Balcones Canyonlands Conservation Plan

2016 Annual Report

(October 1, 2015 – September 30, 2016)

USFWS Regional Section 10(a)(1)(B) Permit No. TE-788841-2

Travis County – City of Austin

Submitted by
The Balcones Canyonlands Conservation Plan
Coordinating Committee
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CONTENTS

BACKGROUND 5

PERMIT REQUIREMENTS 6

DEVELOPMENT ACTIVITY WITHIN THE PERMIT AREA.....7

MITIGATION CREDIT BALANCE.....7

PARTICIPATION CERTIFICATE ACTIVITY 9

FUNDS COLLECTED THROUGH PARTICIPATION CERTIFICATES.....9

FUNDS COLLECTED THROUGH TAX BENEFIT FINANCING 10

FUNDS EXPENDED FOR LAND ACQUISITION.....11

FUNDS EXPENDED FOR OPERATIONS AND MAINTENANCE 12

UPDATED MAP OF LANDS DEDICATED TO THE BALCONES CANYONLANDS PRESERVE 13

FY 2016 RESEARCH OR INVESTIGATIVE REPORTS.....13

PUBLIC USE, HABITAT AND WILDLIFE MONITORING, AND MANAGEMENT ACTIVITIES OCCURRING WITHIN THE BALCONES CANYONLANDS PRESERVE……13

CITY OF AUSTIN……13

TRAVIS COUNTY……25

LOWER COLORADO RIVER AUTHORITY.....35

CITY OF SUNSET VALLEY.....36

THE NATURE CONSERVANCY OF TEXAS.....37

TRAVIS AUDUBON SOCIETY 38

LITERATURE CITED.....38

LIST OF TABLES

Table 1. Species Covered by the Balcones Canyonlands Conservation Plan……5

Table 2. Infrastructure Projects Mitigated through the Use of Mitigation Credits During FY16 by Participating Agency……8

Table 3. FY16 Projects Mitigated Through the Purchase of Participation Certificates……10

Table 4. USFWS HCP Land Acquisition Grant Awards Received by the Permit

Holders, 1997-2010……11
Table 5. Annual FY14 through FY16 BCP Budgets (excluding Land Acquisition Costs) for Permit Holders, the Managing Partner, and Cooperating Entities with Summary of Total Budgets since Plan Inception……..12
Table 6. Management Status of City of Austin BCP Properties……14
Table 7. City of Austin Monitoring and Management Activities on BCP Tracts within the Bull Creek Macrosite……..15
Table 8. City of Austin Monitoring and Management Activities on BCP Tracts within The Barton Creek, Cypress Creek, North Lake Austin, South Lake Austin and West Austin Macrosites……..16
Table 9. BCCP Partners Education and Volunteer Activities Summary for FY16……25
Table 10. Travis County Monitoring and Management Activities within the Bull Creek, North Lake Austin, South Lake Austin, West Austin, Pedernales River, Big Sandy Creek Macrosites and the Cave Tracts……28
Table 11. Travis County Monitoring and Management Activities within the Cypress Creek Macrosite……29
Table 12. Travis County BCP Volunteer Hours for FY16……..33
Table 13. Travis County BCP Education and Outreach Summary for FY16…..34

LIST OF APPENDICES:

Appendix A – City of Austin Development Permits Issued in the BCCP Permit Area for FY 2016
Appendix B – Travis County Development Permit Issued in the BCCP Permit Area for FY 2016
Appendix C – Balcones Canyonlands Preserve Properties by Macrosite
Appendix D – Balcones Canyonlands Preserve Properties by Management Agency
Appendix E – Balcones Canyonlands Preserve System Map
Appendix F – City of Austin 2016 Golden-cheeked Warbler (Setophaga chrysoparia) Monitoring Program
Appendix G – City of Austin 2016 Black-capped Vireo (Vireo atricapilla) Monitoring Program
Appendix H – Balcones Canyonlands Preserve Karst Monitoring and Management FY 2016 Report
Appendix I – FY 2016 Report on Monitoring of the Golden-cheeked Warbler (Setophaga chrysoparia) on Travis County Tracts of the Balcones Canyonlands Preserve

Appendix J - FY 2016 Report on Monitoring and Management of the Black-capped Vireo (Vireo atricapilla) on Travis County's Balcones Canyonlands Preserve

Appendix K –Travis County FY 2016 Jollyville Plateau Salamander Monitoring Report

Appendix L – FY 2016 Summary of Wildlife and Plant Management Activities on Travis County's Balcones Canyonlands Preserve and Select Parks

Appendix M – Wild Basin Wilderness Preserve 2016 Annual Report

Appendix N – City of Sunset Valley Gaines Greenbelt 2016 Annual Report

Appendix O – Travis Audubon Society Baker Sanctuary 2015-2016 Annual Report

Appendix P – Research Reports:

1. Barnes, M., and A. Haynes. *Effects of anthropogenic noise on soundscape and the stress hormone levels of the Gulf Coast Toad (Incilius valliceps) in Central Texas.* St. Edwards University. 2016.
2. Belaire, A., T. Bilinksi, and J. Salinas. *Evaluation of 30-year old restoration site in Wild Basin (continuation of 2014 Study).* St. Edwards University. 2016.
3. Belaire, A., B.D. Shults, and J. Salinas. *Abundance and Distribution of Avian Nest Predators and Predator Activity at Wild Basin*. St. Edwards University. 2016.
4. Bilinksi, T., M. Rodrigues, A. Ontai, E. Ademski, and J. Stewart *Urbanization and Ecosystem Services.* St. Edwards University. 2016.
5. Blanton & Associates. *Wheless Preserve Golden-cheeked Warbler Territory Mapping Report.* Prepared for Lower Colorado River Authority. 2016.
6. Cambrian Environmental. *Results of 2016 Biological Monitoring of Cave X, Travis County, Texas.* Prepared for Regents School of Austin. 2016.
7. Crosby, *et al*. *Reports on Bull Creek and Gus Fruh Parks*. Crosby's Planet Earth Classes. Liberal Arts and Science Academy, Austin Independent School District. Spring 2016.
8. Emmons, K., M. Mendoza, L. Schricker, and M. Wallace. *Evaluating Ecosystem Services at Wild Basin Wilderness Preserve, Texas.* St. Edwards University. 2016.
9. Fennel, T. *et al*. *Reports on Bull Creek and Gus Fruh Parks.* Tim Fennel's Planet Earth Classes. Liberal Arts and Science Academy, Austin Independent School District. 2016.

10. Hall, J. and S. Kiefer. *Remote Camera Deer Survey.* Plateau Land & Wildlife Management. Prepared for Lower Colorado River Authority. 2016.

11. Horvath, A., D. Metlay, and B. Lexington. *Field Test Evaluation of White-tailed deer (Odocoileus virginanus) Surveying Methods at Wild Basin Nature Preserve*. St. Edwards University. 2016
12. Houston, D. *Westcave Preserve Golden-cheeked Warbler Report.* Westcave Preserve. Prepared for Lower Colorado River Authority. 2016.
13. Johnson, D., N. Barrett and M. Fencl. *Determining Patterns of Plant Succession, Ecosystem Services and Hydrology at Wild Basin Wilderness Preserve*. St. Edward's University. 2016.
14. Johnson, E., S. Bryson, and A. Kropf. *An Assessment of Mechanical Removal Methods of Privet (Ligustrum japonicum & Ligustrum sinense) at Wild Basin Wilderness Preserve*. St. Edwards University. 2016.
15. Knobles, D. and P. Wilson. *Pilot Study of Acoustic Recordings of the Golden Cheeked Warbler in Balcones Canyonlands Preserves from March 15-June 30 2016. St.* Edwards University. 2016.
16. Ortuno, J. *Efficient Mosquito Vector Abundance Comparison Between Work and Natural Protected Areas.* Wild Basin Preserve. St. Edward's University. 2016.
17. Walker, *et al. Reports on Bull Creek and Gus Fruh Parks.* Walker's Planet Earth Classes. Liberal Arts and Science Academy, Austin Independent School District. 2016.
18. Zara Environmental. *2016 Summary of Cave Management Activities at Pennie's Cave, Travis County, Texas.* Brandywine Realty Trust. 2016.

