



Cathedral Room LSC by Heather Veerkamp 2021

**Inside: Lake Shasta Caverns Plus**

The SAG RAG is published by the Shasta Area Grotto of the National Speleological Society. Grotto meetings are held at various sites or homes on the fourth Saturday of most months at 7:30 p.m. Meeting locations are announced in the SAG RAG, subject to changes by email. Membership dues are \$5 per year, due at the first of the year, and include SAG RAG subscription. Send dues to treasurer Melanie Jackson at 708 Yama St., Yreka CA 96097. Original material submitted for the SAG RAG, unless otherwise noted, is copyright to the SAG RAG. Within the caving community, such may be copied with credit given to the author and the SAG RAG. For use outside the cave community, please seek the permission of the author or editor first. Send material for publication, always welcomed for consideration, to Bighorn Broeckel, 2916 Deer Meadow Road, Yreka, CA 96097 or <caverbill@live.com>. Also check on the Shasta Area Grotto website.

## CAVE CALENDAR 2022

Jan 29 SAG meeting 7:30 pm at Hobson's, McCloud.

Use Esperanza to reach Hobson's (see map). Go slow and watch for potholes. Vertical training in heated Wayback starting about noon. Possible follow-up Sunday at Pluto's skylights. Tri-tip dinner Saturday night.

(On map: Pilgrim Creek is the usual route but is under repair. From 89 follow Esperanza to Pilgrim Creek, and cross to Winton. Follow Winton to Hotlum, # 4418.)



Let me know how many for dinner so I can plan how much to cook. Steve Hobson

### Letter to the SAG RAG Editor

From Joel Despain and Heather Veerkamp

Dear Editors: Thanks for another great issue of the Rag [Sep-Oct 2021, Vol 40 Num 4]. Joel likes the covergirl. In response to the email from Bruce and Pat, yes, we think that Drip Cave is very likely Pipevine Cave. It appears that this cave has been lost and found several times. When we discussed the cave with Brad Rust, he had two other references to a cave with a deep pit in that area in his Forest Service files. One was from way back in the 1930s, if I am remembering correctly, and the other was a note from Steve Knutson from the 1970s. Steve had not been to the cave but had heard about it. And we weren't born yet in 1958, and so were unlikely to go caving with the Drip Cave Team.

Thanks.

JD&HV

### SAG RAG SUMMARY

By Bill Broeckel

Thank-you, again, to Joel Despain and Heather Veerkamp for excellent reports on progress in the Shasta County limestones. I especially enjoyed the profile map of Lake Shasta Caverns (LSC) showing 229.4 feet of depth to the caverns. Also the descriptions and maps of the satellite caves caught my eye. I put everything in because it was all good, resulting in a special 18 page SAG RAG. Apologies for my limitations in grey-scale and definition. The high quality in meaning and content won the day, so here it is. Thanks again, Joel and Heather.

BB

## SHASTA AREA GROTTO MEETING MINUTES

**OCTOBER 23, 2021**

The meeting was called to order at 7:47 pm at Thorne and Sharon Bertrand's home in Mt. Shasta.

**Attendance:** Steve Hobson, Mike Stufflebeam, Thorne and Sharon Bertand, Kit and CJ McKinley, Jim & Liz Wolff, Bill Broeckel, and Melanie Jackson.

**Minutes:** September minutes were accepted as read.

**Treasure's Report:** Checking Balance \$654.94, Petty cash \$116.00, Total cash \$770.94.

We need to send a check to the WCC for \$100.00 for our prior commitment of \$100.00 per year for 3 years. This is the second year.

**Old Business:** Thorne spoke with Ryan Ek at Lava Beds regarding the possible combined **SAR/SAG/Lava Beds joint cave rescue training sometime in June of 2022**. It would be a 2-day training exercise. Ryan would arrange for entrance and campground use. We need dates and to make sure that SAR is on board. We need to talk with the SAR board long before then. The Bertrand's are in charge of cave rescue training for SAR and will need to present this to the board in November. We need better communication and commitment from SAR. The Bertrand's also will speak to Ryan Ek about what skill sets do they have/need for training. Thorne would like to have a meet and greet the night before the training at Lava Beds.

Since 97% of the Lava Beds burned during the last two fire seasons, we will need to get with their management people to see where the training can take place. Liz W will check on dates the CRF building may be available. SAG would like to have a final planning meeting for the Labe's training on April 23 possibly at Labe (?). Training can't be in May because SAR has a Fundraiser then and the Labe Time Line is happening and SAG has people involved with that.

