Balcones Canyonlands Conservation Plan

2025 Annual Report

(October 1, 2024 – September 30, 2025)

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
January 2026

CONTENTS

BACKGROUND **1**
PERMIT REQUIREMENTS **2**
DEVELOPMENT ACTIVITY WITHIN THE PERMIT AREA **3**
MITIGATION CREDIT BALANCE **3**
BCCP INCIDENTAL TAKE PERMIT ACTIVITY **4**
FUNDS COLLECTED THROUGH INCIDENTAL TAKE PERMITS **5**
FUNDS COLLECTED THROUGH TAX BENEFIT FINANCING **6**
FUNDS EXPENDED FOR LAND ACQUISITION **6**
FUNDS EXPENDED FOR OPERATIONS AND MAINTENANCE **6**
LANDS DEDICATED TO THE BALCONES CANYONLANDS PRESERVE **7**
FY 2025 RESEARCH OR INVESTIGATIVE REPORTS **8**
PUBLIC USE, HABITAT AND WILDLIFE MONITORING, AND MANAGEMENT ACTIVITIES OCCURRING WITHIN THE BALCONES CANYONLANDS PRESERVE **9**
LITERATURE CITED **16**

LIST OF TABLES

Table 1 - Species Covered by the Balcones Canyonlands Conservation Plan 1
Table 2 - Infrastructure Projects Mitigated Through the Use of Mitigation Credits in FY25 by Participating Agency..... 3
Table 3 - FY25 Projects Mitigated Through the Purchase of Incidental Take Permits 5
Table 4 - Travis County and City of Austin FY25 BCP Land Acquisitions. 6
Table 5 - Annual FY25 BCP Budgets (excluding land acquisition costs) for Permit Holders, the Managing Partners, and Cooperating Entities with Summary of Total Budgets since Plan Inception. 7

LIST OF APPENDICES:

Appendix A *– City of Austin Development Permits Issued in the BCCP Permit Area for FY 2025*
Appendix B *– Travis County Development Permit Issued in the BCCP Permit Area for FY 2025*
Appendix C *– Balcones Canyonlands Preserve Properties by Macrosite*

Appendix D *– Balcones Canyonlands Preserve Properties by Management Agency*
Appendix E *– Balcones Canyonlands Preserve System Map*
Appendix F *– City of Austin FY 2025 Golden-cheeked Warbler (Setophaga chrysoparia) Monitoring Program*
Appendix G *– City of Austin FY 2025 Black-capped Vireo (Vireo atricapilla) Monitoring Program*
Appendix H *– Balcones Canyonlands Preserve Karst Monitoring and Management FY 2025 Report*
Appendix I *– FY 2025 Report on Monitoring of the Golden-cheeked Warbler (Setophaga hrysoparia) on Travis County Tracts of the Balcones Canyonlands Preserve*
Appendix J *- FY 2025 Report on Monitoring and Management of the Black-capped Vireo (Vireo atricapilla) on Travis County's Balcones Canyonlands Preserve*
Appendix K *– FY 2025 Summary of Wildlife Management Activities on Travis County's Balcones Canyonlands Preserve and Select Parks*
Appendix L *– FY 2025 Travis County Balcones Canyonlands Preserve Non-*Native Plant Management Program
Appendix M *– Wild Basin Wilderness Preserve 2024-2025 Annual Report*
Appendix N – City of Sunset Valley Gaines Greenbelt *2025* Annual Report
Appendix O *– Travis Audubon Society Baker Sanctuary 2024-2025 Annual Report*
Appendix P *– City of Lakeway Schramm Ranch 2025 Report*
Appendix Q *– LCRA and Westcave 2025 Report*
Appendix R *– The Nature Conversancy Barton Creek Habitat Preserve 2025 Report*
Appendix S1 *– FY 2025 BCP Partner Reports – City of Austin*
Appendix S2 *– FY 2025 BCP Partner Reports – Travis County*
Appendix S3 *– FY 2025 BCP Partner Reports – LCRA*
Appendix S4 *– FY 2025 BCP Partner Reports –Outreach*
Appendix T1 *– UT Austin Tawny Crazy Ant Study 2025*
Appendix T2 *– Honeybee Impact on Wild Bees*
Appendix T3 *– Building Conservation Collections of Prunus*
Appendix T4 *– Hill Country Research on Large Mammals*
Appendix T5 *– Effects of Soil Inocula on Texas Red Oak Seedlings During Drought*
Appendix T6 *– Pennies Cave 2025 Annual Report*
Appendix T7 *– Phylogenomics of Endangered Troglobitic Rove Beetles*
Appendix T8 *– Juniper Decline*
Appendix T9 *– Karst Services on Travis County BCP*
Appendix T10 *– Plant Material Collection*
Appendix T11 *– Reconstruction Past Climate Change*
Appendix T12 *– Park Biodiversity Survey*