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 referred to as the Balcones Canyonlands Conservation Plan (BCCP). This permit allows incidental "take" of eight locally occurring endangered species in compliance with Section 10(a)1(B) of the Endangered Species Act (USFWS, 1996a). The 30-year permit covers approximately 561,000 acres in western Travis County identified in the Habitat Conservation Plan and Final Environmental Impact Statement (HCP) (USFWS, 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 (Table 1).

Table 1. Species Covered by the Balcones Canyonlands Conservation Plan.

Common name	Scientific name	Status
Black-capped vireo	*Vireo atricapilla*	Endangered
Golden-cheeked warbler*	*Setophaga chrysoparia*	Endangered
Tooth Cave pseudoscorpion	*Tartarocreagris texana*	Endangered
Tooth Cave spider	*Neoleptoneta myopica*	Endangered
Bee Creek Cave 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 concinna*	Species of Concern
Spider	*Neoleptoneta devia*	Species of Concern
Spider	*Eidmannella reclusa*	Species of Concern
Harvestman	*Texella spinoperca*	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
Pseudoscorpian	*Tartarocreagris 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

*Scientific reclassification in 2011 from *Dendroica chrysoparia* to *Setophaga chrysoparia*

Permit Requirements

The City of Austin and Travis County (the Permit Holders) are required to assemble and manage a minimum of 30,428 acres of suitable habitat for the golden-cheeked warbler and the black-capped vireo. Additionally, Permit Holders are required to protect and manage populations of canyon mock orange and Texabama croton. The Permit Holders are also required to acquire, manage, and/or ensure protection for 35 karst features which support populations of six species of endangered karst invertebrates. An additional 27 karst features are known to harbor 25 karst-specific species of concern. This system of managed and protected habitats is known as the Balcones Canyonlands Preserve (BCP or Preserve). The locations of habitat areas and specific karst features proposed for protection are delineated in the HCP (USFWS, 1996b).

Agencies or organizations which enter into formal agreements with the Permit Holders in order to manage designated Preserve lands in accordance with the BCCP are considered Managing Partners. Until 2014, the sole BCP Managing Partner was 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 capital improvement and infrastructure development projects through the mitigation credit system established by the BCCP. On 7 February 2014, the City of Sunset Valley entered into a BCP Managing Partner Agreement and designated 21.585 acres, known as the Gaines Greenbelt, to be included as part of the BCP. The Gaines Greenbelt mitigates for impacts to golden-cheeked warblers, black-capped vireos, and karst species due to maintenance, improvement and public use of the Gaines Greenbelt Trail, and future impacts associated with social trail closure, fencing and signage.

The Nature Conservancy of Texas (TNCTX) and the Travis Audubon Society (TAS) also manage lands for public and environmental benefit within the BCP. In

April of 2015 Travis County purchased a conservation easement over 672 acres of the Travis Audubon Society Baker Sanctuary.

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

- 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 BCP operations and maintenance
- an updated map of BCP lands
- a summary of public use and habitat management activities within the BCP
- copies of all research and investigation reports prepared within the last year.

Development Activity within the Permit Area

The City of Austin development activity report for Fiscal Year 2016 (FY16), which details building permits issued by the City of Austin west of Loop 1 within the Permit area, is located in Appendix A.

The Travis County development activity report for FY16, which details building permits issued by Travis County in precincts 2 and 3 within the Permit area, is located in Appendix B.

Mitigation Credit Balance

The City of Austin's BCP 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. Fish and Wildlife Service, 1996a and 1996b). BCP acreage that was originally mitigation under the BCCP Alternative Determination Process, or another Section 10(a) or Section 7 permit, is not included in this mitigation bank acreage total. 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 (Table 2).

Table 2. Infrastructure Projects Mitigated Through the Use of Mitigation Credits in FY16 by Participating Agency**.**

City of Austin	
Starting City of Austin Balance	**11,591.94 acres**
New preserve additions (credits) –	0
AE – Steiner Blvd. Pole Installs	0.1
AE – Four Points East Elevated Storage Reservoir	3.9
AE – Google Fiber Pole Replacements	0.2
Remaining Mitigation Credits	**11,587.74 acres**
Travis County	
Starting Travis County Balance	**5,935.322 acres**
New preserve additions (credits)	0
Remaining Mitigation Credits	**acres**
Lower Colorado River Authority (LCRA)	
Starting LCRA Balance	**2,447.0 acres**
New preserve additions (credits) –	0
Remaining Mitigation Credits	**2,447.0 acres**

A number of private landowners also manage habitat within the proposed preserve boundaries, often as required under individually issued Section 10(a) permits. These landowners are responsible for reporting in accordance with the terms and conditions of their individual permits directly to the USFWS and their reports are not incorporated into this Annual Report. The Permit Holders strive to cooperate with these entities and private landowners to address species and land management concerns common to all BCP properties.

The City of Austin operates the BCCP Capital Improvement and 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 entities participating through the BCCP have met their obligations under the Act and may proceed with development under the terms of their respective Participation Agreements. Those agencies and landowners choosing not to participate may comply with the Endangered Species Act by obtaining an individual 10(a) permit from the USFWS.

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. Descriptions of participation categories are defined in the interlocal agreement entitled "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 Austin Ecological Services office. During FY16, 18 Participation Certificates were issued as follows: six for single family residences, eight for subdivisions, three for commercial development, and one infrastructure project (Table 3).

Funds Collected through Participation Certificates

A total of $832,725.00 was collected through the sale of Participation Certificates in FY16 (Table 3). To facilitate a 50/50 split in participation certificate revenue between the City of Austin and Travis County, participants pay the mitigation fee with two checks, half to "BCCP-City of Austin" and the other half to "BCCP-Travis County." The checks are delivered to each agency for separate processing.

Table 3. FY16 Projects Mitigated Through the Purchase of Participation Certificates.

Application #	Date	Name	Category	Amount Paid
0804	10/22/15	Austin Seventy One, Ltd (Boswell)	Commercial	$246,675.00
0579	11/19/15	Maureen Alexander (D. Braun)	Residential	$2,000.00
0776b	11/12/15	Sweetwater Sect. 1 Village P1, Nash Sweetwater, LLC	Subdivision	$4,675.00
0776c	11/12/15	Sweetwater Sect. 1 Village L1, Nash Sweetwater, LLC	Subdivision	$22,825.00
0776d	01/27/16	Sweetwater Sect. 1 Village L2, NASH Sweetwater, LLC	Subdivision	$26,400.00
0776e	01/27/16	Sweetwater Sect. 2 Village Z2, Nash Sweetwater, LLC	Subdivision	$1,375.00
0819	02/12/16	Sparks	Residential	$1,375.00
0825	02/10/16	Pedernales Electric Cooperative	Infrastructure	$550.00
0803	02/18/16	Walker	Commercial	$40,150.00
0820	02/18/16	Jones	Subdivision	$249,425.00
0822	04/06/16	Synchro Realty, LLC	Subdivision	$96,250.00
0823	04/06/16	Terrace Partners, LLC	Commercial	$58,850.00
0829	03/10/16	Bullard	Residential	$2,000.00
0776g	04/06/16	Sweetwater Sect. 2 Village P2, Nash Sweetwater, LLC	Subdivision	$22,000.00
0826	02/22/16	Cones	Residential	$5,225.00
0721e	06/16/16	Travisso, Ltd., Heath Melton	Subdivision	$48,950.00
0845	08/23/16	Harris	Residential	$2,000.00
0848	09/26/16	Uribe	Residential	$2,000.00
			Total:	**$832,725.00**

Funds Collected through Tax Benefit Financing

Travis County's Tax Benefit Financing Plan is 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). It is the method Travis County agreed to use for funding land acquisition and management. In FY16, Travis

County's Tax Benefit Financing Plan generated $15,250,276 for Travis County's land acquisition and management projects.

