

The

The Kansas City Area Grotto

Volume 24

Issue 4

September

2010

# Guano

Monitoring Caves on the ONSR  
Carroll Cave Biology



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## Events

### **October 7-10**

TAG Fall Cave-In.  
<http://www.tagfallcavein.org>

### **October 8-10**

Ennis Cave Birthday Bash. Contact Rick  
Hines for information.

### **October 22-24**

Fall MVOR. Camp Oko-Tipi near Hannibal,  
MO. Sponsored by PEG and Chouteau  
Grotto.

### **October 23-24**

CRF Annual Meeting.

### **October 30**

Annual Bat census trip - Carroll Cave.  
Contact Bill Gee for information.

### **November 24-29**

Cave monitoring on the Eleven Point  
Ranger District. Contact Jim Cooley for  
information.

### **December 30 to January 2**

Cave monitoring on the Eleven Point  
River. Contact Jim Cooley for  
information.

### **July 18-22, 2011**

NSS Convention in Glenwood Springs,  
CO.

# The Guano

September 2010, Volume 24,  
Issue 4

The *Guano* is published on an irregular schedule as dictated by the trip reports submitted to the editor.

Submit articles via e-mail to the editor: editor@kcgrotto.org. Preferred file format for trip report attachments: Microsoft Word. Please submit photos in JPG or PNG format.

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The Kansas City Area Grotto is affiliated with the National Speleological Society and the Missouri Speleological Survey. KCAG is a founding member of the Missouri Caves and Karst Conservancy.

Meetings are held monthly. Check <http://www.kcgrotto.org> for dates and places.

**Annual Dues:** \$15 for full members [three caving trips with KCAG, nomination and vote of membership required.]

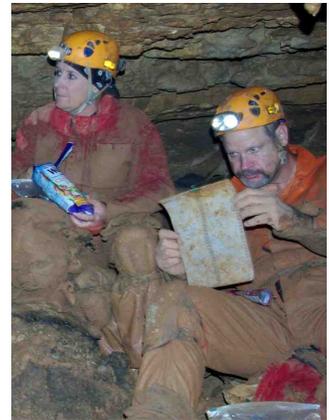
**NCRC Callout number - Emergency use only!** Central Region (502) 564-7815. This number may be used for cave rescue emergencies in the states of Illinois, Indiana, Iowa, Kentucky, Michigan, Missouri, Ohio and Wisconsin.

## *A Message From the President*

The Missouri response to the White Nose Syndrome (WNS) panzootic continues to develop. On September 18th, in Rolla, several cavers, including members of the KCAG, will be trained in decontamination techniques to help prevent the spread of WNS, as part of the Missouri Department of Conservation (MDC) Cave Stewardship Program. The program was developed by the state-wide White Nose Syndrome Working Group, on which I represent our grotto. I will be giving a demonstration of this procedure at an upcoming grotto meeting, and will be assisting Bill Elliott (MDC's bat biologist) with training in Rolla. Careful, thorough pre- and post-trip decontamination of gear is now the standard for responsible caving, not only for admission to all publicly owned caves, but for many private ones as well, including Carroll Cave.

The caving game is changing. By being flexible and willing to adapt, we can not only continue to play, but send a message of support and solidarity to our beleaguered professional resource stewards as they struggle to confront this crisis. WNS is widely expected to have its first major impact in Missouri this winter. The story of this disaster will continue to unfold. Even if we can't be part of the so-far elusive solution, we can at least eliminate ourselves as part of the problem.

Yours in Karst,  
Jim Cooley



### **Cover Photo**

A thick strand of fungus which developed from a bait stick in Carroll Cave. The bottom fungus ball is about 2 inches long. Photo by Bill Gee.

February 2010. Monitoring caves on the ONSR.  
Article by Jim Cooley. Photos by Jim Cooley, Rick Hines  
and Justace Clutter.

**Wednesday, February 17**

After you've been retired for a while, your skills begin to atrophy. Since March 10, 2009, I have not needed an alarm clock to get out of bed in the morning. My "retirement", being populated with a host of joys too numerous to mention (and probably even to count), provides me with reason enough to leap out of the sack every morning, fully refreshed and brimming with enthusiasm for a new day ... although usually

not at 4:30 a.m. So when Rick Hines and I set a 7:00 a.m. departure time for leaving his house in Stilwell, Kansas for a mid-winter cave-monitoring trip on the Ozark National Scenic Riverways (ONSR), I decided that setting the alarm clock once again might be a good idea. I needed to have feet on the floor by 4:30 a.m. at the latest if I was to have any hope of being at Rick's house

at 6:15, so we could be on the road by 7:00.

But as I say, skills atrophy. Trying to set the damned thing, I ran the alarm time past the desired hour three or four times before I finally got 4:30 dialed into the little digital devil device. My fuzzy-headedness and fumbling fingers might have had something to do with a life-long habit of procrastination, which led me to find myself

**Below:** Rick Hines at the entrance to Reary Cave (SHN-088). Despite the promising entrance, there's not much cave there. This is a composite photo stitched together by Rick Hines using Adobe Photoshop. Photo(s) by Jim Cooley.





**Above:** Rick Hines examines winter hydrothems (a word I made up) at Reary Annex Cave (SHN-249). Photo by Jim Cooley.

turning in for bed and fooling with setting alarms at roughly midnight, after a late, stressful evening of last-minute packing out. Finally, though, I managed to get the device set and within seconds was dreamcanoeing down sun-dappled Ozark streams.

#### **Thursday, February 18th**

True to my retirement experience, I awoke fully re-

freshed and brimming with enthusiasm, only to wonder why I had not been drop-kicked into consciousness by the wee-hours Fascist talk radio show that I'd relied on to bounce me out of bed during my years working in the corpwhoreporate snoreporate. I rolled over and checked the alarm, only to discover with a start that it was already 5:30 a.m. A quick assessment identified the problem: I'd managed to set the alarm for 4:30 p.m. As I say, skills atrophy. Already this trip was running on "caver time."

So, my first official act on this junket was to shoot off a quick e-mail to Rick to let him know I was running seriously late. I didn't phone, because I didn't want to wake the rest of the Hines' household. I strongly suspected Rick would be hawking his e-mail, sooner or later. I didn't even have my first cup of coffee poured before I got a message back: "No problem." Of course it was no problem. Rick Hines is quite possibly the easiest person to get along with on the planet.

We finally made our ren-



dezvous in Stilwell a few minutes before 7:00, transferred a small mountain of gear to Rick's van, including rope, vertical equipment, survey gear, radios, documentation and paper work, caving equipment, grate for the fire, kitchen table – yes, that's right, my infamous three-ton, folding-leg "field kitchen" table – dry food, cooler, cooking utensils, spare clothes, sleeping bag, pillows, tent, backpacks, walking sticks, life jackets and, of course, the speleolaptop. I have no idea how people caved before the advent of PCs, but I sure couldn't do it. Rick brought his laptop, too -- they're now a mandatory item in the speleological armamentarium. Rick had already loaded his canoe on top of his van. Once we had the van loaded, Rick and I both marveled at how much crap we find it necessary to haul around the country just to go wallow in the mud. I

felt a little better about staying up until the wee hours assembling such a mass of gear. We couldn't have shoe-horned a third person into that van if we'd wanted to. I left my van parked down in Rick's driveway, with my ca-

noe lashed to the top. It would be safe there. HA! I had forgotten about the biggest vandal of them all.

