Front cover: Dave Springhetti in Davenport Cave in South Dakota. All surfaces are encrusted in the spar crystals that are common to Black Hills Caves. Photo by Dan Austin.

Back cover, bottom: (L-R): Derek Bristol, Chris Pelczarski, Adam Weaver, and Nick Anderson in Wind Cave early this year. Photo by Hazel Barton.

**About the Cover**

It is election night and I’m working on the December President’s Column and wondering what direction the nation will turn. By the time you read this; hopefully, the election will be decided, and we can move forward. In 2020, the national has been divided and the pandemic has hit the country hard, but I believe we will emerge on the other side as a better nation but with sorrow in our hearts for those that have passed.

We are nearing the holidays and I just wanted to thank our many volunteers that have given freely of their time and treasure to the society. From volunteering to serve on our many committees, hosting the convention and many regional events, providing training and leadership in our many grottos, working on the Headquarters, representing our interests with local, state, and federal organizations, we are constantly trying to improve the society.

I also wanted to give a special thanks to Christy Starr and Michelle Vaughn, our two wonderful staff that work hard to provide our member services. They manage the bookstore, provide bookkeeping services, handle membership inquiries, and manage our headquarters property among their many duties.

I wanted to also thank our many donors that are supporting the society. From our Team 404 members that are helping to finance the headquarters, those that have named the society in their estate planning, those that have helped to fund our preserves, purchase caves, and donate to the society. Also thank you for helping fund the National Speleological Foundation’s NSS endowment.

And thanks to all our officers and directors for all they do for the society.

**NSS News Conservation Issue: Call for Articles**

Give us a heads up please! Send a note to valhildrethwerker@caves.org

- Length up to 2500 words or 15,000 characters+spaces limit.
- Send images as tiff or jpeg files, maps and illustrations as PDFs. Never embed images or figures into the document with text!
- Use the NSS News Submission and Style Guidelines
- Please email a notice that you plan to submit. Send all submissions to nssnews@caves.org and valhildrethwerker@caves.org
- Send submissions by January 15!

Describe conservation issues and accomplishments in the annual issue!

Val Hildreth-Werker
NSS News Conservation Editor

Hopefully, we will be able to control the pandemic in the coming months and gather at the NSS Convention in Weed, California this summer. Have a safe and happy holiday and hope to see you all in 2021.

Geary Schindel
NSS President

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**GIVE & WIN 2020!**

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Welcome to the Black Hills Edition of the News!

When most people think about the Black Hills, they think about Mt. Rushmore, The Sturgis Motorcycle Rally, or Badlands National Park. When most cavers think about the Black Hills they think of Jewel or Wind Cave. This issue doesn’t however focus on any of those things.

The Hills are often described as an island in the plains due to the Black Hills Uplift, during the Laramide Orogeny. Due to this uplift, the Hills are ringed by sequential layers of limestone, exposed to the surface and then dropping under adjacent formations. The uplift created an amazing area for rock climbing and also gave the majority of the caves their characteristic joint controlled pattern. The Hills—are full of caves! More than 400 of them have been discovered and mapped, but there are still large swaths of terrain that have yet to be ridgewalked. There are many interesting dig projects underway on holes that blow more than 20 mph. There are tiny crawls that lead to big halls, just waiting to be found. The focus of this issue is on the work done and continuing to be done in many of these small projects, centered around the last couple years.

Most of the work in the Black Hills, in both big caves and small, has been accomplished by the Paha Sapa Grotto. The Grotto is one of the oldest active clubs in the country and has been around since 1955, with its predecessor the Black Hills Caves, Madison Limestone, which is also home to Rapid City, flowing yearlong across the karst sections of the Black Hills.

Hughes wrote after interviewing the first grotto chairman. Like most clubs the Paha Sapa Grotto has waxed and waned over the years, but under its current leadership we’re thriving and working heavily on projects in both South Dakota and Wyoming.

In this issue, we also celebrate the formation of a new caving organization, the Black Hills Caves and Nature Conservancy (BHCNC). A group that created a new cave preserve in 2020, and has plans for more in the future. This new cave preserve finally puts the future of some Black Hills caves directly in the hands of cavers, and ensures that we will always have a place to get underground! For more about this group visit them at www.blackhillscaves.org.

If you are reading this issue and think that it sounds exciting, and that the Black Hills have a lot to offer, then I will also remind you that the NSS Convention is scheduled to be here in 2022. So, look for more information on that! I also want to take a moment to thank Nick Anderson who led the charge on getting this issue together. Without his leadership on the project most of these stories wouldn’t have been told.

As always, Cave On!

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**Dahm Springs Preserve**

Adam Weaver

In the late spring of 2020, in the midst of the pandemic, the Black Hills Cave and Nature Conservancy (BHCNC) established the Dahm Springs Preserve. This preserve is the culmination of work by many dedicated cavers over the past couple of decades, and this work of course comes with a story.

**The Land**

In the Black Hills, most of the population relies on the Madison Aquifer for its drinking water source. This aquifer resides in the Madison Limestone, which is also home to the majority of the significant caves in the region. The Black Hills are ringed by this limestone, and many of the surface streams of the area have a large loss zone as they cross this geologic unit. Rapid Creek, which by definition is actually a river, is the exception and is a primary source of water to Rapid City, flowing yearlong across the karst sections of the Black Hills.

The Dahm Springs Preserve is tied heavily to the karstic hydrology of the Madison and Rapid Creek. The 45-acre preserve is a rectangular parcel of land that contains nearly all of Thompson Canyon (also known as Boundary Gulch), which is an intermittent tributary of Rapid Creek. The preserve ends about 500 yards from the canyon’s mouth and contains the 1.5-acre section where the canyon intersects Rapid Creek itself in Dark Canyon.

...and its History

In the early days of the Black Hills, gold mining was the main driving force bringing people to the area, but by the late 1890s tourism began to bring folks to the area. With a vast network of railways built for mining, it was a natural step for rail tourism to bring people to the wilderness of the hills. The “Crouch Line” of the Black Hills and Western Railroad was constructed through Dark Canyon along Rapid Creek to allow people of the time to experience the rustic beauty of this canyon. This line eventually traveled to the town of Mystic, which was a large hub of the time. In Thompson Canyon, a rail spur was installed to allow for logging in the large swath of forest bisected by this canyon. The Black Hills and Western Railroad expanded its business over the years, flourishing in the 1910s hauling people, coal, and lumber, but by 1920 had fallen on hard times. By 1940, it was operating only as a tourist attraction with the Crouch Line as its last operating line. This line continued to show the beauty of Dark Canyon to local tourists until the end of the 1946 season, and then operations closed for good.
As locals continued to explore the hills for both gold and pleasure, the Black Hills National Forest was established, and eventually grew to manage Thompson Canyon. As nearby communities like Rapid City grew and automobiles and roads took the place of old rail lines, the Black Hills became more accessible to people looking to explore on the weekends. This trend was also true in Thompson Canyon and led to the discovery of Crystal Lake Cave in the early 1950s by students of the South Dakota School of Mines. The cave had many crawlways and large passages, and of course two large crystal lakes that are now known to be the surface of the Madison aquifer. Eventually, John Brooks created the first map of the cave, after exploring nearly all of its known passage. Often early trip reports, and subsequent maps referred to the cave as Brooks Cave. By the 1960s, the cave and the canyon were favored by the local community, and this location was a favorite of the newly formed Paha Sapa Grotto. The cave was even one of the day trips highlighted at the 1967 NSS Convention. As the grotto grew and expanded into the southern hills, they visited the cave less frequently.

With little or no organized caving happening in the canyon, it was left to the spelunkers. In the following years there were a number of near misses, falls, accidents, and lost folks in what was now called Brooks Cave. Each time the Paha Sapa Grotto came and helped rescue folks from the cave, it yielded many interesting newspaper headlines.

Eventually, Thompson Canyon and the surrounding land was sold to private interests by the USFS and five of the forty-acre tracts were purchased by Curtis Dahm. Between this purchase and the late 1980s the cave and land continued to be a favorite haunt of many local youths, and became a party cave. When the cave was visited by the Paha Sapa Grotto in preparation the 1988 convention, it was clear that something had to be done. During and after the 1988 NSS Convention, truckloads of garbage were hauled out of the cave and the cave was restored to some of its former glory. The cave was then gated by Dave Springhetti and the local grotto, earning the appreciation of Curtis Dahm and his wife Marilyn. From this point forward, the cave remained protected and the grotto made periodic visits over the years, taking many new cavers to see the lakes with Marilyn and Curtis’ permission.

In the 1990s a few interesting things started to happen in Thompson Canyon. First, the USGS got interested in the aquifer lakes of Brooks Cave and installed a monitoring station in the cave. This interest led to a large amount of data being collected which correlated the lake/aquifer level to both precipitation and the levels of Rapid Creek. Second, a flood event in the canyon washed out parts of the road that was built upon the railbed and the canyon become less accessible. Finally, and most importantly, Mike and Greg Hanson became interested in the Canyon.

Mike and Greg were local cavers who spent an extensive amount of time mapping Stagebarn Cave and looking at (and finding) many of the caves of the Black Hills. They asked the Dahms for permission to look at the rest of Thompson Canyon for more caves, because there were a lot of holes in the limestone walls. This ridgewalking led to the official discovery and subsequent mapping of the rest of the caves of the preserve and a few other caves on surrounding lands. These caves include Doggone Cave, Brooks Junior...
Cave, Bat Cave, God Offul Cave, Hungry Cave, Big Shelter Cave, and the hidden jewel of the canyon; Dahm Spring Cave.

Dahm Spring Cave is special for many reasons. The cave is in an unlikely spot on a hillside and contains a very large perched pool that is fed by a small spring. The pool, which has a calcified bottom, is host to a number of paleontological specimens that include a raccoon and a giant centipede. Aside from this, the cave has some of the most plentiful and pristine flowstone formations in the region. Because the cave was found so recently, and prized for its beauty, it has been carefully managed by the Dahm family and the local caving community.

After this discovery, Grotto members became close friends with the Dahms. Mike, Greg, and Dave continued to talk with Marilyn and Curt over the next few years, and even filmed a video of Dahm Spring Cave to show Curt shortly before he passed away. For many years, the grotto worked with Marilyn to help care for the caves, and visited them periodically. A number of grotto meetings were held at Marilyn’s house, and Dan Austin led an effort to make the modern maps of Dahm Spring, Brooks, and Brooks Jr Cave that we have today.

