City of Austin's BCCP Activities
Quarter 1 Update: 1 October – 31 December 2020

BCCP Administration	
Infrastructure Projects	Four Infrastructure Habitat Assessment Applications were processed, and Determination Letters were issued from October – December 2020.
Land Acquisition /Management Agreements	Austin Water (AW) BCP is still working toward acquisition of Bright Leaf Preserves, that is expected by April 2021. Staff are also working with representatives of a proposed development at the east end of Milky Way in River Place on a 10-acre donation of creek adjacent to existing Park West Preserve. BCP (AW & Travis County) staff evaluated a Karen Mountain tract along Bull Creek for potential acquisition.
Reports and Events	Staff participated in the Westcave Christmas Bird Count, where the count area overlaps BCP property, Dec. 15.
Dual-managed Properties	A second draft interdepartmental agreement prepared in 2020 by AW BCP for dual management of PARD preserves, as required by the permit, is still being discussed with PARD staff. While the 1996 HCP defined specific preserve areas for bird habitat, karst preserve areas on PARD-managed parks and preserves were never defined, along with clarification of roles for AW BCP in co-managing them. Staff suggested changes to a draft scope of work created by PARD for developing a Climate Vulnerability Analysis and Recommended Strategies plan for Austin Parks and Recreation Natural Areas. Dual managed BCP properties were included in the scope. Some proposed guidance for management goals and strategies in the plan conflict with primary goals of the BCCP and existing provisions of the BCP management plan. When suggestions were not addressed, staff requested that properties dual-managed with PARD be excluded from the scope.
Personnel	Hired William Stout to assist with reforestation efforts as part of an Urban Forest grant.
Rare and Endangered Resources Management	
Golden-cheeked Warbler (GCWA) and Black-capped Vireo (BCVI)	Staff compiled data and drafted summary reports for the 2020 field season. Due to changes in field protocols to comply with Covid-19 safety measures, results from the 2020 field season are not expected to be consistent with previous years.
Jollyville Plateau Salamander	BCP continues to conduct aquatic life surveys of springs across the BCP on a periodic basis in hopes of locating new salamander locations and other rare stygobitic life.
Karst invertebrates/ karst work	AW BCP staff are collecting data for preparation of karst completion status analysis and report expected in FY21 with TC BCP.

	Currently hydrogeological studies are underway in the FM 2222 and RM 620 area in cooperation with TxDOT, for which an annual report was prepared. The study is still restoring filled caves on existing preserves and assessing springs both to enhance the karst preserve habitat but also in preparation of later drip monitoring and dye tracing water source areas. Several recent caves were discovered including Black Cap Cave and Mossy Elm Cave. Archeological artifacts were discovered in the fill excavated from Mossy Elm Cave, apparently recent wash in from surface artifacts. The Texas Historical Commission led an effort with archeologist Ron Ralph to recover artifacts from the excavated fill, a tremendous benefit to the BCP to help understand the history of our preserves. Hydrogeological study of permit caves along Slaughter Lane in Circle C continued with support from Zara Environmental LLC funded mostly by Mobility Corridor Project of COA Public Works. Access to Pipeline Cave on Parkside Village by Whitestone Reit has allowed a study of the permit cave and allowed huge improvement in habitat described in the karst section of the annual report. Joe Diaz, PARD manager for Circle C Metro Park supported access for cave restoration and tracing on parkland. A tracer injection was conducted near Midnight Cave on Nov. 12 2020 to help define its water source area. A report is anticipated in February 2021.
Plant and Animal Control	
Mammals	47 hogs and 21 deer were removed by contractors and City staff this quarter.
Red-imported fire ants and Tawny crazy ants	AW BCP staff created and delivered a training for PARD staff for identifying and reporting Tawny crazy ants.
Invasive Plants	BCP staff are continuing efforts to remove non-native plants on COA BCP tracts.
Land Stewardship	
Habitat Restoration	Due to Covid-19, a limited number of staff and volunteers maintained restoration projects at the Vireo Preserve to promote water retention, slope stabilization, soil restoration, and reforestation on degraded sites to promote future habitat for GCWA and BCVI.
	Using funds from an Urban Forest grant, implemented a 0.5-mile bioswale project on JJ&T, hired William Stout to assist with reforestation efforts, planted over 250 trees and shrubs, and collected, prepped, and seeded over 50,000 native plant seeds across a 50-acre site.
	To assist with reforestation efforts on JJ&T, installed a native plant nursery on JJ&T, 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.
	With the limited volunteer opportunities during Covid-19 stages 4/5, staff hosted a series of reforestation classes to provide continuing education for volunteers and the public, including historical ecology, native plant identification, tree planting, invasive plant identification and removal, hydrological processes and vegetation, soil biology, and incorporating native fungi into restoration.
	Worked with Texas State University student and faculty to collect and plant 480 Texas red oak acorns for a research project on Reicher Ranch. This was a very poor acorn production year for all species of oaks on BCP.

