pecos River & Langtry, between mouth of the Pecos River and Hwy 90

Correll 19369 & 19420, 7/7/1958 (LL); Turner 524, 4/18/1949 (SRSC); Warnock 11953, 3/28/1954 (LL, SRSC); Warnock 47146, 3/29/1947 (SRSC)

**Scutellaria drummondii** Benth. var. edwardsiana B. L. Turner

Drummond’s skullcap

Common on rocky flats, slopes, ledges, and intermittent drainages

McVaugh 7224, 3/31/1947 (SRSC, TEX); Mears 2499, 4/16/1968 (TEX); Powell 3420, 3/31/1979 (SRSC)

**Scutellaria texana** B. L. Turner

Texas skullcap

Not seen during this study; Pump Canyon, Rio Grande between Pecos River & Langtry, between mouth of the Pecos River and Hwy 90

Correll 19369 & 19420, 7/7/1958 (LL); Turner 524, 4/18/1949 (SRSC); Warnock 11953, 3/28/1954 (LL, SRSC); Warnock 47146, 3/29/1947 (SRSC)

**Teucrium canadense** L.

American germander

Rare in gravelly and/or silty soils along intermittent drainages and river banks

Poole 4622, 7/11/2002 (TEX-NPS); Crutchfield 3397, 7/13/1967 (LL)

**Utricularia gibba** L.

Rare in shallow water along rivers

Poole 4630, 7/11/2002 (TEX-NPS)
LINACEAE

Linum berlandieri Hook. var. filifolium (Shinners) C. M. Rogers  Berlandier’s yellow flax (L. rigidum Pursh var. filifolium Shinners)
In frequent on shallow gravelly soils on flats or gentle slopes
Poole 4483, 4/17/2002 (TEX-NPS); Casaday 31, 5/18/2001 (Amistad NRA collection);
Powell 3418, 3/31/1979 (SRSC); Warnock 47186, 3/29/1947 (SRSC)

Linum rupestre (A. Gray) Engelm. ex A. Gray  rock flax
In frequent on rocky slopes, flats, outcrops, bluffs, and intermittent drainages
Poole 4572, 5/24/2002 (TEX-NPS); Casaday 30, 5/18/2001 (Amistad NRA collection); Correll 32609, 4/21/1966 (LL); Warnock 22872, 3/22/1969 (SRSC); Warnock 47186, 3/29/1947 (SRSC)

LOASACEAE

Cevallia sinuata Lag.  stinging cevallia
Common on rocky flats, slopes, and intermittent drainages
Labus 193, 5/18/1988 (SWT); Thompson 197, 9/17/1958 (TEX)

Eucnide bartonioides Zucc.  rock nettle
In frequent on rock outcrops and cliffs
Hanks 4, 11/8/1980 (SRSC); Labus 340, 10/8/1988 (SWT); Turner 905, 5/22/1949 (SRSC, TEX); Worthington 12039, 6/2/1984 (UTEP)

Mentzelia albescens (Gillies ex Arn.) Griseb.  wavyleaf mentzelia
Not seen during this study; just east of Amistad Dam
Sikes 455, no date (LL)

Mentzelia oligosperma Nutt.  stickleaf, chicken-thief
In frequent on rocky slopes, flats, and ledges
Correll 19389, 7/7/1958 (LL); Scudday 694, 7/1/1979 (SRSC, TEX)

LOGANIACEAE

Mitreola petiolata (Walter ex J. F. Gmel.) Torr. & A. Gray  hornpod
Not seen during this study; Painted Canyon
Warnock 21380, 7/29/1967 (SRSC)

LYTHRACEAE

Lythrum californicum Torr. & A. Gray  California loosestrife
Rare on rock outcrops, boulders, ledges, floodplain terraces, and spring-fed areas
Poole 4607, 6/28/2002 (TEX-NPS); Cory s.n., 8/16/1941 (TAES); Crutchfield 3402, 7/13/1967 (LL): Turner 887, 5/22/1949 (SRSC)

MALPIGHIACEAE

Aspicarpa hyssopifolia A. Gray  hyssophead aspleaf
Not seen during this study; Amistad Dam & Hwy 90 at Pecos River
Turner 509, 4/18/1949 (SRSC); Warnock 22861, 5/22/1969 (SRSC)

Galphimia angustifolia Benth.  narrowleaf thryallis
(Thryallis angustifolia (Benth.) Kuntze)
Rare on rock outcrops, ledges, and cliffs
Poole 4641, 7/11/2002 (TEX-NPS); Warnock 23619, 5/24/1966 (SRSC)
MALVACEAE

Abutilon fruticosum Guill. & Perr.
Texas indianmallow
(misapplied by Texas authors as A. incanum (Link) Sweet)
Rare on rocky slopes, flats, and gravelly soils in intermittent drainages & along rivers
Amistad NRA Interpretive Collection; Thompson 290, 9/15/1958 (TEX); Warnock 11657, 9/26/1953 (TEX); Warnock 11678, 9/26/1953 (LL)

Abutilon parvulum A. Gray
little leaf abutilon
Rare on rocky slopes
Poole 4530, 5/21/2002 (TEX-NPS)

Abutilon wrightii A. Gray
Wright’s indianmallow
Infrequent on rocky slopes
Poole 4529, 5/12/2002 (TEX-NPS); Labus 192, 5/18/1988 (SWT); Labus 334, 10/8/1988 (SWT); Mears 2560, 4/16/1968 (TEX); Mears 2620, 4/17/1968 (TEX); Warnock 47225, 3/29/1947 (SRSC)

Allowissadula holosericea (Scheele) D. M. Bates
velvet leaf mallow
Frequent on silty soils along intermittent drainages
Poole 4681, 10/10/2002 (TEX-NPS); Amistad NRA Interpretive collection; Labus 314, 8/24/1988 (SWT)

Callirhoe leiocarpa R. F. Martin
tall poppymallow
Not seen during this study; Hwy 90 at Pecos River bridge
Turner 525B, 4/18/1949 (LL)

Herissantia crispa (L.) Brizicky
netvein herissantia
Rare on rocky slopes, ledges, and intermittent drainages
Turner 493, 4/18/1949 (SRSC)

Hibiscus coulteri Harv. ex A. Gray
yellow desert-mallow
Rare on rocky slopes
Parks 262, 4/10/1949 (SRSC)

Hibiscus martianus Zucc.
heartleaf hibiscus
(H. cardiophyllus A. Gray)
Infrequent on rocky slopes, flats, and cliffs
Amistad NRA Interpretive collection; Labus 249, 5/23/1988 (SWT); Tharp 8817, 6/14/1941 (TEX); Warnock 47196, 5/29/1947 (TEX)

Malvastrum coromandelianum (L.) Garcke
threelobe falsemallow
Rare on rocky slopes and intermittent drainages
Reed 2268, 5/31/2001 (TAMU); Warnock W855, 10/20/1940 (SRSC, TEX); Warnock 11688, 9/26/1953 (LL)

Meximalva filipes (A. Gray) Fryxell
violet sida
(Sida filipes A. Gray)
Common on rocky slopes, flats, slopes, and intermittent drainages
Casaday 26, no date (Amistad NRA collection); Labus 60, (SWT, TAES, TEX); Labus 335, 10/8/1988 (SWT)

Sida abutilifolia Mill.
creeping yellow sida
Common on rocky slopes, flats, slopes, and intermittent drainages
Poole 3816, 4/2/1994 (TEX); Poole 4666, 7/12/2002 (TEX-NPS); Labus 161, 5/10/1988 (SWT); Labus 172, 5/11/1988 (SWT, TAMU, TEX); McVaugh 10603, 5/22/1949 (TEX); Mears 2625, 4/17/1968 (TEX); Parks 263, 4/10/1949 (SRSC); Thompson 204, 9/17/1958 (TEX)

Sida longipes A. Gray
stalkflower sida
Rare on rocky slopes, uplands, rock outcrops, and intermittent drainages
Observed in Hunt Area 1 and Canyon 87 but not collected
**Sphaeralcea angustifolia** (Cav.) G. Don
narrowleaf globe mallow
Rare on rocky flats, slopes, ledges, intermittent drainages, & disturbed areas
Poole 4704, 2/19/2003 (TEX-NPS); Poole 4742, 3/26/2003 (TEX-NPS)

**MELIACEAE**

**Melia azedarach** L.
Chinaberry (I)
Rare on rocky slopes in disturbed areas
Poole 4704, 2/19/2003 (TEX-NPS)

**MENISPERMACEAE**

**Cocculus carolinus** (L.) DC.
Carolina snailseed
Rare, twining on shrubs on rocky slopes, ledges, and intermittent drainages
Poole 4647, 7/11/2002 (TEX-NPS)

**MORACEAE**

**Morus alba** L.
white mulberry (I)
Rare on rocky slopes in inundation zone
Poole 4737, 3/26/2003 (TEX-NPS); Flyr 965, 4/1/1966 (TEX)

**NYCTAGINACEAE**

**Acleisanthes anisophylla** A. Gray
oblique-leaf trumpets
Infrequent on silty alluvial soils above intermittent drainages
Poole 4679, 10/10/2002 (TEX-NPS)

**Acleisanthes longiflora** A. Gray
angel trumpets
Infrequent on rocky slopes, ledges, rock outcrops, bluffs, and disturbed areas
Poole 4805, 5/14/2003 (TEX-NPS)

**Acleisanthes wrightii** (A. Gray) Benth. & Hook. f. ex Hemsl.
Wright’s trumpets (C, E)
Not seen during this study; Seminole Canyon State Historical Park
Labus 357, 10/9/1988 (SWT, TEX)

**Allionia incarnata** L.
trailing four-o’clock
Rare on rocky slopes and outcrops
Poole 4543a, 5/22/2002 (TEX-NPS); Labus 364, 10/16/1988 (SWT, TEX); Labus 377, 10/16/1988 (SWT); Thompson 194, 9/17/1958 (TEX)

**Boerhavia coccinea** Mill.
scarlet spiderling
Not seen during this study; near mouth of Devil’s River
Thompson 202, 9/17/1958 (TEX)

**Boerhavia linearifolia** A. Gray
narrowleaf spiderling
Infrequent on rocky slopes, flats, ledges, and intermittent drainages
Poole 3815, 4/11/1994 (TEX); Poole 4130, 9/6/1994 (TEX); Poole 4479, 4/17/2002 (TEX-NPS); Poole 4548, 5/22/2002 (TEX-NPS); Correll 14915, 10/7/1952 (LL); Labus 121, 4/23/1988 (SWT, TAMU, TEX); Turner 504, 4/18/1949 (SRSC); Turner s.n., 9/13/1948 (SRSC); Warnock 22710, 8/10/1967 (SRSC)

**Cyphomeris gypsophiloides** (M. Martens & Galeotti) Stand.
red cyphomeris
Infrequent on rocky slopes, boulders, cliffs, canyons, and intermittent drainages
Poole 4467, 4/17/2002 (TEX-NPS); Goldschmidt s.n., 10/22/1932 (TEX); Labus 375, 10/16/1988 (SWT); Mahrt 92, 10/13/1990 (TEX); Parks 207, 4/10/1949 (SRSC); Turner 503, 4/18/1949 (SRSC)
Mirabilis albida (Walter) Heimerl
white four-o’clock
(M. dumetorum Shinners; M. grayana (Stand.) Standl.; M. oblongifolia (A. Gray) Heimerl)
Rare on cliffs, boulders, and outcrops
Poole 4699, 10/30/2002 (TEX-NPS); Turner 901, 5/22/1949 (SRSC, TEX)

Nyctaginea capitata Choisy
scarlet muskflower
Rare on flats, ledges, and disturbed areas
Poole 4817, 6/19/2003 (TEX-NPS); Labus 372, 10/16/1988 (SWT)

OLEACEAE

Forestiera angustifolia Torr.
narrowleaf elbowbush
Common rocky slopes and flats
Poole 4776, 4/10/2003 (TEX-NPS); Labus 402, 2/4/1989 (TEX)

Forestiera reticulata Torr.
netleaf elbowbush
Rare on rocky slopes, ledges, bluffs, outcrops, and cliffs
Poole 4651, 7/11/2002 (TEX-NPS); Labus 293, 8/24/1988 (TAMU)

Fraxinus berlandieriana A. DC.
Berlandier ash
Rare on silty soils along river and creek banks, rock ledges, canyons
Poole 4594, 6/26/2002 (TEX-NPS); Correll 12908, 6/27/1946 (LL); Correll 19391, 7/7/1958 (LL); Correll 32611, 4/21/1966 (LL); Correll 38413, 4/10/1970 (LL); Mears 2493, 4/16/1968 (TEX); Parks 209, 4/10/1949 (LL, SRSC); Warnock 47199, 3/29/1947 (LL, SRSC)

Fraxinus greggii A. Gray
Gregg ash
Infrequent (locally common at a few sites) on rocky slopes, ledges, outcrops, & intermittent drainages
Mears 2615, 4/17/1968 (TEX); Parks 216, 4/10/1949 (TEX); Powell 3058, 2/18/1977 (SRSC); Reed 2294, 5/31/2001 (TAMU); Warnock 47209, 3/29/1947 (SRSC); Worthington 26183, 3/16/1997 (UTEP)

Fraxinus texensis (A. Gray) Sarg.
Texas ash
Rare in silty soils along river and creek banks
Observed in uppermost Amistad reaches of Devil’s River and the south fork of San Pedro Creek but not collected.