Funds Expended for Land Acquisition

The Permit Holders received $60,584,037 in federal grant funds from 1997 to 2010 through the USFWS Section 6 HCP Land Acquisition Assistance Program. With the required match, a total of $81,222,130 was spent on grant-funded BCP Preserve Acquisition, as indicated in Table 4.

Table 4. USFWS HCP Land Acquisition Grants Received by the Permit Holders, 1997-2010.

Year	Federal Grant Funds	Minimum Local Match *	Total Grant	Local Recipient
1997	$1,000,000	$333,333	$1,333,333	City of Austin
1998	$2,000,000	$666,667	$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	$14,362,500	$4,787,500	$19,150,000	City of Austin, Travis County
2002	$10,000,000	$3,333,333	$13,333,333	Travis County
2003	$4,993,794	$1,664,598	$6,658,392	Travis County
2004	$3,375,000	$1,125,000	$4,500,000	Travis County
2005	$6,890,000	$2,296,667	$9,186,667	Travis County
2007	$5,742,500	$1,914,167	$7,656,667	Travis County
2008	$5,250,000	$1,750,000	$7,000,000	Travis County
2010	$1,330,243	$886,829	$2,217,072	Travis County
Total	**$60,584,037**	**$20,563,927**	**$81,222,130**	

* Minimum match does not include overmatches

Travis County continues to purchase preserve properties using County funds without grant assistance. Fee simple purchases and alternative protection strategies such as conservation easements, donations, and deed transfers have also been utilized. Use of these non-traditional measures provides opportunities to secure in-perpetuity protection for habitat lands that may not otherwise be available.

Travis County expended $28,400.00 in FY16 on non-grant land acquisition associated costs. These costs cover appraisals and surveys associated with preserve acquisitions that were completed in FY17.

The City of Austin did not expend any funds on land acquisition during FY16. At the end of FY16, the City of Austin owned and managed 13,610 acres of land within the BCP and Travis County managed 9,548 acres of land within the BCP. For a detailed account of all BCP tracts assembled see Appendices C, D, and E.

Funds Expended for Operations and Maintenance

In FY16, the Permit Holders, LCRA, TNCTX, the Travis Audubon Society (TAS) and the City of Sunset Valley spent $3,468,407 on operation and maintenance of BCP lands (Table 5).

The City of Austin spent a total of $1,205,825 for FY16 to fund BCP management expenditures by the Austin Water Utility's Wildland Conservation Division - Balcones Canyonlands Preserve Program (WCD-BCP). This figure understates the City's total expenditures on this program since it does not include (1) work by other staff in Austin Water Utility on program administration and support; (2) operation and maintenance expenditures by Austin Parks and Recreation Department (PARD) operations on BCP-designated parkland; or (3) capital improvement projects related to offices, and other facilities/ infrastructure. The aforementioned expenditures cannot be readily determined from their program budgets.

Table 5. Annual FY14 through FY16 BCP Budgets (excluding land acquisition costs) for Permit Holders, the Managing Partners, and Cooperating Entities with Summary of Total Budgets since Plan Inception.

BCP Partner	FY 2014	FY 2015	FY 2016	Total Budget: 1996 to Present
City of Austin	$1,094,110	$1,121,952	$1,205,825	Up to FY 16 $16,907,002
Travis County	1,220,027	$1,487,673	$2,061,798	Up to FY 16 $14,362,790
LCRA*	$63,100	$21,000	$31,542	Up to FY 16 $1,732,221
TNCTX	$10,000	$10,000	$68,000	Up to FY 16 $1,050,000
TAS	$50,000	$85,000	$85,000	Up to FY 16 $136,986
City of Sunset Valley	N/A	N/A	$16,242	Up to FY 16 $16,242
TOTALS	**$2,437,237**	**$2,725,625**	**$3,468,407**	Up to FY 16 $34,205,241

* Does not include expenditures by Westcave Preserve Corporation

The Travis County Natural Resources budget for the BCP Program in FY16 was $2,527,925. This total includes Travis County General Fund expenditures, BCP Participation funds, funds for land acquisition and funds negotiated and received from private 10(a) holders for land managed by Travis County to support ongoing operations and maintenance of County-managed Conservation Easements. This sum does not include administrative, legal, law enforcement support or non-habitat-related operations and maintenance provided by other Travis County Departments. This sum does not include estimated expenditures by St. Edwards University, which holds a contract to conduct educational programming and management of the County-owned Wild Basin Wilderness Preserve.

Updated Map of Lands Dedicated to the Balcones Canyonlands Preserve

As of FY16, 31,785 acres of black-capped vireo and golden-cheeked warbler habitat have been assembled by the Permit Holders with the assistance of cooperating landowners and entities. Even though the minimum 30,428 acres of endangered bird habitat has now been acquired, additional acreage will still be needed to meet the configuration requirements for the bird habitat blocks by macrosite and to acquire additional specific karst features required in the Permit.

Fifty of the 62 caves which are identified to be protected in the permit have been afforded some level of protection. Thirteen additional endangered species karst features which are not listed on the permit are also protected on BCP land. A map illustrating the current status of the BCP is enclosed as Appendix E. Summaries of BCP lands sorted by macrosite and managing entity are attached as Appendices C and D, respectively.

FY 2016 Research or Investigative Reports

Research reports for activities that occurred on the BCP are included as Appendices F through O and P1 through P18. See the table of contents for a list of appendices which include the author and title of each research report.

Public Use, Habitat and Wildlife Monitoring, and Management Activities Occurring within the Balcones Canyonlands Preserve

CITY OF AUSTIN

The following section lists the wildlife and habitat monitoring, management, and public use activities on City of Austin (COA) land counted as part of the BCP. The COA's BCP tracts are managed by WCD-BCP and PARD with different management responsibilities assigned to each entity (Table 6). PARD operations

performs regular maintenance such as mowing, trash pickup, and some trail management activities, while WCD-BCP staff assumes primary responsibility for BCP management and monitoring.

Table 6. Management Status of City of Austin BCP Properties

Tract	**Primary Management Responsibility**	**Acreage**
Upper Bull Creek Unit (Franklin, Gass, Lucas, Hanks, Lanier, COA Canyon Creek plus MUD tracts, Gardens at Bull Creek, Bowman, and Sam Hamilton Memorial Reserve (former WTP 4 "entire tract")	AWU/BCP	1166.50
Middle Bull Creek Unit (Kent Butler Ecological Reserve, Beard Trust)	AWU/BCP	996.71
Lower Bull Creek Unit (Jester, Forest Ridge, 3M, Hilltop, Gibson/Nott, Hiller, Kruger)	AWU/BCP	1090.98
Lime Creek (incl. 100 acres of Austin-Simon, Ltd.)	AWU/BCP	586.70
Parke West, Coldwater/Cowfork, Long Canyon, Vaught Ranch	AWU/BCP	1393.86
Cortaña	AWU/BCP	1751.95
Double J&T	AWU/BCP	1730.00
Reicher Ranch	AWU/BCP	819.74
Bohls Ranch	AWU/BCP	450.14
Bohls II	AWU/BCP	18.81
Sansom	AWU/BCP	13.00
Senna Hills	AWU/BCP	35.00
Schramm Ranch	AWU/BCP	100.63
Vireo Preserve	AWU/BCP	214.00
Ullrich Water Treatment Plant	AWU/BCP	18.00
Barton Creek Ventures	AWU/BCP	13.62
	AWU/BCP Subtotal	**10,399.64**
Bull Creek District Park, Bull Creek Greenbelt	PARD/BCP	129.48
St. Edward's Park	PARD/BCP	50.00
Barrow Preserve	PARD/BCP	8.00
Emma Long Metro Park	PARD/BCP	950.00
Commons Ford Park	PARD/BCP	115.00
Barton Creek Wilderness Area (Barton Creek Venture)	PARD/BCP	1075.24
Barton Creek Greenbelt	PARD/BCP	814.64
Friesenhahn	PARD/BCP	62
Mt. Bonnell	PARD/BCP	6
	PARD/BCP Dual-Managed Subtotal	**3,210.36**
	TOTAL ACREAGE	**13,610.00**

******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.

Table 7. City of Austin Monitoring and Management Activities on BCP Tracts within the Bull Creek Macrosite.

