Vegetation Management Activities on Travis County Balcones Canyonlands Preserve During FY2006



Travis County
Department of Transportation and Natural Resources
Natural Resources and Environmental Quality
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INTRODUCTION

On May 2, 1996, the City of Austin and Travis County were jointly issued a U.S. Fish and Wildlife Service (USFWS) regional permit referred to as the Balcones Canyonlands Conservation Plan (BCCP) that allows incidental "take" of eight locally occurring endangered species under Section 10(a)1(b) of the Endangered Species Act (U. S. Department of the Interior, Fish and Wildlife Service 1996a). The thirty-year permit covers lands in western Travis County outside of proposed Preserve boundaries identified in the Habitat Conservation Plan and Final Environmental Impact Statement (HCP/FEIS) (U. S. Department of the Interior, Fish and Wildlife Service 1996b). The permit also covers incidental take of 27 additional species of concern should any become listed as threatened or endangered during the life of the permit.

The City of Austin and Travis County are required by the terms of the BCCP to assemble and manage suitable habitat for two endangered bird species and six karst invertebrates. This system of managed and protected habitats is known as the Balcones Canyonlands Preserve (BCP). The City of Austin and Travis County also agreed to protect and manage populations of unique or endemic plant species of concern found within preserve boundaries, as well as on other city-and county-managed tracts. Plant species of concern listed in the permit include canyon mock-orange *(Philadelphus ernestii)* and Texabama croton (*Croton alabamensis var. texensis*). Bracted twistflower (*Streptanthus bracteatus*) and Texas amorpha *(Amorpha roemerana)* were discussed in the HCP/FEIS but were not listed in the BCCP Permit (U. S. Department of the Interior, Fish and Wildlife Service 1996b). However, because these two species are rare, they are afforded the same protection as plants listed under the permit.

In addition to managing these rare plant species, Travis County Natural Resources staff also manages non-native and invasive plant species on Travis County BCP tracts in accordance with the BCP Land Management Plan (1999) and Travis County's Wildlife and Vegetation Management guidelines. Non-native and invasive plants can cause habitat degradation by out-competing and replacing native species, which can ultimately decrease the quality of food, cover, and breeding sites for wildlife. Therefore, in order to prevent a negative impact on endangered species habitat, non-native plants found on the BCP are identified and targeted for removal.

MONITORING FOR SPECIES OF CONCERN

Texabama Croton

Texabama croton is a thicket-forming woody species typically occurring as an understory shrub in mesic limestone canyon woodlands associated with live oak (*Quercus fusiformis*) mottes. In 1994 the species was first observed at Pace Bend Park (Travis County Transportation and Natural Resources Department, 1996). Pace Bend Park consists of 1520 acres owned by the Lower Colorado River Authority (LCRA) and managed by Travis County's Parks Division. The park is located in western Travis County, approximately 11 miles northwest of Bee Cave, north of State Highway 71 at the terminus of Ranch Road 2322. Pace Bend Park is found on the Pace Bend USGS 7.5" topographic quadrangle map.

All known colonies of Texabama croton at Pace Bend Park were mapped using a Global Positioning System (GPS) and are shown in **Figure 1**. Surveys within the park to locate new plants and monitor known colonies were conducted in FY2006. Additionally, all located plants were checked and noted for overall health. Three generalized categories were used in classifying health of individual plants and/or colonies: "poor" - shows significant damage from insects, deer, or other animals or appeared to be stressed; "fair" - shows marginal signs of damage or stress; and "good" – indicates a vigorous plant or colony that shows no signs of damage or stress.

Survey efforts in 2006 identified 10 new colonies since the previous survey in 2002, yielding a total of 75 colonies at Pace Bend Park (**Figure 1**). These colonies contained a total of approximately 1162 individual plants, a gain of 548 individuals from 2002 (Travis County, 2002). Approximately 94% of the Texabama croton colonies were categorized as being in good health, 4.7% were considered in fair health, and 0.9% were found to be in poor health. Field investigations for Texabama croton are conducted on a three-year cycle, with the next inventory scheduled for 2009. Protection of Texabama croton is enhanced through park staff education and training, including plant identification, familiarization of colony locations and proper management techniques.