Menodora heterophylla Moric. ex A. DC.
redbud menodora
Rare on grasslands, rocky flats and slopes
Turner 898, 5/22/1949 (SRSC)

Menodora longiflora A. Gray
showy menodora
Rare (locally common at only site) on rocky slopes, cliffs, ledges, outcrops, boulders, bluffs, and flats
Poole 4668, 10/9/2002 (TEX-NPS); Amistad NRA Interpretive collection

Menodora scabra A. Gray
rough menodora
Rare in rocky flats, slopes, outcrops, ledges, bluffs, cliffs, and intermittent drainages
Observed at the Rock Quarry campground, Cow Creek, & Pecos River picnic area but not collected

ONAGRACEAE

Calylophus berlandieri Spach subsp. berlandieri
halfshrub sundrops
Rare on gravelly slopes, flats, and disturbed areas
Poole 4476, 4/17/2002 (TEX-NPS); Poole 4578, 5/24/2002 (TEX-NPS)

Calylophus berlandieri Spach subsp. pinifolius (Engelm. ex A. Gray) Towner
Berlandier’s sundrops
Not seen during this study; Amistad Reservoir area
Flyr 946, 3/27/1966 (TEX)
**Calylophus hartwegii** (Benth.) P. H. Raven *subsp. maccartii* (Shinners) Towner & P. H. Raven

Pringle evening primrose

Rare on rocky slopes, flats, and disturbed areas

Poole 4734, 3/25/2003 (TEX-NPS); Flyr 719, 10/9/1965 (TEX); Flyr 879, 3/26/1966 (TEX); McVaugh 8259, 5/9/1947 (TEX)

**Calylophus hartwegii** (Benth.) P. H. Raven *subsp. pubescens* (A. Gray) Towner & P. H. Raven

Grand Prairie evening primrose

Not seen during this study; Amistad Reservoir area

Flyr 719, 10/9/1966 (TEX)

**Gaura calcicola** P. H. Raven & D. P. Greg.

Texas bee blossoms

Rare on silty and/or gravelly soils along river banks, rocky slopes, and ledges

Poole 4663, 7/12/2002 (TEX-NPS); Labus 151, 5/10/1988 (SWT); Reed 2292, 5/31/2002 (TAMU)

**Gaura coccinea** Pursh

scarlet gaura

Rare on rocky flats and slopes

Observed once in Seminole Canyon State Historical Park but not collected.

**Gaura suffulta** A. Gray *var. suffulta*

wild honeysuckle

Rare (locally common at one site) on silty and/or gravelly soils

Correll 27130, 3/31/1963 (LL)

**Ludwigia octovalvis** (Jacq.) P. H. Raven

shrubby water primrose

Rare in silty soils along edges of rivers

Crutchfield 3399, 7/13/1967 (LL)

**Oenothera falfurriae** W. Dietr. & W. L. Wagner

royal evening primrose (E)

Not seen during this study; Mile Canyon

Parks 271, 4/10/1949 (TEX). Note that this same specimen at SRSC is identified as *O. pubescens*.

**Oenothera kunthiana** (Spach) Munz

Kunth sundrops

Not seen during this study; Mile Canyon, Devil’s River bridge, Castle Canyon Island, mouth of Pecos River, and Rio Grande between Langtry and the Pecos River

Parks 208, 4/10/1949 (SRSC); Powell 3422, 3/31/1979 (SRSC); Turner 899, 5/22/1949 (SRSC); Turner 21-114, 3/25/2001 (TEX); Warnock 11964, 3/28/1954 (SRSC); Warnock 47132, 3/29/1947 (SRSC, TEX)

**Oenothera laciniata** Hill

cutleaf evening primrose

Not seen during this study; Painted Canyon

Warnock 21378, 21386, 7/29/1967 (SRSC)

**Oenothera primiveris** A. Gray

desert evening primrose

Not seen during this study; bluffs above Rio Grande at Langtry

Worthington 55863, 3/16/1997 (UTEP)

**Oenothera pubescens** Willd. ex Spreng.

South American evening primrose

Not seen during this study; Mile Canyon

Parks 271, 4/10/1949 (SRSC). Note that this same specimen at TEX is identified as *O. falfurriae*.

**Oenothera rosea** L’Hér. ex Aiton

rose sundrops

Rare on river bank ledges, rocky intermittent drainages, or disturbed areas

Poole 4761, 3/28/2003 (TEX-NPS)

**Oenothera triloba** Nutt.

stemless evening primrose

Rare along canyons and rivers

Parks 286, 4/10/1949 (SRSC); Warnock 47136, 3/29/1947 (SRSC)
**OXALIDACEAE**

*Oxalis dichondrifolia* A. Gray  
ponyfoot woodsorrel  
Rare on rocky slopes, intermittent drainages, and disturbed areas  
*Poole 4499, 4/17/2002 (TEX-NPS); Ertter 5404, 5/18/1984 (TEX); Turner 897, 5/22/1949 (SRSC)*

*Oxalis dillenii* Jacq.  
yellow woodsorrel  
Infrequent on silty or rocky soils on river banks, intermittent drainages, flats, & slopes  
*Poole 4727, 3/7/2003 (TEX-NPS)*

*Oxalis drummondii* A. Gray  
Drummond woodsorrel  
Rare on rocky slopes  
*Amistad NRA Interpretive collection; Parks 202, 4/10/1949 (SRSC); Warnock 47211, 3/29/1947 (SRSC)*

*Oxalis violacea* L.  
violet woodsorrel  
Not seen during this study; mouth of Pecos River & Seminole Canyon State Historical Park  
*Havard s.n., 10/1883 (US); Labus 379, 10/16/1988 (TEX)*

**PAPAVERACEAE**

*Argemone aenea* G. B. Ownbey  
golden pricklypoppy  
Not seen during this study; canyon at mouth of Pecos River  
*Warnock 47181, 3/29/1947 (SRSC, TEX)*

*Argemone chisosensis* G. B. Ownbey  
Chisos pricklypoppy  
Infrequent on rocky soils in intermittent drainages and disturbed areas  
*Poole 4702, 10/31/2002 (TEX-NPS)*

*Argemone mexicana* L.  
yellow pricklypoppy  
Infrequent on rocky slopes, flats, intermittent drainages, and disturbed areas  
*Poole 4763, 3/28/2003 (TEX-NPS); Reed 2241, 5/31/2001 (TAMU)*

**PASSIFLORACEAE**

*Passiflora affinis* Engelm.  
yellow passionflower  
Rare (locally common at one site), climbing on trees, shrubs, or rock outcrops or cliffs  
Observed at San Pedro campground area & North Oak Tree Camp canyon but not collected.

*Passiflora tenuiloba* Engelm.  
slenderlobe passionflower  
Infrequent on trees, shrubs, rock outcrops, ledges, and cliffs  
*Labus 86, 4/23 1988 (SWT, TEX); Warnock 11707, 9/26/1953 (SRSC, TEX); Warnock 22715, 8/10/1967 (SRSC)*

**PEDALIACEAE**

*Proboscidea louisianica* (Mill.) Thell.  
Devil’s claw  
Rare (locally common at one site) on silty and/or rocky soils in intermittent drainages or disturbed sites  
*Amistad NRA Interpretive Collection; Ertter 5407, 5/18/1984 (TEX)*

**PHYTOLACEAE**

*Rivina humilis* L.  
pigeonberry  
Rare (locally frequent at one site) on rocky flats, outcrops, bluffs, & intermittent drainages  
*Labus 40, 11/22/1987 (SWT); Labus 386, 12/17/1988 (SWT); McVaugh 8252, 5/19/1947 (TEX); Turner 885, 5/22/1949 (SRSC, TEX)*
PLANTAGINACEAE

**Plantago helleri** Small
Infrequent (locally common at a few sites) on gravelly flats, slopes, & disturbed areas
Parks 275, 4/10/1949 (SRSC); Warnock 47158, 3/29/1947 (SRSC)

**Plantago rhodosperma** Decne.
Infrequent (locally common at several sites) on silty and/or rocky soils on flats, slopes, intermittent drainages, and disturbed areas
Brown 6043, 4/12/1968 (TEX); Hogg s.n., 4/19/1978 (UTEP); Powell 3435, 3/31/1979 (SRSC); Warnock 47227, 3/29/1947 (SRSC)

PLATANACEAE

**Platanus occidentalis** L. sycamore
Rare (locally common at most sites) on rocky river and stream banks
Poole 4918, 10/9/2003 (TEX-NPS); Flyr 958, 3/27/1966 (TEX)

POLEMONIACEAE

**Gilia incisa** Benth. cutleaf gilia
Infrequent on rocky slopes, flats, and intermittent drainages
Poole 4746, 3/26/2003 (TEX-NPS); McVaugh 8238, 5/19/1947 (TEX); Mears 2577, 4/17/1968 (TEX); Turner 529, 4/18/1949 (SRSC); Warnock 21385, 7/29/1967 (SRSC); Warnock 47144, 3/29/1947 (SRSC, TEX)

**Gilia rigidula** Benth. subsp. acerosa (A. Gray) Wherry blue gilia
Rare on rocky slopes and flats
Casaday 7, no date (Amistad NRA collection)

**Gilia rigidula** Benth subsp. rigidula blue gilia
Rare on rocky slopes and flats
Pruski 740, 4/8/1979 (TEX)

POLYGALACEAE

**Polygala lindheimeri** A. Gray var. lindheimeri purple milkwort
Infrequent on rocky slopes, outcrops, cliffs, ledges, upland flats, & disturbed areas
Poole 4542, 5/22/2002 (TEX-NPS); Correll 19398, 7/7/1958 (LL); Correll 27145, 3/31/1963 (LL); Correll 32602, 5/11/1988 (LL); Labus 174, 5/11/1988 (TEX); Larson 29, 6/19/2001 (Amistad NRA collection); McVaugh 8251, 5/9/1947 (TEX); Turner 507, 4/18/1949 (LL, SRSC); Wendi 1137, 1139, 8/12/1975 (LL)

**Polygala macradenia** A. Gray glandleaf milkwort
Rare (locally common at two sites) on rocky slopes, outcrops, ledges, cliffs, & uplands
Poole 4781, 4/10/2003 (TEX-NPS)

**Polygala ovatifolia** A. Gray eggleaf milkwort
Infrequent on rocky slopes, flats, ledges, rock outcrops, boulders, & intermittent drainages
Poole 4686, 10/11/2002, (TEX-NPS); Correll 32606, 4/21/1966 (LL)

**Polygala palmeri** S. Watson rock milkwort (C)
Rare on gentle gravelly slopes and flats
Poole 4487, 4/17/2002 (TEX-NPS); Warnock 11704a, 9/26/1953 (SRSC); Warnock 19419, 7/7/1958 (LL)

**Polygala scoparioides** Chodat broom milkwort
Rare on gravelly soils on flats, slopes, and disturbed areas
Poole 4459, 4/16/2002 (TEX-NPS); Langford s.n., 8/26/1967 (LL)
POLYGONACEAE

*Eriogonum havardii* S. Watson  
Havard’s wild buckwheat  
Not seen during this study; bluffs and ledges along Rio Grande near Langtry  
*Correll 34158, 5/9/1967 (LL); Hinckley 158, 7/3/1949 (SRSC, TEX)*

*Persicaria hydropiperoides* (Michx.) Small  
swamp smartweed  
Rare in silty soils along river banks  
*Warnock 11690, 9/26/1953 (TEX)*

*Persicaria maculosa* A. Gray  
lady’s thumb (I)  
*(Polygonum persicaria L.)*  
Rare (locally common at only site) on silty soils along rivers  
*Thompson 186, 9/17/1958 (TEX)*

*Persicaria punctata* (Elliott) Small  
water smartweed  
Rare (locally common at one site) on silty soils along rivers and creeks  
*Poole 4137, 9/16/1994 (TEX); Poole 4618, 6/28/2002 (TEX-NPS); Crutchfield 3403, 7/13/1967 (LL)*

*Rumex altissimus* Alph. Wood  
pale dock  
Not seen during this study; Devil’s River near Del Rio  
*Whitehouse s.n., 4/1/1933 (TEX)*

*Rumex maritimus* L.  
golden dock  
Rare (locally common at a few sites) on rocky and/or silty soils along rivers or drainages, also inundation zone  
*Poole 4135, 9/16/1994 (TEX); Poole 4551, 5/22/2002 (TEX-NPS); Poole 4615, 6/28/2002 (TEX-NPS); Turner 99-218, 5/2/1999 (SRSC, TAES, TEX)*

*Rumex stenophyllus* Ledeb.  
narrowleaf dock  
Not seen during this study; Rio Grande at Langtry  
*Worthington 12036, 6/2/1984 (UTEP)*

*Rumex violascens* Rech. f.  
violet dock  
Not seen during this study; Mile Canyon  
*Parks 276, 4/10/1949 (SRSC); Skiles 11, 8/26/1952 (SRSC)*

PORTULACEAE

*Portulaca oleracea* L.  
common purslane  
Rare in gravelly soils in flats and disturbed areas  
Observed at Rough Canyon and San Pedro campground but not collected

