

Balcones Canyonlands Conservation Plan

2020 Annual Report

(October 1, 2019 – September 30, 2020)

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 V – Research Reports:

1. Houston, Dawn. 2020 Westcave Preserve Golden-cheeked Warbler Report. Westcave Preserve. Prepared for Lower Colorado River Authority. 2020.
2. 4CAVES Institute P.B.C.. Cave Drip Monitoring FY2020 Report. Prepared for City of Austin. 2020
3. Hauwert, N. FM2222 Bypass Study Annual Report Update. City of Austin Wildland Conservation Division. 2020.
4. LeBrun, E., Nash, C., Secula, A., Santillana, A, and Umanzor, E., Williams, K. Tawny Crazy Ant (*Nylanderia fulva*) Study Balcones Canyonlands Preserve- Jollyville Unit. Task 5 – Data analysis and Final Report. Invasive Species Research Group, UT Austin, Brackenridge Field Laboratory. 2019.
5. Strickland, C. Pipeline Cave Map. City of Austin Wildland Conservation Division. 2020.
6. Zara Environmental. 2019 Annual Summary of Carbon Dioxide Monitoring in Two Balcones Canyonlands Conservation Plan Caves, Travis County, Texas. Endeavor Real Estate Group. 2020.
7. Zara Environmental. 2020 Summary of Cave Management Activities at Pennie's Cave, Travis County, Texas. Endeavor Real Estate Group. 2019.
8. Scalise, J. 2020 Tawny Crazy Ant Infestation at Emma Long Metropolitan Park. City of Austin

Wildland Conservation Division. 2020.

9. Hauwert, N., McCaw, M. *Evaluation of Proposed Infiltration Area on William H Russell Karst Preserve*. City of Austin. 2020.
10. O'Donnell, L., Nesvacil, K. *History of Fire Incidents On and Near Balcones Canyonlands Preserve Western Travis County, Texas April 1961-April 2020*. City of Austin Wildland Conservation Division. 2020.
11. Strickland, C. *City of Austin Balcones Canyonlands Preserve Cave Invertebrate Species Trends*. City of Austin Wildland Conservation Division. 2020.
12. Datri, C., Gordon, J., Sprouse, P. *Spring, Cave, and Stygofauna Investigations at Westcave Preserve, Travis County, Texas*. Prepared for Westcave Preserve. 2020.
13. Cord, E. *An Acoustic Device Comparison: Evaluating the use of three types of bat detectors for community science*. Prepared for Travis County. 2020.

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	<i>Vireo atricapilla</i>	Delisted*
Golden-cheeked warbler**	<i>Setophaga chrysoparia</i>	Endangered
Tooth Cave pseudoscorpion	<i>Tartarocreagris texana</i>	Endangered
Tooth Cave spider	<i>Neoleptoneta myopica</i>	Endangered
Bee Creek Cave harvestman	<i>Texella reddeni</i>	Endangered
Bone Cave harvestman	<i>Texella reyesi</i>	Endangered
Tooth Cave ground beetle	<i>Rhadine persephone</i>	Endangered
Kretschmarr Cave mold beetle	<i>Texamaurops reddeni</i>	Endangered
Canyon mock-orange	<i>Philadelphus ernestii</i>	Species of Concern
Texabama croton	<i>Croton alabamensis</i>	Species of Concern
Flatworm	<i>Sphalloplana mohri</i>	Species of Concern
Ostracod	<i>Candona</i> sp. nr. <i>stagnalis</i>	Species of Concern
Isopod	<i>Caecidotea reddeni</i>	Species of Concern
Isopod	<i>Trichoniscinae</i> N.S.	Species of Concern
Isopod	<i>Miktoniscus</i> N.S.	Species of Concern
Spider	<i>Cicurina wartoni</i>	Species of Concern
Spider	<i>Cicurina ellioti</i>	Species of Concern
Spider	<i>Cicurina bandida</i>	Species of Concern
Spider	<i>Cicurina reddeni</i>	Species of Concern
Spider	<i>Cicurina reyesi</i>	Species of Concern
Spider	<i>Cicurina cueva</i>	Species of Concern
Spider	<i>Cicurina travisae</i>	Species of Concern
Spider	<i>Neoleptoneta concinna</i>	Species of Concern
Spider	<i>Neoleptoneta devia</i>	Species of Concern
Spider	<i>Eidmannella reclusa</i>	Species of Concern
Harvestman	<i>Texella spinoperca</i>	Species of Concern
Pseudoscorpion	<i>Aphrastochthonius</i> N.S.	Species of Concern
Pseudoscorpion	<i>Tartarocreagris reddeni</i>	Species of Concern
Pseudoscorpion	<i>Tartarocreagris intermedia</i>	Species of Concern

Pseudoscorpion	<i>Tartarocreagris</i> N.S. 3	Species of Concern
Pseudoscorpian	<i>Tartarocreagris comanche</i>	Species of Concern
Millipede	<i>Speodesmus</i> N.S.	Species of Concern
Ground beetle	<i>Rhadine s. subterranea</i>	Species of Concern
Ground beetle	<i>Rhadine s. mitchelli</i>	Species of Concern
Ground beetle	<i>Rhadine austinica</i>	Species of Concern

*Previously listed as Endangered, the Black-capped vireo was delisted in April 2018

**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 390 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 2020 (FY20), 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 FY20, 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 FY20 by Participating Agency

City of Austin	
<i>Starting City of Austin Balance</i>	11,522.64 acres
<i>New preserve additions (credits) –</i>	38.8
Wastewater Collection System Replacement Lines – Group B – Loc 4 - Barrington	0.8
Bullick Hollow Substation – Control House and Duct Bank	2.7
Slaughter Lane Corridor Improvements	62.9
Bee Creek Substation – Yard Improvements/Bee Creek, LakeShore, Circuit 915	1.4
HV-RP CKT 965 Relay Upgrade River Place Substation	0.2
Highland Park Water & Wastewater Improvements – Phase 1	1.4
William Cannon Dive Corridor Improvements	12.8
Highland Park Water & Wastewater Improvements – Phase 2	1.1
Old Lampasas Dam #3 Modernization Project	4.6
Remaining Mitigation Credits	11,473.54 acres

Travis County	
<i>Starting Travis County Balance</i>	8,575.066 acres
<i>New preserve additions (credits)</i>	98.518
Bullick Hollow Road at RM 2769 Left Turn Lane	0.5
Bullick Hollow Road Bicycle Safety Improvements	1.6
Circle Drive Bike Safety Improvements Project	3.7
Circle Drive Left Turn Lane Project	0.1
Remaining Mitigation Credits	8,667.684 acres
Lower Colorado River Authority (LCRA)	
<i>Starting LCRA Balance</i>	260.13 acres
<i>New preserve additions (credits) –</i>	0
Hamilton Substation TL Relocation	0.1
Remaining Mitigation Credits	260.03 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 FY20, 22 Participation Certificates were issued as follows: two for

subdivisions, one for infrastructure projects, eight for single family residential, two for commercial development, and nine for residential (Table 3).