Canyon mock-orange

Canyon mock-orange is a deciduous shrub typically associated with Cow Creek and Edwards limestone formations in both xeric and mesic juniper woodlands. This arching branched shrub is often found with elbowbush (*Forstiera pubescens*), shrubby boneset (*Eupatorium havanense*), fragrant sumac (*Rhus aromatica*), and yaupon holly (*Ilex*

vomitoria) as an understory species beneath shin oak (*Quercus sinuata*), Texas mulberry (*Morus microphylla*) and Ashe juniper (*Juniperus ashei*).

Hamilton Pool Preserve consists of 232 acres owned and managed by Travis County's Transportation and Natural Resources Department, Parks Division. The tract is located east of Hammett's Crossing on Hamilton Creek, a tributary of the Pedernales River in western Travis County. The property is located approximately 13 miles south of State Highway 71 on Hamilton Pool Road (FM 3238). Hamilton Pool Preserve is found on the Hammett's Crossing USGS 7.5" topographic quadrangle map.

Canyon mock-orange individuals were mapped and surveyed at Hamilton Pool Preserve in 2006 (see **Figure 2**). The overall health of each canyon mock-orange individual at Hamilton Pool Preserve was recorded, monitored and categorized as "good", "fair", or "poor" as previously described. During this evaluation a total of 152 plants were located. Of these, 145 had been previously located (Travis County 2000, 2002). Fifteen individuals previously recorded were unable to be located and seven new individuals were found in 2006. A total of 72% were found to be in good health, 22% were in fair health, and 6% were in poor health. Field investigations for canyon mock-orange are conducted on a three-year cycle as well, with the next inventory scheduled for 2009.

The majority of canyon mock-orange individuals are located in protected areas away from public hiking trails. Protection of this species, therefore, includes enforcement of preserve rule requiring visitors walk only on designated hiking trails. Travis County Natural Resources staff cooperate with staff at Hamilton Pool Preserve to educate the public about this species and how best to assist in its protection.

Texas amphora and bracted twistflower

In 2004, Texas amorpha individuals within Travis County BCP tracts were located and recorded using a GPS unit (Travis County Natural Resources 2004). This species will be surveyed in FY2007 as part of an ongoing three-year monitoring schedule. Currently there are no known populations of bracted twistflower on Travis County BCP tracts. Active searches will continue annually for both bracted twistflower and Texas amorpha and locations will be recorded and mapped.

NON-NATIVE SPECIES MANAGEMENT

In accordance with the BCP Land Management Plan and Travis County's Wildlife and Vegetation Management guidelines, Travis County BCP properties are continuously

inventoried for the presence of non-native and invasive species. When located, these species are assessed for potential impacts to native plant and wildlife populations. Plant species constituting a threat are prioritized for management action. Control methods employed to manage non-native species may include, but are not limited to:

- manual removal;
- application of approved site-appropriate herbicide by Structural Pest Control Board (SPCB)-licensed staff, and;
- use of prescribed fire.

Travis County Natural Resources staff targeted seven BCP tracts for non-native plant management: Nootsie, Vireo Ridge, Bunten, Lake Perspectives, Cuevas, Wild Basin Preserve and Steiner Ranch tracts (see **Figure 3**). A total of 10 species of invasive plants were identified on these BCP tracts and targeted for removal during FY2006, these species are listed below in **Table 1**. Approximately six days (48 hours) of staff time was devoted to non-native plant removal.