Making a Preserve

By 2012, Marilyn was starting to get concerned about what would happen to the caves when she wasn’t able to care for the land any longer. The idea came that the land should be preserved permanently to ensure the caves would always be protected, and Marilyn initially approached the Nature Conservancy; it was not interested in a preserve at that location. Marilyn talked about this to the local caving community, and Mike and Greg Hanson, Dan Austin, and Dave Springhetti started working on the idea that we should make the land an NSS preserve. The NSS and the Paha Sapa Grotto with Dan Austin as chairman were all for this and created the “Boundary Gulch Committee” to make it happen. However, by 2015, this project had run into a number of logistical difficulties, stalled, and local proponents of it had lost faith that it would ever come to fruition. By the end of 2015 after 3 and a half years of work the “Boundary Gulch Project” ended with no preserve, and only Mike Hanson still hopeful.

A few years went by and the Grotto leadership had cycled to a new enthusiastic set of officers. With Chris Pelczarski as Chairman and Adam Weaver as Vice-Chair, the Grotto started to rapidly grow in members and to take on new projects. During this time, Mike Hanson encouraged them to take back up the project with Marilyn, because through his continued conversations with her, he knew she still had hopes of creating a cave preserve. Chris and Adam saw this as a way to ensure Black Hills caving could continue indefinitely, and started trying to figure out the best path forward. They struck out initially trying to work with the NSS, and when they talked to Dave Springhetti, he advised that he was not willing to attempt the project again due to the poor outcome of the previous project. These difficulties gave them some pause, and a month or two went by before they were again urged by Mike Hanson.

After a number of discussions, they decided that the Grotto was going to need to do the project on its own. Adam and Chris started working on the process of becoming a 501c3 to assist in the amount of fundraising needed. Adam also convinced Chris that Ken Steinken was the perfect grotto member to be the point person for the land negotiation. Ken, a retired teacher and retired cave guide, was one of the kindest people he knew and had a long-time devotion to the protection of natural resources. He was also integral in creating a park in Rapid City; all qualities that would be useful in this endeavor. It was easier to convince Ken to do this job than expected, and then they just had to find the best way to re-introduce the idea as a grotto project, and coincidentally Ken, to Marilyn. To do this, they tricked Dave back into the project by asking him to just make the introduction of Ken to Marilyn. Dave has since been a part of the project every day after this first meeting.

From this point forward, Ken became the main point of contact working with Marilyn on the project, with Dave often present to lend continuity to the situation. As Ken worked with Marilyn, Adam, Chris, and Dave were working furiously trying to
find the best organization and organizational structure to hold the land. It became clear that the grotto was not going to be able to do this effectively and the process went through a number of iterations that led to the creation of a couple of 501c3 organizations, and many meetings that sometimes got us no closer to the goal. Eventually, Adam and Dave talked and decided to create a new conservancy and to hand pick the board of that conservancy. The next day, Adam registered the Black Hills Cave and Nature Conservancy with the state of South Dakota, and he and Dave met with the lawyer to finalize the new organizational paperwork. From that point forward it was just a matter of time, paperwork, money, and some hand-wringing to make the preserve a reality.

When it was clear that the project would finally be successful, the BHCNC again approached the NSS to make this land and its caves an NSS Preserve. This was meant with enthusiasm by the NSS and in July of 2020, the NSS and BHCNC boards signed an agreement to jointly manage these seven caves and the land above them. The hope with this relationship is to combine the local leadership of the BHCNC with the longevity and experience of the NSS to ensure that the caves are protected in perpetuity. And of course, also ensure that cavers can visit these caves forever!

The Future

Moving forward we hope to do a number of projects on the land and will be remapping some of the caves on the preserve. There is also a likelihood for additional caves to be found in this large limestone canyon. We are continuing to fundraise, with hopes of paying off this acquisition prior to the 2022 NSS Convention, which is slated to be in Custer, SD. If you have interest in contributing to this fundraiser or learning more about this exciting new cave preserve please visit us at: www.blackhillscaves.org

Dave spins a yarn about the only known dive trip in Brooks Cave by the lake.

Profiling the Microbial Communities of Brooks Cave

Researchers from the Massachusetts Institute of Technology are currently studying the Bacteria, Archaea and Fungi that live in Brooks Cave. Cave microbes are hard to study because they tend to be both less plentiful and harder to access than their surface-dwelling counterparts. By employing modern molecular techniques and Next Generation Sequencing technology, the MIT researchers studying Brooks cave were able to identify 56 Orders of Bacteria and Archaea using less than 0.3 liters of water from Brooks Cave Lake. Their primary goal is to establish a cave-specific microbiome - a list of the microbes typically found in Brooks Cave. A Voronoi Tree-Map Diagram detailing the microbiome of Brooks Cave Lake, is shown below. Researchers hope that monitoring changes in the type and number of microbes in Brooks Cave can help geologists understand more about the source of the water in Brooks Cave Lake. You can see the full article detailing this research on the NSS News Extensions page: https://caves.org/pub/nssnews/MicrobialCommunitiesinBrooksCave.pdf

Riley Drake

This Voronoi Treemap Diagram shows the relative abundance (indicated by the size of cells) and the Class (indicated by cell color) of Bacteria and Archaea found in Brooks Cave Lake during two sampling campaigns in June 2019 and October 2020. The image was generated by David Yang and Riley Drake using the SysbioTreemaps package as released in July 2020 by Michael Jahn, David Leslie and Ahmadou Dicko and R-Studio (R-Studio Team, 2020).

Riley Drake (Shalek Lab, MIT) and Olivia Hershey (Barton Lab, University of Akron) taking water samples from Brooks Cave Lake in June of 2019.
The first tourist cave in the Black Hills of South Dakota was opened in 1890 under the name “Mammoth Crystal Cave.” This cave is located north of Rapid City, SD, near a community called Tilford. Tourists came to this cave on a rail line that took them up Dry Elk Creek Canyon and stationing below the cave, tourists then traversed up the steep canyon walls.

Mammoth Crystal was the first one of these caves to go “big.” It was the biggest crystal cave in the region for nearly 70 years, until Herb and Jan Conn began mapping Jewel Cave. In the years following its opening for tours and initially mapping, many other show cave operations opened, with the attempt to capitalize on this cave’s regional fame. Many of the Black Hills caves are characterized by calcite spar coating covering the cave walls and a network of interconnecting maze passage that often consists of a fair amount of crawling. Stagebarn Crystal, Diamond Crystal, and Sitting Bull Crystal Caves all capitalized on this trend. The overabundance of similarly named caves led to this cave changing its name first to “Old Crystal Cave” and finally to “Bethlehem Cave.” Eventually, however, the cave’s relative remoteness, more than its name, likely led to it ending show cave operations indefinitely.

The Paha Sapa Grotto started going to Bethlehem in the 1970s. The grotto signed up to map the cave, and one of the early trip reports cited that “Bethlehem cave is where the Paha Sapa Grotto lost its innocence.” Bethlehem is a big cave, and I believe the grotto of the day didn’t realize what they were getting into when they started the project. These surveys in the 70s and into the 80s culminated in a very nice map produced by Mike Hanson. This map contains a little over 3 miles of passage in Bethlehem, with the vast majority of it being mostly pleasant walking passage. The cave in this map contains a number of large, crystal-covered rooms, large pools of water, and a lot of unmapped crawls.

Eventually, the grotto and the local caving community, through some odd circumstances, lost contact with the cave owners. In 2016, Chris Pelczarski and I tried to do a number of things to figure out how to get back to Bethlehem, but never found the right contact. The grotto even went so far as to appoint someone at a meeting to look into this, but nothing came from that. Finally, after the pandemic started, while working on another project to find the owners of Rowe Cave I found a key piece of information. A couple of phone calls later, and I was able to talk to Kurt, the current owner of the cave, and the spectacular property around it. I was amazed to have even gotten him on the phone finally, and I awkwardly tried to explain to him what the grotto had been up to for the last 15 years. Luckily, Kurt was an extremely nice guy who had previous good experiences with the grotto. We were back in the cave for the first time in more than a decade!

Kurt liked that we wanted to make a new map of the cave with Disto-Xs. As we got to know Kurt better, he often told me that he didn’t understand why we were spending so much time doing this. I would always try to explain, but the joy of survey can be a hard thing to explain. Since what I believe was the first survey attempt in 1935, the cave has had at least five different efforts to complete a full map, with only the map by Mike Hanson being successful. As we started working on this project, we went on the first trip with Nick Anderson, Chris Pelczarski, Rene Ohms, and myself. As two teams of two, we surveyed about 1000 feet on this trip with 200 feet being new survey. Nick and I surveyed both entrances, as well as a large crawl section that was not contained on the original map. Chris and Rene went through “fat man’s misery” a small crawl that led them to the section of cave below the first big room of Bethlehem. We were overall excited about the project and returned the following weekend with Dave Springhetti and Colton Mumma. On this trip, Nick, Dave, and I surveyed into the top of the big room and quickly discovered the complexity that this cave had to offer. The first big rooms called Poverty Flats were 60-80 feet wide, but only 7 feet tall with a shape like a parabolic curve. Eventually, our team connected to Rene, Colton, and Chris, who had made their way up from the bottom of the room through some complex breakdown maze. On this day, we surveyed another 1300 feet, with about 300 feet of new survey, and had gotten the entrance series completed. Our team got into some of the other passages that spiraled below the large rooms on this trip. This complexity made me think about those old grotto trip reports and how Bethlehem at first seems like an easy cave to survey, but then at every turn more cave is found.

The cave, as most know it, has three distinct sections. The tour route was largely created in the 1890s and then improved over time. The recreational Poker Chip route is marked with poker chips and covers about a mile of cave, going under and forming a figure 8 with the tour route. And, the far north, where many of the largest rooms in the cave are, but only a handful of visitors have been. Over the next couple of months, Chris and I started leading more sporadic trips with his teams working in the large maze of cave under Poverty Flats and my teams working north.

