Balcones Canyonlands Preserve Karst Management
2004 Annual Report

Travis County Natural Resources
and the City of Austin BCP – AWU

Travis County Parks and Natural Resources
Project Numbers 0905-0312, 0905-0323, 0905-0324

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ATTACHMENT A: REPORT BY TEXAS CAVE MANAGEMENT ASSOCIATION (TCMA)

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CITY OF AUSTIN 17 REPORTS

1.0 REGIONAL PERMIT

There are six species of endangered karst invertebrates and 25 karst species of concern (SOC) covered by the Balcones Canyonlands Conservation Plan (BCCP), a regional 10(a)1(b) permit issued by the U.S. Fish and Wildlife Service (USFWS) to the City of Austin (COA) and Travis County (TC) in May 1996. If these 25 species of concern become listed as endangered in the future, no additional mitigation would become necessary to protect them if all of the karst protection outlined in the BCCP is fully implemented. Many of the species of concern may actually be as endangered, or more so than the currently listed species. The SOC have no protection under the Endangered Species Act of 1973, as amended, so the SOC caves lack the federal protections given to the endangered species caves.

The Regional Permit requires protection of 35 endangered species (ES) caves and 27 caves additional caves that support SOC that are not currently listed by the USFWS for a total of 62 karst features (60 caves, 1 mine and 1 karst spring).

The six species of endangered karst invertebrates in Travis County are:

Tooth Cave pseudoscorpion	*Tartarocreagris texana*	Kretschmarr Cave mold beetle	*Texamaurops reddelli*
Tooth Cave spider	*Neoleptoneta myopica*	Bee Creek Cave harvestman	*Texella reddelli*
Tooth Cave ground beetle	*Rhadine persephone*	Bone Cave harvestman	*Texella reyesi*

The 25 additional karst species of concern to be protected by the regional permit are:

FLATWORMS	*Sphalloplana mohri*	**PSEUDOSCORPIONS**	*Aphrastochthonius* N. S.
OSTRACODS	*Candona* sp. nr. *stagnalis*		*Tartarocreagris comanche*
SPIDERS	*Cicurina bandida* (#1)*		*Tartarocreagris reddelli*
	Cicurina cueva (#4)		*Tartarocreagris intermedia (#2)*
	Cicurina ellioti (#5)		*Tartarocreagris* N. S. 3
	Cicurina reddelli (#3)	**HARVESTMEN**	*Texella spinoperca* (#2)
	Cicurina reyesi (#6)	**GROUND BEETLES**	*Rhadine s. subterranea*
	Cicurina travisae (#7)		*Rhadine s. mitchelli*
	Cicurina wartoni (#9)		*Rhadine austinica*
	Neoleptoneta concinna	**ISOPODS**	*Caecidotea reddelli*
	Neoleptoneta devia		*Trichoniscinae* N. S.
	Eidmannella reclus		*Miktoniscus* N. S.
MILLIPEDES	*Speodesmus* N. S.		

*Numbers #1-9 correspond to species listing in the Final HCP-EIS, Section 2-66.

2.0 CAVE MANAGEMENT SUMMARY

This annual report covers the fiscal year 10/01/03-9/30/04 and is referred to in this document as "2004". In 2004, the Balcones Canyonlands Conservation Plan (BCCP) partners continued efforts to determine and track cave status of the 62 karst features covered by the BCCP 10(a) permit. The permit holders continued efforts to acquire, protect, and monitor the karst species in the caves included in the Permit.

Table 1 – Endangered Karst Invertebrate Locations in Travis County, Texas. This table is revised for 2004 from the HCP (USFWS 1996) to show new species location information from James Reddell (2004).

Cave Name	Current Preserve Status	Karst Fauna Region	Tooth Cave Pseudoscorpion	Tooth Cave Spider	Tooth Cave Ground Beetle	Kretschmarr Cave Mold Beetle	Bee Creek Cave Harvestman	Bone Cave Harvestman
Amber Cave	BCP Jollyville/ TC	Jollyville Plateau	X			X		
Bandit Cave	Private	Rollingwood					P	
Beard Ranch Cave	BCP Ivanhoe/COA	Jollyville Plateau						X
Bee Creek Cave	Private	Rollingwood					X	
Beer Bottle Cave	***Not Protected under BCCP***	McNeil/Round Rock						X
Broken Arrow Cave	BCP Lime Cr. Prs./COA	Cedar Park			X			
Cave Y	Barton Creek Grblt/COA	Rollingwood					**"P" 1996 delete "P" 2004**	
Cold Cave	Private	McNeil/Round Rock						X
Cotterell Cave	BCP Spicewood Spgs. Pk./COA	Central Austin						X
Disbelievers Cave	BCP Private 10(a)	Jollyville			X			
Eluvial Cave	BCP Private 10(a)	Jollyville						X
Fossil Cave	Schroeter Pk./COA	McNeil/Round Rock						X
Fossil Garden Cave	Private	McNeil/Round Rock						X
Gallifer Cave	Private TSNL/TC owns surrounding land	Jollyville Plateau		P	P			X
Hole-in-the-Road	Private	McNeil/Round Rock						X
Japygid Cave	BCP Private 10(a)	Jollyville			X	P		
Jest John Cave	BCP Forest Ridge/COA	Jollyville Plateau					X	
Jester Estates Cave	BCP Forest Ridge/COA	Jollyville Plateau					X	
Jollyville Plateau Cv.	BCP Private 10(a)	Jollyville			X			X
Kretschmarr Cave	Private TSNL	Jollyville Plateau			X	X		
Kretschmarr Dble. Pit	Private TSNL	Jollyville Plateau	P		P		P	
Lamm Cave	Private Section 7	Jollyville Plateau			X			
Little Bee Cr. Cave	BCP Ullrich WTP/COA	Rollingwood					X	
McDonald Cave	BCP Jollyville/TC	Jollyville Plateau						X
McNeil Bat Cave	Private	McNeil/Round Rock						X
Millipede Cave	Not Protected under BCCP	McNeil/Round Rock						X
M.W.A. Cave	BCP Private 10(a)	Jollyville	P		X	P		X
New Comanche Tr. Cave	Private	Jollyville Plateau		X				X
No Rent Cave	Private	McNeil/Round Rock						X
North Root Cave	Private TSNL	Jollyville Plateau			X			
Puzzle Pits Cave	Not Protected under BCCP	Jollyville			X			
Rolling Rock Cave	BCP Lime Cr. Prs./COA, Sec.10(a)	Cedar Park			X			
Root Cave	Private TSNL	Jollyville Plateau			X			X
Spider Cave	BCP Park West/COA	Jollyville Plateau			**"P" 1996 "X" 2004**		**"X" 2004**	**"P" 1996** delete "P" 2004
Stovepipe Cave	Private Sec. 7	Jollyville Plateau	P	P	X	X		P
Tardus Hole	Private TSNL	Jollyville Plateau			X			
Tooth Cave	Private TSNL	Jollyville Plateau	X	X	X	X		X
Weldon Cave	Private	McNeil/Round Rock						X
West Rim Cave	Not Protected under BCCP	Central Austin						X
Known Locations (In Permit area)			2	2	14	4	4	20
Possible Locations (In Permit area)			3	2	3	2	3	2

Source: Elliott 1992 and USFWS (1994)

X = confirmed occurrence based on collected specimen

P = probably occurrence based on observation but not confirmed with collected specimen

Thirty-nine out of the 62 karst features (62 = 60 caves, one spring, and one mine) covered by this Karst Management Plan are privately owned. BCP Partners will work closely with non-profit groups and other interested parties to protect the listed karst features.

Nineteen caves are protected as part of the BCP on COA owned or managed land (managed by the Austin Water Utility Dept.-BCP office), one on The Nature Conservancy (TNC) land, two on Travis County (TC) land, 7 caves (entrances only) are protected on TSNL land, 2 caves are protected on Texas Cave Management Association (TCMA) land, 8 caves are protected as part of private Section 10(a) or Section 7 agreements with USFWS, one is protected by a private landowner (Bandit Cave), and one private cave is informally protected by TC (Talus Springs Cave). A total of 43 of the BCCP caves are "protected" in some way, with 19 "unprotected" (including Fossil Cave since its location and status in the park is unknown). This is the only publicly owned "unprotected" cave. Some "protected" caves only have protected entrances, but are threatened by surrounding development or planned development. With the exception of the Four Points: Northeast Cluster, which is protected by a private 10(a) agreement and some of the caves in the Four Points Northwest Cluster, all the caves in clusters to be protected by the permit are threatened by potential development near the caves (Tables 1&2)

In addition to managing the karst features required in the BCCP permit, BCP Partners are also voluntarily managing other karst features located on preserve land, such as Testudo Tube (COA) and several non-BCP karst features.

3.0 KARST FEATURE STATUS

The following table lists the names and status in 2004 of the 62 caves/karst features listed in the BCCP permit.

Table 2 Status in 2004 of the 62 caves/karst features listed in the BCCP permit with 35 with ES and 27 additional caves with SOC.

Cave Name	ES or SOC	Current tract/owner. On BCP Land or private	Cave Cluster	2004 Status
Adobe Springs Cave	SOC	BCP Lehmann/TNC		Good
Airman's Cave	SOC	BCP Barton Creek/COA		Good
Amber Cave	ES	BCP Jollyville/TC	4 Points Cl (Parke)	Good, too close to roadway
Armadillo Ranch Sink	SOC	Private		Unknown
Arrow Cave	SOC	BCP Slaughter Cr. Pk./COA		Good
Bandit Cave	ES	Private		Good, the owner is ecologically concerned
Beard Ranch Cave (Featherman's	ES	BCP Ivanhoe/COA		Good

Cave)				
Bee Creek Cave	ES	Private		Unknown
Blowing Sink Cave	SOC	BCP COA		Good
Broken Arrow Cave	ES	BCP Lime Crk Pres/COA		Good
Buda Boulder Spg.	SOC	BCP Shoal Creek Grblt./COA		Good
Cave X	SOC	Private/COA Protection Agreement		Unknown, New agreement not working smoothly yet
Cave Y	ES	BCP Barton Creek Grblt/COA		Good
Ceiling Slot Cave	SOC	Private		Unknown
Cold Cave	ES	Private	Northwood Cl.	Unknown
Cotterell Cave	ES	BCP Spicewood Spgs. Pk./COA		Good
Disbelievers Cave	ES	BCP Private 10(a)	4 Points Cl. (Perot)	Good
District Park Cave	SOC	BCP D.Nickols Pk./COA		Good
Eluvial Cave	ES	BCP Private 10(a)	4 Points Cl. (Perot)	Good
Flint Ridge Cave	SOC	Prop 2/COA		Good
Fossil Cave	ES	BCP Schroeter Pk./COA		Can't find entrance, area in park protected however, FWS thinks taken
Fossil Garden Cave	ES	Private	McNeil Cl.	Unknown
Gallifer Cave	ES	Private TSNL/ surrounding land to TC 12/03	4 Points Cl (Parke)	Good
Get Down Cave	SOC	Private/COA Protection Agreement with TCMA		Good, implementing agreement, COA/TCMA management agreement pending
Goat Cave	SOC	BCP Goat Cave Karst Preserve/COA		Good
Hole-in-the-Road	ES	Private	Northwood Cl.	Unknown
Ireland's Cave	SOC	Private Circle C		Poor, watershed probs., golf course new development, with a proposed grossly inadequatt setback
Jack's Joint	SOC	Private		Unknown
Japygid Cave	ES	BCP Private 10(a)	4 Points Cl. (Perot)	Good
Jest John Cave	ES	BCP Forest Ridge/COA		Good
Jester Estates Cave	ES	BCP Forest Ridge/COA		Good COA recently took over management
Jollyville Plateau Cv.	ES	BCP Private 10(a)	4 Points Cl. (Perot)	Good
Kretschmarr Cave	ES	Private TSNL	4 Points Cl. (Parke)	Good
Kretschmarr Dble. Pit	ES	Private TSNL	4 Points Cl. (Parke)	Good
Lamm Cave	ES	BCP Private Section 7		Entrance OK, FWS considers taken
Little Bee Cr. Cave	ES	BCP Ullrich WTP/COA		Good
Lost Gold Cave	SOC	Private		Unknown, new owner
Lost Oasis Cave	SOC	Private TCMA		Good
M.W.A. Cave	ES	BCP Private 10(a)	4 Points Cl. (Perot)	Good
Maple Run Cave	SOC	BCP Goat Cave Karst Preserve/COA		Good
McDonald Cave	ES	BCP Jollyville/TC		Good
McNeil Bat Cave	ES	Private	McNeil Cl.	Unknown
Midnight Cave	SOC	BCP Slaughter Cr. Pk./COA		Good
Moss Pit	SOC	Private		Unknown
New Comanche Tr.	ES	Private		Unknown