*Portulaca pilosa* L.  
shaggy portulaca  
*(P. mundula I. M. Johnst.)*  
Rare on rocky slopes, bluffs, uplands, gravelly silty river banks, and disturbed areas  
*Poole 46665, 7/12/2002 (TEX-NPS); Hinckley 152, 7/3/1949 (TEX)*

PRIMULACEAE

*Anagallis arvensis* L.  
scarlet pimpernel (I)  
Not seen during this study; Devil’s River near Del Rio  
*Correll 15997, 4/18/1957 (LL, SRSC); Hanson s.n., 3/18/1919 (TEX); Turner 889, 5/22/1949 (SRSC, TEX)*
Samolus ebracteatus Kunth subsp. cuneatus (Small) R. Kunth  
largeflower brookweed  
(S. cuneatus Small)  
Rare on moist soils or ledges along river banks  
Poole 3761, 11/2/1993 (TEX); Correll 14976, 10/9/1952 (LL); Correll 15998, 4/18/1957 (LL); Flyr 1059, 4/23/1966 (TEX); Labus 148, 5/10/1988 (SWT)  

Samolus valerandi L. subsp. parviflorus (Raf.) Hultén  
smallflower brookweed  
(S. parviflorus Raf.)  
Rare on gravelly soils along river banks or rocky sites near springs  
Poole 4605, 6/28/2002 (TEX-NPS); Correll 15999, 4/18/1957 (LL); Crutchfield 3404, 7/13/1967 (LL); Warnock 47179, 3/29/1947 (SRSC)  

RAFFLESIAEAE  

Pilostyles thurberi A. Gray  
Thurber’s stemsucker  
Rare on Dalea frutescens on rocky slopes  
Poole 4507, 5/21/2002 (TEX-NPS)  

RANUNCULACEAE  

Anemone edwardsiana Tharp  
twoflower anemone (E)  
Rare on rocky slopes, flats, ledge, cliffs, and rock outcrops  
Poole 4705, 2/19/2003 (TEX-NPS); McVaugh 7730, 3/31/1947 (TEX)  

Anemone tuberosa Rydb. var. texana Enquist & Crozier  
tuber anemone  
Not seen during this study; Devil’s River Lake, Pecos River at Hwy 90 bridge, bluffs of Rio Grande near Langtry, Amistad NRA old headquarters  
Amistad NRA Interpretive collection; Hinckley 424, 3/10/1950 (SRSC); McVaugh 7729, 3/31/1947 (TEX); Worthington 26173, 3/16/1997 (UTEP)  

Clematis drummondii Torr. & A. Gray  
old man’s beard  
Common, climbing on cliffs, boulders, fences, shrubs, and disturbed areas  
Poole 4928, 10/10/2003 (TEX-NPS)  

Clematis pitcheri Torr. & A. Gray  
leatherflower  
Rare, climbing on shrubs, boulders, and cliffs  
Warnock 11689, 9/26/1953 (LL, SRSC)  

Delphinium madrense S. Watson  
Sierra Madre larkspur  
Rare on rocky slopes and flats  
Correll 27162, 3/31/1963 (LL)  

Ranunculus sceleratus L.  
blister buttercup  
Not seen during this study; Pump Canyon  
Correll 23576, 4/15/1961 (LL)  

RESEDACEAE  

Oligomeris linifolia (Vahl) J. F. Macbr.  
lineleaf whitepuff  
Rare on silty and/or rocky slopes and intermittent drainages, inundation zone  
Poole 4715, 2/20/2003 (TEX-NPS)  

RHAMNACEAE  

Colubrina texensis (Torr. & A. Gray) A. Gray  
hog-plum  
Common on rocky slopes, flats, ledges, intermittent drainages, and disturbed areas
Condalia hookeri M. C. Johnst. var. hookeri
Infrequent on rocky slopes, flats, ledges, and intermittent drainages
Warnock W358, 10/12/1940 (GH, LL, SRSC)

Condalia spathulata A. Gray
narrowleaf squawbush
Infrequent (locally common at several sites) on rocky slopes, flats, and uplands
Observed at over 20 sites but not collected

Condalia viridis I. M. Johnst.
green squawbush
Infrequent (locally common at a few sites) on rocky flats, slopes, ledges, and uplands
Poole 4684, 10/11/2002 (TEX-NPS); Labus 045, 11/22/1987 (TEX); Reed 2266, 5/31/2001 (TAMU)

Karwinskia humboldtiana (Schult.) Zucc.
coyotillo
Frequent on rocky slopes, flats, ledges, bluffs, uplands, and intermittent drainages
Correll 19397, 7/7/1958 (LL); Correll 38414, 4/10/1970 (LL); Hinkley 420, 3/10/1950 (SRSC, TEX); Johnston 46, 12/1958 (TEX); Labus 016, 11/22/1987 (TEX); McVaugh 8240, 5/9/1947 (TEX); Parks 260, 4/10/1949 (SRSC); Reed 2291, 5/31/2001 (TAMU); Suttkus 66-1, 5/15/1966 (SRSC, TEX); Tharp 8816, 6/14/1931 (SRSC, TEX); Warnock 21189, 10/12/1940 (LL, SRSC); Warnock 22713, 8/10/1967 (SRSC); Warnock 47157, 3/29/1947 (SRSC)

Ziziphus obtusifolia (Hook. ex Torr. & A. Gray) A. Gray
lotebush
Common on rocky flats, slopes, ledges, bluffs, rock outcrops, boulders, and intermittent drainages
Ertter 5399, 5/18/1984 (TEX); Labus 076, 4/23/1988 (TEX)

ROSACEAE

Prunus minutiflora Engelm. ex A. Gray
Texas almond (C, E)
Rare on rocky slopes, bluffs, ledges, outcrops, and uplands
Poole 4722, 2/21/2003 (TEX-NPS); Poole 4751, 3/27/2003 (TEX-NPS); Carr 10931, 2/28/1991 (TEX); McVaugh 772, 3/31/1947 (TEX)

Rubus trivialis Michx. var. duplaris (Shinners) Mahler
Rio Grande dewberry
(R. riograndis L. H. Bailey)
Rare (locally common at one site) on rocky soils near intermittent drainages
Observed at Canyon 6 and Oak Tree Camp but not collected

RUBIACEAE

Cephalanthus occidentalis L.
buttonbush
Common in silty, rocky soil along rivers or frequently flooded intermittent drainages
Labus 159, 5/10/1988 (TEX); Thompson 187, 9/17/1958 (TEX)

Galium aparine L.
cling-on bedstraw
Rare (locally common at one site) on silty soils on river banks and intermittent drainages
Poole 4725, 3/7/2003 (TEX-NPS)

Galium correlii Dempster
Correll’s bedstraw (C)
Rare on cliffs, boulders, and rock outcrops
Correll 32612, 4/12/1966 (LL); Crutchfield 3393, 7/13/1967 (LL); Johnston 12448, 4/29/1979 (TEX)

Galium microphyllum A. Gray
bracted bedstraw
Not seen during this study; Pump Canyon
Correll 38409, 4/10/1970 (LL)
*Galium proliferum* A. Gray  
A. Gray spreading bedstraw
- Common on rocky flats, boulders, rock outcrops, and intermittent drainages
  - Parks 241, 4/10/1949 (SRSC); Powell 3443, 3/31/1979 (SRSC); Warnock 11963, 3/28/1954 (SRSC)

*Galium virgatum* Nutt.
- wand bedstraw
- Rare (locally common at two sites) on rocky flats, rock outcrops, bluffs, and intermittent drainages
  - Mears 2592, 5/17/1968 (TEX)

*Houstonia acerosa* (A. Gray) A. Gray
- needleleaf bluets
- Rare on rocky slopes and flats
  - Casaday 37, 5/15/2001 (Amistad NRA collection)

*Stenaria nigricans* (Lam.) Terrell var. *nigricans*
- prairie bluets
- Infrequent (locally common at two sites) on rocky outcrops, boulders, cliffs, ledges, rocky slopes, and intermittent drainages
  - Poole 4619, 7/11/2002 (TEX-NPS); Correll 27780, 6/14/1963 (LL); Correll 32605, 4/21/1966 (LL); Freeman s.n., 4/30/1977 (UTEP); Labus 147, 5/10/1988 (TEX); Scudday 690, 7/1/1979 (SRSC); Turner 490, 4/13/1949 (SRSC); Turner s.n., 6/1/1948 (SRSC)

**RUTACEAE**

*Ptelea trifoliata* L.
- skunkbush, wafer ash
- Rare (locally common at two sites) on rocky slopes, boulders, and intermittent drainages
  - Flyr 1073, 4/24/1966 (TEX); Warnock 22865, 5/22/1969 (SRSC)

*Thamnosma texana* (A. Gray) Torr.
- Dutchman’s breeches
- Infrequent on rocky flats, slopes, uplands, and disturbed areas
  - Poole 4741, 3/26/2003 (TEX-NPS); Carr 10933, 2/28/1991 (TEX); Labus 100, 4/23/1988 (TAMU, TEX); Warnock 23628, 5/24/1966 (SRSC)

**SALICACEAE**

*Populus deltoides* W. Bartram ex Marshall
- eastern cottonwood
- Rare on rocky, silty soils along drainages and rivers
  - Poole 4783, 4/11/2003 (TEX-NPS)

*Salix exigua* Nutt.
- coyote willow
  - (S. thruberi Rowlee)
- Rare (locally common at one site) on silty soils on river terraces
  - Poole 4582, 6/26/2002 (TEX-NPS); Argus 11688, 5/15/1985 (TEX); Dorn 7189, 5/2/1997 (RM); Flyr 954, 4/1/1966 (TEX)

*Salix gooddingii* C. R. Ball
- Goodding willow
- Rare (common at one site) on rocky and/or silty river banks, intermittent drainages, and rocky slopes (inundation zone)
  - Poole 4602, 6/26/2002 (TEX-NPS); Argus 11690, 11691, 5/15/1985 (TEX)

*Salix nigra* Marshall
- black willow
- Infrequent (locally common at several sites) on river banks and intermittent drainages
  - Cory 38091, 8/17/1941 (TEX); Flyr 1006, 4/3/1966 (TEX); Labus 135, 5/10/1988 (SWT, TAMU, TEX); Powell 3907, 3/31/1979 (SRSC); Skiles 12, 6/26/1952 (SRSC)
**SAPINDACEAE**

_Sapindus saponaria_ L. var. _drummondii_ (Hook. & Arn.,) L. D. Benson  
western soapberry  
Rare along rocky flats and intermittent drainages  
_Trapense 2149, 5/10/1961 (LL)_

_Serjania brachycarpa_ A. Gray  
littlefruit slipplejack  
Rare, sprawling on shrubs at cliff base  
_Poole 4670, 10/9/2002 (TEX-NPS)_

_Ungnadia speciosa_ Endl.  
Mexican buckeye  
Rare (locally common at two sites) on rocky slopes, boulders, ledges, canyons, and intermittent drainages  
_Labus 066, 3/191/988 (TAMU, TEX); Mears 2616, 4/17/1968 (TEX)_

**SAPOTACEAE**

_Sideroxylon lanuginosum_ Michx. subsp. _rigidum_ (A. Gray) T. D. Penn.  
_coma, gum elastic_  
(Bumelia lanuginosa (Michx.) Pers.)  
Rare on rocky slopes and intermittent drainages  
_Labus 295, 8/24/1988 (SWT); Warnock 47206, 3/29/1947 (SRSC)_

**SCROPHULARIACEAE**

_Bacopa monnieri_ (L.) Wettst.  
_water hyssop_  
Infrequent (community dominant at most sites) on river banks or ledges or lower inundation zone  
_Poole 4532, 5/22/2002 (TEX-NPS); Crutchfield 3400, 7/13/1967 (LL); Mears 2544, 4/16/1968 (TEX)_

_Castilleja rigida_ Eastw.  
_rigid Indian paintbrush_  
(C. _latebracteata_ Pennell)  
Rare on rocky slopes, flats, and cliffs  
_Poole 3812, 4/11/1994 (TEX); Poole 4757, 3/28/2003 (TEX-NPS); Goldschmidt s.n., 10/28/1932 (TEX); McVaugh 7720, 3/31/1947 (TEX)_

_Castilleja sessiliflora_ Pursh  
downy Indian paintbrush  
Not seen during this study; Hwy 277 South campsite and Painted Canyon Amistad NRA Interpretive collection; Goldsmith s.n., 10/22/1932 (TEX)

_Leucophyllum frutescens_ (Berland.) I. M. Johnst.  
cenizo  
Abundant (community dominant) on rocky flat, slopes, ledges, and rock outcrops  
_Freeman s.n., 4/30/1977 (UTEP); Labus 82, 4/23/1988 (TEX); Worthington 8257, 5/17/1982 (UTEP)_

_Leucospora multifida_ (Michx.) Nutt.  
narrowleaf conobea  
(Stemodia _multifida_ (Michx.) Spreng.)  
Rare on rocky intermittent drainages or boulders  
_Poole 4608, 6/29/2002 (TEX-NPS); Poole 4644, 7/11/2002 (TEX-NPS)_