Marble Mountain caving and Mules (horses) to the Marbles: **Save the dates Friday September 2<sup>nd</sup> through Wednesday September 7<sup>th</sup>**. Cost for the mules is round trip of \$200 that includes the tip. Limit is 75 lbs of gear per person. If you want to ride in on a horse that is extra. Steve will make a deposit to the packers and collect the money from those of you planning on having your gear packed in a month before. Let Steve know before summer to reserve a spot.

**New Business:** none.

**Cave Trips:** 10/15/21 Liz, Jim, and Steve went scouting for places that SAG could do some fun caving on 10/23/21. They had to get with FS law enforcement to see what areas were open (fire burn areas had caused a lot of road closures).

September Kit and CJ went to Coltus Lake (south of Bend, OR on the Cascade Hwy) to caves they found in the 1982 Convention Guide book, Parker Cave, Karen's Cave and others. In August they took 10 to 11-year-old kids (relatives?) caving at Three Level Ice Cave and Amazeattic Cave.

10/23/21 Everyone who attended the dinner and SAG meeting, except Bill B. went caving to areas off Mayfield Rd. that Liz, Jim, and Steve found on the 10/15 trip. One was a large opening, vertical that Mike S. descended. It turned out to be a flower pot and didn't go. Was fun watching Mike trying to get over the lip when ascending. He made it by the way. Then there were two other openings much smaller that had blackberry bushes growing out of them, making it difficult to see how deep they were and if they went. It was a rainy day so everyone was wearing rain gear. Mike and Melanie each put on vertical gear and took loppers so they could cut out the blackberry vines. Long story short they weren't actually deep and didn't go. Just two more flower pots. We then went looking for other caves that Liz and Jim knew about. We did a lot of hiking around and some caving, but it was an enjoyable time. Saw areas we hadn't been to before.

**Next SAG meeting December 4<sup>th</sup> at Bill and Judy Broeckels'.** Bring cookies to share.

Meeting adjourned at 9:02 pm. Respectfully submitted by Melanie Jackson in regular secretary's absence.

**MJ**

## Exploring Lake Shasta Caverns and its environs

Joel Despain and Heather Veerkamp

It was fall 2018. We had lived in northern California for several years and had still not visited Lake Shasta Caverns (LSC). Pat Kambesis was in town, and she, Heather and Joel were very curious about the unusual caves of the McCloud Limestone. So, on a warm day we were off to the Caverns to see what was to be seen.

We were greeted by a friendly and energetic tour leader, Cave Dave Mundt, head of the cave operations at LSC. Dave was engaging, funny and endlessly enthusiastic about the cave. We had a very small tour group, and soon we were all discussing cave geology, hydrology and the weird caves found in the McCloud watershed. For the research Pat and I were planning, very detailed and very complete cave maps are needed with the plan view but also detailed profiles and many cross sections. We began discussing re-mapping the cave with Dave. He was immediately excited about the project. The cave had been mapped in the 70s by the Klamath Mountains Conservation task force. But those maps were largely sausage tubes and were incomplete.

The first day of the survey was November 9th. Anna Chinchilli (then a Forest Service intern), Cave Dave and Joel began at the lower artificial entrance and mapped away. One of the first things we realized was that LSC is not one cave, nor even two: it is multiple caves. The historic cave with a natural entrance is the original, but in tunneling passageways to allow tour access, the developers of the cave inadvertently intersected multiple other caves. The largest, the Discovery Room and adjacent passages, is a significant part of the tour today. The other caves are much smaller and are found scattered along the artificial tunnels, but these voids are still large enough to call a cave, and often contain important cave features such as scenic pool-spar crystals.

Heather and Joel continued mapping away with many trips into the cave over the next two years. We worked from the bottom up and attempted to be very thorough. We only mapped during the quiet season, avoiding the busy summer months at the Caverns. LSC is packed with speleothems and features, and Joel was challenged to get it all on the map. Things like shields, broken speleothems buried by new calcite growth, cubic calcite crystals, spathites, etc. were hard to represent. It was unconventional, but Joel finally settled on a series of small colored dots to represent these and other cave features. It's a show cave, why not make the map a bit more showy?

Another large drafting challenge is that so much of the cave overlies itself. Joel finally settled on a half-scale central map showing how segments of the cave lie in true relationship to each other surrounded by full-size segments of the map with the details. The profile of the cave is interesting and makes more obvious sense since it is such a vertically-oriented cave. Cross sections are tied to both the plan and profile views.