Table 1. Non-native and invasive plant species targeted for removal on Balcones Canyonlands Preserve tracts in FY2006 (Fiscal year Oct.2005-Oct.2006)

Species	Location	Quantity	Removal methods
Chinaberry (*Melia azedarach)*	NT, BU, VR, SRVMA, CV	~67	cut and treat with herbicide
Chaste tree *(Vitex Agnus-castus)*	BU	1	cut and treat with herbicide
Giant reed *(Arundo donax)*	WB	~.25 acres	cut and treat with herbicide
Heavenly bamboo (*Nandina domestica)*	VR, BU	3	cut and treat with herbicide and/or hand pulled
Multiflora rosa *(Rosa multiflora)*	BU	~.02 acres	Spray with herbicide
Japanese privet *(Ligustrum japonicum)*	LP, NT	3	cut and treat with herbicide
Chinese wisteria *(Wisteria sinensis)*	BU	~55	cut and treat with herbicde
Chinese tallow *(Triadica sebifera)*	CV	4	cut and treat with herbicde
Crape myrtle *(Lagerstroemia indica)*	BU	1	cut and treat with herbicde
Chinese parosol *(Firmiana simplex)*	BU	3	cut and treat with herbicde

BU= Bunten tract, NT=Nootsie tract, VR= Vireo Ridge tract, SRVMA= Steiner Ranch Vireo Management area, WB=Wildbasin Preserve, LP=Lake Perspectives tract, CV=Cuevas tract

Several techniques were used, sometimes simultaneously, to remove non-native plants. Woody plants were either cut down or "girdled" (i.e., cuts were made around the circumference of the trunk, but the plant was not felled) with hand tools such as chainsaws, handsaws, or loppers, and then most plants were treated with herbicide; a 1:5 Garlon 4/Red River Basal Oil mix was used on the majority of plants. A

Glyphosphate/surfactant mix of 2.5:5 mix or 100% Glyphosphate was applied to giant reed.

In 2006, two Travis County Natural Resource employees were SPCP (Structural Pest Control board) licensed. These two individuals also attended the necessary one-hour Continuing Education course in order to comply with annual license requirements. Two additional staff, for a total of four, will be licensed in FY2007.

RECOMMENDATIONS

- Continue to collect baseline data on unique and endemic plant species. Unusual species previously unrecorded will be assessed for degree of rarity and protected as appropriate.
- Continue efforts to locate, map and protect populations of bracted twistflower on County BCP and parklands.
- Continue efforts to locate, map and protect populations of Texas amorpha on County BCP and parklands.
- Continue to collect baseline data on non-native and invasive plant species on all current and newly acquired County properties.
- Continue to prioritize BCP properties for removal of exotics and initiate management activities.
- Priority targets for removal on the Bunten tract in FY2007 should include periwinkle, bamboo, multiflora rose and exotic wisteria. Though other non-natives exist on this tract, these species are highly invasive and will therefore be aggressively targeted in 2007. Manual and chemical control methods may be utilized. Special care should be taken in areas adjacent to any waterways containing populations of Jollyville Plateau salamanders (*Eurycea tonkawae*), a species currently petitioned for listing under the Endangered Species Act..
- Inventory and prioritize eradication of non-native plants on the newly acquired Mirtsching tract.

LITERATURE CITED

Balcones Canyonlands Preserve. 1999. Balcones Canyonlands Preserve Land Management Plan. Unpublished Document. Austin, Texas

Travis County Natural Resources. 2000. Monitoring and Management of Plant Species of Concern located on the Balcones Canyonlands Preserve in FY2004. Unpublished Document. Travis County Division of Parks and Natural Resources, Austin, Texas.

Travis County Natural Resources. 2002. Monitoring and Management of Plant Species of Concern located on the Balcones Canyonlands Preserve in FY2004. Unpublished Document. Travis County Division of Parks and Natural Resources, Austin, Texas.

Travis County Natural Resources. 2004. Monitoring and Management of Plant Species of Concern located on the Balcones Canyonlands Preserve in FY2004. Unpublished Document. Travis County Division of Parks and Natural Resources, Austin, Texas.

U. S. Department of the Interior, Fish and Wildlife Service. 1996a. Federal Fish and Wildlife Permit No. PRT-788841.

U. S. Department of the Interior, Fish and Wildlife Service. 1996b. Final Environmental Impact Statement / Habitat Conservation Plan for Proposed Issuance of a Permit to Allow Incidental Take of the Golden-cheeked Warbler, Black-capped Vireo, and six karst invertebrates in Travis County, Texas.

