



Texas Cave Conservancy

TCC Cave Management Brushy Creek Municipal Water District Round Rock, Texas 2009 Report



Prepared by: Mike Walsh
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September 2009



September 27, 2009

This report represents the first annual Brushy Creek MUD report as required by the U. S. Fish & Wildlife Service on the Cat Hollow-Sendero Springs-Snowmelt Cave properties. Urban cave management presents a number of challenges for cave management. When caves are located in people's backyards there will be some problems. This year was no exception. The Texas Cave Conservancy attempts to work toward solving as many of these problems as possible so it will not have to tie up the client's time.

We attempt to go beyond the contract and work to protect the caves, cave life and the client. In addition, the Texas Cave Conservancy attempts to assist in such things as dealing with governmental agencies such as the U.S. Fish & Wildlife Service. This year the subject of a parking area near the Beck Bridge Cave became an urgent situation.

The TCC was able to obtain the support of James Reddell & Mike Warton on the mitigation project around the cave that stops street runoff into the cave. Along with the work of *aci Consulting*, Brushy Creek MUD was able to obtain project authorization from the U.S. Fish & Wildlife Service in an extremely short time. Dealing with the realities of caves in urban areas and working together to learn and to solve problems greatly assists in the protection of these cave related endangered species. Thank you for working with the Texas Cave Conservancy.

Mike Walsh President- Texas Cave Conservancy

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Beck Bridge Cave was explored, and surveyed by Mike Warton & Associates in 1991. In addition, he investigated and made collections in the cave. No cave related endangered species were found in the cave at that time. Later, Mike Warton & Associates gated the cave. On April 13, 1995, cave biologist Andy Grubbs collected from the cave and turned the collection over to James Reddell. James identified one of the species collected as *Texella reyesi*, the Bone Cave Harvestman. Mike Warton and others were not aware that this species had been collected from the Beck Bridge Cave until February of this year. This information was been confirmed by James Reddell, cave biologist, Texas Memorial Museum, Austin, Texas.

The streets were later built in the Cat Hollow sub-division. Recent investigation shows that there appears to be a French Drain carrying run-off oil and gasoline directly into the cave. Both Mike Warton and James Reddell recommend mitigation that would prevent this potential harmful recharge into Beck Bridge Cave. Both have stated that they would like for the mitigation to include moving the entryway down slope. The development of the down slope parking area would provide the funding for a change in the path of the recharge from into the cave to the parking area Bio-Retention facility. An extra benefit would be that the potential harmful recharge would not be entering the local water supply. If more information is required please contact James Reddell. Thank you.

Mike Walsh
President-Texas Cave Conservancy

James Reddell

James Reddell
512-584-5575
In support of the mitigation efforts the preserve Beck Bridge Cave,

Mike Warton & Associates
Geologist/ Karst Terrains Specialist/ National Cave Gate Consultant
Specialist in Texas' Environmental Karst Research & Services

3508 Valley Pike Road, Cedar Park, Texas 78613
Central Texas Office: AC (830) 597-4320
E-mail: Mwa5057@aol.com

Letter of Comment per proposed new construction for
Disc Golf Facility Parking Lot Design located along
Liberty Walk Drive & “Beck Bridge “Cave Preserve
Round Rock, Williamson County, Texas

Date: March 24, 2009

The Williamson County karst feature identified as “Beck Bridge” Cave was investigated and reported as part of the Cat Hollow subdivision development properties during the early 1990's. The cave's name and location were re-identified and description matched to that of an old Texas Speleological Survey (T.S.S.) data entry originating from the mid 1960's. This cave was one of many found upon the properties. Our investigation of the cave assessed the cave as a significant Point Recharge Feature, however, following several attempts with biological collections for karst invertebrates, failed to produce any specimens of the Bone Cave Harvestman (**Texella Reyesi** / endangered species habitat), thus, the cave was assessed as non-habitat. It is our present understanding that this species was found within the cave at a later time.

