BALCONES CANYONLANDS CONSERVATION PLAN

Annual Report
FY 2003

Background

On May 2, 1996, the City of Austin and Travis County were jointly issued a U.S. Fish and Wildlife Service (USFWS) regional permit (the 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 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 species of concern should any become listed as threatened or endangered during the life of the permit (**see Table 1**).

Table 1. Species covered by the BCCP.

Common name	**Scientific name**	**Status**
Black-capped vireo	*Vireo atricapilla*	Endangered
Golden-cheeked warbler	*Dendroica chrysoparia*	Endangered
Tooth Cave pseudoscorpion	*Tartarocreagris texana*	Endangered
Tooth Cave spider	*Neoleptoneta myopica*	Endangered
Bee Creek harvestman	*Texella reddelli*	Endangered
Bone Cave harvestman	*Texella reyesi*	Endangered
Tooth Cave ground beetle	*Rhadine persephone*	Endangered
Kretschmarr Cave mold beetle	*Texamaurops reddelli*	Endangered
Canyon mock-orange	*Philadelphus ernestii*	Species of Concern
Texabama croton	*Croton alabamensis*	Species of Concern
Flatworm	*Sphalloplana mohri*	Species of Concern
Ostracod	*Candona* sp. nr. *stagnalis*	Species of Concern
Isopod	*Caecidotea reddelli*	Species of Concern
Isopod	Trichoniscinae N. S.	Species of Concern
Isopod	*Miktoniscus* N. S.	Species of Concern
Spider	*Cicurina wartoni*	Species of Concern
Spider	*Cicurina ellioti*	Species of Concern
Spider	*Cicurina bandida*	Species of Concern
Spider	*Cicurina reddelli*	Species of Concern
Spider	*Cicurina reyesi*	Species of Concern

Spider	*Cicurina cueva*	Species of Concern
Spider	*Cicurina travisae*	Species of Concern
Spider	*Neoleptoneta cocinna*	Species of Concern
Spider	*Neoleptoneta devia*	Species of Concern
Spider	*Eidmannella reclusa*	Species of Concern
Pseudoscorpion	*Aphrastochthonius* N. S.	Species of Concern
Pseudoscorpion	*Tartarocreagris reddelli*	Species of Concern
Pseudoscorpion	*Tartarocreagris intermedia*	Species of Concern
Pseudoscorpion	*Tartarocreagris* N. S. 3	Species of Concern
Harvestman	*Texella spinoperca*	Species of Concern
New Comanche Trail Cave Harvestman	*Texella comanche*	Species of Concern
Millipede	*Speodesmus* N. S.	Species of Concern
Ground beetle	*Rhadine s. subterranea*	Species of Concern
Ground beetle	*Rhadine s.mitchelli*	Species of Concern
Ground beetle	*Rhadine austinica*	Species of Concern

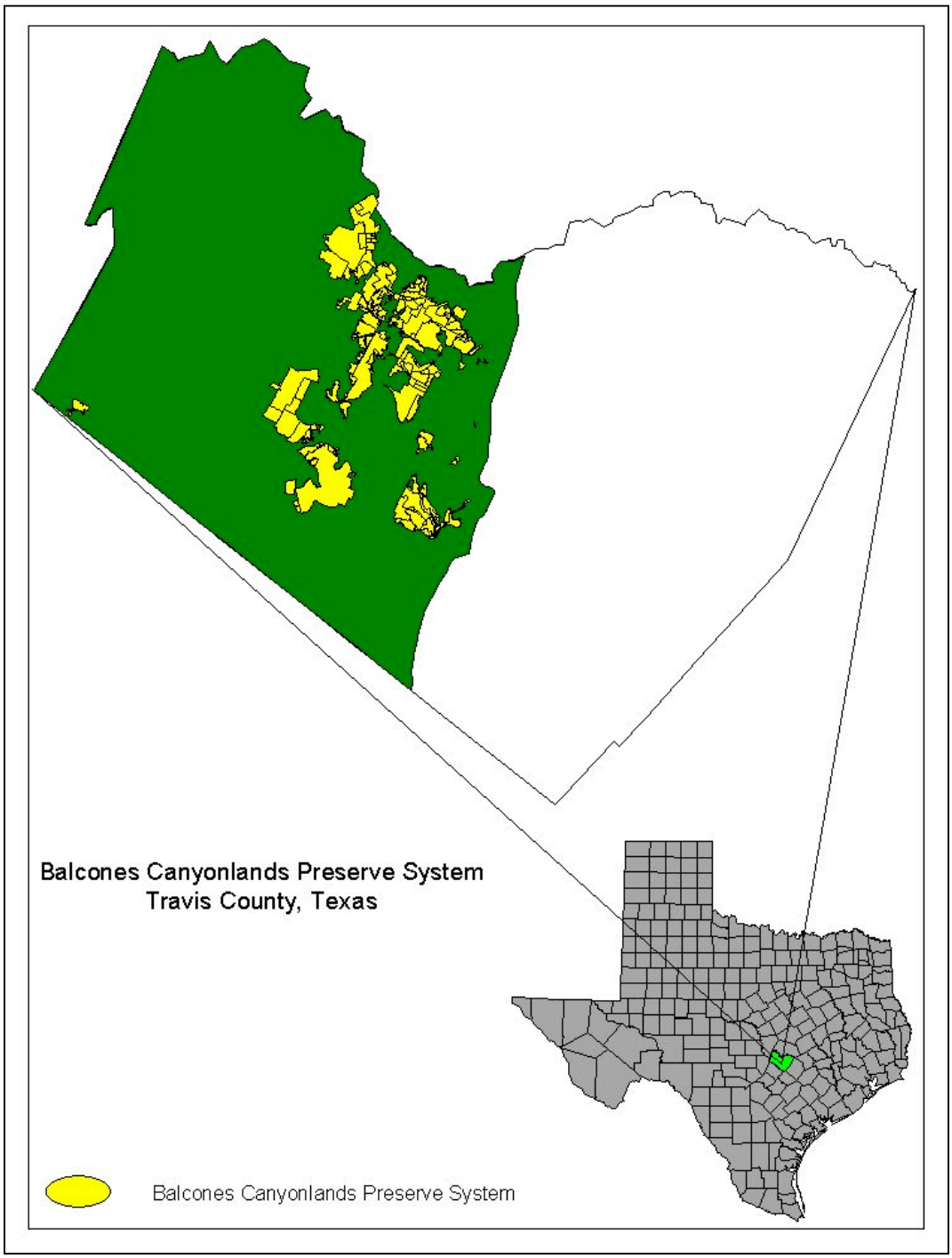
The Permit Requirements

The City of Austin and Travis County (the Permit Holders) are required by the terms of the Permit to assemble and manage 30,428 acres of suitable habitat for the golden-cheeked warbler and the black-capped vireo, and to protect and manage populations of canyon mock-orange and Texabama croton. The Permit Holders are also to acquire and manage or implement management agreements on 35 karst features supporting populations of endangered invertebrates and 27 features known to harbor species of concern. This system of managed and protected habitats is known as the Balcones Canyonlands Preserve (BCP). The locations of habitat areas and specific karst features proposed for protection are delineated in the HCP/FEIS (U. S. Department of the Interior, Fish and Wildlife Service, 1996b).

Agencies or organizations entering into formal agreements with the Permit Holders to manage designated preserve lands in accordance with the BCCP are considered Managing Partners. The sole BCP Managing Partner is the Lower Colorado River Authority (LCRA) which manages 2,707 acres as a portion of the preserve system. As a Managing Partner, LCRA may mitigate for its capital improvement and infrastructure development projects through the mitigation credit system established by the BCCP. Though the Nature Conservancy of Texas (TNCTX) and the Travis Audubon Society (TAS) also manage lands for public and environmental benefit within the Preserve, these organizations are not considered Managing Partners as no formal agreements with the Permit Holders have been finalized. In FY2003, the City of Lakeway accepted

management obligations for the 498 acre Schramm Ranch tract, portions of which are set aside as mitigation under USFWS 10(a) permit number PRT-812695 (U. S. Department of the Interior, Fish and Wildlife Service, 1998). Though the City of Lakeway is not a Managing Partner, the Permit Holders have worked to cooperatively address land management concerns common to all BCP properties.

Figure 1. Location of the Balcones Canyonlands Preserve System.



The City of Austin operates the BCCP Capital Improvement/Infrastructure Development Mitigation Process, and Travis County administers the BCCP Public Participation Process that addresses the mitigation needs of agencies and landowners under the terms of the Permit. The BCCP provides a voluntary, streamlined alternative for agencies and landowners seeking to comply with the Endangered Species Act (the Act). Those participating through the BCCP have met their obligations under the Act and may proceed with development under the terms of Participation Agreements. Those choosing not to participate may comply with the Endangered Species Act by obtaining an individual 10(a) permit from the U. S. Fish and Wildlife Service.

The Permit further requires that the Permit Holders submit an annual report that provides:

- an annual summary of development activities within the Permit area
- an annual list of tracts for which Participation Certificates were issued
- the amount of funds collected through Participation Certificate and USFWS directed mitigation fees
- the amount of funds expended for land acquisition
- the amount of funds expended for Preserve operations and maintenance
- an updated map of Preserve lands
- a summary of public use and habitat management activities within the Preserve, and
- copies of all research and investigation reports prepared within the last fiscal year.

Development Activity within the Permit Area

The City of Austin development activity report for FY2003 detailing a compilation of Development Permits issued within the City's jurisdiction of the Permit area is attached as Appendix A.

A summary of development permit applications received by the Travis County Permitting office is compiled and forwarded to the USFWS Ecological Services office on a quarterly basis. A compilation of Travis County Development Permits issued within the Permit area in FY2003 is attached as Appendix B.

Mitigation Credit Balance

The City of Austin's Balcones Canyonlands Preserve staff administers the Capital Improvement and Infrastructure Development Project mitigation credit system on behalf of the BCCP Coordinating Committee. The mitigation needs of the Permit Holders and the Managing Partner for these projects are provided under the terms of the regional

Permit. Mitigation credits are issued at a rate equal to the number of acres within the Preserve system managed under the terms and conditions of the Permit and the HCP/FEIS (U. S. Department of the Interior, Fish and Wildlife Service, 1996b). Capital improvement and infrastructure development mitigation needs are subtracted from this accumulated "bank" of credits at a rate of one acre of credit per acre of habitat impact; regardless of habitat zone (see **Table 2**).

Table 2. Projects mitigated through the use of mitigation credits during FY03 by participating agency.

City of Austin	
Starting City of Austin Balance	11,634.35 acres
AWU Travis Water Treatment Plant	(98) acres
Remaining Mitigation Credits	***11,536.35 acres***
Travis County	
Starting Travis County Balance	1,528.0 acres
New preserve additions (credits)	35 acres
Remaining Mitigation Credits	***1,563 acres***
Lower Colorado River Authority (LCRA)	
Starting LCRA Balance	2,523.1 acres
HiCross to Marshall Ford	(32.8) acres
Westlake Hills – Phase A	(0.7) acres
Tom Miller Dam Extension	(0.1) acres
Singleton Bend Rd Phase I	(0.4) acres
Remaining Mitigation Credits	***2,489.1 acres***

Participation Certificate Activity

Travis County's Natural Resources Department administers the BCCP Public Participation Process on behalf of the BCCP Coordinating Committee and issues Participation Certificates for cooperating landowners within the Permit area. Over the past year, 6 Participation Certificates were issued (**Table 3**): one for commercial use, one for agricultural use, one for infrastructure construction, and three for subdivisions. Descriptions of participation categories are defined in the Interlocal Cooperation Agreement between Travis County and the City of Austin Implementing the Balcones Canyonlands Conservation Plan Shared Vision (City of Austin and Travis County, 1995).