We met many of the cave staff. All were very nice people who graciously welcomed us to the cave. Carlos and Dave soon were plying us with stories of other caves on the mountain that they had hiked to over the years. It wasn't long before we were taking days off from the LSC survey

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Forest's class, Basement LSC by Heather Veerkamp 2021

to ridgewalk the area, much to Heather's delight. Below LSC we were told of a stream cave. What, a cave with a creek? Carlos used one of the company boats to take us via the Lake to this cave. Sure enough, a stream cave with a walk-in entrance. The LSC staff refer to this cave as the "Aquifer" and so Aquifer Cave it became. There is about 120 feet of sloping, rock-floored passage to a terminus where the water pours from a breakdown ceiling. The passage varies from about 8 to 4 feet tall and is up to ten feet wide. Aquifer Cave is odd. The ceiling is composed of limestone colluvium (angular shards) held together by calcite-cemented soil. Steep slopes of this glued-together limestone are common in the area. The passage below the ceiling is incised into the bedrock. But here the limestone is very dirty with what appears to be purplish volcanic layers. Aquifer Cave seems to be the piracy of the stream in the large canyon downhill and upstream from LSC. The cave runs parallel to the canyon and is not far underground.

Heather, Joel and Liam Tobin returned to Aquifer Cave to map it in July 2019 for a total length of 124 feet including a small upper level.

On another ridgewalking outing in February 2019, Heather, Forest Despain and Joel started at Aquifer and then worked their way upstream. Shortly we located another small cave entrance lead with a stream that was sumped at that time. That lead still needs to be checked. This may provide upstream access to Aquifer Cave during low water conditions. We continued further up the canyon and then up and out of the steep valley to the left (northwest) hiking and looking. Lots of great limestone. No obvious holes. We climbed higher and doubled back to return to LSC, a few sub-ridges downstream. We hiked up to a long cliff above the deep, steep canyon below. At the base of the cliff and behind a huge live oak was a ridiculously large cave entrance! We were stunned. The 30-foot diameter hole led directly into the mountain and stayed huge! But, alas, it did quickly end where the cave is filled with rock rubble after a bit more than a hundred feet. Sunlight goes all the way to the back when our star is at the right angle. There is a bit of airflow that emanates from the terminal rubble telling tantalizing tales of what lies beyond. But, it would be a very, very big dig. It was Heather's Birthday, so Birthday Cave it became. Not surprisingly with the huge entrance, we were not the first ones there. An old shovel was found near the cave terminus.

Back at the LSC, Heather and I continued to map away. One of our big challenges was the Spider Complex, the largest section of the cave off the tour trail with multiple pits and tight squeezes. This part of the cave was virtually unknown to the current Caverns staff. It was accessed through the floor of the Signature Room and a rocked-up passage that led immediately to a pit in the wall of the Basement right off the tour trail. We surveyed into the Complex from both directions.

The pits all had rusty steel cables, and other metal bits in the walls at the top – perhaps for rigging in the past. The area was mazy with lots in interconnections and dead end passages. There were historic signatures, broken glass and other indications of early European explorers. Most passages were narrow and rifty, a few were well decorated and a few had breakdown. One passage with a breeze ended in a major speleothem choke. Two other areas had very stale air likely to be high in CO<sub>2</sub>.

We were confused about where the two halves of the Complex met from our access into the area

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Cave Dave & WWII boat by Heather Veerkamp 2021

via the Basement and Signature Room. At one point Joel was attempting to climb into a narrow slot/pit/climb-down and dropped his Croll and chest harness down the hole. He attempted to worm his way in but soon found it to be too tight. Enter Heather who deftly slid down the hole, passed up the Croll and realized that she had been at the bottom of this pit before, but from the other side. This was the connection between the two sections of the Spider Complex.

In the fall of 2020 we decided that we needed some help with the greater area. We had begun caving frequently with Niles Lathrop and many of his caving friends, and so we invited them. On the trip was Spencer Haggard, Jacob Ergov, Joey Meyer and Sonia Meyer. Also along was Anna Chinchilli, since she had moved back into the area, and our old friends from the coast Mark Fritzke and Dick LaForge. Dick brought along a new caving friend from Humboldt State, Brad Ellis.

We started the day in grand style. Cave Dave pulled out the stops and provided the team with a unique boating experience. The WWII landing craft owned by the Caverns (which was actually used to haul equipment to the beaches of Normandy) was put into service to haul the cavers across the lake. We also spent the night at the cave, something that happens only rarely.