Funds Collected through Participation Certificates

A total of \$329,475.00 was collected through the sale of Participation Certificates in FY20 (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 - FY20 Projects Mitigated Through the Purchase of Participation Certificates

Application Number	Date	Name	Category	Amount Paid
0926	10/14/2019	12544 Riata Vista LLC (Joseph Llamas)	Commercial	\$10,700.00
0972	11/21/2019	Timothy Jordan Novak	Residential	\$4,125.00
0974	3/5/2020	MQMFM, LLC. (Marshall Ford Marina)	Commercial	\$60,500.00
0984	1/15/2020	Hamad Nasir	Residential	\$9,625.00
0985	2/26/2020	Daniel Morales	Residential	\$6,875.00
0992	2/6/2020	Michael Hill	SF Residential	\$2,000.00
0993	2/24/2020	Steve and Cari Henry	Residential	\$4,950.00
0994	3/10/2020	Ann and Nate Boren	SF Residential	\$2,000.00
0995	3/2/2020	Guy Mehner	SF Residential	\$2,000.00
1002	8/27/2020	Dustin Kiker	SF Residential	\$2,000.00
1004	6/30/2020	HPI Champion Land Investors, LLC	Multi-Family Residential	\$30,800.00
1005	6/30/2020	Hamad Nasir	Residential	\$2,200.00
1006	8/27/2020	Michael and Lisa McClendon	SF Residential	\$2,000.00
1007	6/30/2020	Gray Engineering Inc.	Infrastructure	\$5,500.00
1008	6/10/2020	James Boanerges	Residential	\$79,750.00
1011	8/27/2020	Ashlin Williams	Residential	\$10,450.00
1013	9/24/2020	Timothy and Anne Helle	SF Residential	\$2,000.00
1021	8/27/2020	Kari and Don Roberts	SF Residential	\$2,000.00

1026	9/24/2020	Robert and Diane Witte	SF Residential	\$2,000.00
1027	9/24/2020	Paul Ledet	Residential	\$1,100.00
0721-P	10/8/2019	Travisso, Ltd., Heath Melton	Subdivision	\$79,475.00
776q	9/24/2020	Nash Sweetwater, LLC	Subdivision	\$7,425.00
			Total	\$329,475.00

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 FY20, Travis County's Tax Benefit Financing Plan generated \$19,880,147.00 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 Grands 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 \$19,764,052.61 in FY20 on non-grant land acquisition activities and secured 98.518 acres for inclusion in the BCP. The City of Austin expended \$490,000 in FY20 on non-grant land acquisition activities and secured 38.8 acres for inclusion in the BCP, including a cave. At the end of FY20, the City of Austin owned and managed 13,683.84 acres of land within the BCP and Travis County managed 12,454.573 acres of land within the BCP. For a detailed account of all BCP tracts assembled see Appendices C, D, and E. All City of Austin and Travis County FY20 BCP land acquisitions are shown by tract in Table 5.

Table 5 - Travis County and City of Austin FY20 BCP Land Acquisitions.

Tract Name	Agency	Date Acquired	Acreage	Total Expenditures
SAS	Travis County	11/15/2019	94.307	\$19,615,003.01
Lime Creek Unit: Jeannot	Travis County	9/29/2020	4.211	\$149,049.60
		Total	98.518	\$19,764,052.61
Venturina Biggs/Whirlpool Cave Preserve	City of Austin	2/7/2020	4.7	\$490,000
Carol Lee Preserve	City of Austin	9/18/2020	34.144	\$0
		Total	38.8	\$490,000

Funds Expended for Operations and Maintenance

In FY20, the Permit Holders, LCRA, TNCTX, the Travis Audubon Society (TAS) and the City of Sunset Valley spent \$5,048,894 on operation and maintenance of BCP lands (Table 6).

The City of Austin spent a total of \$2,504,506 for FY20 to fund BCP management expenditures by the Austin Water 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 on program administration and support; (2) operation and maintenance expenditures by Austin Parks and Recreation Department (PARC) operations on BCP-designated parkland; or (3) capital improvement projects related to offices, fencing, and other

facilities/ infrastructure. The aforementioned expenditures cannot be readily determined from their program budgets.

Table 6 - Annual FY18 through FY20 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 2018	FY 2019	FY 2020	Total Budget: 1996 to Present
City of Austin*	\$1,774,183	\$2,184,283	\$2,184,506	Up to FY20 \$24,848,141
Travis County	\$2,492,553	\$6,096,477***	\$2,760,549	Up to FY20 \$27,900,655
LCRA**	\$69,903.00	\$4,564.00	\$5,639	Up to FY20 \$1,822,527
TNCTX	\$10,000	\$10,000	\$10,000	Up to FY20 \$1,110,000
TAS	\$85,000	\$85,000	\$85,000	Up to FY20 \$476,986
City of Sunset Valley	\$2,619.08	\$0	\$3,200	Up to FY20 \$22,061
TOTALS	\$4,434,258.08	\$8,380,324	\$5,048,894	Up to FY20 \$56,180,370

* City of Austin budget includes BCCP Participation funds.

** Does not include expenditures by Westcave Preserve Corporation

*** the larger than usual number for FY19 was a \$3M infusion to fund road repairs

In FY2018 the City of Sunset Valley hired a consultant to survey Gaines Greenbelt, and this cost is reflected as the budget above (Table 6). 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 FY20 was \$3,277,631. 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.