Background

On May 2, 1996, the City of Austin and Travis County were jointly issued a U.S. Fish and Wildlife Service (USFWS) regional permit referred to as the Balcones Canyonlands Conservation Plan (BCCP). This permit allows incidental "take" of eight locally occurring endangered species in compliance with Section 10(a)1(B) of the Endangered Species Act (USFWS, 1996a). The 30-year permit covers approximately 561,000 acres in western Travis County identified in the Habitat Conservation Plan and Final Environmental Impact Statement (HCP) (USFWS, 1996b). The permit also covers incidental take of 27 species of concern should any become listed as threatened or endangered during the life of the permit (Table 1).

Table 1 - Species Covered by the Balcones Canyonlands Conservation Plan

Common name	Scientific name	Status
Black-capped vireo	*Vireo atricapilla*	Delisted*
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

*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 to manage designated Preserve lands in accordance with the BCCP are considered Managing Partners. The Lower Colorado River Authority (LCRA) and The City of Sunset Valley are both Managing Partners. As a Managing Partner, LCRA may mitigate for capital improvement and infrastructure development projects through the mitigation credit system established by the BCCP. The City of Sunset Valley entered into a BCP Managing Partner Agreement in 2014 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.

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 Incidental Take Permits 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 2025 (FY25), which details building permits issued by the City of Austin west of Loop 1 within the Permit area, is in Appendix A.

The Travis County development activity report for FY25, which details building permits issued by Travis County in precincts 2 and 3 within the Permit area, is 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/EIS (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 FY25 by Participating Agency

City of Austin	
Starting City of Austin Balance	**11,598.84 acres**
New preserve additions (credits)	0
25_02_AE_City Park Rd Pole Replacement	0.8
25_03 COA Redbud_Trail Bridge Amendment	0.5
25_06_AE City Park Rd Replacement	0.6
25_07 COA West Bank Lift Station	0.2
25_10 COA Wastewater Billing Meter Assessments	0.1
25_11 COA Bull Creek Basin - Large Diameter WW Pipeline Removal	6.8
Remaining Mitigation Credits	**11,589.84**
Travis County	
Starting Travis County Balance	**9,386.84 acres**
New preserve additions (credits)	0

Remaining Mitigation Credits	**9,386.84 acres**
Lower Colorado River Authority (LCRA)	
Starting LCRA Balance	**206.63 acres**
New preserve additions (credits) –	0
25_01_LCRA_Lakeway to Lakeway Tap Fiber Upgrade Project	0.8
Remaining Mitigation Credits	**205.83 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 Incidental Take Permit 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 BCCP Incidental Take Permits. 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.

BCCP Incidental Take Permit Activity

Travis County's Natural Resources Department administers the BCCP Incidental Take Permit Process on behalf of the BCCP Coordinating Committee and issues Incidental Take Permits for cooperating landowners within the Permit area. As required by the terms of the regional Permit, copies of each Incidental Take Permit and Habitat Determination map are provided to USFWS Austin Ecological Services office.

During FY25, 24 Incidental Take Permits were issued as follows for development projects: 2 for schools, 3 for infrastructure projects, 2 for single family residential, 1 for multi-family residential, 9 for residential, 2 for subdivisions, 4 for commercial development, and 1 Other.

Funds Collected through Incidental Take Permits

A total of $1,501,725.00 was collected through the sale of Incidental Take Permits in FY25 (Table 3). There is a 50/50 split in BCCP Incidental Take Permit revenue between the City of Austin and Travis County.