Presently, I have reviewed the draft document and construction design prepared for Jacobs Engineering with recommendations from ACI Consulting per the proposed new construction of the Disc Golf Facility & Parking Lot adjacent South of the cave. It should be noted that the presence of Liberty Walk Drive was pre-existing at the time of our investigation of the cave, placing the cave's entrance within 100' feet of the roadway, and the cave entrance was not readily recognizable as it had been filled with large concrete slabs, construction refuse, and large boulders. Our investigation required the hand excavation and removal, and restoration of the entrance, and later gating the entrance. I would concur with ACI Consulting's recommendation(s) that design alternative # 3 is the best of the alternative designs presented towards addressing point recharge concerns with the cave, as well as the lesser impact to the quality of surface habitat around the cave's immediate entrance area of native grass coverings suited to the forage of nocturnal species of the cave (crickets). I would further support and encourage that periodic monitoring of the cave's ecosystem and recharge be done following the completion of construction as verification to the effectiveness of diverted storm water drainage away from the cave.

Sincerely, Mike Warton
Mike Warton & Associates



TCC 2009 Cave Management Activities

- Monthly cave visitations to the caves.
- Completion of the Cave Management forms.
- Cave monitoring activities including the annual monitoring report
- Installation of Cave Temperature instruments in Flowstone Rift Cave & Zapata Cave. They will be installed in Beck Ranch Cave & Cat Hollow Cave #1.
- Completion of the Annual Report.
- Treated the fire ant mounds throughout the year. (Total of 157 mounds)
- Mitigation of the vandalism at the Beck Ranch Cave.
- Mitigation of the vandalism at the Cave Kiosk.
- Mitigation of the un-authorized vehicles at Flowstone Rift Cave (placed rocks and installed a chain gate).
- Mitigation of destruction of the Critical Habitat area at Flowstone Rift (dirt and native grass seeds).
- Mitigation of the minor damage to exterior cave fences.
- Trash clean up on all of the cave sites.
- Trash clean up in Beck Ranch Cave.
- Maintenance and replacement of cave gate locks as required.
- The TCC laid out basic trail system on cave preserves.
- Worked with the Home Owners representatives at Sendero Springs (Flowstone Rift & Quarry Fern) & Cat Hollow (Kitten Cave).
- Consulted with the Brushy Creek MUD on the following projects:

Clean up and landscape work near Flowstone Rift Cave at Sendero Springs.

The Pavilion at Sendero Springs.

The restoration work near In-Situ Cave in Sendero Springs.

The Quarry Fern Cave Preserve issues.

The Beck Bridge Cave parking project at Cat Hollow.

The Kitten Cave questions at Cat Hollow.

Provided Brushy Creek MUD access to the TCC owned, Avery Ranch Cave.

The cave kiosk is now more secure from vandals since the installation of security bolts and the expanded metal. The TCC will continue to work to make the cave kiosk more useful.





Cave Monitoring

The Texas Cave Conservancy works with several U. S. Fish & Wildlife Endangered Species Permit holders while conducting the required cave monitoring. Mike Warton (center), Dr. Tom Illiffe (upper left) and Bill & Jeanette Larson (lower left) are our principal researchers. The Texas Cave Conservancy does not collect cave related species within the endangered species caves. The following report outlines the observations made by the TCC cave monitors. In February of 2009, the Texas Cave Conservancy started a Cave Management –Cave Monitoring workshop where cavers, working under the supervision of experts, can learn how to be of assistance to the individuals involved in the study and the protection of caves and the species within the caves. A certificate of will be issued upon the completion of the forty hour Cave Management-Cave Monitoring Workshop.



The photo in the upper right shows the entrance to Beck Ranch Cave, on of the monitoring sites. This cave takes a good deal of water following a heave rainfall. Trash is washed in and from time to time it is necessary to remove the trash. The photo on the lower right shows the entrance of another monitoring site, Cat Hollow Cave # 1. The photo on the right in the center is that of an Eastern Pipistrelle (*Pipistrellus subflavus*) covered with moisture. Piers Hendrie , the photographer takes a number of close up photos of the cave related species for the Texas Cave Conservancy. Documentation, photography, monitoring and clean up are all part of the Texas Cave Conservancy's cave management activities.