Lands Dedicated to the Balcones Canyonlands Preserve

As of FY20, 32,406 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-two of the 62 karst features which are identified to be protected in the permit have been afforded some level of protection. Eleven 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 2020 Research or Investigative Reports

Research reports for activities that occurred on the BCP are included as Appendices F through S, and V1 through V13. 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 7). PARD operations performs regular maintenance such as mowing, trash pickup, management of public access, 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")	Austin Water (AW)	1166.50
Middle Bull Creek Unit (Kent Butler Ecological Reserve, Beard Trust)	AW	996.71

Lower Bull Creek Unit (Jester, Forest Ridge, 3M, Hilltop, Gibson/Nott, Hiller, Kruger)	AW	1120.98
Lime Creek (incl. 100 acres of Austin-Simon, Ltd.)	AW	586.70
Parke West, Coldwater/Cowfork, Long Canyon, Vaught Ranch	AW	1393.86
Carol Lee	AW	34.14
Cortaña	AW	1751.95
Double J&T	AW	1730.00
Reicher Ranch	AW	819.74
Bohls Ranch	AW	450.14
Bohls II	AW	18.81
Sansom	AW	13.00
Senna Hills	AW	35.00
Schramm Ranch	AW	100.63
Vireo Preserve	AW	214.00
Ullrich Water Treatment Plant	AW	18.00
Barton Creek Ventures	AW	13.62
Massey	AW	5.00
Whirlpool Preserve	AW	4.70
	AW Subtotal	10,473.88
Bull Creek District Park, Bull Creek Greenbelt	PARD/AW	129.48
St. Edward's Park	PARD/AW	50.00
Barrow Preserve	PARD/AW	8.00
Emma Long Metro Park	PARD/AW	950.00
Commons Ford Park	PARD/AW	115.00
Barton Creek Wilderness Area (Barton Creek Venture)	PARD/AW	1075.24
Barton Creek Greenbelt	PARD/AW	814.64
Friesenhahn	PARD/AW	62
Mt. Bonnell	PARD/AW	6
	PARD/AW Dual-Managed Subtotal	3,210.36
	TOTAL ACREAGE	13,683.84

**PARD Operations does not manage for Endangered Species; they perform regular maintenance, i.e. mowing, trash pickup, manage public access, and some trail management activities. AW 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 Reserve	Beard Trust	Kent Butler Ecological Resv	Jester Estates Cave Preserve	Barrow Preserve	Bull Cr. Greenblt.	Forest Ridge	Gibson/Nott	Hillier/Hilltop	Jester	Krueger	St. Edwards Park	3M
Monitoring Activities	mist-net, band, and spot-map golden-cheeked warblers									X		X				X							
	search for banded golden-cheeked warblers	X							X	X		X				X	X	X	X	X	X	X	
	mist-net, band, and spot-map black-capped vireos											X				X							
	karst monitoring (faunal surveys, cricket counts, karst feature searches)			X								X	X			X							
	spring/stream monitoring (including Jollyville Plateau Salamanders)											X											
	bracted twistflower monitoring																						
	canyon mock-orange monitoring																						
	vegetation monitoring								X														
	fuel moisture sampling of junipers																						
	deer & hog trap photo monitoring		X		X			X		X	X	X	X								X		X
monitoring of oak wilt		X					X																
Management Activities	deer control		X		X				X	X											X		
	feral hog control		X		X			X		X	X	X	X								X		X
	red imported fire ant control												X										
	habitat restoration (native plants & karst)			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
	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	X	X
	inspect utility corridor maintenance		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

		Barton Creek macrosite					Cypress Creek		North Lake Austin macrosite							South Lake macrosite					West Austin macrosite		
Monitoring and Management Activities on the Canyonlands Preserve (City of Austin tracts)		Barton Creek Wilderness	Barton Creek Greenbelt	Bohls II	Friesenhahn	Senna Hills	Austin-Simon	Lime Creek	Carol Lee	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				X
	mist-net, band, and spot-map black-capped vireos	X									X					X							X
	karst monitoring (faunal surveys, cricket counts, karst feature searches)	X	X					X			X				X								
	spring/stream monitoring (including Jollyville Plateau Salamanders)										X					X		X					
	bracted twistflower monitoring	X	X																		X	X	X
	canyon mock-orange monitoring																						
	vegetation monitoring										X						X	X	X				X
	fuel moisture sampling of junipers										X								X				
	deer & feral hog trap photo monitoring															X		X	X				
	monitoring of oak wilt	X			X			X			X		X					X	X				
Management Activities	deer control															X		X					
	feral hog control																	X					
	red imported fire ant control							X							X								
	habitat restoration (native plants, karst)										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
	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
	inspect utility corridor maintenance	X									X				X							X	X

Table 10 - City of Austin Monitoring and Management Activities on Karst Preserves

Monitoring and Management Activities on the Balcones Canyonlands Preserve (City of Austin tracts)		Karst Preserves											
		Village at Western Oaks Karst Preserve	William H Russell Karst Preserve	Goat Cave Karst Preserve	Dick Nichols Park	Testudo Tube Cave Karst Preserve	Circle C Metro Park	Tabor tract (WQPL)	Stillhouse Hollow Preserve	Schroeter Park	Shoal Creek Greenbelt	Massey Tract	Whirlpool Preserve
Monitoring Activities	mist-net, band, and spot-map golden-cheeked warblers												
	search for banded golden-cheeked warblers												
	mist-net, band, and spot-map black-capped vireos												
	karst monitoring (faunal surveys, cricket counts, karst feature searches)	X	X	X	X	X	X	X					
	spring/stream monitoring (including Jollyville Plateau Salamanders)												
	bracted twistflower monitoring												
	canyon mock-orange monitoring												
	vegetation monitoring	X											
	fuel moisture sampling of junipers												
	deer & hog trap photo monitoring												
	monitoring of oak wilt		X	X									
Management Activities	deer control												
	feral hog control												
	red imported fire ant control												
	habitat restoration (native plants & karst)	X					X						
	non-native plant control	X											
	trash removal	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	
	maintenance of roads, fences, signs	X	X	X		X	X		X				
	inspect utility corridor maintenance												

In addition to the activities in the tables above, BCP staff conducted or coordinated the following activities within each macrosite. Activities specific to golden-cheeked warbler, black capped vireo, and karst invertebrates are covered in separate species reports.

BARTON CREEK MACROSITE

Barton Creek Wilderness Area and Greenbelt, and the Friesenhahn tract

- Found 460 Bracted Twistflower (*Streptanthus bracteatus*) plants during 2 surveys, April 27th and May 6th.
- BCP staff found a bicycle jump constructed of cut juniper staves in the head of a tributary canyon to Barton Creek near Moonshadow Drive, March. Reported to Parks & Recreation Dept. staff, who dismantled it. Found it had been reconstructed in April, but PARD staff later found it removed, after BCP staff member who reported it was harassed by a mountain-biker who used it.
- Continued negotiations in January with Austin Energy and Austin Fire Dept. over AE plans to remove tree canopy along powerlines, potentially reducing efficacy of existing AFD shaded fuel breaks. Some compromise reached, but most AE work allowed; AFD will plan to upgrade fuel break to compensate.