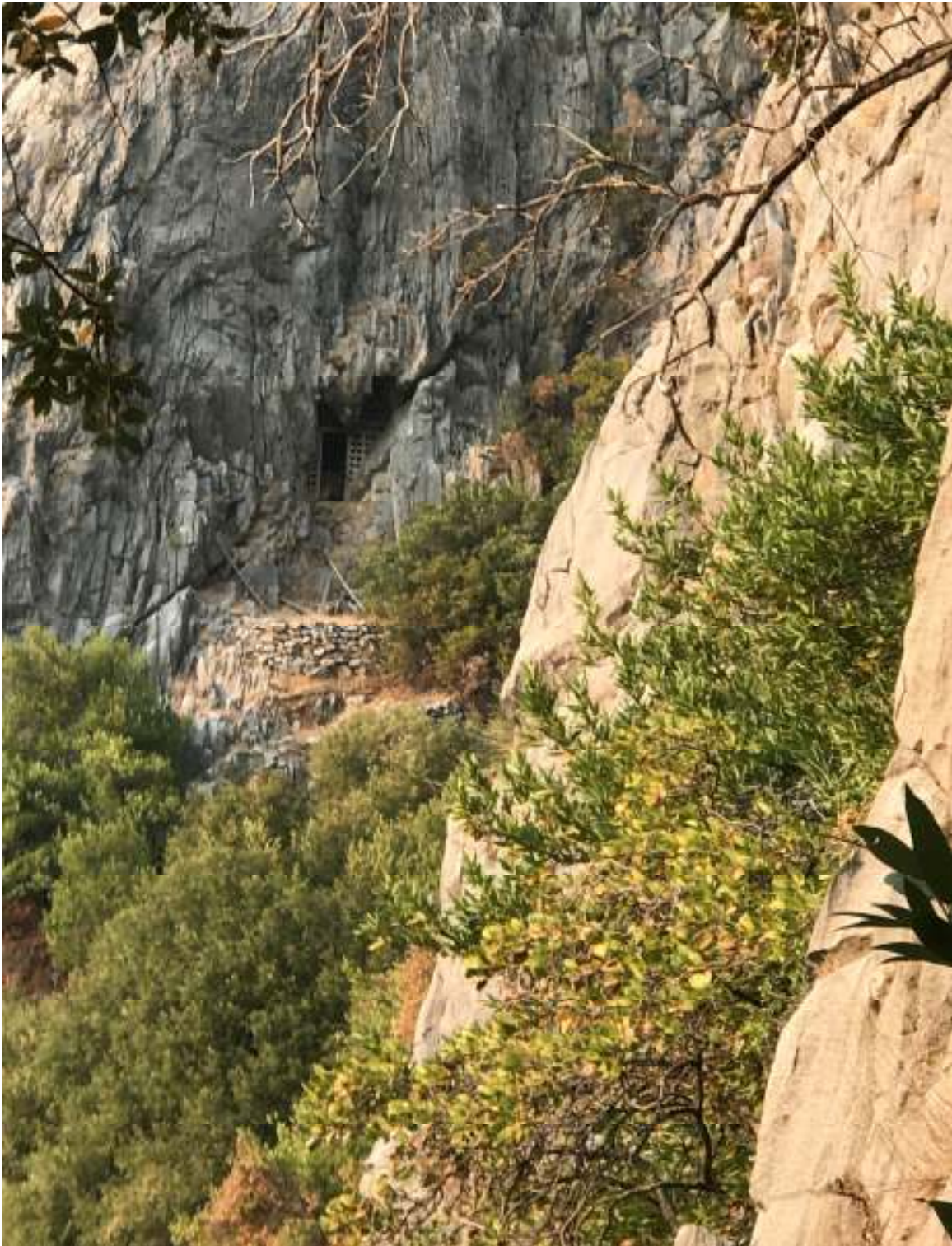
We divided into teams. Battery Cave was found years ago by Dave and other Caverns staff. He found an old type of battery near the entrance that dates from the World War II era revealing that they were not the first to see this cave. Battery is somewhat like Birthday in that it is large and short, and mostly a single descending passage. But the entrance to Battery is smaller and the cave a bit longer. The cave does appear to be an archaeological site, showing who was really here first. Battery has an upper level and a good number of nice cave formations. Birthday and Battery were both mapped that weekend. A lot of the area was ridgewalked and several obvious possible cave entrances were checked. We got more mapping tasks completed in the Caverns, and a good time was had by all.

