

RARE PLANT SURVEY AND GENERAL PLANT INVENTORY  
OF CYPRESS CREEK COUNTY PARK, TRAVIS COUNTY, TEXAS,  
SUMMER 1996

21 September 1996 Draft

During the summer of 1996, botanical surveys were conducted on all Travis County parks west of the Balcones Escarpment. The goals of these surveys were to locate populations of rare, unusual, or management sensitive plant species and, at each park, to conduct a general inventory resulting in an annotated checklist of all plant species observed. Cypress Creek Park was visited on 25 June 1996, 1 July 1996, 19 July 1996, 29 July 1996 and 30 August 1996; total field time during these five visits was approximately seven hours.

### **Location/Physical Setting**

Cypress Creek Park occupies about 15 acres along both banks of Cypress Creek at its mouth at Lake Travis. Two developed portions are readily accessible. The southern unit, with a huge parking lot, a frequently mown picnic area, a boat ramp, and little natural vegetation, lies on the west side of Bullick Hollow Road just south of R. M. 2769. The northern unit, just across Cypress Creek, has a smaller parking lot and picnic area, no boat ramp, and more natural vegetation; it is reached from R. M. 2769 just west of Bullick Hollow Road. According to the Jollyville Quadrangle (USGS, 1987) the park may also include undeveloped land on the east of Bullick Hollow Road; this area, while clearly public land, may still be administered by the Lower Colorado River Authority. Although flanked in most directions by steep limestone hills, the developed portions of the park are situated mostly on level to gently sloping terrain, at elevations ranging from about 710 feet down to the pool level of Lake Travis, which is normally 681 feet.

Like most Lake Travis shoreline parks, Cypress Creek Park is underlain by Cretaceous limestone and marl of the Glen Rose Formation (Garner et al., 1976; Proctor et al., 1981). In some areas this limestone may be mantled by modern alluvium deposited since the creation of Lake Travis.

Three soil units are mapped within the park on relevant portions of sheet 22 in the Travis County soil survey, (Werchan et al., 1974). Those of the Cypress Creek floodplain are mapped as Volente complex, 1 to 8 percent slopes. Volente soils are deep, well drained soils that developed in slope alluvium. The surface layer is dark grayish-brown silty clay loam; the underlying layer is silty clay. These soils are calcareous, moderately alkaline Pachic Haplustolls and are assigned to the Deep Upland range site. Soils of foot slopes on the north side of the creek are mapped as Tarrant soils, rolling. Tarrant soils are shallow to very shallow stony clays of limestone uplands. The surface layer is dark grayish-brown stony clay about 8 inches thick; the underlying layer is

limestone. These soils are well drained, calcareous, moderately alkaline Lithic Haplustolls and are assigned to the Rocky Upland range site. Soils of foot slopes south of the creek are mapped as Brackett soils and Rock outcrop, steep. Brackett soils are shallow, well drained soils of limestone uplands. The surface layer is light brownish-gray gravelly clay loam or gravelly loam about 4 inches thick; the next layer, about 10 inches thick, is pale-brown clay loam. These soils are calcareous, moderately alkaline Typic Ustochrepts and are assigned to the Steep Adobe range site.

## Vegetation

The vegetation of Cypress Creek Park is so varied that it defies attempts at description. A number of major woodland vegetation types (along with associated grassland openings) are represented, albeit by representatives that are either tiny of themselves or are mere tips of larger bands of vegetation extending off-site. In addition, a variety of riparian and lacustrine associations are present, along with various disturbance types. If a person with a strong arm were to vigorously throw a stone in any normal, non-vertical trajectory from any point in any one plant community, chances are close to 100 percent that that stone would land in some completely different community, and chances are almost as high that the stone would fly over some other assemblage en route.