Cave				
No Rent Cave	ES	Private	McNeil Cl.	Unknown
North Root Cave	ES	Private TSNL	4 Points Cl (Parke)	Good
Pennie's Cave	SOC	Private		Destroyed (cave filled in)
Pickle Pit	SOC	BCP Private Sec. 7		Unknown
Pipeline Cave	SOC	Private		Unknown
Rolling Rock Cave	ES	BCP Lime Cr. Prs./COA		Good
Root Cave	ES	Private TSNL	4 Points Cl (Parke)	Good
Slaughter Creek Cave	SOC	BCP Slaughter Cr.Pk./COA		Good
Spanish Wells	SOC	Private		Unknown
Spider Cave	ES	BCP Park West/COA		Good
Stark's North Mine	SOC	Private		Unknown, Recently sold
Stovepipe Cave	ES	BCP Private Sec. 7		Unknown, (fence cut, illegal acces), Appears permit holder not protecting adequately
Talus Springs Cave	SOC	Private/ 10(a) permit, TC checks entrance		Good/Unknown, only 50' setback from dev.
Tardus Hole	ES	Private TSNL	4 Points Cl (Parke)	Good
Tooth Cave	ES	Private TSNL	4 Points Cl (Parke)	Good
Weldon Cave	ES	Private	McNeil Cl.	unknown
Whirlpool Cave	SOC	Private TCMA		Good

Many of the caves designated here as "protected" with the status of "good" in this table do not have large enough buffer areas around the caves to be adequately protected to meet the new requirements listed in *the U.S. Fish and Wildlife Service Draft Recommendations for Karst Preserve Design, March, 2001 Version*, including many caves that were considered "protected" under USFWS individual 10a permits in years past. The new USFWS preserve design directs that the protected area surrounding the cave must be 59-89 acres in size to capture the majority the plant and animal community elements in viable numbers needed to support the cave species. The terms "protected" and "good" listed in this document refer to caves with some amount of setback around the entrance and some amount of protection over the footprint of the cave and do not necessarily provide this large protected area acreage.

Caves on Balcones Canyonlands Preserve (BCP) land generally have adequate buffer areas and are receiving adequate protection, however some are too close to adjacent development or the protected areas are not large enough to adequately protect the caves under the new criteria. Also some of the caves listed as "protected" under individual USFWS Section 10(a) or Section 7 permits may not be managed to adequately protect them.

The COA currently has two Private Landowner Agreements to protect BCP caves but obtaining and managing these agreements has been challenging.

Though the TSNL caves have "protected" entrances, the privately owned areas around the small cave tracts are not large enough to adequately protect the footprint and drainage areas around the caves. TSNL is negotiating with Travis County about accepting ownership of these caves with the transfer pending for Dec. 2004.

4.0 ACCESS STATUS AND KARST EDUCATION

In the fiscal year 10/01/03-9/30/04, the total number of visitors in the City of Austin's BCCP caves for educational/recreational/rescue training that were issued access permits were: District Park Cave (0), Maple Run Cave (14), Midnight Cave (15), Whirlpool Cave (876), Goat Cave (150) and Get Down Cave (6). The City of Austin issued a Scientific/Research permit to Rob Jackson, and Will Pockman for Cotterell Cave.

The following table lists caves that are currently gated, fenced and/or open to the public, and also protection and monitoring status.

Table 3: 62 BCP karst feature status.

Cave Name	Gated/Fenced	Protection Area Status /Adequate Preserve size	Species Monitoring Status (Yes= surveys done regularly in last 12 months)	Public Access
Adobe Springs Cave	Tract perimeter	Protected on preserve		none
Airman's Cave		Protected on parkland	COA species and surface monitoring	open
Amber Cave	Gated	Protected on preserve – too close to road and sewer line	TC surface monitoring	none
Armadillo Ranch Sink		Unknown		none
Arrow Cave	Gated	Protected in parkland	COA annual species and surface monitoring	none
Bandit Cave	Gated	Protected by private ecologically concerned landowner		none
Beard Ranch Cave		Protected on preserve	COA annual species and quarterly surface monitoring	none
Bee Creek Cave		Unknown		none
Blowing Sink Cave	Gated [1]	Protected on preserve	COA annual species and quarterly surface monitoring	none
Broken Arrow Cave		Protected on preserve	COA annual species and quarterly surface monitoring	none
Buda Boulder Spg.		Protected in parkland	COA annual species monitoring	none
Cave X	Gated and fence	Protected by landowner with 4.5 acre setback to protect cave footprint. Protected to some extent (not actively managed an set back is inadequate)		none
Cave Y	Gated	Protected in parkland	COA annual species and quarterly surface monitoring	none
Ceiling Slot Cave		Unknown		none
Cold Cave		Unknown		none
Cotterell Cave	Fenced	Protected in parkland	COA species and surface monitoring	none
Disbelievers Cave		Protected by 10a permit, hired ACI Consulting		none

District Park Cave	Gated after the 1	Protected in parkland	COA species and surface monitoring	1st room open, past the 1st room access by permit*
Eluvial Cave		Protected by 10a permit, hired ACI Consulting		none
Flint Ridge Cave	Gated	Protected in watershed protection Land (drainage basin will be negatively impacted b the construction of a new highway).	COA annual species and quarterly surface monitoring	none
Fossil Cave		Protected in parkland	Exact location of cave is unknown	none
Flint Ridge Cave	Gated	Protected in watershed protection land		none
Fossil Cave		Protected in parkland		none
Fossil Garden Cave		Unknown		none
Gallifer Cave	Gated	Protected by TSNL and TC owns surrounding land.		none
Get Down Cave	Gated	Protected with Protection Agreement Inadequate setback from development.	TCMA species and surface monitoring	none
Goat Cave	Fenced	Protected on preserve	COA species and surface monitoring	access by permit*
Hole-in-the-Road		Unknown		none
Ireland's Cave	Fenced	Protected by landowner with 4.8 ac. Setback, watershed problems with golf course, set inadequate		none
Jack's Joint		Unknown		none
Japygid Cave		Protected by 10a permit, hired ACI Consulting		none
Jest John Cave		Protected on preserve	COA cricket exit count, bi-annual surface monitoring	none
Jester Estates Cave	Gated	Protected on preserve	COA annual species and quarterly surface monitoring	none
Jollyville Plateau Cv.	Gated [1]	Protected by 10a permit, hired ACI Consulting		none
Kretschmarr Cave	Gated [1] and Fenc	Protected by TSNL in fenced area. Too close to roadway and in powerline ROW. Potential development land too close east and west.		none
Kretschmarr Dble. Pit		Protected by TSNL in 5 ac tract and TC owns surrounding land.		none
Lamm Cave		Protected under Section 7 permit but setback is too		none
Little Bee Cr. Cave		Protected by COA WWW Dept		none
Lost Gold Cave	Gated	Unknown, new owner, may be development near cave entrance		none
Lost Oasis Cave	Gated and Fence	Protected by TCMA	TCMA species and surface monitoring	controlled access**
M.W.A. Cave		Protected by 10a permit, hired ACI Consulting		
Maple Run Cave	Gated	Protected on preserve	COA species and surface monitoring	access by permit*
McDonald Cave	Tract perimeter	Protected on preserve	TC surface monitoring	none
McNeil Bat Cave		Unknown		none
Midnight Cave	Fenced	Protected in parkland - Good	COA annual species and Quarterly surface monitoring	access by permit*
Moss Pit		Unknown		none
New Comanche Tr. Cave		Unknown		none
No Rent Cave		Unknown		none
North Root Cave		Some protection because TSNL owns the cave ent Potentially threatened with surrounding developm		none
Pennie's Cave		Destroyed (cave filled in)		none
Pickle Pit	Gated	Unknown		none
Pipeline Cave	Metal frame [1]	Unknown		none
Rolling Rock Cave		Protected on preserve	COA annual species and quarterly surface monitoring	none

Root Cave		Some protection because TSNL owns the cave ent Potentially threatened with surrounding developm		none
Slaughter Creek Cave	Gated	Protected in parkland	COA annual species and quarterly surface monitoring	none
Spanish Wells		Unknown		none
Spider Cave		Protected on preserve	COA annual species and quarterly surface monitoring	none
Stark's North Mine		Unknown, recently sold		none
Stovepipe Cave		Unknown - fence cut, illegal access. Appears pe holder not protecting adequately.		none
Talus Springs Cave	Gated	Protected by Homeowners Association and TC, is gated but only has 50' setback from houses and is probably effected by uphill develop	TC surface monitoring	none
Tardus Hole		Protected by TSNL in 5 ac tract, TC protects adjoining land on 3 sides.		none
Tooth Cave	Gated	Some protection because TSNL owns the cave ent Potentially threatened with surrounding developm		none
Weldon Cave		Unknown		none
Whirlpool Cave	Gated	Protected by TCMA	TCMA species and surface monitoring	controlled access**

* Access by Permit - Permit may be issued by COA – Austin Water Utility or PARD staff.

** Controlled Access - Private cave owners control the access

[1] Needs gate repairs/improved gate

5.0 MANAGEMENT COORDINATION AND OVERSIGHT

The City of Austin, Travis County and TCMA have continued to work together to standardize monitoring and reporting procedures.

In 2004, a Karst Sub-Committee of the Scientific Advisory Committee (that advises the BCP Coordinating Committee) was established to monitor BCP karst issues and make recommendations on BCP karst protection issues.

6.0 BIOLOGICAL MONITORING

The City of Austin's BCCP staff performed species surveys for Airman's, Broken Arrow, Cotterell Cave, District Park, Flintridge, Goat, Lost Gold, Maple Run and Midnight Caves.

Nico Hauwert with the COA-WPDRD continued his study on the surface catchment area of Flintridge cave. This study will help determine the potential negative impacts associated with the construction of state Highway 45 South.

Rob Jackson, professor at Duke and Will Pockman, professor at the University of New Mexico continued their study on water uptake of certain species of trees located within Cotterell cave.

Travis County's BCCP staff did surface monitoring of McDonald Cave and Amber Cave. For training purposes, county staff assisted local karst researchers holding USFWS permits with karst monitoring to receive training in karst biological survey methodology and species identification. County staff continued training activities with the goal of obtaining USFWS

permits needed to do biological surveys in county owned caves in the future. County staff did surface monitoring informally of Talus Springs Cave on adjacent private land and coordinated with the owners (the homeowners association), worked with the contractor on cave gate design, and coordinated the construction of a cave gate at this location. Travis County did surface monitoring informally for TSNL caves including Gallifer, Kretschmarr, Kretschmarr Double Pit, and Tardus Hole Caves.

The Texas Cave Management Association (TCMA) performed species surveys in Whirlpool, Get Down Caves, and Lost Oasis Caves (Attachment A). TCMA initiated a cave drip monitoring project at Flintridge Cave. The study area is beneath the proposed Outer Loop (SH45) and base line measurements will help evaluate the effect of the highway. TCMA continued to provide valuable volunteer support activities to the BCCP and Central Texas cave protection efforts. They assisted with monitoring of access to City of Austin sensitive caves, participated in negotiations with developers to manage caves under City of Austin cave management agreements, visited caves on private land to assess potential threats, and assisted both BCCP partners in assessment and protection of BCP caves. The BCCP partners greatly appreciate the dedication and hard work of this group.