	Because of poor acorn crop, few shin oak acorns were available for collection, but the few collected were planted in potential Black-capped Vireo habitat in the middle section of the Cortaña tract. A count of seedlings from acorns planted in 2019 revealed a minimum emergence rate of 76%.
Fencing	Fencing installation was initiated on Park West. Future fencing in proposed Bright Leaf Preserve acquisition and Carol Lee was planned.
Roads	Road restoration was completed on Cortana tract.
Oak Wilt	Planned trenches to contain oak wilt infection within Emma Long Park and adjacent to Cortaña tract.
Wildfire Preparedness	Constructed shaded fuel break on the JJ&T boundary with Apache Shores neighborhood.
Law Enforcement	
Trespass and Criminal Mischief	Trespassing picked up during the pandemic. We continue to work on fencing, patrolling and education to avoid preserve damage.
	Continued patrols of Preserve boundaries.
Outreach/Volunteers	
See *BCP Partners Education Summary October– December 2020.* Staff have helped create educational webinars for our Wildlands Neighbors Group, BCP Forest Restoration Training, and AFD Wildfire Division. A short educational video on Austin geology is being prepared.	

City of Austin's BCCP Activities
Quarter 2 Update: 1 January – 31 March 2021

BCCP Administration	
Infrastructure Projects	Seven Infrastructure Habitat Assessment Applications were processed, and Determination Letters were issued from January through March 2021.
Land Acquisition /Management Agreements	Austin Water (AW) BCP is anticipating acquisition of Bright Leaf Preserves around July 2021. AW BCP attended a neighborhood Association meeting of the adjacent Highland Park West Neighborhood Association with representatives of Austin Fire Department, primarily to address wildfire concerns. Staff continue to work with representatives of a proposed development at the east end of Milky Way in River Place on a 10-acre donation of creek adjacent to existing Park West Preserve. BCP (AW & Travis County) staff evaluated a Karen Mountain tract along Bull Creek for potential acquisition, received an appraisal. AW BCP is seeking funding source for future acquisition. AW BCP worked with West Lake Hills neighbors of the 18-acre AW BCP Little Bee Creek Preserve to examine potential for expanding the preserve to a larger size with additional caves. This preserve currently contains only 1 of 4 caves in a designated protected preserve known to contain the endangered Bee Creek Cave harvestman (*Texella reddelli)* that is restricted only to this portion of Austin and increasing rare bracted twistflower. Preservation of this creek also supports high water quality for the adjacent Ullrich WTP. Residents allowed BCP staff access to private lots to view caves which have become rare in this area. Currently no funding sources have been identified for additional acquisition.
Reports and Events	Submitted annual BCCP report to USFWS https://www.traviscountytx.gov/tnr/nr/2020-annual-report
Personnel	Hired Jim O'Donnell as Forest Ecosystem Biologist and Colin Strickland as Cave Biologist.
Rare and Endangered Resources Management	
Golden-cheeked Warbler (GCWA) and Black-capped Vireo (BCVI)	Initiated BCVI and GCWA surveys and color-banding in March. COVID restrictions precluded an in-person event to train volunteers to search for banded GCWAs outside the study plots, so staff limited participation to experienced volunteers. Fortunately, enthusiastic response from 60 of these volunteers allowed almost all search areas to be covered, as in previous years.
	Continuing to collect DNA samples to assess genetic structure of GCWA populations across its breeding range in collaboration with Dr. Giri Athrey/Texas A&M University.
Jollyville Plateau Salamander	BCP continues to conduct aquatic life surveys of springs across the BCP on a periodic basis in hopes of locating new salamander locations and other rare stygobitic life. Watershed Protection Biologist initiated a new JPS occupancy survey for Kent Butler (West Bull Creek). BCP staff conducted the twice yearly JP salamander survey in testudo tube, all salamanders captured were photographed for future population analysis.
Karst invertebrates/ karst work	AW BCP staff are collecting data for preparation of karst completion status analysis and report expected in FY21 with TC BCP.
	AW BCP staff assisted USFWS genetic study by collecting eyeless Batrisodes in Travis and Williamson counties.

