Balcones Canyonlands Preserve Karst Management
2005 Annual Report

Travis County Natural Resources
and City of Austin BCP – AWU

January 2006

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

ATTACHMENT B: KARST FAUNAL REPORTS:
TRAVIS COUNTY 4 REPORTS
CITY OF AUSTIN 52 REPORTS
TEXAS CAVE MANAGEMENT ASSOCIATION 8 REPORTS

ATTACHMENT C:

1. "Genetic and morphological analysis of species limits in *Cicurina* spiders (Araneae, Dictynidae) from southern Travis and northern Hays counties (TX), with emphasis on *Cicurina cueva* Gersch and relatives" by Paquin, Pierre and Hedin, Marshal. 2005

2. The Canadian Arachnologist, Newsletter, May 2005, "Working on the Genus From Hell" by Pierre Paquin

1.0 REGIONAL PERMIT

There are six species of endangered karst invertebrates (ES) 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 caves and 27 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 EIS-HCP, Section 2-66.

** *Cicurina cueva* has recently been reviewed as part of a petition for endangered species listing. On 12/5/06 USFWS determined that it is not a listable entity based on recent data showing that it is not a distinct species.

2.0 CAVE MANAGEMENT SUMMARY

This annual report covers the fiscal year 10/01/04-9/30/05 and is referred to in this document as "2005". In 2005, 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.

The 62 BCP caves are currently managed as follows: twenty caves protected as part of the BCP on COA land plus 2 additional private caves managed by the Austin Water Utility Dept.-BCP office; one protected on The Nature Conservancy (TNC) land; 9 protected on TC land (of these 2 have only the entrances protected) and one 10(a) private cave is informally protected by TC (Talus Springs Cave); 2 caves are protected on Texas Cave Management Association (TCMA) land; a total of 9 caves are protected as part of private Section 10(a) or Section 7 agreements with USFWS; and one cave is protected by a private landowner (Bandit Cave). A total of 44 of the BCCP caves are "protected" in some way, with 18 "unprotected". 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).

Table 1. Endangered Karst Invertebrate Locations in Travis County, Texas. This table was originally in the BCCP permit in 1996 and has been revised for 2006 to show new species location information from James Reddell (2004, 2005) and HNTB (2005).

Cave Name	**Current Preserve Status**	**Karst Fauna Region**	**Tooth Cave Pseudoscorpion** *Tartarocreagris texana*	Tooth Cave Spider *Neoleptoneta myopica*	**Tooth Cave Ground Beetle** *Rhadine persephone*	**Kretschmarr Cave Mold Beetle** *Texamaurops reddelli*	**Bee Creek Cave Harvestman** *Texella reddelli*	**Bone Cave Harvestman** *Texella reyesi*
Amber Cave	BCP Jollyville/ TC	Jollyville Plateau	X 1996			X 1996		
Bandit Cave	Private	Rollingwood					P 1996	
Beard Ranch Cave	BCP Ivanhoe/COA	Jollyville Plateau						X 1996
Bee Creek Cave	Private	Rollingwood					X 1996	
Beer Bottle Cave	Not required to be protected under BCCP	McNeil/Round Rock						X 1996
Broken Arrow Cave	BCP Lime Cr. Prs./COA	Cedar Park			X 1996			
Cave Y	Barton Creek Grblt/COA	Rollingwood					P 1996 delete P (Reddell 2004)	
Cold Cave	Private	McNeil/Round Rock						X 1996
Cotterell Cave	BCP Spicewood Spgs. Pk./COA	Central Austin						X 1996
Disbelievers Cave	BCP Private 10(a)	Jollyville			X 1996			
Eluvial Cave	BCP Private 10(a)	Jollyville						X 1996
Fossil Cave	Schroeter Pk./COA	McNeil/Round Rock						X 1996
Fossil Garden Cave	Private	McNeil/Round Rock						X 1996
Gallifer Cave	BCP Jollyville/TC	Jollyville Plateau		P 1996	P 1996 X 2005			X 1996

Hole-in-the-Road	Private	McNeil/Round Rock						X 1996
Japygid Cave	BCP Private 10(a)	Jollyville			X 1996	P 1996 X 2005		
Jest John Cave	BCP Forest Ridge/COA	Jollyville Plateau					X 1996	
Jester Estates Cave	BCP Forest Ridge/COA	Jollyville Plateau					X 1996	
Jollyville Plateau Cv.	BCP Private 10(a)	Jollyville			X 1996			X 1996
Kretschmarr Cave	BCP Jollyville/TC	Jollyville Plateau			X 1996	X 1996		
Kretschmarr Dble. Pit	BCP Jollyville/TC	Jollyville Plateau	P 1996 X 2005		P 1996 X 2005		P 1996	
Lamm Cave	Private Section 7	Jollyville Plateau			X 1996			
Little Bee Cr. Cave	BCP Ullrich WTP/COA	Rollingwood					X 1996	
McDonald Cave	BCP Jollyville/TC	Jollyville Plateau						X 1996
McNeil Bat Cave	Private	McNeil/Round Rock						X 1996
Millipede Cave	Not Protected under BCCP	McNeil/Round Rock						X 1996
M.W.A. Cave	BCP Private 10(a)	Jollyville	P 1996 X 2005		X 1996	P 1996 X 2005		X 1996
New Comanche Tr. Cave	Private	Jollyville Plateau		X 1996				X 1996
No Rent Cave	Private	McNeil/Round Rock						X 1996
North Root Cave	BCP Jollyville/TC	Jollyville Plateau			X 1996			
Puzzle Pits Cave	Not required to be protected under BCCP	Jollyville			X 1996			

Rolling Rock Cave	BCP Lime Cr. Prs./COA, Sec.10(a)	Cedar Park			X 1996			
Root Cave	BCP Jollyville/TC	Jollyville Plateau			X 1996 Tentative 2005			X
Spider Cave	BCP Park West/COA	Jollyville Plateau					X Reddell 2004	P 1996 delete P 2004 (Reddell)
Stovepipe Cave	Private Sec. 7	Jollyville Plateau	P 1996 delete P 2005 (Reddell) *	P 1996	X 1996	X 1996		P 1996
Tardus Hole	BCP Jollyville/TC	Jollyville Plateau			X 1996			
Tooth Cave	BCP Jollyville/TC	Jollyville Plateau	X 1996	X 1996	X 1996	X 1996		X 1996
Weldon Cave	Private	McNeil/Round Rock						X 1996
West Rim Cave	Not Protected under BCCP	Central Austin						X 1996

Sources: BCCP Permit 1996, Elliott 1992, USFWS 1994, Reddell 2004 and 2005, HNTB 2005

X 1996 = confirmed occurrence based on collected specimen, the designation in the 1996 BCCP permit

P 1996 = probable occurrence based on observation but not confirmed with collected specimen, the designation in 1996 BCCP permit

X 2005 = was listed as confirmed in the HNTB summary of James Reddell's data, 2005 report for USFWS

Tentative 2005 = was listed as tentative in the HNTB summary of Reddell's data, 2005 report for USFWS

Delete P = this species is no long thought to occur in this cave (personal communication Reddell 2004 or 2005).

* Reddell (pers com 2005) reported that *Tartarocreagris texana* does NOT occur in Stovepipe Cave. The species there is *Tartarocreagris altimana,* known only from that cave.

3.0 OWNERSHIP AND PROTECTION STATUS

The following table lists the status of the 62 caves/karst features listed in the BCCP permit with information on ownership, species status, cave cluster.

Table 2: 2005 Ownership Status of the BCCP 62 caves/karst features (35 with ES and 27 caves with SOC).

Cave Name	ES or SOC	Current tract/owner. On BCP Land or private	Cave Cluster
Adobe Springs Cave	SOC	BCP Lehmann/TNC	
Airman's Cave	SOC	BCP Barton Creek/COA	
Amber Cave	ES	BCP Jollyville/TC	4 Points Cl (Parke)
Armadillo Ranch Sink	SOC	Private	
Arrow Cave	SOC	BCP Slaughter Cr. Pk./COA	
Bandit Cave	ES	Private	
Beard Ranch Cave (Featherman's Cave)	ES	BCP Ivanhoe/COA	
Bee Creek Cave	ES	Private	
Blowing Sink Cave	SOC	BCP COA	
Broken Arrow Cave	ES	BCP Lime Crk Pres/COA	
Buda Boulder Spg.	SOC	BCP Shoal Creek Grblt./COA	
Cave X	SOC	Private/COA Protection Agreement	
Cave Y	Not ES, changed to SOC	BCP Barton Creek Grblt/COA	
Ceiling Slot Cave	SOC	Private	
Cold Cave	ES	Private	Northwood Cl.
Cotterell Cave	ES	BCP Spicewood Spgs. Pk./COA	
Disbelievers Cave	ES	BCP Private 10(a)	4 Points Cl. (Perot)
District Park Cave	SOC	BCP D.Nickols Pk./COA	
Eluvial Cave	ES	BCP Private 10(a)	4 Points Cl. (Perot)
Flint Ridge Cave	SOC	Prop 2/COA	
Fossil Cave	ES	BCP Schroeter Pk./COA	
Fossil Garden Cave	ES	Private	McNeil Cl.
Gallifer Cave	ES	BCP Jollyville/TC	4 Points Cl (Parke)
Get Down Cave	SOC	Private/COA Protection Agreement with TCMA	
Goat Cave	SOC	BCP Goat Cave Karst Preserve/COA	
Hole-in-the-Road	ES	Private	Northwood Cl.
Ireland's Cave	SOC	Private Circle C	
Jack's Joint	SOC	Private	
Japygid Cave	ES	BCP Private 10(a)	4 Points Cl. (Perot)
Jest John Cave	ES	BCP Forest Ridge/COA	
Jester Estates Cave	ES	BCP Forest Ridge/COA	

Jollyville Plateau Cv.	ES	BCP Private 10(a)	4 Points Cl. (Perot)
Kretschmarr Cave	ES	BCP Jollyville/TC	4 Points Cl. (Parke)
Kretschmarr Dble. Pit	ES	BCP Jollyville/TC	4 Points Cl. (Parke)
Lamm Cave	ES	BCP Private Section 7	
Little Bee Cr. Cave	ES	BCP Ullrich WTP/COA	
Lost Gold Cave	SOC	Private	
Lost Oasis Cave	SOC	Private TCMA	
M.W.A. Cave	ES	BCP Private 10(a)	4 Points Cl. (Perot)
Maple Run Cave	SOC	BCP Goat Cave Karst Preserve/COA	
McDonald Cave	ES	BCP Jollyville/TC	
McNeil Bat Cave	ES	Private	McNeil Cl.
Midnight Cave	SOC	BCP Slaughter Cr. Pk./COA	
Moss Pit	SOC	Private	
New Comanche Tr. Cave	ES	Private	
No Rent Cave	ES	Private	McNeil Cl.
North Root Cave	ES	BCP Jollyville/TC	4 Points Cl (Parke)
Pennie's Cave	SOC	Private	
Pickle Pit	SOC	BCP Private Sec. 7	
Pipeline Cave	SOC	Private	
Rolling Rock Cave	ES	BCP Lime Cr. Prs./COA	
Root Cave	ES	BCP Jollyville/TC	4 Points Cl (Parke)
Slaughter Creek Cave	SOC	BCP Slaughter Cr.Pk./COA	
Spanish Wells	SOC	Private	
Spider Cave	ES	BCP Park West/COA	
Stark's North Mine	SOC	Private	
Stovepipe Cave	ES	BCP Private Sec. 7	
Talus Springs Cave	SOC	Private/ 10(a) permit, TC checks entrance	
Tardus Hole	ES	BCP Jollyville/TC	4 Points Cl (Parke)
Tooth Cave	ES	BCP Jollyville/TC	4 Points Cl (Parke)
Weldon Cave	ES	Private	McNeil Cl.
Whirlpool Cave	SOC	Private TCMA	

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 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. Some of the caves designated in this report as generally "protected" 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.

Travis County owns two small cave tracts that are not large enough to adequately protect the footprint and drainage areas since only the entrances are "protected". The COA currently has two Private Landowner Agreements to protect BCP caves but managing these agreements with the private owners has been challenging.

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

Table 3: 2005 Protection, monitoring and access status of the 62 BCP karst features

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	Fenced	Protected on preserve		none
Airman's Cave		Protected on parkland	COA species and surface monitoring	open
Amber Cave	Gated, fenced	Protected on preserve (very close to road and sewer line)	TC surface monitoring	none
Armadillo Ranch Sink		Private - Unknown		none
Arrow Cave	Gated	Protected in parkland .(There are nearby homes immediately south of the cave entrance).	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		Private- Unknown		none
Blowing Sink Cave	Gated [1]	Protected on preserve	COA annual species and quarterly surface monitoring	none
Broken Arrow Cave	Fenced (ranch fence)	Protected on preserve	COA annual species and quarterly surface monitoring	none
Buda Boulder Spg.		Protected in parkland (close proximity to a hike and bike trail)	COA annual species monitoring	none
Cave X	Gated, fenced	Protected by landowner with 4.5 acre setback to protect cave footprint. Protected to some extent (not actively managed and the set back is inadequate).		none
Cave Y	Gated	Protected in parkland	COA annual species and quarterly surface monitoring	none
Ceiling Slot Cave		Private - Unknown		none
Cold Cave		Private - Unknown		none
Cotterell Cave	Fenced	Protected in parkland. (There are nearby homes immediately east of the cave entrance)	COA species and surface monitoring	none
Disbelievers Cave		Protected by 10a permit, hired ACI Consulting		none
District Park Cave	Gated after the 1st room.	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 may be negatively impacted by the construction of a new highway).	COA semi-annual species and quarterly surface monitoring	none