_Maurandya antirrhiniflora_ Humb. & Bonpl. ex Willd.  
_snapdragon vine_  
Common, climbing on shrubs or along ground  
_Mears 2614, 4/17/1968 (TEX); Powell 3426, 3/31/1979 (SRSC); Turner 520, 4/18/1949 (SRSC)_

_Mimulus glabratrus_ Kunth  
yellow monkeyflower  
Rare (common at only site) on rocky alluvium near spring  
_Poole 4606, 6/28/2002 (TEX-NPS)_
**Penstemon baccharifolius** Hook. baccharisleaf penstemon
Infrequent (locally common at several sites) on cliffs, bluffs, rock outcrops, and boulders
Poole 4643, 7/11/2002 (TEX-NPS); Amistad NRA Interpretive Collection; Correll 19402, 7/7/1958 (LL); Goldschmidt s.n., 10/22/1932 (TEX); Labus 42, 11/22/1987 (TEX); Powell 3059, 2/18/1977 (SRSC); Turner 15964, 5/19/1991 (SRSC, TEX); Turner s.n., 6/15/1948 (SRSC); Warnock 11694, 9/26/1953 (TEX); Warnock 22725, 8/10/1967 (SRSC); Warnock 23618, 5/24/1966 (SRSC); Warnock 47223, 3/29/1947 (SRSC); Woodruff 305, 5/17/1989 (TEX); Worthington 12016, 6/2/1984 (UTEP)

**Seymeria texana** (A. Gray) Pennell Texas seymeria (C, E)
Rare on rocky slopes or flats in grasslands or shrublands
Observed once in Hunt Area but not collected

**Stemodia schottii** Holz. Schott’s stemodia
Rare on silty clay soils in intermittent drainage in inundation zone
Poole 4830, 6/20/2003 (TEX-NPS)

**Verbascum thapsus** L. common mullein (I)
Rare on ledges, intermittent drainages, flats, and disturbed areas
Poole 4766, 3/28/2003 (TEX-NPS)

**Veronica peregrina** L. wandering veronica
Not seen during this study; Mile Canyon and near mouth of the Pecos River
Parks 264, 4/10/1949 (SRSC); Warnock 47180, 3/29/1947 (SRSC)

**SIMAROUBACEAE**

**Castela erecta** Turpin subsp. texana (Torr. & A. Gray) Cronquist goatbush
Infrequent (locally common at a few sites) on rocky slopes, flats, and ledges
Ertter 5400, 5/18/1984 (TEX); Labus 074, 4/23/1988 (TEX); McVaugh 7739, 3/31/1947 (TEX); Powell 3415, 3/31/1979 (SRSC)

**SOLANACEAE**

**Calibrachoa parviflora** (Juss.) D’Arcy mudflat petunia
(Petunia parviflora Juss.)
Infrequent (locally common at several sites) on rocky and/or silty soils on flats or gentle slopes in intermittent drainages, along river banks, and inundation zone
Poole 4552, 5/22/2002 (TEX-NPS); Ertter 5416, 5/19/1984 (TEX); Flyr 995, 4/2/1966 (TEX); Parks 266, 4/10/1949 (LL, SRSC); Warnock 47178, 3/29/1947 (SRSC, TEX); Worthington 12037, 6/2/1984 (UTEP)

**Chamaesaracha sordida** (Dunal) A. Gray hairy false nightshade
Rare on rocky slopes or flats
Correll 15994, 4/18/1957 (LL); Mears 2556, 4/16/1968 (TEX); Neff 94-4-15-2, 4/15/1992 (TEX)

**Chamaesaracha villosa** Rydb. Trans-Pecos five-eyes
Rare (locally common at a few sites) on rocky flats, slopes, and intermittent streambeds
Poole 4493, 4/17/2002 (TEX-NPS)

**Datura inoxia** Mill. Indian apple
Infrequent on rocky and/or silty soils on slopes or flats in disturbed areas
Poole 3766, 11/3/1993 (TEX); Poole 4566, 5/22/2002 (TEX-NPS)

**Hunzikeria texana** (Torr.) D’Arcy Texas cupflower
(Leptoglossis texana (Torr.) A. Gray; Nierembergia viscosa Torr.)
Rare (locally common at one site) on rocky flats, slopes, and uplands
Flyr 887, 3/26/1966 (TEX); Flyr 1018, 4/4/1966 (TEX); Flyr 1082, 4/24/1966 (TEX); Freeman s.n., 4/30/1977 (UTEP); Goldschmidt s.n., 10/22/1932 (TEX); Hinckley 413, 3/10/
1950 (LL, SRSC); McVaugh 7733, 3/31/1947 (TEX); Powell 3427, 3/31/1979 (SRSC); Warnock 47131, 3/29/1947 (SRSC)

**Lycium berlandieri** Dunal

Infrequent on rocky flats and slopes.

Correll 30668, 11/13/1964 (LL); Flyr 810, 10/25/1965 (TEX); Flyr 819, 11/8/1965 (TEX); Warnock 11696, 9/17/1958 (TEX)

**Nicotiana glauca** Graham

Tree tobacco (I)

Frequent on rocky and/or sandy soils on slopes, flats, river banks, ledges, boulders, and cliffs in inundation zone

Bray s.n., 6/3/1902 (TEX); Hogg s.n., 4/20/1978 (UTEP); Parks 273, 4/10/1949 (LL); Thompson 199, 9/17/1958 (TEX)

**Nicotiana repanda** Willd. ex Leh.

Fiddleleaf tobacco

Infrequent on rocky flats, slopes, intermittent drainages, ledges, stream and river banks

Poole 4494, 4/17/2002 (TEX-NPS); McVaugh 8249, 5/19/1947 (TEX); Parks 204, 9/17/1958 (LL, SRSC); Skiles 5, 6/26/1952 (SRSC); Warnock 47176, 3/29/1947 (SRSC)

**Nicotiana trigonophylla** Dunal

Desert tobacco

Infrequent on rocky flats, slopes, ledges, bluffs, and intermittent drainages

Johnson 6, 12/1/1958 (TEX); Warnock 221, 4/10/1949 (SRSC); Warnock 47188, 3/29/1947 (SRSC)

**Physalis cinerascens** (Dunal) Hitchc. var. cinerascens

Beach groundcherry

Infrequent (locally common at one site) on rocky and/or silty soils on flats, slopes, and disturbed areas

Poole 4560, 5/22/2002 (TEX-NPS); Poole 4580, 5/24/2002 (TEX-NPS); Correll 38411, 4/10/1970 (LL); Parks 199, 4/10/1949 (SRSC); Turner 527, 4/18/1949 (SRSC); Warnock 47167, 3/29/1947 (LL, SRSC)

**Quincula lobata** (Torr.) Raf.

Purple groundcherry

(Phyalis lobata Torr.)

Rare (locally common at one site) on rocky and/or silty flats, slopes, and disturbed areas

Flyr 924, 3/26/1966 (TEX); Parks 253, 4/10/1949 (SRSC); Powell 3452, 5/31/1979 (SRSC); Tharp 8843, 6/14/1931 (TEX); Warnock 47142, 3/29/1949 (SRSC); Worthington 8258, 5/17/1982 (UTEP)

**Solanum elaeagnifolium** Cav.

Silverleaf nightshade

Common on rocky and/or silty soils on flats, slopes, floodplains, and disturbed areas

Poole 4785, 4/11/2003 (TEX-NPS)

**Solanum ptycanthum** Dunal ex DC.

American nightshade

(misapplied by Texas authors as S. americanum Mill.)

Rare in rocky flats, slopes, and intermittent drainages

Poole 4629, 7/11/2002 (TEX-NPS); Skiles 13, 6/26/1952 (SRSC)

**Solanum rostratum** Dunal

Buffalobur

Infrequent (locally common at two sites) on rocky and/or silty soils on flats, slopes, intermittent drainages, and disturbed areas

Poole 4812, 5/20/2003 (TEX-NPS)

**Solanum triquetrum** Cav.

Texas nightshade

Rare, sprawling on shrubs, boulders, rock outcrops, or cliffs

Correll 19403, 7/7/1958 (LL); Correll 30667, 11/13/1964 (LL); Powell 3437, 3/31/1979 (SRSC); Warnock 22876, 5/22/1969 (SRSC); Warnock 47218, 3/29/1947 (SRSC)
STERCULIACEAE

Ayenia pilosa Cristóbal  
Rare on rocky slopes, ledges, and rock outcrops  
_McVaugh 8236, 5/9/1947 (TEX)_

_Hermannia texana_ A. Gray  
Texas hermannia  
Rare on rocky slopes, flats, uplands, and intermittent drainages  
_McVaugh 8241, 5/9/1947 (TEX); Reed 2252, 5/31/2001 (TAMU)_

Melochia pyramidata L.  
Pyramid flower  
Rare on river banks, intermittent drainages, and ledges  
_Poole 4597, 3/26/2003 (TEX-NPS); Labus 276, 8/24/1988 (SWT); Turner 917, 5/22/1949 (SRSC); Warnock W856, 10/2/1940 (SRSC, TEX)_

TAMARICACEAE

Tamarix aphylla (L.) H. Karst.  
Athel (I)  
Rare in rocky soils in inundation zone  
_Poole 4743, 3/26/2003 (TEX-NPS)_

Tamarix ramosissima Ledeb.  
Salt cedar (I)  
Common on rocky, silty, and/or clay soils on flats or gentle slopes along river banks, wetlands, floodplains, and inundation zone  
_Poole 3271, 5/6/1993 (TEX); Poole 4512, 5/21/2002 (TEX-NPS); Poole 4744, 3/26/2003 (TEX-NPS); Larson 18, 6/19/2001 (Amistad NRA collection); Reed 2248, 5/31/2001 (TAMU); Turner 99-216, 5/2/1999 (SRSC)_

ULMACEAE

Celtis laevigata Willd. var. laevigata  
Sugar hackberry  
Rare on rocky and/or silty soils in river banks, floodplains, and canyons  
_Correll 27136, 3/31/1963 (LL); Flyr 768, 10/11/1965 (TEX); Flyr 801, 10/23/1965 (TEX); Flyr 1033, 4/26/1966 (TEX)_

Celtis laevigata Willd. var. reticulata (Torr.) L. D. Benson  
Netleaf hackberry  
_C. reticulata Torr._  
Common on rocky slopes, uplands, ledges, bluffs, and intermittent drainages  
_Poole 4786, 4/11/2003 (TEX-NPS); Flyr 785, 10/23/1965 (TEX)_

Celtis pallida Torr.  
Granjeno  
(C. ehrenbergiana) (Klotzsch) Liebm._  
Common on rocky slopes, flats, ledges, bluffs, river banks, and intermittent drainages  
_Poole 4799, 5/9/2003 (TEX-NPS); Poole 4815, 5/23/2003 (TEX-NPS); Hinckley 153, 7/3/1949 (SRSC); Labus 31, 11/22/1987 (SWT, TEX); Turner 497, 4/18/1949 (SRSC)_

Ulmus pumila L.  
Chinese elm (I)  
Rare, cultivated  
Observed at Pecos River picnic area but not collected

URTICACEAE

Boehmeria cylindrica (L.) Sw.  
False nettle  
Rare on sandy or rocky soils along river banks and shallow water along boat docks  
_Crutchfield 3396, 7/13/1967 (LL); Warnock W859, 10/12/1940 (SRSC, TEX)_

Parietaria pensylvanica Muhl. ex Willd.  
Pennsylvania pellitory  
Frequent on rocky and/or silty soils along flats, slopes, ledges, rock outcrops, riverbanks, and intermittent drainages  
_Correll 27139, 3/31/1963 (LL); Labus 154, 5/10/1988 (TEX); Labus 248, 5/23/1988 (SWT); Parks 285, 4/10/1949 (SRSC); Powell 3834, 3/31/1979 (SRSC); Warnock 11971, 3/28/1954 (SRSC); Warnock 47153, 3/29/1947 (SRSC)_
VERBENACEAE

*Aloysia gratissima* (Gillies & Hook.) Tronc.  beebrush
Frequent on rocky and/or silty soils on flats, slopes, river banks, and intermittent drainages
*Poole 4778, 4/10/2003 (TEX-NPS); *Erter 5402, 5/18/1984 (TEX); Flyr 731, 10/10/1965 (TEX); *Mears 2495, 4/16/1968 (TEX); *Thompson 191, 11/17/1958 (TEX); *Warnock 47195, 3/29/1947 (SRSC)

*Bochea linifolia* A. Gray  groovestem bochea
Rare (locally common at one site) on rocky flats, slopes, ledges, and intermittent drainages
*Poole 4700, 10/20/2002 (TEX-NPS)

*Glandularia bipinnatifida* (Nutt.) Nutt.  *var. bipinnatifida* Dakota vervain
Rare on rocky and/or silty soils along flats, river terraces, or intermittent drainages
*Poole 4736, 3/26/2003 (TEX-NPS)

*Glandularia pumila* (Rydb.) Umber  low pink vervain
(*Verbena pumila* Rydb.)
Rare (locally common at one site) on rocky and/or silty soils along flats, ledges, bluffs, river terraces, and intermittent drainages
*Poole 4709, 2/19/2003 (TEX-NPS); Flyr 912, 3/26/1966 (TEX); *Mears 2547, 4/16/1968 (TEX)