Table 3 - FY25 Projects Mitigated Through the Purchase of Incidental Take Permits

Application Number	Date	Name	Type	Amount Paid	Acres
0721-V	11/26/2024	Kristin Zamora for Travisso LTD	Subdivision	$500,500.00	95.1200
0721-W	11/26/2024	Kristin Zamora for Travisso LTD	Subdivision	$729,300.00	133.4600
1252	10/10/2024	Robert Thompson (9670 Bee Cave, LLC)	Commercial	$3,850.00	0.6980
1269	12/17/2024	Lamar Technical Service Inc for PEC	Infrastructure	$7,975.00	2.9000
1273	11/21/2024	Lake Travis Independent School District	School	school	22.5970
1275	11/26/2024	Venkatesh Babu Kaka	Residential	$1,100.00	0.2274
1277	11/1/2024	Tower Ventures / Jester Club Inc.	Commercial	$5,500.00	2.2740
1284	11/21/2024	Lake Travis Independent School District	School	school	240.6800
1285	10/24/2024	Donald Cook	Residential	$14,900.00	3.1318
1288	11/21/2024	Landon Alford	SF Residential	$2,000.00	3.2230
1289	10/10/2024	Kara Batesole	Residential	$825.00	0.2900
1292	11/1/2024	North Lake Bible Church	Commercial	$34,650.00	6.2500
1298	11/21/2024	Ryan Bates	Residential	$8,800.00	1.5900
1305	5/1/2025	Brandon Copley	Residential	$5,225.00	1.8660
1312	2/12/2025	Race Chapman for PEC, Inc.	Infrastructure	$3,850.00	0.7000
1313	2/12/2025	Race Chapman for PEC, Inc.	Infrastructure	$4,950.00	0.9000
1316	3/25/2025	Bryan Jones	SF Residential	$2,000.00	5.5800
1317	5/19/2025	Jennifer Franklin for Peace Lutheran Church	Commercial	$3,050.00	2.5767
1320	6/27/2025	Jack and Cindy Ball	Other - Undetermined	$107,800.00	19.6030
1321	5/1/2025	Margaret Winter	Residential	$3,575.00	1.3610
1323	5/1/2025	Robert M. Schmidt and Susan H. Denn	Residential	$28,875.00	16.1170
1325	5/29/2025	Thomas Kimutis	Residential	$7,150.00	5.0200
1331	9/11/2025	Ihor Stepanov (Art Village LLC) for Mahmood Ali and Amin Momin	Residential	$12,100.00	4.4200
1339	8/27/2025	Westlake Ocelot, LLC	Multi-Family Residential	$13,750.00	5.0477

Funds Collected through Tax Benefit Financing

Travis County's Tax Benefit Financing Plan is the method Travis County agreed to use for funding land acquisition and management. In FY25, Travis County's Tax Benefit Financing Plan (TBF) generated $19,880,147.00 for Travis County's land acquisition and management projects.

Funds Expended for Land Acquisition

Travis County continues to pursue preserve properties using 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.

Neither Travis County nor the City of Austin acquired property for inclusion in the BCP in FY25. For a detailed account of all BCP tracts assembled see Appendices C, D, and E. All City of Austin and Travis County FY25 BCP Land acquisitions are shown by tract in Table 4.

Table 4 - Travis County and City of Austin FY25 BCP Land Acquisitions.

Tract Name	Agency	Date Acquired	Acreage	Total Expenditures
	Travis County			$0
		Total	**0**	**$0**
	City of Austin			$0
		Total	**0**	**$0**

Funds Expended for Operations and Maintenance

In FY25, the Permit Holders, LCRA, TNCTX, the Travis Audubon Society (TAS) and the City of Sunset Valley spent $9,415,753.49 on operation and maintenance of BCP lands (Table 5).