Senna Hills

- Inspected trees pruned without notice by Texas Dept. of Transportation contractor along FM 2244, February. Dressed one scraped oak limb to prevent oak wilt.

BULL CREEK MACROSITE

Upper Bull Creek Unit

Canyon Creek MUD (Stovepipe cave karst preserve)

As part of a hydrological study, staff and contractors continued to excavate several promising features. Work on one of the features was temporarily halted due to the fact that archeological deposits were discovered, staff are working with the Texas Historical Commission to determine how to proceed.

Sam Hamilton Memorial Reserve West

- BCP staff worked met with Austin Fire Department staff to investigate and determine how to mitigate for illegal clearing that occurred on the adjacent Austin Fire Station.

Lower Bull Creek Unit

Forest Ridge/ Jester

- Prepared and presented hikes for those requesting a permit to hike through the Bull Creek Preserve during Golden-cheeked Warbler breeding season.

- Staff and volunteers conducted one workday to repair trail erosion problems due to the recent waterline work.

Bull Creek Greenbelt

- Coordinated with AFD who completed survey of a PARD property for Bracted Twistflowers.

CYPRESS CREEK MACROSITE

Lime Creek/Austin Simon

- Several shin oak seedlings observed in Black-capped Vireo habitat creation area, where acorns had been planted in previous years.

NORTH LAKE AUSTIN MACROSITE

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

- Completed about 200ft of fencing along Western boundary, and added new gate along 2222 near the North West corner of the tract.
- American Youth Works' Texas Conservation Corps were contracted for 5 days of *Ligustrum sinense* removal, followed up by staff and volunteer efforts to seed the cleared areas with natives and to chip the pulled material to be used in restoration efforts.
- Staff coordinated with PEC for emergency pole replacement which required vegetation removal for access.
- Rangers reported a pipe coming onto and draining into Long Canyon from neighboring residence. Staff worked with Austin Watershed Protection's Spill Response Team to inspect the pipe and have the pipe removed from City property.
- Worked with Outreach staff to record a version of the Long Canyon guided hike to be presented virtually in light of Covid-19 restrictions.

Cortaña

- A contractor completed construction of a game fence from the end of Sun Tree Cove west to the bottom of Panther Hollow in February. The primary purpose of the fence is to reduce trespass originating from the River Place Nature Trail.
- A Texas Conservation Corps crew removed brush and dead material from the shaded fuel break between Sun Tree Cove and Pelican Point in late February and early March.
- An LCRA crew trimmed encroaching trees from roads used for access from Portofino Drive to the southern part of the tract, December and January. The trimming greatly expanded the width of the road corridor but was necessary for utility truck emergency access now that original access point from Big View Drive is no longer available.

- Extremely poor crop of shin oak acorns in the shinnery provided only 101 for planting in the mid-Cortaña Black-capped Vireo habitat creation area.
- Inspection of one of the two 2019 mid-Cortaña acorn-planting sites revealed a germination rate greater than 75%.
- Monitored *Quercus buckleyi*, *Q. fusiformis*, and *Q. sinuata* seedling plots (acorns planted October 2018) monthly from July-October.

Emma Long Park and Preserve

- AW BCP and PARD staff continued periodic meetings to discuss conservation issues at Emma Long.
- Reports of Tawny Crazy Ants at Emma Long Park were confirmed by Ed Lebrun, and partially mapped by staff. Staff have worked to provide language and educational materials for PARD for public education around reducing the spread and impacts of Tawny Crazy Ants. Staff also led a training for PARD rangers on identifying and documenting Tawny Crazy Ants.
- Reviewed and provided comments for Vegetation Work Plans for roadside vegetation maintenance along City Park Road and Pearce Road.
- Conducted searches for the rare orchid, Large-flower/Giant Crested Coralroot (*Hexalectris grandiflora*) but did not find any blooming.
- Installed an oak wilt suppression trench to a depth of 60”.

Carol Lee Preserve

- AW BCP accepted the Carol Lee Preserve, a 34.14 acre tract of land Southeast of the intersection of FM 2222 and City Park Road. This tract is occupied Golden-cheeked Warbler habitat.

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).

JJ&T

- Monitored *Quercus buckleyi*, *Q. fusiformis*, and *Q. sinuata* seedling plots (acorns planted October 2018) monthly from July-September.

- Shaded fuel break completed along urban interface with Apache Shores neighborhood.
- Fence installation along both boundaries along Murfin Road.
- Installation of a nursery at rainwater catchment pole barn, complete with a fence to prevent WTD herbivory. This nursery will serve as propagation and staging area for native plants to be used for the bioswale project.
- Van Dyck Earthworks & Design installed approx. 0.5 miles of bioswales (berms and swales on contour to capture, sink, and spread water). Beau Brotherton filmed the site (camera, drone) prior to installation. Small groups of staff and volunteers began seeding and planting in November.

Reicher Ranch

- 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.
- Monitored decomposition of *Ligustrum lucidum* logs inoculated with Turkey Tail mushrooms (February 2019) in February and August. Repeated at two other sites (Vireo Preserve, Lost Creek).
- Monitored *Quercus buckleyi*, *Q. fusiformis*, and *Q. sinuata* seedling plots (acorns planted October-November 2019) on Mount Tabor and Birthday Mountain monthly from July-September.
- Monitored *Q. buckleyi* seedling plots (acorns planted November 2019) near trail below Emmaus in April and monthly from July-September. Seedling survival in the closed canopy forest was very high with low mortality -- of the 336 acorns planted, 242 seedlings (72%) were alive in September, and 22 (7%) were dead.
- Conducted experiment in Reicher greenhouse comparing emergence and growth of four species of plants (sideoats grama, little bluestem, prairie verbena, tomatoes; planted 6 March 2020) in potting soil and soil collected from under Ashe junipers. Results appear to be comparable for both soil media.
- Worked with Texas State University student and faculty to collect (October, November) and plant (15 November) 480 *Quercus buckleyi* acorns, in forest below Emmaus and Reicher circle, for a research project. This was a very poor production year for all species of oaks, especially *Q. fusiformis* and *Q. sinuata*, and very challenging to collect enough *Q. buckleyi* acorns for this project.

