Vegetation Management Activities on Travis County Balcones Canyonlands Preserve During FY2009



Photo: Canyon Mock-orange (*Philadelphus ernestii*)

Travis County 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 properties. 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, Travis County affords them same protection as plants listed under the permit.

In addition to managing these rare plant species, Travis County Natural Resources also manages non-native and invasive plant species in accordance with the BCP Land Management Plan (2007) and Travis County's Wildlife and Vegetation Management guidelines. Non-native and invasive plants cause habitat degradation by out-competing and replacing native plants, 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 targeted for removal.

SPECIES OF CONCERN MONITORING

Canyon mock-orange, Texabama croton and Texas amorpha are monitored on a three-year cycle. Canyon mock-orange was surveyed in FY2009 (Fiscal year Oct. 2008-Sept. 2009). Texas

amorpha is scheduled to be surveyed in 2010. Texabama croton was surveyed in 2008 and is scheduled to be re-surveyed in 2011. Active searches will continue for bracted twistflower, which to date, has not been found on Travis County BCP or Park properties.

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. The 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, with assistance of Natural Resources BCP staff. The tract is located at the confluence of Hamilton Creek and 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" quadrangle maps.

Canyon mock-orange individuals were mapped and surveyed at Hamilton Pool Preserve in August 2009. Due to the prolonged draught and the time of the year, the overall condition of individual plants was not measured. A majority of plants were found to have dropped a considerable amount of leaves and many looked stressed. As a result, only an attempt to relocate all known and new individuals was made. Any new plants were mapped and tagged. Occasionally, while searching for previously tagged plants, it was determined that tags were missing or lost, and subsequently re-tagged. During this evaluation a total of 153 plants were located. Of these, 151 were previously located (Travis County 2000, 2002, 2006). Six individuals previously recorded in 2006 were unable to be located and two new individuals were found in 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 the preserve rule requiring that visitors walk only on designated hiking trails. Travis County Natural Resources staff cooperate with Hamilton Pool Preserve staff to educate the public about this species and how best to assist in its protection.

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 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 Texas Department of Agriculture-licensed staff, and use of prescribed fire.

Staff targeted eleven species of invasive plants for removal on BCP tracts during FY2009 (**Table 1**). Management activities occurred on five tracts: Gray Mountain, Greenshores, Lucas, Nootsie, and Vireo Ridge (**Figure 1**). Approximately 25 hours of staff time were devoted to non-native plant removal.

Table 1. Non-native and invasive plant species targeted for removal on Balcones Canyonlands Preserve tracts in FY2009 (Fiscal year Oct.2008-Sept.2009)

Species	Location	Quantity	Removal methods
Chinaberry (*Melia azedarach)*	VR, LU	24	Cut-treat with herbicide and/or hand pulled
Crape Myrtle (*Lagerstroemia indica*)	VR	2	Cut-treat with herbicide
Heavenly Bamboo (*Nandina domestica)*	VR, GS, LU	244	Cut-treat with herbicide and/or hand pulled
Holly (*Ilex spp.*)	VR	2	Cut-treat with herbicide
Indian Hawthorne (*Rhaphiolepis indica*)	VR	7	Cut-treat with herbicide
Jasmine (*Jasminum spp.*)	VR	~15x8'area	Cut-treat with herbicide
Malta star thistle (*Centaurea melitensis*)	LU	50	Hand pulled
Mimosa (*Albizia julibrissin*)	VR	2	Cut-treat with herbicide
Privet (*Lugustrum spp.*)	VR	8	Cut-treat with herbicide
Red-tipped Photinia *(Photinia fraseri)*	VR, GM	3	Cut-treat with herbicide, and/or hand pulled
Tree of Heaven *(Ailanthus altissima)*	VR,GS,NT	130	Hand pulled

GM= Gray Mountain tract; GS= Greenshores tract; LU= Lucas tract; NT= Nootsie tract; VR= Vireo Ridge tract.

Several techniques were used in conjunction 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. The cut stems were then treated with herbicide; a 10% Arsenal AC/surfactant mix was applied on treated plants. Some plants were removed manually (hand pulled) with no herbicide use.

In FY2009, two Natural Resources staff obtained their Noncommercial Political Pesticide Applicator licenses through the Texas Department of Agriculture. One Natural Resources staff member already licensed attended the necessary Continuing Education course in order to comply with annual license requirements.

