

Welcome to the City of Cedar Park Discovery Well Cave Preserve



The Texas Department of Transportation (TEXDOT) needed to expand HWY 183 for the Toll Road program. In order to do so they had to destroy Jug Cave, an endangered species cave. This small cave was out front of the Denney's located at Hwy 620 and Hwy 183. As mitigation TEXDOT had to acquire a one hundred acre site with three caves that had the rare cave beetle, the *Rhadine persephone*. This site was the only one that came close to the requirement. The U.S. Fish & Wildlife approved of the trade off and in 2002, TEXDOT paid just under \$10,000,00 for the property.

The Texas Cave Conservancy worked with the parties involved to have the management of the 109- acre site transferred over to the City of Cedar Park. The transfer occurred in 2008. The TCC has worked with the City of Cedar Park to secure approval from the U. S. Fish & Wildlife to allow limit public access to the site. Today you will be able to visit the entrances of most of the caves on this site. Along the way, the signs will provide information on the caves, the cave life, the critical habitat and some of the ongoing studies. This includes Mammal studies, biological studies, cricket surveys, and fire ant control activities.

Look at the map and read about the site at the gated caves along the way. The loop trail will return you to this entrance. There is no cave access at this site. The Discovery Well Tract will be the home for **CAVE DAY** in April and again in September. You may access the cave preserve through this gate throughout the year during the daylight hours. Thank you for coming out.

This wooded area is the home to the Texas Cave Conservancy's **CAVE DAY** operations. Two times a year, in April and in September visitors will enter on Anderson Mill, follow the dirt trails around to this site. We will have picnic tables, cave tour information and water.

When we start from this site we will be able to expand our **CAVE DAY** operations. If you are associated with a conservation or nature organization and would like to have a table at **CAVE DAY**, please contact the Texas Cave Conservancy at:

TCC-caves@austin.rr.com

This site and several other adjoining sites total over 200 acres of nature preserves. In a 2008 mammal study on this site the following animals and birds were observed.



**TERRESTRIAL MAMMAL SPECIES OBSERVED AT
DISCOVERY WELL PRESERVE BY THE TCC STAFF**

Common Name

Nine-banded armadillo

Eastern cottontail

Texas mouse

Deer mouse

White-ankled mouse

North American porcupine

Common gray fox

Ringtail

Common raccoon

Striped skunk

White-tailed deer

Scientific Name

Dasyus novemcinctus

Sylvilagus floridanus

Peromyscus attwateri

Peromyscus maniculatus

Peromyscus pectoralis

Erethizon dorsatum

Urocyon cinereoargenteus

Bassariscus astutus

Procyon lotor

Mephitis mephitis

Odocoileus virginiana

Jumbled Rocks Cave

This sinkhole entrance was naturally filled, and excavated by **Mike Warton & Associates** (MWA) in 1994 to reveal a small cave. **Mike Warton** is one of the best-known Texas cavers. His company locates caves, digs them open, explores them, maps them and then gates them. An additional excavation in 2007 by MWA extended the cave's length to approximately 60 feet long, and a depth of 25 feet. The cave was assessed as a significant contributor of rainfall runoff to groundwater storage of the Buttercup Creek Cave System/ Cedar Park Watershed. It was later gated in 2007. The City of Cedar Park, and the Texas Cave Conservancy manage the cave.



The rare cave beetle, the *Rhadine persophone* has not be observed or collected from this cave. Each evening the crickets leave this cave for food. Other creatures within the cave eat the cricket's eggs. In addition, small mammals enter the cave and leave nutrients in the form as undigested food. The life of the cave depends on this food cycle. The small hole in the gate is known as the mammal access point. More information on the cave life cycle will be available at the next cave, Persimmon Well.