WEST AUSTIN MACROSITE

Mount Bonnell

- Found 48 Bracted Twistflower (*Streptanthus bracteatus*) plants during a half-day census on April 16th.

- Staff met with PARD representative to relay concerns of social trail use through Bracted Twistflower habitat and to brainstorm methods for reducing use of social trails, including increased fencing and signage.

Ullrich WTP

- Found 86 Bracted Twistflower (*Streptanthus bracteatus*) plants during a half-day census on April 23rd.

Vireo Preserve

- Planted an approx. 100 more trees and shrubs on and near the bioswale project. Beau Brotherton produced a short video of the bioswale project in March (<https://www.youtube.com/watch?v=jK6Jwv5cJ8U>), and took additional footage in fall 2020 for a “one year later” addition to the video.
- Completed a 3,000-gallon rainwater collection system in March to water trees in and around the bioswale area (“Coyote Ridge”).
- CAMN 2020 class set up and monitored five Texas Parks and Wildlife Dept. game cameras from February-December.
- Sacred Journey school hosted a virtual herbal class in April.
- Monitored decomposition of *Ligustrum lucidum* logs inoculated with Turkey Tail mushrooms (February 2019) in February and August. Repeated at two other sites (Reicher, Lost Creek).
- Surveyed Bracted Twistflowers on April 28, no plants found.
- Monitored *Quercus buckleyi* seedling plots (planted fall 2018) in April and monthly from June-September.
- Installed a weather station in October.
- Collected *Rhus virens* seeds from October-December to plant at JJ&T restoration sites. Bumper crop for this plant, which hasn’t been observed since 2010. In contrast, very few acorns produced this year for all species of oaks.
- Small groups of staff and volunteers continued habitat restoration efforts, following strict measures to prevent the spread of COVID-19.

FY 2020 BCP Partners Outreach

Each quarter, BCP partners with outreach programs meet to coordinate efforts and produce a summary report for the Coordinating Committee that includes the number of people reached and the number of volunteer hours completed, as well as highlights from that time period. An annual summary is provided in the final report of the year, and is included below as Table 11. The partners included in this report are Travis County, City of Austin, Travis Audubon (Baker Sanctuary), The Nature Conservancy (Barton

Creek Habitat Preserve), Westcave Preserve, and St. Edward's University (Wild Basin Wilderness Preserve).

Table 11 - Summary of FY20 BCP Outreach and Education Activities

Activity	Location	Events	Youth	Adults	Volunteer Hours
Guided Hikes	Onsite	627	1,731	5,864	558
Programs / Presentations	Onsite	83	1,683	595	81
	Offsite	34	1,311	2,625	394
Land Stewardship	Onsite	308	147	852	3,845.75
Ecological Monitoring	Onsite	206	6	280	860.5
	Offsite	15		13	382
Visiting Groups / Educators	Onsite	65	61	884	71
Campouts	Onsite	5	94	50	
Training	Onsite	11	1	142	247
FY 2020 Total		1,354	5,034	11,305	6,439.25

* Monetary value of volunteer work (\$25.10/hour): \$161,625.18.

TRAVIS COUNTY

Travis County Natural Resources staff conducted a variety of resource monitoring and management activities on County-managed BCP lands in FY20, which are summarized in Tables 12, 13, and 14. The wildlife and plant management activities are described in more detail in Appendices I through N, and U4, U12, and U13. Additionally, the annual reports for Wild Basin Wilderness Preserve and the Baker Sanctuary can be found in Appendices O and Q, respectively. 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. Travis Audubon Society owns and manages the 715-acre Baker Sanctuary as part of the BCP, with Travis County holding a conservation easement over 675 acres of the sanctuary.

Natural Resources Staff changes that occurred in FY20 include:

- Audrey Gray was hired as a Maintenance Worker Senior in January 2020.

- Amanda Wood was hired as an Environmental Specialist in February 2020.
- Nancy Sandoval was hired as a Natural Resources Tech in February 2020.
- Jeremy Hull was hired as a Volunteer Coordinator in March 2020.
- Kaitlin Lopez, Rebecca Woodward, and Bianca Perez worked as temporary Natural Resources Techs during the Spring and Summer of 2020.
- Grants and Contract Administrator, Holly Kreiner, resigned in June 2020.

Travis County Maintenance Activities

Travis County completed new boundary fence construction on portions of the Starks North Mines tract and the Cuevas tract. A cleanup of dumped materials on the Cuevas tract was completed prior to the fence being installed. Several fence repairs were made along the Lime Creek Ranch tract.

County Road & Bridge staff striped the parking lot at Wild Basin Preserve.

Two large demolition and cleanup projects were completed which removed buildings and debris left over from previous owners. On the Nootsie tract, a house and outbuildings were removed. A collapsing old barn was partially demolished leaving the stone walls, which have historic significance, intact. On the Blackmore tract, several structures, an old car, and lots of trash were removed.

Several habitat management projects were completed in FY20. Travis County Natural Resources and Parks staff conducted three prescribed burns on Travis County BCP tracts. A 15-acre prescribed burn was conducted in February 2020 on the Kotrla Unit to enhance black-capped vireo habitat. A 20-acre burn was conducted at Hamilton Pool Preserve in July 2020 to maintain a prairie area. In September 2020, a 2-acre area on the Nootsie tract that was dominated by King Ranch bluestem, an invasive grass, was burned. Native grass and forb seeds were planted after the burn to restore it to a more natural prairie.

Several mechanical and hand-clearing black-capped vireo habitat enhancement projects were conducted in FY20. Twelve acres of existing overgrown vireo habitat on the Kotrla Unit and Vireo Ridge tract were cut back to improve habitat conditions. On the Kotrla Unit, 5.5 acres of new habitat was manipulated to encourage use by vireos.

In January 2020, trees were planted on the Canyon Vista tract in an area of the BCP where a neighbor had previously cleared behind his lot.

On November 24th, Austin Water had a pump failure at a lift station adjacent to the BCP resulting in an accidental wastewater discharge. About 46,000 gallons of wastewater flowed onto the Cuevas tract before the pump could be repaired. BCP staff monitored the situation. No recovery of the water was possible but, fortunately, environmental damage was minimal.

Travis County Infrastructure Corridor Activities

In FY20, LCRA, Pedernales Electric Cooperative (PEC), and Austin Energy coordinated with Natural Resources staff to conduct routine inspections and/or vegetation trimming along utility lines that transect Travis County BCP tracts. This work was done during the winter to avoid the warbler and vireo nesting season.

