

RARE PLANT SURVEY AND GENERAL PLANT INVENTORY
OF WILD BASIN PRESERVE, TRAVIS COUNTY, TEXAS,
SUMMER 1996

27 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.

The botanical resources of Wild Basin Preserve have already been investigated to a level of detail greater than that achieved during these summer 1996 surveys. For this reason, very little time was spent at Wild Basin except to search along trails for a single species, Glass Mountains coral-root (*Hexalectris nitida*). These surveys were conducted on 22 July 1996, 30 July 1996, 9 August 1996, and 30 August 1996. Total time spent in the park was approximately four hours.

Location/Physical Setting

Information of this sort has already been developed in far greater detail than possible or necessary here. Any interested reader should consult the succinct treatment of local geology by Garner (undated); the detailed and extensively annotated account of local vertebrates by Oliver (undated), and the cogent analysis of the preserve's vegetation by Williams (1977).

According to sheet 52 of the Travis County soil survey (Werchan et al., 1974), soils of the gently sloping ridgetop at the entrance to the preserve 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 this mapping unit is assigned to the Adobe range site. Soils of the balance of the preserve are mapped as Brackett soils are Rock outcrop, steep. This mapping unit is assigned to the Steep Adobe range site.

Target Rare Plant Species

Seven rare plant species were sought in appropriate habitat at the other fifteen parks included for survey during this project: Texas amorpha (*Amorpha roemerana*), Texabama croton (*Croton alabamensis* var. *texensis*), Glass Mountains coral-root (*Hexalectris nitida*), Heller's marbleseed (*Onosmodium helleri*), canyon mock-orange (*Philadelphus ernestii*), bracted twistflower (*Streptanthus bracteatus*), and Buckley tridens (*Tridens buckleyanus*). More than 15 years of

field work by dozens of competent botanists has already revealed the status of six of these species at Wild Basin, and during this short-term, part-time project no effort was made to duplicate their work.

Results of Rare Plant Surveys

Although no significant original field work was undertaken during this project, a brief summary of previous findings is in order. Cumulative field work to date has failed to turn up populations of four of the target species: bracted twistflower, canyon mock-orange, Texabama croton, and Texas amorpha. All three should be considered absent from the park, at least at present.

The other three targets are present at Wild Basin. Each is discussed, albeit briefly in some cases, below. General information about these target species will be presented in a separate appendix at the end of the set of park reports.

HELLER'S MARBLESEED AT WILD BASIN PRESERVE. See the following sources: Williams, 1977; Wild Basin News Vol. 3, No. 2 (April-May 1981); Wild Basin News Vol. 6, No. 2 (April-May 1984); Walther, 1985; Muzos, 1986. Additional information should be available from present and former preserve staff.

BUCKLEY TRIDENS AT WILD BASIN PRESERVE. See the following source(s): Wild Basin News Vol. 4, No. 6 (December 1982-January 1983); Walther, 1985. Additional information should be available from present and former preserve staff.

GLASS MOUNTAINS CORAL-ROOT AT WILD BASIN PRESERVE. One stem of this former candidate for federal endangered species status was encountered at Wild Basin during these surveys. It was first observed on 22 July 1996 6 or 7 feet north of the Possum Trail from a point 45 steps east of (downslope from) that trail's junction with the Ledge Trail (Figure 3). To relocate this individual, look for a smooth Ashe juniper (*Juniperus ashei*) branch that hangs conspicuously 5 feet or so over the trail. The *Hexalectris nitida* is 6 or 7 feet from the base of that juniper, on the opposite side of that branch, i.e., on the left side of the trail. Slope is gentle (5°) or less to the northeast; underlying geology is probably Upper Glen Rose; the soil is a grayish gravelly clay loam overlain by 1-2 inches of decaying Ashe juniper needles; the immediate area is shaded by low branches of the same juniper, along with a few much smaller trees (ca. 4 inches diameter at base) and a few scraggly Lindheimer silk-tassel (*Garrya ovata* subsp. *lindheimeri*). As this was the only *Hexalectris* (of any species) encountered during a two-hour search along all the trails within the preserve, no voucher specimen was collected. Field determination as *Hexalectris nitida* was based largely on characters of the labellum, which was about 7 mm long and white with rose-purple highlights on raised striations that ran from the base almost to the apex. The lateral lobes were about 5 mm long and solid white, i.e., completely devoid of striations, and the sinuses separating the central lobe from the two lateral lobes were less than 1 mm deep.