As required by the terms of the regional Permit, copies of each Participation Certificate and Habitat Determination map are provided to USFWS Ecological Services office on a quarterly basis.

Table 3. Fiscal Year 2003 Participation Certificate summary.

BCCP Application #	Date Issued	Name	Category	Amount Paid
#0335	10/02/02	Champion	Subdivision	$84,300.00
#0345	10/02/02	Champion	Commercial	$50,700.00
#0355	7/16/03	Rancho la Valencia	Subdivision	$29,400.00
#0358A	4/11/03	City of Cedar Park	Infrastructure	$1,989.00
#0361	10/21/02	Ball	Agriculture	$5,700.00
#0365	6/24/03	Melton	Subdivision	$4,200.00

USFWS directed mitigation payments may be received as the result of landowner requested alternative habitat determinations as permitted through the BCCP or in accordance with the terms of an individual 10(a) permit. No USFWS directed mitigation payments were received in FY2003

Funds Collected through Participation Certificate and USFWS directed mitigation fees

A total of $176,289 was collected through the sale of Participation Certificates in FY2003. These funds are disbursed between the Permit Holders on a quarterly basis. Travis County's Tax Benefit Financing Plan, a funding mechanism outlined in the Interlocal Cooperation Agreement between Travis County and the City of Austin Implementing the Balcones Canyonlands Conservation Plan Shared Vision (City of Austin and Travis County, 1995) and directed by the Travis County Commissioners Court to support County Preserve land purchases, generated $2,072,290.00 in FY2003.

Funds Expended for Land Acquisition

Since the inception of the BCCP, the Permit Holders have successfully competed for USFWS Habitat Conservation Plan grants each year. To date, seven Land Acquisition Assistance Program awards totaling $50,348,411 have been completed or are in progress (see **Table 4**).

In FY2003, Travis County expended $1,310,375 on land acquisition activities. This includes $522,100 for fee simple acquisition and associated costs for the 35.146-acre Tomen-Parke Section 14, Lot 2 and $664,824 for the 55-acre King tract. (Note: closing did not take place on the King tract until FY04, but expenditures were booked in FY03). A total $123,451 was spent on surveys, appraisals, environmental site assessments and other associated acquisition costs for five additional tracts. Of these five, one seller

declined the county's offer (Blizzard), and another withdrew from negotiations (Vista Point 3.15 acre in-holding). The 141-acre Tomen-Parke Caves tract was acquired in early FY2004. A purchase contract was signed and approved by Commissioners Court on the 320-acre Ribelin tract on 16 December 2003. Closing on this parcel is anticipated within 180 days of the date of the purchase contract. Acquisition activities for the Medway tract are underway. Staff plans to continue land acquisition efforts in FY04 through the pursuit of both fee simple purchases and alternative protection strategies such as conservation easements.

Table 4. USFWS HCP Land Acquisition Grant awards received by the Permit Holders.

Year	Federal Grant Funds	Minimum Local Match (25%)	Total Grant	Local Recipient
1997	$1,000,000	$333,333	$1,333,333	City of Austin
1998	$2,000,000	$666,666	$2,666,666	Travis County
1999	$1,500,000	$500,000	$2,000,000	Travis County
2000	$4,140,000	$1,380,000	$5,520,000	Travis County
2001	$14,140,000	$4,713,333	$18,853,333	City of Austin, Travis County
2002	$10,000,000	$3,333,333	$13,333,333	Travis County
2003	$4,993,794	$1,647,952	$6,641,746	Travis County
Totals	**$37,773,794**	**$12,574,617**	**$50,348,411**	

The City of Austin committed to accruing 11,578 acres toward the completion of the BCP. Presently the City of Austin owns and manages 13,035 acres of land within the Balcones Canyonlands Preserve. At this time, the City of Austin is not negotiating for the purchase of any additional preserve land.

Funds Expended for Operations and Maintenance

The City of Austin spent a total of $540,088 for FY 02-03 to fund preserve management expenditures by the Austin Water Utility's Wildland Conservation Division, Balcones Canyonlands Preserve Program (**Table 5**). This figure understates the City's total expenditures on this program since it does not include (1) work by other staff in the AWU"s Wildland Conservation Division on program administration and support; (2) operation and maintenance expenditures by PARD's Park Operations on BCP-designated parkland; or (3) land management expenditures by the Austin Water Utility on the two

BCP-designated tracts that it owns and manages. Those expenditures cannot be readily determined from their program budgets.

Table 5. Annual FY2002 and FY2003 BCP budgets for Permit Holders, the Managing Partner, and cooperating entities with summary of total budgets since plan inception.

BCP Partner	2002	2003	Total Budget: 1996 to Present
City of Austin	$701,724	$540,088	$3,595,317
Travis County	$431,498	$334,439	$2,405,519
LCRA	$165,000	$165,000	$678,072
TNCTX	$120,000	$80,000	$774,000
TAS	$9,083	$8,863	$61,346
TOTALS	**$1,427,305**	**$1,128,390**	**$7,514,254**

The Travis County Natural Resources budget for the BCP Program in FY2003 was $334,439. This includes Travis County General Fund expenditures as well as developer funds negotiated to support ongoing operations and maintenance of County managed Conservation Easements. Note that this figure does not include expenditures by the Committee for Wild Basin Wilderness, Inc., which holds a contract to conduct educational programming and management of the County owned Wild Basin Wilderness Preserve, or funds expended by the Travis County Parks Department for non-habitat related operations and maintenance of Hamilton Pool Preserve. This total also does not include funds generated by the County's Tax Benefit Financing plan, as these funds have been dedicated solely for land acquisition by Commissioners Court.

Updated Map of Lands Dedicated to the Balcones Canyonlands Preserve

With the addition in FY2003 of 35 acres to the Preserve, 26,617 of the 30,428 acres required by the Permit (88%) have been assembled by the Permit Holders and cooperating entities. A map illustrating the current status of the Balcones Canyonlands Preserve is enclosed as Appendix C. A summary of BCP lands by managing entity is enclosed as Appendix D.

Public Use and Habitat Management Activities occurring within the Balcones Canyonlands Preserve

The City of Austin

The Austin Water Utility (AWU) Wildland Conservation Division (WCD) staff has responsibility for management, habitat restoration, removal of threats to the habitat and

Table 6. Management Status of City of Austin BCP Properties

Tract	Primary Management Responsibility	Acreage
Upper Bull Creek Unit (Franklin, Hanks, Lanier, COA Canyon Creek)	AWU/BCP BCP/PARD(Franklin)	608
Middle Bull Creek Unit (Ivanhoe, Beard Trust)	AWU/ BCP	996
Lower Bull Creek Unit (St. Edward's Park, Jester, Forest Ridge, 3M, Hilltop, Gibson/Nott, Hiller, Kruger)	AWU/BCP	1140
Lime Creek (inc. 100 acres of Austin-Simon, Ltd.)	AWU/BCP	594
Park West, Coldwater I & II, Long Canyon	AWU/BCP	1345
Cortaña	AWU/BCP	1752
Double J&T	AWU/BCP	1729
Reicher Ranch	AWU/BCP/PARD	820
Bohls Ranch	AWU/BCP	450
Sansom	AWU/BCP	13
Senna Hills	AWU/BCP	35
Vireo Research Area	AWU/BCP/PARD	214
Ullrich Water Treatment Plant	AWU/BCP	18
Water Treatment Plant #4	AWU/BCP	138
	AWU/BCP Subtotal	**9,852**
Bull Creek District Park, Barton Creek Greenbelt	PARD Operations*	25
Spicewood Springs Preserve	PARD Operations	8
Barrow Preserve	PARD Operations	8
Emma Long Metro Park	PARD Operations	950
Commons Ford Park	PARD Operations	115
Barton Creek Wilderness	PARD Operations	999
Barton Creek Greenbelt	PARD Operations	813
Friesenhahn	PARD Operations	62
Mt. Bonnell	PARD Operations	3
	Other City of Austin Subtotal	**3,183**
	TOTAL ACREAGE	**13,035**

*****PARD Operations does not manage for Endangered Species; they perform regular maintenance, i.e. mowing, trash pickup, and some trail management activities. AWU BCP staff provides BCP management activities.

inventorying existing species within the city's 13,035 acres portion of the BCP. Five biologists assigned to the WCD provide monitoring; surveying; and land management functions for the City's BCP Program. Maintenance and administrative support is provided by WCD staff. The Utility's Wildland Conservation Division currently manages 9,852 acres of the BCP and assists PARD Park Operations on the other 3,183 acres of designated parks and Preserves.

UPPER BULL CREEK UNIT

Staff conducted 3 white-tailed deer census counts on a 5-mile census route on a portion of the Upper Bull Creek Unit (Canyon Creek, Franklin, Lanier, WTP#4 tracts) in August and September of 2003, with an average survey count of one deer per 30 acres.

Canyon Creek

Illegal trespass from Canyon Creek development remains an ongoing problem. The primary trespass routes appear to come from the adjacent Canyon Creek conservation easements. Management activities for this tract during FY 02-03 included:

- Routine patrol of the area for evidence of trespass and preserve damage.
- BCP staff conducted golden-cheeked warbler surveys at the 100-acre transitional study plot on Canyon Creek (City of Austin 2003 Golden-cheeked Warbler and Black-capped Vireo report, Appendix E).
- Repair road by removing fallen trees, which were damaged by storms.
- Repair of damaged perimeter fence and gates due to unauthorized trespass.
- Contacted adjacent landowner regarding fence damage due to a fallen tree. The landowner repaired the fence and removed the tree.
- Brown-headed cowbird trapping. BHCO were trapped daily in March, April, and May (83 days). Total number of birds trapped was 54.
- Prepared info packet on illegal trespass and non-compliance from Canyon Creeks section 7A permit and met on site with a Canyon Creek rep regarding our concerns. The Canyon Creek representative agreed work on it.
- Met with Schlumberger site manager regarding concerns of illegal trespass into COA preserve land via Schlumberger mitigation land. The site manager said he would work with us on this issue.
- Staff conducted 3 white-tailed deer census counts.
- Feral hog trapping, (one hog was removed).
- Removed non-native invasive vegetation.