The City of Austin spent a total of $2,841,081 for FY25 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 (PARD) 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 5 - Annual FY25 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 2025	Total Budget: 1996 to Present
City of Austin*	$2,846,081	Up through FY25 $36,976,963
Travis County	$6,117,845	Up through FY25 $56,083,912
LCRA**	$185,284.99	Up through FY25 $2,059,094.99
TNCTX	$263,175	Up through FY25 $1,806,745
TAS	None Reported	Up through FY25 $816,986
City of Sunset Valley****	$3,367.50	Up through FY25 $35,814.50
TOTALS	**$9,415,753.49**	**Up through FY24 $97,779,515.49**

* City of Austin budget includes BCCP Participation funds.

** Does not include expenditures by Westcave Preserve Corporation

**** The City of Sunset Valley does not track staff time in regard to open space management. Budgetary expenditures only reflect the cost of consultants.

The Travis County Natural Resources budget for the BCP Program in FY25 was $6,117,845. 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 FY25, 33,293.24 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. Seventeen endangered species karst features which were not listed on the BCCP Permit are being protected on BCP lands. Additionally, 26 species of concern karst features not listed on the BCCP Permit are also being protected on the BCP. 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 2025 Research or Investigative Reports

The Balcones Canyonlands Preserve is more than a refuge for rare species, it is a place where science and stewardship meet. Each year, researchers from across Texas and beyond bring new questions to the preserve, and in FY25 those questions ranged from the depths of karst caves to the rings of bald cypress trees along Hill Country rivers.

Deep underground, specialists worked to restore access to fragile cave systems, removing decades of accumulated debris to reveal hidden passages. These efforts paid off: surveys documented endangered invertebrates, including a new site record for the Bone Cave harvestman. Such discoveries remind us that even in well-studied landscapes, mysteries remain—and that careful excavation and habitat protection are essential for species survival. Yet challenges persist. Invasive fire ants continue to threaten cave communities, and maintaining safe access requires ongoing stabilization of unconsolidated soils. Future work will focus on mapping newly opened passages and refining microclimate management to support these rare organisms.

Above ground, rare plants faced a different set of pressures. Teams from the Lady Bird Johnson Wildflower Center collected seeds from species found only in Central Texas, banking genetic diversity for future restoration. Success depended on timing: drought and early fruit drop made collections difficult, and germination trials for some species fell short. These setbacks offer lessons for the coming year. Better phenology tracking, fruit bagging, and expanded monitoring will improve yields and help safeguard these plants against a changing climate.

Juniper woodlands, a defining feature of the preserve, also came under scrutiny. Researchers from Texas A&M investigated the causes of juniper decline, a concern for habitat integrity and erosion control. Their findings point to drought and heat stress as primary drivers, with pathogens playing a secondary role. This reinforces the need for management strategies that build resilience to extreme weather, a theme echoed across all research this year.

At Reimer’s Ranch and Hamilton Pool, scientists from the University of Texas began piecing together the long-term climate story of the Hill Country. By sampling tree rings and water chemistry, they aim to reconstruct centuries of drought and flood cycles. Though initial cores were younger than hoped, the work lays the foundation for a record that will guide water management in an era of increasing variability.

Finally, the preserve opened its doors to the next generation of scientists. Students from the Liberal Arts and Science Academy conducted field studies on plant diversity, bird populations, and arthropods, exploring how soil, water, and urbanization shape local ecosystems. While small sample sizes limited statistical power, these projects fostered curiosity and connection which is an investment in future stewards of the BCP.

Taken together, these efforts tell a story of adaptation and discovery. They reveal a preserve responding to drought, invasive species, and urban pressures, while offering opportunities for innovation in conservation. Looking ahead, priorities include expanding rare plant propagation, deepening climate archives, and strengthening partnerships that link science, education, and community. The Balcones Canyonlands Preserve remains a vital platform for research that informs action, ensuring that this unique landscape endures for generations to come.

Research reports for the activities that occurred on the BCP are included as Appendices T1 through T12. See the table of contents for a list of appendices which include the title of each research report.

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

The golden-cheeked warbler is a species whose entire breeding range lies within central Texas, making the Balcones Canyonlands Preserve a cornerstone of its survival. Each spring, as the warblers return from their wintering grounds, biologists and volunteers fan out across the preserve to map territories, monitor nests, and track banded birds. These efforts are more than data collection, they are a measure of how well the preserve fulfills its promise to protect a species found nowhere else.