Perhaps most significant from a management perspective is a stand of mixed woodland on very gently sloping Tarrant soils west of the parking lot on the north side of Cypress Creek. Varying microhabitats and successional stages are represented within this small area, making description of its structure and composition a task perhaps too lengthy to be undertaken here. Although plateau live oak (*Quercus fusiformis*) is probably the dominant species, many other tree species are present, and an even larger number of shrub species and tree seedlings occupy the understory. Interesting species include Texas amorphia (*Amorpha roemerana*), which is found in drier, more open portions of the woodland, and Heller's marbleseed (*Onosmodium helleri*), a ground-layer forb occurring in more mesic, shaded portions. Both of these rare endemic species are discussed in detail below. East and south of the parking lot this woodland has been cleared, resulting in a partially shaded savanna-like community. The grassland component of this portion of the community is occasionally mown and regularly visited by cattle.

South of the creek a plateau live oak savanna is also present, at least in those portions supporting natural vegetation. Its structure here is more open, with a ground layer featuring many grasses and forbs found on dry rocky limestone slopes. Lakeward is a band of bermudagrass (*Cynodon dactylon*) and other weeds that are regularly mown. Along the road is a strip of young woodland dominated by saplings of cedar elm (*Ulmus crassifolia*) and hackberry (*Celtis reticulata*).

Two other major plant communities are found east of Bullick Hollow Road, the portion of the "park" that may actually be administered by LCRA. The foot of the north-facing slope supports a fairly mature Ashe juniper (*Juniperus ashei*) - Texas oak (*Quercus buckleyi*) woodland containing many species absent from other communities. Terraces along Cypress Creek, particularly

along its south bank, support a deciduous riparian woodland dominated by black willow (*Salix nigra*). Perhaps because of a perennial water source, its herbaceous community is particularly rich. During the drought of 1996, annual and fast-growing perennial components of this community colonized the banks of Cypress Creek west of Bullick Hollow Road, an area which is normally submersed under the waters of Lake Travis. It was somewhat ironic that drought conditions created one of the county's most interesting, if temporary, wetlands.

### **Target Rare Plant Species**

Six rare plant species were sought in appropriate habitat at all of the sixteen parks included for survey during this project: Texas amorphia (*Amorpha roemerana*), Texabama croton (*Croton alabamensis* var. *texensis*), Glass Mountains coral-root (*Hexalectris nitida*), Heller marbleseed (*Onosmodium helleri*), canyon mock-orange (*Philadelphus ernestii*), and Buckley tridens (*Tridens buckleyanus*). A seventh rare plant species, bracted twistflower (*Streptanthus bracteatus*), cannot be detected during summer of a drought year and was essentially omitted from this project. Information about the relative rarity, distribution, habitat, etc., of each of these species will be provided in a separate appendix at the end of the set of park reports.

### **Results of Rare Plant Surveys**

Three of the seven target species are shrubs which can be sought during most of the growing season. One of these shrubs, Texas amorphia, was discovered within the park in 1988 by Pat McNeal; this population was revisited during the current surveys (see below). No populations of the other two shrubs have been found to date at Cypress Creek Park, and both are apparently absent. Canyon mock-orange is restricted to solution-pitted limestone boulders and rimrock in and along wooded steep-sided canyons; such habitat is absent from Cypress Creek Park. Texabama croton is capable of occupying a broader range of habitats, perhaps including some of those within the park. However, it is such a conspicuous shrub that an absence report resulting from a survey of a park of this size is probably not entirely meaningless.

The other four target species are herbaceous plants, one of which, Heller marbleseed, was discovered in the park years ago and was revisited during these surveys (see below). Only one of the other three herbaceous target species was sought at Cypress Creek during this time period. The mixed woodland west of the parking lot on the north side of the creek was examined on 19 July 1996 for populations of Glass Mountains coral-root, but none were found. Most of this area is at best marginal habitat for this orchid. A summer survey, particularly one conducted following a fairly severe winter-spring drought, cannot be expected to provide presence/absence information about the second herbaceous target, bracted twistflower, as it is a spring-blooming annual which even on wet years has normally disappeared by late June. A report on the status of Buckley tridens awaits surveys to be conducted in October 1996.