Eventually, Nick and I talked Derek Wolfe into coming up from Colorado to help out. On Derek’s first trip, we were able to map 3300 feet, the remainder of the Poker Chip route, finally giving us a backbone of survey through the center of the cave. Derek came for two additional day trips, where we were able to survey an additional 6,000 feet of cave and really define the cave shown on Mike Hanson’s previous map. In this process, we also surveyed another 2500 feet of new survey and found a 50-foot virgin dome that we have plans to climb in the near future.

The re-survey project of Bethlehem has been a really exciting diversion for us in 2020, and it’s just coming into the most exciting part. Now that we have just over 3 miles of survey completed; we are pushing into these crawls that were left by the previous teams. Although moving forward in the project, the size of the passages will be smaller and grabbier, the chance for a new breakout area is extremely high!

Above: Lydia Austin beneath boxwork in Bethlehem and facing page, upper left, the Shrine Room in Bethlehem Cave. Both photos by Dan Austin.
Caves of the Forest

Adam Weaver and Nick Anderson

Introduction
In the Black Hills, most thoughts and efforts drift towards Wind and Jewel Cave. But, the rest of the Hills are also full of caves. The Black Hills National Forest itself is home to more than 255 caves. These caves are seldom visited, and many of them have been looked at only one or two times. Over the last few years, we have been revisiting and mapping many of these caves, hoping we will find the next big thing. It hasn’t happened yet, but we’ve had lots of fun trips trying.

Hanger 18
Nick Anderson

Dean Faust and Carter Hall originally found this small cave. In Carter’s words, “This small cave had me thinking big. It has a great opening, lots of mossy rock, and we saw it steaming on a bitter cold day. What more can you ask for?”

Excited, Dean, Adam, Dave Springhetti and I ventured out again to rediscover Hanger 18. I personally would not describe the entrance as great. In fact, it took us several hours to rediscover the entrance. It had filled in with debris over the years. When we finally determined we were in the right spot to open the cave back up, we noticed a swarm of bees hanging out that Dave described as, “ah yes, they appear to be ground bees.”

We had already been hung up getting to this cave by unexpected bridge closures, hiking around, and digging. Ground bees were my final straw. Nonetheless Dave and Adam persevered, and we pushed through the debris to gain access to indeed a very nice room. Unfortunately, none of the tight spots appeared to go, and we completed a quick resurvey and left—already talking about our next evening night cave trip.

Ice Cave
Adam Weaver

To be clear, this cave is cool. I didn’t intend for that to be a pun, but the cave does get its name from the large ice column that forms in the cave each year, usually disappearing by the end of June. This column forms due to a small sinkhole above the cave, that serves as a cold air sink. The cave is essentially one large room with a small crawl at the end, but it is over 250 feet long. So, its pretty impressive for a one-room cave. This was the first cave resurveyed for this project, and probably still my favorite map of the project (see map, page 9; digital edition viewers can zoom in for more detail).

Blue Rock Crystal Cave
Adam Weaver

This cave was a long-term party destination for the high school kids of Sturgis, SD. A few years ago, the grotto and USFS removed all of this trash and cleaned up the cave over a 3-day effort. The cave was then gated and closed. A couple years ago we were teaching a USFS cave training class and took the opportunity to survey this cave. It was great, because we did the in-cave portion of the course at this cave where we could talk about both cave survey and cave restoration.

Sourdough Cave
Nick Anderson

Sourdough cave was originally mapped by Dave & Lottie Anderson, Rick Bogue, Mike Hanson, Terry Rasmussen of the Paha Sapa Grotto back in 1991. Although historical records suggest the cave was known about in the 1960s and once even contained a small placer deposit of gold. Remapping this cave was a huge accomplishment to cross off the list. Not because it was significant or large, but because it was across the street from Adam Weaver’s house and we had kept finding an excuse not to do it. Finally, Adam, Sharon Weaver, Emily Mammenga and I ventured across the street to knock out this 150-foot cave. While no placer deposits were discovered, Sharon and Emily got underground and were able to practice some tricky vertical maneuvers, and make some attempts to use photogrammetry on fossils in the cave.

Blackhawk Cave
Nick Anderson

Originally surveyed in 1989 by the Paha Sapa Grotto, I returned to Blackhawk Cave to verify its location and work on my sketching. What should’ve taken an hour to map, I spent over 4 hours working on my sketches for under 150 feet of cave. It would’ve been a pleasant cave to sit in if it wasn’t for the family of dead skunks at the bottom of the pit and the mountain lion tracks into the back room. There is a small dig at the back with slight air, but not enough to warrant any major dig attempts.

NSS News, December 2020
Hideaway Hills: Where the Dangers are Double

Nick Anderson; photos by Dan Austin

I had finally settled into my working from home routine one morning in late April when Adam Weaver called. Ignored it as this was not an unusual occurrence and we had no upcoming cave trips. Within 15 seconds, I received a text that said, “Borehole! Call Me.” That is usually enough to get me to stop whatever I’m doing. What happened over the next few days is still incredibly bizarre to me.

As it turned out, a massive sinkhole had opened the night prior in a residential development just minutes north of Rapid City in Blackhawk, South Dakota. Adam had called Emergency Management (EM) officials and offered his caving specialties to help the county assess and deal with the situation. EM agreed and within the hour Adam, Dave Springhetti, and I had gathered our Borehole Response Kits and were on the road.

The collapsed area was pretty large, approximately 40 feet by 40 feet and 60 feet deep. It was also immediately evident that there was a void at the bottom of the sinkhole. Our first concern was safety. While the ground had given way, the sidewalk hadn’t caved in and was free hanging over the entrance. Quick work with an excavator knocked out the sidewalk, allowing Adam to make the initial descent. He carefully navigated his way through the debris and dropped out of sight into the void and shouted back, “you got to be kidding me.”

Now excited and needing no further invitation, Dave and I quickly dropped down the rope and had the same sentiments as Adam. The void was incredibly huge! I thought to myself, “This is what every caver hopes to find!” But reality struck in the next 30 seconds as my eyes adjusted and I noticed garbage, blast marks, and a rail cart. It wasn’t a new cave—it was a mine and the sinkhole was a mine collapse! We became wary after noticing the multiple ceiling collapses and fracturing pillars. Dave, Adam, and I created a quick sketch of the mine and planned to return the next night with two teams to map the extent of what we could safely access.

The next night was quite the event. Dan Austin, Chris Pelczarski, Rene Ohms, Karl Emmanuel, and Ken Steinken came out to map, look at the geology, and photo document the mine. We were met with over 100 people waiting, including homeowners, firefighters, search and rescue, geologists, and countless others, all waiting to see what we would find.

The results were shocking. We could safely navigate a room system held up by pillars that stretched 650 feet long and up to 150 feet wide. The mine’s full extent is still unknown as several passageways were sumped but still have rail cart tracks heading off into them. Numerous collapses prevented exploration down multiple side passages. There was even an abandoned car that collapsed in at some point, identified as a 1954 Ford Crestline Sunliner.

It has been determined that the mine is an abandoned gypsum mine that dates back to the 1920s. There have been numerous reports of other stability issues in the area. Unfortunately, 15 homes have been evacuated and there is still no relief for the homeowners. There are now two multi-million dollar lawsuits pending over this disaster.

The whole situation remains strange in my mind as the story picked up national attention and many of Dan Austin’s photos went viral. Karl Emmanuel, a geologist who extensively studies sinkholes, gave an update on sinkholes for the Paha Sapa Grotto at a meeting that reached well over 500 viewers. The grotto membership swelled with people asking us to take them to the mine. We spent many hours explaining that the Paha Sapa Grotto explores caves and that we would not mine exploring. At the end of the day, I and the other cavers who went into the mine were happy to provide our experiences and expertise with underground exploration and help everyone better understand and deal with this unfortunate situation.
Winter is coming and Colorado caving is coming to a close as most Colorado caves become inaccessible due to closed roads and snowpack. Although these Colorado options wane, the opportunity for new projects with convenient access becomes available in South Dakota. Only a short 6-7 hour drive from my home south of Denver, Adam Weaver approached me and asked if I would be willing to help with a resurvey project for a short, scrappy cave with “only” 2,400 feet. I agreed and we formulated the Mystic Cave resurvey project.

Mystic Cave is located ~500 feet north of the well-decorated tourist attraction, Rushmore Cave, and is vastly different in character. Mystic is crawly and mostly void of decorations, while Rushmore’s passage is larger and pretty. The two caves are incredibly close to connecting, within 100 feet, but currently has no known connection.

The project was ambitious. At just over 2,400 feet, Adam surmised we could knock out the resurvey in a short weekend with three survey teams; I’ll admit, I was skeptical. Nevertheless, we began our survey on a surprisingly warm November Saturday with three groups of surveyors comprised of 10 cavers. Diplomatically and strategically placed, we started our survey. My team started from the entrance while the other teams started from different locations throughout the cave. Almost immediately, we started our crawling to belly-wallowing survey.

Due to the dusty nature of the entrance series crawl, respirators or dust masks are required to avoid hardened, dirt-filled boogers that can last for days. Surveying in such flour-like dust is even more enjoyable. A solid 300 feet later, we could finally stand up into the Mask Room, where we and everyone else ditched their dust masks. Some walking survey rewarded our efforts until meeting up with a second survey team who were taking a break and retreating from some extremely tight fissure survey. That team was composed of the smallest members to push those fantastic back twisting, chest compressing leads. Not something I can do with my husky 150 lbs of mass.

My team continued through another enjoyable crawl series, The Uglies, until reaching the largest room in the cave, Grand Hall, and the third survey team. It was getting late and it was apparent that we weren’t even close to finishing the cave. We all exited the cave after 11 hours of knee-tenderizing crawls. Upon our exit, we concluded that we had only surveyed around half of the cave—our first day of effort produced a
combined, impressive 2,625 feet of survey – and exceeded the previously known survey length.

I returned the following day with only two hardened soldiers for more crawling and some walking passage and collected another 1,154 feet; the others were smart and stayed home. We liberally consumed Advil on our exit. Over the next two months, four more trips were required over a series of weekends to complete the survey, bringing the cave length to a total of 5,947.4 feet. This doubled the old previous survey and made Mystic the 9th cave in South Dakota to exceed 1 mile. A single weekend survey, hah! We pushed every identifiable lead and discovered some new passages. All that remains are a few digs for some ambitious cavers of the future.