Cave Biology Monitoring

Brushy Creek Municipal Utility District Caves

May 2009

Cave	Zapta Cave	Flowstone Cave	Beck Ranch Cave	Cat Hollow Cave #1
Preserve	Zapta Cave Preserve	Flowstone Cave Preserve	Beck Ranch Cave Preserve	Cat Hollow Cave Preserve
Location	Williamson County	Williamson County	Williamson County	Williamson County
Date:	5/20/2009	5/12/2009	5/22/2009	5/22/2009
Weather Conditions:	clear	clear	clear	clear
Gate:	OK	OK	OK	OK
Lock	OK	OK	Replaced	OK
CO2 Levels:	OK	OK	OK	OK
Trash:	No	No	Yes	No
Chemicals or Sewage:	No	No	No	No
Fire Ants:	No	No	No	No
Time Spent:	15 mins	35 mins	60 mins	60 mins
Outside temp:	96.4F	94.6	94.6F	92.4
Outside Hummidity	38%	38%	37%	34%
Cave Temperature:	83.2F	68.7F	66.3F	73.1F
Cave Humidity:	51%	66%	64%	76%
<u>Species:</u>	-			-
Amphipods	0	0	3	1
Coleoptera	0	3	0	0
Centipedes	0	0	0	2
Crickets	11	100+	25+	200+
Flatworms	0	0	0	0
Isopods	0	0	1	0
Millipedes	0	0	2	0
Spiders	0	50+	2	3
Springtails	0	0	1	0
Snails	0	0	0	0
Texella Reysi	0	0	0	0
Speodesmus	1			
Canbala	1			
Flies	50+			
Mosquitoes	100+			
Collembola		100+		
Bats			4	
Beetles			6	
<i>Notes:</i>	<i>Two or more vultures live in the cave.</i>	<i>Two cats and large amounts of Raccoon scat.</i>		<i>Fire ants around entrance-Treated September 6, 2009</i>

September 2009

Cave	Zapata Cave	Flowstone Rift Cave	Cat Hollow Cave # 1	Beck Ranch Cave
Preserve	Zapata Cave Preserve	Flowstone Rift Preserve	Cat Hollow Cave Preserve	Beck Ranch Cave Preserve
Location	Williamson County	Williamson County	Williamson County	Williamson County
Date:	9/3/2009	9/3/2009	9/7/2009	9/7/2009
Weather Conditions:	Sunny, clear and dry	Sunny, clear and dry	Sunny, clear and dry	Sunny, clear and dry
Gate:	OK	OK	OK	OK
Lock	OK	OK	OK	OK
CO2 Levels:	OK	Fair	OK	OK
Trash:	No	No	No	No
Chemicals or Sewage:	No	No	No	No
Fire Ants:	Yes	No	No	No
Time Spent:	45 mins	30 mins	35 mins	45 mins
Outside temp:	93.5	103.4	92.5	79
Outside Hummidity	31%	24%	33%	68%
Cave Temperature:	76.1	74.8	73.1	72
Cave Humidity:	87%	67%	76%	81%
<u>Species:</u>	-			
Amphipods	0	0	1	0
Coleoptera	0	0	0	1
Centipedes	0		0	1
Crickets	0	0	150+	25
Flatworms	0	0	0	0
Isopods	0	53	4	0
Millipedes	0		0	5
Spiders	4	22	2	2
Springtails	0	30	4	12
Snails	0		0	1
Texella Reysi	0	0	0	
Flies		0	0	
Collembola		600+		
Bats				3
Beetles		4		5
Moth	1			
Raccoon	1			
Frog		2		
Ant		2		
Earwig		1		
Ceuthophilus cunicularus		3		
Ceuthophilus secretus adult		19		
Ceuthophilus secretus sub adult		69		

U.S. Fish & Wildlife Form

Site: Cat Hollow Property

Size: 67 acres +/-

Location: Hwy 620, Round Rock, Texas

County: Williamson County

Species: Bone Cave Harvestman *Texella reyesi*

Cave Management Group:

Texas Cave Conservancy

1800 West Park

Cedar Park, Texas 78613

512-249-2283 TCC-caves@austin.rr.com

Endangered Species Caves:

Beck Ranch Cave	Gated	<i>Texella reyesi</i>
Broken Zipper Cave	Gated	<i>Texella reyesi</i>
Beck Rattlesnake	Gated	<i>Texella reyesi</i>
O'Conner Cave	Gated	<i>Texella reyesi</i>

