Balcones Canyonlands Conservation Plan

2017 Annual Report

(October 1, 2016 – September 30, 2017)

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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Appendix P – Travis Audubon Society Baker Sanctuary 2016-2017 Annual Report

Appendix Q – City of Lakeway Schramm Ranch Report

Appendix R – Research Reports:

1. Houston, Dawn. *2017 Westcave Preserve Golden-cheeked Warbler Report.* Westcave Preserve. Prepared for Lower Colorado River Authority. 2017.
2. LeBrun, E., Bayless, T., and M. Sanders. *Mitigating the impact of tawny crazy ant populations on endangered karst invertebrates: quantifying harm and designing environmentally safe control methods.* Traditional Section 6 Grant Final Report. University of Texas, Brackenridge Field Laboratory. Austin, TX. 2017.
3. Zara Environmental. *Technical Report for Karst Management Services at the Balcones Canyonlands Preserve – Kotrla Unit.* Travis County, TX. Travis County – Transportation and Natural Resources. 2017.
4. Zara Environmental. *2017 Summary of Cave Management Activities at Pennie's Cave, Travis County, Texas.* Endeavor Real Estate Group. 2017.

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 and an additional 27 karst features that 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 2017 (FY17), 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 FY17, 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. Four City of Austin infrastructure project utilized mitigation credits in FY17 (Table 2).

Table 2. Infrastructure Projects Mitigated Through the Use of Mitigation Credits in FY17 by Participating Agency**.**

City of Austin	
Starting City of Austin Balance	**11,587.74 acres**
New preserve additions (credits) –	0
AW-Forest Ridge Pump Station and Reservoir Access Road Improvement	6.1
WPD-Sendera Section 15-B Wet Pond Retrofit	2.6
WPD-Sendera South Wet Pond Repair	6.0
WPD-Circle C Ranch Phase C Section 9 Pond Liner Repairs	1.5
Remaining Mitigation Credits	**11,571.54 acres**
Travis County	
Starting Travis County Balance	**5,935.322 acres**
New preserve additions (credits)	2,247.311
Remaining Mitigation Credits	**8,182.633 acres**
Lower Colorado River Authority (LCRA)	
Starting LCRA Balance	**2,447.0 acres**
New preserve additions (credits) –	0
Sold Wheless BCP Property with mitigation credits to Travis County	2,175.77
Remaining Mitigation Credits	**271.23 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 FY17, 18 Participation Certificates were issued as follows: seven for single family residences, seven for subdivisions, three for commercial development, and one infrastructure project (Table 3).

Funds Collected through Participation Certificates

A total of $483,406.00 was collected through the sale of Participation Certificates in FY17 (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. FY17 Projects Mitigated Through the Purchase of Participation Certificates.

Application #	Date	Name	Category	Amount Paid
0765	10/27/16	Rob Roy 360	Subdivision	$61,600.00
0841	10/27/16	Tschopp	SF Residential	$2,000.00
0831	10/31/16	Garza Brandywine	Commercial	$41,000.00
0721f	12/09/16	Travisso, Ltd., Heath Melton	Subdivision	$86,900.00
0721g	12/09/16	Travisso, Ltd., Heath Melton	Subdivision	$3,850.00
0721h	12/09/16	Travisso, Ltd., Heath Melton	Subdivision	$68,200.00
0847	01/23/17	Houston	SF Residential	$2,000.00
0851	02/08/17	Junior League	Commercial	$56,650.00
0852	02/08/17	Fryer	SF Residential	$2,000.00
0853	02/24/17	Soth	Subdivision	$8,500.00
0858	02/15/17	Hamilton Pool Storage	Commercial	$11,000.00
0859	02/24/17	Sweetwater Nash - Inf. Road	Infrastructure	$42,900.00
0860	03/06/17	Delgado	SF Residential	$2,000.00
0861	04/28/17	Sanders	SF Residential	$12,925.00
0863	04/25/17	Overstreet	SF Residential	$3,300.00
0721i	06/02/17	Travisso, Ltd., Heath Melton	Subdivision	$41,381.00
0776i	07/12/17	Sweetwater Village Sect. 2, Village P3A	Subdivision	$35,200.00
0870	07/25/17	Subramaniam	SF Residential	$2,000.00
			Total:	**$483,406.00**

