

RARE PLANT SURVEY AND GENERAL PLANT INVENTORY
OF WINDMILL RUN COUNTY PARK, TRAVIS COUNTY, TEXAS,
SUMMER 1996

23 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. Windmill Run Park was visited for approximately two hours on 24 July 1996 and for 1 hour or less on 16 September 1996.

Location/Physical Setting

Windmill Run Park occupies 50 acres about 1 mile west of the intersection of St. Rt. 71 and U.S. Rt. 290 at Oak Hill in southwestern Travis County. Access from St. Rt. 71 is via Scenic Brook Drive to Kirkham Drive. A developed portion, with two playscapes and a few picnic tables, lies on the terrace on the north side of an unnamed tributary of Williamson Creek; this intermittent stream is dammed at the east edge of the park but the impoundment normally contains no water. An undeveloped portion of the park lies on slopes south of the creek. According to the Signal Hill Quadrangle (USGS, 1986) elevation ranges from about 900 to about 950 feet above mean sea level.

The park is underlain entirely by beds of Glen Rose Limestone (Garner et al., 1980; Proctor et al., 1981). This Cretaceous formation is composed of alternating layers of hard limestone and soft marl which typically erode into a stairstep topography such as that displayed on the south side of the creek.

On sheet 60 in the Travis County soil survey (Werchan et al., 1974), three soil units are mapped from the Windmill Run area. Soils on moderately steep Glen Rose slopes in the southwestern part of the park are mapped as Brackett soils, rolling. 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 Adobe range site. Soils of steep slopes along the southeastern edge of the park are mapped as Brackett soils and Rock outcrop, steep, which are assigned to the Steep Adobe range site. Soils along the creek terrace 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.

Vegetation

Several plant communities might be recognized at Windmill Run Park. Most conspicuous are dense mottes of fairly tall mixed evergreen/deciduous woodland that occupy deep silty soils on much of the terrace north of the creek. Plateau live oak (*Quercus fusiformis*) is probably the most common canopy species, with Texas oak (*Quercus buckleyi*) and cedar elm (*Ulmus crassifolia*) of secondary importance. The understory of these mottes is uniformly crowded with Ashe juniper (*Juniperus ashei*), some of which reach into the canopy, winterberry (*Ilex decidua*), yaupon (*Ilex vomitoria*), elbowbush, Japanese ligustrum (*Ligustrum japonicum*), poison ivy *Rhus toxicodendron*, saplings of escarpment black cherry (*Prunus serotina* ssp. *eximia*) and cedar elm, and a surprisingly large number of Carolina buckthorn (*Rhamnus caroliniana*). The ground layer is essentially absent from this deep shade, consisting of scattered clumps of sedges (*Carex* spp.), but is quite varied in those openings that have not been developed for recreational uses.

The vegetation of gently sloping terraces upstream from these live oak mottes is a mostly evergreen woodland dominated by Ashe juniper. Japanese ligustrum and other noxious exotics such as Chinese ligustrum (*Ligustrum sinense*) and firethorn (*Pyracantha* sp.) are fairly common.

Of considerably greater interest is the vegetation of Glen Rose slopes south of the creek. South and west of the western footbridge, this vegetation consists mostly of midgrass grasslands in which the principal perennial grasses, such as seep muhly (*Muhlenbergia reverchonii*), tall grama (*Bouteloua pectinata*), and little bluestem (*Schizachyrium scoparium*) share importance with a host of annual and perennial forbs (see Table 1). The slope is also dotted with succulents, such as twistleaf yucca (*Yucca rupicola*), sacahuista (*Nolina texana*) and Devil's shoestring (*Nolina lindheimeriana*), as well as patches of woodland that appear to have been reduced in extent by a fairly recent fire. Important woodland species include Ashe juniper, plateau live oak, Texas oak, Lindheimer silk-tassel (*Garrya ovata* ssp. *lindheimeri*), and various smaller shrubs.

Most of these woody plants are also important components of the woodland on steep north-facing slopes along the south bank of the creek between the eastern footbridge and the dam. In addition this strip of woodland includes several shrubs and small trees not or seldom encountered elsewhere in the park, such as Mexican buckeye (*Ungnadia speciosa*), littleleaf mulberry (*Morus microphylla*), and rusty blackhaw (*Viburnum rufidulum*).

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 (*Crotonalab amensis* var. *texensis*), Glass Mountains coral-root (*Hexalectris nitida*), Heller marbled seed (*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 relatively 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

None of the target rare plant species was encountered at Windmill Run Park during a two hour survey on 24 July 1996. Virtually all of the park was examined to a greater or lesser degree, but particular effort was made to locate populations of Glass Mountains coral root in juniper woodlands along the creek terrace and on Glen Rose slopes to the south; Texas amorphia in woodlands on Glen Rose slopes; and Heller marbleseed in mesic portions of the woodland on the steep north-facing slope near the dam. Although the presence of two of the herbaceous targets, Buckley tridens and bracted twistflower, could not be determined during this season, it seems unlikely that Windmill Run supports populations of any of the target plant species.

Results of General Plant Inventory

Approximately 125 plant species were observed within the park on 24 July 1996. This is a fairly remarkable number given that, due to extended drought conditions, most herbaceous plants had by then either disappeared from the landscape or been desiccated to unrecognizable skeletal forms. 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 during April and May of a normal year.

It is difficult if not impossible to judge which of the park's plant species might be of interest to the reader, but two species were of particular interest to this observer. Blue-star (*Amsonia ciliata*) is represented by a huge population on the Glen Rose slopes south and west of the western footbridge. This may be the largest population of this species on public land in Travis County. It is otherwise known in the county park system from Pace Bend and Wild Basin. Virginia nailwort (*Paronychia virginica*) was found in rockier parts of the Glen Rose slope; it is not known to occur on any other county park.

The flora of Windmill Run also includes seven species that are endemic to (found only in) central Texas: plateau gerardia (*Agalinis edwardsiana*), plateau wild-mercury (*Argythamnia simulans*), Blackfoot spurge (*Chamaesyce angusta*), devil's shoestring (*Nolina lindheimeriana*), sevenleaf creeper (*Parthenocissus heptaphylla*), mountain grape (*Vitis monticola*), and twistleaf yucca (*Yucca rupicola*). None is considered a species of 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.