Possible destruction by trench, investigated by U.S. fish & Wildlife

Joint Effort Cave	Gated	<i>Texella reyesi</i>
Beck Bridge Cave	Gated	<i>Texella reyesi</i>
Cat Hollow Cave # 1	Gated	<i>Texella reyesi</i>
Cat Hollow Cave # 2	Gated	<i>Texella reyesi</i>
Cat Hollow Bat Cave	Gated	<i>Texella reyesi</i>

Additional Caves:

Dag Nabit Cave	Not Gated
Cat Hollow Cave # 3	Gated

Cave Management Activity

Conducted by: Texas Cave Conservancy

Monthly Inspections of critical habitat area: Yes

Monthly Inspection Forms:	Yes
Trash removal:	Yes
Fire ant treatment frequency:	Monthly, treated upon location
Fences and gates maintained:	Yes
Biodiversity-Annual surveys:	Yes
Cricket studies:	No
Annual Report:	Yes

Name, address, contact information of the owner and manager (those responsible for the protection of the cave related endangered species).

Brushy Creek MUD
16318 Great Oaks Drive
Round Rock, Texas 78681

Tom Clark-General Manager
512-255-7871 t.clark@bcmud.org

Name, address, contact information of the cave management group (those responsible for the protection of the cave related endangered species).

Texas Cave Conservancy
1800 West Park
Cedar Park, Texas 78613

Mike Walsh-President TCC
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U.S. Fish & Wildlife Form

Site: Sendero Springs Property
Size: 227 acres +-

Location: Hwy 1431, Round Rock, Texas

County: Williamson County

Species: Bone Cave Harvestman *Texella reyesi*

Cave Management Group:

Texas Cave Conservancy

1800 West Park

Cedar Park, Texas 78613

512-249-2285 TCC-caves@austin.rr.com

Endangered Species Caves:

Flowstone Rift Cave Gated *Texcella reyesi*

Zapata Cave Gated *Texcella reyesi*

Snowmelt Cave Gated *Texcella reyesi*

This cave is located on another site and is checked monthly also.

Additional Caves:

In Situ Cave Gated

Quarry Fern Cave Gated

Beer Thirty Cave Not Gated

Indicator Cave Not Gated

Quick Slide Cave Not Gated

Valley Cave Not Gated

Wiggle Wise Cave Not Gated

What Not Cave Not Gated

Cave Management Activity

Conducted by: Texas Cave Conservancy

Monthly Inspections of critical habitat area: Yes

Monthly Inspection Forms: Yes

Trash removal: Yes

Fire ant treatment frequency: Monthly, treated upon location

Fences and gates maintained: Yes

Biodiversity-Annual surveys: Yes

Cricket studies: No

Annual Report: Yes

Name, address, contact information of the owner and manager (those responsible for the protection of the cave related endangered species).

Brushy Creek MUD
16318 Great Oaks Drive
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Tom Clark-General Manager
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Name, address, contact information of the cave management group (those responsible for the protection of the cave related endangered species).

Texas Cave Conservancy
1800 West Park
Cedar Park, Texas 78613

Mike Walsh-President TCC
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Monthly Inspections

These monthly inspection checklists represent the official monthly inspections. The TCC visits the sites throughout the year on other occasions in addition to these documented inspections. Each visit the following was checked at each cave location and mitigation and/or notes included as in the above two tables; Unauthorized vehicles, Damage to Critical Habitat area, Trash, Vandalism, Chain Link Fence Condition, Gate & Lock Condition, Fire Ants, and Cave Monitoring.

Brushy Creek MUD Cave Preserve # 1

(Cat Hollow area)