Fossil Cave		Protected in parkland	Exact location of cave is unknown	none
Fossil Garden Cave		Private - Unknown	COA/ USFWS conducted one faunal last fiscal year (see attachment B)	none
Gallifer Cave	Gated, fenced	Protected on preserve	TC surface monitoring, ****	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 semiannual faunal surveys, monthly surface monitoring monitoring	access by permit*
Hole-in-the-Road		Private –Unknown. (very close to a major roadway)	COA/ USFWS conducted one faunal survey (see attachment B)	none
Ireland's Cave	Fenced	Protected by landowner with 4.8 ac. Setback, watershed problems with golf course, setback inadequate	COA/ USFWS/ TCMA conducted one faunal survey last fiscal year (see attachment B)	none
Jack's Joint		Private - 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 (3.2 acre preserve surrounded by homes).	COA annual species and quarterly surface monitoring	none
Jollyville Plateau Cv.	Gated [1]	Protected by 10a permit, hired ACI Consulting		none
Kretschmarr Cave	Gated, Fenced	Protected on preserve. Too close to roadway and powerline ROW. Potential development land too close east and west.	TC surface monitoring	none
Kretschmarr Dble. Pit	Fenced	Protected on preserve	TC surface monitoring	none
Lamm Cave	Gated on 12//05 fenced in 2006	COA negotiated setback (approximately 150')	Zara Environmental, COA, Travis County conducted one faunal survey l year (see attachment B). Site will be monitored and treated for fire ants in the future	none
Little Bee Cr. Cave	Gated	Protected by COA WWW Dept	Annual faunal survey and semiannual monitoring	none
Lost Gold Cave	Gated	Private - 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	Annual faunal survey and monthly surface monitoring	access by permit*
McDonald Cave	Fenced	Protected on preserve	TC surface monitoring	none
McNeil Bat Cave		Private – Unknown (close proximity to high school)		none
Midnight Cave	Fenced	Protected on parkland (close proximity to soccer fields)	COA annual species and Quarterly surface monitoring	access by permit*
Moss Pit		Private - Unknown		none
New Comanche Tr. Cave		Private	TC is negotiating to acquire. Monitoring by consultants for Landowner .	none
No Rent Cave		Private - Unknown		none
North Root Cave		Protected on preserve but area too small. Potentially threatened with surrounding development.	TC surface monitoring	none
Pennie's Cave		Destroyed (cave filled in)		none
Pickle Pit	Gated	Private - Unknown		none
Pipeline Cave	Metal frame [1]	Private - Unknown		none
Rolling Rock Cave	Fenced (ranch fence)	Protected on preserve	COA annual species and quarterly surface monitoring	none
Root Cave		Protected on preserve but area too small. Potentially threatened with surrounding development.	TC surface monitoring	none
Slaughter Creek Cave	Gated	Protected on parkland. (There are nearby homes immediately south of the cave entrance)	COA annual species and quarterly surface monitoring	none
Spanish Wells		Private - Unknown		none

Spider Cave	Fenced (ranch fence)	Protected on preserve	COA annual species and quarterly surface monitoring	none
Stark's North Mine		Private - Unknown, recently sold		none
Stovepipe Cave		Protected by Sec. 7 - fence cut, illegal access. Appears permit holder not protecting adequately.		none
Talus Springs Cave	Gated	Protected by Homeowners Association and TC, only has 50' setback from houses and is probably effected by uphill development.	TC surface monitoring	none
Tardus Hole	Fenced	Protected on preserve	TC surface monitoring	none
Tooth Cave	Gated	Protected on preserve but area too small. Potentially threatened with surrounding development.	TC surface monitoring	none
Weldon Cave		Private - 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

4.0 ACCESS AND EDUCATION

In the fiscal year 10/01/04-9/30/05, 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 (7), Maple Run Cave (TCMA 110 & COA 14), Midnight Cave (TCMA 2 attempts no access due to poor air quality and COA 23), Whirlpool Cave (780), Goat Cave (TCMA 63 & COA 56) and Get Down Cave (TCMA 100 to entrance room only-See TCMA report further in this report). See Table 3 for access and gating status of all of the BCP caves.

George Veni's University class on "Karst Hydrogeology of Central Texas" visited the surface area near Travis County and City of Austin BCP caves for educational purposes.

5.0 MANAGEMENT COORDINATION AND OVERSIGHT

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

The Karst Sub-Committee of the Scientific Advisory Committee (that advises the BCP Coordinating Committee) continued to monitor BCP karst issues and to advise 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 cave, Another cave, Arrow cave, Barker Ranch cave #1, Blowing Sink, Broken Arrow cave, Brown's cave, Cave Y, Cotterell Cave, County Line Bat cave, Dalstrom cave, District Park, Flintridge, Fossil Garden cave, Goat cave, Hole in the Road cave, Hoskin's Hole, Irelands cave, Jest John cave (cricket exit count), Little Bee Creek cave, Maple Run cave, McNeil Bat cave, Midnight Cave, Rolling Rock cave, Sam Bass cave, Seibert Sink, Sky Ranch cave, Slaughter

Creek cave, Spider cave, Sunset Valley cave, Taylor Bat cave and West Rim cave (note that not all of these are BCP caves).

Travis County's BCCP staff assisted with species surveys in the following Travis County-owned caves: Amber, Gallifer, Kretschmarr, and McDonald Caves. These caves were surveyed as part of Dr. Paquin's study for *Cicurina cueva*. These were not full species surveys of these caves.

Travis County's BCCP staff did surface monitoring of McDonald, Amber, Tooth, Root, North Root, Gallifer, Kretschmarr, Kretschmarr Double Pit, Tardus Hole and Two Trunks Caves. County staff continued training with local karst biologists holding USFWS permits to improve skills in karst biological survey methodology and local species identification with the goal of obtaining the necessary USFWS permits to do endangered species karst monitoring in County-owned caves. County staff did surface monitoring of all county-owned caves. County staff also did surface monitoring of Talus Springs Cave, located on adjacent private land in coordination with the landowners, the Ridge at Grandview Hills Homeowners Association.

In Dec. 2004, Travis County acquired 7 BCP caves previously owned by the Texas System of Natural Laboratories (TSNL) and the monitoring above reflects this. The BCP caves acquired included Tooth Cave, Root Cave, North Root Cave, Gallifer Cave, Tardus Hole, Kretschmarr, Kretschmarr Double Pit. The acquisition of these caves and the surrounding land protect a portion of the 4 Points Cave Cluster, an area required for protection by the BCCP permit. These karst feature areas contain many additional non-BCP caves besides the ones here listed.

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. The report, "Summary of Information for Assessing the Status of the Tooth Cave ground beetle (*Radine persephone*)" (HNTB, 2005), lists locations for this species that add new locations not listed in the 1996 BCCP permit. These new locations within the 62 karst features in the permit have been added to Table 1. Two Trunks Cave, located on Travis County BCP land, contains the Tooth Cave ground beetle but is not in this list of 62 karst features on the permit. Though not listed on the permit, this cave will be protected in the same manner as other BCP caves containing endangered species.

Dr. Pierre Paquin with assistance by Nico Hauwert, Julie Jenkins, Jean Krejca, James Reddell, Mark Sanders and Kemble White did research in 70 caves in Travis Hays, and Williamson Counties to locate and study *Cicurina* spider species. The following 28 BCP caves were included in this study: Airman's, Amber, Arrow, Blowing Sink, Cave X, Cave Y, Cotterell cave, District Park, Flint Ridge, Fossil Garden, Gallifer, Get down Cave, Goat, Hole in the Road cave, Ireland's, Kretschmarr, Lamm, Lost Oasis, Little Bee Creek, Lost Gold, McDonald, Maple Run, McNeil Bat cave, Midnight, Slaughter Creek, Tooth, West Rim, and Whirlpool Caves. *Cicurina cueva* was also discovered at several caves on City of Austin property. Another, Barker Ranch cave #1, County Line Bat cave, and Seibert Sink all harbor blind *Cicurina cueva.* In consultation with the USFWS, the City of Austin BCP has agreed to take on extra management responsibilities for these caves (Seibert Sink and Another cave were gated). The City of Sunset Valley has also agreed to take on extra management responsibilities for Sunset Valley cave (another new location for *Cicurina cueva*). See the attached May 10, 2005 Revised Version of their study, "Genetic and morphological analysis of species limits in *Cicurina* spiders (Araneae, Dictynidae) from southern Travis and northern Hays counties (TX), with emphasis on *Cicurina cueva* Gersch and relatives". This study was originally requested by the USFWS who consider this May 2005 draft to be the final version. Also attached is an article about Dr. Paquin's study in "The Canadian Arachnologist Newsletter", May 2005. The USFWS has been reviewing the status of *Cicurina cueva* as part of a petition for endangered species listing. On 12/5/06 USFWS determined that *Cicurina cueva* is not a listable entity based on Dr. Paquin's research showing that it is not a distinct species. The USFWS therefore determined that listing is not warranted for this species.

The City of Austin also issued a Scientific/Research permit to 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.

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.

The Texas Cave Management Association (TCMA) performed species surveys in Whirlpool, Get Down, and Lost Oasis Caves (Attachment A). TCMA continued with the 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 2005.

Table 4: 2005 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 semiannual cave faunal surveys including USFWS *Cicurina* study. (See Attachments) 2. BCP staff have noticed a slight increase in litter and graffiti. BCP staff contacted TCMA and the local UT grotto requesting help in monitoring this situation. BCP staff are currently considering installing a rules sign in the first room. If the cave continues to be vandalized BCP staff will gate the cave.
Amber Cave Travis County 1. Did cricket exit survey. 2. Did trash cleanup and did frequent surface inspections with no signs of vandalism to the cave entrance or in the cave. 3. Staff assisted Dr. Paquin who surveyed for *Cicurina* sp. (see attachment) 4. Maintained fencing and signage to protect this area from unauthorized access and dumping. 5. Inspected for RIFA. 6. Checked on effects of nearby roadway and sewer line.
Armadillo Ranch Sink Private
Arrow Cave City of Austin 1. Quarterly site inspections were conducted. 2. The cave gate 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.Staff conducted 2 cave faunal surveys including the USFWS *Cicurina* study. 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 1. The City of Austin contacted the owner requesting access and permission to collect blind *Cicurina* for the USFWS *Cicurina* study. Access was denied. 2. The owner expressed interest in attracting bats (*Myotis velifer incautus)* to Bandit cave. BCP staff advised him to contact Jim Kennedy at BCI.

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. Zara Environmental along with local cave volunteers and the City of Austin initiated a stabilization project using reinforced concrete to stabilize passageways within the cave. 5. BCP staff conducted 2 cave faunal surveys including the USFWS *Cicurina* study (See attachments)
Broken Arrow Cave City of Austin 1. This cave was inspected quarterly with no sign of human visitation or vandalism. 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. The 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 with no signs of vandalism. 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. BCP staff conducted 2 cave faunal surveys including the USFWS *Cicurina* study (See attachments).
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. BCP staff conducted 2 cave faunal surveys including the USFWS *Cicurina* study (See attachments). (see attachments).
Disbelievers Cave Private 10a Permit: PRT-808694
District Park Cave City of Austin 1. BCP staff conducted 2 cave faunal surveys including the USFWS *Cicurina* study (See attachments).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. BCP staff repaired the cave gate lock, and removed trash from the un-gated portion of the cave.
Eluvial Cave Private 10a Permit: PRT-808694
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. The contractor was looking for signs of water infiltration other than from the entrance. 3. BCP staff treated numerous RIFA mounds with boiling water. 5. BCP staff conducted 3 cave faunal surveys including the USFWS *Cicurina* study (see attachments). Nico Hauwert with the COA WPDRD continued his study on the surface catchment area of Flintridge cave. COA staff and TCMA excavated a nearby sinkhole in an attempt to see if it connects to 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 Travis County 1. Constructed 8' boundary fencing to protect this area. 2. Did frequent surface inspections with no signs of vandalism to the cave entrance or in the cave. 3. Maintained fencing and signage to protect this area from unauthorized access and dumping. 4. Inspected for RIFA. 5. Stt assisted Dr. Paquin who surveyed for *Cicurina* sp. (see attachment) 6. Did cricket exit survey.

Goat Cave Karst Preserve
City of Austin
1. Completed biannual faunal survey including the USFWS blind *Cicurina* study (see attachments). 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. COA staff suspended AFD mock rescue scenarios due to violations of their access permit. Access will be restored if and when AFD staff attend a karst education class offered by TCMA.
5. Karst Education: Goat cave entrance area was used by George Veni's Karst/hydrology class and Channel 8 did a karst education story at the cave.
6. No bats observed during 2005. There seems to be a consistent concern regarding the lack of bat populations in this and in other local Austin caves, such as Barker Bat and County Line Bat caves. These caves have historically had bat activity. Possible explanations for some historic bat colony locations is encroaching urbanization and changes in land usage

Hole-in-the-Road Cave
Private
USFWS and COA staff conducted a faunal survey for the USFWS blind *Cicurina* study (See attachment).

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. USFWS, COA, and TCMA conducted a cave faunal survey for the USFWS blind *Cicurina* study (See attachment).
4. More info is needed on who will manage the cave. Need to ask about possible landowner agreement with BCP.
5. Ireland's Cave was one of the numerous sites utilized during the collection blitz of the *Circurina cueva,* several individuals were collected during the survey by Pierre Paquin, Mark Sanders (COA), and Julie Jenkins (TCMA).

Jack's Joint Cave
Private

Japygid Cave
Private 10a Permit: PRT-808694

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.
3. BCP staff conducted a cricket exit count (see attachment).

Jester Estates Cave
City of Austin
1. BCP staff conducted 6 site visits and on several occasions removed new illegally dumped trash.
2. BCP staff continue to meet with neighbors regarding why these activities must end. BCP staff hand delivered an educational flier to all neighbors. The flier briefly states why this site is environmentally sensitive and lists ways neighbors can minimize their impacts to this site.
3. The site was treated for fire ants with boiling water.
4. BCP staff removed non-native invasive vegetation from the preserve.

Jollyville Plateau Cave
Private 10a Permit: PRT-808694

Kretschmarr Cave
Travis County
1. Built new 8' boundary fencing and gate to protect this area from unauthorized access and dumping.
2. Coordinated with Pedernales Electric Coop on maintenance of this area since it in the ROW
3. Did frequent surface inspections with no signs of vandalism to the cave entrance or in the cave.
4. Inspected for RIFA.
5. Staff assisted Dr. Paquin who surveyed for *Cicurina* sp. (see attachment).
6. Did cricket exit survey.

Kretschmarr Double Pit Travis County 1. Built new 8' boundary fencing and gate to protect this area from unauthorized access and dumping. 2. Did frequent surface inspections with no signs of vandalism to the cave entrance or in the cave. 3. Inspected for RIFA.
Lamm Cave Section 7 Permit 2-15-93-F-075 (see USFWS files) Zara Environmental, COA, and Travis County staff conducted a cave faunal survey. (see attachment) Developers plan to build a Wal-Mart in close proximity to this cave. The City of Austin negotiated protective measures for this cave including a Land Management Plan for this cave. The cave will have a setback size of approximately 4.13 acres. The radius of the setback varies from a minimum of 123 feet south of the cave to a maximum of 340 feet north of the cave. The cave will also be gated following specifications from the City of Austin and the site will be protected with an iron fence. No application of fertilizers, pesticides or herbicides will be allowed in the CEF area. Fire ants will be treated with boiling water twice per year following strict COA guidelines.
Little Bee Creek Cave City of Austin 1. BCP staff conducted 2 site visits. On one visit staff noted signs of a camp fire, new trash, and increased signs of human foot traffic (heavy compaction of the floor substrate). 2. A cave gate was installed in order to protect the cave from the illegal activities listed above. COA BCP staff sought bids for this project, (Zara Environmental won the bid). 3. BCP and USFWS staff conducted a cave faunal survey. Primary purpose of the survey was to collect blind *Cicurina* for the USFWS *Cicurina* study (See attachment).
Lost Gold Cave Private 1. 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. Conducted one faunal survey (see attachment). 4. TCMA removed the old gate and installed a new gate in another location. The old gate was removed and the area thoroughly covered to return the airflow in the cave to pre-development conditions. It is hoped that raccoon access has also been limited by the gate replacement. 5. One faunal survey performed in 2004-2005 was part of an attempt to locate the Circurina cueva cave spider . Surveyors and collections were made by Pierre Paquin, Mark Sanders (COA), and Bill Russell (TCMA).
Maple Run Cave City of Austin 1. BCP staff conducted 2 cave faunal surveys including the USFWS *Cicurina* study (See attachments). 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. Maintained fencing and signage to protect this area from unauthorized access and dumping. 2. Did frequent surface inspections with no signs of vandalism to the cave entrance or in the cave. 3. Inspected for RIFA. 4. Staff assisted Dr. Paquin who surveyed for *Cicurina* sp. (see attachment).