Over eight survey teams and trips—with a collective 212 hours of combined labor—finished the project. I want to thank all of the survey participants: Nick Anderson, Kevin Chase, James Cobb, Sandy Cronin, Amy Fowler, Victoria Hagg, John Lang, Kelly Mathis, Rene Ohms, Ethan Oleson, Chris Pelczarski, Jessica Reese, Chris Sterling, and Adam Weaver.

History

The early exploration and discovery of the cave were documented in the Carbide Flash articles in the January 1981 and January 1982 editions. Discovered in the summer of 1980 by Ken Allgier and Vern Novstrup—members of the Paha Sapa Grotto—Mystic Cave was a shelter cave with only 25 feet of known passage and was referred to as “Bat Cave.” Due to the numerous other “Bat Caves” in the Black Hills and the cave’s mysterious qualities, it was later renamed Mystic Cave. Motivated by slight airflow, Ken and Vern started a several-day dig which broke out into 100 feet of stooping passage leading to a tight spot. More digging yielded more crawling passage, the Salamander Crawl. Ken remarked, “a salamander almost scared me out of my wits.”

The Salamander Crawl ended at a small triangular hole through which Vern couldn’t fit, necessitating more hard rock digging. Armed with Mr. Stanley, their 2-pound sledgehammer, the duo returned and broke through—now the Birth Place—to yet another dig. Fortunately, easy soft rock digging broke through to the cave’s first standing passage, The Standing Room, now referred to as the Mask Room. A breakout was finally accomplished.

Exploration continued through numerous leads in the 1980s, mainly motivated to connect Mystic Cave to nearby Rushmore Cave. The first survey and map were produced by 1982, scaled approximately 1”:48’, and displayed approximately 2,400 feet of passage.

Geology

The soluble bedrock in which Mystic Cave is found is within the extensive, thick Madison Group Limestone—regionally known as the Paha Sapa Limestone. An ancient sea deposited these sediments between 340 and 360 million years ago as part of a large barrier-reef complex. This series of thick reef carbonates was deposited on a relatively thin series of horizontal Paleozoic sediments previously deposited on the elevated Precambrian core of the Black Hills uplift.

The bridge in the Grand Hall of Mystic Cave

The meta-igneous and meta-sedimentary rocks of the core are dated from 1.7 to 2.5+ billion years old and have been complexly folded and faulted.

The most recent regional uplift began approximately 60 million years ago (the Laramide Orogeny) and accounts for the Black Hills’ current topographic relief. This topography possesses an elongated dome-like geometry that generally follows a series of ancient structures within the Precambrian. Sediments typically overlap the margins of the uplift and are exposed outwards from the core area. One of the thickest and most characteristic sediment horizons exposed is that of the Madison Group’s limestones and dolomites.

The bedrock near Mystic Cave tilts away from the core at an approximate 5° dip towards the east and southeast. Upland precipitation followed by freshwater infiltration during the last 30-40 million years has been channeling carbonic acid generated from atmospheric and soil horizon sources into the fractures and void spaces of the Madison Group rocks. These solutions have been responsible for ongoing solutional enlargement within the carbonate bedrocks of the uplift.

Many passages in Mystic Cave exhibit a complex three-dimensional maze geometry with smooth scalloped walls, intertwining crawly ways and blind leads. Although mostly devoid of characteristic vadose developments, Mystic Cave does contain some localized spar, boxwork and flowstone decorations. Mystic’s largest room is The Grand Hall, with the cave’s most unique feature: a natural limestone arch. 9’2” high by 11’7” wide
Ken remarked, "a salamander almost scared me out of my wits. " Cave was a shelter cave with only 25 feet of known passage and was referred to as "Bat Cave. " Due to the numerous other obstacles, the team broke through – now the passage (Profile Only) leads to a tight spot. More digging yielded more crawling passage; the team continued their rock digging. Armed with Mr. Stanley, their 2 lb sledge hammer, the duo returned and broke through – now the Cave does contain some localized spar, boxwork and flowstone decorations. The largest room in Mystic is the Grand Hall.

The rock digging unveiled the Birth Place, now referred to as the Birth Place of Rushmore Cave. The first survey and map was produced by 1982, scaled approximately 1'':48', displayed approximately 1:96, approximately 162 feet per inch. This map is more concrete proof that the cave was once known as "Pat" and almost doubled the cave's length. Although close, within 100 feet of Rushmore Cave, there is no known connection yet.

The complex three-dimensional maze geometry with smooth scalloped walls, under the peak of the Dome, the Grand Hall is located. It is a complex, maze-like structure with smooth, scalloped walls and a variety of rooms and passageways. The Grand Hall is the largest room in the cave and is approximately 200 feet long. The Grand Hall is located at the northern end of Mystic Cave and is accessed through a series of small rooms and passages. The Grand Hall is a popular destination for spelunkers, who are fascinated by its unique features and the history it holds.

The Legend indicates the various levels of the cave, including the Highest Level, High Level, Middle Level, and Deepest Level. The Profile View shows the various changes in ceiling height and vertical drop height, which are important for navigation and exploration. The Legend also provides information on the various types of formations and features found in the cave, such as spar, boxwork, and flowstone decorations. These features are not only visually striking but also provide insights into the geological history of the cave and the environment it was formed in.

The History section provides a brief overview of the discovery and exploration of Mystic Cave. It mentions the initial discovery in 1981 and the subsequent surveys and maps produced in the following years. The History section also highlights the significance of Mystic Cave as a unique and important geological feature, and its contributions to the understanding of the Black Hills region.

The Geology section delves into the geological processes that led to the formation of Mystic Cave. It explains the role of water, carbonic acid, and other factors in shaping the cave's features. The section also discusses the regional geology of the area, including the Paha Sapa Limestone, and how it relates to the formation of Mystic Cave. The section includes a discussion of the uplift and folding of the Black Hills region, which played a crucial role in the cave's development.

The total length of the cave was surveyed, totaling 5,947.4 feet or 1,812.8 meters. The cave contains a variety of passageways, rooms, and features, including a prominent Grand Hall. The cave is accessible via an entrance located at a depth of 20 feet, with the lowest point of the cave located at a depth of 88 feet. The cave contains a variety of formations, including spar, boxwork, and flowstone decorations. The cave is a popular destination for spelunkers and geologists, and it continues to be explored and studied for its unique features and geological significance.

The cave is located in Pennington County, South Dakota, and is part of the Black Hills region. The Black Hills are a mountain range in South Dakota, Wyoming, Montana, and Nebraska, and they are known for their unique geological features and their role in the history of the United States. The Black Hills are a popular destination for outdoor enthusiasts, including spelunkers, hikers, and geologists.

The cave is closed to the public due to safety concerns and to protect the natural resources. Visitors interested in exploring Mystic Cave can contact local authorities or organizations for information on guided tours or other means of accessing the cave. The cave is a unique and important geological feature, and it continues to be studied and explored by researchers and enthusiasts alike.

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NSS News, December 2020

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Beyond the Stink and Down the Suck. Pushing Goodhue Cave to One Mile
Chris Pelczarski and Nick Anderson

Goodhue Cave is special, and not for the reasons a cave is typically considered special. It’s special because most cavers who go to it only go once every year or so. Some go once and vow to never go again. You might be thinking, “How could the cave be that bad? These are Jewel Cavers after all!” The truth is, the cave isn’t that bad. It just isn’t that good either. It’s like a low-grade assault on the body; a lot of very sub-par cave for almost no good cave. Still, every now and then, one of the Black Hills Cavers thinks, “Wow, has it really been 8 months since we last went to Goodhue?” and shortly after, 6 of us will have an e-mail in our inbox with the subject “Goodhue.”

Goodhue Cave was first discovered by Steve Baldwin in the early 2000s. The entrance is a little sinkhole in the corner of a dry stream bed. Immediately upon entering, you are greeted with The Death Rocks: two enormous, conspicuously coffin-shaped rocks choked in a fissure by only their widest point in the middle, which you must crawl under without touching. There’s barely enough clearance to do so. Legend has it that Steve Baldwin made a special trip to Rapid City to purchase pipe he could thread together to make an extended pole to poke at them before crawling under.

After this, you begin your descent down a 70-foot vertical fissure. This fissure is too narrow in most spots; and it is just wide enough if you follow the only correct path: move left 10 feet, down 3, back right 15 feet, down 10, right 2, up 7...you get the idea. It takes a strong caver 45 minutes to climb up this 70-foot crack on the exit. The reward at the bottom? The Black Hills’ only stream cave! Centimeters of water trickling at your feet! Waterfalls! Okay, there’s actually no waterfalls. Huge passages! Kind of. I mean, you can walk on a flat floor in a couple places. It feels big, comparatively.

This all makes it sound like Goodhue isn’t worth exploring. However, as cavers, we all know that in exploration, it is always worth it because you either eliminate possibilities or make a breakthrough. This is why we push in Goodhue. The stream is in there, somewhere.

The recent years’ exploration has all been in an area in the southeast corner of the map beyond something called The Stink. The Stink is a nasty, acrobatic slither fest at the grimy, silty bottom of a tall fissure that is too narrow except at that lowest level. It was pushed by me and Dan Austin in 2017. Jan Corn’s song (and probably philosophy as well) of ‘Never Go Caving With Anyone Smaller Than You’ was playing in some other dimension, but Dan must’ve failed to hear it. Following me, pushing through a squeeze on a weird shelf with fins of rock poking into our backs, Dan suddenly wondered if he’d be able to get out. It was indeed a close call. A couple of fins have since been removed for safety reasons and to allow for increased exploration. Dan did, of course, make it out that day but not without lots of cursing.

Beyond The Stink, Goodhue somehow managed to get worse. One of its features includes a 200-foot long “walking” crack that varies in size from 8 – 10 inches (and eventually gets too tight). If you’re looking for a fun way to challenge your surveying skills, try sketching in that passage! Dan did a fantastic job. Another feature of interest is a hole down that is too tight which I convinced Dan must’ve failed to hear it. Following me, pushing through a squeeze on a weird shelf with fins of rock poking into our backs, Dan suddenly wondered if he’d be able to get out. It was indeed a close call. A couple of fins have since been removed for safety reasons and to allow for increased exploration. Dan did, of course, make it out that day but not without lots of cursing.