Travis County Transportations and Natural Resources Department. 1996. Texabama Croton *(Croton alabamensis* var. *texensis)* at Pace Bend Park, Travis County, Texas Unpublished Document, Austin, Texas

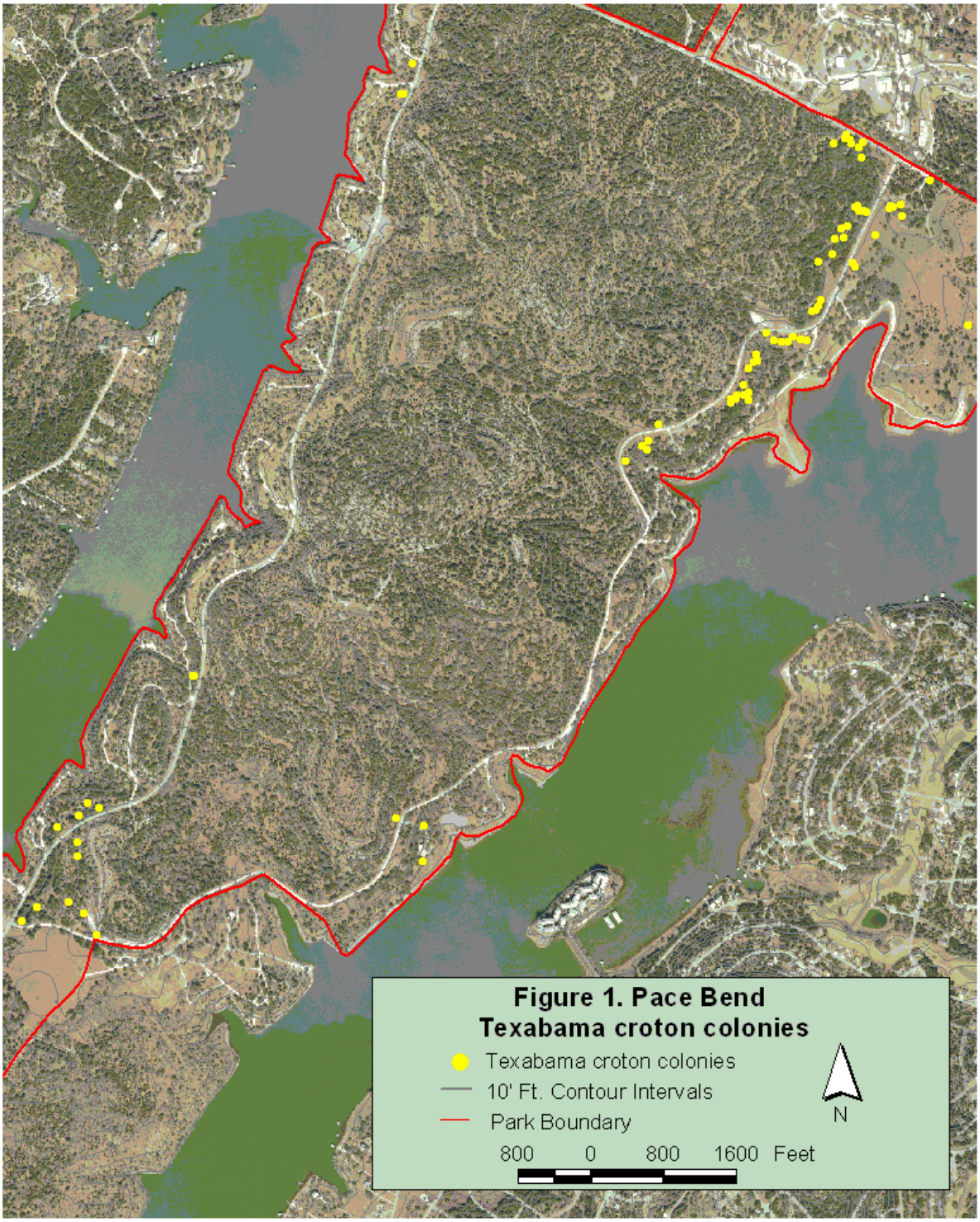

Figure.1 Pace Bend Texabama croton locations. 2006

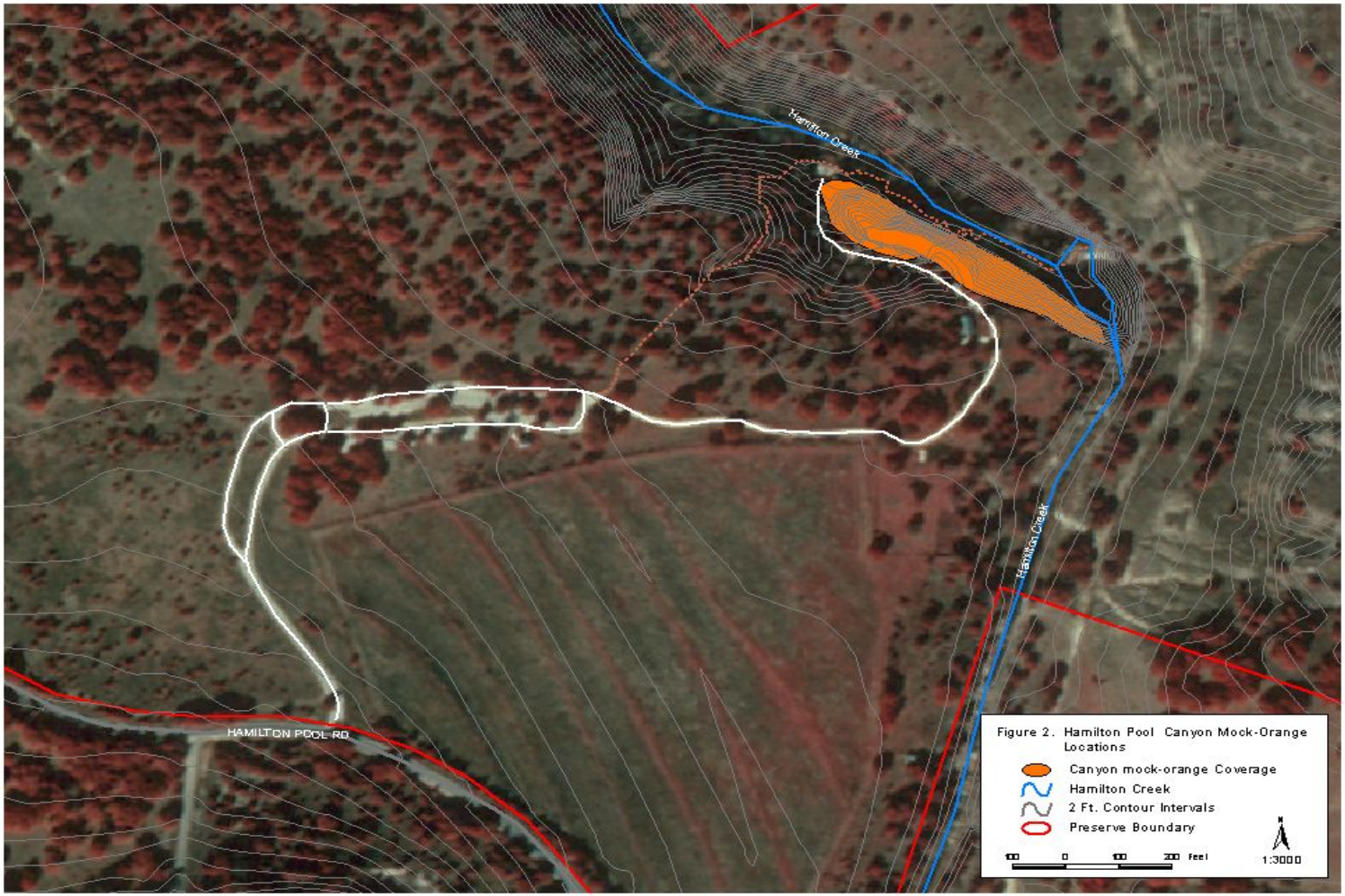