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. 3. No new activity of access attempts were made in 2005
M.W.A. Cave Private 10a Permit: PRT-808694 (see FWS files for status)
Moss Pit Cave Private
New Comanche Trail Cave Private
No Rent Cave Private
North Root Cave Travis County 1. Did surface inspections with no signs of vandalism to the cave entrance or in the cave. 2. Inspected for RIFA.
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 and USFWS attempted to gain access for the blind *Cicurina* study. Access was denied.
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. 2004-2005 no changes observed. There is a need to establish a sufficient setback for the cave with the Stratus group, TCMA will look into it 2006.
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. 3. Conducted one cave faunal survey (see attachment).
Root Cave Travis County 1. Did frequent surface inspections with no signs of vandalism to the cave entrance or in the cave. 2. Inspected for RIFA.

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. On at least one occasion staff noticed RIFA entering the cave. 4. The City of Austin contracted Zara Environmental to make improvements to the cave gate. 5. Completed semiannual cave faunal surveys including USFWS *Cicurina* study. (See Attachments)
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 and treated red imported fire ants. 3. Conducted one cave faunal survey (see attachment).
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) 1. COA staff noted that the perimeter fence was breached. Staff contacted USFWS and the permit holder. Fence was eventually repaired with additional "no trespass" signs.
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 continued requesting that the homeowners association donate the land to Travis County. Coordinated management with them. 2. Travis County staff regularly checked the cave entrance - informed the owner that yard clippings are being dumped near the cave entrance.
Tardus Hole Cave (Kretschmarr Fluted Sink) TSNL Private 1. Travis County unofficially monitored the tract.
Tooth Cave Travis County 1. Installed new cave gate lock. 2. Did frequent surface inspections with no signs of vandalism to the cave entrance or in the cave. 3. Inspected for RIFA. 4. Dr. Paquin surveyed for Cicurina sp.
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.
5. The TCMA partnered with the Austin Water Utility for implementation of the Austin Clean Water Program (ACWP). The Whirlpool Preserve site was used as a staging area for over 1 mile of sewer line leak prevention liner materials.
6. TCMA granted permission to the US Geological Survey for the installation of a groundwater monitoring well at the Whirlpool Preserve site.
7. Visitation and collection of the Cicurina cueva cave spider took place at Whirlpool Cave. Surveyors were Pierre Paquin, Mark Sanders (COA) and Julie Jenkins (TCMA).

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ATTACHMENT A:
Attachment A:

Texas Cave Management Association (TCMA)
December 2005

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 780 registered visitors in 2004-2005.

Bill Russell and Julie Jenkins, TCMA staff, performed two biological surveys in 2004-2005. This was a year of agency activity at the Whirlpool Preserve site besides the large numbers of visitors and the educational opportunities that the cave presents. Both the City of Austin and the US Geological Survey had major projects that affected the preserve.
The City of Austin Water Utility implemented its Austin Clean Water Program by installing over a mile of liner in the sewer lines that run south thru the preserve. For several months Insituform, the contractor utilized the preserve as a staging ground for the new poly liner materials and TCMA provided initial property access to the contractor.
The US Geological Survey (USGS) was granted permission to access the preserve to drill a groundwater monitoring well. This well will provide the USGS information on the affects of groundwater in highly urbanized areas of Austin.
Also this year faunal surveys and collection of the *Circurina cueva* cave spider was on going in various Austin caves including WP. The intent was to determine the various locations, identification, and range of the *Circurina cueva* as a followup to a petition to USFWS for listing this spider.

LOST OASIS CAVE
In spring 2005 the old gate was removed and a new entrance was gated. This provides better access for surveying. The old gate area has been thoroughly covered and secured, this reduced the airflow to pre-development conditions to prevent drying of the cave interior. One survey was performed during in 2005 year by Bill Russell, Pierre Paquin, and Cindy Baker (USFWS) as part of a study of the *Circurina cueva* by Pierre Paquin. 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 the re-gating and monitoring trips.
There was still some evidence of raccoon scat in the cave. It appears that one or two small holes have opened to the surface allowing entry into the cave for small animals. We have put

rocks on top of both holes. Our observance is that where caves are very near residential development the occurrence of raccoons and increased scat has become a problem or at least an issue for the cave species.

GET DOWN CAVE

The annual Western Oaks Cave Day date event is now held on October 30th. There was more visitation this year than previously (numbers exceeded 100 visitors to the entrance room of the cave- only). USFWS has been consulted re: access one day per year, entrance room only; the response is that this is not an endangered species cave, yet protection of the SOC's is of importance. As the access does not in any way affect the SOC, who dwell deep in the dark zone, some 30 feet down and nearly 100 feet in the cave, this one day annual event access will continue and monitoring efforts will be included to determine if adverse affect to the SOC's is observed.

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.

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 was blocked at various times during the year, yet the raccoons managed to locate additional methods of entry. Finally in October of 2005 a more robust blockage was put in place. The cave will be surveyed numerous times in 2006 to study the effectiveness of the raccoon anti-access measures. 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.

2004-2005 saw one of the faunal surveys at Get Down Cave, specifically oriented toward locating and collecting the *Circurina cueva.* Surveys and collections were performed by Pierre Paquin, Mark Sanders (COA), and Bill Russell (TCMA).

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 2004-2005:

Maple Run Cave: 110 – up from last year

Goat Cave: 63 – down from last year

Midnight Cave: 2 trips to check status of air, no actually trips took place 2004-2005 due to insufficient air for recreational use.

District Park: 7-up from last year, training trip only District Park Cave: This cave received one visitation in 2004-2005. This visit was a training class for the Austin Nature and Science Center counselors, training provided by Julie Jenkins, TCMA.. The gate/lock access problems still exist. It is recommended that the current gate be removed and relocated to just inside the cave entrance at an area where the passage is narrow and accessibility limited. It is thought that this would eliminate the most serious access problems that of having to dig out the gate after heavy rain events and the problems of lock maintenance.

Goat Cave: Bev Shade, geologist with Zara Environmental and George Veni and Assoc. held a mapping survey class in Goat Cave, no faunal survey was performed at that time.
In September or Oct., Dr. Tom Iliffe's group from Texas A&M Galveston biology class visited Goat Cave. It was raining that day and thus visitation was limited to entrance rebelay training was the only activity.

Maple Run: Saw a small increase of visits with no adverse affects apparent, likely due to bad weather that prevented access to Goat Cave, bumping a group over to Maple Run.
Midnight Cave- 2 attempts that were cancelled due to low air quality. TCMA has begun annual air quality checks at Midnight Cave. Historically the air is of good quality as long as Slaughter Creek is running. When the creek quits running air quality diminishes.All gathered data from the monitoring site has been sent to Nico Hauwert with the City of Austin Watershed Protection and Development Review Dept. In August of 2005 the data logger seal was breeched and the electronics failed. No additional data was available and new equipment will have to be purchased and additional watertight measures will be explored for the electronics portion of the logging equipment.

ATTACHMENT B:
KARST FAUNAL REPORTS:

Name: Pierre Paquin, Kemble White, Kathleen O'Connor
Agency: Travis County, USFWS
Date: 1-07-05 **No. of pages: 1**

Location: Gallifer Cave_____ GPS coordinates (NAD 1983) _____
Section No._____

Time Started:_____ Time ended: _____Scientific permit # Kemble White (TE800611-0)
Surface area observations: _____
_____

Survey area: *Solenopsis invicta* If so, heavy infestation moderate light
Vandalism If so, trash speleothems gate graffiti
Temperature Inside:_____Outside:_____Humidity Inside: _____ Outside: _____
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: _____
Organic matter encountered in survey area: _____

Surface area moisture conditions: _____

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (Individuals taken were all collected by Pierre Paquin)
Cambala sp.	-		
ÿ *Texella*	3	Under rocks	3 juveniles collected
***** *Cicurina sp.* (subspecies: *Cicurella*)	13	under rocks in cave	13 specimens collected: 6 female, 7 juveniles
Cicurina varians	1	under rock	Male collected
Neoleptoneta sp.	4	under rocks	1 male, 3 female collected
Eidmannella sp.	5	under rocks	4 juveniles, 1 female
Rove beetle- Staphylinidae	2	under rocks	2 juveniles collected
Collembola	-		
Scorpion: *Pseudouroctunus*	1		
Japygidae	-		
Crickets*: Ceuthophilus secretus*	-		
Ceuthophilus cunicularis	-		
Webworms: Mycetophilidae	-		
Syrrhophus marnocki	1		

(*) signifies species of concern **(ÿ) signifies endangered species**

Gallifer Cave was informally surveyed on above date by researchers Pierre Paquin and Kemble White. The main purpose of the survey was to find and collect troglobitic spiders of the genus *Cicurina* for an ongoing study conducted by Mr. Paquin. The above table provides information on species richness and does not always indicate actual abundance of each of the species encountered.

One individual *Cicurina sp.* was collected by Mr. Paquin.

Name: Pierre Paquin, Kemble White Agency: Travis County, USFWS
Date: 1-07-05 No. of pages: 1

Location: Amber Cave GPS coordinates (NAD 1983) _____
Section No._____

Time Started:_____ Time ended: _____Scientific permit # Kemble White (TE800611-0)

Surface area observations: _____
_____

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside:_____Outside:_____Humidity Inside: _____ Outside: _____
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: _____
Organic matter encountered in survey area: _____

Surface area moisture conditions: _____

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (Individuals taken were all collected by Pierre Paquin)
Cambala sp.	-		
ÿ *Texella sp.*	2	Under rocks	
Cicurina varians	1	Under rocks	1 juvenile collected
*****Cicurina sp.* (*Cicurella sub species*)	3		1 female, 2 juveniles collected
Eidmannella	2	Under rocks	1 female,1 juvenile collected
Scorpion: *Pseudouroctunus*	1	Under rocks	
Crickets*: Ceuthophilus secretus*	-		
Ceuthophilus cunicularis	-		
Webworms: Mycetophilidae	-		
Staphylinidae	1		Specimen collected by P. Paquin

(*) signifies species of concern **(ÿ) signifies endangered species**

Amber Cave was informally surveyed on above date by researchers Pierre Paquin and Kemble White. The main purpose of the survey was to find and collect troglobitic spiders of the genus *Cicurina* for an ongoing study conducted by Mr. Paquin. The above table provides information on species richness and does not always indicate actual abundance of each of the species encountered.

One *Cicurina sp.,* one *Eidmannella* and one Rove beetle (Staphylinidae) were collected by Mr. Paquin.

Name: Pierre Paquin, Kemble White, Kathleen O'Connor
Agency: Travis County, USFWS
Date: 1-07-05 No. of pages: 1

Location: McDonald Cave GPS coordinates (NAD 1983) _____
Section No._____

Time Started:_____ Time ended: _____Scientific permit # Kemble White (TE800611-0)
Surface area observations: _____
Survey area: *Solenopsis invicta* If so, heavy infestation moderate light

Vandalism If so, trash speleothems gate graffiti

Temperature Inside:_____Outside:_____Humidity Inside: _____ Outside: _____
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: _____
Organic matter encountered in survey area: _____

Surface area moisture conditions: _____

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (Individuals taken were all collected by Pierre Paquin)
Cambala sp.	-		
**Speodesmus*			
Texella sp.	2	Under rocks	1 juvenile collected
Cicurina varians	1		
**Cicurina sp.- Cicurella* subspecies	16	Under rocks	8 female, 1 male, 7 juveniles collected
Eidmannella	9	In cave	2 females, 7 juveniles collected
Neoleptoneta sp.	1	Under rocks	1 female collected
Pseudoscorpion: *Tartarocreagris sp.*			
Scorpion: *Pseudouroctunus*	1		
Crickets*: Ceuthophilus secretus*	-		
Ceuthophilus cunicularis	-		
Springtails: Collembola			
Diplurans: Japygidae	-		
-Campodeidae	-		
Mites: Acarina undetermined	-		
Ticks: *Ixodes*	-		
Webworms: Mycetophilidae	-		
Staphylinidae	1		

(*) signifies species of concern **(ÿ) signifies endangered species**

McDonald Cave was informally surveyed on above date by researchers Pierre Paquin and Kemble White. The main purpose of the survey was to find and collect troglobitic spiders of the genus *Cicurina* for an ongoing study conducted by Mr. Paquin. The above table provides information on species richness and does not always indicate actual abundance of each of the species encountered.

Name: Pierre Paquin, Kemble White, Kathleen O 'Connor
Agency: Travis County, USFWS Date: 1-07-05
No. of pages: 1

Location: **Kretschmarr Cave** _____ GPS coordinates (NAD 1983) _____
Section No._____

Time Started:_____ Time ended: _____Scientific permit # Kemble White (TE800611-0)

Surface area observations:
_____
_____

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside:_____Outside:_____Humidity Inside: _____ Outside: _____
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: _____
Organic matter encountered in survey area: _____

Surface area moisture conditions: _____

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (Individuals taken were all collected by Pierre Paquin)
Tachys sp.	1		
Rove beetle- Staphylinidae	1	Under rocks	
Pholcidae	1		
**Cicurina sp.* Subspecies: *Cicurella*	1	Under rocks	1 female, 3 juveniles collected
Cicurina varians	1	Under rocks	1 juvenile collected
Springtails: Collembola	-		
Crickets*: Ceuthophilus cunicularis*	-		
Mites- Acarina undet.	-		

(*) signifies species of concern **(ÿ) signifies endangered species**

Kretschmarr Cave was informally surveyed on above date by researchers Pierre Paquin and Kemble White. The main purpose of the survey was to find and collect troglobitic spiders of the genus *Cicurina* for an ongoing study conducted by Mr. Paquin. The above table provides information on species richness and does not always indicate actual abundance of each of the species encountered.

Name: Mark Sanders, Kathleen O'Connor, and John Chenoweth
Agency: COA, Travis County
Date: 10/27/04 **No. of pages: 3**

Location: Airman's cave Section No. 1

Time Started: 10:53am Time ended: 11:13am Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) trash, lots of plastic bottles and one battery

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 67 F Outside: 75.7 F @ 10:31am Humidity Inside: 96% Outside: 92%
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) wet and warmer than usual

Organic matter encountered in survey area: small amounts of old raccoon scat..