Beyond The Stink, Goodhue somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow somehow 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enough to have my own office! And second, that we had managed to both evade a day in the office. As we surveyed the bypass of Crick’s Notch, we decided that by naming this passage “The Office,” that upon exit, we could both say that we had spent the day in The Office after all.

Once exiting The Office down the hole into the area beyond the dig, we discovered a strange winding hole up. Beyond this hole, Dan and I got into an area that was very complex and multi-level. Since it wasn’t obvious where to go or if there were even separate passages to choose from, we decided to split up: Dan went into the lower area and I took the upper. The upper area was quite loose and as I gained the top of a huge boulder, I suddenly heard Dan yelling in distress: “OHHH FORK....FORK FORK FORK....woooo....oh fork..FORK!” I called and called for Dan but received no answer. The forking continued. I began to move towards where I had seen Dan go but as there was quite a bit of loose rock under me, I didn’t know where Dan was, and I couldn’t communicate with him. I had no choice but to remain perched on my sketchy breakdown, listening to Dan struggle with whatever situation he had encountered. This went on for nearly 30 minutes before Dan emerged with a look in his eye like he had just made a narrow escape. He explained what had happened: as he tried to traverse across a fissure at the mid-level, he crossed an area where the walls were coated in a thin layer of very slippery silt. No matter how hard he pushed on the outer walls, he could not maintain his elevation in the narrow fissure. Dan slowly slid inch by inch 35 feet down a fissure that he wasn’t even sure his chest would clear. This caused panic as he wondered if his chest would be wedged. It took Dan 5 minutes to slide down to the bottom of this fissure but 25 minutes to climb up what became known as Dan’s Little Fork Slot, or “The Suck.” We left without surveying anything more in that area as Dan was quite shaken up. The area has since been surveyed to its end (we brought a rope the next time.)

After a cavers first time in Goodhue, it usually takes some convincing to get them to return, but it inevitably happens. Nick Anderson managed to skip the 2019 Goodhue trip, but exactly one year and two days after his first decent into Goodhue, he returned along with Dan, Kelly Mathis, Jessica Reese, Rene Ohms, Ethan Rueter, John Lang, and myself.

Here is Nick’s recount of the discovery of the “Drip Room”:

It was New Year’s day, and due to some shenanigans related to the New Year, the two teams decided to enter the cave at different times. The plan was to meet up late morning in the “The Office,” where I promised Chris I would have coffee waiting. As I drove to the cave, I remember thinking, “Starting 2020 off in Goodhue, the year can’t get much worse from here.” Boy, was I wrong! The early morning team consisted of Dan, Kelly, Jess, and myself. We set off to work in The Office while waiting for the mid-morning team and the rope.

After a few hours of arduous travel and relatively unproductive survey, the mid-morning team caught up to us and Chris found his Starbucks Instant coffee pouch waiting for him—as promised. A quick business meeting ensued, and the teams split off. Dan, Chris, John, and I would head to The Suck while the others would continue
Goodhue Cave
Custer State Park, South Dakota

Cave Length: 1.08 Miles (5683 feet)
Cave Depth: 168.7 Feet

Compass measurements adjusted 758 degrees for magnetic declination on January 1, 2020

LEGEND

- Pit depth (in feet)
- Ceiling height (in feet)
- Soda Straws
- Sloping Floor (down to right)
- Entrance Level
- Patio Level
- Upper Level
- Middle Level
- Lower Level
- Spar
- Flowstone
- Drapery
- Popcorn
- Water
- Flowing water
- Stalactite/Stalagmite
- Nautilus Fossil
- Mud Floor
- Sediment Floor
- Breakdown
- Lead (unexplored Passage)
- Survey Station
- Survey Line
- Passage Too Tight
- Airflow Direction

Scale: 1/2" = 100 feet
work in The Office area. Feeling bad for Chris, who had hauled the rope through The Stink, I took the rope through the heinous “Malicious Deal” fissure climbs to the top of The Suck. I can only describe the next hour and a half as harrowing.

Rigging the rope on bomber fin (South Dakota Cavers are world-renown for our rope work), Dan and John descended The Suck armed with only a handled ascender to aid them back up. Chris and I decided to poke a middle-level hole at the back of The Suck and I took the rope as a handline and slowly traversed in a kneebar with a white knuckle grip on the rope to prevent myself from sliding too far down and getting my chest jammed in the slot. I had made it across when—suddenly—the rope slipped and swung back to Chris. I uttered an “oh FORK,” which alerted Chris to my incredibly unfortunate predicament.

Meanwhile, John and Dan needed the rope to start to head back up as both levels turned out to be too tight. Chris, who was waiting to see if any level went, now got to sit and listen to John and Dan struggle up the rope, all while keeping an ear on my slow progress back across the mid-level suck with no handline. Some swearing, cursing, and existential crises aside, all team members made it back to relative safety and regrouped.

With some time left before we were supposed to meet up with the other team, Chris and John went to check out a dig while Dan and I went into a sketchy breakdown climb. At the top was a small hole that Dan somehow convinced me to check out. I carefully slithered in—wary of the loose rocks above and below me—and popped into a room which I could stand in! Excitement quickly turned to concern as directly above me was a car-sized boulder only being held up by the small rocks wedged between it and the walls. Upon closer inspection, I noticed a black space above the rock. It was BIG! I couldn’t tell how big because of the angles, and I had left the Disto with the dig team. However, the climb up was sketchy, and after the day’s events, I decided not to push my luck.

Excited and discombobulated from the terrors of Goodhue, I did the only rational thing I could do to get an estimate on the size of the room: I counted the number of seconds it took a drop of water to reach the floor from the ceiling. I quickly ran back to the group and proclaimed, “Potential Paleo Borehole! It’s 2.5 seconds tall!”

The team met me with blank stares and, eventually, laughter. I figured we would use an equation to estimate the room’s height, which was ruled as ridiculous. We were out of time to push further and the Drip Hole Borehole would have to wait for another trip. Upon meeting up with Rene, the rest of the team had a good laugh at my ridiculous measuring tool and, flustered me further, the team guessed that the room was 2.5 drip seconds high and 1.5 drip seconds wide and went for at least 5 drip seconds.

The consequences of my actions weighed on my mind for months. Now we had to plan a return trip out to the worst part of the cave (it takes 2 hours to travel 0.25 miles) for a lead I was beginning to second guess myself on. Nevertheless, we all had a twinge of excitement when in March, Dan, Chris, John, Rene, and I returned to push the Drip Hole Borehole. Upon return to the climb up that I had chickened out of previously, Rene scampered right up while making sure to comment on the fact I didn’t do it the first time.

We popped up into the black void to find it ended immediately; it was a blind dome collapse that ended just out of our sight-line from below. The room was still an impressive size for the cave and we agreed to call it the “Drip Room.” It was a disappointing day, but hopefully, no one has to venture beyond The Stink again with that lead crossed off.

Epilogue: Goodhue Cave still awaits a breakout. On every trip, someone stops the group and says, “Hey—do you guys hear that? It sounds like a stream!” But no real stream has yet been found. Few leads remain for those that wish to push. After 1.08 miles of cave passages, we now know the Black Hills may have some of the best caving in the world, but some of the worst stream caving anywhere.
Mining In Moria at Reeds Cave
By Derek Wolfe

Reed’s Cave has a fascinating history and is one of the few South Dakota caves that exceeds 5 miles of surveyed passage. The cave was discovered by the operation of a surface quarry in the late 60s. Don Reed, the quarry blaster after whom the cave is named, was one of the first explorers to penetrate the cave’s depths. Members of the Paha Sapa Grotto gained interest in the cave in 1966, when true exploration began and a gate was installed to protect the cave’s formations from rock collectors and vandals. Many pockets and holes appeared during quarry operation and further mining opened an additional entrance in 1967.

Through decades of mining and exploration, Reed’s may have reached its fully explored potential. Mining activity has been on/off for the last 50 years and active as recently as this past winter (2020). Similar in character to both Wind and Jewel, Reed’s has been a popular destination for cavers in the Black Hills. My first trip to the cave was during a Black Hills Caver Classic in the 90s to the Queen’s Room, a popular recreational destination. Excited to return for survey and exploration, I finally received my opportunity in 2019 over 20 years later.

Small amounts of survey in varied locations throughout the cave finally yielded the coveted 5 mile mark in the last two decades. One of the more recent, exciting, survey trips occurred in January 2019. I joined a large group of cavers equipped with a drill, digging, and survey supplies to push into a tight, virgin room near the end of the Train Tunnel in an area called Moria. The location of the room was particularly exciting since it sat on the southwestern edge of the cave.

We divided into three teams, two for survey and one digging, and proceeded with our tasks. The digging crew was to work on the tight opening with a hammer drill to remove bedrock and try to enter the new chamber while the survey crew was tasked to resurvey Moria. Much of the original survey missed several side passages as the area was a very complex 3D maze.

After several hours and four drained drill batteries, the digging crew succeeded in their endeavor only to be disappointed with a dead-end room. Our survey crew had successfully resurveyed several hundred feet along with several hundred feet of additional new survey that included some tight virgin crawls. Our teams reconvened, while some left, and some continued to survey. We discovered a few new small rooms with hard, tight gritty crawling but unfortunately didn’t find the next breakout. Reed’s holds onto its secrets tightly; maybe someone will get lucky someday and find the passage that beckons onward.

Other Reeds Cave Happenings

Nick Anderson

While the Moria trip has been the only big trip in Reeds Cave in the last several years, Christopher Pelczarski has often led most of the other efforts into the cave in his efforts to find the way onward. He’s netted several hundred feet of tough, nasty survey. Although the new survey may be grueling, travel to different cave boundaries is relatively accessible, and Reeds Cave has become a place to introduce grotto members to caving. Decorations, tricky obstacles, and various routes make it the ample training ground for new caver recruits. In fact, before I ever set foot in Jewel, I made several long day trips in Reeds with Chris. It has also become a great place to get kids into caving in the past year, and several family trips have taken place. The Weavers, Austins, Wolfes, and Schaffers have all taken their kids down into the main room in the past year as part of the Paha Sapa Grotto’s “Kids-Cave-A-palooza” events.
Stagebarn Cave, also known as Stagebarn Crystal Cave, is the longest privately owned cave in South Dakota. At 6.94 miles, it’s the third longest cave in South Dakota behind Wind and Jewel Cave. Once a booming tourist attraction, the cave is now closed to the general public; however, Paha Sapa Grotto Members who are desperate to get underground can still gain access for just a piece of Perkins pie or a six-pack of Miller Lite.