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 FY17, Travis County's Tax Benefit Financing Plan generated $16,937,800 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 $26,475,370 in FY17 on non-grant land acquisition activities and secured 2,390.7 acres for inclusion in the BCP. Travis County

purchased the 2,319.5 acre Wheless tract from LCRA; this ensures that the habitat is protected beyond the original terms of the permit and transferred both mitigation credits and management responsibility to Travis County. Because the Wheless tract has been a part of the BCP since 1996, this purchase did not represent a change in total BCP acreage. In addition to the Wheless Tract, Travis County purchased 62.358 acres and protected 8.842 acres through a conservation easement for inclusion in the BCP.

The City of Austin did not expend any funds on land acquisition during FY17. At the end of FY17, the City of Austin owned and managed 13,610 acres of land within the BCP and Travis County managed 11,923 acres of land within the BCP. For a detailed account of all BCP tracts assembled see Appendices C, D, and E. All Travis County FY17 BCP land acquisitions are shown by tract in Table 5.

Table 5. Travis FY17 BCP Land Acquisitions.

Tract	Agency	Date Acquired	Acreage	Total Expenditures *
Wheless*	Travis County	4/27/2017	**2,319.50**	$20,396,999
Martin Hamilton Pool	Travis County	2/7/2017	**2.580**	$254,281
Martin Conservation Easement	Travis County	8/1/2017	**8.842**	$0.00
Paladino (Lime Creek Unit)	Travis County	10/6/2016	**4.989**	$201,940
Lu 1B (Lime Creek Unit)	Travis County	11/9/2016	**5.540**	$218,206
McCarthy (Lime Creek Unit)	Travis County	7/21/2017	**6.200**	$245,716
Endres	Travis County	5/5/2017	**4.440**	$117,765
Blackmore	Travis County	6/9/2017	**38.950**	$5,030,562
		Total	**2,390.691**	**$21,189,191**

*Wheless was purchased by Travis County to ensure the property is protected in perpetuity; acreage was already counted in BCP totals. The previous total was 2176 acres, a new survey resulted in athe acreage of 2,319.50

Funds Expended for Operations and Maintenance

In FY17, the Permit Holders, LCRA, TNCTX, the Travis Audubon Society (TAS) and the City of Sunset Valley spent $4,081,604 on operation and maintenance of BCP lands (Table 6).

The City of Austin spent a total of $1,768,118 for FY17 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 6. Annual FY15 through FY17 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 2015	FY 2016	FY 2017	Total Budget: 1996 to Present
City of Austin	$1,121,952	$1,205,825	$1,768,118	Up to FY 17 $18,675,120
Travis County	$1,487,673	$2,061,798	$2,188,286	Up to FY 17 $16,551,076
LCRA*	$21,000	$31,542	$10,200	Up to FY 17 $1,742,421
TNCTX	$10,000	$68,000	$30,000	Up to FY 17 $1,080,000
TAS	$85,000	$85,000	$85,000	Up to FY 17 $221,986
City of Sunset Valley	N/A	$16,242	$0	Up to FY 17 $16,242
TOTALS	**$2,725,625**	**$3,468,407**	**$ 4,081,604**	Up to FY 17 $38,286,845

* Does not include expenditures by Westcave Preserve Corporation

The City of Sunset Valley does not track staff time related to open space management for budgetary purposes. Therefore there are no operation and maintenance costs available for the City of Sunset Valley's management of Gaines Greenbelt.

The Travis County Natural Resources budget for the BCP Program in FY17 was $2,188,286. 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 FY17, 31,859 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 karst features 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 2017 Research or Investigative Reports