And so we were off, rolling down Highway 7 in Rick's Green Machine. We stopped in Clinton, as usual, for the obligatory good-luck breakfast Frosty -- a chocolate Frosty, of course, the new vanilla version being a mere impostor. As we neared Springfield, I asked Rick if he'd ever been to the Riverbluff Cave Museum. I'd tried to stop in a couple of times with my girlfriend Pic, but we were always running too late. This time, even with our later-than-planned start, we were right in the middle of the museum's stated business hours. So we

**Above:** Cyle Riggs admires Reary Shelter (SHN-256). Photo by Rick Hines.  
**Below:** Rick Hines inventories Reary Crawl Cave (SHN-257) in the manner suggested by the name. Photo by Jim Cooley.



decided to pay a visit. I got on the cell phone to the museum and refreshed my memory of the directions, then directed Rick. He offered to get out his computer and turn on the GPS navigation system, but I declined. I told him that if you forego map-reading and dead-reckoning in favor of a voice-capable GPS system, your skills will atrophy. Rick avowed that he'd never had any such skills in the first place, and so had nothing to lose. He said he was quite content to turn navigation over to the care and protection of satellites and sophisticated software.

Amazingly, I managed to guide us to the museum with no problem. Riverbluff Cave, on the south side of Springfield, was unearthed by a county road crew on September 11, 2001. Despite other distracting events that day, the first explorers into the



cave realized they'd stumbled into a treasure trove of Pleistocene paleontology, miraculously preserved when the entrance collapsed some 600,000 years ago and sealed the 2,000-foot cave, creating an air-tight time capsule. The county resealed the entrance and eventually established a museum, the Missouri Institute of Natural Science, to oversee the excavation and curation of artifacts.

It turns out that, true to its name, the large metal shed that houses the museum contains not only Riverbluff Cave material, but “fossils, minerals and artifacts from around the world.” The fragmentary fossilized remains from the cave were quite interesting, and were supplemented by full-size plastic replicas of the skulls of both a woolly mammoth and an extinct short-faced bear (*Arctos simius*). There was also an extensive minerals collection. I noticed some CDs lying on a table next to a projector, and asked the volunteer if we could preview them, thinking they would make a great grotto presentation.



**Above:** Jim Cooley, Cyle Riggs, and Rick Hines at the LARGE entrance to Reary Outlook Tunnel (SHN-612). Jim is trying to convince someone we need to explore and map this hole. He succeeded with Cyle, failed with Rick. Photo by Justace Clutter. **Left:** A large velvet mite, genus *trombidium*, found lurking outside Reary Crawl Cave. Photo by Jim Cooley.



Unfortunately, he was unable to get the CD player to work.

About that time the museum director, Matt Forir, came in. He was able to answer a lot of questions that the volunteer couldn't field about the excavation of the cave and the artifacts in the museum. Matt had previously served as president of the Missouri Speleological Survey, so Rick and I had a long talk with him, chatting about people we knew in common in the caving community. He didn't have the CDs for sale, but graciously offered to loan them to us for a grotto presentation. Not only did we get to see some fascinating artifacts, but the

beginnings of a new professional relationship for the CCC may have been forged as well.

After spending much longer than expected at the museum, we headed back

north toward Highway 60 -- and very nearly didn't make it, as we narrowly avoided an automobile accident. It was a good reminder of how dangerous caving can be -- and what the most dangerous part of the trip is! Finally we got back on the highway and headed east toward the Riverways. Three hours later we were turning onto Highway 19 at Winona, heading north. It was after 3:30 when we arrived at our campsite, a 175-acre, heavily wooded plot of land owned by my friend and long-time Cave Research Foundation (CRF) member George Bilbrey. The Powder Mill Research Center (PMRC), which is where we usually stay when doing Riverways monitoring, had been reserved by the Ozark Trails Association and was not



**Above:** The best part of Reary Outlook Tunnel (SHN-612) -- the outlook!

**Right:** Cyle Riggs surveying inside the smaller entrance to Reary Outlook Tunnel (SHN-612). Photos by Jim Cooley.

**Right:** Jim Cooley lights up the back (sinkhole) entrance to McDonald Cave using one of Rick Hines' slaved flashes. Photo by Rick Hines.

available. I'd asked George if we could use his remote little 175-acre hideaway to avoid paying camping fees at Pulltite, because it was only three miles from Pulltite as the crow flies, or 10.6 miles by vehicle. Rick unlimbered his chain saw while I pitched my tent, and in short order we had a stack of wood cut, a campfire blazing and were making dinner.

### Friday, February 19th

The next morning we were up with the chickens, made breakfast, and were headed the ten miles back down the road to the Pulltite access, arriving just in time for our scheduled 9:00 a.m. rendezvous with Justace Clutter and Cyle Riggs. They were driving in from Springfield, where Justace's parents live. Justace and Cyle pulled in at 10:20, setting a new bar for "caver time." Fortunately, Rick Hines is the easiest person on the planet to get along with, and I'm just plain lazy, so we were more amused than perturbed. By reading the literature on the bulletin board, I also learned that there is NO fee for camping at ONSR campsites until April 1st. There was no one in the campground capitalizing on the free camping. But Bilbrey's property offered



better firewood pickings, and putatively more privacy. We all suited up, turned on our GPS units and FRS radios, and decided to head east along the south bank of the Current River to start monitoring the 18 caves in the vi-

cinity of this popular, heavily utilized campground. I strapped on my exterior-frame backpack, full of all kinds of survey gear and other toys for boys.

Before we headed into the woods, I reminded everyone



of the “rules of engagement.” We were monitoring caves for the ONSR, a national park, under the auspices of a CRF management agreement with the National Park Service (NPS) through which the park utilizes knowledgeable volunteers to provide cave management services for this rich speleological resource. Cave locations revealed in the course of the trip were to remain confidential. While most of the caves weren’t technically closed, the National Cave Resource Protection Act forbids the release of entrance locations by government entities or their subcontractors – a rubric under which we qualified, uncompensated status notwithstanding. Any publications of our work needed to be vetted with CRF prior to publication, and so on.

The first cave, Reary Annex (SHN-249), we found

easily, a small, 50-foot crawl within sight of the entrance of its bigger cousin, Reary Cave (SHN-088), which itself was only 130 feet long. Both caves had large icicles at their entrances. I filled out the standard ONSR monitor-

ing forms, which are basically a biological inventory and a “human impacts” assessment. I then photographed the entrances of these two caves for the Missouri Speleological Survey (MSS) electronic cave files. We used multiple-exposure techniques to get a good, comprehensive documentary shot of Reary Cave, whose entrance was too wide to capture in a single photograph from any available vantage point. Rick would later stitch two photographs together using Adobe’s Photoshop to create a picture of the cave impossible to take in field on foot. Technology, oh technology! While I was finishing paperwork, my co-conspirators forged on ahead. Cyle stayed high and

**Above:** Jim Cooley and Cyle Riggs arrive at the lower entrance of McDonald Cave (SHN-105). **Below:** Justace Clutter completes the inventory of McDonald Cave. It was, after all, a Saturday – he was due for the bath. Photos by Rick Hines.





easily located Reary Shelter (SHN-256), a 24-foot-long slot reported to be “on a hill behind the amphitheater.”