Table 12 - FY20 monitoring and management activities on Travis County-managed BCP tracts within the Bull Creek and North Lake Austin Macrosites.

Monitoring and management activities on Travis County-managed BCP tracts		Bull Creek Macrosite								North Lake Austin Macrosite							
		Canyon Vista	Colina Vista	Concordia	Karnik/ Richards/ Wendland	Origer	Ribelin	Sam Hamilton East	Woody Hollow	Franzetti/ Webb	Gray Mountain/ Coldwater	Greenshores	Hereford/ Lemens	Hunt, Brown, Martin, and Ross Conservation	Steiner Ranch	Woods of Greenshores	
Monitoring Activities	spot-map golden-cheeked warblers (intensive plots)							X*									
	spot-map golden-cheeked warblers (tract-wide survey)	X*															
	spot-map black-capped vireos						X								X		
	presence/absence survey for black-capped vireos			X			X	X							X		
	karst surface monitoring																
	karst faunal surveys																
	cave cricket exit counts																
	Jollyville plateau salamander surveys						X	X									
	Water quality						X	X									
	deer surveys																
Management Activities	deer control									X							
	feral hog control	X		X			X	X									
	cowbird control																
	red imported fire ant control																
	non-native plant control	X	X	X		X	X	X		X		X			X	X	
	black-capped vireo habitat restoration																
	trash removal																
	patrol for evidence of trespass, vandalism, and dumping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	fence maintenance or construction																
	Wildfire fuel mitigation	X								X					X		

* Re-sighting of banded warblers only

Table 13 - FY20 Monitoring and Management Activities on Tracts Managed by Travis County within the Cypress Creek Macrosite.

Monitoring and management activities on Travis County-managed BCP tracts		Buntin	Collins/ Franklin	Cuevas East	Cuevas/ TSNL/	Crossings	Grandview Hills	Grandview Hills	King/ Atwood/	Lake Perspectives	Lime Creek Unit	Lucas/ Lake Travis	New Life	Nootsie	Romberg	SAS	Snowden	Spezia	Toops	Trails End/ Seven	Wheless	Vireo Ridge/	Vista Point	Volente Unit
Monitoring Activities	spot-map golden-cheeked warblers (intensive plots)	X*	X														X*				X		X	
	spot-map golden-cheeked warblers (tract-wide survey)								X	X		X						X						
	spot-map black-capped vireos											X										X	X	
	presence/absence survey for black-capped vireos											X										X	X	X
	karst surface monitoring			X	X		X					X											X	
	karst faunal surveys			X	X		X					X											X	
	cave cricket exit counts			X	X							X												
	Jollyville Plateau salamander surveys																							
	water quality																						X	
	deer surveys	X					X							X			X					X	X	
Management Activities	deer control																X					X		X
	feral hog control																							
	cowbird control													X										
	red imported fire ant control			X	X																			
	non-native plant control	X	X				X	X	X		X	X	X				X			X	X	X	X	
	black-capped vireo habitat restoration																					X		
	trash removal				X						X	X		X						X				
	patrol for evidence of trespass,	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X

[illegible]

* Re-sighting of banded warblers only

Table 14 - FY20 monitoring and management activities on Travis County-managed BCP tracts within the South Lake Austin, Pedernales River, West Austin, Big Sandy Creek Macrosites and Cave Tracts.

Monitoring and management activities on Travis County-managed BCP tracts		South Lake Austin		Pedernales River	West Austin	Big Sandy	Cave Tracts		
		Chandler	Medway	Hamilton Pool/ Martin	Wild Basin	Kotria Unit	Irelands Cave	McNeil	Starks North Mine/ Twidwell
Monitoring Activities	spot-map golden-cheeked warblers (intensive plots)				X				
	spot-map golden-cheeked warblers (tract-wide survey)								
	spot-map black-capped vireos					X			
	presence/absence survey for black-capped vireos				X	X			
	karst surface monitoring					X	X	X	X
	karst faunal surveys					X	X	X	X
	cave cricket exit counts					X		X	X
	Jollyville plateau salamander surveys			X					
	Water quality				X				
	deer surveys			X		X			
Management Activities	deer control					X			
	feral hog control					X			
	cowbird control								
	red imported fire ant control								
	non-native plant control	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
	fence maintenance or construction								X
	Wildfire fuel mitigation								

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 the safety to the public, firefighters, and staff is the highest priority for all fire management activities; 2) reducing potential impacts to the wildland-urban interface (WUI) from wildfires; and 3) meeting its obligations to protect endangered species habitat.

Fuel mitigation efforts on County-managed BCP lands have focused on the WUI, where preserve tracts abut development, roads, and utility lines. Land management practices within the WUI, such as the creation of shaded fuel breaks, are designed to reduce the likelihood of accidental ignition and to minimize the risk of surface fires spreading into the forest crown. Treated areas become fire adapted, thereby minimizing risk to habitat and adjacent structures.

In FY20, Natural Resources staff coordinated shaded fuel treatment projects on the following BCP tracts: Canyon Vista, Collins, Lime Creek Unit, Romberg, Steiner Ranch, Toops, Volente, Webb, and Wheless. Lake Travis Fire & Rescue (ESD 6) and Texas Conservation Corps were contracted to perform most of the work. Austin Fire Department Wildfire Division conducted a treatment on the Webb 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 fire adapted communities and to explain BCP fuel mitigation efforts. Staff collaborated with Emergency Service Districts in disseminating information to the public.

Travis County Conservation Easement Monitoring

Staff conducted annual conservation easement monitoring reviews at 15 properties which are privately owned but are managed as part of the BCP by Travis County through conservation easement agreements. There were significant compliance issues this year, primarily tree cutting, on the Steiner Ranch and Woods of Greenshores conservation easements. Most issues were resolved but some still require a resolution.

On the Greenshores conservation easement, an underground wastewater line construction project was completed and all BCP requirements were met.

Travis County Law Enforcement and Preserve Patrol

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. The Park Police and 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 October 2019, the Travis County Commissioners' Court approved a Conservation Lands Damage Recovery Order which provides a means of collecting and receiving monetary reparations for damages to County BCP or Park lands. This order has proven useful this year as the number of damage cases, primarily tree cutting but also encroachment and dumping, have increased. Fifteen cases of tree cutting were documented within Travis County BCP tracts. In most cases, these were neighbors cutting vegetation on the BCP behind their lots to enhance their view or in a misguided attempt at fuel reduction. Monetary reparations were collected in seven of these cases, six cases are still open, and two cases were minor and were resolved without requiring reparations. There were two encroachment cases, one of which is still open and one which was resolved by having the material (bike ramps) removed. One dumping case is still open.