Surface area moisture conditions: (dry, dripping, pools) primarily dry, but damp in some areas.

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Cicurina sp.	3		
Eidmannella sp	7		
* *Speodesmus sp*.	1		
Surface millipede	1		
mold beetle			1 was observed under plastic in-between sections 1 & 2
Surface roach	2		
Springtails: *Collembola*	5		
Ceuthophilus sp. B	2		
Ceuthophilus nymphs	8		
mosquitoes	2		
Fungus gnats			
Plethodon albagula	5		One appeared to be slightly injured

(*) 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 new graffiti at the entrance of the cave which we removed, we also noticed much more trash than usual inside the cave, (mostly plastic bottles and clothing, a couple of batteries and a air horn). All trash was removed.
I'm seriously considering installing a "caving etiquette" sign inside the first passage room, informing all who enter of the rules and the consequences if these rules are not followed (potentially gating the cave).
We also noticed just one Eastern Pipistrelle bat and a Rhadine austinica inbetween sections 1 and 2 and once again more trash than normal.
Kathleen O'Connor, biologist with Travis County helped us out on this survey.

Name: Mark Sanders, Kathleen O'Connor, and John Chenoweth
Agency: COA, Travis County
Date: 10/27/04 No. of pages: 3

Location: Airman's cave Section No. 2

Time Started: 11:55am Time ended: 12:28pm 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: 67 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)

Organic matter encountered in survey area: raccoon scat .

Surface area moisture conditions: (dry, dripping, pools) dry, though damp in a few 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*			One noted inbetween sections 1 & 2
Spiders: wall web			
Cicurina sp.	20		
Eidmannella sp	4		
Surface wolf spider	1		Very large individual, "accidental".
* *Texella spinoperca*	1	Under rock	One was observed just outside of survey area walking adjacent to the trail.
Cambala speobia	1	scat	
* *Speodesmus sp.*	2	On scat and under rock	
* *Rhadine austinica*	1	Walking on wall	Another individual was observed outside of survey area
Rove beetles: *Orus rubens*			
Texoreddellia texensis	6	New raccoon scat	
Springtails: *Collembola*	7		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	1		
Ceuthophilus cunicularis			
Ceuthophilus nymphs	14		
Fungus gnats	10		
Plethodon albagula	3		

(*) signifies species of concern

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

Name: Mark Sanders, Kathleen O'Connor, and John Chenoweth
Agency: COA, Travis County

Date: 10/27/04 No. of pages: 3

Location: Airman's cave Section No. 3

Time Started: 1:40pm Time ended: 1:53pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) more traffic than usual, people are looking for clay for the aggie art gallery

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 68.5 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)

Organic matter encountered in survey area: a little bit of old raccoon scat

Surface area moisture conditions: (dry, dripping, pools) damp in 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			
Cicurina sp.	3		3 additional individuals were noted under plastic in the aggie art gallery.
Eidmannella sp			
* *Texella spinoperca*			
Cambala speobia			
* *Speodesmus sp.*			3 were observed in aggie art gallery near scat and candle was mold.
* *Rhadine austinica*			15 were observed in the nearby aggie art gallery near mammal scat, most # I've ever seen at once.
Texoreddellia texensis			Several noted inbetween sections 2 and 3
Ceuthophilus nymphs	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.

We noticed a large # of cave fauna in the aggie art gallery primarily around fresh mammal scat and candle wax.
Section 3 was nearly devoid of organic nutrients and so therefore we did not observe much activity.
A small amount of graffiti was removed inbetween sections 2 and 3, probably new.
I forgot the map showing the area to survey for section 3 so this time we surveyed a smaller area, see map (4.5 x3 meter area versus the usual 4.5 x 3.7 meter area).

Name: Mark Sanders, Pierre Paquin Agency: COA, USFWS
Date: 1/12/05 No. of pages:

Location: Airman's cave

Section No. entrance to approximately 350 feet into the cave

Time Started: 9:45am Time ended: ~12:15pm 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: 64.5 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

Organic matter encountered in survey area: old raccoon scat .

Surface area moisture conditions: (dry, dripping, pools) mostly dry, however some areas were moist

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Pseudouroctonus reddelli	11		
Cicurina varians	25		7 collected
**Cicurina reyesi*	55		1 adult female and 13 immatures were collected for DNA species study
Eidmannella sp	20		
**Tartarocreagris sp*	1		Collected by Pierre for species ID work
* *Rhadine austinica*	10	On floor	2 were collected for species work by James Reddell
Staphylinidae	1		
Texoreddellia texensis	5		2 were collected for DNA species ID work
Ceuthophilus cunicularis	2		
Ceuthophilus nymphs	24		
Collembola	~200		
**Batrisodes sp* (mold beetle)	1		Collected by Pierre for species ID
Plethodon albagula	1		
Pipistrellus subflavus	12		

(*) 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 encountered a small amount of trash which I removed.
At the end of our survey we encountered 3 teenagers passing us as we were leaving, Pierre and I talked to them to make sure that they understood the sensitive nature of the cave and to make sure they minimize their impacts. They agreed.

Name: M Sanders, P Paquin, C Baker Agency: COA, USFWS
Date: 1/06/05 No. of pages: 1

Location: Another Cave

Section surveyed: Entire cave

Time Started: 5pm Time ended: 6:30pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) A bag of trash was dumped near the entrance, I will remove it soon.

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) above average rainfall

Organic matter encountered in survey area: wood and leaf litter, raccoon and cricket scat

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

CAVE CRICKET EXIT COUNT

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Collembola (springtails)	20		
Cicurina sp (blind)	2		2 immatures were collected for DNA study
Cicurina varians	5		A couple were collected
Cambala speobia	7		
Ceuthophilus sp. B	?		Several were observed but were not counted
Ceuthophilus nymphs	?		Observed but not counted
Ceuthophilus cunicularis	?		Observed but not counted

(*) 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.

Currently this cave is not gated, however, I think that gating is warranted due to the close proximity of homes. In the past the entrance was very tiny, it appears that the entrance has collapsed and is now much larger, obvious and easier to access.

Name: M. Sanders, K. O'Connor, J. Chenoweth Agency: COA, Travis Co
Date: 12/02/04 No. of pages: 1

Location: Arrow Cave
Section surveyed: Entire cave

Time Started: 12:07 Time ended: 1:52pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) no problems observed.

Survey area: *Solenopsis invicta* If so, heavy infestation moderate light
Vandalism If so, trash speleothems gate graffiti
Temperature Inside: NA Outside: 60F Humidity Inside: NA Outside: @ noon
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: leaf litter, raccoon scat, wood debris, fungus

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

CAVE CRICKET EXIT COUNT

Species	No. seen	Mic rohabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Gastropoda	1		
Earth worm	1		
springtails	~275		
Cicurina sp	7		
Eidmannella sp	4		
Solenopsis invicta			
**Texella mulaiki*			
Leiobunum townsendii			
*Speodesmus sp	3	On floor	
Cambala speobia	10		
Texoreddellia texensis	1		
**Rhadine austinica*			
Rove beetles			
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	27		
Ceuthophilus nymphs	~225		
Ceuthophilus cunicularis	1		
Fungus gnat	15		
moth	1		
Syrrhophus marnocki			
Plethodon albagula	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.

Name: M Sanders, P Paquin, C Baker Agency: COA, USFWS
Date: 1/06/05 No. of pages: 1

Location: Arrow Cave
Section surveyed: First portion of cave

Time Started: 3:40pm Time ended: 4:35pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) no problems noted

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 62 F Outside: NA Humidity Inside: 94% 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

Organic matter encountered in survey area: Leaf litter, wood debris, fungus, cricket scat

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

CAVE CRICKET EXIT COUNT

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Collembola (springtails)	10		
Cicurina sp (blind)	2		Collected for DNA species ID
Eidmannella or Gaucelmus	1		Collected for species ID
Cybaeus sp (spider)	?		At least one was collected for ID
Terrestrial isopod	10		
Cambala speobia	6		
Japygidae	2		One was collected for ID purposes
Cockroach	1		
Ceuthophilus sp. B	30		
Ceuthophilus nymphs	~100		
Phorid fly	?		Noted as observed in cave

(*) 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.

Pierre was surprised to find blind Cicurina so close to the entrance.

Name: Mark Sanders, John Chenoweth, Kathleen O'Connor
Agency: COA, Travis County
Date: 12/08/04 No. of pages: 2

Location: Blowing Sink tract
Section No. Upper portion of the cave (cave was sumped below the flowstone climb approximately 220 foot depth)
Time Started: 10:30am Time ended: 4 pm 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: 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) recent flooding within the previous month.

Organic matter encountered in survey area: leaf litter and woods materials

Surface area moisture conditions: (dry, dripping, pools) damp and the lower portion was wet.

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: Gastropoda	8		
Amphipods: **Stygobromus russelli*	5	In pools	
Spiders: wall web	2		
Cicurina sp.	7	Under rocks	
Surface spiders	3		
* *Texella mulaiki*	1	On Wall	Collected and given to James Reddell for ID
Millipedes: Diplopoda accident	3		
Cambala speobia	2	On wall, under rocks	
* *Speodesmus sp*.	4	On wall, under rocks	
Rove beetles: *Orus rubens*	3		
Springtails: Collembola	20		
Ceuthophilus sp. B	6		
Ceuthophilus nymphs	25		
Fungus gnats	3		
Plethodon albagula	1		
Bufo valliceps	1		
Crotalus atrox	1		Unsuccessful attempt t o capture and remove from cave

(*) signifies species of concern

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

The primary purpose of this visit was to check bait traps which were installed in Eileen's river by Zara Environmental, add traps and bait existing traps. The lower portion of the cave was still flooded and so we were not able to check any of the existing traps, however, we did install 3 traps in the flooded passage between the base of the flowstone climb and twist of fate.

Name: Mark Sanders, Pierre Paquin, Cynthia Baker Agency: COA, USFWS
Date: 1/12/05 No. of pages: 1

Location: Blowing Sink cave
Section No. Upper portion of the cave (up to the first vertical drop)
Time Started: 2:15pm Time ended: 3:20 pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) no problems noted .

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) above average rainfall

Organic matter encountered in survey area: leaf litter and wood debris

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)
**Cicurina sp.*(blind)	5	Under rocks	3 immatures were collected for DNA species ID
Cicurina varians	?		Observed but not counted
Gnaphosidae (spider)	1		
Ceuthophilus sp. B	12		
Solenopsis invicta	30		In the entrance/ first portion of cave
Terrestrial isopods	3		

(*) 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: M Sanders, J Chenoweth, K. O'Connor Agency: COA, Travis Co
Date: 12/03/04 No. of pages: 1

Location: Lime Creek preserve , broken arrow cave Section No. entire cave

Time Started: 11:45am Time ended: 12:25pm 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 graffiti

Temperature Inside: 66 F Outside: 53 F Humidity Inside: 100% Outside: 58% @ 11:40am
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) Heavy flood the previous month (approximately 10 inches)

Organic matter encountered in survey area: a small amount of leaf litter and wood debris.

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

Species	No. seen	M icrohabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Snails: Gastropoda			
Earthworms: Haplotaxida	7		
Scorpions: *Vaejovis reddelli*			
**Cicurina sp.*	3	Under rocks	
Wall web spider	8		
Leiobunum townsendii			
* *Speodesmus sp.*	1	On wall	
Cambala speobia	~50		
Rove beetles	1		
Rhadine subterranea	2	Under rock and on floor	
Mold beetle			
Springtails: Collembola	~23		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	8		
Ceuthophilus cunicularis			
Ceuthophilus nymphs	57		
Aquatic amphipods	~100		Collected for for species ID
Solenopsis invicta			
Fungus gnats			

(*) signifies species of concern
(ÿ) signifies endangered species

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

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

Name: M.Sanders, Pierre Paquin, Cynthia Baker Agency: COA, USFWS
Date: 1/05/05 No. of pages: 1

Location: Cave Y
Section surveyed: First half of cave

Time Started: NA Time ended: NA Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) no problems noted

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) above average rainfall

Organic matter encountered in survey area: raccoon scat, leaf litter and wood debris

Surface area moisture conditions: (dry, dripping, pools) .upper area was dry, lower section was damp.

CAVE CRICKET EXIT COUNT

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Cicurina varians	?		Noted as observed in cave, unknown number
**Texella grubbsi*	8	Under rocks	2 were collected for ID purposes
Pseudouroctonus reddelli	4		
Diptera: Fungus gnats	?		Noted as observed in cave, unknown number
Speodesmus sp	?	On floor, under rocks	Noted as observed in cave, unknown number
Collembola sp	?		Noted as observed in cave, unknown number
Ceuthophilus nymphs	?		Noted as observed in cave, unknown #
Ceuthophilus cunicularis	?		Noted as observed in cave, unknown number

(*) 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.

All spiders were collected by Pierre for ID purposes, all other collections will delivered to the proper species specialist for ID purposes.

Name: M.Sanders, Pierre Paquin Agency: COA, USFWS
Date: 1/10/05 No. of pages: 1

Location: Cave Y
Section surveyed: First half of cave

Time Started: 4:45pm Time ended: 5:45pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) no problems noted

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 64 F Outside: 72 F @ 4:45pm Humidity Inside: 97% 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

Organic matter encountered in survey area: raccoon scat, leaf litter and wood debris

Surface area moisture conditions: (dry, dripping, pools) .upper area was dry, lower section was damp.

CAVE CRICKET EXIT COUNT

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Cicurina sp* (blind)	6	Under rocks	4 immatures were collected for DNA species ID
Cicurina varians	8		2 were collected
Wall web spider ?	1		Collected for species ID
**Texella grubbsi*	5	Under rocks	
Fungus gnats	3		4 were in their larval stage.
Diplura: Japygid ?	3	On floor, under rocks	1 was collected for ID purposes
Texoreddellia texensis	1		1 was collected for DNA species ID work
Pseudouroctonus reddelli	2		
Cockroach	?		Observed but not counted
Staphylinidae: rove beetle	?		Observed but not counted
Ceuthophilus nymphs	12		
Ceuthophilus sp B	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.

Blind *Cicurina* were only found in the lower portion of the cave, and *C varians* was found throughout the upper portion of the cave.
All spiders were collected by Pierre for ID purposes, all other collections will delivered to the proper species specialist for ID purposes.