7.0 KARST MANAGEMENT ACTIVITIES

The BCP Land Management Plan outlined planned activities concerning the 62 BCCP karst features. The following table includes a summary of activities completed in 2004.

Table 4: 2004 BCP Karst Management Activities

Adobe Springs Cave The Nature Conservancy The last cave faunal survey was conducted in 1999. The entrance to the cave continues to be undisturbed and is protected on the Lehmann Preserve tract.
Airman's Cave City of Austin 1. Completed annual cave faunal survey. (See Attachment) 2. To date, have not noticed any significant increase in litter and any new graffiti. It appears that the caving community are policing themselves and so far no cave gate is warranted.
Amber Cave Travis County 1. Did frequent surface inspections with no signs of vandalism were found to the cave entrance or in the cave (one person entered the cave once). 2. Replaced inadequate cave cover with an improved cave gate in 11/03. 3. Maintained fencing and signage to protect this area from unauthorized access and dumping. 4. Inspected for RIFA. 5. Checked on effects of nearby roadway and sewer line. 6. Worked with BCP partners to start training county staff on karst species management, worked with partners to develop unified survey protocol.

Armadillo Ranch Sink Private
Arrow Cave City of Austin 1. Quarterly site inspections were conducted 2. The entrance was inspected to make sure that no human access had occurred. 3. The site was also inspected for RiFA infestations. On all visits fire ant mounds were observed in close proximity of the cave entrance, however, ants did not appear to be entering the cave. 4. A cave gate was installed in order to protect the cave from potential illegal access. COA BCP staff sought bids for this project, (Zara Environmental won the bid). The gate was installed approximately 10 feet inside the entrance. 5. TCMA visited the cave entrance several times in 2004 and no disturbances around the cave were noted, even though there is neighborhood activity in the immediate area (dog graves and mowed paths).
Bandit Cave Private TCMA reports that several years ago sewer lines were constructed near Bandit Cave and as indicated by a TCMA survey, the lines did not encounter the cave, and no adverse effects have been noted.
Beard Ranch Cave (Featherman's Cave), City of Austin 1. The cave was inspected twice, Spring and Fall. 2. No evidence of vandalism was noted. 3. No red imported fire ants were found. A healthy population of native fire ants was found in close proximity to the cave.
Bee Creek Cave Private
Blowing Sink Cave City of Austin 1. This site was inspected 6 times and no signs of vandalism were found in the cave or to the cave entrance. 2. Fire ant mounds were present, (within 150' radius); activity was noted near the entrance but not inside the cave. 3. Zara Environmental was given a research permit to conduct extensive faunal surveys of the cave stream. Zara excavated the closed portion of the cave thus allowing access to the Edwards Aquifer for research and monitoring purposes. 4. COA BCP, WPDRD and Pard personnel met with representatives of new planned development, (the new housing development immediately east of the preserve) regarding: the need to make sure the new development negative impacts on the preserve would be minimized. The developer agreed to install a chainlink perimeter fence. 5.TCMA inspects Blowing Sink at least monthly as this cave is more high profile than most of the BCP caves.
Broken Arrow Cave City of Austin 1. This cave was inspected 3 times and no sign of human visitation was found. 2. A small amount of fire ant activity was found near the cave entrance but not activity was observed in the entrance. 3. BCP staff conducted one cave faunal survey (see attachment).
Buda Boulder Spring City of Austin 1. BCP staff visited the site twice and noted no real negative impacts to the spring. Old abandoned transient camps were found nearby. 2. WSPD staff has taken water quality samples at this spring, most recently on 1/7/99. **T**he chemistry looks fairly typical for an urban setting according to David Johns, (WSPD geologist).
Cave X Private 1. The City of Austin entered into a Private Landowner Agreement "Cave X, Management and Monitoring Plan, Covenants and Restrictions, (see attachment)", with the property owners (Regent's School) in Oct. 1999. The

agreement sets aside a 4.5 acre area was set aside to protect the cave footprint. The USFWS was involved in the discussions on protection. 2. The cave entrance is gated and also has a fence for added protection. 3. There are still concerns about the implementation of Private Landowner Agreement that does not seem to be working yet. This site has had quite a lot of new development in close proximity of the cave. With the potential listing of *Cicurina cueva*, Regents expressed interest in a "Candidate Conservation Agreement" . COA, Travis County, Regents, Horizon, and USFWS met regarding what measures would be needed to fulfill this. One suggestion was that Regents should start to implement the "Cave X Management and Monitoring Plan. 4. TCMA is interested in mgt. of this cave, mgt. issues have been neglected by the owners. 5. TCMA worked with Save Our Springs on the USFWS petition for listing of the *Circurina cueva.* 6.TCMA has been unable to gain any access to the cave in 2004. The owners have been reluctant to respond to communication efforts. TCMA is still interested in mgt. of the cave
Cave Y City of Austin 1. 4 site visits were conducted to this cave. On one visit staff noticed that the new cave gate was breached. COA BCP contracted with the original contractor and had the gate repaired. Even though the gate was breached it appears that no one actually entered the cave. 2. No red imported fire ant activity was observed at or near the cave entrance, however, there were fire ant mounds within a 150' radius of the cave. 3. A cave gate was installed in order to protect the cave from potential illegal access. COA BCP staff sought bids for this project, (Zara Environmental won the bid). The gate was installed inside the shelter cave entrance.
Ceiling Slot Cave Private
Cold Cave Private
Cotterell Cave City of Austin 1. Monthly site inspections were conducted, and found no RIFA at or near the cave. Staff did note that some one had cut the fence. Staff responded by repairing the fence and . increased the frequency of patrols. 2. RIFA were treated with boiling water, most of the ants were located at the parking lot, approximately 300 feet from the cave. 3. Rob Jackson, professor at Duke and Will Pockman, professor at the University of New Mexico continued their permitted access on water uptake of certain species of trees. 4. Conducted 2 cave faunal surveys (see attachments).
Disbelievers Cave Private 10a Permit: PRT-808694 (see FWS files for status)
District Park Cave City of Austin 1. Completed annual faunal survey at this cave (see attachment). 2. Conducted site surveys quarterly. No red imported fire ants were noted in the cave. 3. Permitted access to this cave was allowed. 4. BCP staff replaced all of the old flagging to make certain access is limited to that area. 5. Cave gate lock was inoperative after a series of rains, no access took place for the vast majority of the year.
Eluvial Cave Private 10a Permit: PRT-808694 (see FWS files for status)
Flint Ridge Cave City of Austin 1. BCP staff conducted 6 site visits and noted no signs of illegal trespass and no fire ant activity inside the cave, however fire ant mounds were noted within a 150 foot radius of the cave entrance. 2. COA BCP staff escorted TXDOT contractors into the cave to allow for a new method of mapping the exact location of the cave footprint on the surface.

3. A cave gate was installed in order to protect the cave from potential illegal access. COA BCP staff sought bids for this project, (Zara Environmental won the bid). The gate was installed approximately 10 feet inside the entrance.
4. WPDRD staff continued to monitor recharge at the cave.
5. Conducted a cave faunal survey (see attachment).
6. Nico Hauwert with the COA WPDRD continued his study on the surface catchment area of Flintridge cave.

Fossil Cave
City of Austin
1. The site was inspected twice and there was new signs of vandalism (someone dumped pea gravel and concrete dust into 2 of the karst features, though not what is believed to be Fossil cave.
2. No red imported fire ant activity was observed at the cave entrance, however, mounds were found within a 150' radius of the cave.
3. BCP staff contacted the Division Manager of the site requesting a meeting regarding the recent vandalism and why the features need to be protected. The Division Manager agreed to meet and look into the situation. It appears that neighbors were involved with the dumping. The neighborhood association will be notified.
4. Invasive non-native vegetation was removed from the park.

Fossil Garden Cave
Private

Gallifer Cave
TSNL
1. Surface was monitored was done by Travis County who purchased surrounding land in 12/03. No vandalism observed. Monitored for fire ants.

Get Down Cave
Private/TCMA
1. The City of Austin entered into a Private Landowner Agreement with Lumberman's investment Corporation in July 2000 and with TCMA to manage the cave. The agreement sets aside an area to protect this cave and several others. The USFWS was involved in the discussions on protection area needed.
2. The existing cave gate was replaced with a much more esthetically pleasing gate. The old gate had altered the entrance sink entrance. The new gate design allowed for the restoration of the sink entrance.
3. An educational kiosk has been constructed. The committee put a lot of time and effort in drafting educational information for kiosks at the new preserve. This preserve will go a long way educating the public about caves, cave fauna and their importance, etc.
4. The BSEACD's work on the kiosk has been completed and the Davis Lane entrance kiosk has been fully put in place.
5. TCMA met with the HOA, City of Austin, and the BS/EACD representatives several times during the year to work on finishing up last details of the preserve (fencing, access, gates, and wet pond issues.). Items such as fencing and access have been resolved however, the wet pond issue and ownership still remains unresolved as of 9/30/04.
6.TCMA is finalizing a draft mgt. plan for the caves and preserve
7.During the TCMA spring survey it was noted that there was an considerable accumulation of raccoon scat and carcass of a raccoon. The troglobitic species typically noted were not visible and appear to have been replaced by terrestrial isopods and rove beetles in large numbers.
8. During the Fall survey we discovered the conditions had become worse, there was even more scat and another raccoon carcass. We believe that the increased numbers in the raccoons is due to the urbanization of the area, which greatly increases the availability of food. The animal access has been blocked and the cave resurveyed in several months to check on the species activity.
9. Frequently raccoon access has been regarded as necessary to maintain the energy for the cave environment, however lately there have been several instances in which the abundance of raccoon scat has over powered the cave eco system resulting in the displacement of cave adapted animals by less adapted species.

Goat Cave Karst Preserve
City of Austin
1. Completed biannual faunal survey and quarterly visits for presence/absence of bats (to date, no bats have been observed).
2. Surveyed for and treated RIFA with boiling water.

