

**Tier III Land Management Plan
BALCONES CANYONLANDS PRESERVE
LAND MANAGEMENT PLAN**

TIER III

**CITY OF AUSTIN
BARTON CREEK GREENBELT AND WILDERNESS PRESERVE
BARTON CREEK MACROSITE**



August 2007

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1.0 BACKGROUND INFORMATION

All previous background information for the Barton Creek tract can be found in the first five-year set of three volumes entitled *Balcones Canyonlands Preserve Land Management Plans* (August 5, 1999).

2.0 MANAGEMENT PROGRAM FOR COA BARTON CREEK GREEN BELT AND WILDERNESS PARK

2.1 Plan Administration

See Tier II-B Plan Administration for the description of City of Austin Water Utility as a managing entity, staffing levels, equipment inventory, budget and annual reports as they pertain to the City of Austin's management of the BCP.

2.2 Management Goal

2.2.1 Primary Management Goal

The COA Barton Creek Greenbelt and Wilderness Park will be managed for golden-cheeked warblers, *Streptanthus bracteatus*, and protected caves invertebrates, while providing appropriate, safe public recreational access. The Wilderness Park will provide authorized access routes to the Barton Creek Greenbelt and educational opportunities, while protecting habitat for golden-cheeked warblers, *Streptanthus bracteatus*, and karst invertebrates.

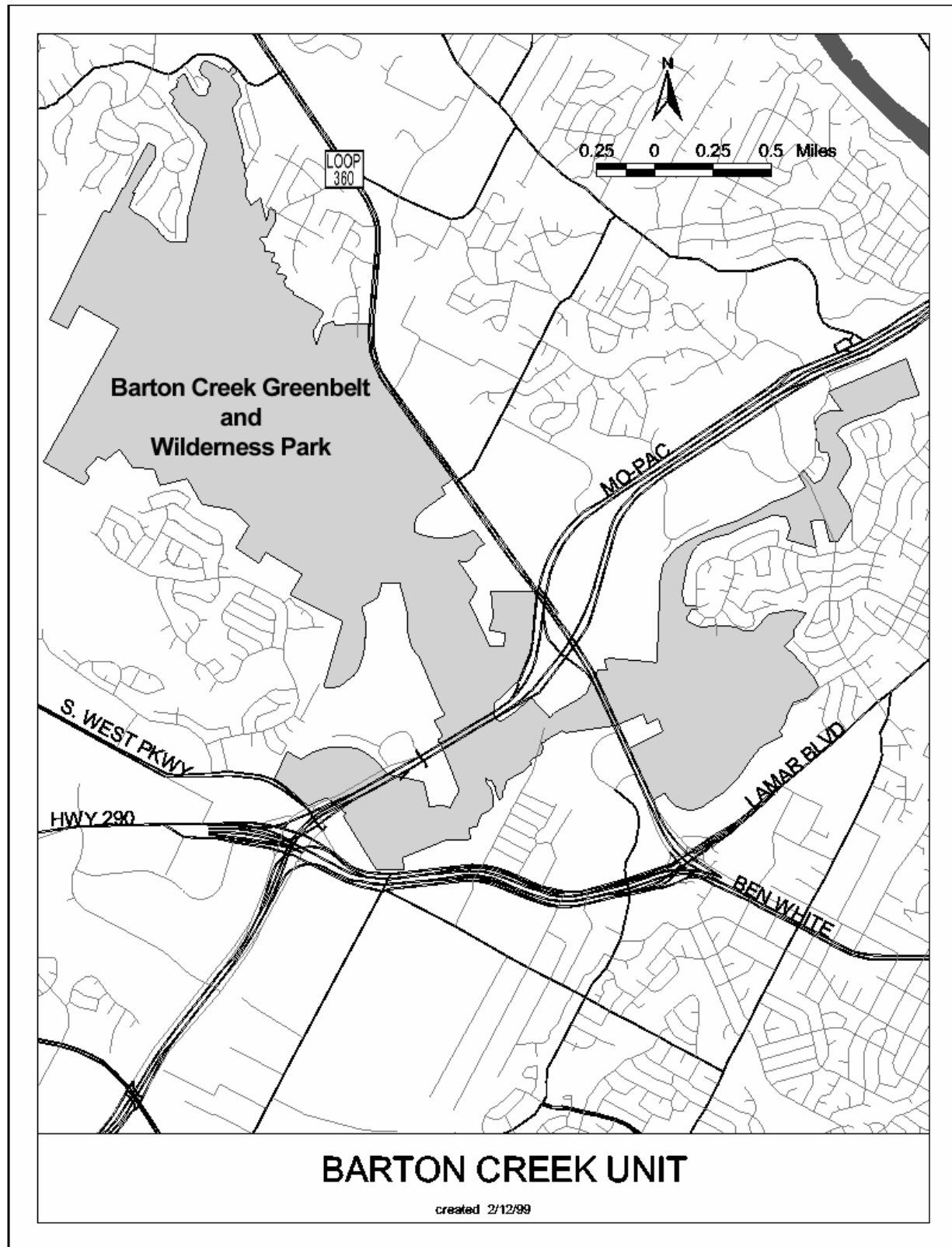
2.2.1.1 Golden-cheeked Warbler (GCWA)