Persimmon Well Cave

This sinkhole entrance was naturally filled when found in the early 1980's by caver **Mike Warton**. In 1994, it was excavated to reveal an open cave beneath the 20- foot entrance drop. Several small passages lead from the entrance, however, eventually they become too small to follow. The cave was assessed as a significant contributor of rainfall runoff to groundwater storage of the Buttercup Creek Cave System/ Cedar Park Watershed. **Mike Warton & Associates** gated it in 2007. The City of Cedar Park, and the Texas Cave Conservancy manage the cave.

The area surrounding the cave is known as the critical habitat area. The natural vegetation is required to support a healthy cricket population. The Texas Cave Conservancy conducts non-chemical fire ant treatment such as the use of boiling water in this area. The fire ants destroy the cricket population so it is necessary that they be controlled. The following is information on the TCC's fire ant control activity in the areas around the caves in 2008:

Fire Ant Survey 2008

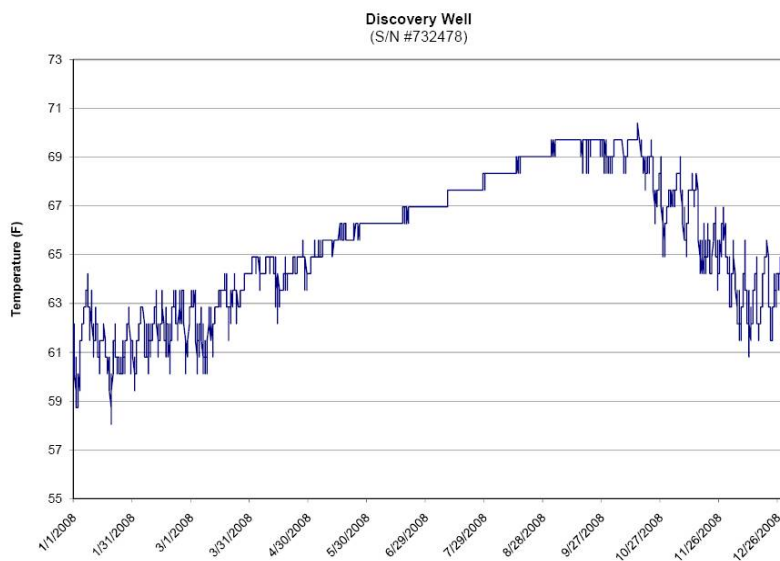
January	7	mounds
February	5	mounds
March	23	mounds
April	14	mounds
May	22	mounds
June	21	mounds
July	13	mounds
August	15	mounds
September	15	mounds
October	10	mounds
November	7	mounds
December	6	mounds
Total	148	mounds



Small Sink Areas

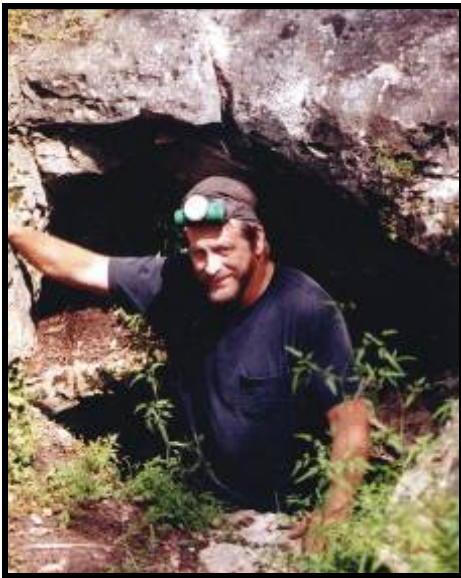
Ahead and on the left is a small sink area that drains water often into caves. Sometimes areas such as these are opened and lead to cave passage. The Discover Well Cave Preserve is part of one of the five known branches of an underground stream that leads to the Buttercup Creek Cave and then on to a spring on the headwaters of Cypress Creek. Water flowing along the bottom of the next cave Under Three Oaks goes downstream to Discovery Well Cave, then to Hunters Glenn Cave, on to Nelson Ranch Cave, Ilex Cave and then on to Buttercup Creek Cave. Salamanders, the *Rhadine persephone* cave beetle and other invertebrates sometimes use this stream to move from cave to cave.