	Currently hydrogeological studies continue in the FM 2222 and RM 620 area. In late February 2021, contractor Rich Zarria and his crew dug 18 feet deep through ranch fill containing cattle ribs to make an unprecedented discovery of a new 600 feet plus long cave system, named Persephone Cave, on the AW BCP Stovepipe Karst Preserve. Faunal surveys, cave cricket exit counts, and continuous temperature/humidity monitoring was immediately conducted in Persephone Cave to document changes to the cave ecosystem following restoration. In the future we expect this cave may connect to Stovepipe Cave, which is already outstanding for its diversity of endangered cave invertebrates. This project was possible through mitigation funding provided by the Texas Department of Transportation. Conducted cave faunal surveys and cave cricket exit counts on all other assigned caves (ongoing). A hydrogeological study report of Pipeline Cave permit cave along Slaughter Lane in Circle C was completed February 8, 2021 by Zara Environmental LLC funded primarily by Mobility Corridor Project of COA Public Works with support from AW BCP. The study also included hydrogeological data on Midnight, Slaughter Creek, Arrow, and Get Down federal permit caves. AW BCP is compiling data on Airmen's Cave for a hydrogeological study, partially to fully assess any potential impacts from proposed redevelopment of Brodie Oaks Mall, as requested by representatives of the developers and Watershed Protection Dept. A remapping of the cave and assessment of drips is underway.
Plant and Animal Control	
Mammals	10 hogs and 7 deer were removed by contractors and City staff this quarter.
Red-imported fire ants and Tawny crazy ants	Staff developed and produced temporary signage for public education about Tawny Crazy Ants. Signs were shared with PARD for installation.
Invasive Plants	BCP staff continue to remove non-native plants on COA BCP tracts. A long-standing infestation of Chinese Privet on the Long Canyon tract continues to be a focus of work by staff and volunteers. New areas addressed by staff this quarter included a large invasive plant infestation on the Vaught Ranch tract, and others in canyons in the center of the Cortaña tract.
Land Stewardship	
Habitat Restoration	Due to Covid-19, a limited number of staff and volunteers maintained restoration projects on the JJ&T and Vireo Preserve tracts to promote water retention, slope stabilization, soil restoration, and reforestation on degraded sites to promote future habitat for GCWA and BCVI.
Fencing	Some unfinished sections of fence were completed along Park West/Long Canyon. A portion of the Carol Lee Preserve along FM 2222 was fenced. Work was initiated on Forest Ridge to install a perimeter fence along the boundary in an area that had been previously fenced but with a major setback deep into the property.
Roads	The unprecedented winter storm that downed trees across much of central Texas fortunately spared most Preserve roads, but staff devoted several hours to re-opening a road on the Lime Creek tract. Staff will collect tree slices for tree ring analyses (fire scars, age) from downed trees in fall 2021.

Oak Wilt	A contractor installed two trenches to contain oak wilt infection: one within Emma Long Park and another straddling the boundary between the Cortaña tract and a Steiner Ranch tract managed for the BCP by Travis County.
Wildfire Preparedness	AFD constructed a shaded fuel break on the Jester Estates Karst Preserve which borders 18 homes in the Jester Estates Neighborhood.
Law Enforcement	
Trespass and Criminal Mischief	We continue to work on fencing, patrolling and education to avoid preserve damage.
	Staff and volunteers located several new, unauthorized trails in the Barton Creek Wilderness, apparently constructed to be used by mountain-bikers. Reported to PARD Rangers, who closed some of the trails with signs and some obstacles.
	Continued patrols of Preserve boundaries.
Outreach/Volunteers	
June 6 is Austin Cave Day AW BCP is sponsoring the National Karst and Cave Management Symposium in San Marcos Nov 1-7 2021: https://symposium2021.nckms.org/. The symposium wants to offer the BCP Coordinating Committee free admittance to attend. See *BCP Partners Education Summary January–March 2021.*	