City of Austin will limit and control human disturbances of golden-cheeked warblers and GCWA habitat.

2.2.1.2 Black-capped Vireo (BCVI)

No goal is established for BCVI. No suitable BCVI habitat is present; however, BCVI may benefit from areas, which may be established as open shrub land/fire breaks to aid in wildfire suppression.

FIGURE 1: LOCATION MAP



2.2.1.3 Federally listed Karst Species

BCP staff will protect and monitor karst species in Airman's Cave and Cave Y per the procedures addressed in section 2.4. PARD staff will assist in protecting caves and surrounding areas.

2.2.1.4 Bracted twistflower

In the next 5 years, the City of Austin BCP Program will develop a specific management and monitoring/research plan for the bracted twistflower at this location. Until developed, these plants will be managed and monitored under the existing MOU developed the BCP Partners, USFWS, TPWD, Lady Bird Johnson Wildflower Center, and other concerned conservationists.

2.2.2 Secondary Management Goals

Secondary management goals are to protect water quality and cultural/ archeological resources, to the extent that it is within our means to do so, and to provide public education about the BCP, the species it protects and their management.

2.3 Issues

Over the years, BCP and PARD staff has blocked off numerous unauthorized trails, held numerous volunteer service outings, coordinated an emergency rescue plan, and established a Memorandum of Cooperation with local rock climbers; however, there are other problems relating to unregulated over-use and insufficient funding, as described below.

Lack of perimeter fencing is problematic as the adjacent lands continue to develop. The park experiences impacts from transient camping and disregard for trail use protocols, such as staying on marked trails and not speeding on bicycles.

Many public behavioral problems were ameliorated in 1998 when the Parks and Recreation Department added the Greenbelt and Wilderness Park to the list of parks in which alcoholic beverages are prohibited.

Increasing Public Use

Since opening in 1985, the levels and types of use on Barton Creek Greenbelt have increased significantly. It is estimated that Barton Creek Greenbelt annually attracts over 100,000 visitors to its trails and natural areas. Common activities include:

- Hiking
- Mountain Biking

- Walking pets
- Water recreation - swimming, bathing, tubing, canoeing, kayaking
- Rock climbing and rappelling
- Caving
- Nature Study - field trips, photographers, bird watchers

Increased and more varied public use has simultaneously deepened community appreciation for the unique character and fragile and endangered resources of the Barton Creek watershed.

2.4 Management Objectives

Tier II objectives for the Barton Creek Macrosite include protection of endangered species and species of concern and their habitats by securing boundaries and managing fire, management of public access, habitat, and water quality, public education/outreach, and monitoring and enhancement of habitat. The goals and objectives of the Macrosite and this unit will be implemented through the objectives and activities listed below.

1. Promote user safety and emergency response:

- a) Publicize current adopted park and preserve rules in signs and kiosks at authorized access points.
- b) Develop emergency trail closure plan with Parks Police, AFD, APD, and EMS.
- c) Enforce leash laws through Park Police.

2. Protect Cave Y and Airman's Cave by the following means:

- a) Restrict access to Cave Y to monitoring and protection activities only.
- b) Continue to utilize volunteer assistance of Texas Cave Management Association per signed Memorandum of Understanding.
- c) Conduct annual biological monitoring of Airman's Cave to assess user impacts (responsibility of AWU-Wildland Conservation Division).
- d) Based on monitoring data, initiate additional protection of Airman's Cave as needed.