Several times per year the Texas Cave Conservancy enters the caves to check the relative humidity and the cave temperatures. In addition, we check to see if there are any potential problems such as chemical or sewage pollution entering the underground homes of the beetles. Caves are windows to the aquifer and through the protection of the beetles home we are helping protect our water supply. The chart below shows the year round changes in the humidity in Discovery Well Cave.



Future Nature Center Location

The future nature center with an educational kiosk and restrooms will be built in this area. Auto and bus parking will be along the road just to the south of this location. Currently 3.5 miles of trail are laid out on this site. The trail system will connect into the Buttercup Cave Preserve trails for a total of over 5 miles of connected trail. The Texas Cave Conservancy is working to expand both the trails and the educational sign program.

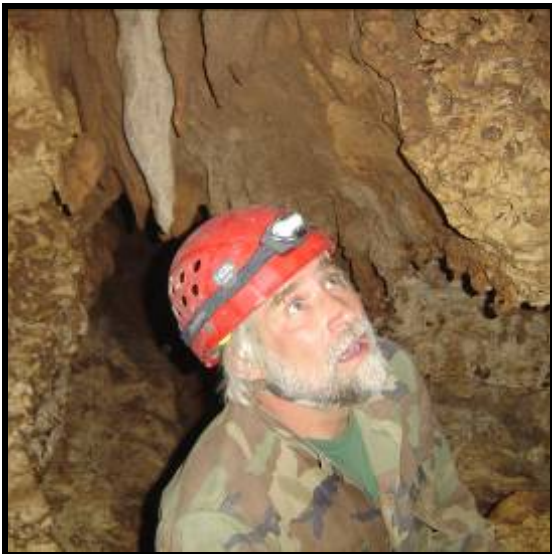


Mike Warton

The Discovery Well Cave Preserve may be visited throughout the year during the daylight hours. Have you noticed that this site is open and free of heavy growth Juniper? The Developer cleared a good deal of it prior to the sale to TEXDOT. Since the young growth cedar can dry out the caves, the young growth Juniper will continue to be cleared in the areas around the caves. This cave preserve is a good place to observe birds early in the morning.

Under Three Oaks Cave

This small sinkhole entrance developed along a rock joint that was naturally filled, and excavated by **Mike Warton & Associates** in 1994 to reveal a small cave that rapidly becomes too narrow to follow. It was gated in 2007. It is believed to be the start of the Discovery Well Branch of the underground stream that leads on to Buttercup Creek Cave and then on to Cypress Creek and Lake Travis. Water going underground on the other side of Anderson Mill Street drains more directly toward Lake Travis.



Bill Larsen

Bill Larsen was one of the early explorers of many of the cave in the Buttercup Creek area. Bill, along with his dog, found caves, dug them open and explored them. These caves were saved due to Bill Larsen and Mike Warton's efforts. These two cavers helped establish over thirty cave preserves within the Buttercup Creek Watershed area.

Uncorked Cave

In 1994, the entrance to this cave was a naturally filled sinkhole. **Mike Warton & Associates** excavated loose rocks and soil revealing an open cave about 15 feet down. The cave was documented with structural relationship to the adjacent Hunters Lane Cave. The cave was gated by MWA in 2001. Two times a year the TCC conducts a cricket survey at this cave along with Discovery Well Cave, Persimmon Well Cave, and Hunter's Lane Cave.

Using numeric counters, once person counts the number of adult crickets coming out of the cave over a three -hour period. The other person counts the number of juveniles. In addition the foraging range is noted a each site.