*Glandularia quadrangulata* (A. Heller) Umber  beaked vervain
(*Verbena quadrangulata* A. Heller)
Rare on rocky and/or silty soils on flats, ledges, bluffs, river terraces, and intermittent drainages
*Poole 4735, 3/26/2003 (TEX-NPS); *Turner 498, 4/19/1949 (SRSC); Turner 21-112, 3/25/2001 (TEX)

*Lantana achyranthifolia* Desf.  brushland lantana
(*L. macropoda* Torr.)
Infrequent on rocky slopes. rock outcrops, bluffs, river terraces, and intermittent drainages
*Poole 4466, 4/17/2002 (TEX-NPS); Poole 4571, 5/24/2002 (TEX-NPS); Correll 38415, 4/10/1970 (LL); Cory 38096, 8/17/1941 (TEX); Reed 2287, 5/31/2001 (TAMU); *Scudday 695, 7/1/1979 (SRSC); Tharp s.n., 6/14/1931 (TEX); *Turner 23-139, 6/8/2003 (TEX); Worthington 8256, 5/17/1982 (UETP); Worthington 26177, 3/16/1977 (UETP)

*Lantana urticoides* Hayek  calico bush
(misapplied by H. Moldenke and Texas authors as *L. horrida* Kunth)
Infrequent (locally common at one site) on rocky slopes. flats, bluffs, and rock outcrops
*Amistad NRA Interpretive Collection, Hinckley 410, 3/11/1950 (SRSC); Labus 089, 4/23/1988 (SHST, TEX); *Reed 2261, 5/31/2001 (TAMU); *Scudday 691, 7/1/1979 (SRSC); *Turner 23-187, 6/8/2003 (TEX); Worthington 12031, 6/2/1984 (UETP)

*Lantana velutina* M. Martens & Galeotti  velvet lantana
Not seen during this study; Hwy 90 bridge over Amistad Reservoir
*Worthington 8255, 5/17/1982 (UETP)

*Lippia graveolens* Kunth  scented lippia
Common (locally abundant at several sites) on rocky slopes, flats, ledges, bluffs, and rock outcrops
*Poole 3762, 11/2/1993 (TEX); Poole 4469, 4/17/2002 (TEX-NPS); Poole 4575, 5/24/2002 (TEX-NPS); *Mears 2631, 4/17/1968 (SRSC, TEX); Powell 3395, 10/27/1978 (SRSC);
Phyla nodiflora (L.) Greene

frogfruit

(P. incisa Small)

Abundant on rocky and/or silty soils on flats, river terraces, slopes, intermittent drainages, and disturbed areas

Poole 4460, 4/16/2002 (TEX-NPS); Poole 4498, 4/17/2002 (TEX-NPS); Poole 4522, 5/21/2002 (TEX-NPS); Crutchfield 3405, 7/13/1967 (LL); Labus 140, 5/10/1988 (TEX); Labus 170, no date (SHST); Larson 12, 4/19/2001 (Amistad NRA collection); Larson 24, 6/19/2001 (Amistad NRA collection)

Tetraclea coulteri A. Gray

Coulter’s wrinklefruit

Not seen during this study; Laughlin Air Force Base Recreation Area

Observed but not collected (Texas Natural Heritage Program 1995)

Verbena canescens Kunth

gray vervain

Infrequent (locally common at one site) on rocky slopes, flats, ledges, rock outcrops, and disturbed areas

Poole 4520, 5/21/2002 (TEX-NPS); Poole 4555, 5/22/2002 (TEX-NPS); Poole 4708, 2/19/2003 (TEX-NPS); Freeman s.n., 4/30/1977 (UTEP); Labus 99, 4/23/1988 (TAMU); Maars 2501, 4/16/1968 (TEX); Powell 3447, 3/31/1979 (SRSC); Pruski 749, 4/8/1979 (TEX); Reed 2245, 5/31/2001 (TAMU); Warnock 47168, 3/29/1947 (SRSC)

Verbena halei Small

slender vervain

Rare on rocky and/or silty soils on river banks or intermittent drainages

Poole 4662, 7/12/2002 (TEX-NPS); Labus 090, 4/23/1988 (SHST, TEX); Parks 254, 4/10/1949 (TEX)

Verbena neomexicana (A. Gray) Small

New Mexico vervain

Infrequent on rocky and/or silty soils on slopes, flats, and intermittent drainages

Worthington 55882, 3/16/1997 (UTEP)

Verbena perennans Wooton

perennial vervain

Not seen during this study; Spur 454

Reed 2251, 5/31/2001 (TAMU)

Verbena plicata Greene

whitevein vervain

Rare on rocky and/or silty soils on flats, slopes, bluffs, and intermittent drainages

Poole 4554, 5/22/2002 (TEX-NPS); Turner 21-113, 3/25/2001 (TEX)

Vitex agnus-castus L.

chastetree (I)

Infrequent (locally common at several sites) on rocky slopes, flats, ledges, rock outcrops, and cliffs

Poole 4798, 5/9/2003 (TEX-NPS)

VIOLACEAE

Hybanthus verticillatus (Ortega) Baill.
green violet

Rare on rocky slopes or rock outcrops

Parks 217, 4/10/1949 (SRSC); Warnock 47191, 3/29/1947 (SRSC, TEX)

VISCACEAE

Phoradendron tomentosum (DC,) Engelm. ex A. Gray

mistletoe

Infrequent on Prosopis glandulosa in rocky, silty soils on flats

Poole 4798, 5/9/2003 (TEX-NPS)
VITACEAE

**Cissus incisa** Des Moul.
cow itch, ivy treebine
Infrequent, climbing on trees, shrubs, rocks, cliffs, and ledges
*Ertter* 5415, 5/19/1984 (TEX); *Warnock* 22708, 8/10/1967 (SRSC); *Worthington* 12032, 6/2/1984 (UTEP)

**Parthenocissus heptaphylla** (Buckley) Britton ex Small
sevenleaf creeper (E)
Rare, climbing on trees, shrubs, and rocks; North Oak Tree Camp
Observed once but not collected

**Vitis monticola** Buckley
mountain grape
Rare (locally common at one site), climbing on trees, shrubs, ledges, cliffs, and rock outcrops
*Poole* 4649, 7/11/2002 (TEX-NPS); *Correll* 38412, 4/10/1970 (LL)

**Vitis rupestris** Scheele
sand grape (C)
Not seen during this study; Seminole Canyon State Park
*Labus* 138, 5/10/1988 (SHST)

ZYGOPHYLLACEAE

**Guaiacum angustifolia** Engelm.
guayacán
Common on rocky slopes, flats, ledges, river terraces, and intermittent drainages
*Ertter* 5413, 5/19/1984 (TEX); *Scudday* 697, 7/1/1979 (SRSC); *Warnock* 47174, 3/29/1947 (SRSC)

**Larrea tridentata** (Sesse & Moc. ex DC.) Coville
creosotebush
Rare (locally common at one site) on rocky slopes, ledges, and flats
*Poole* 4772, 4/9/2003 (TEX-NPS); *Flyr* 1089, 4/24/1966 (TEX); *Labus* 034, 11/22/1987 (TEX)

MONOCOTYLEDONS

AGAVACEAE

**Agave americana** L.
century plant
Rare; Hwy 277 North campground and Pecos River picnic area
Observed in cultivation but not collected

**Agave lechuguilla** Torr.
lechuguilla
Common (locally abundant at a few sites) on rocky flats, ledges, bluffs, and rock outcrops
*Poole* 4802, 5/12/2003 (TEX-NPS); *Flyr* 865, 1/15/1966 (TEX)

**Dasylirion texanum** Scheele
sotol
Frequent on rocky slopes, flats, ledges, bluffs, rock outcrops, and intermittent drainages
*Labus* 017, 11/22/1987 (TEX); *Mears* 2627, 4/17/1968 (TEX)

**Hesperaloe parviflora** (Torr.) J. M. Coult.
red yucca (C)
Rare on rocky slopes and flats
*Flyr* 1065, 4/23/1966 (TEX)

**Nolina texana** S. Watson
beargrass
Infrequent on rocky slopes, flats, ledges, and intermittent drainages
Observed at 15 sites but not collected

**Yucca constricta** Buckley
Buckley yucca
Rare on rocky slopes
Observed once at Hunt Area 4 but not collected

**Yucca reverchonii** Trel.
San Angelo yucca
Rare on rocky slopes
*Flyr* 1078, 4/24/1966 (TEX)
**Yucca thompsoniana** Trel. Thompson yucca

Common on rocky slopes and flats
Poole 4788, 5/8/2003 (TEX-NPS)

**Yucca torreyi** Shafer Torrey yucca

Frequent on rocky slopes, flats, ledges, and bluffs
Correll 27135, 3/31/1963 (LL); Flyr 989. 4/2/1966 (TEX); Nichols 3-22-92.2, 3/22/1992 (TEX)

**BROMELIACEAE**

**Tillandsia recurvata** (L.) L. ballmoss

Rare (locally common at only site) on *Quercus fusiformis*
Observed at Pafford’s Crossing but not collected

**COMMELINACEAE**

**Commelina erecta** L. erect dayflower

Not seen during this study; near Devil’s Cave near mouth of Devil’s River
Thompson 236, 9/18/1958 (TEX)

**Tinantia anomala** (Torr.) C. B. Clarke (Commelinantia anomala) (Torr.) Tharp false dayflower

Rare (locally common at one site) on rocky slopes, flats, ledges, and intermittent drainages
Correll 27129, 3/31/1963 (LL); McVaugh 8253, 5/9/1947 (TEX); Powell 3446, 3/31/1979 (SRSC); Turner 526, 4/18/1949 (SRSC)

**Tradescantia brevifolia** (Torr.) Rose Trans-Pecos spiderwort

Rare on river and stream banks, intermittent drainages
Thompson 237, 9/18/1958 (TEX); Warnock 22731, 8/10/1967 (SRSC)

**Tradescantia occidentalis** (Britton) Smyth prairie spiderwort

Not seen during this study; hills above Devil’s Lake dam and east bank of Pecos River near Hwy 90 bridge
McVaugh 8243, 5/9/1947 (TEX); Turner 494, 4/18/1949 (SRSC)

**CYPERACEAE**

**Carex planostachys** Kunze cedar sedge

Rare on rocky clay soils or along intermittent drainages
Poole 4807, 5/19/2003 (TEX-NPS)

**Cladium mariscus** (L.) Pohl subsp. *jamaicense* (Crantz) Kük. Jamaica sawgrass (C. jamaicense Crantz)

Rare (locally common at most sites) on rocky and/or silty soils on gravel bars or ledges in rivers
Poole 4592, 6/26/2002 (TEX-NPS); Cory 38025, 8/16/1941 (TEX); Crutchfield 3417, 7/13/1967 (LL)

**Cyperus elegans** L. sticky flatsedge

Rare in shallow pools on bedrock in canyons and along rivers
Poole 4695, 10/29/2002 (TEX-NPS); Cory 37966, 8/15/1941 (TEX); Goldsmith 9194, 10/22/1932 (TEX)

**Cyperus ochraceus** Vahl pond flatsedge

Rare in silty soil along river bank
Poole 4585, 6/26/2002 (TEX-NPS)
**Cyperus odoratus** L.  
fragrant flatsedge  
Rare (locally common at two sites) on rocky, silty and/or clay soils on river banks and ledges and inundation zone  
Poole 4133, 9/6/1994 (TEX); Poole 4461, 4/16/2002 (TEX-NPS); Poole 4541, 5/22/2002 (TEX-NPS); Poole 4610, 6/28/2002 (TEX-NPS); Henrickson 22621 5, 10/9/1999 (TEX)

**Cyperus squarrosus** L.  
(C. aristatus Rottb.)  
bearded flatsedge rare on thin silty or clay soils over ledges or boulders along springs or rivers  
Poole 4610a, 6/282002 (TEX-NPS)

**Eleocharis cellulosa** Torr.  
Gulf Coast spikesedge rare in mud or on bedrock in water along rivers  
Poole 4635, 7/11/2002 (TEX-NPS); Cory 38019, 8/16/1941 (TEX); Crutchfield 3398, 7/13/1967 (LL)

**Eleocharis geniculata** (L.) Roem. & Schult.  
annual spikesedge (misapplied as *E. caribaea* (Rottb.) S. F. Blake)  
Rare (locally common at three sites) in rocky, silty and/or clay soils or bedrock on river banks and near springs  
Poole 4631, 7/11/2002 (TEX-NPS); Cory 38016, 8/16/1941 (TEX); Crutchfield 3407, 7/13/1967 (LL); Nealley 122, 10/1892 (TEX)

**Eleocharis montevidensis** Kunth  
sand spikesedge infrequent (locally common at most sites) on silty river banks, gravel bars, or near springs  
Poole 4589, 6/26/2002 (TEX-NPS); Poole 4613, 6/28/2002 (TEX-NPS); Correll 25075, 5/2/1962 (LL); Parks 267, 4/10/1949 (SRSC)

**Fimbristylis vahlii** (Lam.) Link  
Vahl’s fimbry rare (common at only site) on rocky slopes and flats near springs  
Poole 4611, 6/28/2002 (TEX-NPS)