3. Conducted 12 site inspections. Once the fence was installed trash was no longer thrown into the cave. 4. Allow permitted access to this cave. 5. Designed and installed a new educational sign regarding the new restoration effort and the benefits of bats.
Hole-in-the-Road Cave Private
Ireland's Cave Private 1. A new subdivision; Somerset Estates, is being constructed around the cave. 2. City of Austin Watershed Protection and Development Review Department obtained 4. 819 acres critical environmental feature setback surrounding the cave. About 99% of the cave's natural catchment area is preserved. The entire 4.819 acres setback will be fenced with a combination of 6-ft wood and wrought fencing. 3. More info is needed on who will manage the cave. Need to ask about possible landowner agreement with BCP
Jack's Joint Cave Private
Japygid Cave Private 10a Permit: PRT-808694 (see FWS files for status)
Jest John Cave City of Austin 1. Conducted 2 site visits found and no signs of vandalism or human visitation. 2. No red imported fire ants were present at the cave entrance, however, there were mounds within a 150' radius of the cave entrance.
Jester Estates Cave City of Austin 1. COA took over ownership of the property. The immediate neighbors purchased the 3 acre tract and donated it to the COA BCP. The neighbors paid for the property and a new property line survey, COA paid for a Environmental Assessment. 2. BCP staff conducted 6 site visits and on several occasions removed new illegally dumped trash. BCP staff met with neighbors regarding why these activities must end. 3. BCP staff noticed that one neighbor was dumping chlorinated pool water into the preserve. The neighbor was immediately contacted and the pipe was removed. 4. The site was treated for fire ants with boiling water (70 mounds were treated).
Jollyville Plateau Cave Private 10a Permit: PRT-808694 (see FWS files for status)
Kretschmarr Cave TSNL Private 1. Travis County unofficially monitored the tract and propped up the 8' fence that was damaged by a motor vehicle. Noted the gap in the fence made by Pedernales Electric Company several years ago for access to maintain the power line Right of Way vegetation.
Kretschmarr Double Pit TSNL Private 1. Travis County unofficially monitored the tract.
Lamm Cave Section 7 Permit 2-15-93-F-075 (see USFWS files)
Little Bee Creek Cave City of Austin 1. BCP staff conducted 2 site visits and noted no new vandalism or illegal activity. 2. AWU has fenced the perimeter of the property which will help protect the cave from illegal access. AWU site managers are also planning on gating the cave using a design provided by BCP staff.
Lost Gold Cave Private

1. COA BCP staff and Scott Hiers with WPDRD conducted a cave faunal survey (see attachment). 2. Noticed that the cave gate has been breached. Scott notified the property owner and let him know that the gate needed to be repaired. 3. Removed trash from the cave. 4. Scott Hiers with WPDRD determined the drainage basin for this cave in order to protect it from new planned development.
Lost Oasis Cave TCMA 1. No visitation activities other than routine monitoring for both fire ants and cave biology. 2. TCMA produced a detailed survey map of the cave for BCP files. a biology class from the Univ. of TX-Austin monitored the cave for biological life. 3. Conducted one faunal survey (see attachment)..
Maple Run Cave City of Austin 1. Completed annual faunal survey (see attachment). 2. Conducted 6 site visits, found no sign of unpermitted access, and on occasion, removed trash from the entrance. 3. Surveyed for and treated red imported fire ants with boiling water. 4. Permitted access to this cave is allowed. 5. TCMA delivered a detailed survey map of this cave for BCP files.
McDonald Cave Travis County 1. Staff did surface monitoring and found no signs of vandalism. 3. Installed fences, gate, and signs to protect this tract from unauthorized access. 3. Worked with BCP partners to start training county staff on karst species management, worked with partners to develop unified survey protocol.
McNeil Bat Cave Private 1.TCMA attempted to observe any bat flights from a remote location at the RR HS and did not sight any emergence from the cave locality. 2. Landowner relations are in need of improvement in order to gain any access to the cave or implement any types of protection measures.
M.W.A. Cave Private 10a Permit: PRT-808694 (see FWS files for status)
Midnight Cave City of Austin 1. Conducted 8 site visits, the fence was vandalized by people climbing it, however, it appears that they were not actually entering the cave. 2. Surveyed for RIFA, found no activity at the entrance, however did note mounds within a 150-foot radius of the cave. 3. Permitted access is allowed at the cave. 4. PARD made additional safety improvements and repairs to the fence.. 5. Conducted one cave faunal survey (see attachment). 6. Due to bad air TMCA suggests that access for the cave be limited to such times as when the air quality is adequate (low oxygen and likely high levels of CO2.) Winter months and when Slaughter Creek is flowing are the best times for access.
Moss Pit Cave Private
New Comanche Trail Cave Private
No Rent Cave Private
North Root Cave TSNL Private

Pennie's Cave Private 1. The entrance is filled with rock, gravel and graded over and the cave may be lost. City Watershed Protection staff is aware of the issue and will require setbacks for its protection if/when development plans are submitted to the COA. The BCCP may still want to consider replacing this cave on the BCP list or begin work on a private landowner agreement to uncover /protect it. 2. TCMA reported that Scott Heirs, COA Watershed Protection obtained accurate GPS coordinates to the filled cave entrance and the owner has clearly expressed no interest in the cave ever being opened. It is the hope of TCMA that the BCCP will replace this covered cave with Grassy Cove or some other cave in need of BCCP protection (see TCMA report). 3. TCMA reported that Grassy Cove Cave, a cave which would benefit from protection through the BCP, is now owned by the Circle C Neighborhood Assoc. and the entrance to this cave is featured as the entrance photo in the City of Austin Watershed Protection's new poster titled "Austin Underground".
Pickle Pit Cave Section 7 Permit 2-15-93-F-075 (see USFWS files) 1. City of Austin Staff located the cave in 2004 and took an accurate GPS reading. 2. City of Austin staff noted that the cave is gated and with the exception of construction trash dumped in and around the cave, the cave gate appeared to function as designed (keep trespassers out).
Pipeline Cave Private TCMA had a meeting with the Stratus Development Group and has been assured that the cave will be set aside and that the previously planned large commercial development on that tract will likely be scaled down to accommodate the cave.
Rolling Rock Cave City of Austin 1. This cave was inspected twice, and no sign of human visitation or vandalism was found. 2. Was inspected for red imported fire ants, none were present at or near the cave entrance, but did find several species of native ants. RIFA mounds were found within a 150' radius of the cave entrance.
Root Cave TSNL Private
Slaughter Creek Cave City of Austin 1.Quarterly site inspections were conducted. 2. The entrance was inspected to make sure that no human access had occurred. 3. The site was also inspected for RIFA infestations. On all visits fire ant mounds were found in close proximity of the cave entrance, however, ants did not appear to be entering the cave. 4. A cave gate was installed in order to protect the cave from potential illegal access. COA BCP staff sought bids for this project, (Zara Environmental won the bid). The gate was installed approximately 10 feet inside the entrance.
Spanish Wells Cave Private
Spider Cave City of Austin 1. 4 site visits were conducted, and no sign of human access, or vandalism was found. 2. Surveyed for red imported fire ants, found no activity at or near cave entrance, but did find mounds within a 150' radius.
Stark's North Mine Private 1. TCMA reports that they visited the mine and it appears undisturbed. TCMA was contacted about sewer line construction in the vicinity, and the engineer of the project was advised of the sensitivity of this locality. 2. TCMA reports the tract of land where the cave is has been put on the market. It is unknown at this time if the land has sold and what the status of the cave will be after the new owner takes possession. 3. City of Austin accurately GPS the cave position. Trash was visible inside the cave passage.

4. The neighbor immediately downhill from the cave has contacted TCMA re; protection of the cave and the impending erosion issues. No action taken.
Stovepipe Cave Section 7 Permit 2-15-93-F-075 (see USFWS files)
Talus Springs Cave Private 1. The USFWS 10a permit PRT 815447 mitigation requirement intended this cave to go to Travis County, however, the cave is located on private land just outside of the mitigation area. Travis County has had meetings with the homeowners association requesting that they donate the land to Travis County. 2. Travis County staff regularly checked the cave entrance. The owner was informed that yard clippings are being dumped near the cave entrance. 3. Travis County worked with the owners to hire Zara Env. to build a cave gate and this was constructed.
Tardus Hole Cave (Kretschmarr Fluted Sink) TSNL Private 1. Travis County unofficially monitored the tract.
Tooth Cave TSNL Private
Weldon Cave Private
Whirlpool Cave TCMA 1. Conducted a biological survey in December 2003. 2. Controlled and monitored public access. 3. Planning to relocate the survey areas in 2003. 4. Education usage of the cave continues to be very regular and high as compared to the other Austin area caves. The main groups utilizing the cave are The Austin Nature Center, The University of Texas, Texas State University, Texas A&M, and various outdoor groups from around central Texas. This cave has tremendous potential as an educational resource and receives in excess of 1000 visits annually and observations indicate that visitor impact to be minimal.

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ATTACHMENT A:

Texas Cave Management Association (TCMA)
December 2004

Submitted by: Julie Jenkins and Bill Russell, TCMA

Whirlpool Cave owned by Texas Cave Management Association is utilized by large numbers of visitors from Austin and the surrounding area, The cave is primarily for educational/recreational activities by the City of Austin Nature Center and other outdoors and nature related organizations. Other uses include Austin Fire Department safety and fire rescue training, science monitoring for the TCMA and BCP and caver training by local Texas cave grottos. The cave is typically visited on a weekly basis by one or more organizations. In the fall new cavers receive training and experience in Whirlpool. Groups using the cave stay to the well-worn path and seldom if ever stray from the established route. Visits may take as little as an hour or last for several hours, depending on the educational needs, age and background of the group touring the cave. Whirlpool received 1079 registered visitors in 2003.

Bill Russell and Julie Jenkins, TCMA staff, performed two biological surveys in 2003-2004. The biological survey in June 2004, which was the 2nd wettest of record at the Austin Bergstrom International Airport...with 14.18 inches of rain. This is 10.76 inches above normal. The latest 30 year 1971 to 2000 normal for June is 3.42 inches. Much of the cave was not affected by these increased rains however, just past the Natural Bridge area (see map), the low areas before the Travis Co. Room, and the first part of the South Caverns was more wet than usual, with active drips from speleothems and ponded water in low areas.
Despite the increase of rainfall the routine cave critters were still slightly decreased from last year. Increased wetness would not seem to be favorable for the Rhadine beetle as they appear to prefer dry, powdery substrate. This seems to have especially affected the entrance area, which had direct input from the creek, when water topped the entrance approximately 10" flowing over the cave gate. At the bottom of the entrance ladder, the numbers of *Plethodon albagula* sightings was dramatically decreased. Relocation of monitoring sites was not implemented this year.

LOST OASIS CAVE

Two surveys were performed during the 2003-2004 year by Bill Russell and Julie Jenkins. Historically, Lost Oasis, a small cave has been monitored for its biology and has had little interest from local cavers, thus there has been no access except for monitoring trips.

Considerable numbers of animals were found presumably due to the favorable moisture conditions following June rains. The cave has air-flow and the moist air in the cave has likely attracted cave animals to the entrance area of the cave. There was evidence of raccoon scat in the cave on both visits. It appears that one or two small holes have opened to the surface allowing entry into the cave for small animals.

GET DOWN CAVE

The annual Western Oaks Cave Day date was changed to October 30th and thus there is no cave day activity during this period.

Outstanding issues of the year regarding the karst preserve are still ownership of the preserve and ownership/responsibility for the wet pond. These remain unresolved at the time of this report and presented somewhat of a stumbling block to the preserve management as no funds were available and although a management plan has been drafted, it has yet to be approved.

Two surveys were performed this year, most remarkably it should be noted that during our surveys we discovered an over abundance of raccoon scat and that the highly cave adapted species had apparently been displaced by less adapted and more aggressive species, like rove beetles. It has been noted that there are distinct issues with raccoons in the cave, which is demonstrated both thru the increase in the scat and the decaying raccoon carcasses found.

During the Fall survey we discovered that conditions had become worse, there was even more scat than the Spring survey and another raccoon carcass. We believe that the increased numbers in the raccoons is due to the intense urbanization of the area, which greatly increases the availability of food (dog food outside etc.). The animal access has been blocked and the cave will be resurveyed in several months to check on the species activity.

Frequently raccoon access has been regarded as necessary to maintain the energy for the cave environment, however lately there have been several instances in which the abundance of raccoon scat has over powered the cave eco system resulting in the displacement of cave adapted animals by less adapted species.

CITY OF AUSTIN: GOAT CAVE KARST PRESERVE, DICK NICHOLS PARK AND THE SLAUGHTER CREEK METROPOLITAN PARK

The TCMA does not “officially” manage any of the city owned caves, we do provide valuable volunteer support activities on behalf of the city, such as in particular monitoring local access to city owned caves and support of cave and karst related activities.

TCMA administered access permits for the following city owned caves in 2003-2004:

Maple Run Cave: 60

Goat Cave: 88

Midnight Cave: 1 to check status of air, no scheduled trips in 2003-2004
District Park: 0
Get Down: 6

District Park Cave: This cave received no visitation in 2004 as the wet year and flooding into the cave entrance contributed to gate/lock problems. The problem has been addressed.