Name: Mark Sanders, Pierre Paquin, Cynthia Baker Agency: COA, USFWS
Date: 1/12/05 No. of pages: 1

Location: Cotterell cave Section No. entire cave

Time Started: 4:30pm Time ended: 5:45 pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) No problems noted

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 67 F Outside: NA Humidity Inside: 97% 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

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

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)
**Tartarocreagris sp*	1	Under rock	Collected by Pierre for DNA species ID work
**Cicurina sp.* (blind)	6	Under rocks	3 adult females and 3 immatures were collected for DNA species ID study
ÿ *Texella reyesi*	4	Under rocks	One collected for DNA species ID work
Tachys sp. (surface beetle)	1		
Plethodon albagula	12		6 adults, 6 juveniles

(*) signifies species of concern
(ÿ) signifies endangered species

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

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

Name: Mark Sanders and John Chenoweth Agency: COA
Date: 11/05/04 No. of pages: 2

Location: District Park Cave Section No. 1 (aquifer room)

Time Started: 10:26am Time ended: 10:55am Scientific permit # TE798920-0

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

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

Vandalism If so, trash speleothems gate graffiti broken tape

Temperature Inside: 70 F Outside: 60 F Humidity Inside: 98% Outside: 68% @ 10am

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) above 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	2		
Scorpions: *Vaejovis reddelli*			
Spiders: wall web			
Cicurina sp.	12	Under rocks	
Cambala speobia	29		
Assassin beetle			
Texoreddellia texensis			
Springtails: Collembola	~50		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	5		
Ceuthophilus cunicularis	14		
Ceuthophilus nymphs	118		
Fungus gnats	10		
moth	2		

(*) 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. We replaced it with new tape.

Name: Mark Sanders and John Chenoweth Agency: COA
Date: 11/05/04 No. of pages: 2

Location: District Park Cave Section No. 2 (aggie level)

Time Started: 11:25am Time ended: 11:52am 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 broken tape

Temperature Inside: 68 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) above average rainfall .

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

Surface area moisture conditions: (dry, dripping, pools) portions were 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: *Vaejovis reddelli*			
Spiders: wall web			
* *Cicurina sp.*	12	Under rocks	
* *Speodesmus sp*	1	Under rock	One was observed just outside of survey area
Assassin beetle			
Texoreddellia texensis			
Springtails: Collembola	~60		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	1		
Ceuthophilus cunicularis	3		
Ceuthophilus nymphs	40		
Fungus gnats	7		
moth	2		

(*) 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. We replaced it with new tape.

Name: Mark Sanders and Pierre Paquin Agency: COA and USFWS
Date: 3/02/05 No. of pages: 2

Location: District Park Cave Section No. 1 (aquifer room)

Time Started: 2:18pm Time ended: 3pm 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: 63 F Outside: 52 F @ 1:45pm Humidity Inside: 100% Outside: 93%

Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: leaf litter, raccoon scat .

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

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Cicurina varians	9		
Cicurina sp.(blind)	12		7 collected for DNA species ID study
Cambala speobia	4		
* *Rhadine austinica*			
Assassin bug	1		
Springtails: Collembola	~100		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B			
Ceuthophilus cunicularis	2		One collected for DNA work
Ceuthophilus nymphs	25		
Fungus gnats	6		

(*) signifies species of concern

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

The passageway leading to this room was blocked by soil and sediments from the November floods. It prevented human passage, however not raccoon.
After the construction of the flood retention pond and park construction this cave now takes a lot of recharge during rainfall events which will always block entry into the lower portions of this cave. I may attempt to re-direct the flow of water from the cave.

Name: Mark Sanders and Pierre Paquin Agency: COA and USFWS
Date: 3/02/05 No. of pages: 1

Location: District Park Cave Section No. 2 (aggie level)

Time Started: 3:15pm Time ended: 3:25pm 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: 66 F Outside: 52 F @ 1:45pm Humidity Inside: 100% Outside: 93%

Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: leaf litter, raccoon scat .

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

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Cicurina varians			
Cicurina sp.(blind)	1		collected for DNA species ID study (San Diego state)
Cambala speobia	13		4 additional were observed outside of survey area
* *Rhadine austinica*			1 was observed outside of survey area
Assassin bug	1		
Springtails: Collembola	~50		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B			
Ceuthophilus cunicularis	3		
Ceuthophilus nymphs	15		
Fungus gnats			

(*) signifies species of concern

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

Raccoon scat was more abundant than ususal.

Name: Mark Sanders and Jean Krejca Agency: COA
Date: 10/29/04 No. of pages: 2

Location: Flintridge cave Section No. upper portion of cave

Time Started: 9am Time ended: 11 am 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: Humidity Inside: 98% Outside:
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: leaf litter, rotting wood and fungus growing off of the wood

Surface area moisture conditions: (dry, dripping, pools) mostly damp, wetter than usual

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)

Snails: Gastropoda	3		
Earthworms: Haplotaxida	7		
**Cicurina cueva*	~40	Under rocks	Jean took a real good photo of one
Eidmannella sp.			
* *Texella mulaiki*	3	Under rocks	Jean took a real good photo of one
* *Speodesmus sp.*	5		
* *Rhadine austinica*	3????	On floor and wall	We observed what we believe to be the larval stage of Rhadine, Jean collected one for ID
Rove beetles: *Belonuchus sp*	8		
Texoreddellia texensis	12		
Springtails: *Pseudosinella sp*	~50		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	6		
Ceuthophilus cunicularis			
Ceuthophilus nymphs	~50		
Solenopsis invicta	~50		Probably washed in from last flood
Fungus gnats			
* Amphipods *Stygobromus russelli*	~20		
Copepods	~15		Probably accidentally washed in, Jean collected several for ID
Surface diving beetle	2		In pools near the 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.

We did a cursory survey, primary purpose was to get an idea of the #'s of *Cicurina cueva.*

Name: Mark Sanders, Pierre Paquin, Cynthia Baker Agency: COA, USFWS
Date: 1/11/05 No. of pages: 1

Location: Flintridge cave Section No. entrance to "breakdown room"

Time Started: 9:45am Time ended: 11:30 am Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) no problems noted

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 68 F Outside: 71 F @ 9:45am Humidity Inside: 98% Outside: 72%
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: leaf litter, rotting wood and fungus growing off of the wood

Surface area moisture conditions: (dry, dripping, pools) mostly damp, wetter than usual

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Cicurina cueva*	5	Under rocks	One adult male, very rare and 4 immatures were collected for DNA work

Titanoecidae or Corinnidae,	?		Extremely numerous surface spider found throughout the upper portion of the cave.
Eidmannella sp.			
* *Texella mulaiki*	?	On clay/ mud substrate	At least 2 were observed.
Pseudouroctonus reddelli	2		
* *Speodesmus sp.*	16	On wall, under rocks	
* *Rhadine austinica*	2 or 3	On floor and wall	1 or 2 were collected for species ID purposes
Staphylinidae: *Belonuchus sp*	15		
Agonum*:* Carabid surface beetle	2		
Beetle larvae	?		Observed but not counted, probably Staphylinidae
Texoreddellia texensis	4		2 were collected for DNA species ID work
Collembola: *Pseudosinella sp*	16		
Ceuthophilus sp. B	6		
Ceuthophilus cunicularis	2		
Ceuthophilus nymphs	10		I think that this is a mistake, considerable undercount
Cockroach	3		Probably washed in from last flood
Fungus gnats	?		Observed but not counted

(*) 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.

Several fire ant mounds were observed in close proximity to the cave entrance. BCP staff will treat the area this Spring with boiling water.

Name: Mark Sanders Agency: COA
Date: 5/12/05 No. of pages: 1

Location: Flintridge cave Section No. cursory survey of the entire cave

Time Started: 9:30am Time ended: 2:55 am Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) no problems noted

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

Vandalism If so, trash speleothems gate graffiti
Temperature Inside: 70.5 F Outside: NA Humidity Inside: 98% Outside: NA
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) Approximate 2 inch rain event within the previous week.

Organic matter encountered in survey area: leaf litter, rotting wood and fungus growing off of the wood

Surface area moisture conditions: (dry, dripping, pools) mostly damp, wetter than usual

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Cicurina cueva*	5	Under rocks	
Titanoecidae or Corinnidae,	1		Extremely numerous surface spider found throughout the upper portion of the cave.

* *Speodesmus sp.*	3	On walls	
* *Rhadine austinica*	1	On wall	
Staphylinidae: *Belonuchus sp*	~25		
Texoreddellia texensis	5		
Collembola: *Pseudosinella sp*	10		
Amphipods	7		
Ceuthophilus sp. B	6		
Ceuthophilus secretus	1		
Ceuthophilus nymphs	19		
Cave moths	7		
Fungus gnats	7		
Gastropoda (snail)	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.

During this visit my primary goal was to observe 2 contractors (TXDOT/ ACI) and make sure they were in compliance with their permit. The purpose of their visit was to attempt to determine water flow routes in the cave/ where exactly does the water enter the cave.
Several fire ant mounds were observed in close proximity to the cave entrance. BCP staff will treat the area later this Spring with boiling water.
It appears that the cave took quite a bit of rainfall runoff from the previous weeks 2 inch rainfall event.

Name: Mark Sanders, Pierre Paquin Agency: COA, USFWS
Date: 3/11/05 No. of pages: 1

Location: Fossil Garden cave (private, Travis County) Section No. entire cave

Time Started: 2pm Time ended: 3:30pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) no problems noted

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 63.5 F Outside: 75 F @ 2pm Humidity Inside: 95% Outside: 24%
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: raccoon scat, leaf litter and wood debris

Surface area moisture conditions: (dry, dripping, pools) primarily dry but damp in a few areas

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Cicurina sp* (blind)	9	Under rocks	All were collected for USFWS DNA study.
Cicurina varians	2		One was collected
Araneae: (amber spider)	12		

***Batrisodes sp*	5		3 were collected for species ID work, could be a listed species
***Rhadine sp*	4		3 were collected for DNA species ID work
Cambala speobia	7		
Millipede (new species)	1		Collected fro species ID
Collembola	~60		
Ceuthophilus sp. B	?		Observed but not counted
Ceuthophilus nymphs	~50		
Staphylinidae: rove beetles	3		3 were collected for species ID
Diplura: Japigids	6		Several observed near entrance but not counted
Gastropoda	4		
Pipistrellus subflavus (bat)	3		

(*) signifies species of concern
(**) endangered species

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

This cave is in desperate need of a fence and bat gate (it appears to be a party spot for the nearby high school. Due to time constraints we did not survey the entire cave, focused on the large chamber and did not venture on into the "Rhadine room".

Name: M Sanders, J Chenoweth Agency: COA
Date: 11/5/04 No. of pages: 2

Location: Goat cave Section No. 1 (landing zone)

Time Started: 2:02pm Time ended: 2:20pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) fire ant mounds were observed near the entrance, and a large rock was thrown over the fence, we carefully placed it inside the cave.

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

Vandalism If so, trash speleothems other graffiti

Temperature Inside: 67.5 F Outside: 69.5 F Humidity Inside: 95% Outside: 43% @ 1:38pm

Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: leaf litter, pieces of wood, fungus

Surface area moisture conditions: (dry, dripping, pools) portions were 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			
Surface spiders	5		
* *Cicurina sp*			
Suface beetles	4		
* *Speodesmus sp.*			
Collembola			
Fungus gnats			
Ceuthophilus sp. B			
Ceuthophilus nymphs			
Mosquitoes	9		
Bufo valliceps valliceps	1		
Plethodon albagula	12		

(*) 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: M Sanders, J Chenoweth Agency: COA
Date: 11/5/04 No. of pages: 2

Location: Goat cave Section No. 2 (alcove)

Time Started: 2:35pm Time ended: 2:54pm 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 other graffiti

Temperature Inside: 69 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

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	1		
Earthworms: Haplotaxida			
Isopods: Oniscoidea			
Scorpions surface			
* *Cicurina sp*	3	Under rocks	

* *Speodesmus sp.*	1	Under rock	
Collembola			
Fungus gnats	3		
Ceuthophilus sp. B			
Ceuthophilus nymphs	7		
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.

No bats were observed.
The alcove and most of the cave appeared to have had heavy foot traffic, most of the surface areas are trampled, and compacted. It appears that someone has attempted to build a wall (wall off the alcove). I believe that the cave is experiencing too much traffic.
I talked with TCMA, and the ANC and we will now limit the # of visitors to 10 maximum and flag off the alcove from traffic.
In the future we may limit access to just the landing zone.

Name: M Sanders, Pierre Paquin Agency: COA, USFWS
Date: 3/02/05 No. of pages: 2

Location: Goat cave Section No. 2 (alcove)

Time Started: 5:15pm Time ended: 5:27pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) recent heavy traffic by AFD cave rescue training scenarios

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

Vandalism If so, trash speleothems other graffiti

Temperature Inside: 62 F Outside: 52 F @ 5pm Humidity Inside: 98% Outside: 95%

Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: clay, soil

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)
Psocoptera	1		
Pseudouroctonus reddelli			1 was observed outside of survey area
Tartarocreagris sp		On wood	1 was collected for species ID outside of survey area
* *Cicurina sp* (blind)	1	Under rocks	3 were observed outside of survey area, all were collected for ID purposes
Ceuthophilus sp. B	3		One was collected for species ID

Ceuthophilus numphs	5		
Plethodon albagula			5 were observed at the entrance sink area

(*) 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.

No bats were observed.

Name: Mark Sanders, Pierre Paquin Agency: COA, USFWS
Date: 3/11/05 No. of pages: 1

Location: Hole in the Road cave (private, Travis County) Section No. first 3 chambers

Time Started: 10:20am Time ended: 11:30am Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) no problems noted

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: NA Outside: 65 F @ 10:15am Humidity Inside: NA Outside: 35%
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: leaf litter and wood debris

Surface area moisture conditions: (dry, dripping, pools) primarily dry but damp in a few areas

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Cicurina sp* (blind)	4	Under rocks	Collected for USFWS DNA study.
Cicurina varians	?		Observed but not counted
*** Tartarocreagris sp*	1	Under rock	Collected by Pierre Paquin for species ID, could possibly be a listed species
Cambala speobia	?		Observed but not counted
* *Speodesmus sp.*	3	Under rocks	
Collembola	~200		
Ceuthophilus sp. B	12		

Ceuthophilus nymphs	~75		
Terrestrial isopod	?		Observed but not coutned
Diptera: (flies)	?		Observed but not coutned
Surface centipede	?		Observed but not coutned
Haplotaxida: (earthworm)	?		Observed but not coutned

(*) signifies species of concern
(**) endangered species

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

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

The lower portions of this cave had more promise to find listed species, but unfortunately we were pressed for time and were unable to thoroughly explore that area.
We removed some old carpet and beer bottles from the cave.
The cave needs a survey map, it would be interesting to see how extensive this cave is.

Name: Mark Sanders, Julie Jenkins, and Pierre Paquin
Agency: COA-AWU, TCMA, and USFWS
Date: 3/9/05 No. of pages: 1

Location: Irelands cave (private, Travis County) Section No. approximately first 2/3rds of cave

Time Started: 8:20am Time ended: 9am Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) entrance was blocked by owners with a stump and rocks to prevent illegal access

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

Vandalism If so, trash speleothems gate graffiti
Temperature Inside: 69.5 F Outside: 54.5 F @ 8:15am Humidity Inside: 100% Outside: 76%
Humidity was measured with a Psychrodyne analog psychrometer.