Research reports for activities that occurred on the BCP are included as Appendices F through P and R1 through R4. 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=7). 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 7. 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 8. 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	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																						
	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 9. 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				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			X
	fuel moisture sampling of junipers									X								X				
	white-tailed deer photo monitoring							X						X	X		X	X				
	monitoring of oak wilt	X	X		X							X					X	X				
Management Activities	deer control							X						X	X		X	X				
	feral hog control																X					
	red imported fire ant control						X	X		X				X								
	restoration (planting native plants)									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
	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			X
	inspect utility corridor maintenance	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 69 Bracted Twistflower (*Streptanthus bracteatus*) plants during a one-day census, May 10.
- Proposed a fuel reduction (shaded fuel break) behind Cliffstone Cove and Canyonbend Drive, which Austin Fire Department Fuels Crew began in autumn 2017. Coordinated with Park Rangers to persuade encroaching neighbors to remove obstacles.
- Austin Fire Department Fuels Crew completed fuel reduction in the head of a canyon below Lost Creek Boulevard.
- Found large area where rock had been excavated. Park Rangers later confronted a trespasser who claimed to be digging for geodes; he was informed that such activity is not permitted, and escorted off the grounds.
- Began planning with Parks & Recreation Department staff to remove large number of old trash dumps left by transients.

Senna Hills

- Removed vegetation fallen on neighbor's fence.

BULL CREEK MACROSITE

Hanks Tract and Gardens at Bull Creek

- Installed new water gap on tributary 6.

Lanier

- Completed restoration efforts at the former Lanier house and shed by planting native grass seed and fencing hardwood saplings.

Sam Hamilton Memorial Reserve West

- In fall 2017, monitored the 3,600 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; seedlings heights and root depths are highest under dead canopy and open areas. City of Austin BCP biologists are collaborating with researchers Brian Pickles and Monika Gorzelak to study mycorrhizal fungi in Ashe juniper-oak woodlands. As part of these collaborative efforts, City of Austin BCP hosted Drs. Pickles and Gorzelak for a 3-week visit from 27 September – 17 October 2017. During this time, they worked with staff to dig up 6 shin oak seedlings per plot to count ectomycorrhizae on each root and collect root and soil samples for DNA sequencing (to be conducted in 2018). Ectomycorrhizal counts were highest on shin oak roots in live sites and lowest in the dead and open sites. City BCP staff collected vegetation data at each site in November 2017. Results will be reported in peer-reviewed journals.

- Led the annual summer night hike, focusing on the sounds at night and Jollyville Plateau salamanders.

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

- Worked with a new volunteer trail stewards, volunteers repair minor trail and erosion problems and report more serious issues to staff.

Bull Creek Greenbelt

- Found 42 Bracted Twistflowers at the Valburn colony on May 17.
- Identified potential threat to Twistflower population (new development) and created educational handout for neighborhood with details specific to their area.

CYPRESS CREEK MACROSITE

Lime Creek/Austin Simon

- Documented sprouts from acorns (primarily *Quercus sinuata*) that were planted in 2016 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.
- Discovered an area of cleared vegetation, on Parke West, with a deer feeder and hunting equipment. Urban Forestry called out to assess tree damage and give a dollar amount for prosecution. TPWD Game Wardens pursuing legal recourse as individual was caught.
- Repaired a water gap damaged from flooding.
- Started fence construction along eastern and southern Parke West and western and northern Long Canyon.

Cortaña

- Monitored Austin Energy and contractor project to replace old electric poles along a distribution line running along western boundary of the tract and across Travis County BCP land, from Portofino Drive north to Steiner Ranch Boulevard. Assisted with access, and negotiated removal of a short, unused spur electric line.
- Assisted with access for shaded fuel break implementation around Steiner Ranch neighborhood.
- Repaired flood damage to an access road through Steiner Ranch BCP property.
- 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.
- With help from a neighbor, planted native grass seed to reclaim an area cleared of Johnsongrass along the neighbor's boundary.

- Collected acorns from the shinnery in autumn 2016 for use in re-vegetation work and studies elsewhere on the Preserve. Acorn crop too sparse in autumn 2017 for significant harvest.
- Again, in autumn 2016, planted shin oak acorns in the mid-Cortaña Black-capped Vireo habitat creation area, and on a ridge south of the existing shinnery. Returned in 2017 to inspect mid-Cortaña sites; found only 4 acorns had sprouted from the 2015 planting, but 54 had sprouted of 280 acorns from the 2016 planting.
- Volunteer land stewards continued, in the first months of 2017, the exotic plant purge begun during fall 2014 in Antler Hollow, removing sprouts from remaining seeds and those plants missed in the original effort.