Stagebarn has quite a bit of potential for exploration and is likely over 10 miles in length. Unfortunately, Black Hills Cavers often neglect Stagebarn due to its northern hills location, coldness, and wetness. The leads aren’t that great and it’s only really accessible once the snow melts out of the canyon. We all prefer to work in other, more significant, caves.

The cave is comprised of two cave systems. The upper-level cave is a complex bedding plane that is mainly hands and knees or belly crawls. This upper level is often the way of connecting various extents of the cave, including the two known entrances. The lower level is much more cavernous and joint controlled and creates the “halls” of the cave. The goal has always been to breakout out into another lower-level hall.

It was an unusually cold May day in 2019 when Adam Weaver, Dean Faust, Ethan Olsen, and I felt desperate enough to push the northern boundary of Stagebarn on some old leads pointing towards a blank section of the map. Adam had a great idea to invite Dean. We were hoping to knock loose a memory of his about a blowing lead he may have forgotten. About halfway to our original leads, we stopped to check on a side lead. After several minutes of searching for a tie-in station, we realized that the source of our confusion was a lead drawn on our map as a wall. It not only went, but it had air.

Our team decided to focus on this lead for the day. It was immediately apparent that it would not be an enjoyable survey. The average passage height is 15 inches tall with sharp, grabby spar. After every 6-foot survey shot, I would ask Adam if he wanted to continue or back out and check out the primary leads. I was fresh off a camp trip in Jewel Cave where I had been yelled at for wanting to survey a small side passage instead of the 1,600 feet of borehole in front of us. I was new enough not to realize that what we were surveying in Stagebarn was considered borehole. Thus the name “Classic Misdirection” was born.

We surveyed roughly 400 of virgin cave on that trip. leaving behind a pit that multiple levels off of it—precisely the type of thing that leads to the halls. We were forced to turn back as the bend into the pit required some serious contorting and the 6’6” member of our team was not able to make the bend. He did offer to sit and wait while we continued, like a true team player. On the exit, Dean had Adam lead the way out and Adam took a wrong turn which ended up being a 15 minute shortcut to the new area. Unfortunately, the shortcut is a belly crawl that comes out head first over an 8-foot drop. Dean, who wasn’t paying close attention to the route we were taking, had some choice words for us as he tried to maneuver that drop. Now the main travel route, the shortcut is still unsurveyed.

The 400 feet of virgin cave with multiple going leads was exciting but the thought of the travel out to the leads was not. Although relatively short, 45 minutes, it was 45 minutes of back-scraping, clothes-tearing travel that culminated in a 10 foot long, 12-inch squeeze with 2 inches of standing water—enough to ruin your day. Other projects and a short Jewel Cave season pushed Stagebarn from our minds for almost a year.

In February of 2020, Adam, Kelly Mathis, Jessica Reese, and I finally returned to push the lead. In short, it was a miserable day of survey but we netted another 400 virgin feet of cave heading lower in profile and off the map. Near the end of the day, we finally hit a room where we could stand and left a lead that, I admittedly scooped for 300 feet, and continued to pancake belly crawls—but there was still air.

With Jewel Cave closed indefinitely, attention turned to Stagebarn. In May of 2020, a year after the initial breakout, Derek Wolfe, Chris Pelzarski, and I returned to tackle the pancake crawls. We continued the exciting crawling breakout of Classic Misdirection as we were edging westward into blank space on the map. I had just squeezed through a tight spot and became very excited as I could finally see lower-level walking cave! I speed crawled through towards the promised land only to find a handline. We had tied back into known cave! I was right, the lead did head to the halls but unfortunately, not a new one. We returned into the crawls to push leads northward which we hoped would veer back west. The cave passage did just that but the crawls became extremely low and wide. Extending as a 15-foot wide and 9-inch tall passage, sketching became very difficult and Derek couldn’t turn his head or hold the survey book at a sketchable angle. These low crawl passages eventually pinched, leaving us only
with leads south out of the new breakout. We exited the cave, having set 100 stations and netting over 1,100 feet of Virgin Cave.

It was time to take a break from the new area and focus on Derek’s and Adam’s wild idea: to start a resurvey of the cave. An effort to resurvey the entrance series from the 1980s began in early June. Due to lack of sketching detail, missed leads, and numerous loop closure errors, Stagebarn has needed new resurvey for a long time; technology and sketching standards have been improved dramatically over the last 30 years. We began from the entrance and surveyed the lollipop loop – the historical cave tour route – and established a solid backbone survey. I begrudgingly agreed to tag-team the first trip with Derek and together, we mapped 2,455 feet of cave. Roughly 50 percent of that was resurvey while we mapped several missed survey loops, netting almost 1,200 feet of new additional cave survey.

Because I don’t learn, just two weeks later, we returned to continue the remapping project. This time Chris Sterling and Jaralei Tufte joined. This trip provided an excellent introductory cave survey trip for Jaralei. We resurveyed already mapped loops off the eastern edge of the historic cave tour route. We added several new loops, corrected two bad loop closures, and netted ~900 feet of additional survey towards the cave’s length while adding 900 feet to our resurvey project.

The next day I had enough of Derek’s resurvey shenanigans and we decided to venture out to Classic Misdirection as a team of two again. Tempers were still high from the day before and our surface watch didn’t know who would make it back out alive. Fortunately, we set aside our petty arguments and started knocking out leads. Low pancake crawls circled around that created several loops and tied back into already-marked leads. This survey mopped up most of the new breakout leads, which collected over 3,000 feet of virgin cave survey off existing cave boundaries. Only one poor southern lead is left. It was time to start looking for a new breakout.

The next survey trip to Stagebarn wouldn’t happen until September of this year. On a previous trip with one of the landowner’s and their friends, Adam and I noticed an unmarked high lead down in Behemoth Hall. Derek, Ryan Montoya, and I decided to check it out. After a long survey day in Bethlehem Cave the day prior, we weren’t too excited to survey the notorious crawls in the upper levels of Stagebarn so we decided to investigate this unmarked lead in the lower area of Stagebarn. We accomplished the tricky climb into the lead and began our survey (well, Ryan and Derek did it with ease—it took some encouraging swear words at me to get me to do it). Unfortunately, the lead tied right back into known cave (at a much easier spot to climb into, giving me relief). We discovered an additional mid-level with several going crawling leads but decided to return to Behemoth Hall for resurvey and knock off unsurveyed leads in the process.

We completed a full resurvey of Behemoth Hall, found and surveyed some new virgin passage in pits, and completed a maze complex survey at the eastern edge of Behemoth Hall. The most exciting part of the day was digging through a section at the western terminus of Behemoth Hall. After 30 minutes of digging, I fit through a very tight constriction to find going maze cave. The 6.5-inch squeeze was too much for Derek and Ryan so I scooped ahead a bit while they dug laboriously to make sure I could get back out. To my horror, I found a lone boot print and handprint. Someone had been here before—we still don’t know who it was but we know whoever it was didn’t map it.

For the first time in my caveing career, I am excited about Stagebarn Cave. In the next few weeks, we plan to return with a hammer drill to continue to push this next breakout.
The Lakes section of Wind Cave over the recent years has been neglected and the last serious amount of continuous exploration was in 2012. Some survey and exploration love was needed in the Lakes section. With Jewel Cave exploration being closed due to tourist trail construction, the end of 2019 seemed to be an excellent opportunity to revive the exploration in the area.

Travel to the Lakes section takes anywhere from 1-2.5 hours depending on the destination. The plan was to start from the current area of lake flooding and furthest point in the Lakes Section—Calcite Lake—and systematically start eliminating leads back towards the cave’s entrance. Moreover, upper-level leads could have been overlooked as the entire Lakes section is entered from a chimney down-climb appropriately named The Boxwork Chimney. Returning up into mid-level cave would be excellent for proceeding into the unknown.

The first trip was led by Adam Weaver with Rene Ohms and Nick Anderson on November 24th with the intent of searching out high, unmarked leads. Some side passages along with a false floor collapse that Nick fell through, The Trap Door, down in lower level passage were surveyed along with a semi-tricky climb to several hundred feet of undiscovered mid-level development.

Chris Pelczarski spearheaded the next two trips where a few hundred feet of survey was accomplished with several side leads eliminated. He left one intriguing lead that Rene Ohms returned to and surveyed, a few hundred feet, that ultimately connected back to known cave in the Club Room Section. That connection, The Tot Shaker, was only accomplished by Rene due to its body-bending, tight nature.

I finally was able to make my first trip in mid-December. Once entering the Lakes section, we eliminated a few leads but ultimately began a survey just past What the Hell Lake. Here, the crux of the survey in the entire Lakes Section project became apparent, locating tie-in stations from original carbide survey markers. After plenty of bickering, debating, and consulting of the poorly drafted notes on the map, we agreed on a tie-in and began our survey. The passage size wasn’t anything to get excited over but the area had impressive helictites. We proceeded to knock out leads along with discovering several unmarked leads. It seems the best leads in Wind Cave are the leads that are not marked.

Continuing through several well-decorated crawls, we made the fantastic discovery of The Impress Maxima, a 4.5’x3’ white helictite—a play on its nearby neighboring, just-as-impressive and famous, Emperor Maximus. Although we didn’t find the way onward, we departed the cave with over 1,500 feet of survey. Any survey day over 500 feet in Wind Cave is excellent and any survey day with 1,000 feet in Wind is stellar. We were excited to return.

I returned to Wind in January and led a trip and methodically began eliminating leads from Calcite Lake. Per usual Wind Cave, for every marked lead we found and surveyed, we found at least one or two unmarked leads. I should have known better than to go with two cavers smaller than myself as we began surveying an unmarked lead heading off into white space on the map. The required body contortion was very specific as if to execute a double axel flawlessly and was only made more enjoyable by extremely sharp blades of boxwork on the floor and ceiling. Ultimately, the passage ended but upon exiting, the challenge of getting my body out became apparent. Specific knee bends, blind placements with feet, back arches and slowly inch by inch, I progressed outward. The bottomless pit in my stomach of anxiety rose, a rare occasion for me.