Hanks Tract and Gardens at Bull Creek Tract

BCP staff has spent considerable time overseeing mitigation measures on this tract and adjacent City infrastructure land to the north. A portion of the Hanks tract was involved in the construction of a regional flood retention facility on the adjoining Gardens of Bull Creek property. Management activities for this tract included:

- Routine patrol of the area for evidence of trespass and preserve damage.
- Issued trespass warnings to trespassers.
- Repaired chain-link fencing that was vandalized.
- Required adjacent landowners to repair perimeter fence that they damaged.
- Staff continued to monitor the health of 229 trees (planted Nov. 2000). WSPDR and COA BCP staff conducted a final walk through with the contractor and released the contractor from further responsibility.
- Re-installed irrigation to these newly planted trees.
- Removed trash from Gardens at Bull Creek.
- Repaired access road on Hanks by removing fallen trees.
- Repaired vandalized perimeter fence and deer exclosure.
- Installed new perimeter signs and repaired vandalized signs.
- Installed “no fishing and hunting signs at selected areas.
- Removed the Hanks cabin (Habitat for Humanity reused 80% of the cabin). The cabin had become an attractive nuisance for vandalism.
- White-tailed deer exclosure: monitored hardwood saplings that had been planted in previous years by Boy Scout troops.
- Seeded white-tailed deer exclosure to aid in golden-cheeked warbler habitat restoration.
- Seeded eroded areas with native grasses.
- Surveyed erosion problems from adjacent development. This erosion and sedimentation is adversely affecting Bull Creek water quality as well as Jollyville salamander habitat. Staff reported all erosions problems associated with adjacent development to the City of Austin’s environmental inspectors. Remediation was enacted as required by City code.
- Feral hog trapping (5 hogs were removed)
- Biological monitoring continued during FY 02-03 at Hanks. Quarterly monitoring of the presence of the aquatic Jollyville Plateau Salamander was conducted on both tributaries. Staff conducted surveys following protocol established in the City of Austin’s Watershed Protection Department (WSPD) report “Jollyville Plateau Water Quality and Salamander Assessment”. At set stations, staff measured flow, water and air temperature and counted all salamanders observed. Salamanders counted were

further broken down into 3 categories based on observed size. WSPD staff periodically takes water and benthic samples at these sites to determine current status on water quality. Staff will continue to conduct quarterly surveys at this site until there is a minimum of 5 years of data. Five years of data should allow for an accurate assessment of the populations dynamics at this site. Monitoring at this site will continue beyond the 5 years to determine if the recently constructed dam has any adverse affect on the salamanders and their habitat.

- Golden-cheeked warbler observations and enumeration were conducted and territories were mapped. (City of Austin 2003 Golden-cheeked Warbler Report Appendix E).
- Removed non-native invasive vegetation.
- Treated site for fire ants.

Lanier tract

Important management activities for this tract include:

- Within the last three years there have been 3 large apartment complexes built nearby without adequate barriers to stop illegal trespass onto adjacent preserve land. Most of the illegal trespass on Lanier originates from Canyon Creek mitigation land.
- Routine patrol of the area for evidence of trespass and preserve damage.
- White-tailed deer surveys are conducted on Lanier, as part of the five mile Upper Bull Creek census route.
- Removed non-native invasive vegetation.
- Repaired road, both erosion and vegetation removal of downed trees.
- Boarded up the deteriorating Lanier house for safety reasons (asbestos was found in the roof tiles).
- Requested that Pedernales Electric Cooperative trim tree branches away from the electric line in order to prevent sparking and a potential wildfire.
- Treated site for fire ants.

Franklin tract

Key management activities for this tract over the past year were:

- Trapped feral hogs (11 hogs were removed).
- Sedimentation and erosion work along Bull Creek.
- Routinely patrolled main roads and perimeter fencing to look for signs of trespassing, vandalism or illicit dumping.
- White-tailed deer surveys are conducted on Franklin tract, as part of the five mile Upper Bull Creek census route.

- White-tailed Deer Management Program. Sixteen deer were culled under the TPWD Antlerless & spike-buck Deer Control Permit (ADCP). Harvesting began November 15, 2002 and ended January 8, 2003, for a total of six available hunting days. The harvested meat was donated to the Capital Area Food Bank.
- Repaired access road damaged by flooding and erosion problems.
- Repaired vandalized perimeter fence.
- Completed the fencing of the Cistern Spring/Jollyville salamander habitat restoration project with the help of a grant from the Partners for Fish and Wildlife Program.
- Continued to monitor Cistern Spring for the presence of salamanders.
- Collected the seed of locally rare spring associated plants and sowed it at the newly protected Cistern Spring fenced area.
- Removed trash dumps from this site.
- Removed non-native invasive vegetation.
- Requested that Pedernales Electric Cooperative trim tree branches away from the electric line in order to prevent sparking and a potential wildfire.
- Quarterly monitoring for the presence of the aquatic Jollyville Plateau Salamander. Note: Staff conducted surveys following protocol established in the City of Austin's Watershed Protection Department (WPD) report "Jollyville Plateau Water Quality and Salamander Assessment". At set stations, staff measured flow, water and air temperature and counted all salamanders observed. Salamanders counted were further broken down into 3 categories based on observed size. WPD staff periodically takes water and benthic samples at this site to determine current status on water quality. Staff will continue to conduct quarterly surveys at this site until there is a minimum of 5 years of data. Five years of data should allow for an accurate assessment of the populations dynamics at this site.
- Treated site for fire ants.
- Monitored hardwood saplings that had been planted previous year by high school students associated with Peers for Assisted Leadership program.
- Planted and maintained hardwood saplings in open areas in an attempt to create GCW habitat.
- Assisted WSPDR staff in collecting water samples to determine if any contaminants were present, (no contaminants were found).
- Assisted TPWD staff in collecting caddis flies, (a TPWD study to determine species diversity from undisturbed sites versus disturbed sites).

LOWER BULL CREEK UNIT

Forest Ridge

The Forest Ridge area is subject to continuing heavy public use by hikers and runners. Mountain biking and dog walking appear to be substantially reduced, though these activities continue to occur illegally. The proportion of hikers with entry permits continues to increase and staff finds increasing awareness and sympathy for the nesting season entry permit requirement. Management activities included:

Key management activities for this tract over the past year were:

- Repaired perimeter fence, dodge way, and sign vandalism.
- Conducted 5-year educational permit classes on this site.
- Plant native vegetation with the aid of a local Boy Scout Troop along a portion of the 5.9 miles of public access trails.
- Routine patrol of this site
- BCP staff conducted golden-cheeked warbler surveys at the 100-acre prime study plot on Forest Ridge for the sixth consecutive year (City of Austin 2003 Golden-cheeked Warbler and Black-capped Vireo report, Appendix E).
- Trapped feral hogs (1 hog was removed)
- Conducted a cricket exit count at Jest John cave.

Jester tract

Public access has been allowed on a portion of this tract; however, dodge ways have been installed to curtail prohibited mountain bike and horse use of this area. Education programs to permit preserve hikers during the bird season continued. Other management activities on Jester have included:

- Sedimentation and erosion control.
- Trail work and repair.
- Closed illegal trails and removed tree forts.
- Installed informational signs regarding access and endangered species issues.
- Repaired fence, dodge way and sign vandalism.
- Routine patrol of site.
- Met with Austin Energy regarding excessive clearing. Austin Energy replanted the site with native shrubs.
- Conducted a property line survey for areas where there was a conflict with adjacent landowners and in preparation for a new fence.

- Public Outreach: Participated in Jester-Lakewood Garden Road Show (co-hosted by COA WPD), explaining purpose of adjoining BCP properties and donating native saplings to homeowners.

Hilltop

With the completion of a fence along a portion of the northern boundary, the trespass from mountain bikers, horseback riders and motorcyclists has been reduced. Management activities on Hilltop included:

- Routine patrol of site.
- Completed installation of 1,643 feet of 6-foot chain-link fencing, with additional 1 foot of 3-strand barbwire, along portion of northern boundary of Hilltop and continuing along portion of eastern boundary of Kruger tract.
- Worked with adjacent property owner regarding problems with gate, located adjacent to kindergarten school, being left unlocked and open.
- GCW surveys (enumerations).

Hiller

This tract lies adjacent to Forest Ridge, Hilltop, and Gibson/Nott tracts.

- Periodic patrolling of site

Gibson /Nott Tract

- Periodic patrolling of site

Kruger

This recently acquired tract (95 acres) lies adjacent to both the Hilltop and 3M tracts. The completion of fencing of the external Kruger boundaries has aided greatly in the management of trespassing from mountain bikers, horseback riders, and motorcyclists onto the Kruger and 3M tracts. Management activities included:

- Completed installation of 2,477 ft. of 6 ft. chain-link fencing, with additional 1 ft. of 3-strand-barb wire, along portion of northern boundary along Whitecliff Drive and continuing along a portion of the eastern boundary. The remainder of the eastern portion of the Kruger boundary was fenced as part of the Hilltop/Kruger fencing project.
- Routine patrolling of site.
- GCW surveys (enumerations).
- Majority of chain link fence (2200 ft.) painted by 18 E-Corps students in two workdays (Exception was 277 ft. section along White Cliff Dr, which could not be

painted at that time because of large trash piles dumped illegally along side of road next to fence. Contacted Travis County regarding removal).

3M Mitigation Tract

Horseback riders and motorcyclists have subsided on this tract due to recently installed fencing on the Kruger tract. The closure of Forest Ridge and Jester to biking was initiated in the spring of 2001. Some illegal biking on 3M continues from entry points on the St. Edward's tract. Management activities included:

- Routine patrolling of main roads and perimeter fencing to look for signs of trespassing, vandalism or illicit dumping.
- Completed installation of 845 ft of game fence along portion of northern boundary at Spicewood Springs Road. This fencing connects with an existing game fence enclosure on 3M tract and also with an existing chain-link fence along the boundary of 3M and the St. Edward's tract.
- Routine patrolling of main roads and perimeter fencing to look for signs of trespassing, vandalism or illicit dumping.
- Golden-cheeked warbler monitoring is conducted on a 100-acre plot (designated as a primary plot) on a portion of this tract and 3M tract (City of Austin 2003 Golden-Cheeked Warblers Report, Appendix E)
- GCW surveys (enumerations on non 100-acre plots).
- Monitoring of twist-leaf yuccas, which were caged in previous year by volunteers.
- Met with and reviewed Austin Energy's proposal to cut vegetation from power lines. The proposal was regarded as routine maintenance.
- Repaired perimeter fence.
- Treated site for fire ants.

St. Edwards Park

This area serves as a major public access route for hikers and bikers. Hikers are allowed into adjacent Bull Creek Preserve properties, but mountain biking is prohibited. The major trail through this park continues to be heavily used by dog-walkers, hikers and mountain bikers. Management activities included the following:

- New, illegal mountain biking paths within the parkland portion were mapped.
- The area was routinely patrolled.
- Drafted language for signs for closing of unauthorized mountain bike trails, which cut across 100-acre GCW survey plot. Updated Activity Plan for closing of these trails

- Golden-cheeked warbler monitoring is conducted on a 100-acre plot (designated as a primary plot) on a portion of this tract and 3M tract (City of Austin 2003 Golden-Cheeked Warblers Report, Appendix E).
- GCW surveys (enumerations on non 100-acre plots).
- Trail repair.
- Repaired perimeter fence.

MIDDLE BULL CREEK UNIT

Ivanhoe

Management activities included the following:

- Endangered bird monitoring activities at Ivanhoe concentrated on the 100-acre study plot for golden-cheeked warblers (City of Austin 2003 Golden-cheeked Warbler and Black-capped Vireo Monitoring Program report, Appendix E).
- Brown-headed cowbird trapping.
- Feral hog trapping. (No hogs were removed from this site).
- Conducted routine patrols on this tract.
- Erosion repair on access road.
- Mapped springs and collected aquatic amphipods and isopods for species identification.
- Met with and reviewed Austin Energy's proposal to cut vegetation from power lines. The proposal was regarded as routine maintenance.
- Removed non-native invasive vegetation.
- Treated site for fire ants.
- Monitored the rare canyon mock orange, made note of bloom period, pollinators and seed set.
- Monitored the extensive populations of canyon mock orange (*Philadelphus ernestii)* on this tract. Drafted monitoring program for CMO. Discussion with LBJWC of potential project to map/monitor this population (plus the one at Bohls) and do reproduction study
- Invited TPWD staff to monitor one spring on this tract.

Beard Family Trust

Management activities for this tract included:

- Routine patrol of area.
- Sedimentation and erosion control work.
- Repair of fences

- GPS mapping was continued for the BCP resources inventory.