Goat Cave: This year saw an unusually high number of visitors to the cave. In mid September, a large group of 28 from Texas A&M Galveston biology class visited Goat Cave. It appears that their activities were more aggressive than the more routine, casual cave visitor. When performing their fall survey, city staff noted the decrease in cave life activity and the increase human disturbance to the faunal survey zones. 28 biologists looking for cave critters could have an impact on the cave fauna.
Because of the change in cave faunal activity TCMA has placed a freeze on access to Goat Cave by any local interested parties until the spring survey sometime in March 2005.

City of Austin/Texas Cave Management Association
Flintridge Cave Drip Monitoring Project - 2004
Bill Russell, Julie Jenkins

Flint Ridge Cave

The Flint Ridge Sink first came to the attention of cavers in March of 1984, when Bill Russell was checking the area in advance of nearby subdivision development. The sink was about 10 feet deep, 50 feet long and floored with dirt and leaf litter. The cave is located at the southeast end of the sink and is the second deepest cave in Travis County at 152 feet.

In 2000, the TCMA signed a MOU with the City of Austin Water and Wastewater Department that would allow access to the Water Quality Protection Lands for scientific and management purposes. Bill Russell and Julie Jenkins began exploring ideas for studies that could be done in caves on the lands. Flintridge Cave was an ideal selection because this area will beneath the proposed Outer Loop (SH45) and base line measurements will help evaluate the effect of the highway, as well as give an idea of the time required for rain events to effect drip rates at this depth, about 130 feet below the surface.

The first site found was chosen and rough manual counts and some rudimentary water sampling began as we developed our methodology however, flooding in 2002 destroyed all indications that a monitoring site ever existed and the data useless as the site was no longer usable. In 2003 we began to explore the cave for new drip formations with a sizeable output for catchment and safely located out of the flood water path in the cave. A new site was chosen that had a stable drip of approximately 60ml/min. The site is located at the bottom of a 10 foot pit with the drips originating from a stalactite hanging above the pit. Figuring out the best way to attach the equipment at the site sounds much easier that it was. And in June of 2004 major rain events and flooding again filled the cave. The site was safe but alterations to placement of equipment and various catchment devices were necessary. After securing and modifying the equipment and making all the adaptations needed to be able to log the drip activity and record the data over a period of time in such hostile conditions is not without its challenges.

The site is located in the “4 Second Pit”, the only known pit in the cave. The stalactite currently drips a constant 92ml/min . A funnel and catchment tubing will be installed to capture all drips and pass them along the tube to the tipping bucket

where the drips are logged using a Hobo Micro Station data logger. We will also be gather information on Conductivity, TSS, and other parameters using equipment provided Austin's Water Quality Protection Lands (WQPL's).

Late fall (November or December) is the projected date to begin gathering data from the monitoring site.

ATTACHMENT B:
KARST FAUNAL REPORTS:

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): B. Russell, J. Jenkins Date: May 15, 2004

Surface Temperature: lo 70's Surface Humidity: 80+% Weather Conditions: overcast/humid

Cave: **GET DOWN CAVE** Survey Section: A. Discovery Landing

Time Stated: 10:30 noon Time Ended: 11:00am

☐ *Solenopsis invicta* (fire ant) Infestation: NO x YES ☐ Heavy ☐ Moderate ☐Light

☐ Vandalism: NO x YES ☐ Gate ☐ Broken Speleothems ☐ Grafitti

Cave Temperature: _____°F (C) Cave Humidity: _____°F (C) Air Flow: ☐ In x Out

FAUNAL SURVEY

SPECIES	COUNT	OBSERVATIONS
Spiders: Circurina	1	Floor under rock
Wall Web		
Harvestman: L. townsendii		Near entrance but not in survey area
*Texella mulaiki		
Millipedes: Cambala speobia		
*Speodesmus sp. "small"		
*Speodesmus sp. "large"		
Cave Crickets: Ceuthophilus sp. B		
Ceuthophilus secretus	12	
Ceuthophilus cunicularis	2	
Ceuthophilus nymphs	20+	ceiling
Springtails: Collembola sp	100's+	On the scat which is scattered throughout the cave
Silverfish: Texoreddellia tex.		
Beetles: Coleoptera sp		
*Rhadine austinica	2	
Flies: Diptera		
Scorpion: V. redelli		
Snails: Gastropoda		Empty snail shells
Salamander: Plethodon albagula		
Cliff Chirping Frog: Syrrhophus marnocki		
Rattlesnakes: Crotakus atrox		
Spider adult & nymphs- unknown species	5	Compact web on floor
Rove beetles	5	Old decomposed scat, under rocks
Moth	1	small

☐ Section Map of Survey Area attached ☐ Photographs taken? (please provide copies of photos with titles for this report)

* Use the back of the report for additional notes and comments. Damp active drips, old scat: observed terrestrial isopods and another dead raccoon. This area lacks soils, has popcorn like formations and cemented rock, the scat appears to be providing a nutrient source for invertebrates in the area however, the typical cave invertebrates are not present, more aggressive isopods and rove beetles are in abundance and there is a clear lack of the expected cave animals.

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): B. Russell, J. Jenkins Date: May 15, 2004

Surface Temperature: lo 70's Surface Humidity: 80+% Weather Conditions: overcast/humid

Cave: **GET DOWN CAVE** Survey Section: B. South end of Canon del Blanco Vista

Time Stated: 11:150 Time Ended: 11:45am

☐ *Solenopsis invicta* (fire ant) Infestation: NO x YES ☐ Heavy ☐ Moderate ☐Light

☐ Vandalism: NO x YES ☐ Gate ☐ Broken Speleothems ☐ Grafitti

Cave Temperature: _____°F (C) Cave Humidity: _____°F (C) Air Flow: ☐ In x Out

FAUNAL SURVEY

SPECIES	COUNT	OBSERVATIONS
Spiders: Circurina	3	
Wall Web	2	
Harvestman: L. townsendii		
*Texella mulaiki		
Millipedes: Cambala speobia	15	Wet scat
*Speodesmus sp. "small"	2	1 on candle remnant,
*Speodesmus sp. "large"	1	
Cave Crickets: Ceuthophilus sp. B		
Ceuthophilus secretus	3	Along right canyon wall
Ceuthophilus cunicularis		
Ceuthophilus nymphs	5	Right canyon wall
Springtails: Collembola sp		
Silverfish: Texoreddellia tex.	2	floor
Beetles: Coleoptera sp		
*Rhadine austinica	2	In pulveralite on floor when first entering area, later none were to be found
Rove beetles	20	scat
Flies: Diptera		
Scorpion: V. redelli		
Snails: Gastropoda		Empty snail shells
Salamander: Plethodon albagula		
Cliff Chirping Frog: Syrrhophus marnocki		
Rattlesnakes: Crotakus atrox	15+	scat
brackenrigeii- isopod		

Greater amounts of raccoon scat have been observed farther back than this monitoring point, we will watch this and make recommendations after the fall survey.

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): B. Russell, J. Jenkins Date: Sept 25, 2004

Surface Temperature: 75 Surface Humidity: 67% Weather Conditions: humid/vercast

Cave: **GET DOWN CAVE** Survey Section: A. Discovery Landing

Time Stated: 2:00 Time Ended: 2:30pm

☐ *Solenopsis invicta* (fire ant) Infestation: NO x YES ☐ Heavy ☐ Moderate ☐Light

☐ Vandalism: NO x YES ☐ Gate ☐ Broken Speleothems ☐ Grafitti

Cave Temperature: _____°F (C) Cave Humidity: _____°F (C) Air Flow: ☐ In x Out

FAUNAL SURVEY

SPECIES	COUNT	OBSERVATIONS
Spiders: Circurina	1	
Wall Web		
Harvestman: L. townsendii		
*Texella mulaiki		
Millipedes: Cambala speobia		
*Speodesmus sp. "small"		
*Speodesmus sp. "large"		
Cave Crickets: Ceuthophilus sp. B		
Ceuthophilus secretus	5	
Ceuthophilus cunicularis		
Ceuthophilus nymphs		
Springtails: Collembola sp	50+	Scat, more scat than May survey
Silverfish: Texoreddellia tex.		
Beetles: Coleoptera sp		
Rove beetles	50++	On the abundance of scat present in the cave
*Rhadine austinica		
Flies: Diptera	1	Not sure what type of fly- black, surface, not typical house type
Scorpion: V. redelli		
Snails: Gastropoda		
Salamander: Plethodon albagula		
Cliff Chirping Frog: Syrrhophus marnocki		
Rattlesnakes: Crotakus atrox		

☐ Section Map of Survey Area attached ☐ Photographs taken? (please provide copies of photos with titles for this report.) * Use the back of the report for additional notes and comments scat, scat, everywhere scat,

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): B. Russell, J. Jenkins Date: September 25, 2004

Surface Temperature: 75 Surface Humidity: 67% Weather Conditions: humid/overcast

Cave: **GET DOWN CAVE** Survey Section: B. South end of Canon del Blanco Vista

Time Stated: 2:30 Time Ended: 3:00pm

☐ *Solenopsis invicta* (fire ant) Infestation: NO x YES ☐ Heavy ☐ Moderate ☐Light

☐ Vandalism: NO x YES ☐ Gate ☐ Broken Speleothems ☐ Grafitti

Cave Temperature: _____°F (C) Cave Humidity: _____°F (C) Air Flow: ☐ In x Out

FAUNAL SURVEY

SPECIES	COUNT	OBSERVATIONS
Spiders: Circurina		
Wall Web		
Harvestman: L. townsendii		
*Texella mulaiki		
Millipedes: Cambala speobia		
*Speodesmus sp. "small"	2	
*Speodesmus sp. "large"		
Cave Crickets: Ceuthophilus sp. B		
Ceuthophilus secretus	12	
Ceuthophilus cunicularis	5	
Ceuthophilus nymphs	25	Many on floor
Springtails: Collembola sp	20	Wet scat, pulverulite
Silverfish: Texoreddellia tex.	11	
Beetles: Coleoptera sp		
Rove beetles	75+	More scat, fresh scat,
*Rhadine austinica		
Flies: Diptera		
Scorpion: V. redelli		
Snails: Gastropoda		
Salamander: Plethodon albagula		
Cliff Chirping Frog: Syrrhophus marnocki		
Rattlesnakes: Crotakus atrox		

Isopods	50+	Scat, running all around, mostly scat related

☐ Section Map of Survey Area attached ☐ Photographs taken? (please provide copies of photos with titles for this report.)

* Use the back of the report for additional notes and comments: Aside from crickets and collembolas it appears that the unusually high input of raccoon scat and raccoon carcuses, (total of 3 in the past 18 mos) has driven most of the typical cave species away while in favor of the more aggressive beetles and high numbers of isopods. We believe that the urbanization of the area has caused this increase in raccoon activity which has not been this high previously. We recommend closure of animal access holes until populations level out. The cave should be remonitored in early spring.

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): __B. Russell, J. Jenkins_____ Date: _____May 15,2004_____

Surface Temperature:_hi 70's_____ Surface Humidity: _70+%_____ Weather Conditions:__overcast/humid

Cave: ____**WHIRLPOOL CAVE**_____ Survey Section:___A. Natural Bridge_____

Time Stated: __2p.m_____ Time Ended:___2:30am_____

☐ *Solenopsis invicta* (fire ant) Infestation: NO__x__ YES___ ☐ Heavy ☐ Moderate ☐Light

☐ Vandalism: NO_x___ YES___ ☐ Gate ☐ Broken Speleothems ☐ Grafitti

Cave Temperature: _____°F (C) Cave Humidity: _____°F (C)

Air Flow: ☐ In ☐ Out

FAUNAL SURVEY

SPECIES	COUNT	OBSERVATIONS
Amphipods: Stygobromus sp.		Area was very dry and no bugs were observed on initial inspection of area. The survey was not completed.
Isopods: Trichoniscidae		
Spiders: Circurina		
Wall Web		
Harvestman: L. townsendii		
*Texella mulaiki		
Millipedes: Cambala speobia		
*Speodesmus sp. "small"		
*Speodesmus sp. "large"		
Oxidus gracillis (hothouse millepede)		
Cave Crickets: Ceuthophilus sp. B		
Ceuthophilus secretus	1	
Ceuthophilus cunicularis	1	
Ceuthophilus nymphs	3	
Springtails: Collembola sp		
Silverfish: Texoreddellia tex.	1	
Beetles: Coleoptera sp		
*Rhadine austinica		
Flies: Diptera		

Scorpion: V. redelli		
Snails: Gastropoda		
Salamander: Plethodon albagula		
Cliff Chirping Frog: Syrrhophus marnocki		
Rattlesnakes: Crotakus atrox		

☐ Section Map of Survey Area attached ☐ Photographs taken? (please provide copies of photos with titles for this report.)