In 2025, monitoring spanned both intensive study plots and broader enumeration areas. On the intensive plots, City of Austin staff mapped 151 territories, while Travis County surveys added 157 territories on larger tracts such as Volente and Grandview Hills. Territory densities varied widely, from sparse patches near Barton Creek to robust clusters in the Bull Creek and Cypress Creek macrosites. These patterns reflect the influence of habitat quality: closed-canopy juniper-oak woodlands continue to support the highest densities, while smaller, fragmented patches yield fewer territories.

Color-banding remains central to understanding warbler demographics. This year, 115 adults were banded, and return rates climbed to 50%, above the long-term average of 43%. These numbers suggest strong site fidelity among males, though dispersal events remind us that connectivity across the landscape matters. One male banded in 2024 returned six kilometers away, highlighting the need for corridors that link habitat fragments.

Nest monitoring tells a more sobering story. Of 130 nests observed, just over half fledged young, a success rate lower than the long-term average and among the lowest recorded in 15 years. Many failures occurred early in the season, likely tied to limited food resources following a dry winter. While some plots, such as Kent Butler and Forest Ridge, produced strong fledgling numbers, others saw little or no success. These contrasts underscore the complexity of managing for reproductive success, where factors like canopy structure, predator pressure, and weather interact in ways that defy simple solutions.

Despite these challenges, the monitoring program continues to adapt. Survey effort shifted toward lower-density plots to improve representation across the preserve, and volunteers expanded searches for banded birds beyond plot boundaries. These adjustments strengthen the dataset and help managers anticipate trends before they become crises.

Looking ahead, the story of the golden-cheeked warbler on the BCP is one of resilience tempered by vulnerability. The species persists, but declining breeding success and variable territory densities signal the need for vigilance. Protecting large, contiguous habitat patches, maintaining canopy integrity, and mitigating edge effects remain top priorities. Continued collaboration between City of Austin and Travis County staff, and the dedication of volunteers,will ensure that this work endures, giving the warbler a fighting chance in a changing landscape.

The Black-capped Vireo, once a symbol of imperiled Texas wildlife, now tells a story of cautious recovery on the Balcones Canyonlands Preserve. Delisted in 2018 after decades of conservation work, the species still depends on active management to maintain the patchy, early-successional habitats it requires. FY25 marked another year of intensive monitoring and habitat restoration by Travis County and City of Austin biologists, efforts that reveal both encouraging trends and lingering vulnerabilities.
Across Travis County-managed lands, the vireo population reached record highs. Staff documented 77 males and 60 territories, with core areas like the Jollyville and Kotrla Units continuing to anchor the population. These sites, shaped by years of mechanical clearing and prescribed fire, now support dense clusters of territories, a testament to the success of restoration. Breeding success on Travis County lands was strong: 42 territories fledged young, producing at least 121 hatch-year birds. Six territories even managed second broods, a rare but hopeful sign of productivity.

City of Austin tracts told a more complex story. Nineteen territorial males were observed, concentrated at Forest Ridge and Cortaña, with scattered territories at Kent Butler, Barton Creek, and Vireo Preserve. Pairing success was high, 17 of 19 males found mates, but nest outcomes were sobering. Of 34 nests monitored, nearly two-thirds failed, mostly due to predation. Productivity dropped sharply compared to recent years, averaging just 1.3 to 1.7 fledglings per territory. At Cortaña, nest failure soared to 66%, a stark contrast to the previous year’s 21%. These patterns highlight the fragility of small, isolated patches and the influence of predators and habitat structure on reproductive success.

Banding efforts continued to deepen our understanding of vireo demographics. Travis County banded 37 adults and 74 nestlings, while City staff banded 36 nestlings and 10 adults. Returns of previously banded birds revealed strong site fidelity among adults and surprising dispersal among juveniles. One male banded as a nestling at Cortaña in 2024 was resighted 21 kilometers away on Travis County's Kotrla Unit, a record dispersal for the program. Others moved between City and County tracts, underscoring the importance of connectivity across the preserve. Genetic sampling, now underway with university partners, aims to clarify whether inbreeding is contributing to the unhatched eggs observed in multiple nests.