Emma Long Park and Preserve

- AWU and PARD staff continued to meet monthly to discuss conservation issues at Emma Long.
- 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).

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.
- Restoration of the area surrounding Buddy's old house is ongoing, includes sheet-mulching and seeding treatments.
- Austin Fire Department Fuels Crew completed fuel reduction at the end of Gebron Drive.

- Austin Fire Department Fuels Crew completed fuel reduction at the end of Kollmeyer Drive and extended east along boundary with Sharps Road and Foy Drive.

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.
- Continued planting a pollinator garden demonstration area in front of the Caretaker's House.
- Installed a new pollinator garden in front of Emmaus house.
- As part of the collaborative research project on mycorrhizal fungi in Ashe juniper-oak woodlands (see Sam Hamilton Memorial Reserve), City of Austin BCP biologists collected a madrone seedling and soil samples for fungi and bacterial DNA sequencing.

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 11 Bracted Twistflower (*Streptanthus bracteatus*) plants during a half-day census on May 3.

Ullrich WTP

- Found 102 Bracted Twistflower (*Streptanthus bracteatus*) plants during a half-day census on April 26.
- Installed walk-through gate along fence for safer access to Little Bee Creek Cave.

Vireo Preserve

- In January-February, implemented an experimental restoration project to rehydrate and add diversity to a dry woodland on a north-facing slope. This project involved ~1 acre of brush berms on contour, inoculating logs with 3 different types mushroom spores, and adding organic matter (mulch,

compost) to build soil biology. Planted 10-12 different woody species in fall 2017.

- Gave presentation and led a guided hike for City of Austin Development Review staff in February 2017.
- Led quarterly native plant hikes.
- Installed a composting compound and perimeter fencing for an outdoor native plant nursery in early 2017. Upon completion of the fence, began planting pollinator gardens around the plant nursery.
- Installed two rainwater collection systems (200-gallon barrels) in restoration areas to provide supplemental water for over 100 plantings during dry periods.
- Surveyed Bracted Twistflowers on April 27th, 2017, but none were observed.
- In fall 2017, planted native woody trees and shrubs in areas that were sheet-mulched in 2012-2015 to create black-capped vireo nesting habitat.
- In August-September 2017, counted Ashe juniper and Texas red oak seedlings and samplings under various canopy types to evaluate the effect of canopy cover on regeneration and recruitment.
- As part of the collaborative research project on mycorrhizal fungi in Ashe juniper-oak woodlands (see Sam Hamilton Memorial Reserve), City of Austin BCP biologists collected Ashe juniper and red oak seedlings and soil samples for fungi and bacterial DNA sequencing in September-October 2017.
- 100% of the Japanese ligustrum logs that were inoculated with 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 are continuing to monitor the logs to determine the rate of decomposition.
- A core group of 10-15 volunteers assisted with habitat restoration, removal of invasive plants, erosion control, and patrols. Volunteer workdays are held weekly from March-June and three times a week the rest of the year.
- Planted many woody and herbaceous plants from the BCP greenhouse and local nurseries and seeded areas with native grasses and wildflowers.
- Since Vireo Preserve supports many of the habitat types observed throughout the BCP and is easily accessible, 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, native saprophytic mushrooms) 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 2017 BCP Partners Outreach

BCP partners with education and outreach programs meet on a quarterly basis to coordinate efforts and produce a summary report for the Coordinating Committee. This quarterly report includes a table summarizing the education and outreach activities offered by the BCP partners, including the number of people reached and the number of volunteer hours completed on the preserve that quarter. An annual summary is provided in the final report of the year, and is included below as Table 10.

Several BCP partners also post hikes and presentations in the Friends of the Balcones Canyonlands Preserve group in Meetup.com, which has more than 2,000 members. In FY 2017, 55 hikes were offered on the Meetup page; several more were scheduled, but cancelled due to weather. Three BCP-related presentations were also advertised.