Figure. 2 Hamilton pool Preserve canyon mock-orange location. 2006

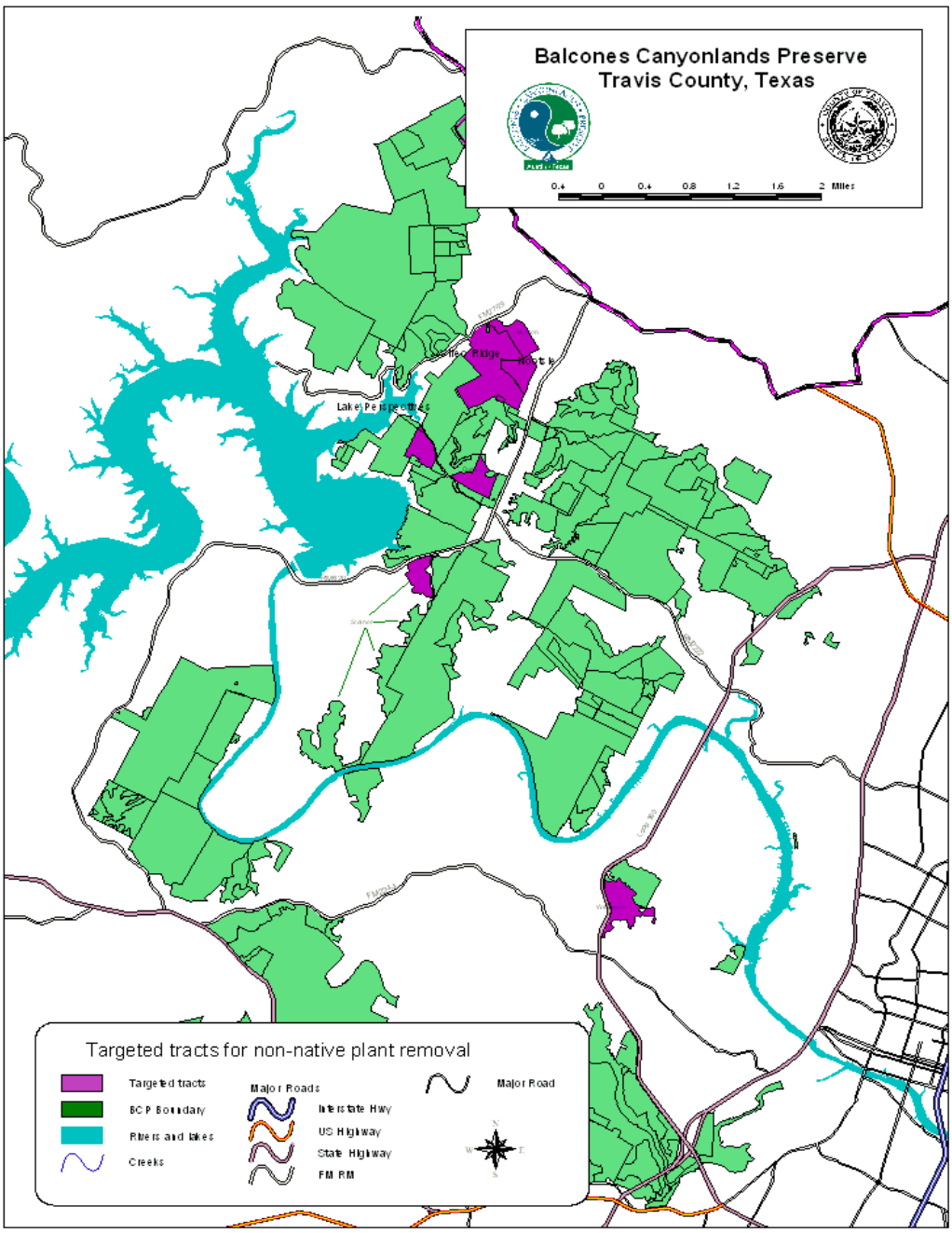

Figure. 3 Balcones Canyonlands Preserve tract locations for non-native plant removal.