* Use the back of the report for additional notes and comments.

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): __B. Russell, J. Jenkins_____ Date: _____May 15,2004_____

Surface Temperature:_hi 70's_____ Surface Humidity: _70+%_____ Weather Conditions:__overcast/humid

Cave: ____**WHIRLPOOL CAVE**_____ Survey Section:___B._Entrance to County Travis Room_

Time Stated: __3p.m_____ Time Ended:___3:30pm_____

☐ *Solenopsis invicta* (fire ant) Infestation: NO__x__ YES___ ☐ Heavy ☐ Moderate ☐Light

☐ Vandalism: NO_x___ YES___ ☐ Gate ☐ Broken Speleothems ☐ Grafitti

Cave Temperature: _____°F (C) Cave Humidity: _____°F (C)

Air Flow: ☐ In ☐ Out

FAUNAL SURVEY

SPECIES	COUNT	OBSERVATIONS
Amphipods: Stygobromus sp.		
Isopods: Trichoniscidae		
Spiders: Circurina		
Wall Web		
Harvestman: L. townsendii		
*Texella mulaiki		
Millipedes: Cambala speobia		
*Speodesmus sp. "small"		
*Speodesmus sp. "large"		
Oxidus gracillis (hothouse millepede)		
Cave Crickets: Ceuthophilus sp. B		
Ceuthophilus secretus	5	ceiling, along wall
Ceuthophilus cunicularis	1	Floor just after entering area
Ceuthophilus nymphs		

Springtails: Collembola sp		
Silverfish: Texoreddellia tex.	1	floor
Beetles: Coleoptera sp		
*Rhadine austinica		
Flies: Diptera		
Scorpion: V. redelli	1	Ceiing of upclimb just before TC room
Snails: Gastropoda		
Salamander: Plethodon albagula		
Cliff Chirping Frog: Syrrhophus marnocki		
Rattlesnakes: Crotakus atrox		

☐ Section Map of Survey Area attached

☐ Photographs taken? (please provide copies of photos with titles for this report)

* Use the back of the report for additional notes and comments.

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): __B. Russell, Jenkins_____ Date: _____September 25, 2004_____

Surface Temperature:__lo 70's_____ Surface Humidity: _82%_____ Weather Conditions:_cloudy, overcast

Cave: ____**Lost Oasis Cave**__ Survey Section:___Entire Cave_____

Time Stated: __10:30a.m_____ Time Ended:___11:00am_____

☐ *Solenopsis invicta* (fire ant) Infestation: NO__x__ YES___ ☐ Heavy ☐ Moderate ☐Light (mounds but, no active individuals)

☐ Vandalism: NO_x___ YES___ **x** Gate ☐ Broken Speleothems ☐ Grafitti

Cave Temperature: _____~70_____°F (C) Cave Humidity: _____°F (C)

Air Flow: ☐ In ☐ Out

FAUNAL SURVEY

SPECIES	COUNT	OBSERVATIONS
Amphipods: Stygobromus sp.		
Isopods: Trichoniscidae	2	large
Spiders: Circurina	1	smaller, whiter not as translucent
Wall Web		
Harvestman: L. townsendii		
*Texella mulaiki		
Millipedes: Cambala speobia	60+	Under rocks, some associtated w/scat found in cave, some found away from scat and in main area, N wall

*Speodesmus sp. “small”	1	
*Speodesmus sp. “large”		
Oxidus gracillis (hothouse millepede)		
Cave Crickets: Ceuthophilus sp. B		
Ceuthophilus secretus	10	On ceiling throughout
Ceuthophilus cunicularis	4	
Ceuthophilus nymphs	5	
Springtails: Collembola sp	30+	Lots around freshest scat
Silverfish: Texoreddellia tex.		
Beetles: Coleoptera sp		
*Rhadine austinica		
Beetles? Staphylinid		
Beetles?	2	Small brown surface dwellers?
Flies: Diptera		
Scorpion: V. redelli	1	in main area
Snails: Gastropoda		
Salamander: Plethodon albagula		
Cliff Chirping Frog: Syrrhophus marnocki		
Rattlesnakes: Crotakus atrox		
Monarail worm		
Fungus mats		
Psocoptera		

☐ Section Map of Survey Area attached

☐ Photographs taken? (please provide copies of photos with titles for this report)

* Use the back of the report for additional notes and comments.

Salamander at gate, not plethodon?
Lots of scat, there are two other openings to the surface, which we’ve block with rocks since the scat situation at Get Down Cave

Unknown millipede on surface-yellow/tan black down back

There were some small surface drips in the cave

Name: Mark Sanders, Carlo Abbruzzese, and Nikki Lake Agency: COA
Date: 10/31/03 No. of pages: 3

Location: Airman's cave GPS coordinates (NAD 1983)_____ Section No. 1

Time Started: 10:52am Time ended: 11:16am Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) small amount of trash

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☒ Vandalism If so, ☒ trash ☐ speleothems ☐ gate ☒graffiti

Temperature Inside: 68 F Outside: 80 F Humidity Inside: 90% Outside: 77% @ 10:30am
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) below average rainfall

Organic matter encountered in survey area: old raccoon scat .

Surface area moisture conditions: (dry, dripping, pools) some mosit areas

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: *Gastropoda*	1		
Earthworms: *Haplotaxida*			
Isopods: *Oniscoidea*			
Scorpions: *Vaejovis reddelli*			
Spiders: wall web	4		
Cicurina sp.	6	Under rocks	
Eidmannella sp	22		
* *Texella spinoperca*			
Cambala speobia	4	Under old scat	
* *Speodesmus sp*.	1	Under old scat	
* *Rhadine austinica*		On floor	One observed just outside survey area.
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	9		
Ceuthophilus cunicularis	4		
Ceuthophilus nymphs	32		
Blow flies: *Calliphora* accident			
Fungus gnats	3		
Plethodon albagula	8		2 adults, 6 juv, all had lots of white spots.
Pipistrellus subflavus			2 were observed in-between 1 and 2

(*) signifies species of concern

See back for additional Field Notes and Comments? ☐ Section map attached? ☒

☐ Photographs taken? How many? _____ If so, attach to this report.

The graffiti may have been from last year, however, we removed it and all other graffiti encountered in the cave which was not much. We used a wire brush and our shirts.
Small amount of trash was removed. In-between sections 1 and 2 we removed 2 old batteries and a small amount of other trash.
Travis County Biologist Nicki Lake helped us survey for sections 1 and 2.

Name: Mark Sanders, Carlo Abbruzzese, and Nikki Lake Agency: COA
Date: 10/31/03 No. of pages: 3

Location: Airman's cave GPS coordinates (NAD 1983)_____ Section No. 2

Time Started: 11:57am Time ended: 12:21pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) small amount of trash

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☒ Vandalism If so, ☒ trash ☐ speleothems ☐ gate ☒graffiti

Temperature Inside: 67 F Outside: 80 F Humidity Inside: 96% Outside: 77% @ 10:30am
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) below average rainfall

Organic matter encountered in survey area: old, and new raccoon scat .

Surface area moisture conditions: (dry, dripping, pools) dry

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: *Gastropoda*			
Earthworms: *Haplotaxida*			
Isopods: *Oniscoidea*			
Scorpions: *Vaejovis reddelli*	1		
Spiders: wall web	3		
Cicurina sp.	24	Under rocks	
Eidmannella sp	2		
* *Texella spinoperca*			
Cambala speobia	2	Under old scat	
* *Speodesmus sp.*	2	Under old scat	
* *Rhadine austinica*	3	On floor, under rocks	4 were observed in-between 1 and 2
Texoreddellia texensis	1	Under rock	
***Springtails:* Collembola**	20		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	5		
Ceuthophilus cunicularis	5		
Ceuthophilus nymphs	38		
Blow flies: *Calliphora* accident			
Plethodon albagula			
Pipistrellus subflavus			

(*) signifies species of concern

See back for additional Field Notes and Comments? ☐ Section map attached? ☒

☐ Photographs taken? How many? _____ If so, attach to this report.

The small amount of trash and graffiti were removed.
Nikki left the cave after we completed this survey.

Name: Mark Sanders and Carlo Abbruzzese Agency: COA
Date: 10/31/03 No. of pages: 3

Location: Airman's cave GPS coordinates (NAD 1983)_____ Section No. 3

Time Started: 1:40pm Time ended: 2:04pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism)

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☐ Vandalism If so, ☐ trash ☐ speleothems ☐ gate ☐ graffiti

Temperature Inside: 69 F Outside:_____ Humidity Inside: 99% Outside: _____
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) below average rainfall

Organic matter encountered in survey area: Old raccoon scat .

Surface area moisture conditions: (dry, dripping, pools) moist in areas

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: *Gastropoda*			
Earthworms: *Haplotaxida*			
Isopods: *Oniscoidea*			
Scorpions: *Vaejovis reddelli*			
Spiders: wall web		Near candles	1 observed in Aggie Art Gallery
Cicurina sp.	9	Under rocks	
Eidmannella sp			
* *Texella spinoperca*			
Cambala speobia		Near candles	Several observed in aggie art gallery
* *Speodesmus sp.*	1	Under rock	4 observed in Aggie Art Gallery
* *Rhadine austinica*		On floor	5 to 7 noticed in-between 2 and 3
Rove beetles: *Orus rubens*			
Texoreddellia texensis			
Springtails: *Collembola*			Numerous observed on candle wax mold in a art gallery
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B			
Ceuthophilus cunicularis			
Ceuthophilus nymphs	2		
Blow flies: *Calliphora* accident			
Fungus gnats			
Plethodon albagula			

(*) signifies species of concern

See back for additional Field Notes and Comments? ☐ Section map attached? ☒

☐ Photographs taken? How many? _____ If so, attach to this report.

Name: Mark Sanders, John Chenoweth Agency: COA

Date: 7/27/04	No. of pages: 1

Location: Lime Creek preserve , broken arrow cave GPS coordinates (NAD 1983) ____ Section No. entire cave

Time Started: 3:10pm Time ended: 4:20 pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) We observed fire ants at the entrance

Survey area: ☒ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☒ light

☐ Vandalism If so, ☐ trash ☐ speleothems ☐ gate ☐ graffiti

Temperature Inside: 71 F Outside: 94.5 F @ 3:10pm Humidity Inside: 93% Outside: 39%
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) This site experienced over 10 inches of rain for the previous month

Organic matter encountered in survey area: rotting wood/leaf litter, damp soil, bones, cricket scat

Surface area moisture conditions: (dry, dripping, pools) Mostly damp with a portion of the lower area with standing water

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: *Gastropoda*	16		
Earthworms: *Haplotaxida*	5		
Scorpions: *Vaejovis reddelli*			
**Cicurina sp.*	2	Under rocks	
Wall web spider	6	On the walls	
Leiobunum townsendii	~ 1000		At the entrance
* *Speodesmus sp*.			
Cambala speobia	52	everywhere	
Rove beetles	2		
Mold beetle	1??	Under rock	Unconfirmed
Springtails: Collembola	~3000		
Crickets*: Ceuthophilus secretus*	220		
Ceuthophilus sp. B			
Ceuthophilus cunicularis	3		
Ceuthophilus nymphs	42		
Aquatic amphipods	7	Under rock in pool	
Solenopsis invicta	4		
Fungus gnats	5		

(*) signifies species of concern

(☼) signifies endangered species

See back for additional Field Notes and Comments? ☐ Section map attached? ☐

☐ Photographs taken? How many? ____ If so, attach to this report.