The ongoing monitoring assists in the determination of weather there is a healthy cricket population within the cave. The surveys are conducts near dusk. The following is a chart showing the results of the Spring 2008 study:



RESULTS OF SPRING CAVE CRICKET SURVEY DISCOVERY WELL PRESERVE SPRING - 2008

FEATURE	DATE	TIME	# ADULT	# JUVENILES	RANGE
Hunter's Lane	4/22/08	8.00 P.M.	38	53	7 meters
Persimmon Well	4/23/08	8.10 P.M.	68	37	4 meters
Uncorked Cave	4/24/08	8.00 P.M.	14	16	5 meters
Discovery Well	4/25/08	8.15 P.M.	22	25	5 meters
Total			142	131	

Discovery Well Cave

In the early 1980's the sinkhole entrance of the cave was observed to be filled with rolls of barbed wire, and an assortment of old ranching refuse. It caught the eye of Austin area cavers **Bill Russell**, and **Bill Larson**. They managed to push aside the column of trash to reveal a vertical shaft descending at a sharp angle for about 20 feet, and then another 10 feet to a narrow horizontal passage that becomes too constricted to follow. From 190-1992 **Bill Larsen & Bill Russell** removed a good deal of trash.

In 1994, **Mike Warton & Associates** removed the remainder of the refuse, and restored the cave to its former natural condition. It was found to contain endangered invertebrate species, and assessed as a significant contributor of rainfall runoff to ground water storage of the Buttercup Creek Cave System/ Cedar Park Watershed. The cave was gated by MWA in 2001 as preservation for the species, and as a natural resource, and is presently managed by the City of Cedar Park and the Texas Cave Conservancy.



The *Rhadine persephone* beetle that was found by **Mike Warton & Associates** was the reason that TEXDOT acquired the 109- acre cave preserve. Since then, the endangered species beetle was collected from the downstream Hunter's Lane Cave. We can thank the cave beetles for this high quality nature preserve.

Zig Zag Cave

This small sinkhole entrance was naturally filled, and excavated by **Mike Warton & Associates** in 1994 to reveal a small cave that rapidly becomes too constricted to follow. It was later gated in 2007. Many times visitors ask us why all of the caves in the Westside Cave Preserve are gated and why they can we not enter them. Caves are gated for a number of reasons, one of which is liability. An open cave or sinkhole could be entered by the local children. Often there are problems such as loose rocks, drops, rattlesnakes or high levels of deadly CO 2. In addition, since many of these caves are endangered species sites, the species must be protected.

The Texas Cave Conservancy is not an organization established for recreational caving. If you are interested in recreational caving contact the following organizations:

Underground Texas Grotto (Austin)

Website: www.utgrotto.org

Dallas –Ft. Worth Grotto

Website: www.dfwgrotto.org

Aggie Speleological Society (College Station)

Website: www.aggiecavers.com

Bexar Grotto (San Antonio)

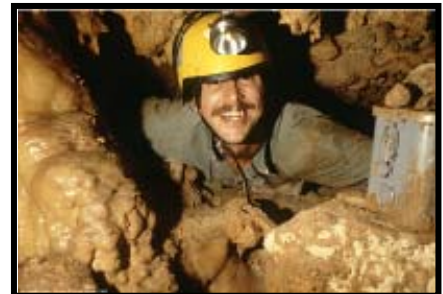
Website: www.caves.org

Texas Speleological Association

Website: www.cavetexas.org

National Speleological Society

Website: www.caves.org



Hunters Lane Cave

Bill Larsen originally reported finding this trash filled sink in the 1980's. Following heavy rains considerable local run off enters the sink. In the mid 80's, Cedar Park caver **Mike Warton** began digging out and removing trash, finding an open cave beneath a 20-foot drop and 15 foot drop to an active horizontal groundwater conduit passage. Later on, MWA removed all refuse and restored the cave to its former natural condition, documented, and gated the cave. **James Reddell**, while conducting research, discovered endangered invertebrate species in the cave in 2007.