Niles, Heather and Joel headed out for another day of ridgewalking upstream of the Caverns late in 2019. We did not find much that day, but Heather lost her phone, and we decided to undertake climbs to entrances in the cliffs up above the natural entrance to LSC. The next day we returned for phone searching and lead climbing. Heather looked for the phone and found it. Niles climbed and Joel belayed. There are several entrances in the cliffs and along a large vegetated ledge. Niles first led to the ledge, and then continued up from there with a climb that was hundreds of feet off of the ground due the very steep descending canyon below us. But he persevered, and we learned that these entrances do not go. The entrances were large and interesting but ended almost immediately in formation chokes. One very short passage wrapped around a dike of diorite in the limestone.

Late in the game James Newell and Mandy Voss joined us, and we brought a 25-foot extension ladder to the Caverns. The Dome Room in the Caverns has a very tall ceiling and an obvious large ledge up high that we wanted to explore. We drove the ladder to the parking area, got it down to the boat, across the lake, onto the bus, up the hill to the entrance and inside to the Dome Room. No problem. And as per our measurements, it was just tall enough. We put a belay on the top of the ladder and all worked to secure it in place. Joel headed up. Gulp. The belay was

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Natural Entrance to LSC by Heather Veerkamp 2021

reassuring as he slowly moved up. It was going to be awkward to get off of the ladder and steep and slippery to take the next step up, but he could see passage up ahead. Carefully he made the moves. It was not as awkward nor slippery as it had first seemed. And right at the top of the ladder on the right was an amazing cluster of helictites. Thousands, and some nearly a foot long. But the hoped-for passage was on the left. There were scuff marks. As expected, Joel was not the first one up on the ledge. There was a flat area a few meters square and a passage with many formations leading off along the same small fault that the Dome Room formed along. He climbed up and had a look. It continued for a few feet and ended in a solid flowstone choke. Oh well, now we know, and it is on the map.

We ended with 4592.8 feet or 1399.9 meters of passage in the Caverns and a depth of 229.4 feet or 69.9 meters. About 700 feet short of a mile. But the grand total does also include the excavated tunnels, which are not cave. We do still have a few small leads, but nothing that is likely to go too far unless we get lucky. Here are the overall totals for the segments in meters:

Historic Lake Shasta Caverns: 910.7  
Discover Level Cave: 332.8

Other small cavelets intersected by the tunnels

“high dome” (lower entrance tunnel): 10.7  
“clay dome” (lower entrance tunnel): 3.3  
“stair dome” (lower entrance tunnel): 9.1  
Crystal spar pools (stairs): 8.9

Excavated tunnels

Lower entrance tunnel: 86.9  
Crystal Room tunnel: 15.1  
Upper entrance tunnel: 16.1  
Thompson Room exit: 6.3

Cave Dave was always a great host and frequently helped with the survey when he could get away. He has fascinating and sometimes hilarious stories of the antics of tourists visiting the Caverns. Perhaps most significantly Dave has been determined by a group of enlightened visitors to be a demi-god for the Caverns. He protects the Caverns portal to the vast Lemurian realm beneath Mt. Shasta. Now that is promotion!