The Coronavirus disease (COVID-19) pandemic and related government mandated shut-downs altered normal patrol activities. During the COVID-19 pandemic shutdown between March 25 and April 24, 2020, Natural Resources staff duties shifted to either teleworking or performing essential duties. Patrolling was an essential duty and several staff members shifted to patrol activities during that period, significantly increasing patrol efforts. Patrolling during this period was important because trespassing, tree cutting, and criminal mischief on the BCP increased while more of the public was homebound.

As in previous years, remote surveillance cameras were implemented by patrol staff to better monitor illegal activity. An average of four cameras were posted at

any given time. A wireless cellular camera system was set up this year that allowed staff to see images in real time, enabling them to potentially intercept trespassers. Images of over 100 different individuals trespassing on the BCP were taken throughout the year.

While patrol staff handled the majority of illegal activity cases independently, Park Police were requested to assist on 13 occasions in FY20. One of these situations resulted in a written Criminal Trespass Warning issued to an individual trespassing and violating public nudity laws on the Wheless tract. Several other individuals trespassing on the Wheless tract were issued verbal warnings by law enforcement. Two incidents at the Trails End tract involved law enforcement issuing verbal warnings to two individuals with prior criminal records. In addition, Park Police escorted Natural Resources staff onto private property at Steiner Ranch on several occasions to inform residents that illegal removal of vegetation had occurred behind their residences and that they would soon be receiving a Notice of Violation in the mail.

Texas Search and Rescue, a non-profit first responder organization who deploy statewide to help law enforcement and emergency agencies, conducted two training events on the Nootsie tract to improve their field skills.

Travis County BCP Volunteer Program

In FY20, 65 volunteers donated their time and energy to help maintain the Travis County BCP and provide nature education to the community. Volunteers are an integral part of the BCP team, extending the County's capacity while also increasing awareness of the BCP and BCCP. The volunteers' commitment, energy, and expertise strengthen the BCCP program and broaden the County's impact.

COVID-19 caused significant disruptions to the volunteer program during FY20. From March through September, only essential volunteer activities were conducted, such as watering plants at educational gardens and patrolling. Despite this, volunteers contributed 516.5 hours of labor in FY20 conducting wildlife surveys, co-leading guided hikes, controlling invasive species, patrolling the BCP, and photographing wildlife (Table 16). 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 15 - FY20 Travis County BCP Volunteer Hours

Activity	Hours
Land stewardship	368
Patrol	41
Biological monitoring & surveying	10
Education	97.5
Total	516.5
Land stewardship	368



Volunteer highlights included:

- The County's BCP outreach team doubled in size in March when volunteer coordinator Jeremy Hull joined the staff. He has been instrumental in developing new volunteer opportunities and community relationships.
- A small group of committed volunteers worked more than 310 hours maintaining and improving the native-plant gardens at Snowden House, including removing invasive plants (pictured above left). Snowden House is used as a starting point for many guided hikes and volunteer projects, and also hosts community presentations and meetings.

- Virtual meetings for our committed long-term Snowden volunteers (pictured above right) were a great success when volunteer activities were suspended due to COVID-19.

Travis County BCP Education & Outreach Program

Like the volunteer program, the education and outreach program was significantly impacted by COVID-19 in FY20. Guided hikes, community presentations, and lectures by visiting speakers were held in early FY20 but were suspended in mid-March. At that point, outreach staff shifted their focus online, adapting the Wild Neighbors Speaker Series into a monthly webinar, and increasing communications through social media.

Table 16 - Travis County BCP Education & Outreach Summary for FY20

Activities	Events	People reached
Programs/Presentations	11	402
Guided hikes	13	134
Information table at events	3	153
Visiting Groups	5	94
Total	32	783



Outreach highlights in FY20 included:

- Travis County and the City of Austin took the Wild Neighbors speaker series to the web this year due to COVID-19. The monthly Wild Neighbors series features presentations about Central Texas wildlife and how individuals can help their wild neighbors thrive. The first online edition of the Wild Neighbors speaker series featured Erin Cord of Bat Conservation International.
- County BCP staff led 13 guided hikes in early FY20, including one with the local chapter of Outdoor Afro (pictured above) on the BCP tract at Concordia University Texas. The hike was led by Concordia's Director of Environmental Stewardship Zach Stark and Travis County Natural Resources Community Liaison Johanna Arendt.
- The Native Plant Society taught its second day-long workshop at Snowden House about landscaping with native plants to support birds, which was attended by 29 people from around the state. The workshop included guided tours of the native plant gardens and nearby trails.

LOWER COLORADO RIVER AUTHORITY

Annual Status Report for the Balcones Canyonlands Conservation Plan
October 1st, 2019 - September 30th, 2020.

Mitigation Credits Used

The Lower Colorado River Authority (LCRA) debited 0.1 acres from its mitigation bank balance between October 1, 2019 and September 30, 2020. LCRA has 260.03 mitigation credits remaining.

Management Highlights

LCRA managed approximately 400 acres as a portion of the preserve system. Management activities for these LCRA preserves continued to focus on natural resource research and management, access management, and stewardship promotion.

McGregor

- On February 25, 2020, Pedernales Electric Cooperative (PEC) Contractors installed the junction pole (“new pole”) necessary for the reroute from the McGregor Tract over Lake Perspectives Preserve as part of PEC’s Bullick Hollow Project. Work associated with removal of “existing pole” on the McGregor Preserve and removal of leftover concrete from the installation of the new pole was started after the breeding season for the federally endangered golden-cheeked warbler. Concrete removal occurred in September 2020 and the old pole is expected to be fully removed by late October 2020.
- In mid-September, new and updated signage was installed at the preserve.

Westcave

- Texas County Parks and other agencies conducted a prescribed burn of the prairie restoration area (10 acres) on October 2, 2019. In addition, there was ongoing prairie restoration, which included seed harvesting by volunteers and staff/interns off and onsite to help establish two, 100-meter native seed plots. The plots are intended for intensive seed reservoirs for reestablishment of native grasses and forbs. General maintenance is ongoing and includes trail inspections, trail work, tree trimming, bird blind maintenance and supplemental watering for butterfly gardens.