CYPRESS CREEK UNIT

Lime Creek

Management activities for this tract included:

- Monitoring: Lime Creek has two caves, which harbor endangered karst species. Biannual monitoring of these caves has been conducted for karst fauna and red important fire ant infestations (Karst Report, Appendix P).
- Three permanent Land Condition Trend Analysis field plots were surveyed by line and belt transect plot inventory methodology to aid in ongoing vegetation analysis and restoration.
- Periodic patrolling.
- Periodic fence repair.
- Large amounts of trash including numerous tires were removed from this site with the help of the E-corps.
- Cleared access road of fallen trees.
- Met with USFWS, Williamson County, and Cedar Park officials regarding the widening of Lime Creek Blvd, which will impact a portion of the preserve.
- Sought bids for BCV habitat manipulation.

NORTH LAKE AUSTIN UNIT

Emma Long Park

City management activities during FY 02-03 included:

- Monitoring activities for golden-cheeked warblers continued for the sixth year on the Emma Long 100-acre plot. Staff also spent time enumerating warblers throughout the rest of the park (City of Austin 2003 Golden-cheeked Warbler and Black-Capped Vireo Monitoring Program, Appendix E).
- Routinely patrolling main roads and perimeter fencing to look for signs of trespassing, vandalism or illicit dumping.
- Staff conducted 3 white-tailed deer census counts on a 5-mile census route on Emma Long Park in August, September, and October of 2003, with an average survey count of one deer per 1.55 acres.

Coldwater

Management activities on Coldwater during FY 02-03 included:

- During the hot, dry summer months six live oak trees were hand watered. These trees were planted by Austin Energy to remediate vegetation removed while installing underground utilities.
- Routinely patrolled main roads and perimeter fencing to look for signs of trespassing, vandalism or dumping.

Long Canyon

City management activities at the Long Canyon tract during FY 02-03 involve the following:

- Routine Patrols: Main roads and perimeter fencing were visited to look for signs of trespassing, vandalism or dumping.
- Cage and protect from deer browse approximately 1,000 hardwood seedlings and saplings (ongoing project)

Park West

A variety of management activities were conducted during FY 02-03 at the Park West Tract. Key work efforts included:

- Three permanent Land Condition Trend Analysis field plots were surveyed by line and belt transect plot inventory methodology to aid in ongoing vegetation analysis and restoration.
- Routinely patrolled main roads and perimeter fencing to look for signs of trespass, vandalism or dumping.
- Investigation of areas surrounding cave mouths for presence of red imported fire ants, (no fire ants were observed entering any of the karst features).
- Fixed barbed wire fencing along western boundary that had been vandalized.

Cortaña

The fencing installed by Travis County on a portion of its Steiner Ranch Conservation Easement, which is contiguous with Cortaña's western boundary, has helped greatly to curtail some of the trespassing that has occurred in the central and lower parts of Cortaña. However, with the expansion of development on the lower eastern boundary of Cortaña, trespassing activities have escalated this past year. Management Activities included:

- Monitoring: The COA has not been conducting GCW monitoring of Cortaña. However, because of a federal Section 7 permit, Sierra Development Corp. (River Place) has been conducting studies (every other year) to determine GCW and BCV territories and reproductive success on adjacent properties within 3,000 ft of the River Place boundaries. These studies include almost the entire portion of Cortaña (as well

as portions of Park West). The studies have included the years 1994, 1996, 1998, and 2000 and will continue until three years after complete build out of River Place. River Place is also responsible for monitoring 100 acres of manipulated BCV habitat, a portion of which is at the northern tip of Cortaña. The monitoring includes both avian and plant monitoring studies, and has been conducted every year since 1996. All of these studies have been presented to USFWS, via SWCA, Inc, which is conducting the surveys.

- Black-capped vireo surveys – surveys will be used to estimate current population status and trends.
- Five permanent Land Condition Trend Analysis field plots were surveyed by line and belt transect plot inventory methodology to aid in ongoing vegetation analysis and restoration.
- Routinely patrolled main roads and perimeter fencing to look for signs of trespass, vandalism or dumping.
- A large number of tires were removed from this site with the help of the E-corps.
- Created and improved BCV habitat by clearing shin oak and Ashe juniper by hand operated equipment.
- Feral hog trapping, (22 hogs were removed).
- Brown-headed cowbird trapping. BHCO were trapped daily in March, April, May, and June (114 days). Total number of birds trapped was 54.
- Prepared a plan to create more black-capped vireo habitat with a prescribed burn (staff cleared a fire break at this site in preparation for the burn).
- Repaired vandalism of perimeter fence and installed a BCP “no trespassing,” sign.
- Located a new active oak wilt center on eastern boundary of this tract in 2002. Consulted with Texas Forest Service to devise trenching plan to provide barrier to root transmission for control of oak wilt. Two parallel trenches were cut with 48” rock saw. The two trenches were ca. 350 ft each in length and were located approximately 600 ft. apart. Soil was backfilled immediately and grass and forb seeds sown on bare soil. Work was complete prior to March 1 GCW breeding season.
- LCRA Infrastructure Project: Cortaña area under power lines scheduled for clearance/grading, as part of upgrading of LCRA transmission power lines. Clearing completed before onset of Golden-cheeked warbler season. Negotiated with LCRA to conserve seep area and native grasses under power lines at western boundary of Cortaña. Also negotiated with LCRA to improve new access at lower eastern boundary of Cortaña, install gate, and block off abandoned old entry point with boulders. Spread grass seeds on sides of part of cleared access road.
- Activity Plan for revegetation of easement access to LCRA power lines.

- Lower eastern boundary gates at 3 locations have had frequent trespass and damage to gates & lock requiring frequent repair of these gates/locks.
- Repair fencing and a gate at illegal access point on lower eastern boundary, and repositioning of boulder (blocks illegal access) which had been moved aside.
- Public Outreach: Communication with president of River Place MUD Board of Directors and supplied him with factual information to use in monthly newsletter to River Place homeowners regarding facts about BCP (both Cortaña and River Place's private 10(a) mitigation acreage). Conversation with in-holding property owner regarding his easement access rights across old Leonard East Rd easement access.

SOUTH LAKE AUSTIN TRACTS

Staff conducted 3 white-tailed deer census counts on a 5–mile census route on the South Lake Austin tracts (Double J&T, Reicher Ranch, and Bohls) in August, September, and October of 2003, with an average survey count of one deer per 15 acres.

Double J&T

Management activities included:

- Along Murfin Road, there is the continual problem of trespassing and dumping of trash onto Double J&T., as well as cutting of fence along various portions of the road. At the Cardinal Hills neighborhood, the western-boundary fence was cut and removed, and illegal dumping has occurred. Initiated the closing off of these access points and the removal of the trash dumps.
- Perimeter fence repair work.
- Golden-cheeked warbler monitoring is conducted on a 100-acre plot (designated as a transitional plot) on this tract (City of Austin 2003 Golden-Cheeked Warblers Report, Appendix E).
- White-tailed deer surveys are conducted on Double J&T, as part of the five mile SLAM census route.
- Five permanent Land Condition Trend Analysis field plots were surveyed by line and belt transect plot inventory methodology to aid in ongoing vegetation analysis and restoration.
- Routinely patrolled main roads and perimeter fencing to look for signs of trespass, vandalism and/or dumping.
- A large amount of trash was removed from the Northeastern portion of this tract with the help of the E-corps.
- Removed non-native invasive plants.

- White-tailed Deer Management Program. Thirty-six deer were culled under the TPWD Antlerless & Spike-Buck Deer Control Permit (ADCP). Harvesting began November 13, 2002 and ended January 9, 2003 for a total of eight available hunting days. The harvested meat was donated to the Capital Area Food Bank.
- New fence construction: 8000 linear feet of 8 ft. game fencing along western boundary, from north of Murfin Road up to Kollmeyer Rd; and 1300 linear feet of five-strand barb-wire fencing, from western boundary of Sansom tract running west towards Hwy 620.
- Seed dispersal along illegal access points from Murfin Road where two rock-pile barriers were built near the entrance to the illegal dump areas.
- Public outreach with adjacent landowners: for revegetation purposes, donated several saplings to Cardinal Hills private owner whose property is adjacent to newly constructed fence on western boundary.

Sansom Tract

Management activities included:

- Routine patrol of property.
- New game fencing along western boundary of Double J&T, north of Murfin Road, included the western boundary of the Sansom tract.

Reicher Ranch

Management activities included:

- Closed illegal roads, which prevented illegal access into golden-cheeked warbler habitat.
- Trash/dump removal.
- White-tailed deer surveys are conducted on Reicher Ranch, as part of the five mile SLAM census route.
- White-tailed Deer Management Program. Eight deer were culled under the TPWD Antlerless & Spike-Buck Deer Control Permit (ADCP). Harvesting began December 2, 2002 and ended January 9, 2003 for a total of four available hunting days. The harvested meat was donated to the Capital Area Food Bank.
- Three permanent Land Condition Trend Analysis field plots were surveyed by line and belt transect plot inventory methodology to aid in ongoing vegetation analysis and restoration.
- Greenhouse: Volunteers repaired broken glass in overhead vents. Replaced malfunctioning irrigation system controller. Replaced overhead vent motor. Processed

seeds and planted various species in greenhouse for use in re-vegetation effort on the BCP.

- Routine patrol of property.
- Monitoring of twist-leaf yuccas, which were caged in previous year by volunteers.
- Public Outreach: Met with individuals working with school projects to plan future restoration events for those schools located adjacent or near to BCP properties.
- In selected areas treated fire ants with boiling water.
- Removed non-native invasive vegetation.

Bohls Ranch

This riverfront tract is bordered on the west by Reicher Ranch and on the east by the Lake Pointe subdivision and its 230-acre mitigation tract. Since much of the common boundary between Bohls and Lake Pointe mitigation is not fenced, the potential for frequent trespassing onto Bohls continues. Management activities included:

- White-tailed deer surveys are conducted on Bohls Ranch, as part of the five mile SLAM census route.
- Monitoring for golden-cheeked warbler conducted on a 100-acre plot (designated as a prime plot) (City of Austin 2003 Golden-Cheeked Warbler Report, Appendix E).
- One permanent Land Condition Trend Analysis field plots were surveyed by line and belt transect plot inventory methodology to aid in ongoing vegetation analysis and restoration.
- Feral hogs have been observed.
- Routine patrolling.
- Perimeter fence and sign repair.
- Cleared 30 acres of scrub juniper and oaks to create BCV habitat.
- Black-capped vireo habitat restoration efforts were continued. Planted 300 shin Oak acorns on approximately 30 acres on BCV restoration site.
- Re-seeded the BCV manipulated portion of this tract.
- Removed non-native invasive vegetation.
- Monitored canyon mock orange populations.

Commons Ford Ranch Park

- Routine patrolling
- Met with Austin Energy regarding the upgrade of an existing electric line easement. Austin Energy proposed to re-route the existing alignment out of golden-cheeked warbler habitat, thus eliminating the need to clear habitat.

Senna Hills

- Routine patrolling.
- Removed non-native invasive vegetation.
- Contacted a neighbor regarding potential volunteer projects.