	Monitoring and Management Activities on the Balcones Canyonlands Preserve (City of Austin tracts)	Bull Creek macrosite																				
		upper Bull Creek unit										middle unit			lower Bull Creek unit							
		Bowman	Canyon Creek	Canyon Creek MUD tracts 1 to 3	Franklin	Gardens at Bull Creek	Gass	Hanks	Lucas	Lanier	Sam Hamilton Memorial Reserve	Beard Trust	Kent Butler Ecological Resv	Jester Estates Cave Preserve	Barrow Preserve	Bull Cr. Greenblt.	Forest Ridge	Gibson/Nott	Hiller/Hilltop	Jester	Krueger	St. Edwards Park	3M
Monitoring Activities	mist-net, band, and spot-map golden-cheeked warblers										X		X				X					X	X
	search for banded golden-cheeked warblers										X		X			X	X		X	X	X	X	X
	mist-net, band, and spot-map black-capped vireos												X				X						
	karst faunal surveys			X									X	X									
	cave cricket exit counts			X									X	X			X						
	Jollyville Plateau salamander surveys & mark/recapture			X	X			X		X	X		X		X								X
	bracted twistflower monitoring															X							
	canyon mock-orange monitoring												X										
	vegetation monitoring										X		X				X						
	fuel moisture sampling of junipers																						
	white-tailed deer photo monitoring		X								X												
	monitoring of oak wilt		X					X															
Management Activities	deer control		X								X												
	feral hog control		X		X			X		X	X		X										X
	red imported fire ant control										X			X									
	restoration (planting native plants)				X	X		X			X		X				X			X			
	non-native plant control	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X
	trash removal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X
	patrol for evidence of trespass, vandalism, or dumping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	maintenance of roads, fences, signs	X	X	X	X	X	X	X	X	X	X	X	X	X			X			X	X	X	X
	inspect utility corridor maintenance				X	X				X	X		X				X			X		X	X

Table 8. City of Austin Monitoring and Management Activities on BCP Tracts within the Barton Creek, Cypress Creek, North Lake Austin, South Lake Austin and West Austin Macrosites

	Monitoring and Management Activities on the Balcones Canyonlands Preserve (City of Austin tracts)	Barton Creek macrosite					Cypress Creek		North Lake Austin macrosite						South Lake macrosite					West Austin macrosite		
		Barton Creek Wilderness	Barton Creek Greenbelt	Bohls II	Friesenhahn	Senna Hills	Austin-Simon	Lime Creek	Coldwater	Cortaña	Cowfork/Vaught	Emma Long	Long Canyon	Parke West	Bohls	Commons Ford	JJ&T/Sansom	Reicher Ranch	Schramm Ranch	Mount Bonnell	Ullrich	Vireo Preserve
Monitoring Activities	mist-net, band, and spot-map golden-cheeked warblers	X	X						X			X					X	X				X
	search for banded golden-cheeked warblers	X	X						X			X	X				X	X				X
	mist-net, band, and spot-map black-capped vireos									X					X							
	karst faunal surveys	X	X					X		X				X							X	
	cave cricket exit counts	X	X					X		X				X							X	
	jollyville plateau salamander surveys																					
	bracted twistflower monitoring	X	X																	X	X	X
	canyon mock-orange monitoring																					X
	vegetation monitoring											X				X	X	X				X
	fuel moisture sampling of junipers									X								X				
	white-tailed deer photo monitoring							X						X				X				
	monitoring of oak wilt	X	X		X							X					X	X				
Management Activities	deer control							X						X				X				
	feral hog control																					
	red imported fire ant control							X						X								
	restoration (planting native plants)									X		X				X	X	X				X
	non-native plant control	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X		X	X
	trash removal	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	patrol for evidence of trespass, vandalism, or dumping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	maintenance of roads, fences, signs	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X			X
	inspect utility corridor maintenance	X	X	X	X				X	X						X	X	X				X

	Monitoring and Management Activities on the Balcones Canyonlands Preserve (City of Austin tracts)	Barton Creek macrosite					Cypress Creek		North Lake Austin macrosite						South Lake macrosite					West Austin macrosite		
		Barton Creek Wilderness	Barton Creek Greenbelt	Bohls II	Friesenhahn	Senna Hills	Austin-Simon	Lime Creek	Coldwater	Cortaña	Cowfork/Vaught	Emma Long	Long Canyon	Parke West	Bohls	Commons Ford	JJ&T/Sansom	Reicher Ranch	Schramm Ranch	Mount Bonnell	Ullrich	Vireo Preserve
Monitoring Activities	mist-net, band, and spot-map golden-cheeked warblers	X	X						X			X					X	X				X
	search for banded golden-cheeked warblers	X	X						X			X	X				X	X				X
	mist-net, band, and spot-map black-capped vireos									X					X							
	karst faunal surveys	X	X					X		X				X							X	
	cave cricket exit counts	X	X					X		X				X							X	
	jollyville plateau salamander surveys																					
	bracted twistflower monitoring	X	X																	X	X	X
	canyon mock-orange monitoring																					X
	vegetation monitoring											X				X	X	X				X
	fuel moisture sampling of junipers									X								X				
	white-tailed deer photo monitoring							X						X				X				
	monitoring of oak wilt	X	X		X							X					X	X				
Management Activities	deer control							X						X				X				
	feral hog control																					
	red imported fire ant control							X						X								
	restoration (planting native plants)									X		X				X	X	X				X
	non-native plant control	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X		X	X
	trash removal	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	patrol for evidence of trespass, vandalism, or dumping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	maintenance of roads, fences, signs	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X			X
	inspect utility corridor maintenance	X	X	X	X				X	X						X	X	X				X

In addition to the activities in the tables above, BCP staff conducted or coordinated the following:

BARTON CREEK MACROSITE

Barton Creek Wilderness Area and Greenbelt, and the Friesenhahn tract

- Found 392 Bracted Twistflower (*Streptanthus bracteatus*) plants during a one-day census, May 11 (and an additional 29 in an isolated population on April 27).
- Austin Fire Department Fuels Crew completed fuel reduction (shaded fuel break) behind Moon Shadow Drive.
- Austin Fire Department Fuels Crew began fuel reduction in the head of a canyon below Lost Creek Boulevard.

Bohls II

- Restored disturbed area from the construction of the WTCPUA underground water transmission line.
- Installed an 8’ game fence, and gate, on Highway 71 frontage.

BULL CREEK MACROSITE

Upper Bull Creek Unit

Franklin

- Restoration: installed and repaired deer fencing around hardwood saplings after June 3 flood.

Hanks Tract and Gardens at Bull Creek

- Restoration: installed and repaired deer fencing around hardwood saplings after June 3 flood.

Lanier

- Restored flood damaged Lanier spring by removing flood debris and sediment to improve habitat for JP Salamanders.
- Initiated restoration efforts at the former Lanier house and shed by planting native grass seed and fencing hardwood saplings.

Lucas

- Installed new perimeter fence to prevent trespass, dumping, and vandalism.

Sam Hamilton Memorial Reserve West

- Led the annual summer night hike, focusing on the sounds at night and Jollyville Plateau salamanders.
- In September 2016, monitored the 3600 shin oak acorns that were planted in November 2013 under dead and live Ashe junipers and in open areas as part of a germination/survival study. Highest survival is under dead and live canopy and lowest in the open areas; seedling heights are highest under dead canopy and in the open areas.