Habitat management remained a cornerstone of recovery. Travis County added new restoration acreage at Flying K and maintained shrubland through mechanical clearing, while prescribed fire continued to shape habitat at Reimers Ranch and Pace Bend Parks. City staff advanced oak regeneration experiments at JJ&T and Vireo Preserve, planting thousands of shin oak acorns and testing soil inoculation techniques to accelerate shrubland development. These efforts reflect a shared commitment to sustaining the dynamic landscapes vireos need, a commitment complicated by the species' overlap with golden-cheeked warbler habitat, which requires contrasting conditions.

Challenges persist. Predation and cowbird parasitism remain significant threats, particularly on Travis County's Kotrla Unit, where cowbird trapping will resume in FY26. On City lands, high nest failure rates and signs of genetic bottlenecks raise questions about long-term viability. Climate variability, urban encroachment, and the species' semi-colonial nature add layers of complexity to management decisions.

Yet the trajectory of the Black-capped Vireo on the BCP is, at its heart, a story of resilience. From fewer than 50 individuals two decades ago to thriving colonies today, the species has rebounded through science-driven stewardship. Looking forward, priorities include expanding restoration, refining predator and cowbird management, and leveraging genetic data to guide conservation strategies. Continued collaboration between City and County partner, and the dedication of volunteers, will ensure that the vireo's song remains part of the Hill Country soundscape for generations to come.

During Fiscal Year 2025, BCP partners continued implementation of karst monitoring and management obligations under the regional permit, focusing on the protection of endangered karst invertebrates and the maintenance of ecological integrity within the Balcones Canyonlands Preserve. These efforts are essential to sustaining the specialized subterranean habitats that support federally listed species and numerous species of concern. Management activities during this reporting period encompassed routine monitoring of permit caves, targeted excavation and restoration at priority features, invasive species control, and public education initiatives designed to foster stewardship of karst ecosystems.

Monitoring was conducted on select karst features covered by the regional permit, including annual, biannual, and quarterly surveys for caves supporting endangered species or species of concern. These

surveys documented habitat conditions, assessed threats, and recorded faunal observations. Red imported fire ants continued to pose a significant management challenge, with treatments applied at multiple sites to mitigate impacts on native invertebrate populations. In addition to monitoring, BCP partners undertook excavation and restoration projects at select caves within the Cuevas, Cuevas East, Grandview Hills, and Texas System of Natural Laboratories tracts. These projects aimed to restore hydrological and ecological function, improve surveyor access, and evaluate potential leads for additional habitat.

Excavation and restoration were completed at five caves: Amber Cave, Encinal Cave, Kretschmarr Cave, Root Cave, and Two Trunks Cave. Amber Cave and Encinal Cave were prioritized due to strong airflow and significant accumulations of unconsolidated material, respectively, both of which indicate potential for additional passage development. Work at Amber Cave revealed a new kneeling room and a drain emitting concentrated airflow, while excavation at Encinal Cave removed over 3,500 liters of fill to restore access to the deepest mapped extent. Kretschmarr Cave received excavation at two leads, though further work was deprioritized due to safety considerations and limited potential for additional habitat. Root Cave excavation focused on improving entry for fauna surveys, and Two Trunks Cave restoration included removal of bedrock protrusions and excavation of a floor-level lead that revealed a small bedding plane room with suitable karst habitat.

Incidental biological surveys conducted during excavation documented multiple species of conservation interest. Federally listed species were confirmed at Amber Cave, where *Rhadine persephone*, *Tartarocreagris texana*, and *Texamaurops reddelli* were observed, and at Two Trunks Cave, where *Texella reyesi* was recorded for the first time. Additional evaluations at North Root Cave identified *Texella reyesi* and a tricolored bat (*Perimyotis subflavus*), prompting deferral of excavation to avoid disturbance. No listed species were observed at Encinal Cave, Kretschmarr Cave, or Root Cave during FY2025 surveys. These findings underscore the importance of continued excavation at features with strong airflow and structural complexity, as well as the need for adaptive management to balance species protection with habitat restoration objectives.