I made the series of horizontal and vertical 90 degree bends only to feel sharp
boxwork cut through my spine and chest as I proceeded outward. I snickered as one of the smaller lads I was with struggled his way through the passage. Our squirrel hole pushing skills earned an A+ today. Hands and knees crawling were warmly welcomed as we exited what we called Bloody Origami. We exited with over 1,000 feet of new survey, a stellar day in Wind.

At the beginning of March, Kevin Manley and Adam Weaver led the next two trips and eliminated several more leads. Within five months, from November 2019 until the closure of the Cave due to the pandemic, 4,750 feet (0.9 mile) of added passage was discovered over 8 trips bringing the current surveyed length of the Lakes Section to 5.31 miles (04/2020). A fairly respectable amount of new passage. Many leads still exist and likely more unmarked leads need pushed—the unknown calls.

Snake Pit:
The Other Wind Cave Entrance

David Lambert, NSS 57504

Less than one-half mile west of the natural entrance of Wind Cave, lies the lesser-traveled Snake Pit Entrance. This eight-hundred-foot belly crawl provides quicker access to the northwest portions of Wind Cave, but is considered by many to be a harder route than the three-hour travel from the elevator.

Although first entered in December, 1971, it would take the remainder of the decade for interest to gather in exploration of Blowhole Cave, now known as the Snake Pit Entrance. There were too many going leads in Wind Cave at that time for anyone to get excited about a partially sediment-filled belly crawl, but as exploration in Wind Cave continued, the distance between these two caves grew even closer. In October, 1984, two teams of cavers from the Pahasapa Grotto and the Colorado grottos, one entering the Blowhole and the other entering the elevator, connected the two caves near the room known as Santa’s Frosted Forest. Both teams exited the cave that evening through the Blowhole, agreeing they would have preferred to return to the elevator.

When my survey teams and I first began regularly using the Snake Pit Entrance in 2009, we all knew of the lengthy belly crawls. We were not prepared, however, for the amount of prickly pear spines the pack rats leave behind nor that the spring above the entrance sometimes flows directly into the cave. The cactus spines were so bad in the early trips, in fact, that several of my teammates tried lining their shirts with duct tape or even taping a Silpat™ baking sheet to their torso. They only tried this once.

Much like the surveyors in the 1970s, the leads I had been pursuing in the northwest corner of Wind Cave were taking more than 3 hours of travel from the elevator. Navigation was tricky in this part of the cave as we were surveying nearly one hour away from any flagged travel route. To be honest, navigation can be tricky in Wind Cave even if you are near the elevator but after hours of studying maps and line plots, we identified a 2500-foot connection between two primary flagged routes, the yellow and pink trails. This connection has since been flagged as an extension of the yellow trail to not only help surveyors but also provide a more direct route should a rescue ever be needed in this area of the cave.

Entering the Snake Pit has reduced our travel time by almost one hour, and after a few repeat trips, we have found this to require less energy than coming from the elevator. Approximately one-half mile of passages has been added to Wind Cave using this new route, and while we have exited the Snake Pit a few times, the elevator remains our preferred way to end a long day of survey. Besides, how often does one get to say they’ve completed a through-trip in a 150-mile maze cave?

Breakouts have been rare during my survey time at Wind Cave, but nearly thirty miles of passages have been added during those last twelve years. None of this would have been possible without the countless surveyors before us. Each survey, no matter how small, contributes to not only the current length of the cave, but the possibility of future exploration. So, next time you ask why anyone would ever want to return to sewer-sized leads partially full of sediment, remember there will always be someone willing to put up with a few cactus spines.

Jewel Cave:
Beyond the 200th Mile

Rene Ohms

A Black Hills edition of the NSS News would not be complete without mention of South Dakota’s longest cave! Jewel Cave is currently over 208 miles long, and is the 3rd longest cave on Earth. Jewel continues to deliver, providing explorers with endless opportunities for discovery in hundreds of unchecked leads.

In 2014, a tight fissure called the Southwest Splinter was pushed on the western edge of the cave, and the resulting breakthrough has now led to over 30 miles of passage beyond. This area is still going, and since 2015 three new underground camps have been established to facilitate exploration. In December 2018, the 200th mile of Jewel Cave was surveyed on a 4-day camp. The March 2019 issue of the NSS News highlighted the journey to the 200th mile, and since then, 8 more miles have been found. This is remarkable, considering that the cave closed to all exploration in October 2019 for a construction project, and still has not re-opened. We made the most of those 9 months!

In 2019, there were 5 camp trips, including an epic overnight trip to establish the cave’s deepest camp, Hell Canyon Camp. 5.6 miles were surveyed on camp trips, and an additional 2.5 miles were surveyed on 20 day trips. Only one trip has gone back to push leads near the 200th mile, and although the cave continued, it wasn’t as straightforward as everyone had hoped it could be. A breakout in the Hidden Forest area, north of Crushing Deep, yielded the largest passages and most survey of the year. Meanwhile, way on the other side of the cave on what would be the last trip for over a year, a breakthrough was made on day trip beyond the Miseries. More large leads remain there, in the Valley of the Kings. Another special Jewel Cave edition of the NSS News is planned for March 2021, so stay tuned for more details...

In the Lakes section, Wind Cave’s signature boxwork is often coated in pool spar. Photo: DB.
A Plane, a Rope, and a Grotto

Story by Dave Hughes, with Derryl Hauptmann and Adam Weaver

"...3, 2, 1, Drop!" With a loud, metallic clang, the experimental aircraft dropped away from its B-29 mother ship as part of a study to evaluate the gliding characteristics of this highly innovative X-1 rocket-plane. Onboard the B-29 was flight test engineer Joy Hauptmann, an employee of Bell Aircraft Company. And later, during its fantastically storied history, Chuck Yeager would use the Bell X-1 to break the sound barrier, to officially exceed the speed of sound, and to be widely recognized as the first man to successfully fly beyond Mach 1 in a controlled, level trajectory.

Bell was headquartered in Buffalo, New York, and had a major presence at Marietta, Georgia...in addition to doing some important work at Pinecastle Army Air Field in central Florida. Joy enjoyed his employment at Bell and was a key man, at the right time, on a pioneering project. Advancements in the arena of high-performance aircraft were decorated with breathtaking achievements, but also populated with gut-wrenching heartbeat. Scott Crossfield, the brilliant test pilot who was the first to exceed Mach 2, would later die over Georgia in his own small plane while commuting home after addressing a class of young airmen at Maxwell Air Force Base.

Mel Apt, an aviation pioneer who managed to coax the temperamental Bell X-2 beyond Mach 3, was killed near the end of the very same flight where he broke that airspeed milestone—the victim of a horrible and uncontrollable supersonic tumble.

One of Joy’s best friends at work was Jack Woolams, the Chief Test Pilot at Bell Aircraft Company. While evaluating his war surplus P-39 Airacobra for an upcoming air racing competition, Jack’s plane plummeted suddenly and catastrophically...fatally crashing into Lake Ontario. Another test pilot—Alvin “Tex” Johnston—won the air racing community’s coveted Thompson Trophy that year, and was moved to donate his prize money to Jack’s widow. It took 29 years old.

Indeed, it seemed that working in the flight test business for an entire career would result in more sadness, while at the same time providing an undesired reminder of one’s own mortality. So, with a wife, kids, and a life of his own, Joy thought it wise to contemplate a change. He had a sister that included a married couple. In particular, Hauptmann was informed that this pair consisted of an unusual family named Herb and Jan Conn. Conveniently, he learned that Herb sometimes relied upon mountaineering equipment while repairing cracks on the huge caverns at Mount Rushmore. Eager to query the Conn’s about any nearby places to purchase mountaineering rope, Derryl went to a grocery store in Custer and Derryl got a carbide lamp there. His lighting gear thereafter consisted of carbide and candles, but no flashlights.

As the caves became more challenging, it soon was apparent that mountaineering gear—especially climbing rope—was desirable. Derryl found out that there were actual climbers in his geographic area, including a married couple. In particular, Hauptmann was informed that this pair consisted of an unusual family named Herb and Jan Conn. Conveniently, he learned that Herb sometimes relied upon mountaineering equipment while repairing cracks on the huge caverns at Mount Rushmore. Eager to query the Conn’s about any nearby places to purchase mountaineering rope, Derryl went to a grocery store in Custer and Derryl got a carbide lamp there. His lighting gear thereafter consisted of carbide and candles, but no flashlights.

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that form. Hauptmann didn’t think much of the rappelling gear, and he preferred to continue using a simple body rappel instead.

In due course, Derryl became a student at the South Dakota School of Mines and Technology in Rapid City. He joined the National Speleological Society on August 17, 1954 and received membership number 2946. There were few cavers in South Dakota during the 1950s, and surely the fellowship of like-minded explorers would have been welcomed. As such, Derryl began to talk up the idea of forming a grotto. The Rapid City Journal newspaper ran a piece that alluded to the value of a spelunking club, and cave trips were organized in an attempt to recruit members. In addition, Hauptmann had a theory that he put to the test. In particular, Derryl reasoned that a person working at Wind, Jewel, or any other show cave was essentially foregoing a more lucrative career simply because of his extreme enthusiasm for caves and caving.

But the strength of this book comes from Max’s cave photographs. As he is a German photographer, you may not be familiar with Max’s work; however, it is likely that his photographs have already graced the walls of your home as part of the Speleo-Projects calendar series. This is Max’s second book of cave photographs (the first being 2008’s Inside Mother Earth; ISBN 978-3-934020-67-2) and he has contributed to a number of other cave publications, including Ice Caves, Die Höhlen des Toten Gebirges, Descent Magazine, and the NSS News. As a result, Max has a reputation for being one of the best cave photographers in the world, and this book shows how he has earned that reputation.