Lower Bull Creek Unit

Forest Ridge

- Prepared and presented hikes for those requesting a permit to hike through the Bull Creek Preserve during Golden-cheeked Warbler breeding season.
- Worked with a new volunteer trail stewards, volunteers repair minor trail and erosion problems and report more serious issues to staff.

Jester

- Completed new section of 8' perimeter fence.
- Worked with a new volunteer trail stewards, volunteers repair minor trail and erosion problems and report more serious issues to staff.

3M

- COA BCP and WPD staff continued to work with LCRA on restoration of a few sites for the upgrade of the T-160 power line.

Bull Creek Greenbelt

- Found 267 Bracted Twistflowers at the Valburn colony on May 18.

CYPRESS CREEK MACROSITE

Lime Creek/Austin Simon

- Repaired fence where damaged from vehicle collisions.

- Worked with volunteers to plant acorns (primarily *Quercus sinuata*) in areas where juniper had died off and in areas cleared for Black-capped vireo habitat.

NORTH LAKE AUSTIN MACROSITE

Parke West/Coldwater/Cowfork/Long Canyon/Vaught Ranch

- 100% of the Japanese ligustrum logs that were inoculated with native Turkey Tail mushroom spawn in February 2015 (cultured by Jimm Stack of 100th Monkey Mushroom Farm) were covered with fruiting bodies by June 2016. Staff are continuing to monitor the logs to determine the rate of decomposition.
- Removed trash and debris from an illegal campsite.

Cortaña

- As in past years, organized and directed a clean-up of trash, yard trimmings, and debris with neighbors and volunteers along the boundary from Sun Tree Cove to Pelican Point. In order to prevent unauthorized cutting, staff completed necessary trimming of vegetation before the clean-up day.
- Collected acorns from the shinnery for use in re-vegetation work and studies elsewhere on the Preserve.
- Planted Shin Oak acorns in the mid-Cortaña Black-capped Vireo habitat creation area, and on a ridge south of the existing shinnery.
- Continued the intensive exotic plant control effort begun in fall 2014 into February; devoting an additional 6 staff days.

Emma Long Park and Preserve

- AWU and PARD staffs continued to meet monthly to discuss conservation issues at Emma Long.
- Continued to work with stakeholders to promote a sustainable trail system that protects Connors Creek within Emma Long Motocross Park. City staff has offered stakeholders the opportunity to use the BCP Trail Master Plan process to plan and construct an alternative sustainable trail to replace the trail in Connors Creek being closed.
- Conducted searches for the rare orchid, Large-flower/Giant Crested Coralroot (*Hexalectris grandiflora*) but did not find any blooming.

SOUTH LAKE AUSTIN MACROSITE

BCP staff participated in the Westcave Christmas Bird Count, where the count circle includes this macrosite (Bohls Ranch, Reicher Ranch, and JJ&T).

Bohls

- WTCPUA discharged an undetermined amount of treated effluent on to Bohls beginning May 23rd, due to overflow from the treatment pond. Watershed Protection gathered multiple samples at 2 different locations. Lab results from each site were inconclusive.

Commons Ford Ranch Park

- Ongoing prairie restoration project. Vegetation surveys and Project Prairie Bird surveys conducted by volunteers.

JJ&T

- Experimental restoration treatments off along a set of 7x7m plots at a site off of Kollmeyer are ongoing. Treatments include different combinations of berms and swales, vertical staking, vertical mulching, mulches, and seeding and planting native woody plants and grasses.
- Conducted an Rx burn at Buddy's old house, followed-up with a "pear-burner" torch to mechanically treat Malta-star thistle.
- Restoration of the area surrounding Buddy's old house is ongoing, includes sheet-mulching and seeding treatments.

Reicher Ranch

- Hosted multiple middle school groups for interpretive activities.
- Continued restoration of Golden-cheeked Warbler habitat on the grounds of the office headquarters and surrounding areas. Extended the existing habitat restoration area to include the Emmaus Circle. Caged multiple existing trees and shrubs.
- Continued planting a pollinator garden demonstration area in front of the Caretaker's House.

Schramm Ranch

- Continued to monitor restoration areas and compliance with sediment control measures with the Madrone and Cielo developments.

WEST AUSTIN MACROSITE

Mount Bonnell

- Found 67 Bracted Twistflower (*Streptanthus bracteatus*) plants during a half-day census on May 4.
- Installed ornamental iron fence to protect bracted twistflower habitat and keep people off the bluff.
- Worked with PARD staff to identify dead trees that needed to be felled, and low hanging limbs that needed trimming.
- Identified area of park with lots of graffiti and notified and showed PARD staff for clean-up.

Ullrich WTP

- Found 145 Bracted Twistflower (*Streptanthus bracteatus*) plants during a half-day census on April 27.

Vireo Preserve

- Led a tour of ongoing restoration work for the Native Plant Society of Texas in October 2015.
- Gave a guest lecture and led a tour for two St. Edwards University classes in September 2016.
- Led monthly native plant hikes during spring and fall 2016.
- 100% of the Japanese ligustrum logs that were inoculated with native Turkey Tail mushroom spawn in March 2015 (cultured by Jimm Stack of 100th Monkey Mushroom Farm) were covered with fruiting bodies by August 2016. Staff and volunteers are continuing to monitor the logs to determine the rate of decomposition.
- Observed 6 Bracted Twistflowers on April 30, 2016.
- Conducted surveys of plant species growing in the mulch sock project in June and July 2016.
- Staff installed a new roof on the gazebo and a 1500-gallon rainwater collection system in preparation for an outdoor plant nursery in September 2016.
- During late summer/early fall, volunteers installed a rainwater collection system with 150-gallon barrels in a remote area to provide supplemental water for plantings during dry periods.

- A core group of 6-12 volunteers assisted with habitat restoration, removal of invasive plants, erosion control, and patrols. Volunteer workdays are held weekly from March-June and twice a week the rest of the year.
- Planted many woody and herbaceous plants from the BCP greenhouse and local nurseries.
- Since Vireo Preserve supports many of the habitat types observed throughout the BCP, is easily accessible, and offers the opportunity to partner with Travis County and St. Edwards University, it is an ideal site to experiment with habitat creation and restoration techniques. Lessons learned at this site should be applicable to other areas within the BCP. We are continuing adaptive management efforts initiated in 2011 to restore areas degraded by past land use by building soils, controlling erosion, and increasing diversity, with the goal of creating and enhancing endangered species habitat. Adaptive management includes installing berms and swales on contour to capture, spread, and sink, water, and using locally and commercially available materials (mulch, mulch socks, mycorrhizal fungi, soil amendments, native seed and plants) to help rebuild soils and promote regeneration of woody plants. Mulch is a common by-product of juniper-oak forest clearing and thus readily available for habitat restoration projects. Allowing mulch to age and "compost" contributes additional nutrients and micro-organisms. Other soil amendments used to date include organic fertilizers, composts, and/or native mycorrhizal fungi inoculants.

FY 2016 City of Austin BCP Outreach and Volunteer Program

In this 20th year of the Balcones Canyonlands Conservation Plan, outreach and education allowed us to share the successes of the BCP. The City of Austin's program, and those of other BCP partners, continues to reach new audiences, expand programs to connect youth to nature and to share information about the unique habitat and partnership that is the Balcones Canyonlands Preserve. Below are highlights of the outreach, education and volunteer program for the City of Austin in FY 2016.



Hudson Bend Middle School students on a field trip to Reicher Ranch.

Guided hikes and field trips create meaningful connections between stakeholders and the City of Austin's BCP. Continuing successful partnerships with the local school districts again this year, five local middle schools came to Reicher Ranch to investigate warbler habitat first hand and assist in the creation of a pollinator garden. All field trips to the Balcones Canyonlands Preserve now include a service learning component, allowing students to participate in habitat conservation through weeding, mulching, and asking questions of BCP biologists.

Training for new and returning volunteer hike guides enable the City's BCP to offer twenty-four guided hikes on the preserve reaching hundreds of people. Education through participation in community-wide events such as the Zilker Garden Festival, Native Plants week, Austin Nature Day, and other neighborhood and community events allow us to expand understanding of the permit to new audiences over time.