**Fuirena simplex** Vahl  
porcupine sedge rare (locally common at one site) on silty soils or bedrock along rivers and near springs  
Poole 4609, 6/28/2002 (TEX-NPS); Correll 14915A, 10/7/1952 (LL); Crutchfield 3416, 7/13/1967 (LL); Warnock 11801, 11/14/1953 (TEX)

**Rhynchospora colorata** (L.) H. Pfieff.  
whitetop sedge (Dichromena colorata (L.) Hitchc.)  
Rare on bedrock along rivers or intermittent drainages  
Poole 4630, 7/11/2002 (TEX-NPS); Poole 4659, 7/12/2002 (TEX-NPS)

**Schoenoplectus californicus** (C. A. Mey.) Soják  
California bulrush  
(Scirpus californicus (C. A. Mey.) Steud.)  
Rare (locally frequent at one site) on silty soils along rivers  
Poole 4584, 6/26/2002 (TEX-NPS); Crutchfield 3408, 7/13/1967 (LL)

**Schoenoplectus pungens** (Vahl) Palla  
American bulrush  
(Scirpus pungens Vahl)  
Not seen during this study; Amistad Reservoir area  
Flyr 978, 4/1/1966 (TEX)

**Hydrocharitaceae**

**Hydrilla verticillata** (L. f.) Royle  
hydrilla (1) rare (locally common at all sites) in shallow, still water at lake edges  
Poole 4803, 5/12/2003 (TEX-NPS)
IRIDACEAE

Sisyrinchium biforme E. P. Bicknell  
(S. dimorphum R. L. Oliv.)  
Not seen during this study; Devil’s River, west of Del Rio  
Correll 15996, 4/18/1957 (LL)  

Sisyrinchium scabrum Cham. & Schltdl.  
(S. ensigerum E. P. Bicknell; S. chilense Hook.)  
Rare on silty soils along rivers  
Warnock 3907, 3/31/1959 (SRSC)

JUNCACEAE

Juncus bufonius L.  
Not seen during this study; Mile Canyon along Rio Grande  
Parks 260, 4/10/1949 (LL, SRSC)  

Juncus nodosus L.  
Rare in silty soils near springs  
Poole 4612, 6/28/2002 (TEX-NPS)  

Juncus torreyi Coville  
Rare in silty and/or rocky soils along rivers  
Worthington 12041, 6/2/1984 (UTEP)  

LEMNACEAE

Lemna valdiviana Phil.  
Rare, floating on water in spring runs or still water in inundation zones  
Poole 4765, 3/28/2003 (TEX-NPS)

LILIACEAE

Allium drummondii Regel  
Drummond wild onion  
Rare on rocky flats, slopes, grasslands, bedrock, intermittent drainages, and disturbed areas  
Poole 4760, 3/28/2003 (TEX-NPS); Carr 10930, 2/28/1991 (TEX); Flyr 904, 3/25/1966 (TEX); McVaugh 7728, 3/31/1947 (TEX); Powell 3434, 3/31/1979 (SRSC); Warnock 47204, 3/29/1947 (SRSC); Worthington 26176, 3/16/1997 (UTEP)  

Cooperia drummondii Herb.  
(Zephyranthes chlorosolen (Herb.) D. Dietr.)  
Rare on rocky slopes  
Worthington 8246, 5/17/1982 (UTEP)  

Cooperia pedunculata Herb.  
(Zephyranthes drummondii D. Don)  
Rare on rocky slopes and river banks  
Correll 25082, 5/2/1962 (LL); McVaugh 8234, 5/9/1947 (TEX)  

Nothoscordum bivalve (L.) Britton  
Crow-poison  
Rare on rocky slopes, flats, and intermittent drainages  
Poole 4908, 10/7/2003 (TEX-NPS)

NAJADACEAE

Najas guadalupensis (Spreng.) Magnus  
Guadalupe water nympth  
Rare (locally common at one site) in shallow waters of rivers
Correll 25080, 5/2/1962 (LL); Crutchfield 3411, 7/13/1967 (LL); Larson 52, 8/16/2001 (Amistad NRA collection)

*Najas marina* L. spiny water nymph

Not seen during this study; Devil’s River across from marina

Larson 47 & 48, 8/16/2001 (Amistad NRA collection)

**POACEAE**

*Andropogon glomeratus* (Walter) Britton, Sterns, & Poggenb.
bushy bluestem

Infrequent (locally common at several sites) on silty soils along river banks and wetlands

Poole 4813, 5/22/2003 (TEX-NPS); Labus 064, 3/19/1988 (TEX); Warnock 11717, 9/26/1953 (LL)

*Aristida purpurea* Nutt. var. *longiseta* (Steud.) Vasey red threeawn

Rare (locally common at a few sites) in disturbed areas

Poole 4462, 4/16/2002 (TEX-NPS); Casaday s.n., 5/18/2001 (Amistad NRA collection); Larson 21, 6/19/2001 (Amistad NRA collection)

*Aristida purpurea* Nutt. var. *nealleyi* (Vasey) AllredNealley threeawn

(A. glauca (Nees) Walpers)

Not seen during this study; mouth of Pecos River, Mile Canyon, Castle Canyon Island

Parks 279, 4/10/1949 (SRSC); Powell 3433, 3/31/1979 (SRSC); Warnock 22716, 8/10/1967 (SRSC); Warnock 47189, 3/29/1947 (SRSC)

*Aristida purpurea* Nutt. var. *purpurea* purple threeawn

Common on rocky slopes, flats, and disturbed areas

Poole 4516, 5/21/2002 (TEX-NPS); Casaday s.n., 5/18/2001 (Amistad NRA collection); Larson 23, 6/19/2001 (Amistad NRA collection)

*Aristida purpurea* Nutt. var. *wrightii* (Nash) AllredWright’s threeawn

Infrequent (locally common at most sites) on rocky slopes, flats, and disturbed areas

Poole 3275, 5/6/1993 (TEX); Amistad NRA Interpretive Collection; Larson 16 & 17, 6/19/2001 (Amistad NRA collection); Larson 36, 6/18/2001 (Amistad NRA collection)

*Arundo donax* L. giant cane (I)

Infrequent (locally common to abundant at most sites) along river banks and mesic disturbed areas

Poole 4929, 10/10/2003 (TEX-NPS)

*Avena fatua* L. wild oat (I)

Rare on rocky slopes and flats, disturbed areas

Gould 11368, 5/25/1965 (TEX)

*Bothriochloa barbinodis* (Lag.) Herter cane bluestem

Infrequent (locally common at most sites) on rocky slopes and flats. Observed at 10 sites but not collected.

*Bothriochloa ischaemum* (L.) Keng var. *songarica* (Rupr. ex Fisch. & C. A. Mey.) Celarier & J. R. Harlan

King Ranch bluestem (I)

Frequent on rocky slopes, flats, ledges, and disturbed areas

Poole 4514, 5/21/2002 (TEX-NPS); Poole 4739, 3/26/2003 (TEX-NPS); Reed 2250, 5/31/2001 (TAMU)

*Bothriochloa laguroides* (DC.) Herter subsp. *torreyana* (Steud.) Allred & Gould silver bluestem

(B. saccharoides (Sw.) Rydb. var. *torreyana* (Steud.) Gould)

Infrequent (locally common at most sites) on rocky slopes, flats, ledges, and floodplains

Poole 3759, 11/2/1993 (TEX); Poole 4588, 6/26/2002 (TEX-NPS); Amistad NRA Interpretive Collection; Labus 157, 5/10/1988 (TAMU); Labus 337, 10/8/1988 (TEX); Larson 38, 6/18/2001 (Amistad NRA collection); Turner 907, 5/22/1949 (SRSC)
**Bouteloua barbata** Lag.
Rare on rocky and/or silty slopes and flats
*Poole 4556, 5/22/2002 (TEX-NPS)*

**Bouteloua curtipendula** (Mich.) Torr.
Common on rocky slopes, flats, ledges, and outcrops
*Poole 4804, 5/14/2003 (TEX-NPS); Amistad NRA Interpretive Collection; Labus 169, 5/10/1988 (TEX)*

**Bouteloua hirsuta** Lag.
Rare (locally common at one site) on rocky slopes, flats, and intermittent drainages
*Poole 4675, 10/10/2002 (TEX-NPS); Labus 393, 12/17/1988 (TEX)*

**Bouteloua rigidiseta** (Steud.) Hitchc.
Rare on silty slopes on gentle slopes
*Poole 4823, 6/19/2003 (TEX-NPS)*

**Bouteloua trifida** Thurb.
Common on rocky flats, ledges, slopes, floodplains, and disturbed areas
*Poole 4526, 5/21/2002 (TEX-NPS); Poole 4683, 10/11/2002 (TEX-NPS); Poole 4916, 10/9/2003 (TEX-NPS); Amistad NRA Interpretive Collection; Casaday 12, 5/4/2001 (Amistad NRA collection); Labus 127, 4/23/1988 (TEX); Labus 329, 10/1/1988 (TEX); Larson 22, 6/19/2001 (Amistad NRA collection); Parks 240, 4/10/1949 (SRSC); Powell 3392, 10/27/1978 (SRSC); Warnock 23631, 5/24/1966 (SRSC); Worthington 12049, 6/2/1984 (UTEP)*

**Brachiaria fasciculata** (Sw.) Parodi
(browntop panicum)
(Panicum fasciculatum Sw.; Urochloa fasciculata (Sw.) R. D. Webster)
Not seen during this study; near mouth of Pecos River
*Warnock 11697, 9/26/1953 (TEX); Warnock 11743, 9/26/1953 (LL)*

**Bromus catharticus** Vahl
(rescue grass (I))
(B. unioloides Kunth)
Rare on rocky slopes, flats, and intermittent drainages
*Poole 4748, 3/27/2003 (TEX-NPS); Labus 149, 5/10/1988 (TEX)*

**Bromus rubens** L.
(red brome (I))
(B. madritensis L. subsp. rubens (L.) Husn.)
Not seen during this study; Seminole Canyon State Historical Park campground
*Labus 122, 4/23/1988 (TAMU, TEX)*

**Buchloe dactyloides** (Nutt.) Engelm.
(buffalograss)
Rare (locally common at one site) on rocky flats, slopes, river terraces, and intermittent drainages
*Warnock 11699, 9/26/1953 (SRSC)*

**Cenchrus echinatus** L.
(southern sandbur)
Not seen during this study; railroad at Devil’s River
*Egbert s.n., 9/11/1900 (TEX)*

**Cenchrus incertus** M. A. Curtis
(common sandbur)
(C. spinifex Cav.)
Infrequent (locally common at most sites) on rocky and/or silty soils on flats, slopes, and disturbed areas
*Poole 4922, 10/10/2003 (TEX-NPS); Amistad NRA Interpretive Collection; Labus 091, 4/23/1988 (TEX)*

**Cenchrus myosuroides** Kunth
(big sandbur)
Rare on silty soils along river banks
*Poole 4591, 6/26/2002 (TEX-NPS); Egbert s.n., 9/11/1900 (TEX); Hinckley 416, 3/10/1950 (SRSC); Parks 350, 5/31/1949 (LL, SRSC)*
**Chloris crinita** Lag.  
(Trichloris crinita (Lag.) Parodi)  
Not seen during this study; Pecos River canyon below Hwy 90 bridge  
Hinckley 465, 7/22/1950 (SRSC)

**Chloris cucullata** Bisch.  
Rare on rocky slopes, flats, ledges, and rock outcrops  
Amistad NRA Interpretive collection; Labus 315, 8/24/1988 (ASTC); Warnock 11712, 9/26/1953 (SRSC); Worthington 12047, 6/2/1984 (UTEP)

**Chloris pluriflora** (E. Fourn.) Clayton  
Rare along river banks  
Correll 27134, 3/31/1963 (LL)

**Chloris subdolichostachya** C. Müll.  
Rare on rocky or silty soils along intermittent drainages  
Poole 4678, 10/10/2002 (TEX-NPS)

**Chloris verticillata** Nutt.  
Rare on rocky soils on ledges  
Poole 4927, 10/10/2003 (TEX-NPS)

**Cynodon dactylon** (L.) Pers.  
Bermuda grass (I)  
Frequent on rocky and/or silty soils on river banks, floodplains, flats, slopes, ledges, rock outcrops, and disturbed areas  
Labus 85, 4/23/1988 (TEX)

**Dasyochloa pulchella** (Kunth) Rydb.  
Fluffgrass  
(Rieoneuron pulchellum (Kunth) Tateoka)  
Rare (common at only site) on rocky flats, slopes, ledges, outcrops, and intermittent drainages  
Labus 365, 10/16/1988 (TEX)

**Dichanthelium acuminatum** (Sw.) Gould & C. A. Clark var. acuminatum  
Woolly panicgrass  
(Panicum acuminatum Sw.; P. lanuginosum Elliott)  
Not seen during this study; Painted Canyon  
Warnock 21381, 7/29/1967 (SRSC)

**Dichanthelium pedicellatum** (Vasey) Gould  
Cedar panicgrass  
(Panicum pedicellatum Vasey)  
Rare (locally common at one site) on rock outcrops, ledges, boulders, and intermittent drainages  
Poole 4653, 7/11/2002 (TEX-NPS)

**Dichanthium annulatum** (Forssk.) Stapf  
Kleberg bluestem (I)  
Rare (locally common at only site) on rocky slopes  
Poole 4513, 5/21/2002 (TEX-NPS)