Table 10. Summary of FY17 BCP Outreach and Education Activities*

Activity	Location	Events	Youth	Adults	Volunteer Hours
Guided Hikes	Onsite	489	2,436	6,012	1,278.5
Programs / Presentations	Onsite	187	4,024	2,300	489
	Offsite	44	1,406	1,207	22
Land Stewardship	Onsite	273	199	693	3,303
Ecological Monitoring	Onsite	62	1	206	1,195
Visiting Groups / Educators	Onsite	54	146	957	112

Administrative Help	Onsite	16		13	179
	Offsite		2	13	39
Campouts	Onsite	5	59	37	42
Training	Onsite	8		138	203
FY 2017 Total		**1,138**	**8,273**	**11,576**	**6,862.5****

*Includes education and outreach activities offered by Travis County, City of Austin, Travis Audubon, Westcave Preserve, The Nature Conservancy, and Wild Basin Preserve (St. Edward's University).
** Monetary value of volunteer work ($25.11/hour): $172,317.38.

TRAVIS COUNTY

Travis County staff conducted a variety of resource monitoring and management activities on County-managed BCP lands in FY17, which are summarized in Tables 11 and 12. The wildlife and plant management activities are described in more detail in Appendices H through M. Additionally, the annual report for Wild Basin Wilderness Preserve can be found in Appendix N. 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.

One permanent Natural Resources position was filled in FY17. Carla Martin accepted the Environmental Specialist Senior position in May 2017. Carla provides administrative support for grants and contracts. Two seasonal positions were also filled. Anthony Locatelli was the Natural Resources Technician working from March through August 2017. The Mickey Leland intern position was filled by Kenneth Sparks, who worked from May through November 2017.

Infrastructure Corridor

In FY17, 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 warbler and vireo nesting season.

Maintenance

Travis County completed 3.5 miles of new boundary fence construction on portions of the Kotrla Unit and the Woody Hollow, Trails End, and Lucas tracts. Fence repairs were made on the Lucas and Snowden tracts, where vehicular accidents had caused fence damage. Concordia University installed some additional fencing along a portion of conservation easement land, which is owned by the University and managed by Travis County as part of the BCP.

Several debris cleanup days were completed by staff and volunteers. Tracts targeted this year included Trails End, Lucas, and Snowden.

Vegetation Issues

A 3-acre oak wilt center was identified on the Vireo Ridge tract in July. The area will be trenched to prevent further spread of the disease.

In August, winds from Hurricane Harvey blew down some trees on the BCP, including a few trees along our boundary with neighbors. Some of the trees damaged fences and partially fell into backyards. Staff or contractors removed the downed trees that had caused property damage.

Water Quality Issues

On June 21, 2017, Natural Resources staff documented a large water discharge at the City of Cedar Park water tank on the Wheless tract. Staff alerted Cedar Park and the flow was stopped. Cedar Park determined that an incorrectly calibrated sensor caused the release of about 50,000 gallons of treated water. Natural Resources staff inspected the area and determined that no significant damage was caused to the Preserve or nearby karst features.

An Austin Water wastewater line broke along FM 620 adjacent to the Cuevas East tract on August 29, 2017, spilling about 100,000 gallons of sewage. Most of the water was redirected to another sewage line but some of it ran through a culvert to the opposite side of FM 620 into the Bull Creek watershed. Austin Water repaired the break and Watershed Protection and Travis County Natural Resources monitored water quality in the creek. Results indicated that there was not any long-term damage to the creek

Table 11. FY17 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/Lemens/ Hunt**	**Steiner Ranch**	**Chandler**	**Medway**	**Hamilton Pool/ Martin**	**Wild Basin**	**Kotrla Unit**	**Ireland's**	**Stark's North Mine**
Monitoring Activities	spot-map golden-cheeked warblers (intensive plots)	X*																X			
	spot-map golden-cheeked warblers (tract-wide survey)				X								X				X				
	point-count golden-cheeked warbler survey	X			X							X	X								
	spot-map black-capped vireos						X												X		
	presence/absence survey for black-capped vireos							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													
	deer surveys																X		X		
Management Activities	deer control																				
	feral hog control	X			X		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	X
	fence maintenance or construction								X										X		
	Wildfire fuel mitigation													X	X			X			