These directions caused me a bit of consternation, as we had discovered the bright, brand-spankin’ new amphitheater halfway across the campground in the other direction. Eventually I realized these field notes were 30 years old and long predated the new amphitheater. Apparently the bowl-like depression at the base of Reary Bluff had been used by the park service for presentations in 1980, the era in which Reary Shelter was first de-

**Above:** Cyle Riggs attempts to push the dry stream crawl again in McDonald Cave, from the top side entrance. He succeeded only in getting stuck – a watershed experience, without which no young caver’s resume is complete. Photo by Rick Hines.

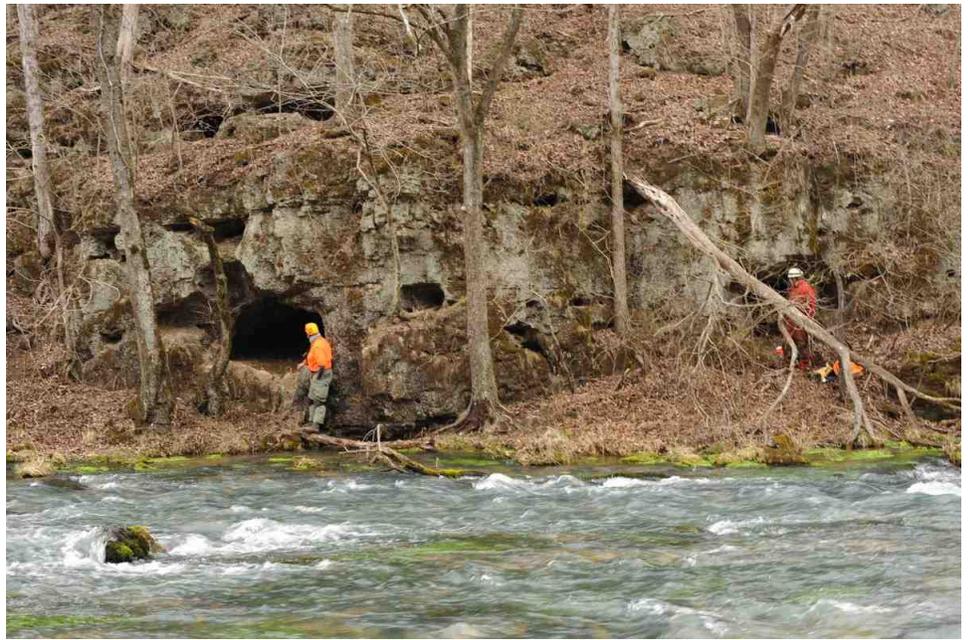
scribed by – who else? – Mr. ONSR Caving himself, Scott House.

While I was sorting out this confusion, Justace and Rick, searching lower along the bluff, found and identified Reary Crawl (SHN-257), a 30-foot-long cave that was every bit as enthralling as the name suggests. Still, we did our photodocumentary and inventory due diligence, and were rewarded by finding a very colorful red beetle of some sort that I had not pre-

viously seen – evidence that even the most insignificant grottos can offer worthwhile surprises. Mick Sutton, CRF Ozark Operations Manager and a PhD. biologist, later identified it from our photo as a species of large, red “velvet mite,” of the genus *trombidium*. They apparently feed on plants, and are quite large (at least for a mite!) and colorful.

At this point, the fun really began. Scott House, the CRF’s ONSR project man-

ager and also MSS's Electronic Cave Files Manager, rates GPS cave locations on a five-point scale. Type 1 locations have been verified in the field by an actual GPS measurement. Type 2 locations are associated with well known caves and are believed to be fairly accurate. The four caves we'd visited so far were type 2 locations, and the GPS units had led us to them with little difficulty. Type 3 locations are guesses, usually based on nothing more than a verbal report – and the GPS location of our next cave, Reary Hole Cave (SHN-542), was one of these. The cryptic location information we had on this cave, from a 2005 visit by a Don Dunham, stated that it was “about 500 feet upstream and at the same level as Reary Crawl ... entrance two



**Above:** Another Rick Hines composite photograph, showing Jim Cooley and Justace Clutter at the two entrances to Pulltite Branch Cave (SHN-196), from across the spring branch. Photo(s) by Rick Hines. **Below:** Spider nest sac in Pulltite Branch Cave (SHN-196). Photo, ruler and hand by Jim Cooley.

feet by two feet and about 28 feet long,” with this note by Scott: “MAP & INVENTORY.” That 500 feet appeared to be along terrain that was rapidly morphing into a real,

live honest-to-Bob bluff, not just a steep slope with a few outcrops encircling a now-defunct amphitheater. Scott’s note strongly suggested that no one had seen this cave since Dunham’s visit.

Justace and Rick stayed low, the more challenging route, while Cyle and I headed toward the top of the bluff. The going was slow, and much tougher for Rick and Justace, as the walkable terrain kept petering out, requiring them to backtrack to find a way forward. We finally made it to at least 500 feet down the bluff, and there was still no evidence of a low cave matching this description. While we were resting, I turned around and noticed a small opening in a rock outcrop above and behind us. I pointed it out to





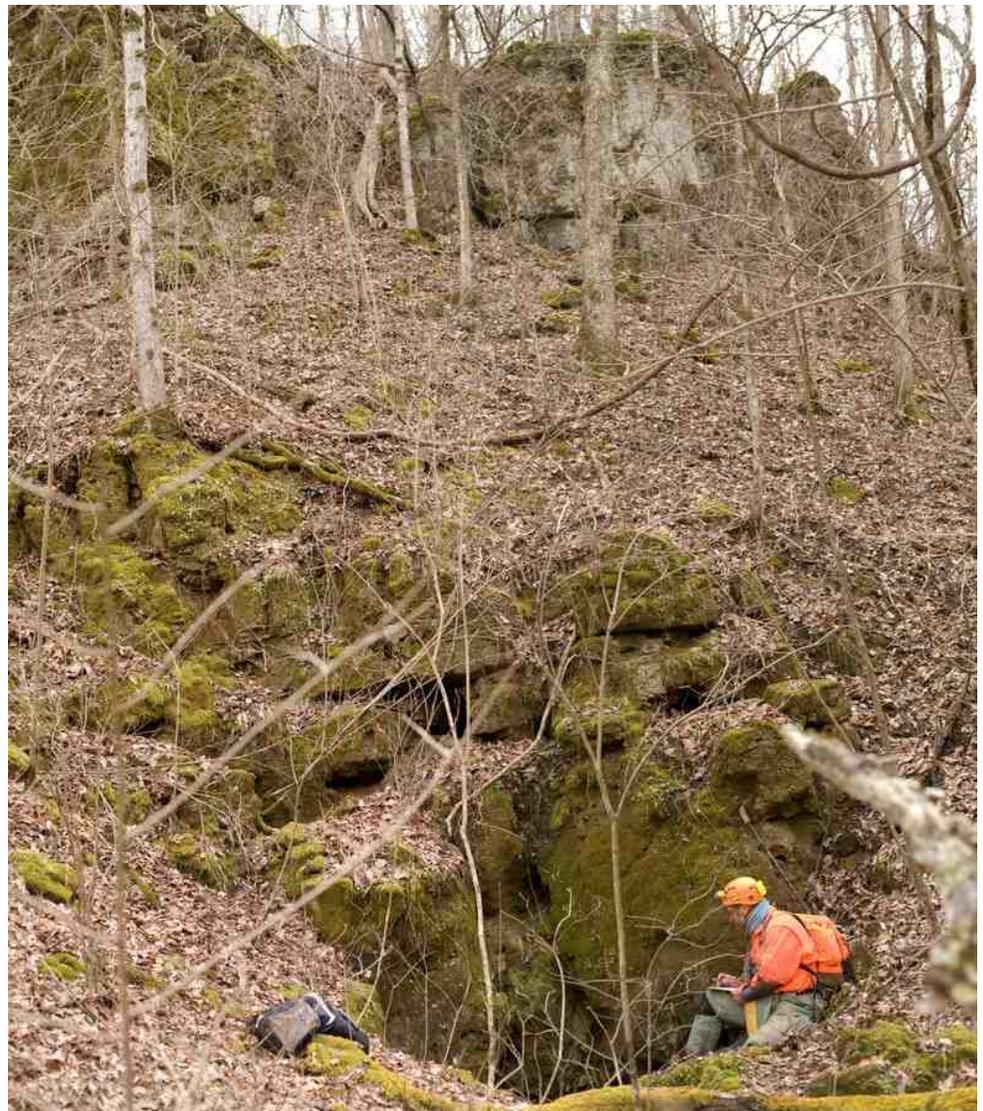
**Left:** Cyle Riggs prepares to monitor Lodge Cave (SHN-368). Photo by Rick Hines. **Below:** Jim Cooley at the entrance to Fire Hydrant Stream Cave (SHN-104), a “karst window” into an underground stream feeding Fire Hydrant Spring, on the Current River on the other side of the ridge. Composite photo by Rick Hines.