BARTON CREEK TRACTS

Barton Creek Wilderness Park

FY 2002-03 management highlights for the B.C. Wilderness Park include:

- Cave Y and substation sink entrances were checked periodically for signs of human visitation, trash, and damage.
- Monitored for the presence of fire ants and found no activity within the caves.
- Repaired vandalized perimeter fence and closure signs to prevent illegal access into golden-cheeked warbler habitat.
- Met with Austin Energy and PARD representatives regarding an Austin Energy proposal to install a new security fence to prevent illegal access. This new fence will protect the endangered golden-cheeked warbler, caves with endangered species, the rare *Streptanthus bracteatus*, and water quality. The fence has been approved and will be built before March 1, 2004.
- Golden-cheeked warbler monitoring continued at the 100-acre prime GCW study plot near Barton Creek, while GCW enumerations throughout this unit were also conducted (City of Austin Golden-cheeked Warbler Report, Appendix E).
- Existing *Streptanthus bracteatus* populations in the Wilderness Park were monitored. A TSU graduate student will conduct genetic research on these populations to assist the BCP's efforts for conservation.
- Routine patrolling.
- Met with Austin Energy regarding the need to maintain the right-of-way and clearing of vegetation on and around power lines for safety concerns. Austin Energy completed the clearing prior to March 1 and has started a new policy of maintaining access right-of-way directly under the lines.
- Fog cave was restored (all trash was removed and all nearby transient camps).

Barton Creek Greenbelt

- Annual karst fauna monitoring was conducted at Airman's Cave, (Karst Report, Appendix P).

- Austin WSPDR staff take routine water and benthic samples from several points on the creek to help determine the health of the creek and to try to determine how the creek is being impacted by adjacent urban sprawl.
- Routine patrol.

Friesenhahn Tract

- Routine patrolling.

WEST AUSTIN PROPERTIES

Vireo Research Area

- Routine patrolling.
- Repaired existing gate and requested that Austin Energy add additional bollards to prevent illegal access. Austin Energy made the necessary improvements.
- An adjacent property owner has constructed a game fence on a portion of the northeastern boundary.

Mount Bonnell Park

This small hilltop park overlooking Lake Austin continues to receive high visitation rates, especially by out-of-town visitors seeking a panoramic view of the lake and scenic Texas Hill Country. Over the past year, several clean-ups of trash (mostly beverage bottles and cans) thrown into the native vegetation by park visitors were performed by preserve staff.

- Volunteers did extensive monitoring of the rare *Streptanthus bracteatus*. The vacant land due south of the park is under construction for a new home. This tract has a substantial population of the rare *Streptanthus bracteatus.* The Ladybird Johnson Wildflower Center contacted the owner and got permission to collect seed from the property. The Wildflower Center is advising the property owner on how to minimize damage to the remaining population.

Ullrich Water Treatment Plant

Managed by AWU. BCP management activities included:

- BCP staff met on site regarding fence design and location for the protection the rare *Streptanthus bracteatus.*
- BCP staff met on site with Ullrich staff to review a proposed design for a cave gate to protect Little Bee Creek Cave (Karst Report, Appendix X).

Water Treatment Plant #4

Managed by AWU. BCP management activities included:

- White-tailed deer surveys are conducted on WTP#4, as part of the five mile Upper Bull Creek census.
- Illegal trespass from adjacent newly built apartments.
- Conducted a follow up survey of "Moss Gully" spring and determined that current flow is not adequate for the presence of salamanders.
- Assisted WSPDR staff in collecting a water sample from Moss Gully to see if the water may be contaminated. No contaminants were found.
- BCP staff removed non-native invasive vegetation in accordance with the management plan.
- Treated site for fire ants.

Barrow Preserve

Management activities include:

- Routine patrol and monitoring adjacent new development (Canyon Rim).
- WSPDR staff monitored the water for pollutants.

Spicewood Springs Preserve

Management activities include:

- Erosion and sedimentation control.
- Repair of vandalized security fence around Cotterell Cave
- Red-imported fire ant control with boiling water (Karst Report, Appendix P).
- Trail work and repair
- Trash removal (including the removal of tree forts).
- Put out seed of locally collected native plants in areas where erosion is occurring to aid in erosion control.
- Added a new rules sign, which covered all illegal activities occurring in the preserve.
- Replaced and repaired rules signs in preserve.
- Conducted 4 faunal surveys at Cotterell Cave (Karst Report, Appendix P).

Two research-monitoring studies are underway at Spicewood Springs Park involving non-BCP investigators. They involve:

- (1) Jollyville Plateau salamander: Monthly surveys were conducted on this preserve and the land immediately downstream until January. This site is now surveyed yearly in January. This site is the type locality for the Jollyville Plateau salamander. This population crashed in 1994 and has never really recovered. Some of the remaining salamanders have notable spinal deformities. Watershed Protection and Development

Review (WPDR) staff takes regular water quality samples for analysis. This year WPDR staff collected soil samples from Cotterell cave for analysis of potential contaminants washing in from nearby homes.

- Staff conducted surveys following protocol established in the City of Austin's Watershed Protection Department (WSPD) report "Jollyville Plateau Water Quality and Salamander Assessment". At set stations, staff measured flow, water and air temperature and counted all salamanders observed. Salamanders counted were further broken down into 3 categories based on observed size. WSPD staff periodically takes water samples at these sites to determine current status on water quality. Staff will continue to conduct yearly surveys at this site until there is a minimum of 7 years of data. As of 1/02 this site is surveyed yearly. Up until then this site was surveyed monthly since 1994. It is uncertain how much longer City of Austin BCP staff will continue to survey this site. However, staff will continue to try to determine why salamanders are disappearing from this site and why some are deformed.
- Salamanders on this site carry the chytrid fungus, which is lethal to frogs. All equipment and clothing must be either dedicated to this site and none other or sterilized with a 10% solution of bleach before accessing any other sites.
- Dr. Rob Jackson at Duke University and Dr. Will Pockman with the University of New Mexico are currently conducting research on the uptake of water from certain species of trees. They have set up scientific probes on some of the roots inside the cave. This monitoring does not require access into the cave and is only done under BCP staff supervision.

PRESERVE-WIDE ACTIVITIES

- Brown-headed Cowbird Control Program.
- Feral Hog Control Program.
- White-tailed Deer Survey Program.
- White-tailed Deer Management Program.
- Public Outreach Efforts.
- GCW/BCV Monitoring Surveys: See attached report, Appendix E.
- Karst Protection: See report, attached as Appendix P.
- Cistern Spring and Jollyville Plateau salamander habitat restoration.
- Continued GIS/GPS mapping of existing BCP resources. The Arc view-created map will have roads, structures, wells, fences, gates, etc. and will be used for future land management.

Travis County

Hamilton Pool Preserve

Public uses permitted prior to Hamilton Pool Preserve's dedication as a portion of the BCP continued through FY2003. The 232-acre site contains approximately 1.75 miles of maintained nature trails, and provides access to a popular swimming area located in a natural grotto. User fees are assessed, and public access to the Preserve is limited to day use only. Pets, fires, cooking, fishing, and collecting are all prohibited within the Preserve.

- Travis County Parks and Natural Resources staff actively engage school children and the public in education and outreach efforts related to endangered species and the BCP through guided tours and special opportunities throughout the year.
- A 100-acre study plot for collection of long-term distribution and abundance data for the golden-cheeked warbler was established by the BCP Land Management Plan (BCP LMP). Intensive data collection and monitoring on the study plot continued, and results are summarized in Travis County's *Monitoring of the Golden-cheeked Warbler, 2003 Field Season* report, attached as Appendix L.
- Brown-headed cowbird trapping continued at Hamilton Pool Preserve, and results are found in the *2003 Wildlife Management Summary for Travis County BCP Lands*, attached as Appendix N.
- The Hamilton Pool Preserve population of canyon mock-orange, a species of concern covered under the Permit, continues to be protected and monitored. A discussion of management activities related to this species as well as information related to the assessment and control of non-native and invasive plant species may be found in *Vegetation Management on Travis County's Balcones Canyonlands Preserve, FY2003*, attached as Appendix O.

JOLLYVILLE UNIT

In FY2003, the 35.147 acre Tomen-Parke Section 14, Lot 2 tract was acquired and incorporated into the Jollyville Unit (now totaling 1655 acres). The Jollyville Unit consists of the Bunten, Grandview Hills, Lake Perspectives, Vireo Ridge and Vista Point tracts, consisting of lands held in fee simple ownership and managed thorough conservation easements.

Bunten tract

- Regular patrols were completed by Travis County BCP Rangers.
- A new 100-acre study plot for collection of long-term distribution and abundance data for the golden-cheeked warbler was established. Results of the intensive data collection and monitoring on the study plot are summarized in Travis County's

Monitoring of the Golden-cheeked Warbler, 2003 Field Season report, attached as Appendix L.

- Assessment and control of non-native and invasive plant species on this heavily impacted tract continued, as reported in *Vegetation Management on Travis County's Balcones Canyonlands Preserve, FY2003,* attached as Appendix O.
- Field investigations to map habitats and verify presence of the Jollyville Plateau salamander continued.

Grandview Hills tract

- Regular patrols were completed by Travis County BCP Rangers.
- Golden-cheeked warbler and black-capped vireo surveys were performed and results are summarized in Travis County's *Monitoring of the Golden-cheeked Warbler, 2003 Field Season* and the *Monitoring of the Black-capped Vireo, 2003* reports, attached as Appendices K and L.
- Non-native and invasive plant species were managed, and the tract was surveyed for the presence of the bracted twistflower as reported in *Vegetation Management on Travis County's Balcones Canyonlands Preserve, FY2003*, attached as Appendix O.
- Travis County staff trapped brown-headed cowbirds on the preserve, initiated investigations to quantify white-tailed deer populations and wildlife management activities including removal of feral hogs and white-tailed deer were completed. A summary of these activities is attached as Appendix N.
- Karst features were investigated, as summarized in the *Balcones Canyonlands Preserve Karst Management Report, 2003* found in Appendix P.

Lake Perspectives tract

The 124-acre Lake Perspectives tract was available to the public through guided access for educational and outreach activities provided by Travis County BCP staff.

- Regular patrols were completed by Travis County BCP Rangers.
- Assessment and control of non-native and invasive plant species on this tract continued, as reported in *Vegetation Management on Travis County's Balcones Canyonlands Preserve, FY2003,* attached as Appendix O.
- Endangered species surveys, including intensive efforts on one 100-acre study plot for collection of long-term distribution and abundance data for the golden-cheeked warbler per the guidelines found in BCP Land Management Plan (BCP LMP) continued. Results of this data collection and monitoring are summarized in Travis County's *Monitoring of the Golden-cheeked Warbler, 2003 Field Season* report, attached as Appendix L.

- Investigations to quantify white-tailed deer populations were initiated. A summary of these activities is attached as Appendix N.

Vireo Ridge tract

- Regular patrols were completed by Travis County BCP Rangers.
- Golden-cheeked warbler and black-capped vireo surveys were performed and results are summarized in Travis County's *Monitoring of the Golden-cheeked Warbler, 2003 Field Season* and the *Monitoring of the Black-capped Vireo, 2003* reports, attached as Appendices K and L.
- Habitat manipulation efforts to restore black-capped vireo nesting areas in this historically populated area continued, and is reported in the Restoration of Black-capped vireo (*Vireo atricapilla*) Habitat on the Balcones Canyonlands Preserve, attached as Appendix M.
- A browse study was performed in FY2002 to quantify white-tailed deer impacts on habitat restoration efforts and direct wildlife population management actions on the Jollyville Unit. This data is reported in the *Assessment of White-tailed Deer (Odocoileus virginianus) Impacts on the Woody Plant Community on the Woody Plant Community in the Vireo Ridge Restoration Area, 2003* attached as Appendix J.
- Travis County staff trapped brown-headed cowbirds on the preserve, as well as on private property immediately adjacent to the Jollyville Unit. Investigations to quantify white-tailed deer populations were completed and wildlife management activities including removal of feral hogs and white-tailed deer were initiated. A summary of these activities is attached as Appendix N.
- Assessment and control of non-native and invasive plant species on this tract continued and the tract was surveyed for the presence of the bracted twistflower, as reported in *Vegetation Management on Travis County's Balcones Canyonlands Preserve, FY2003*, attached as Appendix O.
- Karst features were investigated, as summarized in the *Balcones Canyonlands Preserve Karst Management Report, 2003* found in Appendix P.