MANAGEMENT RECOMMENDATIONS

- Continue to collect baseline data on unique, endemic plant species. Unusual species previously unrecorded will be assessed for degree of rarity and protected accordingly.
- Continue efforts to locate, map and protect populations of all rare plants, including bracted twistflower on all Travis County BCP and parklands. Texas amorpha is scheduled to be surveyed in FY2010.
- Continue to collect baseline data on non-native and invasive plant species on all current and newly acquired County properties. Develop a new comprehensive database system for documenting all non-native locations and tracking for future control efforts.
- Continue to prioritize BCP properties for removal of exotics and initiate management activities. Control efforts for FY2010 will include:
    - Removing priority targets on the Bunten tract, which includes periwinkle, golden bamboo, multiflora rose and exotic wisteria. Though other non-natives exist on this tract, these species are highly invasive and therefore will be aggressively targeted in 2010. Manual and chemical control methods may be utilized. Special care will be taken in areas adjacent to any waterways containing populations of Jollyville Plateau salamanders (*Eurycea tonkawae*).
    - Focusing on eradicating non-native plants on the Vireo Ridge and Snowden tracts around existing structures. Manual and chemical control methods may be utilized.
    - Targeting a population of golden bamboo for removal on the Attwood tract using cut-treat control methods.
    - Coordinating volunteer projects with Concordia University staff and students to control exotic wisteria and ligustrum within the creek area of Concordia's campus.
    - Removing tree of heaven along Connor's Creek in the Greenshores tract, as well as select areas on the Canyon Vista, Nootsie and Vireo Ridge tracts, using manual and chemical control methods.

LITERATURE CITED

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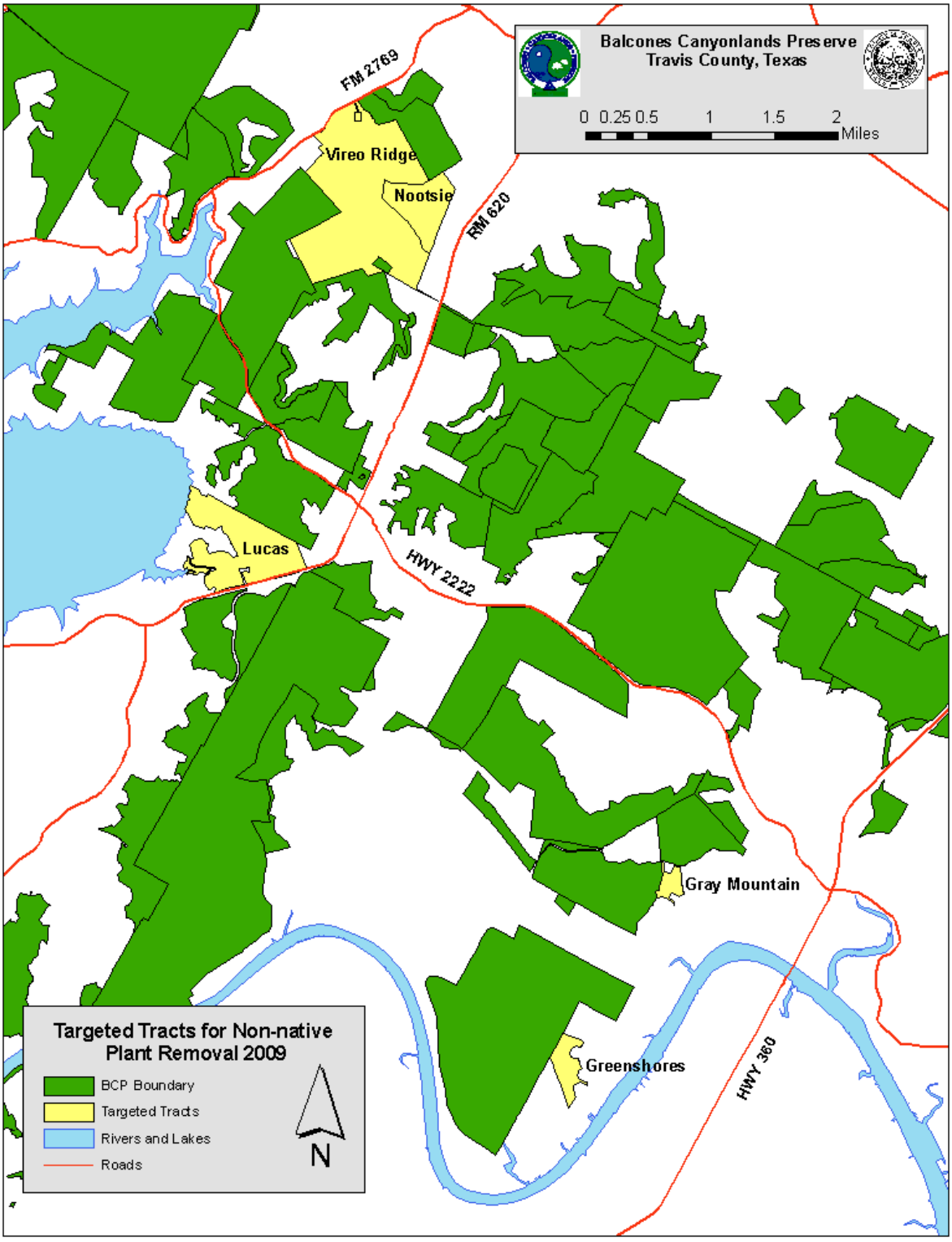


Figure. 1 Balcones Canyonlands Preserve tract locations for non-native plant removal, 2009.