3. Protect water quality:

- a) Continue to build drains in low-lying areas and use cribbing as needed to slow erosion.
- b) Continue mapping of recharge features including sinkholes, caves and springs.
- c) Continuously be alert to potential pollutants and their sources.
- d) Continue to work with neighborhood groups and the highway department to help prevent non-point source pollution.

- e) Continue to report leaking sewer lines and uncovered/unsecured manholes to City of Austin Water Utility and Watershed Protection Department.
- f) Obtain annual update for staff on water quality data from COA and LCRA sources.
- g) Meet annually with agencies collecting water quality data to discuss the yearly monitoring results.
- H) Reduce litter by the following means:
 - i) Routinely remove litter.
 - ii) Promote litter prevention and reduction of human wastes by educating the public about the effects of litter and waste pollution and legal prohibitions on dumping and littering through signs and brochures.
 - iii) Protect smaller seeps and springs from foot traffic by trail closures, barriers and signs as needed.
 - iv) Continue to close trails when wet.

4. Provide endangered species education by the following means:

- a) Emphasize environmentally responsible recreation per the following:
 - i) Post educational and informational signs.
 - ii) Publicize good trail ethics such as International Mountain Bicycling Association's (IMBA) Rules of the Trail and "Tread Lightly."
 - iii) Develop Memoranda of Cooperation with user groups, incorporating resource protection guidelines.
 - iv) By March each year, provide users with information about responsible trail use, using retailer sponsored educational programs, clinics, club newsletters, or local newspapers.
 - v) Continue to provide annual opportunities for coalition-building through trail maintenance/construction service projects.
 - vi) Organize and educate neighborhood groups through their newsletters about the importance of their assistance.
- b) provide public information and education regarding the Balcones Canyonlands Preserve, endangered species, and compatible recreation:
 - i) Develop and publicize an educational program to be presented each spring, to include tours, walks, films, such as "What Good is a Warbler?", ANC's Tropical Connection program, and presentations on protection of endangered species, their ecology, and how to respectfully share the Greenbelt and Wilderness Park with endangered species and wildlife.

- ii) Develop a brochure or pamphlet on GCWA management and natural history, then each March through July disseminate this information to Greenbelt and Wilderness Park users.
- iii) Initiate an annual program to provide educational materials and opportunities for adjacent neighborhoods regarding:
 - a) the negative impacts on songbirds by feeding wildlife
 - b) no trail building from individual homes
 - c) impacts of throwing lawn clippings, tree limbs, chemicals and trash into the Greenbelt
 - d) replacing aggressive exotic ornamental lawn plants with natives.
- iv) Seek support for this education program from tourism and recreation-related businesses, to help educate their clientele about preserving the habitats of the Greenbelt and Wilderness Park.
- v) While minimizing the use of signs and other intrusions on the natural landscape, design and post interpretive signs that explain the importance of the greenbelt/wilderness park as endangered species and wildlife habitat and as a functioning ecosystem.
- vi) Offer two classes per year to teach and encourage low impact recreational activities, such as photography and bird watching.
- c) Require all staff assigned to management of the Barton Creek Greenbelt/Wilderness Park to attend at least one endangered species training, conference, or workshop per year.

5. Reduce impacts on GCWA and *Streptanthus bracteatus* by the following:

- a) Oak wilt: Annually survey and suppress oak wilt and continue ongoing related research.
- b) Trails/climb routes: Continue to routinely maintain signs on all authorized trails/climb routes and block off all unauthorized trails/climb routes twice yearly.
- c) Continue designating trails within the Greenbelt for specific types of activities where possible.
- d) Enforce temporary trail closures due to wet weather by the following means:
 - i) Post closings at access points, state the estimated time of reopening and state that this rule will be enforced by Park Police.
 - ii) When funded, routinely patrol during trail closures and issue tickets as needed.