Cyle, who climbed up to check it out. Always cave with the young!

It turned out this was a real, live cave, albeit a small one, on a six foot ledge. I boosted Cyle up, and in he went. It was crawling all the way, and he hollered back from about fifteen feet in that a boulder constriction made the way forward extremely tight. I encouraged him to push it, and he did. The cave opened up horizontally beyond the constriction, and Cyle could see light ahead. So this was not actually a cave, it was a tunnel. I called down to Justace and Rick, who came up and joined us.

Since the cave was small, I decided we should survey it. Cyle had expressed an interest in survey, so I thought it would be a good opportunity for him to get some experience sketching – in the prone position. We set about surveying the exterior, which

always seems to take me a VERY long time, and then went about the actual survey. Cyle was the only one who went through the cave, it being too small to admit Justace and I, and too small to interest Rick. We nonetheless spent quite a bit of time





on the survey, or enjoying the view of the Current from the bluff, which was spectacular. Since CRF protocol for contriving cave names for discoveries on public lands requires naming them after a nearby terrain feature or other natural attribute, we were pretty much constrained to call this cave Reary Outlook Tunnel. Cyle's Crazy Claustrophobic Crawl would have been a more appropriate name. Finally we finished, and checking the topo map, decided that heading up the bluff to Weese cemetery was a much easier way out than retracing our steps along the bluff. In just a few minutes we were at the cemetery, and sauntering back down EE Highway to Pulltite Landing.

After degearing, we headed back to Bilbrey's property, arriving right at dark. Cyle pitched a tent, while Justace elected to sleep in his car. We all managed

to make ourselves some vittles, finishing dinner just as the skies opened up and sent us scurrying for cover. It poured for most of the night, but by morning the rain had stopped and the sun

was coming out. The Force was with us ... uh, for a while.

### Saturday, February, 20th

On Saturday, we headed back to Pulltite, with 14 of those 18 (uh, now 19) caves still to be inventoried. This time we went to the other end of this half-mile-long camping area, past the new amphitheater on the left, parked, then geared up. Our first stop was the heavily visited McDonald Cave (SHN-105), a short hike. If they expand the campground one more time, this cave will be in the middle of it. This cave, too, was actually a tunnel, although a much bigger one than we'd surveyed the

**Above:** Justace Clutter finds Indian Cave (SHN-145). **Below:** Cyle Riggs at the back – and in the front – of Knob Cave (SHN-367). As the cave taped out at exactly 3.05 meters (10.0 feet) long, the back and the front of this cavern are essentially the same place. For all that, it had quite a few speleothems. Photos by Rick Hines.



day before. It also had an entrance that was so large and had so much brush in front of it that it was difficult to photograph, but Rick gave it a try. This cave, too, had lots of icicles hanging from the bluffs at the entrance. There was a fair amount of trash around that we picked up. After reaching a very tight pinch less than 100 yards in from the lower entrance, we turned around and went back out, then around the right side and up to the sinkhole entrance in the back. We took more photos there, trying to get a good outside and inside shot using Rick's slaved flashes. A short down-climb brought us into a sizable room which contained a few tri-colored bats (a.k.a. eastern pipistrelles, *Perimyotis subflavus*) and a single big brown bat (*Eptesicus fustus*). To the left was the passage that connected with the front of the cave, and to the right the room lowered until it became a watercrawl into what were reported to be a couple of more small chambers.

Justace volunteered to act as group salamander, and slithered through the mud and water to the back of the wet passages. He counted a few more tri-colored bats, then came back out. The slaved flashes really worked well in this area, allowing us to document Justace's sacrifices for speleology from



**Above:** Unknown cave on private property on the very karsty upper Jacks Fork River. Photo by Rick Hines.

across the room, without getting our feet wet. Cyle meanwhile crawled through the pinch toward the front of the cave only to get himself momentarily stuck, an experience he found extremely unpleasant -- as panic usually is. But he managed to extract himself and some more trash as well, and exited with us back through the sinkhole. I suspect this "tunnel" is filling up with cobble washed in by heavy rains, and will soon be completely impassable, if it is not already.

From there, we needed to get across the river, so we scouted along the road we'd taken into the far end of the campground until we found a spot just upstream from the Pulltite Spring branch that minimized the distance we had to carry the canoe. We

ferried three of us across the river at a time, so it took two trips. Once across the river, we beached the canoe and hiked around the spring branch, as wading in spring branches is verboten. It was an arduous hike; there was no trail.

En route, we located and inventoried Pulltite Branch Cave (SHN-196), another two-entrance cave which presented a unique challenge to photograph as well. This was not a long cave, but it had quite a bit of interesting wildlife in it, including a cave salamander and a spider nest ball. There was also evidence of a lot of wood rat activity.