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

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

Surface area moisture conditions: (dry, dripping, pools) most of the survey area was very damp with some standing pools of water

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Spiders: **Cicurina sp*	6	Under rocks	5 were collected for USFWS DNA study.
Cicurina varians	2		
* *Speodesmus sp.*	6		
* *Rhadine austinica*	3	On floor	All were collected by Pierre for a morphological species ID study
Texoreddellia texensis	4		2 were collected for molecular species ID
Springtails: Collembola	~50		
Ceuthophilus sp. B	~20		

Ceuthophilus cunicularis	2		
Ceuthophilus nymphs	~60		

(*) 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 survey was not very thorough due to the fact that Pierre was rushed for a later appointment.
Air quality was surprisingly good however, the CO2 level increased dramatically immediately after Killroy column and continued to increase in the lower portions of the cave (especially in the cave stream passageway.
Due to the sensitivity (speleothems, historical graffiti, and rare cave invertebrates) and major liability issues (bad air) this cave should immediately be gated preferably with a BCI bat style gate with an additional perimeter fence delineating the preserve boundary.

Name: Mark Sanders and Kathleen O'Connor Agency: COA, Travis County
Date: 10/22/04 No. of pages: 2

Location: Jest John Cave
Section surveyed: Cave Cricket exit count

Time Started: 7:25 pm Time ended: 9:25pm Scientific permit # TE798920-0

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

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: Outside: 27.5 C @7:19pm Humidity Inside: Outside: 68%
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) This week has been abnormally hot, low to mid 90's, above average rainfall for the year.

Organic matter encountered in survey area: leaf litter, small wood debris

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

CAVE CRICKET EXIT COUNT

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Solenopsis invicta	~30		
Surface spiders	7		
Leiobunum townsendii	22		
Surface scorpion	1		
Crickets*: Ceuthophilus secretus*	4		
Ceuthophilus sp. B	127		
Ceuthophilus nymphs	769		
Syrrhophus marnocki	1		
Peromyscus sp	2		Exited the cave

Didelphis virginiana	1		Large adult walking up to the cave, possibly wanting to feed on the crickets.

(*) 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.

When this cave was discovered the entrance was too small for human access so it was enlarged. In order to keep the cave from drying out, and to prevent potential vandalism the entrance was restored to it's original size. The entrance to the cave looks much like a armadillo burrow, very small with a shrub growing in the entrance.
BCP staff determined that the best method for measuring the health of this cave would be via cricket exit counts. We noticed that the adult crickets and mice were intimidated by our presence; perhaps if we used lights with red lenses we may have better luck (it's been observed that red light has less of a noticeable reaction from certain species of wildlife).

Name: Mark Sanders and Pierre Paquin Agency: COA-AWU and USFWS
Date: 3/8/05 No. of pages: 1

Location: Little Bee Creek cave Section No. entire cave

Time Started: 9:45am Time ended: 10:05am Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) trash, fire, heavy foot traffic

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 67 F Outside: 57 F @ 9:45am Humidity Inside: 100% Outside: 50%
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: small amount of wood debris

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)
Scorpions: *Vaejovis reddelli*			
Spiders: *Cicurina sp	1	Under rock	Collected for USFWS DNA study.
Achaerenia sp	1		
** *Texella reddelli*			
Millipedes: Diplopoda accident			
Cambala speobia	4	Floor and under rocks	
* *Speodesmus sp*.			
* *Rhadine austinica*			
Reduviidae: Assassin bug	6		
Texoreddellia texensis			
Springtails: Collembola			
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B			

Ceuthophilus cunicularis			
Ceuthophilus nymphs	5		
Syrrhophus marnocki			
Bat: *Pipistrellus subflavus*	1		

(*) signifies species of concern
(**) endangered species

See back for additional Field Notes and Comments? Section map attached?
Photographs taken? How many? If so, attach to this report.

There have been significant habitat damage due to over usage by people (compaction of habitat).
In the past I've seen numerous Rhadine beetles and some Texella, this was the first time that I've noticed the distinct lack of suitable habitat.

Name: Mark Sanders, John Chenoweth Agency: COA
Date: 11/08/04 No. of pages: 2

Location: Maple Run Cave Section No. 1

Time Started: 3:15 pm Time ended: 3:35pm Scientific permit # TE798920-0

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

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

Vandalism If so, trash speleothems gate graffiti other

Temperature Inside: 73 F Outside: 75 F Humidity Inside: 93% Outside: 58% @ 3pm

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) above 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)
Gastropoda	1		
Vaejovis reddelli	1		
Spiders: wall web			
Cicurina sp.	9	Under rocks	
Neoleptoneta sp.			
* *Texella mulaiki*	2	Under rocks	
* *Speodesmus sp.*			
* *Rhadine austinica*	1	On floor	
Batrisodes sp.	1	Under rock	Collected for ID by James Reddell
Texoreddellia texensis	2	Under rocks	One was being eaten by a Cicurina
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B			
Ceuthophilus cunicularis			

Ceuthophilus nymphs	8		
Blow flies: Calliphora accident			
Fungus gnats			
Plethodon albagula	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.

Name: Mark Sanders, John Chenoweth Agency: COA
Date: 11/08/04 No. of pages: 2

Location: Maple Run Cave Section No. 2

Time Started: 4:02 pm Time ended: 4:21pm 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: 71 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) above 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)
Gastropoda			
Vaejovis reddelli			
Spiders: wall web	1		
Cicurina sp.	1	Under rocks	
Neoleptoneta sp.			
* *Texella mulaiki*			
* *Speodesmus sp.*			
* *Rhadine austinica*			
Mold beetle			
Texoreddellia texensis			
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B			
Ceuthophilus cunicularis			
Ceuthophilus nymphs			
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 and Pierre Paquin Agency: COA-AWU and USFWS
Date: 3/8/05 No. of pages: 1

Location: Maple Run cave Section No. Survey station 1

Time Started: 1:05pm Time ended: 1:20pm 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: 79 F @ 12:45pm Humidity Inside: 95% Outside: 25%
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: nothing

Surface area moisture conditions: (dry, dripping, pools) very wet, floor was inundated

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Scorpions: *Vaejovis reddelli*	3		
Spiders: **Cicurina sp*	1	Under rock	Collected for USFWS DNA study.
* *Speodesmus sp*.	1	Under rock	
* *Rhadine austinica*			
Texoreddellia texensis			
Springtails: Collembola			
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B			
Ceuthophilus cunicularis			
Ceuthophilus nymphs	5		

(*) 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.

Most of the floor was inundated with water dripping all over the place.

Name: Mark Sanders and Pierre Paquin Agency: COA-AWU and USFWS
Date: 3/8/05 No. of pages: 1

Location: Maple Run cave Section No. Survey station 2

Time Started: 1:45pm Time ended: 2:55pm 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: Humidity Inside: 95% Outside: 25%
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: nothing

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)
Scorpions: *Vaejovis reddelli*	3		12 were observed in-between sections 1 and 2
Spiders: **Cicurina sp*	2	Under rock	1was Collected for USFWS DNA study and an addition one was collected just outside of survey area.
Anapistula sp (tiny web spiders)	3	On wall	An additional 3 were collected just outside of survey area, however, 3 escaped..
* *Rhadine austinica*			
Texoreddellia texensis			1 collected just outside of survey area.
Springtails: Collembola			
Crickets*: Ceuthophilus secretus*			
Ceuthophilus nymphs	4		An additional 5 were observed just outside of survey area and ~100 were observed near the entrance

(*) 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 spent a large amount of time searching for the tiny *Anapistula* sp spiders. These spiders are extremely tiny and live off of spores collected in their webs. Pierre collected individuals for species ID, but unfortunately 3 escaped and we were not able to collect an adult male.

Name: Mark Sanders, Nico Hauwert, Pierre Paquin, Cynthia Baker
Agency: COA, USFWS Date: 3/11/05 No. of pages: 1

Location: McNeil Bat cave (private, Travis County) Section No. the first large chamber and a few alcoves

Time Started: 12pm Time ended: 1pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) no problems noted, but very close to a high school

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 66 F Outside: 72 F @ 12pm Humidity Inside: 90% Outside: 34%
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: large amount of bat guano,leaf litter and wood debris

Surface area moisture conditions: (dry, dripping, pools) primarily dry but damp in a few areas

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Cicurina sp* (blind)	4	Under rocks	3 were collected for USFWS DNA study.
Cicurina varians	3		
Neoleptoneta sp	1	Under rock	Collected by Pierre Paquin for species ID, could possibly be a listed species, possibly a listed species
Araneae: (amber spider)	3		
Acarina: (mite)	1		
Texella reyesi	3		2 were collected for species ID work
Texoreddellia texensis	1		Collected for DNA species ID work
Cambala speobia	35		
Collembola	~500		
Ceuthophilus sp. B	?		Observed but not counted
Ceuthophilus nymphs	~150		
Staphylinidae*: rove beetles*	2		
Diptera: (flies)	?		Several observed near entrance but not counted
Diptera: bat parasite	1		Collected for species ID
Gastropoda	4		
Syrrhophus marnockii (frog)	1		
Pipistrellus subflavus (bat)	3		

Myotis velifer incautus	~6		Difficult to count because they were flying

(*) signifies species of concern
(**) endangered species

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

This cave is in desperate need of a fence and bat gate (it appears to be a party spot for the nearby high school. Due to time constraints we did not survey the entire cave, focused on the large chamber and did not venture on into the "Rhadine room".

Name: John Chenoweth Agency: COA
Date: 12/02/04 No. of pages: 1

Location: Midnight cave Section No. landing zone

Time Started: 4:20pm Time ended: 4:44pm Scientific permit # TE798920-0

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

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

Vandalism If so, trash speleothems gate other

Temperature Inside: N/A Outside: 60.5F Humidity Inside: NA Outside: 53% @ 4:12pm

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) Above average rainfall for the year (approx. 10" in Nov) recent light freeze.

Organic matter encountered in survey area: leaf litter, wood debris, fungus

Surface area moisture conditions: (dry, dripping, pools) approximately 90% of the floor of the landing zone was under water.

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Earth worms	~55		
Isopods *Trichoniscidae sp*			
Scorpions: *Vaejovis reddelli*			
Spiders: wall web			
**Cicurina sp.*	2	Under rocks	
Eidmannella sp			
** Texella mulaiki*			
Cambala speobia			
**Speodesmus sp.*			
Surface millipede			
** Rhadine austinica*			
Collembola			
Ceuthophilus secretus			
Ceuthophilus sp. B			
Ceuthophilus cunicularis	3		
Ceuthophilus nymphs	40		
Syrrhophus marnockii			

Plethodon albagula	6		2 adults

(*) 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, Kathleen O'Connor Agency: COA, Travis Co
Date: 12/02/04 No. of pages: 1

Location: Midnight cave Section No. upper room

Time Started: 4:20pm Time ended: 4:54pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) a small amount, which we removed.

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

Vandalism If so, trash speleothems gate other

Temperature Inside: N/A Outside: 60.5 F Humidity Inside: 100% Outside: 53% @ 4:12pm

Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) Above average rainfall for the year (approx. 10" in Nov) recent light freeze.

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

Surface area moisture conditions: (dry, dripping, pools) approximately 50% of the floor was saturated with some pooling

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		
Scorpions: *Vaejovis reddelli*			
Spiders: wall web	1		
**Cicurina sp.*	12	Under rocks	
Eidmannella	1		
* *Texella mulaiki*			
Cambala speobia	26		
**Speodesmus sp.*	~60	Mostly on the ceiling	
Surface millipede			
* *Rhadine austinica*	2	Under rocks	
Collembola	~60		
Ceuthophilus secretus			
Ceuthophilus sp. B	15		Numerous crickets outside of survey area.
Ceuthophilus cunicularis	3		
Ceuthophilus nymphs	~140		Throughout the rest of the cave there were thousands of crickets on the ceiling
Syrrhophus marnockii			Just outside of survey area.
Plethodon albagula			1 small juvenile just outside of survey area.

(*) 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, Pierre Paquin, Cynthia Baker Agency: COA, USFWS
Date: 3/03/05 No. of pages: 1

Location: Midnight cave Section No. upper room

Time Started: 10am Time ended: 10:30am Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) small amount of trash and rocks which I removed.

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

Vandalism If so, trash speleothems gate other

Temperature Inside: 65.5 F Outside: 52 F @ 9:25am Humidity Inside: 98% Outside: 90%

Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: cricket guano

Surface area moisture conditions: (dry, dripping, pools) much of the floor was inundated.

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Earthworm (Haplotaxida)	1		
Isopods *Trichoniscidae sp*	1		
Eidmannella sp	12		1 was collected for species ID
**Cicurina sp.*(blind)	13		6 were collected for DNA species ID
* *Texella mulaiki*			
Cambala speobia	32		
**Speodesmus sp.*	35		
* *Rhadine austinica*	2		2 were collected for species ID
Ceuthophilus sp. B	12		
Ceuthophilus cunicularis			
Ceuthophilus nymphs	75		~2000 were observed outside of survey area
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.

Lower portion of cave:
Pierre collected:

Spiders: Erigonine sp 12 observed (2 collected)
Nesticio sp 3 collected.

Name: M Sanders, J Chenoweth, K. O'Connor Agency: COA, Travis County
Date: 12/03/04 No. of pages: 1

Location: Lime Creek preserve , rolling rock cave Section No. entire cave

Time Started: 2:25pm Time ended: 2:52pm 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: 64 F Outside: 56 F Humidity Inside: 97% Outside: 60% @ 2:20pm
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) Above average rainfall for the previous month and year.

Organic matter encountered in survey area: sediment, leaf litter, wood debris, fungus
Surface area moisture conditions: (dry, dripping, pools) Damp, muddy in 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			
Scorpions: *Vaejovis reddelli*			
**Cicurina sp.*	5	Under rocks	
Wall web spider	3		
Eidmannella sp	1		
Leiobunum townsendii			
* *Speodesmus sp.*			
Cambala speobia	1		
Rove beetles			
Mold beetle			
Springtails: Collembola	~70		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	4		
Ceuthophilus cunicularis			
Ceuthophilus nymphs	~60		
*????	1		Collected unknown arthropod for ID
Fungus gnats	1		
Plethodon albagula	3		

(*) signifies species of concern
(ÿ) signifies endangered species

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

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

Fire ants were observed near the entrance. The cave flooded recently with evidence that the lower portion of the cave was sumped (woody debris on the ceiling).