City of Austin's BCCP Activities
Quarter 3 Update: 1 April – 30 June 2021

BCCP Administration	
Infrastructure Projects	Five Infrastructure Habitat Assessment Applications were processed, and Determination Letters were issued from April through June 2021.
Land Acquisition /Management Agreements	• Austin Water (AW) BCP prepared agreements with legal staff for the acquisition of Bright Leaf Preserves. AW BCP evaluated powerlines on the preserve with the preserve director and Austin Energy contractors. Bright Leaf Preserve is fairly unique among BCP preserves in that it its operation directed by a Will and court judgement, its operation is supported by a dedicated endowment, and has a director/resident, all of which support operations according to BCP land-management requirements. • Future expected preserve donations include a 10-acre addition to Parke West at the east end of Milky Way in River Place and Four points preserve adjacent to Sam Hamilton along the west end of Riverplace Blvd. • AW BCP continues working with West Lake Hills neighbors of the 18-acre AW BCP Little Bee Creek Preserve and other land conservation groups to expand the preserve. This preserve currently contains only 1 of 4 caves in a designated protected preserve known to contain the endangered Bee Creek Cave harvestman (*Texella reddelli)* that is restricted only to this portion of Austin, the increasing rare bracted twistflower, Golden-cheeked Warblers, and aquatic permit species of concern. Preservation of this creek also supports high water quality for the adjacent Ullrich WTP.
Reports and Events	
Dual-managed Properties	AW BCP staff participated in the bid evaluation for conducting the work and no vendors were ultimately awarded, instead the project was re-bid.
Personnel	Colin Strickland and Jim O'Donnell were offered permanent biologist positions after a competitive evaluation of candidates through an interview panel. In the 1990's, Jim O'Donnell served on the BCCP biological advisory panel and has worked extensively of restoring preserve forests. Colin serves the BCP as a cave biologist and has extensive experience with Austin's caves.
Rare and Endangered Resources Management	
Golden-cheeked Warbler (GCWA) and Black-capped Vireo (BCVI)	Staff continued color-banding GCWAs and BCVIs through the quarter. Staff and volunteers continued GCWA and BCVI surveys through May (volunteers) and June.
	Collected a total of ~280 DNA samples (from 2019-2021) to assess genetic structure of GCWA populations across its breeding range in collaboration with Dr. Giri Athrey/Texas A&M University.
Bracted Twistflower	Staff and volunteers censused known twistflower populations in April and May. Staff coordinated with UT Botanist to collect replacement samples for herbarium. Staff joined PARD rangers to survey for Bracted Twistflowers on PARD property where plants were reported by AFD in 2020.
Jollyville Plateau Salamander	BCP continues to conduct aquatic life surveys of springs across the BCP on a periodic basis in hopes of locating new salamander locations and other rare stygobitic life. Watershed Protection Biologist initiated a new JPS occupancy survey for Kent Butler (West Bull Creek).