From there we continued up the branch and looked at Pulltite Cabin, which is actually an old hunting lodge, now in process of being restored. Then we hiked over to Fire Hydrant Stream Cave

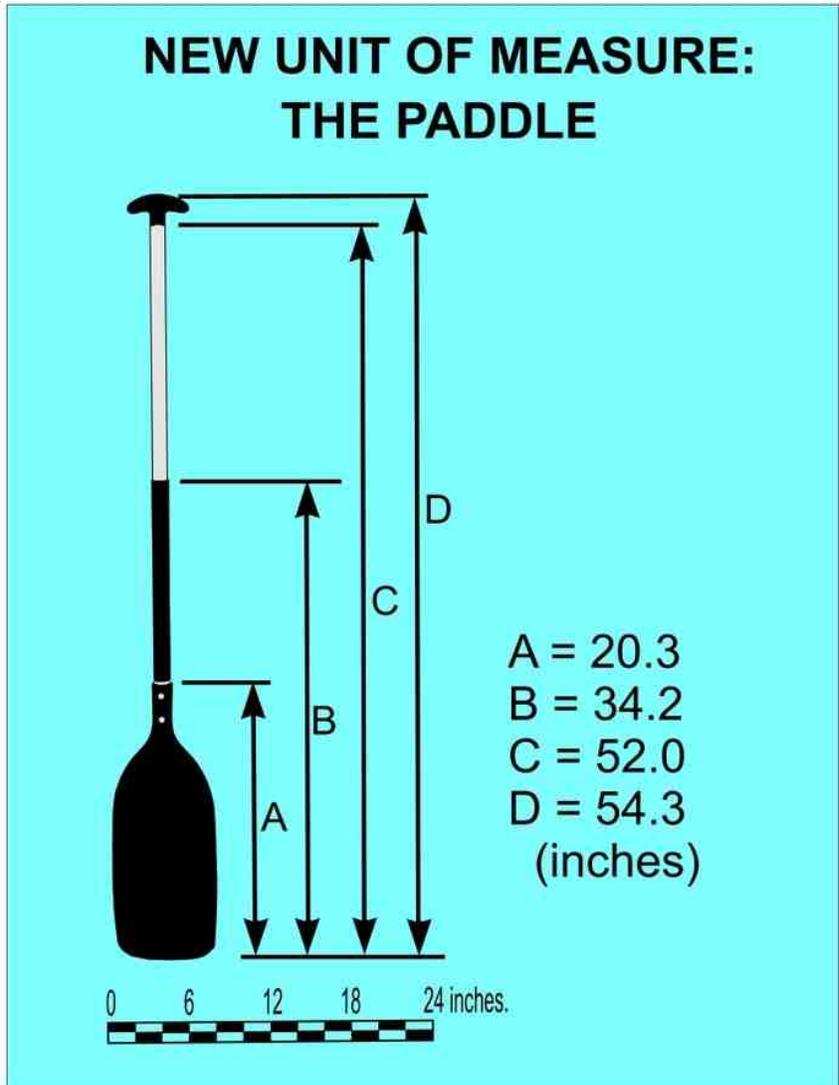


would not reach that cave before running out of daylight.

Instead, we next navigated via GPS to Lodge Cave (SHN-368), photographed its entrance, and inventoried it. It is a small cave, and as time was running short, we didn't get any interior photos. From there, we tried to reconcile the GPS coordinates of Indian Cave (SHN-145) with its description, and especially the description of how to find it. These two pieces of information, when

(SHN-104), a “karst window” into a stream that feeds Fire Hydrant Spring on the river a couple of hundred yards away and through a ridge. The stream is not pushable in any direction, but this cave was just full of tri-colored bats. This stream apparently runs below the ridge toward the river, and has actually created another cave, Fire Hydrant Collapse Cave, whose opening is a sinkhole atop that ridge. That cave is highly vertical, although it does not require rope, and is closed for safety reasons due to loose breakdown. We

**Above:** The lower, horizontal 4x4 inch piece of angle iron started out life as the foot of the this gate in Jacks Fork Bat Cave (TEX-069), resting on silt. Wave action and numerous flood events have severely eroded the silt pile and “breached” this gate. Jim Cooley deploys new unit of measure – the “paddle” – to size up the needed repairs. Photo by Rick Hines. **Right:** The new unit of measure. Xara drawing by Jim Cooley.



put together, simply didn't make any sense. Finally, we elected to use the verbal directions to locate it, and mirabile dictu, the cave turned out to be right where the pre-GPS reporter suggested it would be. From there, we began looking for Knob Cave (SHN-367), and found it using the verbal directions from Indian Cave rather easily. As my directions from Scott House were to FIND AND MAP, we again sent the only member of the team who would fit, Cyle Riggs, into the cave, and he did the sketch. It was, to put it kindly, a less than expansive karst system. While Cyle sketched, I graciously and with infinite patience and aplomb listened to Rick and

Justace bitch and moan about how small this hole was. Well, they ain't all Mammoth Cave. Knob Cave did have a surprising number of small speleothems in it – of course, they HAD to be small, or they wouldn't have fit.

After concluding this second excellent cartographic adventure, we commenced the hike back to the canoe – in the dark, of course. Anyone can hike back to a canoe in perfect daylight. Where's the fun in that? We ferried ourselves back across the river with little difficulty, loaded up, and headed back to camp.

### Sunday, February 21st

**Below:** The entrance to Jack's Fork Bat Cave marked up to indicate problem areas. Photo(s) and composite assembly by Rick Hines, Xara overlays by Jim Cooley.



Photo 2/21/2010 by Rick Hines.

0 6 12 18 24 inches (Scale approximate.)

Drawings and text by Jim Cooley.

On Sunday, we arose and broke camp, then headed for Jacks Fork Bat Cave (TEX-069), on the upper Jacks Fork River. The gate on this cave had been reported as breached, and it had fallen to we intrepid lads of the CRF to get it fixed. But first, we needed to know just what was broken, so we'd know what would be required to effect repairs. Cyle and Justace needed to be back in Kansas City and Lawrence respectively that night, six- and seven-hour drives away, so we decided that they would kick Rick and I out into the Jacks Fork in a canoe, then shuttle Rick's van back to Buck Hollow, a mile or so downstream from the cave, before heading for home.

We dropped Justace's little sports coupe at Buck Hollow, piled into Rick's van, drove to Mountain View, then headed north out of town toward the river. There were a couple of roads indicated on the topo that ought to bring us onto the river not far above the cave, so we tried to find those. After a wrong turn, we finally got headed in the right direction ... only to find the roads we had intended to use were private, and blocked by locked gates. So we backtracked, and executed plan B, which involved putting in at Harlow's Ford. We finally located the road down to the ford, only to find it very steep and almost impassable, thanks to

**Right:** Composite photo of the entrance to Jack's Fork Bat Cave showing where repairs were performed. Photo(s) and composite assembly by Rick Hines, Xara markups by Jim Cooley.

the May, 2009 windstorm, which had hit this area especially hard. ALL of the large trees in the forest on both sides of the road were down – every single one! It looked like a B-52 strike had gone in at Harlow's Ford. We finally managed to get down to the river, and get the canoe off-loaded and our gear on.

While we were gearing up, some locals came down behind us in an ancient, square-bodied Chevy Suburban, one of those heavy, massive monsters built back when Christ was still in the carpenter's union and gasoline was 19 cents a gallon. They stopped at the river's edge, then gunned it and proceeded to drive across the river, dropping the back wheels a couple of times into holes deep enough that the water came in through the back window. It was an amazing performance. At any point in their crossing I would have bet that they would never make it ... but they did.