Public engagement remained an integral component of karst management during FY2025. Educational programs and volunteer initiatives provided opportunities for community members to participate in habitat restoration and learn about the ecological significance of karst systems. These efforts complement technical management activities by fostering long-term support for conservation goals.
Priorities for FY2026 include continued excavation at Amber and Encinal Caves, mapping of Two Trunks Cave, and evaluation of additional features such as Cactus Pit, Kretschmarr Fluted Sink, Mold Hole, and Tight Pit to refine excavation objectives. Future work will also focus on remapping the Root Cave and North Root Cave complex following potential excavation to improve understanding of karst connectivity. Through these actions, BCP partners aim to advance recovery objectives for endangered karst invertebrates while maintaining the ecological integrity of the preserve system.

Across the preserve network, BCP partners coordinated land management to maintain ecological integrity while meeting permit obligations for endangered species and species of concern. Work began with intensified non-native invasive plant control on County tracts, where staff, contractors, and volunteers removed more than 16,000 invasive plants during spring and summer, following nearly 9,000 removals during fall and winter, and implemented targeted treatments for monocultures such as Johnsongrass and dense groundcovers that suppress arthropod habitat and native understory. These efforts were complemented by a pilot neighborhood Native Plant Exchange Program in Grandview Hills and adjacent areas that removed approximately 1,400 non-native ornamentals from private properties and installed 120 native plants, reducing propagule pressure at the preserve edge and demonstrating an effective community partnership model for prevention at the wildland–urban interface. At Wild Basin, partners and trained volunteers removed more than two thousand invasive stems while advancing trail restoration and boundary stewardship in a high-visitation urban preserve setting. Together, these vegetation actions are central to protecting biodiversity and sustaining habitat quality for insectivorous birds and karst ecosystems.

Species management proceeded on multiple fronts. Golden-cheeked warbler monitoring and color-banding on City- and County-managed plots documented nesting success and robust territory establishment; volunteers conducted resighting surveys across additional search areas and received program recognition mid-summer. Black-capped vireo surveys reached the highest number of territories recorded on County properties since the inception of the BCP, bolstered by nestling banding and brush management to maintain the patchy, open shrub structure favored by the species. In karst habitats, faunal surveys and cricket exit counts were conducted across permit caves, and permitted excavation restored hydrologic and ecological function and improved survey access in several features; notably, *Texella reyesi* was confirmed and collected at a cave where it had not previously been documented, expanding known distribution and informing future management. BCP biologists also resumed bat acoustic monitoring and continued white-nose syndrome surveillance through cave and bat swabs, while salamander specialists, aided by rainfall, recorded Jollyville Plateau salamanders at Long Hollow Creek on the Wheless tract for the first time in years, suggesting re-established surface–subsurface connectivity and underscoring the importance of flow maintenance and stream debris removal.

Fire risk reduction and climate resilience remained a priority across jurisdictions. City crews extended shaded fuel breaks along ignition corridors, cleared storm-downed woody fuels, and initiated a live-fuel and soil moisture monitoring project with university partners to ground-truth remote sensing and develop continuous wildfire-risk indicators for operational decision-making. County teams flagged treatment areas for fall and winter work, resumed shaded fuel break maintenance, and conducted brush pile burning at restoration sites to reduce accumulated fuels from habitat work, while partner preserves maintained fuel breaks and critical access routes. Road repairs across Kotrla, Bull Creek, Jollyville, and Cypress Creek units improved emergency ingress and land management mobility; new fencing and gate installations strengthened boundary protection. Partners also managed utility corridors

cooperatively to reduce wildfire risk and improve species outcomes, including realigning distribution lines to tract edges where feasible. These actions converged during severe weather: staff cleaned up significant flood damage and storm debris in July and responded to a late-summer sewage spill affecting springs at SAS Canyon, work that continues through remediation and monitoring to protect water quality.

Partner agencies sustained preserve maintenance and research at Westcave and McGregor, where recurring water-quality sampling, bat emergence counts, NestWatch, and Night Sky monitoring continued alongside trail and boundary care and watershed cleanups. Golden-cheeked warbler surveys identified multiple territories with fledging success, cowbird control was implemented, and biannual karst invertebrate surveys were performed in coordination with County biologists. The Nature Conservancy's Barton Creek Habitat Preserve completed a 200-acre prescribed fire, continued deer management to support oak recruitment, and maintained long-term research programs addressing invasive grasses, pollinator interactions, and mammal monitoring. Across City, County, and partner lands, patrols and law-enforcement coordination continued to address trespass, dumping, and vandalism, supported by road, fence, and facility upgrades, including progress toward a BCP Visitor Center to enhance stewardship capacity and public engagement in the years ahead.