Karst invertebrates/ karst work	AW BCP staff are collecting data for preparation of karst completion status analysis and report expected in FY21 with TC BCP.
	AW BCP staff assisted USFWS genetic study by collecting eyeless Batrisodes in Travis and Williamson counties.
	AW BCP conducted cave faunal surveys and cave cricket exit counts on all other assigned caves (ongoing). Currently hydrogeological studies continue in the FM 2222 and RM 620 area. Contractors and staff continue to excavate filled caves on AW BCP preserves along FM 2222 with funding provided from Texas Department of Transportation to mitigate the FM 2222 bypass to RM 620. AW BCP is completing a hydrogeological study report of Airmen's Cave and recommends the establishment of an easement for the portion of the underlying cave with applicants of a proposed redevelopment of Brodie Oaks Mall. While it appears the mall redevelopment has little chance of impacting the cave, placing the cave under BCP management is required, will assure that permit terms are continued, and that any impacts discovered can be mitigated.
Plant and Animal Control	
Mammals	14 hogs were removed by contractors and City staff this quarter.
Red-imported fire ants and Tawny crazy ants	Staff used boiling water to treat RIFA at several BCP caves.
Land Stewardship	
Habitat Restoration	Due to Covid-19, a limited number of staff and volunteers maintained restoration projects on the JJ&T and Vireo Preserve tracts to promote water retention, slope stabilization, soil restoration, and reforestation on degraded sites to promote future habitat for GCWA and BCVI.
Fencing	Work was completed on Forest Ridge to install a perimeter fence along the boundary in an area that had been previously fenced but with a major setback deep into the property. New GCWA signs installed on new gates at Carol Lee Preserve.
Oak Wilt	
Wildfire Preparedness	No work during nesting season.
Law Enforcement	
Trespass and Criminal Mischief	Staff replaced a gate post that had been pulled down by vandals on the Cortaña/Steiner Ranch boundary.
	Continued patrols of Preserve boundaries. Biologists patrolled tract interiors that correspond with warbler monitoring.
Outreach/Volunteers	

June 6 was proclaimed Austin Cave Day by Austin City Council and was read by Councilwoman Leslie Pool (A Hidden World Beneath our Feet (arcgis.com)
https://austinwater.maps.arcgis.com/apps/MapSeries/index.html?appid=80606a4b1a1045548d90b269060e8d33

AW BCP is sponsoring the National Karst and Cave Management Symposium in San Marcos Nov 1-7 2021: https://symposium2021.nckms.org/. The symposium wants to offer the BCP Coordinating Committee free admittance to attend.

See *BCP Partners Education Summary April–June 2021.*

BCP and AFD staff conducted a 3-day virtual presentation given to AFD staff from multiple Fire Stations in regards to cave rescue training, which included detailed information about our rare karst invertebrates, why they are important, and how they can minimize damage to habitat when performing cave rescues and rescue trainings.

City of Austin's BCCP Activities
Quarter 4 Update: 1 July – 30 September 2021

BCCP Administration	
Infrastructure Projects	Seven Infrastructure Habitat Assessment Applications were processed, and Determination Letters were issued from July through September 2021.
Land Acquisition /Management Agreements	• The 216-acre Bright Leaf Preserve, located near Mount Bonnell, was acquired August 19, 2021. Bright Leaf Preserve is fairly unique among BCP preserves in that it is operation directed by a Will and court judgment, its operation is supported by a dedicated endowment, and it has a director/resident, all of which support operations according to BCP land-management requirements. Bright Leaf Preserve supports Golden-cheeked Warblers in the spring and the ESA-candidate Bracted Twistflower (*Streptanthus bracteatus*) was observed here in 2002, although this plant was not observed in the spring of 2021. It contains spring-fed Dry Creek, which will be surveyed for aquatic life. • Future expected preserve donations include a 10-acre addition to Parke West at the east end of Milky Way in River Place and Four Points Preserve adjacent to Sam Hamilton tract along the west end of Riverplace Boulevard. • AW BCP continues working with West Lake Hills neighbors of the 18-acre AW BCP Little Bee Creek Preserve and other land conservation groups to expand the preserve. This preserve currently contains only 1 of 4 caves in a designated protected preserve known to provide habitat for the endangered Bee Creek Cave harvestman (*Texella reddelli*), that is restricted to this portion of Austin; the ESA-candidate Bracted Twistflower; and aquatic permit species of concern. Preservation of this creek also supports high water quality for the adjacent Ullrich WTP.
Reports and Events	
Dual-managed Properties	
Personnel	Austin Water hired Matt Hollon as the new Division Manager for the Wildland Conservation Division. Matt has worked over 31 years as an environmental planner, with the last 16 as planning manager for Watershed Protection. His work has focused on watershed planning for Austin and Central Texas, with additional experience on national and international watershed projects. He also serves on the Regional Flood Planning Group for the Lower Colorado and Lavaca River basins.
Rare and Endangered Resources Management	
Golden-cheeked Warbler (GCWA) and Black-capped Vireo (BCVI)	Monitoring of 2021 BCVI territories finished. Staff worked to enter BCVI and GCWA observation data into the geodatabase and summary spreadsheets to be compiled and submitted for annual reporting.
Bracted Twistflower	AW BCP staff met with PARD staff to discuss options for reducing social trail use in Bracted Twistflower habitat at Mt. Bonnell.