We encountered high CO2 levels due to rotting organic material in the water, which made for slightly difficult breathing.

Name: Mark Sanders	Agency: COA
Date: 4/23/04	No. of pages: 1

Location: Cotterell cave GPS coordinates (NAD 1983) _____ Section No. entire cave

Time Started: 12:40pm Time ended: 2:22pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) Nothing new, just old trash that I removed.

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☐ Vandalism If so, ☐ trash ☐ speleothems ☐ gate ☐ graffiti

Temperature Inside: 65.5 F Outside: NA Humidity Inside: 95% Outside: NA
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) Above average rainfall this spring

Organic matter encountered in survey area: rotting wood, damp soil, not much of anything.

Surface area moisture conditions: (dry, dripping, pools) Portions are dry, however, mostly damp and a few wet areas

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: *Gastropoda*			
Earthworms: *Haplotaxida*	1		
Scorpions: *Vaejovis reddelli*	4		
Spiders: wall web			
**Cicurina sp.*	8	Under rocks	
Eidmannella sp.			
☼ *Texella reyesi*	3	Under rocks in moist area	
* *Speodesmus sp.*	4	On walls and floor	
Cambala speobia	2		
Rove beetles: *Belonuchus sp*			
Springtails: Collembola	24		
Crickets*: Ceuthophilus secretus*	5		
Ceuthophilus sp. B	1		
Ceuthophilus cunicularis			
Ceuthophilus nymphs	20		
Fungus gnats	2		
Plethodon albagula	5		
Sceloporus olivaceus	1		Adult, released to surface.

(*) signifies species of concern

(☼) signifies endangered species

See back for additional Field Notes and Comments? ☐ Section map attached? ☐

☐ Photographs taken? How many? _____ If so, attach to this report.

I helped Will Pockman PhD set up new probes for the tree root study.

Name: Mark Sanders	Agency: COA
Date: 7/15/04	No. of pages: 1

Location: Cotterell cave GPS coordinates (NAD 1983) _____ Section No. entire cave

Time Started: 11:45am Time ended: 2 pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) Nothing new, just old trash that I removed.

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☐ Vandalism If so, ☐ trash ☐ speleothems ☐ gate ☐ graffiti

Temperature Inside: 67.5 F Outside: 88.5 F @ 11:25am Humidity Inside: 97% Outside: 51%
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) This site experienced over 10 inches of rain for the previous month

Organic matter encountered in survey area: rotting wood/leaf litter, damp soil, dead lizard.

Surface area moisture conditions: (dry, dripping, pools) Portions are dry, however, mostly damp and a few wet areas

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: *Gastropoda*	3		
Earthworms: *Haplotaxida*	1		
Scorpions: *Vaejovis reddelli*	1		
*Pseudoscorpion	1	Under rock	
**Cicurina sp.*	10	Under rocks	
Eidmannella sp.			
☼ *Texella reyesi*	4	Under rocks	
* *Speodesmus sp.*	7	On walls and floor	
Cambala speobia	4		
Rove beetles: *Belonuchus sp*			
Springtails: Collembola	~85		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	3		
Ceuthophilus nymphs	20		
Fungus gnats	2		
Plethodon albagula	5		
Sceloporus olivaceus	1		dead
Bufo valiceps	2		Released both, one was in poor health
Syrrhophus marnockii	1		

(*) signifies species of concern

(☼) signifies endangered species

See back for additional Field Notes and Comments? ☐ Section map attached? ☐

☐ Photographs taken? How many? _____ If so, attach to this report.

I helped Will Pockman PhD set up new probes for the tree root study.

Name: Mark Sanders and Carlo Abbruzzese	Agency: COA
Date: 10/30/03	No. of pages: 2

Location: District Park Cave GPS coordinates (NAD 1983)____ Section No. 1 (aquifer room)

Time Started: 10:41am Time ended: 11:17am Scientific permit # _TE798920-0_

Surface area observations: (gate condition, fire ants, vandalism) broken glass, and trash.

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☒ Vandalism If so, ☐ trash ☐ speleothems ☐ gate ☐ graffiti ☒ broken tape

Temperature Inside: 71.5 F Outside: 73 F Humidity Inside: 93% Outside: 82% @ 10am

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) _below average rainfall .

Organic matter encountered in survey area: _ raccoon scat, some fresh outside of survey area.

Surface area moisture conditions: (dry, dripping, pools) _dry

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: *Gastropoda*			
Earthworms: *Haplotaxida*			
Isopods: *Oniscoidea*	3		
Scorpions: *Vaejovis reddelli*			
Spiders: wall web	4		
Cicurina sp.	15	Under rocks	
Cambala speobia	12	Mostly near raccoon scat	
Assassin beetle	1		
Texoreddellia texensis			
Springtails: *Collembola*	~600		
Crickets*: Ceuthophilus secretus*	3		
Ceuthophilus sp. B	51		
Ceuthophilus cunicularis	4		
Ceuthophilus nymphs	93		
Fungus gnats	4		
Plethodon albagula			2 were observed outside of survey area

(*) signifies species of concern

See back for additional Field Notes and Comments? ☐ Section map attached? ☒

The survey tape marking the pathway for permitted visitors (designated trail to limit impact to more sensitive areas of the cave) was broken and piled up in areas. This is troubling because that shows that these "permitted users" are not following their permit. I will change the lock and close access until we find out how this happened and make sure that it does not happen in the future.
Paul Fushille with Travis County observed our survey for training purposes.

Name: Mark Sanders and Carlo Abbruzzese	Agency: COA
Date: 10/30/03	No. of pages: 2

Location: District Park Cave GPS coordinates (NAD 1983)____ Section No. 2 (aggie level)

Time Started: 11:30am Time ended: 11:55am Scientific permit # _TE798920-0_

Surface area observations: (gate condition, fire ants, vandalism) .

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☒ Vandalism If so, ☐ trash ☒ speleothems ☐ gate ☒ digging ☒ broken tape

Temperature Inside: 69 F Outside: 73 F Humidity Inside: 95% Outside: 82% @ 10am

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) _below average rainfall .

Organic matter encountered in survey area: _ old raccoon scat.____

Surface area moisture conditions: (dry, dripping, pools) _mostly dry, damp is a few areas_____

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Isopods: *Oniscoidea*			
Scorpions: *Vaejovis reddelli*			
Spiders: wall web	6		
**Cicurina sp.*	22	Under rocks	
**Neoleptoneta sp*	1	Under rocks	
**Speodesmus sp*	4	Floor and wall	
* *Texella mulaiki*	1	Under rock	
***Rhadine austinica**	3	floor	
Texoreddellia texensis			
Springtails: *Collembola*	~200		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B			
Ceuthophilus cunicularis			
Ceuthophilus nymphs	11		
Fungus gnats	5		
moth	1		
Pipistrellus subflavus			1 was observed outside of survey area

(*) signifies species of concern

See back for additional Field Notes and Comments? ☐ Section map attached? ☒

The survey tape marking the pathway for permitted visitors (designated trail to limit impact to more sensitive areas of the cave) was broken and piled up in areas.
More troubling was signs of fresh digging, someone has been digging a "lead", fresh broken rock was scattered in a portion of our survey area with a few new broken formations.
I will change the lock and close access until we find out how this happened and make sure that it does not happen in the future.

Name: Mark Sanders and Carlo Abbruzzese	Agency: COA
Date: 10/30/03	No. of pages: 2

Location: Goat cave GPS coordinates (NAD 1983)_____ Section No. 1 (landing zone)

Time Started: 2:30 pm Time ended: 2:45pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism)

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☐ Vandalism If so, ☐ trash ☐ speleothems ☐ gate ☐ graffiti

Temperature Inside: 70.5 F Outside: 84 F Humidity Inside: 88% Outside: 56% @ 2pm

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) below average rainfall

Organic matter encountered in survey area: leaf litter, rotting wood

Surface area moisture conditions: (dry, dripping, pools) drier than usual

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: *Gastropoda*	4		
Earthworms: *Haplotaxida*	12		
Isopods: *Oniscoidea*			
Scorpions: *Vaejovis reddelli*			
Spiders: wall web			
Cicurina sp.	3		
Surface spider	1		
* *Texella mulaiki*			
Millipedes: *Diplopoda* accident			
Cambala speobia	1		
Speodesmus sp.			
Rove beetle	2		
Collembola			
Ceuthophilus sp. B			
Ceuthophilus cunicularis			
Ceuthophilus nymphs	20		
Fungus gnats	1		
Plethodon albagula	17		3 with broken tails
Thamnophis cyrtopsis ocellatus			
Bufo valliceps valliceps			

(*) signifies species of concern

See back for additional Field Notes and Comments? ☐ Section map attached? ☒

☐ Photographs taken? How many? _____ If so, attach to this report.

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Name: Mark Sanders and Carlo Abbruzzese	Agency: COA
Date: 10/30/03	No. of pages: 2

Location: Goat cave GPS coordinates (NAD 1983)_____ Section No. 2 (alcove)

Time Started: 2:58 pm Time ended: 3:25pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism)

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☒ Vandalism If so, ☐ trash ☐ speleothems ☐ gate ☒other

Temperature Inside: 68.5 F Outside: 84 F Humidity Inside: 95% Outside: 56% @ 2pm

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) below average rainfall

Organic matter encountered in survey area:

Surface area moisture conditions: (dry, dripping, pools) dry

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Isopods: *Oniscoidea*			
Scorpions: *Vaejovis reddelli*			
Spiders: wall web			
**Cicurina sp.*	6	Under rocks	
***Neoleptoneta sp**	1	Under rock	
** Texella mulaiki*	1	Under rock	
Millipedes: *Diplopoda* accident			
Cambala speobia			
**Speodesmus sp.*	1	On wall	
Rove beetle	1		
Collembola	8		
Ceuthophilus sp. B	6		
Ceuthophilus cunicularis			
Ceuthophilus nymphs	25		
Fungus gnats	4		
Plethodon albagula			
Thamnophis cyrtopsis ocellatus			
Bufo valliceps valliceps	1		

(*) signifies species of concern

See back for additional Field Notes and Comments? ☐ Section map attached? ☒

☐ Photographs taken? How many? _____ If so, attach to this report.

Mud and old bat guano was splattered on the walls throughout the cave, including inside our survey area.
It appears that access may need to be curtailed until we find out how this happened (I believe that a permitted user entered with too many pupils and not enough supervisors.

Name: M Sanders, J Chenoweth, K O'Connor	Agency: COA
Date: 5/4/04	No. of pages: 2

Location: Goat cave GPS coordinates (NAD 1983)_____ Section No. 1 (landing zone)

Time Started: 11:31am Time ended: 11:48am Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) _____

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☐ Vandalism If so, ☐ trash ☐ speleothems ☐ gate ☐graffiti

Temperature Inside: 66 F Outside: 74 F Humidity Inside: 90% Outside: 50 % @ 10:48am

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) above average rainfall this Spring

Organic matter encountered in survey area: small amount of leaf litter

Surface area moisture conditions: (dry, dripping, pools) damp

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: *Gastropoda*	4		
Earthworms: *Haplotaxida*	10		
Isopods: *Oniscoidea*	4		
Scorpions surface	2		Small juveniles
Surface spiders	2		
Rove beetle	1		
Collembola	3		
moth	1		
Plethodon albagula	3		
Thamnophis marcianus marcianus	2		May have been mating, we rescued one (released on surface), the other one got away
Bufo valliceps valliceps	1		juvenile
Sceloporus olivaceus	1		Adult, released on surface.

(*) signifies species of concern

See back for additional Field Notes and Comments? ☐ Section map attached? ☐

☐ Photographs taken? How many? _____ If so, attach to this report.