Just as Justace and Cyle started up the hill in Rick's van, the skies opened up again. Rick and I pushed off from shore in a rapidly worsening, cold rain. Rick and I courageously continued on (having no choice any-

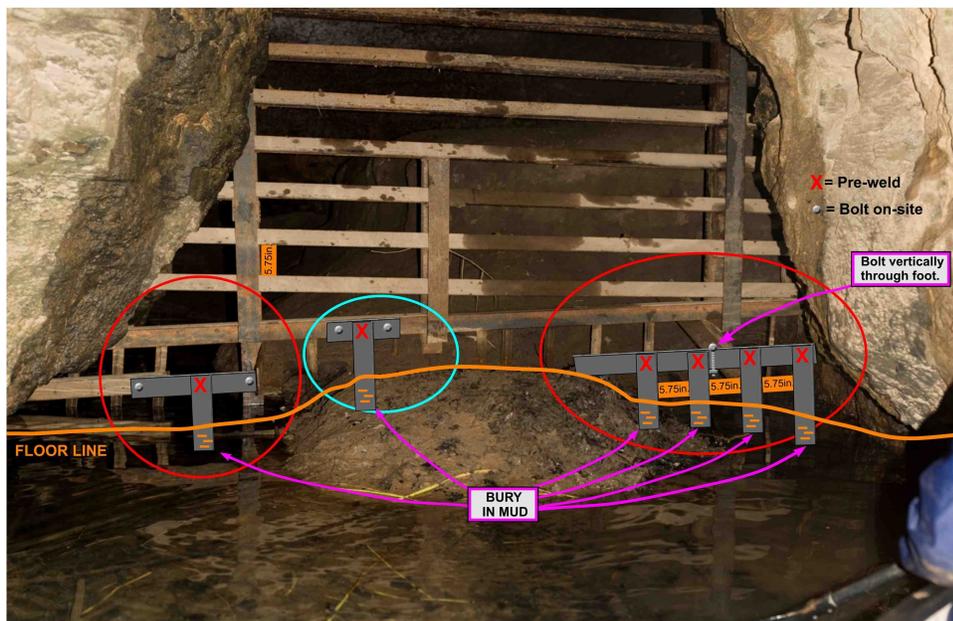


Photo 2/21/2010 by Rick Hines.

0 6 12 18 24 inches. (Scale approximate.)

Drawings and text by Jim Cooley.

way) through a very karsty watershed with one large cave mouth very visible on the right. The timber damage was just phenomenal along the river.

Finally, we reached Jack's Fork Bat Cave, and canoed into its mouth. The "breach" turned out to have been accomplished by the greatest vandal of all: Mother Nature. It seems that the cave gate was built on a mound of fine silt, circa 2003. Since that time, wave action from the river had reduced that mound, leaving the sides of the gate hanging in mid-air. One fix had already been attempted, but soil had continued to disappear, leaving a couple of more spots where a dedicated, drunken college-boy canoeist could have slipped under the gate and into the cave. Being a "flyover" gate, designed to accommodate a

hoped-for maternity colony of gray bats, the gate was not hard to climb over in any case. But you could see that the openings at the bottom would probably be just too inviting to the casual beer guzzler, who would be visiting in the summer, exactly when gray momma bats need protection. So Rick got out his camera and we extensively photographed the situation. I discovered that I'd left the tape measure at home, so we sized up the cave using a new unit of measure: The Paddle.

After dallying in the cave mouth and enjoying its warmth, we got back out on the river and headed downstream toward the truck. It was cold. Although it had gotten up to 60 degrees on Saturday, by Monday the temperature would barely break the mid-30s. Long-suffering, shivering Rick Hines,

the most tolerant guy in the world, finally mentioned that “this trip really isn’t much fun anymore.” I tried to divert Rick from his misery with discussions of how we could fix the gate, and Rick devised a method of repair that would not require welding equipment. Rick would later create composite photos for me showing the entire gate span, on which I was able to indicate all the problems with the gate, and to suggest repairs.

It wasn’t long, though, until we saw the bridge at Buck Hollow come around a bend. Soon I was letting Rick off under that bridge to get his van and bring it down to the takeout point. I floated on by myself to the access, where we hauled one dirty canoe and one dirtier canoeist out of the river, and lashed the former atop the van. After degearing, we turned our noses west and headed back to civilization.

### Monday, February 22nd

But wait! There’s more! Once we established cell phone connection with Justace and Cyle, while checking e-mail at the McDonalds in Mountain View, we discovered that a massive ice storm was hammering Kansas City, the worst so far of the year. Rick and I agreed that battling massive ice storms was young people’s work, and so decided to go

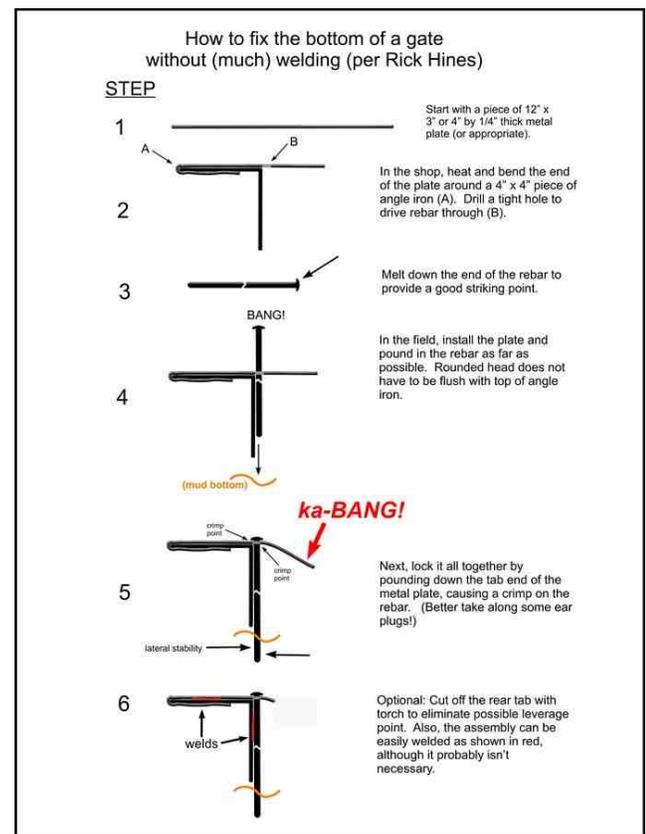
crash the party at the PMRC, which facility ought to be vacant at the end of the weekend, once the Ozark Trail volunteers headed out. So we went back there, finding that only one Ozark Trail volunteer had used the place all weekend, after all. Apparently hikers and trail maintenance volunteers have less tolerance for cold and rain than cavers -- although our float down the Jacks Fork, in the rain, in freezing temperatures, pretty well tested the patience of the most patient man in the world. Cyle and Justace eventually made it home all right, though it took them at least three hours longer than normal. Rick and I holed up Monday at PMRC, then headed home