<i>Date of Monitoring</i>		<i>January 9, 2009</i>	<i>February 23, 2009</i>	<i>March 12, 2009</i>	<i>April 14, 2009</i>	<i>May 12, 2009</i>	<i>May 22, 2009</i>	<i>June 23, 2009</i>	<i>June 24 2009</i>	<i>August 13, 2009</i>
Beck Ranch Cave	<i>Texcella reyesi</i>	Lubricated lock.		Cleaned up trash. Conducted fire ant control activities.	Cleaned up significant trash. Attempted cave lock breach, repaired.	Conducted fire ant control activities.	Cleaned up trash. Cave Monitoring . Lubricated locks.	Cleaned up trash.	Cleaned up trash.	Conducted fire ant control activities.
Broken Zipper Cave	<i>Texcella reyesi</i>		Cleaned up trash.		Cleaned up minor trash	Fence cut, repaired with twist connectors.		Cleaned up trash.		
Beck Rattlesnake	<i>Texcella reyesi</i>	Minor trash cleaned up.		Conducted fire ant control activities.				Cleaned up trash. Rocks stacked on gate, removed.	Cleaned up trash.	
O'Conner Cave	<i>Texcella reyesi</i>		Cleaned up trash.			Cleaned up trash.				Cleaned up trash.
Joint Effort Cave	<i>Texcella reyesi</i>				Cleaned up minor trash				Cleaned up trash.	
Beck Bridge Cave	<i>Texcella reyesi</i>		Visited to determine if it was taking run off from Liberty Hill. Lubricated lock	Cleaned up trash.		Conducted fire ant control activities.				Cleaned up trash. Conducted fire ant control activities.
Cat Hollow Cave # 1	<i>Texcella reyesi</i>	Minor trash cleaned up.	Cleaned up trash.	Cleaned up trash. Conducted fire ant control activities.		Conducted fire ant control activities.	Cleaned up trash. Cave Monitoring . Lubricated locks.	Truck parked, no sign of driver-chain gain needed.	Cleaned up trash. Fence repaired using twist connections. Spray paint on fence, sprayed over in black.	Cleaned up trash. Fence repaired using twist connections.
Cat Hollow Cave # 2	<i>Texcella reyesi</i>							Cleaned up trash.		Conducted fire ant control activities.
Cat Hollow Bat Cave	<i>Texcella reyesi</i>				Cleaned up minor trash		Cleaned up trash.	Cleaned up trash.	Cleaned up trash.	Cleaned up trash. Conducted fire ant control activities.
Dag Nabbit Cave	Non-species	Minor trash cleaned up.	Cleaned up trash.	Conducted fire ant control activities.						
Cat Hollow Cave # 3	Non-species				Cleaned up minor trash		Cleaned up trash.			Cleaned up trash.

Brushy Creek MUD Cave Preserve # 2
(Sendero Springs area)

Date of Monitoring		January 9, 2009	February 23, 2009	March 12, 2009	April 14, 2009	May 12, 2009	May 22, 2009	June 23, 2009	July 24 2009	August 13, 2009	September 3, 2009	September 7, 2009
In-Situ Cave	Non-species	Cleaned up trash. Discussed the clearing of trees around cave with a member of the Home Owners Association.		Fire ant control treatment activities conducted.	Cleaned up trash.	Cleaned up trash. Conducted Fire ant control treatments.	Cleaned up trash. Removed large rocks from gate.				Cleaned up trash.	Cleaned up trash.
Flowstone Rift Cave	Texcella reyesi		Large rock moved. Will replace rock when help is available.	Cleaned up trash. Fire ant control treatment activities conducted.	Cleaned up trash.	Cleaned up trash. Cave monitoring activities. Lubricated locks.	Conducted cave monitoring.	Cleaned up trash. Conducted cave monitoring.		Cleaned up trash.	Cleaned up trash. Cave monitoring activities. Lubricated locks.	
Quarry Fern Cave	Non-species	Cleaned up trash. Rocks in sinkhole, removed.	Cleaned up trash.		Meet with the land -owner next to cave concerning his buying part of the cave preserve.	Conducted Fire ant control treatments.	Cleaned up trash.				Fire ant control treatment activities conducted.	
Zapata Cave	Texcella reyesi		Cleaned up trash.	Cleaned up trash. Fire ant control treatment activities conducted.		Cleaned up trash. Cave monitoring activities. Lubricated locks.	Conducted cave monitoring.	Conducted cave monitoring.	Cleaned up trash.		Cave monitoring activities. Lubricated locks.	Follow up Fire ant treatment
Snowmelt Cave	Texcella reyesi	Cleaned up trash.		Cleaned up trash.	Fire ant control treatment activities conducted.				Cleaned up trash.	Cleaned up trash.		
Beer Thirty Cave	Non-species											
What Not Cave	Non-species								Cleaned up trash.			
Wiggle Wise	Non-species								Cleaned up trash.	Cleaned up trash.		
Valley Cave	Non-species									Cleaned up trash.		
Indicator	Non-species								Cleaned up trash.			