Name: Mark Sanders Agency: COA and USFWS
Date: 1/13/05 No. of pages: 1

Location: Seibert Sink (Barton Creek Wilderness Park) Section No. entire cave

Time Started: 4:20pm Time ended: 5:15pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) no problems noted

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 65º F Outside: NA Humidity Inside: 90% 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

Organic matter encountered in survey area: leaf litter, wood debris, and fungus

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)
Cicurina varians	9		5 collected
Neoleptoneta sp.	1		Totally blind, collected for species ID
* *Texella sp*	6	Under rocks	3 were collected for species ID
Cambala speobia	1		
Springtails: Collembola	30		
Ceuthophilus nymphs	20		
Plethodon albagula	6		
Syrrhophus marnocki	1		Large adult

(*) 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 and Pierre Paquin Agency: COA and USFWS
Date: 3/08/05 No. of pages: 1

Location: Seibert Sink (Barton Creek Wilderness Park Section No. entire cave

Time Started: 11:17am Time ended: 11:50am Scientific permit # TE798920-0

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

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 65º F Outside: 69º F @ 11:15am Humidity Inside: 98% Outside: 28%
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: leaf litter, wood debris, and fungus

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)
Earthworms: Haplotaxida	2		
Pseudouroctonus reddelli	1		
Cicurina varians	10		5 collected for DNA work
Cicurina sp."blind"	3	Under rocks	Collected for DNA species ID work
Neoleptoneta sp.			
Eperigone albula (spider)	2		2 collected for DNA work
* *Texella sp*	1	Under rock	
Cixiidea larvae (root feeder)	1		
Cockroach	1		
Springtails: Collembola	20		
Ceuthophilus nymphs	10		
Plethodon albagula	10		
Syrrhophus marnocki	6		Large adult

(*) 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: M.Sanders, K. O'Connor, J. Chenoweth Agency: COA, Travis Co
Date: 12/02/04 No. of pages: 1

Location: Slaughter Creek Cave

Section surveyed: Entire cave
Time Started: 10:02am Time ended: 11 am 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: 56 F Humidity Inside: 99% Outside: 91% @ 10am
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) recent heavy rains, and a light freeze

Organic matter encountered in survey area: raccoon scat, cricket scat, fungus

Surface area moisture conditions: (dry, dripping, pools) .mostly dry but a few damp areas.

CAVE CRICKET EXIT COUNT

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Gastropoda	2		
Earth worms	9		
springtails	96		
Surface spider	1		
Cicurina sp	21	Under rocks	
Wall web spiders	5		
Eidmannella sp	4		
Vaejovis reddelli	2		
Terrestrial surface isopod	3		
moth	3		
Fungus gnat larvae	35		4 were in their larval stage.
**Speodesmus sp*	10	On floor, under rocks	
Cambala speobia	12		
Texoreddellia texensis			
**Rhadine austinica*			
Rove beetles	3		
Crickets*: Ceuthophilus secretus*	1		
Ceuthophilus sp. B	4		
Ceuthophilus nymphs	73		
Ceuthophilus cunicularis	3		

(*) 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: M.Sanders, Pierre Paquin, Cynthia Baker Agency: COA, USFWS
Date: 1/06/05 No. of pages: 1

Location: Slaughter Creek Cave

Section surveyed: Upper 2/3rds of cave

Time Started: 1:30pm Time ended: 2:45pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) dead raccoon inside the entrance

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 65.2 F Outside: NA Humidity Inside: 99% 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

Organic matter encountered in survey area: raccoon scat, cricket scat, fungus

Surface area moisture conditions: (dry, dripping, pools) .mostly dry but a few damp areas.

CAVE CRICKET EXIT COUNT

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Gastropoda	2		
Earth worms	9		
Collembola (springtails)	25		
**Cicurina sp blind)*	7	Under rocks	Were collected for DNA species ID
Cicurina varians	12		Several were collected
Agyneta (spider)	1		One male collected
**Texella mulaiki*	2	Under rocks	Collected for ID purposes by Paquin
Pseudouroctonus reddelli	2		
Terrestrial surface isopod	3		
moth	2		
Fungus gnat larvae	4		4 were in their larval stage.
**Speodesmus sp*	12	On floor, under rocks	
Cambala speobia	3		
Texoreddellia texensis	1		
Staphylinidae (Rove beetles)	1		
Ceuthophilus nymphs	25		
Ceuthophilus cunicularis	3		

(*) 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, Kathleen O'Connor Agency: COA, Travis Co

Date: 12/9/04 No. of pages: 1

Location: Spider cave Section No. entire cave

Time Started: 11:37am Time ended: 12:18 pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) No problems observed.

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 69 F Outside: 69 F @ 11:30am Humidity Inside: 100% Outside: 47%
Humidity was measured with a Psychrodyne analog psychrometer.

Weather conditions during the past week: (freeze, over 100 F, draught, flood) This site experienced above average rainfall (approx. 10") from the previous month.

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

Surface area moisture conditions: (dry, dripping, pools) Portions are dry, however, most areas were slightly damp.

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Earthworms: Haplotaxida	6		
**Cicurina sp.*	12	Under rocks	
Wall web	2		
ÿ *Texella reyesi*	5	Under rocks, one on path	
* *Speodesmus sp.*	2	Under rocks	
Cambala speobia	15		
Centipede sp	6		
ÿ*Rhadine sp*	1	On floor	Could possibly been subterranean???
Springtails: Collembola	~70		
Ceuthophilus sp. B	12		May actually be a new species.
Ceuthophilus nymphs	~50		
Fungus gnats	1		
Plethodon albagula	6		Small juveniles
Syrrhophus marnockii	1		

(*) signifies species of concern
(ÿ) signifies endangered species

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

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

Name: Pierre Paquin Agency: USFWS
Date: 1/11/05 No. of pages: 1

Location: Westrim cave (private, Travis County) Section No. entire cave

Time Started: ~9am Time ended: ~9:15am Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) No problems noted

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 57.5 F Outside: 56 F Humidity Inside: 85% Outside: 44%
Humidity was measured with a Psychrodyne analog psychrometer.

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

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

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)
Cicurina varians	?	Under rocks	(at least one) 1 was collected
Ceuthophilus nymphs	5		
Millipeds (surface)	?		

(*) signifies species of concern
(ÿ) signifies endangered species

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

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

The cave is a small shallow sinkhole, barely meeting the definition of a cave and is starting to fill up with soil and organic material.
Pierre was not able to access lower portions of the cave and was unsuccessful in finding any troglobitic species.
The endangered *Texella reyesi* is known from this cave as well as blind *Cicurina*; however, it is now unlikely that any troglobitic species will be found due to the lack of depth to this feature.
The cave has a small setback (approximately 1 acre) from new homes.
It appears that the new homeowners are leaving the cave setback area in a natural state.
A small amount of old trash was removed from the cave.

Name: Mark Sanders, Pierre Paquin Agency: COA, USFWS
Date: 1/11/05 No. of pages: 1

Location: Barker Ranch cave #1 (COA's Tabor tract, Travis County) Section No. top 2/3rds of cave

Time Started: 12pm Time ended: 12:50 pm Scientific permit # TE798920-0

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

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: NA Outside: 69 F @ noon 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) above average annual rainfall

Organic matter encountered in survey area: small amount of leaf litter, and wood debris

Surface area moisture conditions: (dry, dripping, pools) mostly dry, with a few pooled areas

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Cicurina sp* (blind)	6	Under rocks	4 immatures were collected for DNA work
Ciciurina varians	?		Several were observed and one was collected
Pseudouroctonus reddelli	2		
* *Speodesmus sp*.	5	On wall, under rocks	
Staphylinidae	?		Observed but not counted
Diplura: Japigid	2		One collected for ID purposes
Collembola	4		
Ceuthophilus nymphs	30		I think that this is a mistake, considerable undercount
Lepidoptera	2		Pierre collected one for species ID

(*) 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.

This cave has a very large sinkhole entrance, thus after recent cold fronts it becomes a "cold trap". The temperature in the cave is colder than what would be expected. Unfortunately inside temperature and humidity was not taken. Mark Sanders removed some non-native invasive "Asian Holly ferns from the entrance of the cave.

Name: Mark Sanders, Pierre Paquin, Cynthia Baker Agency: COA, USFWS
Date: 3/04/05 No. of pages: 1

Location: Brown's cave (private, Williamson County) Section No. first 2 chambers

Time Started: 9:40am Time ended: 11:30am Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) No problems noted

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 62.5 F Outside: 54 F @ 9:38am Humidity Inside: 100% Outside: 85%
Humidity was measured with a Psychrodyne analog psychrometer.

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

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

Surface area moisture conditions: (dry, dripping, pools) primarily dry with a few wet areas
FAUNAL SURVEY

Species	No. seen	M icrohabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Cicurina sp.* (blind)	3	Under rocks	were collected for DNA species ID study
Cicurina varians	?		Observed but not counted
Titanoecidae: (surface spider)	?		Numerous (observed but not counted
ÿ Texella reyesi	8	Under rocks	One or two were collected for DNA species ID work (unconfirmed endangered species)
ÿ Batrisodes sp	1		Collected by Pierre for species ID (unconfirmed endangered speices
Speodesmus sp	7		
Ceuthophilus nymphs	3		
Terrestrial isopod	1		
Phorid fly	1		
Blattodea: cockroach	6		
Planaria	1		
Syrrhophus marnocki	1		

(*) signifies species of concern
(ÿ) signifies endangered species

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

This cave is heavily decorated with beautiful speleothems.
The cave is located in a subdivision, small lot next to a home with a manicured yard and 2 dogs.
Even though the owners have never entered the cave, it appears that they are good land stewards and are very proud of the fact that they have such a unique feature in their yard.
Approximately 30-foot radius around the cave entrance is left undisturbed, native vegetation.
I collected drips from stalactites for possible water quality analysis (samples were given to Nico Hauwert with COA WPDRD for possible analysis.
Mark Sanders took several photos of the cave, species and formations.

Name: Mark Sanders, Pierre Paquin, Cynthia Baker Agency: COA, USFWS
Date: 1/11/05 No. of pages: 1

Location: County Line Bat cave (COA's Tabor tract, Travis County) Section No. entire cave

Time Started: 1:38pm Time ended: 2:30 pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) no problems noted

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) above average annual rainfall

Organic matter encountered in survey area: bat guano, small amount of leaf litter, and wood debris

Surface area moisture conditions: (dry, dripping, pools) mostly dry, with a few wet areas

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Cicurina sp* (blind)	3	Under rocks	3 immatures were collected for DNA species ID
Ciciurina varians	6		Total may have been much higher
Achaearanea porteri (spider)	?		Numerous observed but not counted
* *Speodesmus sp*.	3	under rocks	Collected one for voucher purposes
Collembola	25		
Ceuthophilus secretus	20		
Ceuthophilus cunicularis	?		Observed but not counted.
Ceuthophilus nymphs	25		

(*) 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.

Until recently this cave housed a large colony of *Myotis velifer incautus.* The site is now more secure from trespass and so therefore it is hoped that the bats will return.

Name: Mark Sanders, Nico Hauwert, Pierre Paquin, Cynthia Baker
Agency: COA, USFWS
Date: 1/11/05 No. of pages: 1

Location: Dalstrom cave (private, Travis County) Section No. entire cave

Time Started: 4:30pm Time ended: 6:30 pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) old trash in and around the entrance

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) above average annual rainfall

Organic matter encountered in survey area: leaf litter, and wood debris

Surface area moisture conditions: (dry, dripping, pools) very wet, evidence that the cave sumped last November, (flood debris on the ceiling)

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Rhadine austinica*	1	Under rock	was collected for species ID work, given to James Reddell
Carabid (surface beetle)	1		Near entrance
Plethodon albagula	3		One adult and 2 juveniles

(*) 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.

This cave is a major recharge feature and showed evidence that it actually flooded last November.
It appears that this cave was once a trash pit, the local cave management organization (Texas Cave Management Association) removed a large amount of trash, however, there is still a lot of old metal debris and glass throughout the cave.

Name: Mark Sanders, Nico Hauwert, Pierre Paquin Agency: COA, USFWS
Date: 3/07/05 No. of pages: 1

Location: Hoskins Hole (COA's Rutherford tract in Hays County)

Section No. The first landing zone shelf area (not the lower portion of the cave)

Time Started: 12:30pm Time ended: 1:30pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) Large rolls of old fencing material were located near the entrance.

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: NA Outside: 71º F @ 12:27pm Humidity Inside: NA Outside: 81%
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: Old rusty trash, animal bones, wood debris, and fungus

Surface area moisture conditions: (dry, dripping, pools) damp, portions were very wet, I collected drip water for analysis by a UT grad student.

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Cicurina sp.(blind)	1	Under rocks	It was collected for DNA species ID work
Cicurina varians	6		1 was collected for DNA work
Eidmannella sp	35		4 were collected for DNA/morphological work
Texoreddellia texensis	8		3 were collected for DNA species ID work
Cambala speobia	27	Under rocks, floor	
* *Rhadine austinica*			
Springtails: Collembola	20		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	21		
Ceuthophilus cunicularis			
Ceuthophilus nymphs	~100		

(*) 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.

It appears that the previous landowner used this cave as a trash pit, we observed a fair amount of old glass and metal objects. I estimate that with a crew of 10 the trash could be removed in one day.
We did not explore the lower portion of the cave because our rope was not long enough.

Name: Mark Sanders, Nico Hauwert, Pierre Paquin Agency: COA, USFWS
Date: 3/11/05 No. of pages: 1

Location: Sam Bass cave (private, Williamson County) Section No. entire cave

Time Started: 4pm Time ended: 4:40pm 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 graffiti

Temperature Inside: 58 F Outside: 68 F @ 4:49pm Humidity Inside: 88% Outside: 21%
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: candle wax, left over party trash.

Surface area moisture conditions: (dry, dripping, pools) dry where cave invertebrates were found.

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Scorpions: *Vaejovis reddelli*			
Spiders: *Cicurina sp	4	Under rocks	Collected for USFWS DNA study.
** *Texella reyesi*	3	Under rocks and on wall	
Pseudoscoropion	1	Under rock	Collected by Pierre Paquin for species ID
Cambala speobia	12	Floor and under rocks	
* *Speodesmus sp*.			
* *Rhadine subterranea*	2	On walls	Collected by Pierre Paquin for species ID
Texoreddellia texensis			
Springtails: Collembola	~30		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	10		
Ceuthophilus cunicularis			
Ceuthophilus nymphs	~50		

(*) signifies species of concern
(**) endangered species

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

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

On Halloween this cave is open to visitors (approximately 1000) for a party.
For the rest of the year the cave has little or no visitors.
Much of the cave has been excavated much like a mine. The cave also has several entrances, which allows for a strong draft (note low humidity).
The endangered species were found in a passageway dominated by pulverulitic limestone.