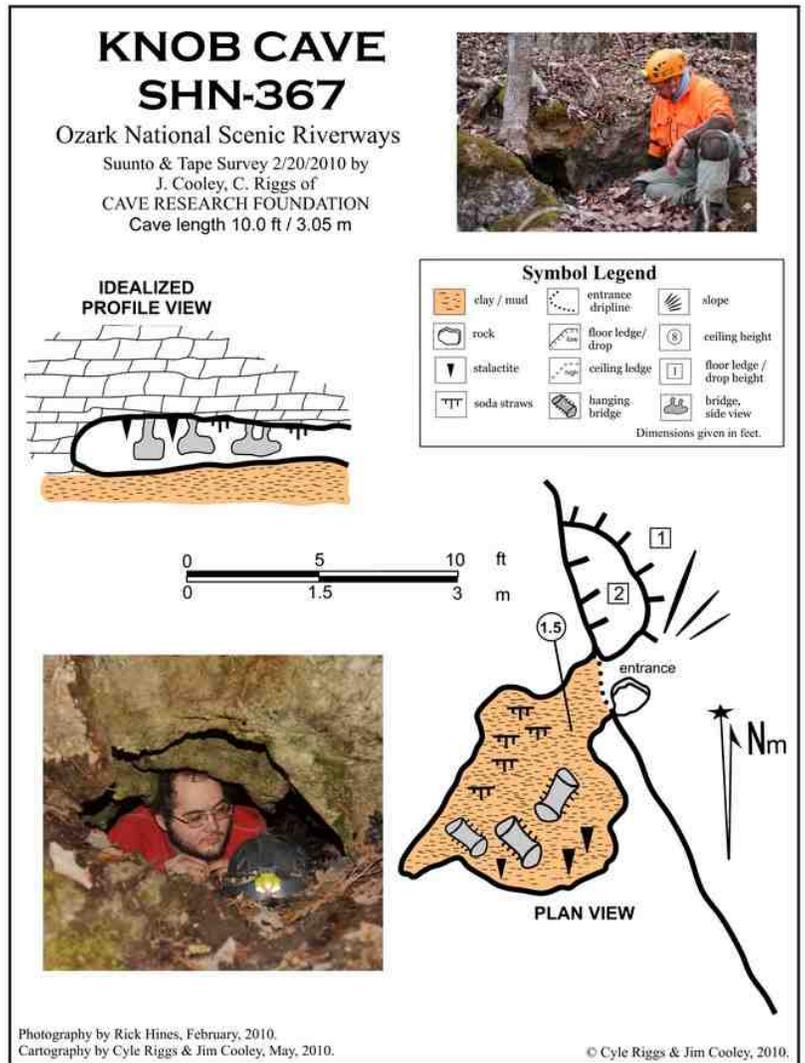
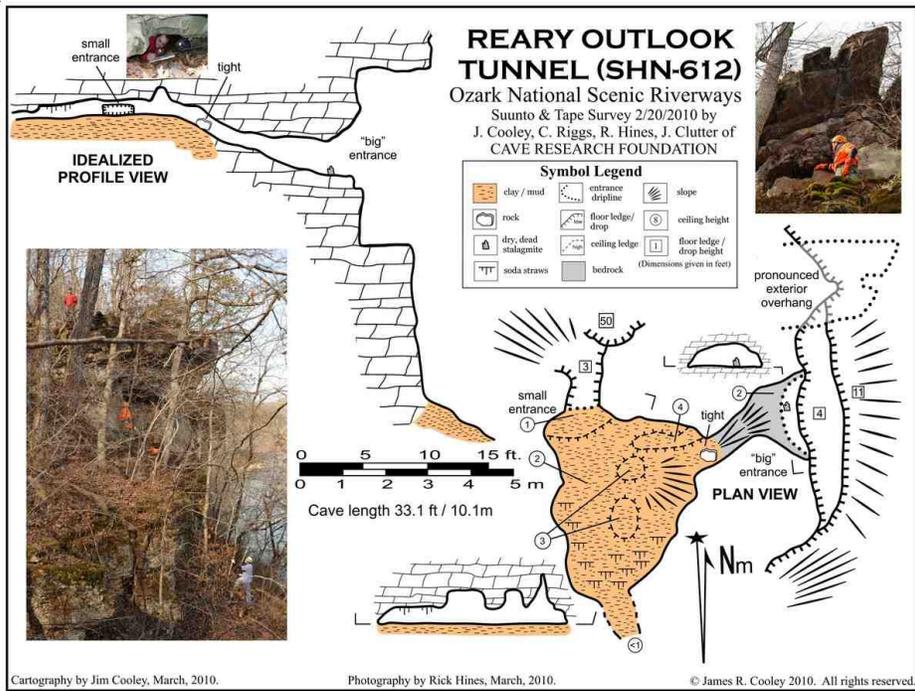
late Monday morning, assuming (correctly) that the working class would have gotten the roads in Kansas City cleared by evening.

Unfortunately, they didn’t also clear the ice off the canoe I keep strapped atop my van. This ice storm was not going to give up without a fight. As I was leaving Rick’s house to head home, a large, thick chunk of it slid forward off the plastic canoe bottom and fell on my windshield, smashing it.

You just never know what’ll happen when you go caving.

**Below:** It pays to cave with an engineer! Rick Hines developed this method of gate repair that would not require welders to be taken to the gate. Xara drawing by Jim Cooley.





# January 2010. Carroll Cave Biology. Article by Bill Gee. Photos by Bill Gee.

This trip started with a conversation between Eric Hertzler and Dr. David Ashley. Eric was planning a trip to do some biology work, mainly planting additional bait sticks in lower Carroll River near the Mountain Room. When he realized all the bats are in that area, he changed plans and some more people came on board. Eventually 11 people signed up, though two dropped out.

I had been caving on Saturday, so I camped overnight at the schoolhouse. Jon Beard, Eric Hertzler and Josh arrived at the schoolhouse a bit before 9:00 a.m. David Ashley and Michael Voltz arrived a few minutes later.



Above: Michael Voltz records data while Dr. David Ashley examines a bait stick in Convention Hall. Below: Michael Voltz and Zack Copeland having a snack in the Round Room. Photos by Bill Gee.



We chatted for a bit while waiting for Zach and his friends to show up. Eventually they did - they had been waiting up at the silo for us!

Three of us had 4x4 trucks, so we loaded all the gear and headed up the hill. Due to snow melt it was very sloppy. Zach Copeland's truck has street tires and had a bit of trouble with a sloppy spot right at the upper gate.

Gearing up and getting down the shaft took a while. We were all in the cave by 11:00 a.m. We split into two teams. Eric led one team for some work in lower Thunder



River and I led the other team into upper Thunder River. We agreed to meet back at the ladder no later than 8:00 p.m.

Our goals were to place some new bait sticks, place two sets of tiles in the river, and examine as many of the existing bait sticks as we could. We left the ladder a few minutes after 11:00.

We carried two sets of five unglazed terra-cotta tiles with us. These were placed in two riffles in the river.

The first riffle is near where the trail comes down to the river after going past the Angel Pool Passage. The second is upstream from the second shower head.

The tiles are flat on one side and have ribs on the other. They are roughly eight inches square. Each tile is numbered. By their nature they make counting and measuring animals much easier. They are easier to find than rocks, and easier to count things on. Counting

**Above:** This photo of a bait stick in Convection Hall shows several kinds of springtails. They are very small, typically less than 2mm long. Photo by Bill Gee.

animals on the tiles gives us much more repeatable data than counting on rocks.

At Flat Rock Falls we placed a couple of bait sticks, then went on to the Round Room. We arrived there about noon. While walking on a mud bank David took a spill and landed on his back on his camera case. He was hurting but still able to



move. At the Round Room we had a lunch break, then placed a pair of bait sticks in an alcove where they are out of the way.