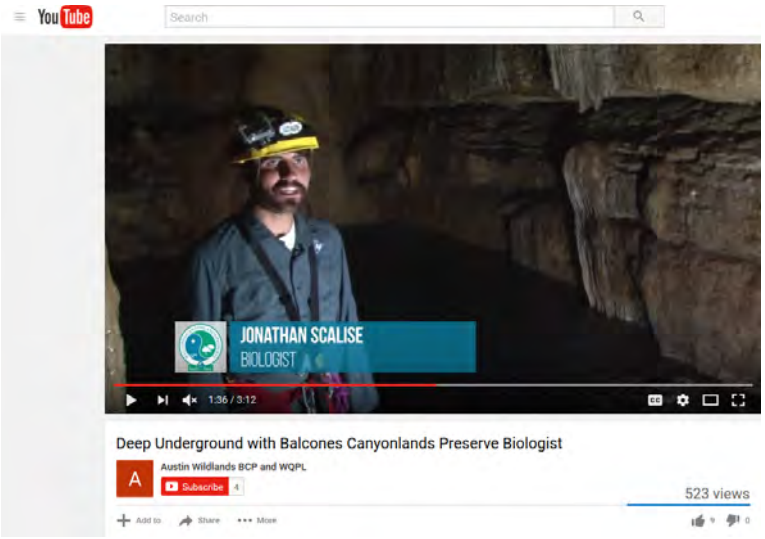
2016 City of Austin BCP Volunteer Highlights



Volunteers at the Vireo Preserve

- Formation of a Forest Ridge Land Steward group. Volunteers regularly walk the trail to alert staff of damage and remove invasive plants.
- Vireo Weekly Workdays-Jim O'Donnell led over 25 volunteer workdays (most of these as a volunteer!)
- A record 48 volunteers collected golden-cheeked warbler re-sighting data for a total of over 700 hours of surveys.
- City of Austin BCP benefitted from the work of an intern from Concordia University who assisted with habitat restoration projects, re-sighting, and preparing materials for the Bull Creek hiking permit process.

Biologists, outreach staff, and the Austin Water Public Information office came together to create a short video highlighing the importance of karst invertebrates, and the caves they inhabit, on the BCP. Short videos allow us to leverage our social media presence to build support and awareness for the permit among a larger audience. Facebook, Instagram, serial newsletters, park planning sessions and neighborhood and community meetings also serve as spaces to share information about the BCP.



FY16 BCP Partners Outreach

Several of the BCCP Partners share a BCP Meetup group as a way to host hikes and allow participants to sign up online, upload photos, and comment on hikes. It has been very successful and has more than 1,700 members. These Partners also coordinate activities to provide a more strategic BCP-wide outreach program and consolidate data to report to the BCCP Coordinating Committee. Table 9 summarizes the Partners outreach and volunteer activities for FY16.

Table 9. BCCP Partners' Outreach and Volunteer Summary for FY16.

BCCP PARTNER EDUCATION SUMMARY

October 1, 2015 – September 30, 2016

BCCP Partners: Travis County, City of Austin, The Nature Conservancy, Travis Audubon & Wild Basin (St. Edward's University)

Outreach	Events	Participants
Guided hikes & lectures	62	799

Youth education events	58	2,790
Neighborhood events, special tours & larger activities	43	8,084
Total	**163**	**11,673**

# Volunteers	Hours worked	Monetary value (@ $25.11/hour)
728	**4,478**	**$112,448.86**

TRAVIS COUNTY

Travis County staff conducted a variety of resource monitoring and management activities on County-managed BCP lands in FY16, which are summarized in Tables 10 and 11. The wildlife and plant management activities are described in more detail in Appendices H through L. Additionally, the annual report for Wild Basin Wilderness Preserve can be found in Appendix M. Wild Basin is owned jointly by Travis County (164 acres) and St. Edwards University (63 acres) and is managed by St. Edwards University under contract with Travis County. The annual report for the Travis Audubon Baker Sanctuary can be found in Appendix O. The majority of Baker Sanctuary (672 acres) is under a conservation easement owned by Travis County and managed by Travis Audubon Society under agreement with Travis County.

Two vacant Natural Resources positions were filled in FY16. Kayla Miloy filled the Environmental Specialist position in November 2015. Johanna Arendt was hired as a Community Liaison in May 2016. The Environmental Project Manager was filled by Debra Scott in July 2016.

Infrastructure Corridor

In FY16, Pedernales Electric Cooperative (PEC), Austin Energy, and LCRA coordinated with Natural Resources staff to conduct routine inspections and/or vegetation trimming along power lines that transect Travis County BCP tracts. This work was done during the winter to avoid the bird nesting season.

Travis County Natural Resources staff assisted City of Austin staff in hosting an Infrastructure Workshop held on October 8, 2015 at the Lady Bird Johnson Wildflower Center. This workshop offered guidance for infrastructure service

providers working on utilities that cross through the BCP or that intersect endangered species habitat outside of the preserve. There were 134 participants at the workshop.

Maintenance

New boundary fences were constructed on portions of the Collins, Trails End, and Scott and White tracts. A new access gate was installed on the Canyon Vista tract. Minor fence repairs were made throughout the BCP.

A new pedestrian bridge at Hamilton Pool was replaced after the previous bridge was destroyed during a flooding event. Parks staff also replaced the restroom facility at Hamilton Pool.

Table 10. FY16 Monitoring and Management Activities on Tracts Managed by Travis County within the Bull Creek, North Lake Austin, South Lake Austin, West Austin, Pedernales River, Big Sandy Creek Macrosites and Cave Tracts.

	Monitoring and Management Activities on the Balcones Canyonlands Preserve (Travis County Tracts)	**Bull Creek Macrosite**								**North Lake Austin Macrosite**					**South Lake Austin**		**Pedernales River**	**West Austin**	**Big Sandy Creek**	**Cave Tracts**	
		Canyon Vista	**Colina Vista**	**Concordia**	**Karnik/Richards/ Wendland**	**Origer**	**Ribelin**	**Sam Hamilton E**	**Woody Hollow**	**Franzetti/Webb**	**Gray Mountain**	**Greenshores**	**Hereford**	**Steiner Ranch**	**Chandler**	**Medway**	**Hamilton Pool**	**Wild Basin**	**Kotrla Unit**	**Ireland's**	**Stark's North Mine**
Monitoring Activities	spot-map golden-cheeked warblers (100-acre plots)	X																X			
	spot-map golden-cheeked warblers (non 100-acre plots)										X			X	X		X		X		
	spot-map black-capped vireos																				
	presence/absence survey for black-capped vireos						X	X											X		
	karst surface monitoring	X			X		X												X	X	X
	karst faunal surveys																		X	X	X
	cave cricket exit counts																		X	X	X
	Jollyville plateau salamander surveys			X				X													
	Water quality			X				X													X
	deer surveys																X		X		
Management Activities	deer control									X						X	X				
	feral hog control	X			X			X	X										X		
	cowbird control																X		X		
	red imported fire ant control																		X	X	
	non-native plant control	X		X	X		X	X	X			X		X			X	X	X		X
	black-capped vireo habitat restoration																				
	trash removal													X							
	patrol for evidence of trespass, vandalism, and dumping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	fence maintenance or construction											X							X		
	Wildfire fuel mitigation									X				X							

Table 11. FY16 Monitoring and Management Activities on Tracts Managed by Travis County within the Cypress Creek Macrosite.