**Digitaria californica** (Benth.) Henrard  
Arizona cottontop  
(Trichachne californica (Benth.) Chase)  
Rare on rocky slopes, flats, ledges, rock outcrops, and intermittent drainages  
Labus 346, 10/8/1988 (TAMU); Labus 363, 10/9/1988 (TEX); Turner 499, 4/18/1949 (SRSC); Warnock 352, no date (LL, SRSC)

**Digitaria cognata** (Schult.) Pilg.  
Fall witchgrass  
(Leptoloma cognatum (Schult.) Chase)  
Rare (locally common at one site) on rocky slopes, rock outcrops, and intermittent drainages
**Echinochloa colona** (L.) Link
Not seen during this study; side canyon at Lake Walk on Devil’s River
Warnock 11692, 9/26/1953 (SRSC, TEX)

**Echinochloa muricata** (P. Beauv.) Fernald
Rough barnyard grass
Rare (locally common at only site) on rocky disturbed slopes, flats, and river bank
Henrickson 22620, 10/9/1999 (TEX); Warnock 354, no date (LL)

**Echinochloa walteri** (Pursh) A. Heller
Coast cockspur grass
Not seen during this study; side canyon at Lake Walk on Devil’s River
Warnock 11685A, 9/26/1953 (SRSC)

**Elymus canadensis** L.
Canada wildrye
Rare (locally common at one site) on rocky, silty soils on river banks
Poole 4660, 7/12/2002 (TEX-NPS)

**Eragrostis barrelieri** Daveau
Mediterranean lovegrass (I)
Rare on rocky slopes, flats, and intermittent drainages
Labus 312, 8/24/1988 (ASTC, TAMU)

**Eragrostis cilianensis** (All.) Vignolo ex Janch.
Stinkgrass (I)
Rare on rocky and/or silty soils in intermittent drainages
Poole 4558, 5/22/2002 (TEX-NPS)

**Eragrostis curtipedicellata** Buckley
Gummy lovegrass
Rare on rocky clay soil on slopes
Poole 4518, 5/21/2002 (TEX-NPS)

**Eragrostis intermedia** Hitchc.
Plains lovegrass
Infrequent on rocky slopes, flats, and intermittent drainages
Poole 4501, 4/17/2002 (TEX-NPS); Poole 4509, 5/21/2002 (TEX-NPS); Poole 4637, 7/11/2002 (TEX-NPS); Labus 129, 4/23/1988 (TEX); Labus 306, 8/24/1988 (ASTC); Warnock 11691, 9/26/1953 (SRSC, TEX)

**Eragrostis lehmanniana** Nees
Lehmann’s lovegrass (I)
Rare (locally common at one site) on rocky and/or silty river banks, slopes, and intermittent drainages
Poole 4568, 7/12/2002 (TEX-NPS); Poole 4682, 10/11/2002 (TEX-NPS)

**Eragrostis palmeri** S. Watson
Rio Grande lovegrass
Rare on rocky, silty, and/or clay soils over bedrock or in intermittent drainages
Poole 4672, 10/9/2002 (TEX-NPS); Poole 4673 & 4674, 10/10/2002 (TEX-NPS); Gould 9749, 10/11/1961 (TAES, TEX); Silveus 765 & 1539, 10/6/1932 (LL)

**Eragrostis pectinacea** (Michx.) Nees
Spreading lovegrass
Rare on rocky and/or silty soils on flats and slopes
Poole 4557, 5/22/2002 (TEX-NPS)

**Eriochloa sericea** (Scheele) Munro ex Vasey
Silky cupgrass
Not seen during this study; Blackbrush Point
Amistad NRA Interpretive Collection

**Erioneuron pilosum** (Buckley) Nash
Hairy tridens
Common on rocky and/or silty soils on river banks, slopes, flats, outcrops, and ledges
Poole 4661, 7/12/2002 (TEX-NPS); Amistad NRA Interpretive Collection; Labus 7, 11/22/1987 (TEX); Labus 51, 11/22/1987 (ASTC); Labus 125, 4/23/1988 (TEX); Labus 262, 8/23/
1988 (TAMU); Parks 243, 4/10/1949 (LL); Warnock 47193, 3/29/1947 (SRSC); Worthington 12046, 6/2/1984 (UTEP)

**Hemarthria altissima** (Poir.) Stapf & C. E. Hubb.  
(limpograss (I))

Rare on silty soils on river banks  
*Poole 4583, 6/26/2002 (TEX-NPS)*

**Heteropogon contortus** (L.) P. Beauv. ex Roem. & Schult.  
tanglehead  
Rare (locally common at one site) on rocky slopes, flats, and intermittent drainages  
*Poole 4906, 10/7/2003 (TEX-NPS); Amistad NRA Interpretive Collection; Labus 267, 8/23/1988 (ASTC); Labus 319, 10/1/1988 (TEX)*

**Hilaria belangeri** (Steud.) Nash  
curly mesquite  
Rare on rocky and/or silty soils in intermittent drainages  
*Poole 4910, 10/7/2003 (TEX-NPS)*

**Hilaria mutica** (Buckley) Benth.  
tobosagrass  
(Pleuraphis mutica Buckley)  
Not seen during this study; Seminole Canyon State Historical Park and mouth of the Pecos River  
*Labus 353, 10/9/1988 (TEX); Larson 13 & 14, 6/19/2001 (Amistad NRA collection); Warnock 11698, 9/26/1953 (LL, SRSC)*

**Leptochloa dubia** (Kunth) Nees  
green sprangletop  
Infrequent on rocky flats and slopes  
*Gould 9748, 10/1/1961 (TAES, TEX); Labus 004, 11/22/1987 (TEX)*

**Leptochloa fascicularis** (Lam.) A. Gray  
salt sprangletop  
Infrequent (locally common at one site) on silty soils along river banks and intermittent drainages  
*Poole 4595, 6/26/2002 (TEX-NPS); Poole 4923, 10/10/2003 (TEX-NPS); Silveus 267, 8/13/1931 (TEX); Silveus 2377, 8/3/1936 (TAES, TEX)*

**Leptochloa uninervia** (J. Presl.) Hitchc. & Chase  
Mexican sprangletop  
Not seen during this study; Devil’s River west of Del Rio, mouth of Pecos River, and Mile Canyon  
*Hinckley 412, 3/10/1950 (SRSC); Parks 353, 5/31/1949 (SRSC); Silveus 7639, 8/13/1936 (TEX)*

**Limnodea arkansana** (Nutt.) L. H. Dewey  
Ozarkgrass  
Rare on silty soils in intermittent drainages  
*Poole 4747, 3/27/2003 (TEX-NPS); Turner 521, 4/18/1949 (SRSC)*

**Lolium perenne** L.  
perennial ryegrass (I)  
Not seen during this study; Hwy 90 Devil’s River bridge  
*Turner 912, 5/22/1949 (SRSC)*

**Melica nitens** (Scribn.) Nutt. ex Piper  
threeflower melic  
Rare on rocky, often shaded, slopes  
*Correll 27142, 3/31/1963 (LL); McVaugh 8254, 5/9/1947 (TEX)*

**Muhlenbergia parviglumis** Vasey  
longawn muhly  
Rare (locally common at one site) in rocky and/or silty soils in intermittent drainages  
*Poole 4911, 10/7/2003 (TEX-NPS)*

**Muhlenbergia porteri** Scribn. ex Beal  
bush muhly  
Rare on rock outcrops  
*Poole 4543, 5/22/2002 (TEX-NPS)*

**Nassella leucotricha** (Trin. & Rupr.) R. W. Pohl  
Texas wintergrass  
(Stipa leucotricha Trin. & Rupr.)
Infrequent (locally common at three sites) on rocky and/or silty soils in intermittent drainages, often in woodlands

*Larson 1, 4/19/2001 (Amistad NRA collection)*

**Panicum antidotale** Retz.  
blue panicum (I)

Not seen during this study

Powell (1994) cites a location along the Pecos River bank near the railroad bridge. However, no voucher specimen was found at SRSC or in the online herbaria databases.

**Panicum hallii** Vasey var. *filipes* (Scribn.) F. R. Waller  
filly panicum  
(P. *filipes* Scribn.)

Rare (locally common at one site) on rocky slopes, flats, and intermittent drainages

Observed at Hunt Areas 3 and 5, and Seminole Canyon, but not collected

**Panicum virgatum** L.  
switchgrass

Rare (locally common at most sites) on rocky and/or silty soils on banks, terraces, and ledges along rivers, intermittent drainages, and springs

**Pappophorum bicolor** E. Fourn.  
pink pappusgrass

Common on rocky slopes, flats, ledges, and intermittent drainages

**Paspalum dilatatum** Poir.  
dallisgrass (I)

Rare in rocky and/or silty soils along rivers or drainages

**Paspalum pubiflorum** Rupr. ex E. Fourn.  
hairseed paspalum

Rare (locally common at two sites) on rocky and/or silty soils along river banks, intermittent drainages, or ephemeral pools on ledges

**Paspalum urvillei** Steud.  
Vaseygrass (I)

Rare (locally common at two sites) on rocky and/or silty soils along river banks, inundated ledges, intermittent drainages, and around springs

**Pennisetum ciliare** (L.) Link  
buffelgrass (I)

(Cenchrus ciliare L.)

Infrequent (locally common at most sites) on rocky slopes, flats, ledges, rock outcrops, bluffs, intermittent drainages, floodplains, and disturbed areas

**Phragmites australis** (Cav.) Trin. ex Steud.  
giant reed  
(P. *communis* Trin.)

Infrequent (locally common to abundant at most sites) in shallow water at river’s edge or in wet silty soils along intermittent drainages

Mears 2604, 4/17/1968 (TEX)
**Poa bigelovii** Vasey & Scribn.  
Bigelow bluegrass  
Rare on silty soils in flats and intermittent drainages  
*Poole 4720, 2/20/2003 (TEX-NPS); Silveus 2574-C, 4/19/1938 (TEX); Warnock 11958, 3/28/1954 (SRSC)*

**Polypogon monspeliensis** (L.) Desf.  
rabbit-foot grass (I)  
Rare in wet soils along river banks and intermittent drainages  
*Parks 213, 4/10/1949 (SRSC); Warnock 11951, 3/28/1954 (LL, SRSC)*

**Polypogon viridis** (Gouan) Briestr.  
water bentgrass (I)  
Not seen during this study; Hwy 90 and Devil's River  
*Turner 903, 5/22/1949 (SRSC); Warnock 3906, 3/31/1950 (SRSC)*

**Schizachyrium scoparium** (Michx.) Nash  
little bluestem  
Rare (locally common at two sites) on rocky slopes and intermittent drainages  
*Warnock 11732, 9/26/1953 (SRSC)*

**Setaria grisebachii** E. Fourn.  
Grisebach bristlegrass  
Rare in intermittent drainages  
*Warnock 11687, 9/26/1953 (LL)*

**Setaria leucopila** (Scribn. & Merr.) K. Schum.  
Plains bristlegrass  
Rare on rocky slopes, flats, and intermittent drainages  
*Poole 4502, 4/17/2002 (TEX-NPS); Poole 4538, 6/28/2002 (TEX-NPS); Hinckley 415, 3/10/1950 (SRSC)*

**Setaria parviflora** (Poir.) Kerguélen  
knotroot bristlegrass  
(misapplied as *S. geniculata* P. Beauv.)  
Rare (locally common at two sites) rocky and/or silty soils or inundated ledges on river banks, springs, or intermittent drainages  
*Setaria texana* Emery  
Texas bristlegrass  
The study area was observed  
*Sorghum halepense* (L.) Pers.  
Johnsongrass (I)  
Rare (locally common at one site) on rocky and/or silty soils along river banks or disturbed areas  
*Poole 4795, 5/8/2002 (TEX-NPS); Labus 152, 5/10/1988 (TEX)*

**Sphenopholis obtusata** (Michx.) Scribn.  
prairie wedgescale  
Not seen during this study; old Devil’s River bridge 10 miles northwest of Del Rio  
*Gould 11356, 5/25/1965 (TAES, TEX)*
**Sporobolus cryptandrus** (Torr.) A. Gray  
Sandy dropseed  
Rare (locally common at only site) on silty slopes on disturbed site  
*Poole 4924, 10/10/2002 (TEX-NPS); Parks 268, 4/10/1949 (SRSC)*

**Sporobolus pyramidatus** (Lam.) Hitchc.  
Whorled dropseed  
Rare on rocky and/or silty soils on slopes, flats, and disturbed areas  
*Poole 4559, 5/22/2002 (TEX-NPS)*

**Trichoneura elegans**  
Silveus’ grass  
Not seen during this study; Devil’s River west of Del Rio  
*Silveus 297, 8/31/1931 (TEX)*

**Tridens albescens** (Vasey) Wooton & Standl.  
White tridens  
Rare on inundated bedrock in intermittent canyons, along river banks, or other wet areas  
*Poole 4692, 10/29/2002 (TEX-NPS); Amistad NRA Interpretive Collection; Labus 145, 5/10/1988 (TEX)*

**Tridens eragrostoides** (Vasey & Scribn.) Nash  
Lovegrass tridens  
Not seen during this study; Pecos River below Hwy 90  
*Hinckley 466, 7/22/1950 (SRSC)*