* Re-sighting of banded warblers only

Table 12. FY17 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**	**Wheless**	**Vireo Ridge/Stratton**	**Vista Point**	**Volente**
Monitoring Activities	spot-map golden-cheeked warblers (intensive plots)									X*											X	X*	
	spot-map golden-cheeked warblers (tract-wide survey)																						X
	point-count golden-cheeked warbler survey	X	X	X	X	X	X	X	X	X			X	X		X	X	X		X			X
	spot-map black-capped vireos																				X		
	presence/absence survey for black-capped vireos											X								X		X	
	karst surface monitoring		X	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					X	X	
Management Activities	deer control																						
	feral hog control																				X		
	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							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				
	Wildfire fuel mitigation				X			X			X										X		

* Re-sighting of banded warblers only

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 to the public, firefighters, and staff is the highest priority for all fire management activities; 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.

In FY17, Natural Resources staff coordinated multiple shaded fuel treatment projects on the following BCP tracts: Lucas, Chandler, Trails End, Steiner Ranch, Tomen 35, Cuevas, Woody Hollow, Wild Basin Preserve, and the Lime Creek Unit. 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. 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 fire adapted communities and to explain BCP fuel mitigation efforts. Staff collaborated with Emergency Service Districts in disseminating information to the public.

Travis County Parks Division staff conducted a 20-acre prescribed burn at Hamilton Pool in February 2017.

Conservation Easement Monitoring

Staff conducted annual conservation easement monitoring at seven properties which are privately owned, but are managed by Travis County through conservation easement agreements. Compliance issues were identified on five conservation easement properties in FY17, but all issues were corrected.

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, dumping, vandalism, theft, vegetation cutting, and unauthorized use of fire.

Law enforcement on all Travis County managed properties, including County Parks and 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 (TCSO). 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 FY17 there were 70 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/vehicular), however eight involved vandalism/criminal mischief (cutting locks and fences, removing or damaging signs, vandalizing an area, shots fired). One case involved a major theft, four involved illegal dumping, one involved an unauthorized fire, four involved illegal clearing, and one involved a significant violation of a conservation easement.

Most of the cases of trespass were documented by surveillance cameras which were operated on various BCP tracts. Two additional cameras were added this year which contributed to the increase in activity observed. The Grandview Hills North/Vista Point area saw such an increase in documented trespass incidents that new gates will be installed at access points to discourage entry. Also, as a

direct result from the cameras, patrol staff was better able to identify, and communicate with law enforcement, the times at which trespassers were entering. Three trespassers were apprehended by law enforcement and patrol staff at the Grandview Hills North tract.

The Grandview Hills North/Vista Point area was also the site of a small, secluded wildfire that spread over 0.7 acres in a low lying area. Law enforcement and fire officials concluded that the ignition source was very likely human caused by an individual unauthorized to be in the area. Luckily, rain put the fire out before it spread further.

The use of cameras at our Cuevas tract was instrumental in determining the visitation of a group of rock climbers who had been frequenting the area. Through the use of cameras, patrol staff was able to identify the nature of the trespass, the time of day and number of individuals accessing and then was able to stop the illegal activity.

Another notable incident that also occurred on our Cuevas tract was an illegal tree harvest that took place near a cave site. Ashe junipers were harvested, most likely for their fence post value, with the remaining slash and debris left lying in and around the area of the cave. The trespassers also drove in a vehicle to haul off material. Law enforcement is investigating the incident.

Several back-of-lot illegal clearing incidents were discovered on the preserve boundary this year. Staff is working with neighbors and law enforcement to rectify these issues.

The Natural Resources field office was the target of a theft in October 2016. A fence was cut to access the tract and an ATV and several other items were stolen. The estimated cost of theft and damages exceeded $16,000. Law enforcement investigated.

Travis County BCP Volunteer and Outreach Programs

Travis County BCP Volunteer Program

In FY17, 228 community volunteers donated their time and energy to help maintain the Travis County Balcones Canyonlands Preserve and provide educational opportunities to the public. 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.

In FY17, volunteers contributed 1,600 hours of labor conducting wildlife surveys, leading guided hikes, controlling invasive species, patrolling BCP boundaries, maintaining trails, and assisting with general land stewardship (Table 13). In addition to benefiting the preserve, the volunteer program also provides a way for people to connect with nature in a meaningful way, and builds a community of people who care about the BCP.