Land management activities are summarized in the BCP Staff Reports found in Appendix S1, S2, and S3. The wildlife and plant management activities are described in more detail in Appendices K and L. Additionally, the annual reports for Wild Basin Wilderness Preserve and the Baker Sanctuary can be found in Appendices M and O, 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. Activities specific to golden-cheeked warbler, black capped vireo, and karst invertebrates are covered in separate species reports.

Education and outreach sustained the social foundation of preserve stewardship, connecting communities to the ecological significance of the BCP through guided experiences, volunteer service, and citizen-science programs. Across partners, more than two thousand events engaged an estimated 18,000 youth participants and 21,000 adults, contributing over 10,000 volunteer hours valued at more than $370,000, effort that translated directly into trail care, invasive plant removal, habitat restoration, ecological monitoring, and public interpretation. Seasonal highlights included corporate restoration workdays, school-based programming and classroom curricula, volunteer recognition for endangered warbler resighting teams, specialized training for emergency responders and City staff on cave safety and wildland operations, and community engagement at Roots & Wings, Barton Springs University Day, and public science events. These investments in people and place amplify the effectiveness of land management and support the permit's long-term conservation objectives.

Wild Basin's Creative Research Center offered a sustained program of public engagement in an urban preserve context, including artist residencies, monthly speaker and social series, spring-break interpretive activities, and guided hike offerings that emphasize watershed literacy, native plant ecology, and karst awareness. Volunteer stewardship remained a cornerstone: trained crews and community workdays advanced trail and stair rebuilds, erosion control, trash removal along highway boundaries, and invasive plant treatments aligned with County vegetation management protocols. Citizen science continued to grow through quarterly eBird surveys, iNaturalist biodiversity projects, and camera-based wildlife monitoring, drawing students and neighbors into long-term observation and data collection that inform management decisions. Westcave Preserve expanded experiential learning through field trips, summer guided hikes, and Night Sky initiatives; since installing feather-friendly markers, partners reported zero bird strikes on key facilities, a tangible example of outreach informing infrastructure choices that reduce wildlife mortality.

City and County outreach extended far beyond interpretive programs. Volunteer teams planted thousands of native trees and shrubs, built brush berms, and stabilized slopes in support of GCWA and BCVI habitat connectivity; neighborhood engagement included the Good Neighbors Program adjacent to McGregor Preserve and pilot efforts to reduce invasive landscaping near preserves. Training and collaboration reached first responders and operations staff through wildland fire courses, cave rescue exercises, and safe cave facilitation classes at Whirlpool Cave, while social media and community events broadened access for diverse audiences, from Night Sky programs and after-dark natural history to inclusive partnerships that welcome new communities into conservation. These education investments—embedded within restoration, monitoring, and preparedness, ensure that stewardship is shared, science-based, and resilient, positioning the preserve system to meet ecological and social challenges in the coming years.

BCP partners with outreach programs meet to coordinate efforts and produce a summary report for the BCCP Coordinating Committee. These reports are found in Appendix S4 and include the number of hours worked by volunteers that quarter, the number of people reached through educational programs, and outreach highlights from each BCP partner. An annual summary is included in the final report of the year.

LITERATURE CITED

City of Austin and Travis County. 2023. *Amended and Restated Interlocal Cooperation Agreement between the City of Austin and Travis County for Shared Vision and Implementation of the Balcones Canyonlands Conservation Plan.*

U. S. Fish and Wildlife Service. 1996a. *Federal Fish and Wildlife Permit No. PRT-788841.*

U. S. Fish and Wildlife Service. 1996b. *Final Environmental Impact Statement / Habitat Conservation Plan for Proposed Issuance of a Permit to Allow Incidental Take of the Golden-cheeked Warbler, Black-capped Vireo, and six karst invertebrates in Travis County, Texas.*