Vista Point tract

- Regular patrols were completed by Travis County BCP Rangers.
- Golden-cheeked warbler and black-capped vireo surveys were performed and results are summarized in Travis County's *Monitoring of the Golden-cheeked Warbler, 2003 Field Season* and the *Monitoring of the Black-capped Vireo, 2003* reports, attached as Appendices K and L.

- Travis County staff trapped brown-headed cowbirds on the preserve, as well as on private property immediately adjacent to the Jollyville Unit. Investigations to quantify white-tailed deer populations were initiated and wildlife management activities including removal of feral hogs was initiated. A summary of these activities is attached as Appendix N.
- Assessment and control of non-native and invasive plant species on this tract continued and the tract was surveyed for the presence of the bracted twistflower, as reported in *Vegetation Management on Travis County's Balcones Canyonlands Preserve, FY2003*, attached as Appendix O.
- Karst features were investigated, as summarized in the *Balcones Canyonlands Preserve Karst Management Report, 2003* found in Appendix P.

Romberg Tract

The 40-acre Romberg tract was available to the public through guided access for educational and outreach activities provided by Travis County BCP staff.

Habitat management activities in FY2002 included:

- Regular patrols were completed by Travis County BCP Rangers.
- Site visits were completed by Travis County Natural Resources staff. The tract was not intensively surveyed in FY2003 due to the absence of warbler breeding territories in recent years. Though warblers have been documented foraging and dispersing juveniles at this location in the past, site visits did not provide any evidence of such use during this nesting season.

Steiner Ranch

The Preserve tracts of Steiner Ranch comprise 819 acres in five separate parcels. Conservation Easements on these tracts were transferred to Travis County as partial mitigation required by the USFWS for impacts resulting from the associated development. Under the terms of the Conservation Easement, the Steiner Ranch Master Association (SRMA) maintained access to a limited number of approved nature trails within the Preserve areas. The use of these trails is restricted to hiking, jogging, and nature viewing from maintained trails, and the trails are for the sole use of residents of the development. Access to remaining portions of these preserve tracts was available to the public through guided access for educational and outreach activities provided by Travis County BCP staff. The Steiner Ranch Unit is comprised of five tracts referred to as J-Canyon, L-Bend, Middle Section, the Vireo Management Area and North East.

J-Canyon tract

- Regular patrols were completed by Travis County BCP Rangers.
- Endangered species surveys for golden-cheeked warblers were completed. Results are summarized in Travis County's *Monitoring of the Golden-cheeked Warbler, 2003 Field Season* report, attached as Appendix L.

L-Bend tract

- Regular patrols were completed by Travis County BCP Rangers.
- Endangered species surveys for golden-cheeked warblers were completed. Results are summarized in Travis County's *Monitoring of the Golden-cheeked Warbler, 2003 Field Season* report, attached as Appendix L.

Middle Section tract

- Regular patrols were completed by Travis County BCP Rangers.
- Endangered species surveys for golden-cheeked warblers were completed. Results are summarized in Travis County's *Monitoring of the Golden-cheeked Warbler, 2003 Field Season* report, attached as Appendix L.

Vireo Management Area tract

- Regular patrols were completed by Travis County BCP Rangers.
- Golden-cheeked warbler and black-capped vireo surveys were performed and results are summarized in Travis County's *Monitoring of the Golden-cheeked Warbler, 2003 Field Season* and the *Monitoring of the Black-capped Vireo, 2003* reports, attached as Appendices K and L.

North East tract

- Regular patrols were completed by Travis County BCP Rangers.
- Golden-cheeked warbler and black-capped vireo surveys were performed and results are summarized in Travis County's *Monitoring of the Golden-cheeked Warbler, 2003 Field Season* and the *Monitoring of the Black-capped Vireo, 2003* reports, attached as Appendices K and L.

Toops Tract

The 170-acre Toops tract was available to the public through guided access for educational and outreach activities provided by Travis County BCP staff.

Habitat management activities in FY2003 included:

- Regular patrols were completed by Travis County BCP Rangers.

- Assessment and control of non-native and invasive plant species continued, as reported in *Vegetation Management on Travis County's Balcones Canyonlands Preserve, FY2003*, attached as Appendix O.
- Distribution, and abundance surveys were performed to assess the local population of the golden-cheeked warbler. Results of data collection and monitoring are summarized in Travis County's *Monitoring of the Golden-cheeked Warbler, 2003 Field Season* report, attached as Appendix L.
- Investigations to quantify white-tailed deer populations were initiated. A summary of these activities is attached as Appendix N.

Wild Basin Wilderness Preserve

Wild Basin Wilderness Preserve is owned by Travis County and managed through contractual agreement by the Committee for Wild Basin Wilderness, Inc. Travis County Parks and Natural Resources supports operation of the 227-acre Preserve through staff and financial assistance. Public uses allowed prior to dedication of Wild Basin Wilderness as a portion of the BCP continued through the past year. Access is permitted for day use only and is restricted to designated trails. Pets, picnicking, and collecting within the Preserve are prohibited.

Wild Basin Wilderness Preserve contains approximately 2.5 miles of maintained nature trails and provides environmental education and outreach programs for the public. Over 4,500 visitors signed in at the hiking trailhead in FY2003. School tours served over 4,500 students over a period of twenty weeks. Tours were conducted in the spring and again in the fall. Groups include public and private schools, parochial schools and home-school groups primarily in age groups 1st - 6th grades. Participating school districts include Austin, Eanes, Georgetown and Roundrock. Eleven different programs were scheduled through the Lone Star Girl Scout Council's Possibilities program and the Boy Scout Council and were attended by 1,500 children and 120 adults. A Summer Camp provides more intensive learning experiences for approximately 120 students each summer. The Committee for Wild Basin Wilderness Preserve has strived to develop relationships with area organizations and businesses, and continues to be an important meeting place for local community, conservation, governmental and corporate groups.

Habitat management activities at Wild Basin Wilderness Preserve in FY2003 included:

- trail maintenance
- erosion control

- re-vegetation projects
- hundreds of hours of volunteer efforts to control non-native and invasive plant species
- boundary delineation by improved signage
- surveys of golden-cheeked warblers found on the property, reported in Appendix H.

A summary of activities is presented in the Wild Basin Wilderness Annual Report, attached as Appendix Q.

Law Enforcement Summary

Management of Preserve lands to maintain and increase populations of endangered species in a rapidly developing urban interface presents unique challenges for public agencies and private landowners alike. Many BCP tracts present significant management challenges ranging from illegal trespass including pedestrian, mountain bike and motorcycle traffic to illegal dumping to poaching of native wildlife on preserve lands.

To protect the significant natural and cultural resources on County owned and managed preserve lands, Travis County has assigned two Park Rangers to the BCP. Travis County Park Rangers are commissioned Texas Peace Officers operating as Deputy Sheriffs under the Travis County Sheriff's Office (TCSO) and are certified Texas Department of Health Emergency Medical Technicians. Their primary duty is to provide the law enforcement component for the effective management of all county owned or managed BCP properties. In FY2004 two additional Park Rangers will undergo training to enable them to provide additional assistance with resource protection and law enforcement activities on the Preserve.

Trespass onto posted preserve lands is the most common concern addressed by Travis County BCP Rangers. When trespassers are apprehended on BCP property they are temporarily detained per TCSO policy, questioned regarding their activities, issued a criminal trespass warning and escorted from the property. In FY2003, 12 TCSO citations were issued to trespassers confronted on BCP property. Rapidly developing suburban neighborhoods surrounding many BCP locations will likely generate additional trespass pressure on these preserve tracts.

Rangers are responsible for boundary patrols and quarterly inspections of County BCP tracts. Patrols are conducted to provide a law enforcement presence to help minimize illegal activities as well as to assess the condition of County property such as boundary fencing. Rangers are also trained to recognize and respond to hazardous and illegally dumped materials, and regularly cooperate with local, state and federal agencies to

appropriately address the threats these materials pose to health and human safety as well as to the natural environment. Inspections encompass surveys of facilities, trails, invasive and non-native species and management needs, trespass issues and other areas that impact the overall condition of preserve tracts. Cooperation with Texas Parks and Wildlife Department Game Wardens has led to the apprehension of poachers illegally taking game animals within the boundaries of the County's preserve lands as well as on adjoining private properties.

Travis County BCP Rangers assist with or lead ongoing education programs conducted by BCP staff, assist with the monitoring and removal of non-native plant and animal species, monitor and protect cultural resource sites, assist with trail mapping and provide support for Travis County Natural Resources field staff. The BCP Rangers have provided assistance in several incidents on City of Austin and LCRA BCP properties and have assisted neighboring landowners and individual BCP land managers with trespass and criminal mischief concerns on adjoining properties.

Cultural Resources

As a political subdivision of the State of Texas, Travis County is obligated to comply with the Antiquities Code of Texas to locate, protect and preserve all cultural resource sites on properties within the jurisdiction and management of the County. Travis County Natural Resources is aware of a number of prehistoric and multi-component archaeological sites located on County owned or managed preserve lands. These sites have been recorded with the Texas Historical Commission, and the Texas Archaeological Research Laboratory located at the University of Texas maintains maps showing locations of identified archaeological sites throughout the BCP. These locations are not identified here, as Section 191.004 of the Antiquities Code of Texas prohibits revealing archaeological site locations in public documents (U. S. Department of the Interior, U. S. Fish and Wildlife Service, 1996).

In order to better protect the important cultural resources known to be on Balcones Canyonlands Preserve tracts, Travis County field staff have undergone training pertaining to the identification and field assessment of lithic (rock) artifacts well as historic artifacts associated with 19th and 20th century farming and ranching practices most likely to be encountered in Central Texas. Known cultural sites are regularly monitored for illegal activities such as evidence of surface collecting of artifacts or unauthorized excavation. Known cultural sites are currently being mapped with global positioning satellite technology and mapped on USGS 7.5-minute topographic maps. This data will be

transmitted to the Texas Historical Commission and maintained in a secure fashion by Travis County Natural Resources staff. Cultural features located on BCP properties are reviewed for possible protection through the National Register of Historic Places, Recorded Texas Historic Landmark, or State Archaeological Landmark designations. Currently, no known features meet the criteria for inclusion under these designations.