**Tridens muticus** (Torr.) Nash var. *muticus*  
Slim tridens  
Rare on rocky slopes  
*Poole 4540, 5/22/2002 (TEX-NPS); Casaday s.n., 5/18/2001 (Amistad NRA collection); Labus 299, 8/24/1988 (TAMU); Labus 323, 10/1/1988 (TEX); Powell 3394, 10/27/1978 (SRSC)*

**Tridens texanus** (S. Watson) Nash  
Texas tridens  
Infrequent (locally common at two sites) on rocky slopes, flats, and intermittent drainages  
*Poole 4486, 4/17/2002 (TEX-NPS); Poole 4677, 10/10/2002 (TEX-NPS); Poole 4818, 6/19/2003 (TEX-NPS); McVaugh 10591, 5/22/1949 (LL, SRSC); Parks 247, 4/10/1949 (LL); Turner s.n., 9/13/1943 (SRSC); Warnock 11695, 9/26/1953 (SRSC); Warnock 23630, 5/24/1966 (SRSC)*

**Trisetum interruptum** Buckley  
Prairie trisetum  
Not seen during this study; Mile Canyon, Rio Grande between Langtry and mouth of the Pecos River, northwest of Amistad Dam along the Rio Grande  
*Mears 2607, 4/17/1968 (TEX); Parks 244, 4/10/1949 (LL); Warnock 11972, 3/28/1954 (LL, SRSC)*

**Vulpia octoflora** (Walter) Rydb.  
Common sixweeksgrass  
Not seen during this study; Laughlin Air Force Base Recreation Area and mouth of Pecos River  
*Poole 3813, 11/11/1994 (TEX); Warnock 47198, 3/29/1947 (SRSC)*

**POTAMOGETONACEAE**

**Potamogeton illinoensis** Morong  
Illinois pondweed  
Rare in shallow water along edges of rivers and lakes  
*Correll 25079, 5/2/1962 (LL, SRSC); Crutchfield 3412, 7/13/1967 (LL); Larson 42, 43, 44, & 46, 8/16/2001 (Amistad NRA collection)*

**Potamogeton pectinatus** L.  
Fennel-leaf pondweed  
Rare in shallow water along edges of lakes  
*Larson 49, 50, & 51, 8/16/2001 (Amistad NRA collection)*

**SMILACACEAE**

**Smilax bona-nox** L.  
Common greenbriar  
Infrequent (locally frequent at one site), climbing on trees, shrubs, and rock outcrops  
*Correll 27140, 3/31/1963 (LL); Hinckley 419, 3/10/1950 (SRSC); Holmes 5706, 5/10/1992 (TEX); Powell 3060, 2/18/1977 (TEX); Warnock 47210, 3/29/1947 (SRSC)*
TYPHACEAE

*Typha domingensis* Pers. tule
(T. angustifolia L.)
Rare (locally abundant at one site) in shallow water along rivers and inundated bedrock in intermittent canyons
*Poole 4691, 10/29/2002 (TEX-NPS); Crutchfield 3410, 7/13/1967 (LL)*

ZANNICHELLIACEAE

*Zannichellia palustris* L. common poolmat
Not seen during this study; stream ca. 2 miles northwest of entrance to Lake Walk
*Correll 25076, 5/2/1962 (LL)*
### APPENDIX B. Plant communities of amistad national recreation area comparison of poole and larson.

<table>
<thead>
<tr>
<th>Poole 2003–2004</th>
<th>Larson 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acacia berlandieri shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Acacia berlandieri-Acacia rigidula shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Acacia berlandieri-Calliandra conferta-Castella erecta subsp. texana-Forestiera angustifolia shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Acacia berlandieri-Diospyros texana-Sophora secundiflora shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Acacia berlandieri-Krameria ramosissima shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Acacia berlandieri-Leuocophyllum frutescens shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Acacia berlandieri-Quercus pungens var. vasyayana-Q. fusiformis-Porophyllum scoparium-Perityle lindheimeri open cliff very sparse vegetation</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland or open cliff sparse vegetation</td>
</tr>
<tr>
<td>Acacia farnesiana woodland</td>
<td>Acacia minuata woodland</td>
</tr>
<tr>
<td>Acacia farnesiana-Baccharis neglecta shrubland</td>
<td>Acacia minuata woodland</td>
</tr>
<tr>
<td>Acacia farnesiana-Baccharis neglecta-Tamarix ramosissima shrubland</td>
<td>Acacia minuata woodland</td>
</tr>
<tr>
<td>Acacia farnesiana-mixed grass open woodland</td>
<td>Acacia minuata woodland</td>
</tr>
<tr>
<td>Acacia farnesiana-Prosopis glandulosa-Aloysia gratissima woodland</td>
<td>Acacia minuata woodland</td>
</tr>
<tr>
<td>Acacia farnesiana-Prosopis glandulosa-Tamarix ramosissima shrubland</td>
<td>Acacia minuata woodland</td>
</tr>
<tr>
<td>Acacia rigidula shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
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<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Acacia rigidula-Acacia berlandieri-Jatropha dioica-Selaginella wrightii shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Acacia rigidula-Acacia berlandieri-Leuocophyllum frutescens shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
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<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Acacia rigidula-Calliandra conferta shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Acacia rigidula-Diospyros texana-Bothriochloa ischaemum var. songarica shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Acacia rigidula-Krameria ramosissima shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Acacia rigidula-Leuocophyllum frutescens shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Agave lechuguilla-Dasylirion texanum shrubland</td>
<td>None</td>
</tr>
<tr>
<td>Aristida purpurea grassland</td>
<td>None</td>
</tr>
</tbody>
</table>
### APPENDIX B. Continued.

<table>
<thead>
<tr>
<th>Poole 2003–2004</th>
<th>Larson 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Aristida purpurea-Bothriochloa ischaemum</em> var. <em>sorangica</em> grassland</td>
<td>None</td>
</tr>
<tr>
<td><em>Arundo donax</em> break</td>
<td><em>Phragmites australis</em> herbaceous vegetation</td>
</tr>
<tr>
<td><em>Baccharis neglecta</em> shrubland</td>
<td>None</td>
</tr>
<tr>
<td><em>Baccharis neglecta-Bothriochloa ischaemum</em> var. <em>sorangica</em> shrubland</td>
<td>None</td>
</tr>
<tr>
<td><em>Baccharis neglecta-Indigofera lindheimeri</em> shrubland</td>
<td>None</td>
</tr>
<tr>
<td><em>Baccharis neglecta-Parkinsonia aculeata</em> shrubland</td>
<td>None</td>
</tr>
<tr>
<td><em>Baccharis neglecta-Phragmites australis</em> shrubland</td>
<td><em>Phragmites australis</em> herbaceous vegetation</td>
</tr>
<tr>
<td><em>Bothriochloa ischaemum</em> var. <em>sorangica-Pennisetum ciliare-Pappophorum bicolor</em> grassland</td>
<td>None</td>
</tr>
<tr>
<td><em>Bothriochloa laguroides</em> subsp. <em>torreyana-Aristida purpurea-Bothriochloa ischaemum</em> var. <em>sorangica</em> grassland</td>
<td>None</td>
</tr>
<tr>
<td><em>Calliandra conferta-Acacia berlandieri</em> shrubland</td>
<td><em>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri</em> shrubland</td>
</tr>
<tr>
<td><em>Calliandra conferta-Krameria ramosissima</em> shrubland</td>
<td><em>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri</em> shrubland</td>
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<tr>
<td><em>Celis laevigata</em> var. <em>reticulata-Acacia rigidula-Prospis glandulosa</em> woodland</td>
<td><em>Prosopis glandulosa</em> woodland</td>
</tr>
<tr>
<td><em>Cephalanthus occidentalis</em> shrubland</td>
<td>None</td>
</tr>
<tr>
<td><em>Cephalanthus occidentalis-Acacia farnesiana</em> shrubland</td>
<td><em>Acacia minuata</em> shrubland</td>
</tr>
<tr>
<td><em>Cephalanthus occidentalis-Baccharis neglecta-Indigofera lindheimeri</em> shrubland</td>
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</tr>
<tr>
<td><em>Chilopsis linearis-Indigofera lindheimeri</em> shrubland</td>
<td>None</td>
</tr>
<tr>
<td><em>Cynodon dactylon</em> grassland</td>
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</tr>
<tr>
<td><em>Eleocharis</em> spp. herbaceous vegetation</td>
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</tr>
<tr>
<td><em>Fouquieria splendens</em> shrubland</td>
<td>None</td>
</tr>
<tr>
<td><em>Hydrilla verticillata</em> submerged aquatic vegetation</td>
<td>None</td>
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<tr>
<td><em>Indigofera lindheimeri-Seina lindheimeri</em> shrubland</td>
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</tr>
<tr>
<td><em>Justicia americana</em> emergent aquatic vegetation</td>
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<tr>
<td><em>Leucophyllum frutescens</em> shrubland</td>
<td><em>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri</em> shrubland</td>
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<tr>
<td><em>Leucophyllum frutescens-Acacia berlandieri</em> shrubland</td>
<td><em>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri</em> shrubland</td>
</tr>
<tr>
<td><em>Lippia graveolens-Acacia berlandieri</em> shrubland</td>
<td><em>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri</em> shrubland</td>
</tr>
<tr>
<td><em>Lippia graveolens-Acacia rigidula</em> shrubland</td>
<td><em>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri</em> shrubland</td>
</tr>
<tr>
<td><em>Lippia graveolens-Aristida purpurea</em> shrubland</td>
<td><em>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri</em> shrubland</td>
</tr>
<tr>
<td>None</td>
<td><em>Hilaria belangeri-Bouteloua curtipendula</em> herbaceous vegetation</td>
</tr>
<tr>
<td>Poole 2003–2004</td>
<td>Larson 2002</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Opuntia engelmannii var. lindheimeri-Salvia farinacea shrubland</td>
<td>None</td>
</tr>
<tr>
<td>Pappophorum bicolor grassland</td>
<td>None</td>
</tr>
<tr>
<td>Parkinsonia texana-Castela erecta subsp. texana-</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Forestiera angustifolia shrubland</td>
<td>Phragmites australis herbaceous vegetation</td>
</tr>
<tr>
<td>Pennisetum ciliare grassland</td>
<td>None</td>
</tr>
<tr>
<td>Phragmites australis-Arundo donax riparian corridor</td>
<td>Phragmites australis herbaceous vegetation</td>
</tr>
<tr>
<td>Phragmites australis-Panicum virgatum grassland</td>
<td>None</td>
</tr>
<tr>
<td>Phyla nodiflora-Cynodon dactylon-Bacopa monnieri herbaceous vegetation</td>
<td>Rock outcrop/butte sparse vegetation</td>
</tr>
<tr>
<td>Phyla nodiflora-Nicotiana glauca-Vitex agnus-castus rock outcrop sparse vegetation</td>
<td>Phragmites australis herbaceous vegetation</td>
</tr>
<tr>
<td>Platanus occidentalis-Cladium mariscus subsp. jamaicensis-Phragmites australis-Panicum virgatum very sparse woodland</td>
<td></td>
</tr>
<tr>
<td>Porophyllum scoparium sparsely vegetated rock outcrop</td>
<td>Rock outcrop/butte sparse vegetation</td>
</tr>
<tr>
<td>Porophyllum scoparium-Heterotheca fulcrata-Penstemon baccharifolius sparsely vegetated rock outcrop</td>
<td>Rock outcrop/butte sparse vegetation</td>
</tr>
<tr>
<td>Prosopis glandulosa woodland</td>
<td>Prosopis glandulosa woodland</td>
</tr>
<tr>
<td>Prosopis glandulosa-Acacia farnesiana woodland</td>
<td>Prosopis glandulosa woodland</td>
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<td>Prosopis glandulosa-Aloysia gratissima-Baccharis neglecta woodland</td>
<td>Prosopis glandulosa woodland</td>
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<tr>
<td>Prosopis glandulosa-Celtis pallida woodland</td>
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</tr>
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<td>Prosopis glandulosa-Leucophyllum frutescens shrubland</td>
<td>Prosopis glandulosa woodland</td>
</tr>
<tr>
<td>Quercus fusiformis woodland</td>
<td>Quercus fusiformis-Celtis laevigata woodland</td>
</tr>
<tr>
<td>Quercus gravesii-Pistacia mexicana woodland</td>
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<tr>
<td>Salix gooddingii-Baccharis salicifolia woodland</td>
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<td>Salix nigra-Tamarix ramosissima-Baccharis neglecta-Cynodon dactylon woodland</td>
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</tr>
<tr>
<td>Salix nigra-Tamarix ramosissima-Baccharis salicifolia-Cynodon dactylon woodland</td>
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</tr>
<tr>
<td>Salvia ballotiflora-Rhus virens-Diospyros texana shrubland</td>
<td>Acacia rigidula-Leucophyllum frutescens-Acacia berlandieri shrubland</td>
</tr>
<tr>
<td>Schoenoplectus californicus herbaceous vegetation</td>
<td>None</td>
</tr>
<tr>
<td>Tamarix ramosissima-Baccharis neglecta shrubland</td>
<td>None</td>
</tr>
</tbody>
</table>