Name: Mark Sanders, Pierre Paquin Agency: COA, USFWS
Date: 1/11/05 No. of pages: 1

Location: Sky Ranch cave (COA's Rutherford tract, Hays County) Section No. entire cave

Time Started: 3:20pm Time ended: 3:50 pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) fire ant mounds were observed in close proximity to the cave entrance
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) above average annual rainfall

Organic matter encountered in survey area: _ leaf litter, and wood debris

Surface area moisture conditions: (dry, dripping, pools) mostly dry, with a few wet areas

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Cicurina sp* (blind)	1	Under rock	One immature was collected for DNA study
Ciciurina varians			
Linyphiidae (sheet web spiders)	?		Numerous observed but not counted
* *Speodesmus sp*.	?	under rocks	Observed but not counted
Cambala speobia	2		One was collected as a voucher specimen
Collembola	?		Observed but not counted
Ceuthophilus nymphs	~100		
Lepidoptera (cave moth)	1		
Solenopsis invicta	2		
Staphylinidae Orus sp	4		
Haplotaxida (earthworms)	?		Observed but not counted
Culicidae (mosquitoes)	?		Observed but not counted

(*) 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: Pierre Paquin, Cynthia Baker, Carolyn Meredith, Mark Sanders, Nico Hauwert
Agency: USFWS, Sunset Valley, COA
Date: 1/13/05 No. of pages: 1

Location: Sunset Valley cave Section No. entire cave

Time Started: 1:40pm Time ended: 3:30pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) The hinges on the gate have rusted off and storm water runoff is undermining the concrete footing

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) above average rainfall

Organic matter encountered in survey area: large amounts of raccoon scat, leaf litter, wood debris

Surface area moisture conditions: (dry, dripping, pools) very damp, the cave showed signs off flooding, flood debris on the walls and ceiling

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Cicurina sp* (blind)	1	Under rock	collected for USFWS DNA study.
Titanoecidae or Corinnidae: (spide	?		Numerous surface spider found throughout the cave, unsure of ID, narrowed down to 2 families
Eidmannella sp	2		
Psychodidae (mothfly or sandfly)	15		
Carabid beetle (surface)	1		
Helicodiscus sp (snail)	1		
Collembola	13		
Ceuthophilus sp. B	2		
Ceuthophilus cunicularis	20		
Diptera: Fungus gnat	?		Observed but not counted
Dermaptera: earwig	2		
Blattodea: cockroach	20		
Haplotaxida: earthworm	3		

(*) 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.

A small amount of old ranch trash was removed from the cave.
Recommendation: redesign and install a new cave gate, current gate in inadequate.
Pierre made the statement that it appears that in cases where you have caves which are major recharge features which get major scouring during heavy rain events it is harder to find troglobitic species, therefore when consultants are surveying they should allow for a certain amount of time to allow the cave to dry out so cave invertebrates will resurface from the interstitial spaces they took refuge in.

Name: Mark Sanders, Nico Hauwert, Pierre Paquin Agency: COA, USFWS
Date: 3/07/05 No. of pages: 1

Location: Taylor Bat Cave (WQPL private easement in Hays County)

Section No. Approximately ½ of the cave passageways

Time Started: 2:50pm Time ended: 3:38pm Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) A large rattlesnake was guarding the entrance.

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

Vandalism If so, trash speleothems gate graffiti

Temperature Inside: 68º F Outside: 71º F @ 2:38pm Humidity Inside: 98% Outside: 72%
Humidity was measured with a Psychrodyne analog psychrometer.

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

Organic matter encountered in survey area: bat guano, wood debris, and fungus

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)
Cicurina sp.(blind)	6	Under rocks	4 were collected for DNA species ID work
Cicurina varians	24		2 were collected for DNA work
Agyneta llanoensis (spider)	~1,000		20 were collected for DNA/morphological work
* *Texella mulaiki*	1	Under rocks	
Cambala speobia	7	Under rocks, floor	
* *Rhadine austinica*			
Texamaurops sp (mold beetle)	4		2 were collected for species ID purposes
Springtails: Collembola	20		
Crickets*: Ceuthophilus secretus*			
Ceuthophilus sp. B	7		
Ceuthophilus cunicularis			
Ceuthophilus nymphs	40		
Fungus gnat larvae	6		
Plethodon albagula	4		
Syrrhophus marnocki	1		
Crotalus atrox	1		Guarding the entrance, we carefully walked around him
Myotis velifer incautus	6		We were careful not to disturb the bats and avoided areas where they were observed.

(*) 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.

KARST FAUNAL REPORTS:

Name: Bill Russell, Pierre Paquin, Cynthia Baker, Mark Sanders
Agency: TCMA, COA, USFWS
Date: 1/06/05 Get Down Cave, VWO Preserve

Location: Get Down cave GPS coordinates (NAD 1983)_____ Section No. entrance to end of canon del Blanco Vista (**both survey areas included in one survey**)
Time Started: 10am Time ended: 11:20am Scientific permit # TE798920-0
Surface area observations: (gate condition, fire ants, vandalism) nothing out of the ordinary.

Survey area: *Solenopsis invicta* If so, heavy infestation moderate light Vandalism If so, trash speleothems gate other
Temperature Inside: NA Outside: 40 Humidity Inside: NA Outside: NA
Humidity was measured with a Psychrodyne analog psychrometer.
Weather conditions during the past week: sprinkles, patchy rain overcast
Organic matter encountered in survey area: Massive amounts of raccoon scat
Surface area moisture conditions: sprinkles, patchy rain overcast

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
Eidmannella sp	4		1 was collected for species ID
**Cicurina sp.*(blind)	8	Under rocks	2 were adult females, all were collected for DNA species ID
Cicurina varians	?		Numerous individuals were seen
Argyrodes (spider)	?		Was listed as seen
Achaearanea sp (spider)	?		Observed but not counted
Batrisodes sp *(mold beetle)*	1	On floor	Collected for ID purposes
Ixodidae (tick).	1		Probably from the raccoons
Staphylinidae	?		Numerous individuals were see including 2 different species
Diptera	?		Was listed as seen

(*) signifies species of concern Section map attached? Photographs taken? How many?

(COA)->Unfortunately we did not treat this visit as an actual survey, primary focus was blind Cicurina and little thou ght was given to other species encountered. Raccoon scat was extremely abundant as well as rove beetles and no ground beetles were encountered.
(TCMA)-> 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. Lots of old scat, observed much raccoon activity! 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 **Trichoniscidae** isopods and rove beetles are in abundance and there is a clear lack of the expected cave animals. After blocking the apparent raccoon entrance and that attempt failing, and again blocking apparent entrances and failing, finally the last week of October, 2005, think we have successfully blocked all raccoon access to the cave.

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): __B. Russell, J. Jenkins_____ Date: _____October 1, 2005_____
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		
Wall Web		
Harvestman: L. townsendii		
*Texella mulaiki		
Millipedes: Cambala speobia		
*Speodesmus sp. "small"		
*Speodesmus sp. "large"		
Cave Crickets: Ceuthophilus sp. B		
Ceuthophilus secretus		
Ceuthophilus cunicularis		
Ceuthophilus nymphs		
Springtails: Collembola sp	50+	Scat, more scat than Jan. 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, * Comments: Scat, scat, everywhere scat. Lots of old scat, observed much raccoon activity! After blocking the apparent raccoon entrance and that attempt failing, and again blocking apparent entrances and failing, finally the last week of October, 2005, think we have successfully blocked all raccoon access to the cave.

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): __B. Russell, J. Jenkins_____ Date: _____October 1, 2005
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: _2:45 p.m._____ Time Ended: _3:15pm_____
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"		
*Speodesmus sp. "large"		
Cave Crickets: Ceuthophilus sp. B		
Ceuthophilus secretus	15	
Ceuthophilus cunicularis	1	
Ceuthophilus nymphs	1	on floor
Springtails: Collembola sp	20	Wet scat, pulverulite
Silverfish: Texoreddellia tex.	11	
Beetles: Coleoptera sp		
Rove beetles	45+	More scat, fresh scat,
*Rhadine austinica		
Flies: Diptera		
Scorpion: V. redelli		
Snails: Gastropoda		
Salamander: Plethodon albagula		
Cliff Chirping Frog: Syrrhophus marnocki		
Rattlesnakes: Crotakus atrox		
Trichinistid Isopods	40+	Scat, running all around, mostly scat related

- comments: Aside from crickets and collembolas it appears that the unusually high input of raccoon scat. Spring survey still shows lots of negative raccoon input to the cave. Scat, scat, everywhere scat. Lots of old scat, observed much raccoon activity! After blocking the apparent raccoon entrance and that attempt failing, and again blocking apparent entrances and failing, finally the last week of October, 2005, think we have successfully blocked all raccoon access to the cave.

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): __Mark Sanders, Pierre Paquin, Julie Jenkins_____ Date: _____March 3, 2005
Surface Temperature:_51_Surface Humidity: _93%
Weather Conditions:_ Record daily rainfall at ABIA, 1 inch, widespread rainfall .
Cave: ____**WHIRLPOOL CAVE**_____
Survey Section:__passages upto and including_A. Natural Bridge_____
Time Stated: __10:22 a.m_____ Time Ended:___10:55a.m._____
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: x In Out Latta Branch stream: flowing

FAUNAL SURVEY

SPECIES	COUNT	OBSERVATIONS
Amphipods: Stygobromus sp.		
Isopods: Trichoniscidae		
Spiders: Circurina- blind	1	Collected outside of survey area
Circurina	1	Collected in between survey areas a&b
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		
Ceuthophilus cunicularis		
Ceuthophilus nymphs	2	
Springtails: Collembola sp	6	
Silverfish: Texoreddellia tex.		
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 . * This survey was primarily a collection trip for the Circurina cueva, not a typical faunal monitoring, some species were collected.

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): __Mark Sanders, Pierre Paquin, Julie Jenkins__ Date: March 3, 2005___
Surface Temperature:_51_____ Surface Humidity: _93%_____
Weather Conditions:_ Record daily rainfall at ABIA, 1 inch, widespread rainfall .
Cave: ____**WHIRLPOOL CAVE**_Survey Section:__**B**. Natural Bridge__and surrounding area____
Time Stated: __11:20 a.m._____ Time Ended:___12:50 p.m._____
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: x In Out Latta Branch stream: flowing

FAUNAL SURVEY

SPECIES	COUNT	OBSERVATIONS
Amphipods: Stygobromus sp.		
Isopods: Trichoniscidae		
Spiders: Circurina- blind	3	collected
Circurina		
Neoleptonatae	1	collected
Wall Web		
Harvestman: L. townsendii		
*Texella mulaiki		
Millipedes: Cambala speobia		
*Speodesmus sp. "small"	7	
*Speodesmus sp. "large"		
Oxidus gracillis (hothouse millepede)		
Cave Crickets: Ceuthophilus sp. B		
Ceuthophilus secretus		
Ceuthophilus cunicularis		
Ceuthophilus nymphs	6	
Springtails: Collembola sp	1	
Silverfish: Texoreddellia tex.	2	collected
Beetles: Coleoptera sp		
*Rhadine austinica	2	collected
Flies: Diptera		
Scorpion: V. redelli	1	
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.

This survey was primarily a collection trip for the Circurina cueva, not a typical faunal monitoring, some species were collected.

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): __B. Russell, J. Jenkins___ Date: _May 7, 2005
Surface Temperature:_hi 80's_____ Surface Humidity: _40%_____
Weather Conditions:__cloudy
Cave: ____**WHIRLPOOL CAVE** Survey Section:___A. Natural Bridge_____
Time Stated: __12:00 p.m_____ Time Ended:___12:30am_____
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: x 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	7	
Ceuthophilus cunicularis	4	
Ceuthophilus nymphs	12	
Springtails: Collembola sp		
Silve rfish: 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?

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

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): __B. Russell, J. Jenkins_____ Date: _____May 7, 2005
Surface Temperature:_hi 80's_____Surface Humidity: _40%___Weather Conditions:__cloudy
Cave: ____**WHIRLPOOL CAVE**_____ Survey Section:___
B._Beginning of County Travis Room including_
Time Stated: __2:45 p.m_____ Time Ended:___3:15 pm_____
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: X In Out

FAUNAL SURVEY

SPECIES	COUNT	OBSERVATIONS
Amphipods: Stygobromus sp.		
Isopods: Trichoniscidae		
Spiders: Circurina	1	
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	15	ceiling, along wall
Ceuthophilus cunicularis	11	Floor just after entering area
Ceuthophilus nymphs	5	
Springtails: Collembola sp	2	
Silverfish: Texoreddellia tex.	2	floor
Beetles: Coleoptera sp		
*Rhadine austinica		
Flies: Diptera		
Scorpion: V. redelli	1	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?

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

Name: Bill Russell, Pierre Paquin, Cynthia Baker
Agency: TCMA, USFWS
Date: 1/06/05 Lost Oasis Cave Preserve

Location: **Lost Oasis Cave** GPS coordinates (NAD 1983)_ Section No. entire cave
Time Started: 10am Time ended: 11:20am Scientific permit # TE798920-0

Surface area observations: (gate condition, fire ants, vandalism) Perimeter fence was vandalized.
Survey area: *Solenopsis invicta* If so, heavy infestation moderate light Vandalism
If so, trash speleothems gate other

Temperature Inside: NA Outside: 40F Humidity Inside: NA Outside: NA
Humidity was measured with a Psychrodyne analog psychrometer.
Weather conditions during the past week: sprinkles, patchy light rain, overcast and cold
Organic matter encountered in survey area: leaf litter
Surface area moisture conditions: sprinkles, patchy light rain, overcast and cold

FAUNAL SURVEY

Species	No. seen	Microhabitat for troglobites	Comments (if specimen was collected state where it was sent to)
**Cicurina sp.*(blind)	5	Under rocks	1 adult female, all were collected for DNA species ID
Cicurina varians	?		Numerous individuals were seen
LINYPHIID (spider)	1		Tiny spider
Corinnidae (spider)	1		Collected near entrance
Pseudouroctonus reddelli	1		
Batrisodes sp *(mold beetle)*	1		?? possibly collected??
Cambala speobia	5		Under rocks
***Speodesmus sp**	5		Under rocks
Ceuthophilus sp	7-10		?? should be more, possibly refers to C cunicularis
Staphylinidae sp	?		Numerous individuals were seen
Diptera larvae	1		
Phorids	?		Listed as "flying around scat

(*) 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.
TCMA recently opened a new entrance to the cave which will allow for easier access. They plan on gating the new entrance soon.

TEXAS CAVE MANAGEMENT ASSOCIATION

Surveyor(s): __B. Russell, J. Jenkins_____ Date: _____May 8, 2005_____
Surface Temperature:_hi 60's_____ Surface Humidity: _80%_____Weather Conditions:__severe T-storms
Cave: ____**LOST OASIS**_____ Survey Section:___entire cave_
Time Stated: __11:30 p.m_____ Time Ended:___12:15 pm_____
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	1	
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	13	
Ceuthophilus cunicularis	2	
Ceuthophilus nymphs	17	
Springtails: Collembola sp		
Silverfish: Texoreddellia tex.		
Beetles: Coleoptera sp		
*Rhadine austinica		
Flies: Diptera	1?	
Scorpion: V. redelli	2	
Snails: Gastropoda		
Salamander: Plethodon albagula		
Cliff Chirping Frog: Syrrhophus marnocki		
Rattlesnakes: Crotakus atrox		

Section Map of Survey Area attached Photographs taken?

- New gate has been installed by TCMA. The old entrance was covered in an attempt to return the cave air to a
- pre-development type condition.