Travis County's Balcones Canyonlands Preserve education and outreach efforts in FY2003 included:

- Interpretation of research data and information about the BCP and endangered species for neighborhoods and homeowner's associations, the general public, and interested groups through preserve tours, workshops, special presentations and exhibits.
- Travis County makes a special effort to reach out to schoolchildren living in the vicinity of Preserve properties. Participation in activities such as Elementary and Secondary school science, environment and nature clubs, the Austin Science Fun Day, and extra-curricular student programs such as summer camps helps to spread the word about the BCCP and protecting the unique native plants and animals found in our community.
- The County regularly provides internship opportunities for college students working in the field of natural resources research and management.
- Continuing data collection and scientific study of the species protected by the BCCP, as well as impacts of land management practices. Research data is presented for interested groups and at professional and scientific conferences, such as the 2002 Land Trust Alliance National Rally, the Society of Ecological Restoration and the 8th Annual Continuing Legal Education Conference on the Endangered Species Act and Habitat Conservation Planning.
- Participation at community events throughout the area, such as the Texas Parks and Wildlife Department's annual "Wildlife Expo" and the Western Oaks annual Karst Preserve Open House, and conferences for groups with mitigation needs such as real estate agencies and builders associations.
- Travis County Natural Resources staff works closely with interested clubs, organizations, and youth-at-risk programs to educate and inform while also providing valuable hands-on work experiences on the Preserve.
- Informing, evaluating, and problem-solving issues such as alternate mitigation opportunities, acquisition strategies, and land management planning with local landowners, developers, real estate associations, and scientific communities.

- The County works closely with partner agencies to address common safety concerns, and has worked to familiarize emergency responders with Preserve tracts within their jurisdictions.
- The County utilizes various media opportunities to inform the public about issues related to the Preserves, such as purchase of new Preserve lands, receipt of federal HCP land acquisition grants, and the negative impact of non-native wildlife on ecosystem health.
- Sixteen new "pages" were created and posted to the Travis County website to provide additional public resources related to the BCCP, with information including participation information, frequently asked questions, species protection, access issues, and contact information for BCP partners and the USFWS.
- A digital video focused on the themes presented on the County website is currently underway, with filming to begin in the spring of FY2004. The final product will be available for televised public service announcements as well as in streaming video format on the internet.
- Information packets for distribution in Washington, D. C. were created to support the BCCP and continued funding of national USFWS Habitat Conservation Plan Land Acquisition Assistance Program.

The Lower Colorado River Authority

Management activities for the three LCRA preserves continued to focus on natural resource research, manage access, and promote stewardship.

Westcave

- LCRA staff conducted territory level surveys for golden-cheeked warblers. Six territories were delineated. Findings are reported in the attached Appendix F.
- Preserve staff hosted more than 6382 students, teachers, tourists, researchers, and nature-enthusiasts, and gave more than 445 on-site tours and off-site presentations.
- Construction of the new environmental learning was completed and the opening occurred on March 21, 2003.

McGregor

- LCRA staff continued to work with the Comanche Trail Community Association to promote local support of land management, animal management, and stewardship efforts on the preserve.

- LCRA continued to work with the Comanche Trail Community Association (CTCA). Through collaboration with the McGregor Good Neighbor Program and the CTCA Dirt Club, the preserve is protected through the continuation of the permit. The third annual permit renewal meeting was held October 2003 for CTCA McGregor Good Neighbor Program permittees. Training for new permittees was also held October 2003. There are currently 14 permitted McGregor Good Neighbors. The active participation of the permittees continues to be an asset to preserve management. Individuals notify LCRA staff about trail conditions, access concerns, and general preserve status, as well as make suggestions for additional cooperative efforts between the CTCA and the LCRA.
- LCRA staff continued to conduct routine property surveys to identify and address maintenance needs and access issues. Activities included walking the preserve's perimeter, mending small sections of fence, and installing perimeter signs at strategic locations to discourage trespass.
- LCRA continues to work with CTCA, Texas Forest Service and the Hudson Bend Fire Department on the development of the CTCA Fire Plan.
- Fence construction continued in FY03. Approximately 2600 ft of 5-strand barbed wire fence was constructed. Fence construction will continue into FY04.

Wheless

- A presence-absence survey of two 100-acre plots (representing prime and transitional habitat) was conducted by LCRA staff. More than 90 total and partial territories were delineated. Ten males were observed within the prime habitat plot and four were observed within the transitional habitat plot. A summary is provided attached as Appendix G.
- LCRA staff continued to conduct routine property surveys to identify and address maintenance needs and access issues. Activities included walking the preserve's perimeter, mending small sections of fence, and installing perimeter signs at strategic locations to discourage trespass. Mountain bike tracks are seen frequently on upland sections of the preserve. Points of entry have been identified through the property surveys. Fence repair and additional signage at these locations should help alleviate the problem.
- The BCVI habitat manipulation area was monitored to determine the success of woody vegetation establishment following the January 2002 clearing.
- Fence construction began in FY03. Approximately 8242 ft of game fence was constructed on the northern property line. Fence construction will continue into FY04.

MONITORING HIGHLIGHTS

Wheless

Seven visits were made with a total of 40.2 hours spent on site surveying for golden-cheeked warblers at Wheless Preserve. Survey time was split among the two 100-acre plots designated as prime habitat and transitional habitat. A total of ten males were recorded on the two plots.

Westcave

Five visits totaling 30.2 hours were spent surveying for golden-cheeked warblers at Westcave Preserve. Six territories were delineated. Four females and no fledglings were observed during the season.

McGregor

A survey of the property was not conducted this year.

The Nature Conservancy of Texas

Barton Creek Habitat Preserve

The Education Partnership Plan was drafted this past October by The Nature Conservancy to describe the educational objectives at the Barton Creek Habitat Preserve. The Nature Conservancy intends to fill a needed function in the Austin environmental education community. We want to work with local area organizations for the common purpose of environmental education. Therefore, we have identified two niches in the Austin community that the Barton Creek Habitat Preserve can help fill: (1) offer The Nature Conservancy's large tract of contiguous land as a resource for other local environmental education organizations to use for their educational programming, and (2) provide educational internships at the university level.

Environmental Education

The Barton Creek Habitat Preserve is one of the closest and largest expanses of protected wild land near downtown Austin. Due to contractual agreements, the use of the preserve cannot degrade existing or future natural habitat and supporting environmental resources. In fact, preference is given to uses that actually enhance habitat conditions. In addition, use of the preserve must fulfill an interpretative, scientific, or educational purpose.

The preserve's proximity to a major urban area offers exceptional opportunities to educate the public about biodiversity and environmental conservation. Austin

environmental education organizations may bring their associated members, students, volunteers, personnel, and/or docents to the preserve to fulfill their training needs, give educational tours and interpretative walks, perform habitat restoration work, and conduct research projects.

Visitation Policies

Educational Tours and Interpretive Walks: The Nature Conservancy feels each visiting group must be accompanied by an interpretive guide or group leader, and all interpretive guides and group leaders must attend orientation at our preserve to help them become familiar with site features while identifying policies, procedures, emergency requirements, etc.

Docent, Volunteer and Staff Training

The Nature Conservancy will make the Barton Creek Habitat Preserve available to environmental organizations for training of their staff, docents, and volunteers. Preserve management practices used at the Barton Creek Habitat Preserve provide an excellent opportunity for instruction and training. These practices include, but are not limited to, habitat restoration, prescribed burning, bird surveying, plant surveying, and wildlife management.

Research

Research proposals may be accepted from environmental organizations, individuals, undergraduate college classes, and graduate students. Approval of research projects and access will be predicated on the scientific merit of the proposed project and its contribution to the preserve management of the Barton Creek Habitat Preserve. Relevant data from research performed at the Barton Creek Habitat Preserve must be made available to The Nature Conservancy for its use. Researchers must make sure we receive a copy of any published or unpublished final reports, and that The Nature Conservancy of Texas is acknowledged in any subsequent publications from this research.

Core Ecological Zones

Because of habitat characteristics or contractual obligations for ecological management, certain areas on the Barton Creek Habitat Preserve are considered especially sensitive to any type or level of activity. These areas are termed “core ecological zones”. These areas will be available on a limited basis for educational purposes or research, and only with written or verbal consent. Core ecological zones are designated by red and yellow “DO NOT DISTURB” signs along their boundaries. See included maps for more details.

Internship Program

There is a strong desire among students from local area universities to participate in internship opportunities. The Nature Conservancy feels that the Barton Creek Habitat Preserve is ideally suited to provide internships to undergraduate students looking for experience in habitat restoration and preserve stewardship. This is an excellent educational opportunity for both the student and The Nature Conservancy.

At the beginning of their internship, interns will be oriented to The Nature Conservancy's mission and goals at the Barton Creek Habitat Preserve. Interns are required to work a minimum of 15-20 hours a week on a regular schedule to be created with the help of the preserve manager. Schedules will be flexible around the interns' work or school schedules. There are two major components to this internship, (1) an intern project, and (2) preserve management job duties. These two components go hand in hand. However, both must be fulfilled to complete a satisfactory internship experience.

Intern Project

At the beginning of the internship, a proposal for an intern project must be submitted to the preserve manager and Edwards Plateau land steward describing the intern's area of research interest, how he or she will go about completing the project, who their resource contacts are, and the components of the project.

By the end of the internship, the intern project should be completed. All intern projects will be posted on The Nature Conservancy's Barton Creek Habitat Preserve website. The website will work not only as a public education tool, but will also orient others to what we are doing at our preserve.

Examples of Intern Projects

- Interpretive signs for interpretive trail, informational kiosk design and creation, trail map, design for new trail creation, a Barton Creek Habitat Preserve interpretive guide pamphlet, or a plant and bird list.
- Creation of new point counts for golden-checked warblers, chainsaw operation procedure and safety manual, and research stewardship needs at preserve.
- Research paper describing habitat restoration techniques at the Barton Creek Habitat Preserve and other habitat restoration techniques.

Preserve Management Job Duties

- The other component to the internship is the fulfillment of preserve management job duties. Job duties are designed in an effort to offer interns real-world experience with on-the-ground application. Each intern will be required to help manage the preserve as a part of his or her internship.

Successes

Since the beginning of this year the Barton Creek Habitat Preserve has seen a lot of visitors, researchers, and volunteers. Volunteer workdays are now held almost twice a month covering a variety of projects, including bottomland restoration, Ashe juniper removal, Adopt-A-Highway cleanups, 25K race, trail maintenance, and maintenance of facilities. Several individuals have started individual projects such as educational exhibits and an informational kiosk.

Many more educational groups such as the Austin Youth River Watch Foundation, The Boy Scouts of America, Sierra Club's Inner City Outreach, and The Girl Scouts of America are participating on a regular basis and performing service projects. These groups have participated on many levels including brush clearing, the creation of campsites, and water quality testing. There are plans being developed by one Boy Scout group to possibly create a composting toilet and outdoor/shower near our camping area.

The internship program at Barton Creek has also been very successful. This past Fall we had our first undergraduate intern from St. Edward's University. Our intern quickly submersed herself into the bottomland hardwood restoration project, and has been very successful completing research on the preserve's bottomland areas along Barton Creek. Through her efforts we now have an excellent inventory listing of our planted hardwoods, which includes their GPS coordinates, genus species, tag number, and age. We have agreed to continue the internship until the end of the coming semester to complete a more thorough research project.

St. Edward's University faculty has been supportive of our efforts at Barton Creek, including providing interns paid through work-study and initiating research on the preserve. Dr. Quinn of the Biology Department has shown interest in starting a long-term study of Ashe juniper recruitment. Dr. Quinn has also showed interest in using the preserve to teach several of his field-oriented classes practical applications of land

stewardship and habitat restoration. Several of his students will also participate in our photo-point monitoring, and habitat restoration projects.

Another partnership we established recently is with Tree Folks. Tree Folks is a local nonprofit that focuses on tree plantings, public education and outreach. We are working with Tree Folks to initiate restoration of hardwood trees within several identified restoration sites along Barton Creek.

The Nature Conservancy is also working The Community Mapping Program of the Orton Family Foundation to create several GIS/GPS projects for middle school and high school students interested in geography. Plans are in the works for mapping several aspects of preserve stewardship, areas of historic and archeological significance, infrastructure, and restoration areas.