	Monitoring and Management Activities on the Balcones Canyonlands Preserve (Travis County Tracts)	Bunten	Collins	Cuevas East	Cuevas West/TSNL	The Crossings	Grandview Hills North	Grandview Hills South	King/Atwood/Blake	Lake Perspectives	Lime Creek Unit	Lucas/ Lake Travis Bluffs	New Life	Nootsie	Romberg	Snowden	Spezia	Toops	Trails End	Vireo Ridge/Stratton	Vista Point	Volente
Monitoring Activities	spot-map golden-cheeked warblers (100-acre plots)									X*										X	X*	
	spot-map golden-cheeked warblers (non 100-acre plots)																					
	spot-map black-capped vireos											X		X						X		
	presence/absence survey for black-capped vireos			X	X																X	
	karst surface monitoring		X	X	X		X					X		X						X	X	
	karst faunal surveys			X	X		X					X									X	
	cave cricket exit counts			X	X							X										
	Jollyville plateau salamander surveys	X	X				X						X			X						
	water quality	X	X				X						X	X		X						
	deer surveys													X		X				X	X	
Management Activities	deer control									X			X				X			X		X
	feral hog control																					
	cowbird control													X				X		X		
	red imported fire ant control			X	X							X									X	
	non-native plant control	X	X		X		X			X	X	X		X		X			X	X	X	
	black-capped vireo habitat restoration																			X		
	trash removal											X							X			
	patrol for evidence of trespass, vandalism, and dumping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	fence maintenance or construction		X								X								X			X
	Wildfire fuel mitigation			X	X			X												X		

* Re-sighting of banded warblers only

Natural Resources staff developed a road inventory database and assessment which documents the types, purpose, and conditions of roads on Travis County BCP tracts. Many of the BCP roads are in need of repairs, and this assessment serves as the first step toward developing a long-term maintenance plan.

Travis County Road and Bridge completed work on a trail maintenance project at Wild Basin Preserve to restore and stabilize the Arroyo Loop Trail and improve handicapped accessibility. The project was undertaken as part of a settlement between Travis County and a citizen-advocate for handicapped accessibility. Under the settlement, Travis County did not admit any wrong-doing but did agree to make a number of improvements to make the trail more accessible. This included smoothing the trail wherever practical using decomposed granite treated with TerraPave resin to make the surface more durable. The project also involved replacing boards on a trail bridge, paving and striping the handicapped parking area, removing obstacles between the parking area and the trail, and adding road base to the access driveway. The project was a joint effort of Travis County and St. Edwards University.

Staff and volunteers conducted a number of trash clean-ups on the BCP including removal of golf balls at Steiner Ranch, trash on the Lucas tract, and trash and tires on the Trails End tract.

Travis County Wildfire Mitigation and Preparedness

Travis County staff actively worked on BCP lands and coordinated with neighboring communities to reduce the risk of wildfire and to improve preparedness for wildfire events. The County's Natural Resources Program is committed to 1) ensuring that safety is the highest priority for all fire management activities, the public, firefighters and staff; 2) mitigating the wildland-urban interface (WUI) from wildfires; and 3) meeting its obligations to protect endangered species habitat from loss due to wildfire.

Mitigation efforts on County BCP lands have focused on the WUI, where preserve tracts abut development, roads and utility lines. Land management practices within the WUI are designed to reduce the probability of accidental ignition and to minimize the spread of wildfire into the forest crown. Fuel mitigation activities, such as the creation of shaded fuel breaks, reduce the risk of surface fires becoming crown fires, a highly destructive, less manageable fire type. Treated areas become fire adapted, thereby minimizing risk to habitat and adjacent structures.

Natural Resources staff coordinated multiple shaded fuel treatment projects on the following BCP tracts: Canyon Vista, Cuevas, Cuevas East, Grandview Hills South, Greenshores, Steiner Ranch, and Trails End. Fuel mitigation activities were funded in part through a Hazard Mitigation Grant, provided by the Federal Emergency Management Agency (FEMA) and Texas Department of Emergency Management. Lake Travis Fire & Rescue (ESD 6) and American Youthworks (AYW) were contracted to perform most of the work. On the Canyon Vista Project, which is adjacent to Laurel Mountain Elementary School, Travis County teamed up with Round Rock Independent School District, the Austin Fire Department, and AYW to conduct a shared fuel mitigation project both on the school property and on the BCP. In another partnership effort, the Texas Forest Service provided their services on fuel mitigation efforts at the Trails End tract. All of the fuel mitigation activities followed a customized scope of work, derived from the USFWS Best Management Practices for fuel reduction in golden-cheeked warbler habitat.

Staff also met with many neighbors and attended neighborhood meetings to promote Firewise communities and to explain BCP fuel mitigation efforts.

Travis County Law Enforcement and Preserve Patrol

Management of BCP lands to meet the terms and conditions of the BCCP permit in a rapidly developing urban interface presents unique challenges for public agencies. Many BCP tracts are subject to law enforcement issues including illegal trespass (pedestrian, mountain bike, all-terrain vehicle, and motorcycle traffic), dumping, vandalism, theft, poaching of native wildlife, cutting of vegetation and unauthorized use of fire.

Law enforcement on all Travis County managed properties, including County Parks and County BCP tracts, are provided by Park Police. Park Police are part of Travis County's Parks Division and are commissioned Texas Peace Officers operating as Deputy Sheriffs under the Travis County Sheriff's Office. The Park Police and Travis County's Natural Resources staff regularly patrol and inspect County managed BCP tracts to look for signs of illegal activity and to assess management needs. Regular patrols provide a visible County presence, thereby minimizing the incidence of unauthorized activities. Patrols also allow staff to inspect fences, locked gates, facilities, trails and roads, and look for resource management issues such as non-native plant and animal encroachment and signs of oak wilt infestation.

In FY16, there were 55 incidents of illegal activities documented on the Travis County managed preserve tracts. Several of these incidents involved multiple violations. Most of the incidents were trespass only (on foot/bike/vehicle), however eight involved vandalism (cutting locks and fences, taking or damaging signs, trashing an area), four involved illegal dumping, two involved unauthorized fire (making a campfire), six involved theft (gate locks), and two involved illegal clearing.

Most of the cases of trespass were documented by surveillance cameras which were operated on various BCP tracts. The Volente tract continues to have recurring trespass problems; however vehicular trespass was down to only one documented incident this year after staff blocked the main entry point. Sam Hamilton East and Ribelin tracts experienced an increase in documented trespassing incidents due to regular use of hidden surveillance cameras. As a result of this vigilant monitoring, patrol staff was able to alert Park Police who in turn were able to issue two verbal and written citations, as well as the arrest of one individual. The use of cameras at the Vista Point tract also alerted patrol staff of illegal trespass and Park Police were able to issue written citations to several trespassers.

Two illegal vegetation clearing incidents were documented on the Steiner Ranch tract this year. One incident involved cutting vegetation for fuel mitigation adjacent to a water treatment facility. The other incident involved clearing behind a residence to enhance their view. This incident resulted in a fine being issued by the Steiner Ranch Homeowners Association.

Significant sediment runoff from adjacent developments occurred on two Travis County BCP tracts (Wild Basin and Nootsie) during significant rainfall events. Natural Resources Staff worked with the developers, St. Edwards University staff, and City of Austin and Travis County storm water inspectors to correct the problems and mitigate for the damage. In both instances the developers had to improve the storm water controls on their property. Both cases are still active and being monitored.

Travis County BCP Volunteer and Outreach Programs

In FY 16, 112 volunteers donated their time and energy towards maintaining the health and integrity of the Travis County BCP. Volunteers are an integral part of the BCP team, extending the County's capacity, while also increasing awareness of the BCP and BCCP within the community. The volunteers' commitment,

energy and expertise strengthen the BCCP program and broaden the County's impact. These volunteers contributed 989 hours of labor on projects such as conducting wildlife surveys, controlling pest species, patrolling BCP boundaries, planting natives, and assisting with maintenance activities and office work (Table 12). Activities range from large group workdays to individual projects and can be one-day events or ongoing.

Table 12. Travis County BCP Volunteer Hours for FY16.

Activity	**Hours**
Biological monitoring & surveying	298.75
Invasive species control	437.5
Land stewardship	223.75
Administration	23
Adult Education	6
Total	**989**





Volunteer highlights included:

- Fifty Concordia University freshmen picked up 7,000 golf balls from the Steiner Ranch tract, cleaned up trash from the Lucas tract, and removed invasive species from Concordia.