Although first encountered on 22 July 1996, the plant did not reach significant maturity for purposes of identification until a third visit on 9 August 1996. This stem had disappeared by the time of a fourth visit on 30 August 1996.

At least two other clusters of *Hexalectris nitida* have been reported from the park. In July 1993 or 1994 Victor Engel, a published authority on the saprophytic orchids of Texas, observed one cluster along the Woodland Trail between Ledge Trail and Creek Trail and a second cluster along the south side of the Creek Trail between its two crossings of Bee Creek. On 20 August 1995 Engel and Carr revisited these locations but found no *Hexalectris*, and none were seen at either spot on 22 July 1996.

Due to confusion in the past about the identity of *Hexalectris* species on the Edwards Plateau, it is likely that at least some of the earlier reports of crested coral-root (*Hexalectris spicata*) were actually based on *Hexalectris nitida*. A thorough assessment of the status of this rare orchid at Wild Basin awaits a year in which weather conditions stimulate flowering to a greater extent.

Results of General Plant Inventory

No general plant inventory of Wild Basin was undertaken during this summer 1996 project, if only because to look for new plants in such a well-studied area during a drought summer would have been a fool's errand. However, an effort was made to compile all of the previously recorded plant sightings at Wild Basin into one list, which was made available on disk to Georganne Foster of Wild Basin on 30 August 1996 and is reproduced in this report.

In the opinion of this observer, the significant plant resources of Wild Basin include more than the three globally-rare species mentioned above. Also of interest are several species which, although globally common or widespread, are quite rare in Travis County.

One such species is naked broom-rape (*Orobanche uniflora*). It was discovered at Wild Basin by a group of school children on 19 March 1982 (Walther in Wild Basin News Vol. 4, No. 2, April-May 1982) and was seen regularly in March during the 1980's (David Mahler, pers. comm. 1996). *Orobanche uniflora* is widely distributed across North America, ranging north to Montana and New Brunswick and east to Florida, but it has never been collected in Travis County; in fact, it has been seen only a few times in all of Texas. According to Mahler naked broom-rape occurred among seep muhly (*Muhlenbergia reverchonii*) and other grasses on more or less open slopes underlain by Upper Glen Rose Limestone.

Also of interest is a close relative, Louisiana broomrape (*Orobanche ludoviciana*), which was reported from the preserve by Walther (1985). This root-parasite ranges across much of the Great Plains, in Texas occurring mostly in the Panhandle and Rolling Plains. It has been collected in Travis County only once, from "hills east of Bee Creek" by B. C. Tharp in 1919, and Wild Basin is the site in the county from which it has recently been reported.

Shooting-star (*Dodecatheon meadia*) is another widespread species that is rare in Travis County. It occurs patchily in most of the southeastern states and ranges as far north as Wisconsin and Ohio. Mary Sophie Young (1920), the first botanist to catalogue in detail the Travis County flora, described this species as being “abundant in the floodplain and banks of Bull Creek,” a location from which it is now apparently absent. In fact, however, shooting star is currently known in Travis County only from Wild Basin, Brightleaf State Natural Area near Mt. Barker, and one or two other locations. Several dozen plants have been reported from two locations within Wild Basin (Wild Basin News Vol. 3, No. 3, June-July 1981; Wild Basin News Vol. 6, No. 2, April-May 1984; Walther, 1985).

Unlike those of the two *Orobanche* species, the locations of *Dodecatheon meadia* within the preserve are still known to preserve staff. An effort to map, preferably with a GPS unit, all of the occurrences of these unusual plants should be undertaken in the spring of 1997.