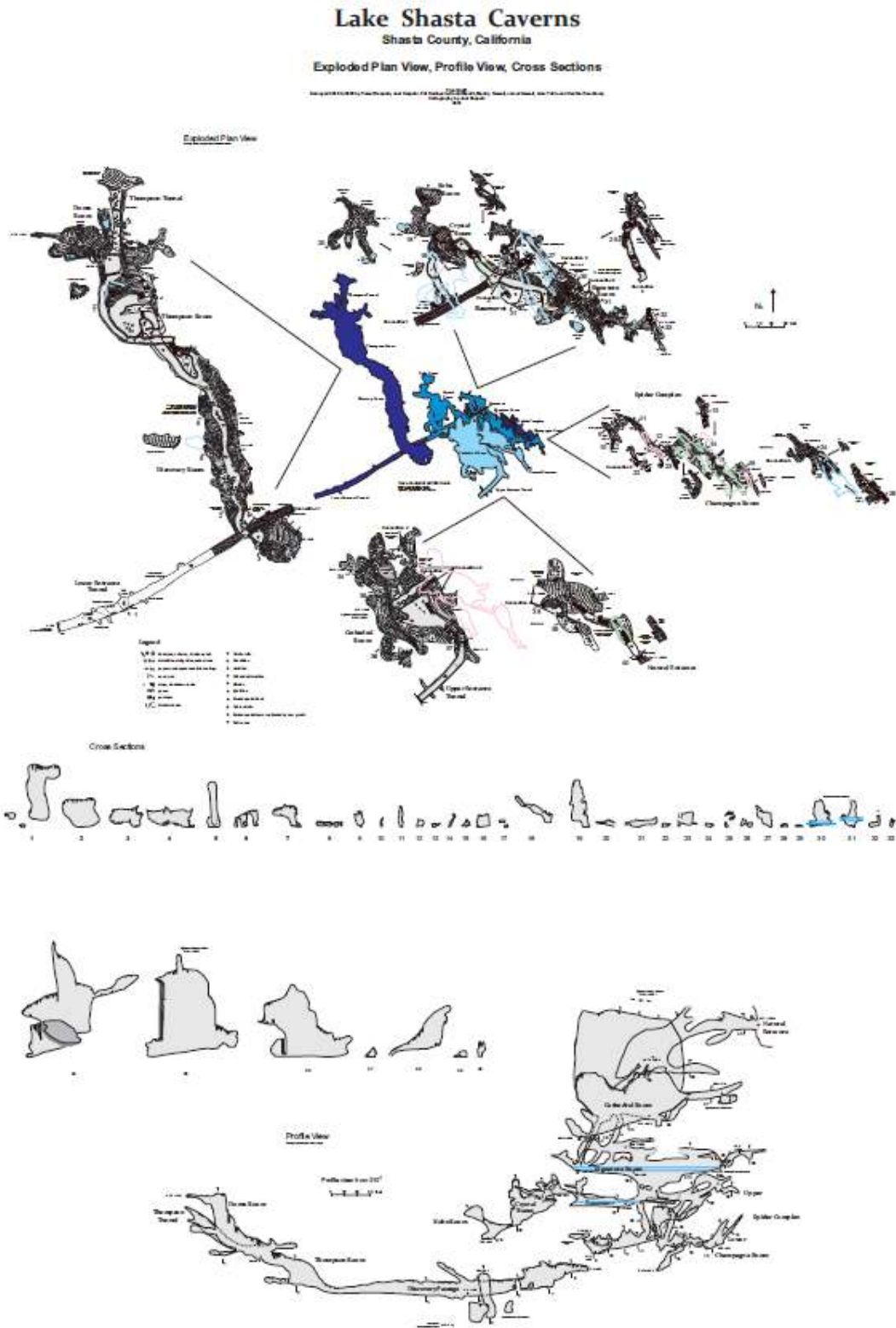
Another important issue for the Caverns is a great need for cave restoration. As with all tour caves, there was some destruction during development and a lot of rubble from blasting and construction was dumped inside. Hopefully in the future, we can organize some clean-up work. It will be rewarding work. It looks like there are lots of old speleothems to be uncovered beneath the rubble.

**JD&HV**



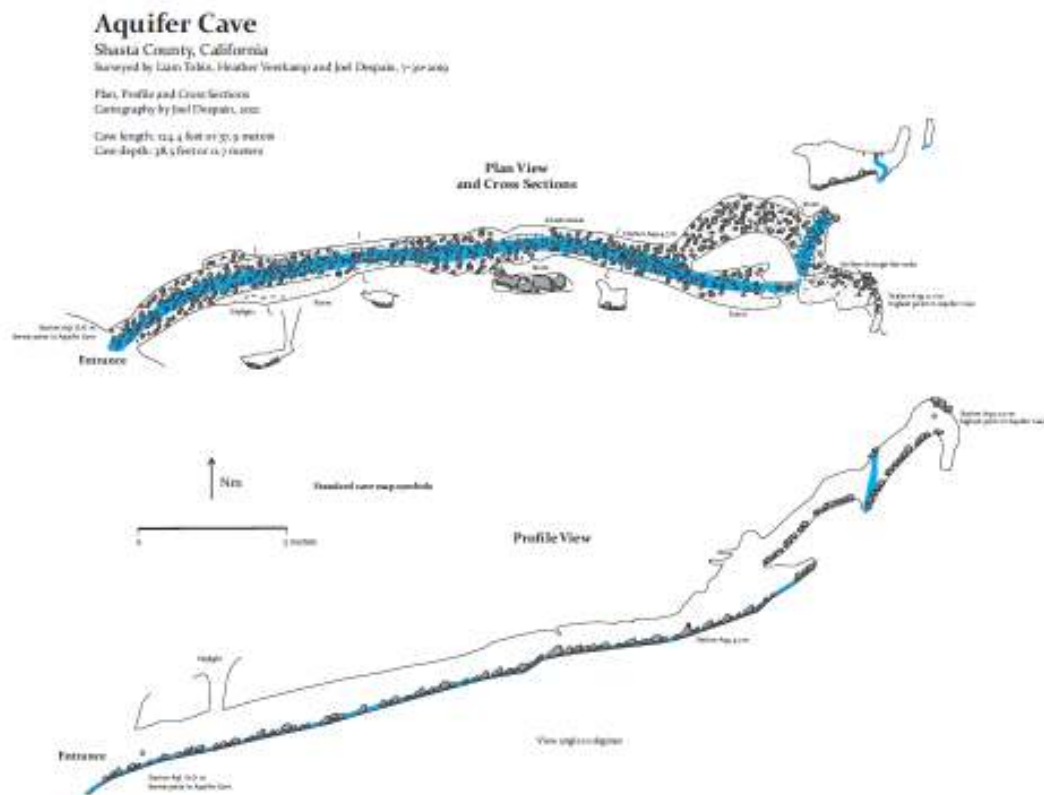
Sketching in Aquifer 1 by Heather Veerkamp 2021