Table 13. FY17 Travis County BCP Volunteer Hours

Activity	Hours
Land stewardship	847
Invasive species control	399
Biological monitoring & surveying	285.25
Administration	45
Education	22
Training	2.25
Total	**1,600.5**



Volunteers from Oracle removing invasive species



Volunteer cleanup at Trails End (photo by Heather Valey)

Volunteer highlights included:

- 50 Oracle employees volunteered for Earth Day, hand-pulling invasive vinca from the BCP's Bunten tract. They helped restore native habitat, learned about the dangers of invasive species, and enjoyed a hike on the preserve afterwards.

- 30 community volunteers came out to help clean up the Trails End tract of the BCP, which was the site of illegal dumping for years before being acquired by the County. The volunteers made the preserve safer for wildlife and more attractive for neighborhood visitors, while also getting to know more about the BCP.

- For National Public Lands Day, the Texas Conservation Corps recruited 24 volunteers to help maintain BCP trails. Trail-maintenance volunteers have also come from local companies FreightPros and NERA Economic Consulting, as well as neighborhoods around the preserve and beyond. These trails not only allow the County to provide public guided hikes, but also aid in land management and species monitoring.

- A group of seven committed volunteers worked 591 hours maintaining and improving the landscaping at Snowden House, including removing invasive plants. Snowden House is used as a starting point for many guided hikes and volunteer projects, and also hosts community presentations and meetings.

Travis County continues to expand its education and outreach program, offering guided hikes throughout the year, providing information about the BCP at community meetings and public events, and offering educational activities and lectures by visiting speakers. Approximately 951 individuals were reached through these efforts (Table 14). In addition, thousands of people enjoy hiking the trails each year at Hamilton Pool Preserve and Wild Basin Preserve, which are open to the public year-round.

A new BCP account on NextDoor.com has allowed County staff to advertise guided hikes and other opportunities directly to BCP neighbors. Communicating through NextDoor builds positive relationships, which can help minimize threats such as wildfire, invasive species, and encroachment. The response has been very positive, and many neighbors have gotten involved with the BCP for the first time, or have taken the opportunity to reconnect. The County also spreads the word about the BCP through Facebook, Instagram and Youtube.

Travis County BCP Education & Outreach Program

Table 14. Travis County BCP Education & Outreach Summary for FY17

Activities	**Events**	**People reached**
Programs/Presentations	16	442
Guided hikes	16	196
Information table at events	5	313
Total	**37**	**951**



Still image from BCP video. Drone footage by volunteer Russell Hughes.

Outreach highlights in FY17 included:

- Travis County produced a short video introducing people to the BCP. It features beautiful drone footage of the preserve and amazing, rare footage of a black-capped vireo baby hatching in its nest. Although it is only 4.5 minutes long, the video has a lot of information about where people can hike, what endangered species the preserve protects, and how the preserve was created through the BCCP. It explains how the BCCP allowed development to continue in western Travis County while preserving the best quality habitat for endangered species. Staff has received very positive feedback from the community, and the video has been viewed 8,600 times on Facebook and shared by 112 people. It has also been viewed 1,900 times on Youtube, bringing the total number of views to over 10,000.

- Participating in community events this year such as Concordia University's NatureFest, Huston-Tillotson University's Earth Day celebration, the annual Lake Travis Cleanup, and National Public Lands Day this, helped County BCP staff reach broader audiences, and build awareness of the BCP.

- County staff gave 11 presentations about the BCP to local Homeowner Associations, community groups, partner organizations, and school classes ranging from elementary to university level, connecting with 322 people.

- The Concordia tract and Wild Basin Preserve serve as living laboratories for Concordia University and St. Edwards University, respectively. Concordia University offers a guided hike to all incoming freshman so they can learn about the BCP and appreciate the natural setting surrounding their campus. Both Concordia and St. Edwards University have some class activities and research projects on the BCP, which are approved through the County's Education and Research Permit process.

LOWER COLORADO RIVER AUTHORITY

Annual Status Report for the Balcones Canyonlands Conservation Plan
October 1st 2016 - September 30th 2017.