There was less organic material than usual, probably due to the fact that in an effort to attract bats to the cave I removed over hanging branches. One major reason why so few salamanders were found was because most of the loose cobble was off of the landing zone area, (we have always required that groups entering the cave to move the loose cobble so no salamanders would be crushed, however, people would constantly throw in rocks to replenish the area, now that the site is fenced, this no longer happens. The other major reason for a lack of salamanders was the 2 garter snakes, one in particular was very fast and I believe could easily catch any salamander. We decided to release the snakes from the cave because of my belief that they can not get their body temperature up high enough to properly digest their food, however, with the removal of the cave gate, now a large beam of sunlight enters the cave which may allow for proper temperature regulation.
This was the first time I've surveyed the cave without Carlo and with 2 new employees, neither of which had any prior caving experience.

Name: M Sanders, J Chenoweth, K O'Connor	Agency: COA
Date: 5/4/04	No. of pages: 2

Location: Goat cave GPS coordinates (NAD 1983)_____ Section No. 2 (alcove)

Time Started: 12:02pm Time ended: 12:34pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism)

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☒ Vandalism If so, ☒ trash ☐ speleothems ☐ gate ☐ graffiti

Temperature Inside: 66.5 F Outside:_____ Humidity Inside: 95% Outside: _____

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) above average rainfall this Spring

Organic matter encountered in survey area: _____

Surface area moisture conditions: (dry, dripping, pools) damp

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: *Gastropoda*			
Earthworms: *Haplotaxida*			
Isopods: *Oniscoidea*			
Scorpions surface			
Cicurina sp	4	Under rocks	tiny
Speodesmus sp.	1	Under rock	
Collembola			
Fungus gnats	2		
Ceuthophilus sp. B	2		
Ceuthophilus *numphs*	2		
Bufo valliceps valliceps			
Sceloporus olivaceus			

(*) signifies species of concern

See back for additional Field Notes and Comments? ☐ Section map attached? ☐

☐ Photographs taken? How many? _____ If so, attach to this report.

Some red broken glass was found and removed, it's possible that it could have been there before.
No bats were observed.
This was the first time I've surveyed the cave without Carlo and with 2 new employees, neither of which had any prior caving experience. It is possible some small troglobitic invertebrates were over looked by the new employees.

Name: Mark Sanders	Agency: COA
Date: 11/25/03	No. of pages: 2

Location: Flintridge cave GPS coordinates _____ Section No. entire cave

Time Started: 9:30am Time ended: 5pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism)

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☐ Vandalism If so, ☐ trash ☐ speleothems ☐ gate ☐ graffiti

Temperature Inside: NA Outside: Humidity Inside: NA Outside:
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) area experiencing draught

Organic matter encountered in survey area: rotting wood, large pockets of white fungus, leaf litter

Surface area moisture conditions: (dry, dripping, pools) Portions are wet (as usual)

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: *Gastropoda*	10		
Earthworms: *Haplotaxida*	2		
Scorpions: *Vaejovis reddelli*	4		
Spiders: wall web	3		
**Cicurina sp.*	27	Under rocks	
Eidmannella sp.	9		
* *Texella mulaiki*	4	Under rocks	
Leiobunum townsendii	30		
Mites: *Acarina sp*	1		
* *Speodesmus sp*.	47	near decaying wood	Most were very small, approximately 1 cm
* *Rhadine austinica*	3	On floor	
Rove beetles: *Belonuchus sp*	8		
Texoreddellia texensis	42	On floor, under rocks	
Springtails: *Pseudosinella sp*	~200		
Crickets*: Ceuthophilus secretus*	12		
Ceuthophilus sp. B	43		
Ceuthophilus nymphs	~120		
Fungus gnats	5		
** Amphipods* **Stygobromus russelli**	42	In small pools of water	

(*) signifies species of concern
See back for additional Field Notes and Comments? ☐ Section map attached? ☐
☐ Photographs taken? How many? If so, attach to this report.
I was accompanying TXDOT subcontractor (ACI). The primary purpose of this visit was to verify the accuracy of the map and therefore the true alignment of the cave with regards to SH 45. Andy Grubs, Kevin Ramberg with ACI surveyed a transect line through most of the cave, the next day Andy and I continued the survey and positioned a radio to transmit precise locations to the surface.
I surveyed areas sporadically throughout the cave.

Name: Mark Sanders and Scott Hiers	Agency: COA
Date: 6/10/04	No. of pages: 1

Location: Lost Gold Cave GPS coordinates (NAD 1983) Section No. cursory survey of the upper portion of cave

Time Started: 1pm?? Time ended: 2:15pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) Cave gate has been breached, and new "party trash" and graffiti was observed within the cave.

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☒ Vandalism If so, ☒ trash ☐ speleothems ☒ gate ☒ graffiti

Temperature Inside: NA Outside: NA Humidity Inside: NA Outside: NA
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) Heavy flood the day before, approximately 5 inches of rain in a 24 hour period.

Organic matter encountered in survey area: Mammal scat (raccoon), leaf litter and wood debris.

Surface area moisture conditions: (dry, dripping, pools) Portions were wet with water dripping, but most of the cave area surveyed was dry and dusty.

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: *Gastropoda*	2		
Isopods: (sowbug)	~400		Large #'s near mammal scat
Scorpions: *Vaejovis reddelli*	4		
Spiders: wall web	21		
Cicurina sp.	8	Under rocks	
Leiobunum townsendii	~100		
Beetle larvae ??	1		
Rove beetles: *Orus rubens*	3		
Arenivaga tonkawa	1		
Assassin bug	1		
Springtails: *Collembola*	12		
Crickets*: Ceuthophilus secretus*	32		
Ceuthophilus cunicularis	26		
Ceuthophilus nymphs	42		
Dark-winged fungus flies	12		
Rodentia (mouse)	1		
Procyon lotor	?		One dead individual was observed and another mammal was heard within the cave but not seen.

(*) signifies species of concern

☒ Photographs taken? How many? ?? If so, attach to this report.

With the exception of *Cicurina sp* (tiny blind spiders)., I did not find any troglobitic species, possibly due to the fact that the cave just experienced a flood event, and that I did not survey the lower stretch of the cave due to time constraints and because I wanted to avoid a "vocal" agitated mammal. It would be advisable to have the cave surveyed once again under more ideal conditions.
We also saw evidence of some ongoing vandalism within the cave and a vandalized gate.
We removed most of the trash including toxic flashlight batteries.

Name: Mark Sanders and Carlo Abbruzzese	Agency: COA
Date: 10/30/03	No. of pages: 2

Location: Maple Run Cave GPS coordinates (NAD 1983)_____ Section No. 1

Time Started: 4:39pm Time ended: 4:58pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) small amount of trash

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☒ Vandalism If so, ☐ trash ☐ speleothems ☐ gate ☐ graffiti ☒ other

Temperature Inside: 70.5 F Outside: 82 F Humidity Inside: 95% Outside: 61% @ 4:19pm

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) below average rainfall

Organic matter encountered in survey area: _____

Surface area moisture conditions: (dry, dripping, pools) moist in some areas

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Spiders: wall web			
Cicurina sp.	5	Under rocks	
Neoleptoneta sp.			
* *Texella mulaiki*	1		
* *Speodesmus sp.*	1	Under rock	1 just out of survey area on the floor
* *Rhadine austinica*			
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	1		
Ceuthophilus cunicularis			
Ceuthophilus nymphs	23		
Blow flies: *Calliphora* accident			
Fungus gnats	2		
Plethodon albagula			

(*) signifies species of concern

See back for additional Field Notes and Comments? ☐ Section map attached? ☐

☐ Photographs taken? How many? _____ If so, attach to this report.

We noticed vandalism approximately 50 feet inside the gate, just before the first vertical drop someone had taken a rock and scratched the walls, ceiling and other rocks, basically bashing on the cave. Further inside in-between sections 1 and 2 someone had taken mud and clay and thrown it into the wall at several points.
Whoever did this had the key to the gate, more than likely it was a sanctioned group, a situation where there were too many pupils and not enough supervisors.
I plan on changing the lock and meeting with the ANC, AFD, and UT Grotto to let them know that if this continues, we will close the cave down to everyone.

Name: Mark Sanders and Carlo Abbruzzese	Agency: COA
Date: 10/30/03	No. of pages: 2

Location: Maple Run Cave GPS coordinates (NAD 1983)_____ Section No. 2

Time Started: 5:35pm Time ended: 6:07pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism)

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☐ Vandalism If so, ☐ trash ☐ speleothems ☐ gate ☐ graffiti ☐ other

Temperature Inside: 70.5 F Outside:_____ Humidity Inside: 98% Outside: _____

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) below average rainfall

Organic matter encountered in survey area: _____

Surface area moisture conditions: (dry, dripping, pools) moist in some areas

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Scorpions: *Vaejovis reddelli*	1		
Spiders: wall web	1		Tiny, within holes in the rock
Cicurina sp.	4	Under rocks	
Neoleptoneta sp.			
* *Texella mulaiki*			
* *Speodesmus sp.*			
* *Rhadine austinica*			
Crickets*: Ceuthophilus secretus*	1		
Ceuthophilus sp. B			
Ceuthophilus cunicularis			
Ceuthophilus nymphs	1		
Blow flies: *Calliphora* accident			
Fungus gnats			
Plethodon albagula			

(*) signifies species of concern

See back for additional Field Notes and Comments? ☐ Section map attached? ☐

☐ Photographs taken? How many? _____ If so, attach to this report.

We noticed vandalism approximately 50 feet inside the gate, just before the first vertical drop someone had taken a rock and scratched the walls, ceiling and other rocks, basically bashing on the cave. Further inside in-between sections 1 and 2 someone had taken mud and clay and thrown it into the wall at several points.
Whoever did this had the key to the gate, more than likely it was a sanctioned group, a situation where there were too many pupils and not enough supervisors.
I plan on changing the lock and meeting with the ANC, AFD, and UT Grotto to let them know that if this continues, we will close the cave down to everyone.

Name: Mark Sanders and Nico Hauwert	Agency: COA
Date: 1/29/04	No. of pages: 2

Location: Midnight cave GPS coordinates (NAD 1983)_____ Section No. upper room

Time Started: 2pm Time ended: 2:40pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism)

Survey area: ☐ *Solenopsis invicta* If so, ☐ heavy infestation ☐ moderate ☐ light

☐ Vandalism If so, ☐ trash ☐ speleothems ☐ gate ☐ other

Temperature Inside: 65.5 F Outside: 53 F @ 3pm Humidity Inside: 100% Outside: 97%

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) possible light freeze, and approx. 3" of rain on 1/16/04, otherwise precipitation is well below normal.

Organic matter encountered in survey area: cave cricket fecal matter, old bat guano.

Surface area moisture conditions: (dry, dripping, pools) portions were damp, mostly dry.

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Gastropoda	1		
Isopods *Trichoniscidae sp*	1		
**Cicurina sp.*	14	Under rocks	
** Texella mulaiki*			
Cambala speobia	53		
**Speodesmus sp.*	127	Mostly on the ceiling	
Surface millipede			
Troglobitic centipede	1	Under a rock	Collected for ID by James Reddell
*** Rhadine austinica**	5		
Mold beetle	3	Under rocks	Collected one for ID by James Reddell
Collembola	5		
Ceuthophilus secretus			
Ceuthophilus sp. B	47		
Ceuthophilus cunicularis	5		
Ceuthophilus nymphs	~1000		Throughout the rest of the cave there were thousands of crickets on the ceiling
Texoreddellia texensis			

(*) signifies species of concern

See back for additional Field Notes and Comments? ☐ Section map attached? ☐

☐ Photographs taken? How many? _____ If so, attach to this report.

Earlier in the day a crew of 3 individuals were inside the main portion of the cave scouting the site for the potential filming of a documentary about Barton Springs.
A small amount of trash was removed from the main part of the cave.