- The official grand opening of Leif's Bird Blind occurred on November 2, 2019. There were five (5) volunteer workdays and thirty-eight (38) volunteers, who worked on the new bird blind, and helped with planting nectar plants and grasses in Ahrns Grove, weeding, trimming, gate building, mulching, weed whacking, cutting invasive species on the prairie, and establishing seed nodes on the prairie.
- Fall 2019 programming included a native grass hike (8 attendees), multiple bird hikes (31 total attendees), birds and brew program (30 attendees), and a roundtable social which included a horned lizard presentation (27 attendees).
- Volunteer workdays were held in early 2020, which included local schools. Students worked on removing non-native plants and weeded gardens. Adults also volunteered to weed, mulch and plant the Ahrns Grove.
- In early 2020, Westcave held its first Heinz Branch Watershed meeting of landowners within the shared watershed. Board Members from all three groundwater conservation districts in Hays, Travis and Blanco counties attended. The watershed spans portions of these three counties.
- Westcave participated in Audubon's Great Backyard Bird Count on February 13, 2020.
- Westcave completed Phase One of its Texas Parks and Wildlife Department (TPWD) grant funded decomposed granite trail project in late Spring 2020. Phase One included completion of the segment from the Ahrns Grove to Leif's bird blind. Construction on Phase Two, which will improve the trail to the historic home site, will be scheduled for completion in either 2021 or 2022.
- In late summer 2020, staff built an extension of an existing trail (ADA-friendly) with money from a TPWD trails recreation grant. The trail is now ADA-friendly from the public parking lot to Leif's Bird Blind.
- David Todd, with Texas Legacy, filmed video footage of the grotto as part of a series of interviews conducted with former Westcave staff members.
- Four bat houses donated by Merlin Tuttle Bat Conservation and Fly by Night Inc. were installed. One of the houses will accommodate 1,000 bats and is the first of its kind in Texas.
- Preserve maintenance is on-going and includes trail inspections, trail work, view shed clearing, painting chimney swift tower, move purple martin house, nest box maintenance, tree trimming, bird blind maintenance and supplemental watering for butterfly gardens.

- The Uplands part of the preserve was re-opened to the public on September 9, 2020, after being closed since mid-March 2020 due to COVID-19.
- Research programs were interrupted in mid-March 2020 due to COVID -19, except for golden-cheeked warbler surveys, water quality testing, and dung beetle research. Research programs throughout the year consisted of:
 - o FeederWatch (Cornell Lab of Ornithology Citizen Scientist program), which started in November 2019 and will end in April 2020. This includes bi-weekly monitoring by volunteers and staff of birds on the feeders at Leif's Bird Blind.
 - o Pond Watch (Xerxes Society Citizen Scientist program), which consists of monthly dragonfly surveys conducted by a core group of volunteers. During the monthly surveys, variegated meadow hawk (target migratory species) and roseate skimmer (not a target species) were observed.
 - o Monthly water quality sample testing was conducted at the grotto and at Hammetts crossing were submitted to LCRA Colorado River Watch Network (CRWN) and all results were within normal ranges.
 - o Seasonal dung beetle research continues by Texas State University PhD candidate, Andy Pinon and current Westcave conservation interns.
 - o Grotto water flow monitoring was conducted by City of Austin (COA) biologists. They measured and trained staff on flow rate measurements. Staff and interns measured the waterfall height from the edge to the surface of the pool and found that the average height is 37 feet.
 - o Golden-cheeked warbler surveys began in March and continued throughout April and May. Three territories were detected and two of the three were confirmed as successful for breeding and nesting.
 - o Nestwatch (Cornell Lab of Ornithology) began in March and about four nest boxes had nests.
 - o Westcave participating in The Cornell Lab Global Big Day on May 9, 2020. Twenty-six (26) avian species were observed.
 - o The Texas Water Development Board's Groundwater Monitoring Team collected water samples from the spring above the grotto to access geochemistry. Flow rates were also measured.
 - o Cave/spring research was conducted by Peter Sprouse, Jessica Gordon, and Crystal Datri. All the springs within the canyon were

mapped and, in the process of mapping, four new caves were discovered. Synopsis of the research is to “conduct a systematic search effort to identify, characterize, and map spring orifices and karst features.” Spring areas were assessed for fauna via visual searches of surface and subsurface habitat, grab sampling, and trapping (mop heads, drift nets, and bottle traps as appropriate).

Expenditures

LCRA expenditures (10/1/2019 to 9/30/2020): \$5,639.00*

*Does not include expenditures by Westcave Preserve Corporation

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 FY20 is included as Appendix P.

THE NATURE CONSERVANCY OF TEXAS ANNUAL REPORT FOR BARTON CREEK HABITAT PRESERVE

Science / Stewardship

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 2020 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. Eleven deer were harvested by 35 hunters.

Ongoing research projects included “KR Bluestem Effects on Grasslands” (The Nature Conservancy / Global Impact Invader Network – GIIN; and “Golden-cheeked Warbler Population Viability and Habitat Suitability within the Balcones Canyonlands Preserve” (City of Austin and Balcones Canyonlands Preserve).

Several ongoing research project that were scheduled over the past year had to be cancelled due to Covid-19 related issues.

Water flow data was collected on Barton Creek and water was sampled for chemistry data in two preserve wells by the Barton Springs/Edwards Aquifer Conservation District. Information collected is being used in a Western Travis County groundwater study.

Due to Covid-19, timing issues, and burn bans, no prescribed fires were conducted during the reporting period.

Education/Outreach/Volunteers

The preserve hosted approximately 559 visitors, 84 volunteers totaling 265 hours of work, and 69 used the property for educational purposes. Groups included the Boy Scouts of America Troops 52 and 70, Girl Scout Troop 44200 (Marble Falls), Cub Scouts, St. Michael's Catholic School Academy, Texas Parks and Wildlife, Capital Area Master Naturalists, Balcones Master Naturalists, Audubon Society, and St. Edwards University.

Volunteer projects included removing old fencing, invasive species removal (Johnson grass – *Sorghum halepense*, Malta star-thistle – *Centaurea melitensis*, Chinaberry Tree – *Melia azedarach*, and *Ligustrum sp.*), trash pickup, trail maintenance, fire-line preparation, juniper removal, deer surveys, bird surveys, boundary monitoring, and infrastructure repair.

Expense Summary

Operations and maintenance cost spent on BCP for FY 2020 was \$10,000.

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 FY20 is included as Appendix Q.

LITERATURE CITED

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