TEXAS AMORPHA AT CYPRESS CREEK PARK. A small population of Texas amorpha was discovered at Sandy Creek Park in 1987 by Pat McNeal. The same population was revisited by McNeal on 16 April 1989 during BCCP-related field surveys. At that time, the population consisted of 10-15 individuals in a brushy oak-juniper woodland 15 meters from a wooden bridge, on the right side of a trail, about 150 meters southwest of the northern parking lot. McNeal reported that brush, including some Texas amorpha plants, had been cleared from portions of the site within the previous two year, but noted a steady increase in population numbers overall (McNeal, 1989a, 1989b).

This population was revisited on 1 July 1996 and 19 July 1996 by W. R. Carr. On these dates three clusters of plants were seen in the woodland area described by McNeal (other clusters were found in other parts of the park). This woodland lies on Tarrant soils over Glen Rose Limestone on terrain that slopes very gently to the south or southeast. Dominance is not immediately obvious and may be shared by plateau live oak (*Quercus fusiformis*), cedar elm (*Ulmus crassifolia*), Ashe juniper (*Juniperus ashei*) and other species. Canopy coverage is fairly high at about 20 or 25 feet, although small gaps are present. The shrub layer is generally open due to brush clearing but dense along margins.

Cluster A was located on the north side of the trail leading southwest from the wooden foot bridge west of the parking lot on the north side of Cypress Creek, 30 paces from the southwest end of that bridge. This spot should be extremely easily to relocate, since it lies at the spot where the trail bifurcates into a "right fork" and a "left fork." A total of 20 stems, representing perhaps 10 plants, was observed within a circle 3 to 4 yards in diameter. The first plant consisted of 5 stems each 6-7 feet in height; some of these stems bore nearly mature fruit. Another 7 stems, ranging in height from 4 to 7 feet, were found about 5 feet to the north along the right side of the right fork of the trail. All of the above plants are under a broken canopy and receive direct sunlight during some seasons for a brief period. The understory is quite open, perhaps as a result of the brush-clearing mentioned by Dr. McNeal. These conditions seems to be adequate for growth and reproduction. The remaining 8 stems were encountered along the left side of the right fork about 10-20 feet from the trail split described above. All of these stems were small, ranging in size from 1/2 to 2 feet in height. The age of these plants could not be determined. All were in an area of greater shade from the shrub layer.

Cluster B was found about 10-15 feet north of the left fork of the trail from a point 100 paces southwest of the southwest end of the footbridge. Two plants were seen in this area, one with 7 stems 3 to 5 feet tall, the other with a single stem 7 feet tall. Both were under a high broken canopy with few taller shrubs in the understory. Both appeared to have flowered during 1996; if mature fruit was produced it had already fallen by 19 July.

Cluster C was located in the small clearing of a light-duty utility line running roughly parallel to R. M. 2769 at the north edge of the same woodland, 32 paces northeast from the westernmost

utility pole within the park. It consisted of three amorpha shrubs, one with a single stem about 2 1/2 feet tall, one with a single stem about 4 1/2 feet tall, and a third represented by several sprouts less than 6 inches tall.

During 1996 surveys, Texas amorpha was also encountered at two previously unreported locations. Cluster D lies on the lowest part of the north-facing slope east of Bullick Hollow Road, an area either within the park or on land still administered by the Lower Colorado River Authority. About 10 shrubs were found along a small, newly-cut survey line which was assumed to be the boundary between park (or LCRA) property and private land upslope to the south. No attempt was made to measure the distance of these plants from Bullick Hollow Road. All of these shrubs were found on a moderate to steep slope in a Texas oak (*Quercus buckleyi*) -Ashe juniper woodland with a nearly closed canopy and a fairly dense shrub layer. Shading from both layers was considerably greater at this site than at the previously reported site. None of the plants seemed at a glance to be as vigorous as the larger plants in the previously reported site.