Mitigation Credits Used

The Lower Colorado River Authority debited 2,175.77 acres from its mitigation bank balance between October 2016 and September 2017 with the conveyance of the Wheless Preserve property to Travis County. LCRA has 271.23 mitigation credits remaining.

Management Highlights

The Lower Colorado River Authority (LCRA) managed 2,707 acres as a portion of the preserve system until April 27, 2017 when LCRA conveyed the Wheless Preserve property to Travis County by Special Warranty Deed. Management activities for the three LCRA preserves continued to focus on natural resource research and management, access management, and stewardship promotion.

Wheless

- LCRA contracted with Plateau Land and Wildlife Management to conduct remote camera surveys. Plateau provided a comprehensive report to LCRA, detailing White-tailed deer population size, sex ratio, doe to fawn ratio, buck age structure and harvest recommendations.

- LCRA conveyed the Wheless Preserve property to Travis County selling a total of 2,175.77 acres of preserve managed by LCRA.

Westcave

- Westcave Outdoor Discovery Center hosted 18,033 students, teachers and visitors during 2016-2017.
- Dawn Houston (Preserve researcher, FWS permitted biologist) conducted territory mapping surveys on the tract and found two successful territories (see attached report).
- Westcave began participating in the BCP-wide GCWA banding and resighting project. The objective is to provide an accurate estimate of return rates, dispersal and survival for the GCWA. Two males were successfully banded.
- Twelve hogs were trapped/dispatched in cooperation with LCRA, trapping

is currently in operation.

- Research efforts include citizen scientist programs FeederWatch, NestWatch, Dragonfly Pond Watch, University of Texas sponsored cave research, bat monitoring by Texas Parks and Wildlife, Colorado River Watch-water quality monitoring, depth measurements in the grotto pool.
- Westcave staff continues general maintenance of boundaries, trails, non-native plant removal and maintains fire lines.
- Westcave has expanded the original monarch waystation, by adding 2 additional, butterfly-shaped garden beds.
- Westcave has continued to stay engaged with the surrounding community by hosting bi-annual round tables with topics pertinent to the local community, hosting a pollinator workshop, offering spring and fall programs including bird walks, wildflower and grass walks, night hikes and golden-cheeked warbler walks. All programs are led by local biologists who are specialists in their field.

McGregor

- LCRA contracted with Plateau Land and Wildlife Management to conduct remote camera surveys. Plateau provided a comprehensive report to LCRA, detailing White-tailed deer population size, sex ratio, doe to fawn ratio, buck age structure and harvest recommendations.

- LCRA was contacted by Travis County, about a breech found in the perimeter fence at the NE entrance of McGregor Preserve. Inspection revealed that the net wire had been cut and an investigation is being conducted.

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 FY17 is included as Appendix O.

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

Annual surveys (point count) were completed for the golden-cheeked warblers (GCWA) to determine population densities. The GCWA population remains stable, no black-capped vireos (BCVI) were observed on the property during the 2017 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 on the property included “Status of Fall Breeding and Overwintering Monarch Butterflies in Texas” (Oklahoma State University), “KR Bluestem Effects on Grasslands” (The Nature Conservancy / Global Impact Invader Network – GIIN), and “Best Practices for Restoration as Biocontrol for the Invasive KR Bluestem in Central Texas Grasslands“ (Trinity University).

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

Juniper thinning was completed on approximately 53 acres of the preserve as part of an ongoing BCVI restoration project, three acres were treated with chainsaws and the remaining 50 acres with a mulching machine.

In February, four units totaling 21 acres were burned with prescribed fire on the preserve.

Education/Outreach/Volunteers

The preserve hosted approximately 1106 visitors, 286 volunteers totaling 606 hours of work, and 304 used the property for educational purposes. Groups included the Boy Scouts of America, Cub Scouts, Camp Champions of Marble Falls, Texas Parks and Wildlife, Balcones Canyonlands Preserve visitors, Austin Youth River Watch, Rose Hill Christian School, Westlake Hills Presbyterian

Men's Group, Capital Area Master Naturalists, Balcones Master Naturalists, Audubon Society, the University of Texas, and St. Edwards University.

Volunteer projects included removing old fencing, invasive species removal (Johnson grass – *Sorhum 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 2017 was $30,000.

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 FY17 is included as Appendix P.

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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