Jollyville Plateau Salamander	BCP continues to conduct aquatic life surveys of springs across the BCP on a periodic basis in hopes of locating new salamander locations and other rare stygobitic life.
Karst invertebrates/ karst work	AW BCP staff are collecting data for preparation of karst completion status analysis and report expected in FY21 with TC BCP.
	AW BCP conducted cave faunal surveys and cave cricket exit counts on all other assigned caves (ongoing). Currently hydrogeological studies continue in the FM 2222 and RM 620 area. Contractors and staff continue to excavate filled caves on AW BCP preserves along FM 2222 with funding provided from Texas Department of Transportation to mitigate the FM 2222 bypass to RM 620. AW BCP is completing a hydrogeological study report of Airmen's Cave and recommends the establishment of an easement for the portion of the underlying cave with applicants of a proposed redevelopment of Brodie Oaks Mall. While it appears the mall redevelopment has little chance of impacting the cave, placing the cave under BCP management will assure that permit terms are continued, and that any impacts discovered can be mitigated.
Plant and Animal Control	
Mammals	25 hogs were removed by contractors and City staff this quarter.
Red-imported fire ants and Tawny crazy ants	
Invasive plants	BCP staff and volunteers are continuing efforts to remove non-native plants on COA BCP tracts.
Land Stewardship	
Habitat Restoration	Working with TreeFolks, Development Services, City BCP, and County BCP to collect "hyperlocal" native woody plant seeds. Seeds are shipped to a vendor, who prepares (stratify and/or scarify) seeds for planting, grows out a subset to determine viability and for future planting, and returns the remainder to be sown directly in the field.
	Austin CCC assisted with tree planting on habitat restoration sites on the JJ&T tract.
	Due to Covid-19, a limited number of staff and volunteers maintained restoration projects on the JJ&T and Vireo Preserve tracts to promote water retention, slope stabilization, soil restoration, and reforestation on degraded sites to promote future habitat for GCWA and BCVI.
Fencing	No fencing was installed during the GCW nesting season. However, a segment of fence and gate installed by the Travis Country neighborhood was found to obstruct access for cave monitoring. BCP staff negotiated access with the neighborhood.
Oak Wilt	BCP staff inspected several known oak wilt centers this quarter. Aerial reconnaissance, with Austin Police Department, was used to locate new infections. None were found.

Wildfire Preparedness	Staff expanded its live fuel moisture (LFM) monitoring program to include three sites in closed canopy forest, in addition to two long-term sites in open, unshaded areas. Closed canopy forest, particularly with large trees, high species diversity, and fuel moisture greater than 70% may be resistant to burning. Such forests might serve as natural firebreaks and present a strategy to help minimize fire risk. The expanded fuel moisture data would allow objective evaluation of these concepts within the BCP.
	Contractors directed by Wildland Conservation Division staff implemented shaded fuel breaks adjacent to neighborhoods on the JJ&T tract. Shaded fuel breaks reduce the risk that fires originating in residential areas will spread into wildlands.
Law Enforcement	
Trespass and Criminal Mischief	Continued patrols of Preserve boundaries. Biologists patrolled tract interiors in connection with BCVI monitoring, oak wilt monitoring, and habitat restoration.
	With assistance from the Austin Police Department, staff patrolled all tracts via aerial reconnaissance in July.
	Staff mapped unauthorized trails reported by volunteer on Barton Creek Wilderness, and reported to Parks & Recreation Dept. rangers.
Outreach/Volunteers	
Staff worked with volunteers to promote forest restoration at JJT and Vireo Preserves, maintain demonstration gardens at Reicher Ranch, remove invasive plant species, and expand Live Fuel Moisture monitoring.	
Staff provided photographs and text on birds of the Barton Creek Greenbelt to expand the Barton Creek time stream project.	