The next stop was UL2. As we traveled up UL2 we stopped often to record data about fish. We saw about 20 fish, taking length estimates on most of them. We also saw a couple of smallish grotto salamanders. We did not spend much time looking for snails or isopods.

We arrived at Convention Hall about 1:30. David's back was giving him a hard time, so I gave him some Ibuprofen out of my first aid kit. We examined the bait sticks in Convention Hall. Michael, Zach and I went over to the Conference Room to look at the bait sticks there while David rested his back. In the Conference Room we found a grotto

salamander on one of the sticks. Michael recorded data about the bugs and I took a bunch of photos.

**Above:** Michael Voltz examines bait sticks in the Conference Room. **Below:** A grotto salamander near one of the bait sticks in the Conference Room. Photos by Bill Gee.



As we traveled, Michael used a laser guided infrared thermometer to measure the wall temperature around several bats. We checked perhaps five to eight bats. David used a "Kestrel" several times to get readings on relative humidity, temperature and air flow.

The trip back to the ladder went quicker than I thought it would given David's bruised back. We arrived there about 5:30. The gear from the other team was still there, so we knew they were not out of the cave. We examined four bait sticks. Two are in the landing area around the ladder and the other two are under the box-work formation a little ways



**Above:** Michael Voltz points a pencil tip at a springtail on a bait stick. Photo by Bill Gee.

down the passage.

We had plenty of time and David's back was feeling better, so we decided to head down Carroll Passage to the Water Barrier. We placed a pair of bait sticks there and wanted to get a look at them. We arrived at the Rimstone Room about 6:15, spent 15 minutes recording data and taking photos of the bait sticks, then headed back.

When we arrived back at the ladder a few minutes after 7:00, we saw that the other team had exited the cave. We geared up and climbed as a group. Everyone was out of the cave by 7:30. We derigged, packed up and headed down the hill shortly after 8:00 p.m. I camped overnight and everyone else drove on home.



**Left:** A partially decomposed bat near the ladder entrance. The skull is clearly visible. Below: More springtails on a bait stick near the Thunder Falls shortcut. Photos by Bill Gee.





**Above:** Milipedes on a bait stick near the Thunder Falls shortcut. These are about 1.5 to 2 centimeters long. **Left:** Springtails on a bait stick in the Rimstone Room. Photos by Bill Gee.

May 2010. Carroll Cave Biology Students. Article by Bill Gee. Photos by DJ Hall and David Ashley.



In the spring of most years St. Louis University sponsors a field work biology class called Ozark Cave Biology. A small group of students, usually six or less, spends most of every day for six weeks in caves learning about cave biota. The class is taught by Dr. David Ashley who is Professor of Biology at Missouri

**Above:** Group photo of the participants before entering the cave. Left to right: Dr. David Ashley, D.J. Hall, Bill Gee, Beth Drury, Ryan Frey, Rubinda Baig (kneeling), Justin Baker, Jessicah Hard and Zack Bowles. Photo by D.J. Hall.

Western State University. One of the caves we take the class into is Carroll Cave. This year the trip happened on Memorial Day.

DJ Hall and I were the trip leaders. Dr. Ashley had four students this year, and we

had two guest students (Beth Drury and Ryan Frey) who are in the biology program at Iowa State University.

During this trip I took the opportunity to collect data from the water level loggers in Thunder River. When I

had a chance to analyze the data, I found that Thunder River, which normally runs about a foot deep, had crested at over 21 feet just two weeks earlier. We observed many signs during the trip that the water had been high recently, but nothing to show it had been that high.

Everyone gathered at the schoolhouse Monday morning. Dr. Ashley and his students were about 15 minutes late. We chatted for a few minutes and then headed up the hill.

Ben Miller went up the hill with us. While we were gearing up, he did a very fast 10 minute trip down the ladder to gather a water sample for ion analysis. He was down and back up before we were ready to go down. Ben then left to continue with other work related to his dye



**Above:** Bill Gee demonstrates how to download a data logger. **Below Left:** This photo of a cave fish is distorted by ripples on the water surface. Photos by David Ashley.

tracing project.

We were all geared up and ready to go down the hole by shortly after 10:00 a.m. DJ Hall went first so he could help people get off the rope when they got to the bottom.



He also took photos of everyone as they arrived in the cave. I stayed on the basement level to help everyone get on the rope safely. I was the last one into the cave a few minutes before 11:00 a.m.

Once in the cave I outlined the plan for the day. I demonstrated how the data loggers are downloaded. Dr. Ashley demonstrated how the bait sticks are examined using the pair which is right at the ladder. DJ took off with the group toward Thunder Falls while I went down to the river to download a data logger. I caught up with them while they were still in the shortcut passage.



**Above:** Examining one of the tiles from the stream. It is much easier to see snails on these tiles than on rocks. Left to right: Zack Bowles, Jessicah Hard, Rubina Baig holding the tile, and Justin Baker taking notes. Photo by DJ Hall.

Thunder River was running about six to eight inches above normal flow. Everyone was impressed by Thunder Falls. DJ took some photos of the group at the lip of the falls, then we headed back to the ladder.

From the ladder we took the overland route past the trail to the Angel Pool. The point where the trail finally hits the river has some tiles which we placed during a trip in January 2010 (see previous article in this issue

of The Guano). The group stopped to examine the tiles to see if any biomass had accumulated. A number of snails were found.

We headed upstream several hundred feet to the second set of tiles which were also examined. These tiles had fewer snails on them. One of them had been moved by the force of the current.

We arrived at the entrance to UL2 about 1:00 p.m. I took Jessicah, Justin and Ryan on up to Flat Rock Falls where we had lunch and then did a fairly complete count of isopods. We counted close to a hundred, but they were all fairly small. The largest was around 7 or 8mm long. We also examined the bait stick (only one at this site). The bait

stick had no bugs on it but a fair bit of mold and fungus.

While we were heading to Flat Rock Falls, DJ took everyone else into UL2. They performed a detailed inventory of critters in the stream. When my team caught up, they were just outside Convention Hall looking at some very large cave fish. They reported having found over 20 cave fish.

Everyone got into Convention Hall by around 4:00 p.m. The bait sticks were ex-



**Above:** Dr. Ashley demonstrates how to examine a tile while Justin Baker looks on. Photo by DJ Hall. **Left:** Rubina Baig takes notes. Photo by David Ashley.



amined, then most people went up to the overlook. Several Kestral readings were taking both at the bottom of the dome and up on the overlook. We left about 4:45 to head back.

Just outside the entrance to UL2 is another set of bait sticks. This set was half-buried in mud where the slope had slumped. The slumped mud was very sloppy and wet. Dr. Ashley examined the bait sticks and found very little on them. We washed the mud off and placed them a bit higher on the slope.

The trip back to the ladder was uneventful. We arrived at the ladder about 5:30. Dr. Ashley and Jason went over to the boxwork formation to examine the pair of bait sticks while everyone else climbed out.

Everyone was out of the cave by 6:15. We packed up, closed the cave and were headed down the hill around 6:45.



**Above:** The group standing at the lip of Thunder Falls. Left to right: Dr. David Ashley, Zack Bowles, Jessicah Hard, Rubina Baig, Justin Baker, Ryan Frey (mostly hidden) and Beth Drury. Photo by DJ Hall. **Right:** A grotto salamander on a mud bank. Photo by David Ashley.