Other environmental education partners we are working with are Wild Basin, The Lady Bird Johnson Wildflower Center, American YouthWorks, and the LCRA. We hope to work with these and other organizations to establish several education programs focusing on restoration, land management, and environmental education.

Future Plans

The Nature Conservancy is currently planning to build an education center for the Barton Creek Habitat Preserve that is expected to be completed in one to two years. The education center will provide office space for The Nature Conservancy's staff and interns as well as an indoor meeting room, restrooms, storage, and an indoor classroom/laboratory. A larger parking lot, an interpretative center, and kiosk are also in the plans for development.

Vireo Management

In 2002 The Nature Conservancy continued management of the Barton Creek Habitat Preserve. This year we continued our new monitoring protocol for golden-cheeked warblers as well as creating a new education partnership plan. The Nature Conservancy also continued our active habitat restoration program for black-capped vireos. In fact this year we were successful in finding a pair of black-capped vireo's on Barton Creek Habitat Preserve. Although no nest was ever found, the birds gave every indication of nesting.

We worked on an area approximately 170 acres in size for vireo restoration. The area received no management other than prescribed fire. Past restoration efforts on other units in the preserve for vireo management include; cutting ½ of the ashe juniper followed by burning then by the cutting of the remaining juniper, cutting all of the juniper followed by burning, and using a Seppi to mechanically remove juniper and not burning. The 170 acres that was burned did not achieve the ecological goals we set, but it did help in determining the effort and type of treatment needed to accomplish the goal of restoring vireo habitat on Barton Creek Habitat Preserve.

Golden-Cheeked Warbler Monitoring

In 2001, a new protocol entitled "Protocol for Barton Creek Preserve Golden-cheeked Warbler Monitoring" was initiated at Barton Creek Preserve to monitor the population status and trends of the Golden-cheeked Warbler. This protocol will enable The Nature Conservancy to estimate pairing success, productivity, and numbers of breeding Golden-cheeked Warblers in the area. This information will enable us to quantify annual population trends based on point count surveys.

The protocol will also allow for comparisons with Golden-cheeked Warbler monitoring data collected at Balcones Canyonlands Preserve and at Fort Hood, Texas. Both Balcones Canyonlands Preserve and Fort Hood collect data on Golden-cheeked Warbler pairing success, productivity, survival, and territory densities on study sites thought to be representative of Golden-cheeked Warbler habitat on those respective lands (Anders 2000a; Travis County Transportation and Natural Resources Department 1999). Balcones Canyonlands collects demographic data at 17 100-acre sites located throughout the preserve, or a total of approximately 8.7% of the Golden-cheeked Warbler habitat on that preserve (Travis County Transportation and Natural Resources Department 1999). The protocol designed for Barton Creek Preserve includes collecting data on pairing success, productivity, survival, and territory density at two approximately 100-acre sites, totaling approximately 15% of the Golden-cheeked Warbler habitat on this preserve (The Nature Conservancy unpubl. data). Although a single 100-acre site would represent a proportion of habitat equivalent to that monitored at Balcones Canyonlands, 2 sites will likely provide data that are more representative of the population at Barton Creek than would a single site. The 2 study sites established at Barton Creek Preserve were chosen randomly from the 13 sites that have been surveyed on the preserve since 1996 (The Nature Conservancy unpubl. data). The 2 randomly selected sites include a portion of the historic Highway 71 (HWY 71) site, and the entire historic Vireo Hill Hollow (VHH)

site. The new HWY 71 site is 106.2 acres (43.0 ha) in size, and the VHH site is 115.0 acres (46.4 ha) in size (see attached Barton Creek Habitat Preserve map).

In addition to collecting demographic data on representative study sites, Fort Hood also collects data on population trends of Golden-cheeked Warblers throughout the military installation (Anders 2000b). These data are collected through point count surveys conducted annually at 428 permanent point count stations arranged along 31 routes. At Fort Hood stations are all located at least 300 m apart along existing roads or trails throughout oak-juniper woodland (Anders 2000b). Using this same protocol, we established 43 permanent stations throughout Golden-cheeked Warbler habitat at Barton Creek Preserve (see attached Barton Creek Habitat Preserve map).

2002 Data Collection

In 2002, we were able, with the volunteer assistance of 4 Fort Hood seasonal field biologists, to collect point count survey data at Barton Creek. No demographic data were collected due to time constraints.

Methods

Point Count Surveys

Forty-three permanent point count stations were mapped along existing roads and trails throughout oak-juniper woodland using ArcView. Universal Transverse Mercator (UTM) coordinates were obtained from ArcView and entered into Global Positioning System (GPS) units. Volunteers located the point count station coordinates in the field and flagged these locations, tying red flagging to branches on each side of the road or trail at each of the 43 points.

As outlined in the Barton Creek monitoring protocol, the point count stations should be surveyed twice between 1 April and 31 May. Due to time constraints in 2002, all but 6 points were surveyed twice, and in 2001, each point was surveyed once. Point count surveys consisted of 6-minute unlimited-radius counts. Counts generally began within 20 minutes of sunrise and ended by 1100. Counts were not conducted during periods of wind or rain strong enough to interfere with detection of birds. At each point, observers recorded date, observer, route number, point number, start time, temperature, cloud cover category, wind speed category, wind direction, and precipitation. Observers recorded all Golden-cheeked Warblers, as well as all individuals of all other bird species detected. For each bird detected, the observer recorded: species, time interval in which bird was detected (first 3 minutes, next 2 minutes, or last minute of count), distance, sex,

observation type (song, call, visual), and for Golden-cheeked Warblers, the direction, number of fledglings present, and song type (A or B).

We calculated the mean number of Golden-cheeked Warbler detections at each point surveyed in 2002 and 2001. We then summed these values. Next, we divided the sum of mean detections by the number of points surveyed during those years. This provides the mean number of detections per point. (Anders 2001)

Results and Discussion

Point Count Surveys

The average detection of Golden-cheeked Warblers per point for 2002 is 0.59 and for 2001 is 0.40. In future years, if point count stations are all surveyed twice during the breeding season, the mean number of detections should be calculated for each point. The data should then be plotted to check for a normal distribution. If the data have a Poisson distribution, the mean detection values should be transformed by taking the square root of (mean detections + 0.5) (Zar 1996), and these transformed mean detection values should then be totaled for all points within a year. The totaled values can then be compared from year to year using paired t-tests or linear regression analysis (Zar 1996), allowing us to analyze population trends for Golden-cheeked Warblers throughout Barton Creek Preserve over time.

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The City of Lakeway

Schramm Ranch

Endangered species surveys were completed and are reported in Appendix I.

Travis Audubon Society

Baker Sanctuary

Access and trail maintenance

- The Sanctuary was open from January 24th until October 26th at which time the gates were locked and the Sanctuary Stewards, Marcie and John Wilcox, posted a closure notice.
- On March 29th, the Travis Audubon Society held their annual open house at the Sanctuary with guided tours from 9:00 AM until noon. 45 visitors toured the Sanctuary.
- John Wilcox maintained all three walking trails by trimming low hanging limbs.
- During the 2003 visitor season, the Sanctuary had 264 registered visitors of which 64% were members. The non-member visitors had prior permission to enter the Sanctuary.

Boundary control

- The TAS Board approved the expenditure to fence our Eastern boundary and 9294 linear feet of 8-foot high fence was installed from Lime Creek Road, South to the City of Cedar Park Water Pipeline right-of-way.
- We installed 911 compliant address signs at all ten Sanctuary gates.

General maintenance

- John Wilcox picked up trash on the Sanctuary right-of-way 12 times.
- The Sanctuary Managers hauled 157 bags of trash to the Travis County Solid Waste Transfer Station.

- John Wilcox mowed and trimmed the Headquarters Area, Parking Lot and around the Baker Cabin 9 times.
- SBC raised and secured their communication cables to the new power poles that PEC installed through the Sanctuary last year.

Problem animal control

- During the 2003 WTD season, the Sanctuary Managers managed 6 deer hunting leases: for gun hunters. As of December 15, 2003 six deer (5 bucks and 1 antlerless deer) were taken. The lack of success in taking deer here was due to (1) the green-up in fall forbs and (2) the Live Oak mast year. All hunters on the Sanctuary filled out the TAS Hunting Application and signed off on the TAS Liability, Indemnity and Release form as well as the TAS Hunting Regulations.
- Feral hogs have not been a problem at the TAS-BS during 2003.
- John Wilcox trapped 22 cowbirds in 2003.

Endangered species

- Rob Fergus (past TAS Executive Director) surveyed the TAS-BS 100 acre GCW plot in 2003 and found 13 warbler territories and 9 fledging groups.
- The Sanctuary Committee met at the TAS-BS three times during 2003.

Restoration

- John Wilcox caged 12 oak saplings.

Cultural resources

- No activity occurred this year regarding cultural resources.

Copies of all research or investigative reports prepared during FY02

Abbruzzese, C, M. and D. L. Koehler. City of Austin 2003 Golden-cheeked Warbler and Black-capped Vireo Monitoring Program. City of Austin Water Utility Wildland Conservation Division, Balcones Canyonlands Preserve Program. See Appendix E.

Pavlas, M. Lower Colorado River Authority 2003 Rare Bird Survey Report, Westcave Preserve. See Appendix F.
Pavlas, M. Lower Colorado River Authority 2003 Rare Bird Survey Report, Wheless Preserve. See Appendix G.

PBS&J. Results of the Golden-cheeked Warbler Survey, Wild Basin Wilderness Preserve, Travis County, Texas. See Appendix H.

SWCA Environmental Consultants. 2003 Golden-cheeked Warbler Monitoring Study, Schramm Ranch, Travis County, Texas. See Appendix I.

Travis County Natural Resources. Assessment of White-tailed Deer (*Odocoileus virginianus*) Impacts on the Woody Plant Community in the Vireo Ridge Restoration Area, 2003. Project Numbers 0905-0314, 0905-0327, 0905-0329. See Appendix J.

Travis County Natural Resources. Monitoring of the Black-capped Vireo (*Vireo atricapilla*) 2003 Field Season, Project Numbers 0905-0312, 0905-0325, 0905-0327. See Appendix K.

Travis County Natural Resources. Monitoring of the Golden-cheeked Warbler 2002 Field Season, Project Numbers 0810-0301, 0905-0312, 0905-0313, 0905-0314, 0905-0315, 0905-0317, 0905-0318, 0905-0319. See Appendix L.

Travis County Natural Resources. Restoration of Black-capped Vireo (Vireo atricapilla) Habitat on the Balcones Canyonlands Preserve, Travis County, Texas. Project Numbers 0905-0314, 0905-0327. See Appendix M.

Travis County Natural Resources. 2003 Summary of Wildlife Management Activities on Travis County Managed Tracts of the Balcones Canyonlands Preserve, Project Numbers 0905-0220, 0905-0226, 0905-0332. See Appendix N.

Travis County Natural Resources. Vegetation Management on Travis County Balcones Canyonlands Preserve Lands During FY2003. Project Numbers 0905-0312, 0905-0325. See Appendix O.

Travis County Natural Resources and City of Austin BCP. Balcones Canyonlands Preserve Karst Management 2003 Annual Report, Project Numbers 0905-0312, 0905-0323, 0905-0324. See Appendix P.

The Committee for Wild Basin Wilderness, Inc. Wild Basin Wilderness Preserve Annual Report for the period January 1, 2003 – December 31, 2003. See Appendix Q.

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