- e) Ensure rock climbing activities are compatible with protecting golden-cheeked warblers by the following:
 - i) Continue participation in Memorandum of Cooperation with the climbing community regarding approval process for additional routes.
 - ii) Prohibit expansion of rock climbing and rappelling into unauthorized areas by twice yearly monitoring and enforcement by Park Police.
- f) Signs
 - i) Replace trash can/coffin at Trail's End with "Pack it in – Pack it out" sign.
 - ii) Collection Policy: Post signs at entry points which:
 - a) Prohibit plant/animal/artifact collections
 - b) Educate readers about the impacts of collecting
 - c) Refer readers to protocol on alternative to collection available from the Ladybird Johnson Wildflower Center here in Austin.
- g) Fire plan: Develop a fire plan with appropriate response organizations.
 - i) Include fire breaks (specialized buffer zones) to protect public safety, personal property, and endangered species habitat.
 - ii) Coordinate fire plan with PARD staff.
- h) provide a report to PARD Director regarding methods of reducing over-use and trail-crowding:
 - i) Recommendations for permit system for biking, climbing, equestrian and group uses, and for dedicating funds from such permits to Barton Creek Greenbelt and Wilderness Park operations and maintenance.
 - ii) Policy recommendations to allow different types of user access at specific times or on specific days, i.e. odd/even, weekday/weekend.
 - iii) Feasibility of volunteer trail patrols in the Greenbelt and Wilderness Park.

6. Continue to develop positive public relations:

- a) Conduct visitor surveys to determine attitudes regarding protection of species of concern and understanding of habitat/wildlife protection and compare with previously conducted survey.
- b) Promote volunteerism in the greenbelt/wilderness park.
- c) Maintain annual contact with adjacent neighborhood groups to encourage input on management and discuss adjacent property issues.
- d) Continue the trails condition hotline.

- e) Continue to notify bike shops and other appropriate parties about trail closures in wet conditions and provide information on alternative locations.

7. Restore disturbed habitats:

- a) Map plant communities and designate areas for potential rehabilitation activities.
- b) Use only native seeds collected in Travis County in habitat rehabilitation projects, and annually collect these seeds for use in regeneration projects.
- c) Conduct at least two re-vegetation projects per year:
 - i) Thin junipers as needed, plant a diversity of woody species, and protect them from deer browse to create future GCWA habitat.
 - ii) Using the techniques from above, maintain healthy plant diversity within suitable or occupied habitat.
- d) Continue to control exotic species, when possible to promote native growth, using IPM practices and a licensed non-commercial pesticide applicator.

8. Monitor GCWA and their habitat:

- a) Each spring provide training for staff to recognize GCWA and their calls and to identify native vegetation.
- b) Annually photograph plant communities and visitor use areas from permanent stations to monitor visitor impacts, changes in vegetation and improvements, and the effects of different management techniques.
- c) Participate in long-term monitoring of a 100 acre plot of prime habitat by volunteers or by staff.
- d) When funded, each spring enumerate all golden-cheeked warbler territories, spot-map territories, and ascertain number of fledglings per territory.
- e) When funded, control nest parasitism and nest predators as needed.

9. Monitor bracted twistflower

In the next 5 years, the City of Austin BCP Program will develop a specific management and monitoring/research plan for the bracted twistflower at this location. Until developed, these plants will be managed and monitored under the existing MOU developed the BCP Partners, USFWS, TPWD, Lady Bird Johnson Wildflower Center, and other concerned conservationists.

TABLE 1: OBJECTIVES AND ACTIVITIES

Objectives	04	05	06	07	08
<i>Vegetation Management</i>					
Protect and increase <i>Streptanthus bracteatus</i>	X	X	X	X	X
Develop GIS vegetation mapping system	X	X	X	X	X
Control non-native species as needed	X	X	X	X	X
Restore selected areas of disturbed habitat annually	X	X	X	X	X
Monitor per BCP protocols annually	X	X	X	X	X
Survey for and suppress oak wilt annually	X	X	X	X	X
<i>Animal Management</i>					
Monitor per BCP protocols	X	X	X	X	X
<i>Physical and Cultural Management Procedures</i>					
Protect Cave Y and Airman's Cave per approved plan	X	X	X	X	X
Protect water quality per approved plan	X	X	X	X	X
Develop Fire Plan	X				
Continue to remove litter as needed	X	X	X	X	X
Implement water quality protection per approved plan	X	X	X	X	X
<i>Visitor Management/Education</i>					
Promote user safety and emergency response	X				
Public relations	X	X	X	X	X
Post educational and informational signs per approved plan	X	X			
Continue participation in MOC	X	X	X	X	X
Construct Wilderness Park trailhead	X	X			
Continue to maintain authorized trails and close those which are unauthorized, as needed	X	X	X	X	X
Implement educational programming per approved plan	X	X	X	X	X
Report to Director on overuse and trail crowding	X	X	X	X	X