Cluster E was encountered in the southern unit of the park, about 25 paces at 42° from a picnic table on a concrete slab on the east side of the north end of the parking lot. The vegetation in this general area is mixed, consisting mostly of mown grassland, a strip of weedy deciduous woodland along Bullick Hollow Road, and in between a bit of limestone outcrop just high enough to escape maintenance. Part of this outcrop supports a little island of native shrubs, including plateau live oak, Ashe juniper, Texas persimmon (*Diospyros texana*), gum bumelia (*Bumelia lanuginosa*), and several Texas amorpha. Most notable was a shrub of minor stature (12 densely foliated stems less than 3 feet tall) but major fecundity (most stems bore several inflorescences with immature fruit). Also observed in this circle less than 10 feet in diameter were 1 shrub with 8 stems 2-3 feet tall, 1 shrub with 7 stems 2-3 feet tall, 1 shrub with 7 stems 1-2 feet tall, 1 shrub with 5 stems 1-2 feet tall, 1 shrub with 2 stems 3 feet tall, 1 shrub with 2 stems 1-2 feet tall, 1 shrub with 1 stem 3 feet tall, and 3 shrubs each with 1 stem 1 foot tall. In total, this cluster consisted of 10 shrubs with 27 stems.

HELLER'S MARBLESEED AT CYPRESS CREEK PARK. Although not considered a species of conservation concern during earlier BCCP surveys, Heller's marbleseed (*Onosmodium helleri*) should receive custodial attention from county parks staff. This Texas endemic is known from Bandera, Bexar, Comal, Hays, Kendall, Kerr and Travis counties, but within that range it is seldom encountered consistently except in the northwestern quarter of Travis County, particularly in the Bull Creek, Cypress Creek and Lake Travis watersheds. If plant species conservation is deemed more viable within the heartland of a species distribution than along its periphery, then perhaps conservation of Heller's marbleseed populations in Travis County should be a priority.

Heller's marbleseed was initially reported from Cypress Creek Park by McNeal (1989a) and was revisited by W. R. Carr on 1 July 1996 and 19 July 1996. This population lies in the mixed woodland in the picnic area at the west end of the footbridge on the north side of Cypress Creek. Several hundred plants were observed on 1 July 1996 in scattered areas between the bridge and the west end of the park, making this one of the largest concentrations of Heller's marbleseed on

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A smaller second population of Heller's marbleseed was encountered in the oak-juniper woodland on the mesic north-facing slope east of Bullick Hollow Road. About 20 plants, all healthy, were observed in passing through a small percentage of seemingly suitable habitat, but total numbers and certainly the concentration of plants are lower at this site than the first.

### **Results of General Plant Inventory**

Approximately 210 plant species have been observed within the park to date. Information about the status of all of these species is provided in the preliminary checklist attached to this report. A more complete inventory of the herbaceous flora will require additional visits in other seasons during a year of normal rainfall.

In addition to Texas amorphia and Heller's marbleseed, the flora of Cypress Creek Park includes six other species that are endemic to (found only in) central Texas: meadow daucosma (*Daucosma laciniatum*), plateau wild-mercury (*Argythamnia simulans*), twistleaf yucca (*Yucca rupicola*), Lindheimer paintbrush (*Castilleja purpurea* var. *lindheimeri*), sevenleaf creeper (*Parthenocissus heptaphylla*), and mountain grape (*Vitis monticola*). Although endemic, none is considered a species of particular conservation concern. Information about the occurrence of these species within the park can be gleaned from the attached park plant list; general information about these endemics will be presented in a separate appendix at the end of the set of park reports.

Also of interest is a large population of hairy leafcup (*Polymnia uvedalia*), a perennial herb of the sunflower family. This species ranges over much of the eastern United States but is rather rare in Texas, where it is known from small populations in Collins, Comal, Gonzales, Gregg,

Nacogdoches, McLennan and Travis counties. Within Travis County it is otherwise known from two small populations, one along Bull Creek near Spicewood Springs Road and another along Bear Creek. During the summer of 1996 at least 200 plants were observed in partial shade of black willows in an open riparian woodland on the alluvial terrace at the edge of a juniper-oak woodland on the limestone slope on the south side of Cypress Creek about 300-400 feet east of Bullick Hollow Road. This is the largest known population in Travis County, the southwestern limit of this species' distribution. Its occurrence here is largely of academic interest.