- Seven volunteers worked 389 hours maintaining and improving the landscaping at Snowden House, including removing invasive species.
- Volunteers helped field staff map communities of the rare plant Texabama Croton on the Kotrla Unit.
- Volunteers from Keep Austin Beautiful planted 550 shin oaks on the New Life tract.

Travis County presented information about the BCP at hikes and tours, community meetings, and public events. Approximately 1,332 individuals were reached through these efforts (Table 13). In addition, public access is available year round at Hamilton Pool Preserve and Wild Basin Preserve, where thousands of people enjoy hiking the trails each year.

Table 13. Travis County BCP Education & Outreach Summary for FY16.

	Events	**People reached**
Youth programs/hikes	4	312
HOA/neighbor meetings	4	100
Information table at events	5	694
Workshops	1	134
Volunteer appreciation	2	55
Guided hikes	3	37
Total	**19**	**1,332**

Outreach highlights in FY16 included:

- Travis County staff presented information and answered questions about the BCP at homeowners' association meetings in neighborhoods adjacent to the preserve including Trails End and Honeycomb Hills.
- Staff presented BCP programs to elementary students at Walnut Springs and Travis Heights, and provided information at the annual Lake Travis Cleanup and the Balcones Canyonlands Master Naturalists' volunteer fair.
- Two volunteer appreciation events celebrated the hard work contributed by the County's BCP volunteers. The fall event featured a star party at the Reimers Ranch Observatory presented by Travis County park supervisor Michael Brewster.
- The Concordia tract and Wild Basin Preserve served as living laboratories for Concordia University and St. Edwards University, respectively. In FY16, Concordia University staff led guided hikes onto the Concordia tract giving 195 students an opportunity to learn about the preserve. Sixty Concordia

students in chemistry classes also accessed the preserve to collect water samples. St. Edwards University activities for students and the general public are reported in the Wild Basin Report submitted by St. Edwards University (Appendix M).

Future Park

Travis County added a portion of the Trails End tract into the Travis County Parks Master Plan document which was approved by Commissioners Court in August 2016. The 228-acre Trails End tract was purchased by the County as part of the BCP in 2015. An adjacent neighborhood has existing deeded recreational use on about 36 acres and the Parks Master Plan recommends that this portion of the tract be developed as a nature-based, minimally developed public park. However, funding has not yet been secured to develop the park.

LOWER COLORADO RIVER AUTHORITY
Annual Status Report for the Balcones Canyonlands Conservation Plan
October 1st 2015-September 30th 2016.

Mitigation Credits Used
The Lower Colorado River Authority (LCRA) debited 0 acres from its mitigation bank balance between October 2015 and September 2016. LCRA has 2,449.4 mitigation credits remaining.

Management Highlights
LCRA manages 2,707 acres as a portion of the preserve system. Management activities for the three LCRA preserves continued to focus on natural resource research and management, access management, and stewardship promotion.

McGregor Preserve

- LCRA contracted with Plateau Land and Wildlife Management to conduct White-tailed deer spotlight and camera surveys at McGregor and Wheless Preserves. See attached report (Appendix P10). No deer or feral hogs were removed from the preserve this year.

- LCRA staff continued to work with the Comanche Trail Community Association (CTCA) to promote local stewardship efforts on the preserve. LCRA Natural Resource Conservation and Environmental Affairs staff held the McGregor Good Neighbor Program (GNP) classroom and field training for CTCA neighbors interested in obtaining a permit to hike the preserve on designated trails. Forty-five people attended the training. Through the GNP, permitted 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.

Westcave Preserve

- Westcave Outdoor Discovery Center staff hosted 17,746 students, teachers, and visitors during 2015-2016.

- Dawn Houston (Preserve staff, FWS permitted biologist) conducted presence/absence surveys on the tract and found two successful territories. See attached report.

- Texas A&M biologists discovered four tri-colored bats *(Pipistrellus subflavus*), a new species for the preserve.

- Staff completed seed bed prep and reseeding as part of a prairie restoration project.

Wheless Preserve

- LCRA contracted with Blanton and Associates to conduct territory level GCWA surveys on the 100-acre Prime Plot and the 100-acre Transitional Plot at Wheless Preserve. Blanton observed GCWA at 77 points in the Prime Plot, including 67 observations of a male, nine observations of a female, and one observation of juveniles. Territory density in the Prime Plot was estimated at 5.9 GCWA per 100 acres. GCWA were observed at 10 points in the Transitional Plot, including nine observations of a male and one observation of a female. One full territory was identified in the Transitional Plot (note: density is not calculated in Transitional Plot). See attached complete report (Appendix P5).

- 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.

CITY OF SUNSET VALLEY

The City of Sunset Valley entered a BCCP Managing Partner Agreement on 7 February 2014 and designated 21.585 acres, known as the Gaines Greenbelt, as BCP. A report of the monitoring and management activities conducted on the Gaines Greenbelt for FY16 is included as Appendix N.

THE NATURE CONSERVANCY OF TEXAS
Annual Report for Barton Creek Habitat Preserve

Science / Stewardship

Annual surveys (point count) were completed for the black-capped vireo (BCV) and golden-cheeked warblers (GCWA). The GCWA population remains stable, while two BCVIs males were detected on the property during the 2016 season. Brown-headed cowbirds were removed from the property by shooting.

Preserve staff and TPWD public lands lottery hunters are helping to control the population of white-tailed deer in an effort to reduce browse and increase recruitment of Texas Oaks. Population is estimated through spot-light surveys, stand counts and camera surveys.

Research projects included “Status of Fall Breeding and Overwintering Monarch Butterflies in Texas” (Oklahoma State University) and “KR Bluestem Effects on Grasslands” (The Nature Conservancy / Global Impact Invader Network – GIIN).

Water quality in Barton Creek is monitored by Austin Youth River Watch, the results have not found any anomalies.

Around 20 acres of Juniper thinning was accomplished prior to a February prescribed fire on 124 acres to maintain and restore BCVI habitat. Three burn units totaling approximately 230 acres are ready to be completed during the upcoming winter burn season.

Approximately three and a half miles of boundary fencing was constructed to replace fencing that had fallen into major disrepair.

Education/Outreach/Volunteers

The preserve hosted approximately 1273 visitors, 222 volunteers totaling 543 hours of work, and 345 used the property for educational purposes. Groups included the Boy Scouts of America, Cub Scouts, Girl Scouts, American Society of Dermatology, Barton Hills Elementary School, Austin KIPP Academy, Camp Champions of Marble Falls, Texas Parks and Wildlife, Balconies Canyonlands Preserve visitors, Austin Youth River Watch, Earth Native Wilderness School, Rose Hill Christian School, Austin High School, Westlake Hills Presbyterian Men’s Group, Capital Area Master Naturalists, Balcones Master Naturalists,

Audubon Society, The National Plant Society of Texas, the University of Texas, and the University of Missouri.

Volunteer projects included removing old fencing, invasive species removal (Johnson grass – *Sorghum halepense*, Malta star-thistle – *Centaurea melitensis*), trash pickup, trail maintenance, fireline preparation, juniper removal, bird surveys, and boundary monitoring.

Expense Summary

Operations and maintenance cost spent on BCP for FY 2016 was $68,000.

TRAVIS AUDUBON SOCIETY

Travis Audubon Society owns and manages 715 acres at the Baker Sanctuary which are included as part of the BCP. In April 2015, Travis County purchased a conservation easement for Baker Sanctuary to ensure that the function and purpose of the Sanctuary will be secured in perpetuity. A report of the monitoring and management activities conducted on the Bakers Sanctuary for FY16 is included as Appendix O.

LITERATURE CITED

City of Austin and Travis County. 1995. *Interlocal Cooperation Agreement between Travis County and the City of Austin Implementing the Balcones Canyonlands Conservation Plan-Shared Vision.*

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