2.5 Specific Implementation Strategies

The Wildland Conservation Division has responsibility for managing caves. Airman's Cave and Cave Y will be monitored by them annually. Only integrated pest management strategies approved by USFWS are used to control Imported Fire Ants near caves.

2.5.1 Cave Y

Access to Cave Y is restricted to authorized personnel only. The entrance to Cave Y is camouflaged and the cave is monitored annually. The cave was gated in November 2003, with additional repair work in July of 2004.

2.5.2 Airman's Cave

On recommendation of the Texas Cave Management Association and University of Texas cave biologist James Reddell no access restrictions are planned for Airman's Cave during this Five Year Plan. Unrestricted public access to this one cave is deemed necessary and appropriate (a) to encourage public appreciation of cave resources and (b) to obtain increased public support for protection of cave invertebrates. No measurable disturbance to cave invertebrates is expected from continued access for the following reasons:

According to information received from James Reddell, rare and endangered cave invertebrates live most of their lives in the narrow undisturbed cracks along the sides of the cave and in the farthest reaches of this two mile long cave where few cavers venture (James Reddell 1997 pers com).

Also, he states that due to the extremely low height of the cave, cavers traverse much of the cave on their hands and knees along narrowly accessible pathways within the larger width of the cave. Along the large majority of the length of the two mile cave, most of the width of the cave is untouched by humans. Evidence of this relatively narrow access path is found in the disturbed and undisturbed wave patterns left on the cave floor silt from underground water after rainfalls (James Reddell 1997 pers com).

At this time Airman's Cave is the only cave on city property that is not restricted. Airman's Cave has experienced public access for thirty years. The cave was assigned to the Nature Preserves Program of the Austin Parks and Recreation Department in 1993 for management. Since that time emergency rescue procedures have been developed and implemented. In addition, thirty years worth of abandoned headlamp batteries have been removed from the cave with the assistance of the University of Texas Cave Grotto members and the Texas Cave Management Association. Also, most spray paint marks used over the decades to mark routes have been

removed. These clean-up efforts will continue and the cave will be maintained in a pristine manner. Karst information may be incorporated at trailhead kiosks.

2.5.3 Access Control and Visitor Management Procedures

2.5.3.1 Access Control

Authorized staff may access the preserve by the most appropriate method, including by foot, motorized vehicle, on horseback or bicycle. Vehicles are restricted to existing roads unless specifically approved by the land manager. Springs and spring runs are restricted to foot access only.

BCG/BCWP visitors access most of the acreage at will. Attempts will be made to limit the creation of new unauthorized trails and to focus users onto authorized trails. Currently there are four miles between the MoPac parking lot and Scottish Trail, the westernmost access point to the Greenbelt. A light industrial grade chain-link fence is planned for the Highway 360 frontage of the electrical substation.

2.5.3.2 Individual or Independent Group Use

BCG and BCWP are public parkland and open to the public. There are currently seven legally designated access points to the Greenbelt. Funds for additional fencing and entry controls will be proposed. Requests for special large events, such as walkathons and bike races are denied. For smaller groups of ten or more, a group use permit and procedures is being developed.

2.5.3.3 User/resource Conflicts (litter, dumping, recreational use)

Trail use reduction techniques under consideration include closing some trails to some types of use, as well as rotating uses of trails. Trails are currently closed during wet conditions. New park and preserve rules will assist enforcement procedures.

An extensive educational program in cooperation with the Austin Nature Center is outlined in the objectives section. This program will include signs, tours, and written materials, as well as outreach to the adjacent neighborhoods and cover topics such as endangered species ecology and management, erosion, water pollution, and respectful use.

3.0 MONITORING

The City of Austin will monitor habitat management in accordance with applicable biological monitoring procedures as defined in Tier II-A Management Handbook.