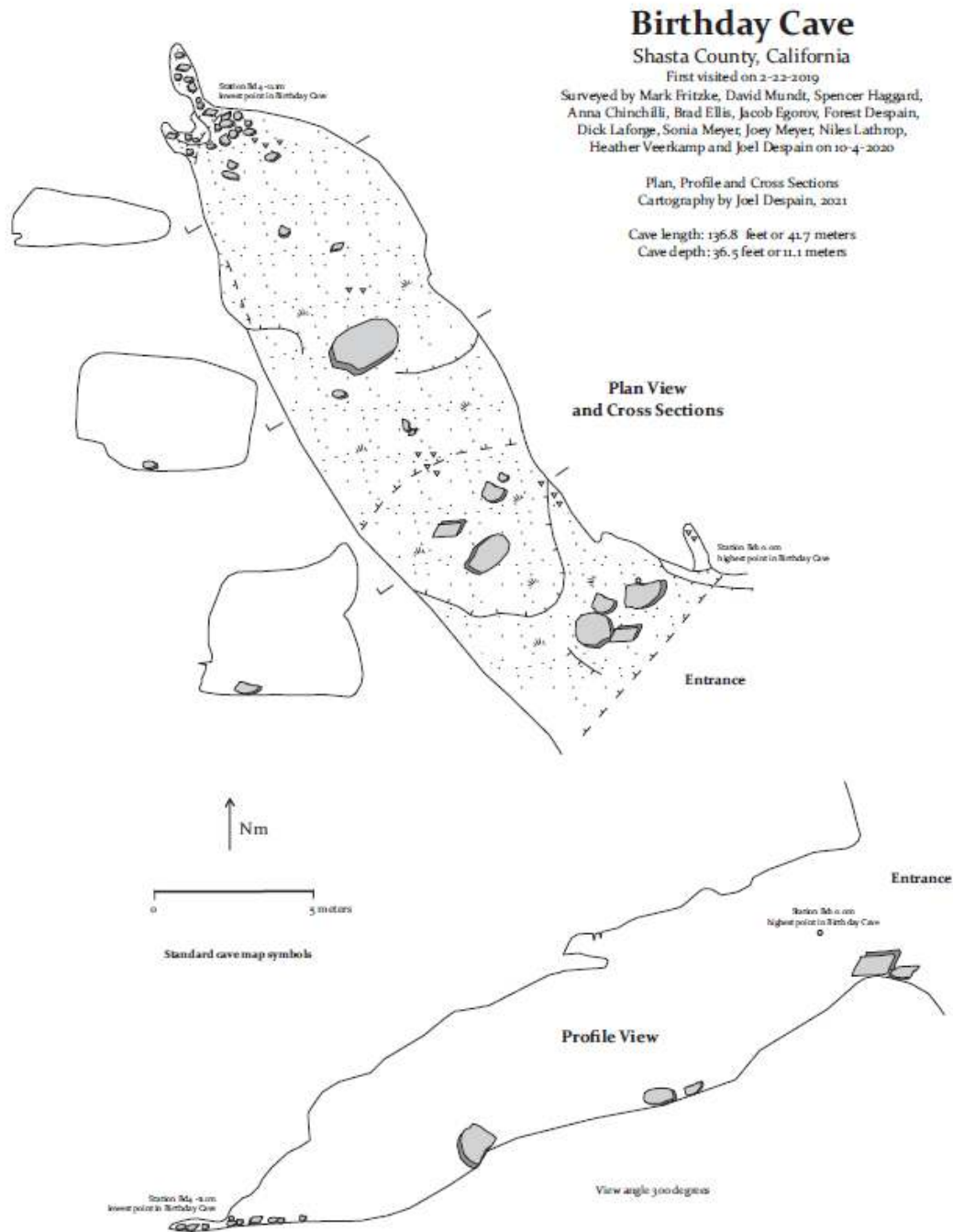


Sketching in Aquifer 2 by Heather Veerkamp 2021



Map: Aquifer Cave





Map: Birthday Cave



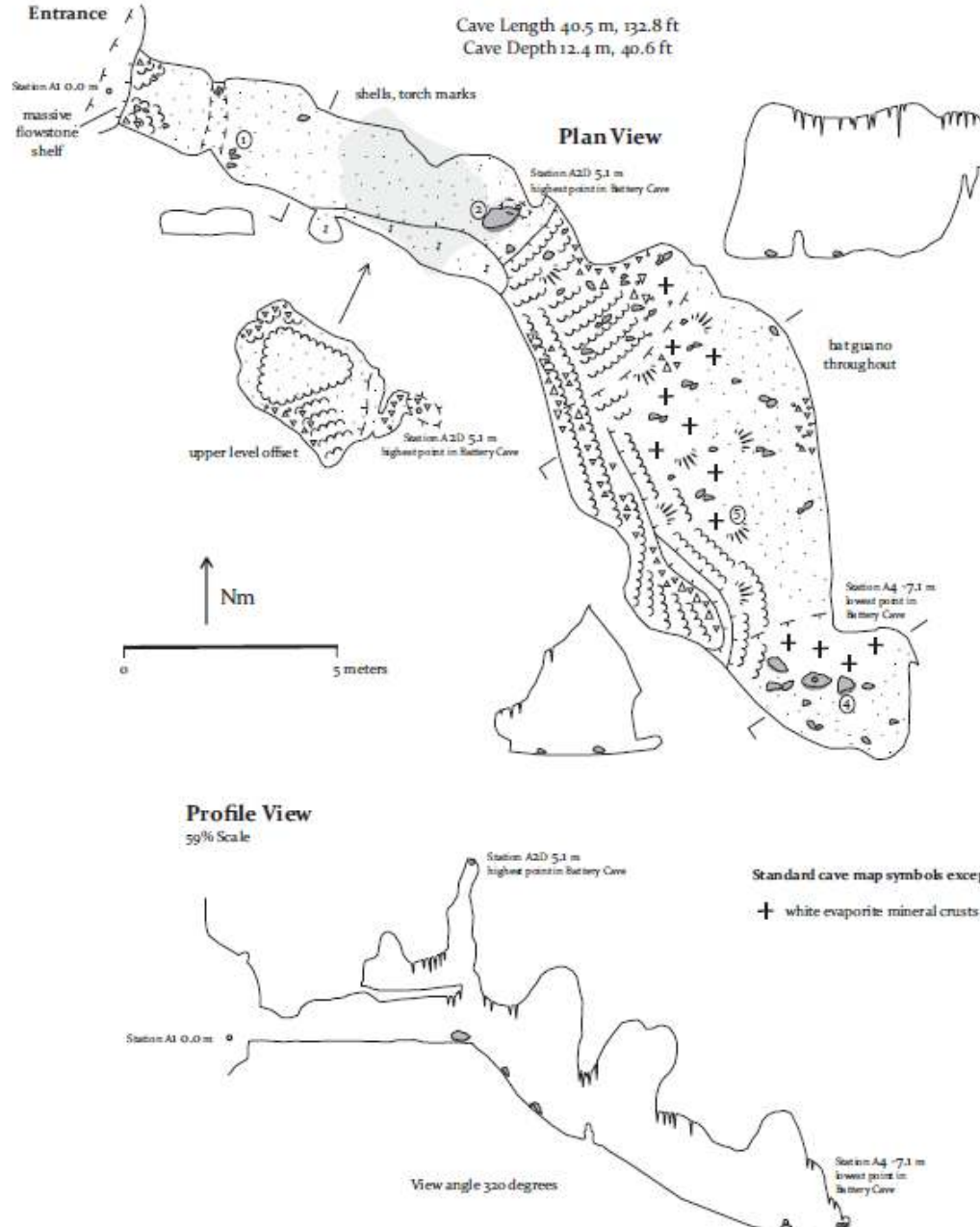
Looking out of Birthday entrance with team by Heather Veerkamp 2021

# Battery Cave

Shasta County, California

Survey by Heather Veerkamp and Joel Despain, 10-4-2020

Plan, Projected Profile and Cross Sections  
Cartography by Joel Despain



Map: Battery Cave



Battery Cave by Heather Veerkamp 2021





**Ridgewalking near LSC by Heather Veerkamp 2021**

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**STAMP**

**TO:**

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