Hunters Lane Cave and Discovery Well Cave are the two biological monitoring sites on this property. All vertebrates and invertebrates, alive or dead, including all troglobites, troglonexes, and accidental species were identified and quantified (approximations are made for very abundant species). Survey data includes microhabitat descriptions, including temperature and humidity.

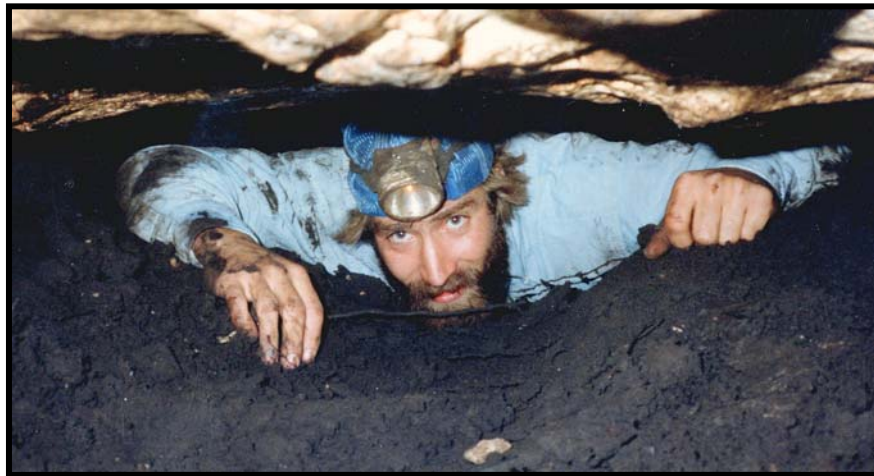


On September 6, 2008 **Dr. Tom Illiffe** & his University of Texas A & M Bio-speleology students conducted biological monitoring in the Discovery Well Cave and Hunter's Lane Cave. No *Rhadine persephone* were observed during the monitoring. The caves were extremely wet.

The CO₂ levels in the caves were low. No fire ants were observed. Species observed within these caves include: Toads, ground beetles, pill bugs, frogs, harvestmen, scorpions, earthworm, millipedes, subterranean silverfish, springtails, flies, crane flies, cave crickets and spiders.

Grassy Grove Sink

The first feature discussed is Grassy Grove Sink. The large oval depression, 60- feet long and 40- feet wide was first reported by Bill Larsen in the 1980's. It receives a large amount of drainage but it would require effort to find a cave. The drainage enters the cave stream below. An attempt was made to excavate it in 1994 by **Mike Warton**. It was revealed to be massively filled with natural rock collapse and soil. Classic sinkhole structures like this retain residual moisture, promoting extended root growth for larger mature trees such as this grand Cedar Elm.



Hole in the Draw Cave

This feature is Hole in the Draw Cave. The one foot wide by three foot long crack drops about six feet to a dirt floor. When found by cavers it was neatly covered by small -stacked rocks. This small sinkhole and cave is structurally related to adjacent Grassy Grove Sink. The cave's entrance was naturally filled, and excavated open by MWA in 1994, and later gated in 2001. It is the last natural feature along this line until the Nelson Ranch Sink is reached over on the Buttercup Creek Cave Preserve.

Thank You For Visiting Discovery Well Cave Preserve

The Texas Cave Conservancy and the City of Cedar Park-Parks and Recreation Department hope you enjoyed your visit to the Discover Well Cave Preserve. Please deposit any trash that you may have picked up just ahead in the barrels.

The City of Cedar Park installed the playground and the water fountain. This small park will connect the Discovery Well Cave Preserve to the Buttercup Creek Cave Preserve at some time in the future.

Once again, thank you for visiting the caves. As you have seen, caves and the cave beetles are the reason that these sites are set aside for protection. The Texas Cave Conservancy will continue to work toward reasonable access to the land set aside for cave protection. Williamson County has over 750 known caves. Projects such as this help make Williamson County the Texas Cave Capital.