The book ‘New Zealand Karst: A voyage across limestone landscape into the subterranean realm of caves’ is a wonderfully illustrated coffee table book of photographs covering the caves and karst of New Zealand. The authors, Max Wisshak and Stefanie Wisshak are professional geologists/geographers, and this shows in the way that the book have been constructed, both in terms of the beautiful maps, but also the detailed (and accurate) description of the different types of karst found in New Zealand. The first three chapters of the book (alpine karst, grassland karst and jungle karst) include a short geologic description, and are illustrated by some really quite stunning landscape images, that really capture the ecological diversity of New Zealand and how these landscapes influence the structure of the resulting caves that form.

But the strength of this book comes...
Rene Ohms
“Driven to explore”

The winner of the 2020 NSS Lew Bicking Award, bestowed for exploration and mapping, is South Dakota caver Rene Ohms. After already being named a NSS Fellow for various project work in 2008, she earned the Society’s top award this year for her ongoing work in all the caves of the Black Hills, including over 300 trips to Wind and Jewel Caves. Known for being a very humble caver and a mentor, Ohms is responsible for 10 miles of surveyed passage in Wind Cave and over 47 miles in Jewel.

Q: How did your sense of adventure develop?
A: I grew up on 10 acres in Virginia and spent a ton of time outside in the woods. My parents gave us lots of opportunities to try new things, and encouraged us to play outside and use our imaginations. We got dirty, rode horses, climbed trees, skated across sketchy ice, and dug through manure piles looking for worms for our fishing hooks. I had a really fun childhood, and was always looking for something new and weird to do.

Q: What are some of your caving accomplishments, and of which you are proudest?
A: I’ve had the good fortune of being on some spectacular caving trips, and have found some really cool stuff. By far, some of my favorite trips have been in Jewel Cave, which is just incredible. There’s a lot left to discover, and you have to work so hard for it. Getting to the leads at the end of Jewel just keeps getting crazier and crazier. Pushing through the Southwest Splinter in 2014 and then finding tons of cave beyond it, including the first water table ‘lakes,’ was remarkable. When we first established Deep Camp, eight hours in, we weren’t sure if we’d even be physically capable of doing those trips. Right now, the leads at the end of the cave are about four hours of travel past that. Jewel continues to push the limits of what we think is humanly possible, and it’s been an accomplishment to somehow keep rising to the challenges it presents.

Another memory that really stands out is surveying to the furthest extent of Snowy River in Fort Stanton Cave (in New Mexico). Snowy continues beyond that in a giant, beckoning lead, and no one’s been back to it yet.

I also happened to be in the right place at the right time when I went on one of Peter Sprouse’s Quintana Roo expeditions in Mexico. We surveyed the entrance areas of Sac Actun and Dos Ojos Caves, which we connected and became the second-longest cave in the world.

Q: Please tell the story of your first cave trip.
A: My first caving trip was in Glade Cave in Virginia, with the Girl Scouts when I was about 12 years old. I remember it being really fun, and we got pretty muddy. It felt like entering another world and was such a new experience for me.

Q: Please share some background information.
A: I was born in 1975 on a U.S. Air Force base in England, but we moved to Virginia when I was only a year old. I lived in northern Virginia until I graduated high school in 1993 and then attended Virginia Tech for a year. I transferred to the University of Arizona in Tucson, where I graduated in 1997 with a degree in Biology. During my last summer of college, I took an internship leading cave tours at Wind Cave National Park and fell in love with the Black Hills. Since then, I’ve had several jobs with the National Park Service and worked at Wind Cave, Jewel Cave, Devils Tower, Fossil Butte, and Badlands National Park. I’m currently the natural and cultural resource manager at Mount Rushmore.

Q: Where do you currently reside, and what’s your NSS Grotto?
A: I live in Custer, South Dakota, and I’m a member of both the Paha Sapa Grotto and the Northern Rocky Mountain Grotto.

Q: What specialized training or certifications have you completed?
A: I had my first NCRC training in 1999 and have been an Instructor since 2009. I’m really excited about taking the SPRAT Level 1 course next month! I’m also a wilderness first responder. I once took a scuba diving course and got my open water certification, but I haven’t used it at all since then, so I’m very badly in need of a refresher. I’ve never tried cave diving, but it does really appeal to me. When I read Sheck Exley’s Caverns Measureless to Man, I could totally see why he did what he did.

Q: What is it (in your mind and in your heart) that drives you to explore caves and to find out ‘what lies beyond?’
A: As a kid, I remember being really fascinated by exploration history. I read about those who sailed around the world not knowing what they might find. I found myself drawn to the idea of going to uncharted places. Of course, many of those places that Europeans characterized as ‘unexplored’ had actually long been inhabited by people, but those sailors had no idea what was waiting for them across the ocean. I also had the erroneous impression that exploration was a thing of the distant past (other than space travel), and I thought that everything on Earth was already known. When I found out that there were caves that hadn’t been fully explored, and some that hadn’t even been discovered yet, I was totally blown away! I think the thing that continues to drive me to explore is that it’s always new. You truly never know how a trip is going to turn out or what you’re going to find. It might be great, or it might be terrible, but that’s all part of the adventure.
Q: What’s the importance of caving versus your job?
A: I have a lot of interests, and caving is one of many. I’m also into rock climbing, cross-country skiing, biking, and kayaking. I also love quiet evenings playing board games or reading books. I’m not one of those people who puts caving above everything else in life, but depending on the trip, it’s almost always my first choice! It’s also nice to be able to shift focus to something else when we can’t go caving much, like this year.

Q: What ‘professional’ and NSS awards have you received?
A: I became an NSS Fellow in 2008, and this year received the Lew Bicking Award. Receiving the Lew Bicking was so surprising to me, and I’m really honored. I still can’t believe it! At work, I’ve earned awards for environmental sustainability, an award for the top natural resource manager in a small park, and some other performance and special achievement awards.

Q: Are there other things about you that we might be surprised or interested to find out?
A: After watching the 2006 documentary movie ‘Air Guitar Nation,’ I was inspired to start hosting air guitar competitions at my house. After five consecutive years in my living room, the party’s popularity outgrew the space and we started hosting it at local venues instead. The Custer event is now part of the national circuit, and our winners go on to compete in the next level of competition. The U.S. champion goes to the World Championships in Finland, so it’s kind of a big deal! I’m not a really great air guitarist myself (and I have yet to win), but I’ve now competed in nine air guitar contests, including a regional competition in Kansas City. Last year I traveled to Nashville to watch the National Championships and to cheer on our Custer competitors. We had to cancel the event this year due to the pandemic, but we’re looking forward to doing it again as soon as it’s safe.

Q: Please comment on ‘women in caving.’ Do they deserve more opportunities or recognition of accomplishments?
A: I’ve never felt like I was treated any differently in caving because of my gender. I’m often the only girl on a lot of trips, but that doesn’t bother me, and guys are usually pretty fun to cave with. I’d love to see more women get involved in caving, and they should (and hopefully already do!) have the same opportunities to go caving as men do. I wouldn’t necessarily say that women should be given more recognition for accomplishments, but they should absolutely get the recognition they deserve. We can stand on our own merits.

Q: What advice would you give young cavers?
A: There’s an endless amount of amazing stuff to do and see in the world, and life is pretty short. We’re only a blip in geologic time, so do what you want to do, don’t take it too seriously, have fun, and be kind.

Q: What effect has the Covid pandemic had on your caving activities this year and for future planning?
A: Both Jewel and Wind Caves are closed now, and I haven’t done a trip in Jewel in over a year. Jewel was closed last winter due to a construction project, and then Covid hit right when the project was coming to an end, so it was pretty rough timing! I’ve been trying to focus on solitary or small group activities outdoors, like climbing and biking, but have done a few caving trips this year. I joined Derek Bristol’s expeditions to Great Expectations (Great X) Cave twice, and did the through trip there in September. I’ve also done a few trips to some of the smaller caves in the Black Hills, but caving has definitely been very much on the back burner this year.

Q: What are your remaining goals in caving, and plans for the future?
A: I’m really excited to get back into Jewel Cave once it reopens. There are several lifetimes of exploration to do in there. I don’t really have specific caving goals, but I’ve never been to Fisher Ridge and would like to get over there sometime. I’d also like to do some more international trips.
A Major New Acquisition – 150 acres of Karstly Goodness!

Marianne Russo, Western Cave Conservancy, Director of Stewardship

Making the Purchase

On the 15th of February, I received an email alerting me to the fact that a property near the tiny Sierra foothill town of Volcano, California, was up for sale, and that this property included Connie’s Cave and Santa Claus Cave. After looking over the real estate ad I quickly sent in a request for more information. An hour or so later I was talking to the real estate agent. It was a property that local cavers from central California grottos had been visiting since the 1960s. In total, 242 acres were up for sale, with about 190 acres of it being a large tract of marble karst with over 10 named caves and lots of exciting leads. Unfortunately, the asking price for the whole property was just under a million dollars.

The property was broken up into 11 different parcels and I learned from the real estate agent that the sellers were willing to sell these parcels off separately, so we decided to bid on just the portion with known caves and karst. We visited the property on several occasions, in order to determine where the various parcel corners were located, and to make sure all of the known caves were within the property. These explorations gave us a good idea of the nature of the entire holding and what we should focus on trying to purchase.

Our first bid, for 187 of the total 242 acres, was rejected since it was far below their asking price per acre. However, they encouraged us to make another offer either on a reduced area of land or for a larger sum. Unfortunately, since the caves were not concentrated in a small area, buying a smaller portion would mean some of the caves would not be included or the property would not be contiguous. We realized that if we wanted to have any chance of securing most of the caves, we would need to raise a lot more money or wait and hope the price was reduced. This later option carried the risk that we would lose out completely.

I had contacted several cavers who, in the past, had been generous donors or who had a special interest in these caves. Through this effort we received several large pledges of $10,000 or more. As generous as they were, these contributions would not be nearly enough so we decided to wait for a while. In May the realtor contacted us to let us know that sales of rural properties were increasing due to the pandemic; it seems that a lot of folks from urban areas were looking for remote retreats. At almost the same time I received a letter from a caver offering to donate $100,000 to help the WCC purchase a cave. Talk about timing! This put a whole new possibility on the table.

In early June we felt ready to make a second offer. We knew now that we had to get much closer to their asking price per acre and that to do that, we would have to forego some of the property. A single forty-acre parcel along the north side contained only one known cave, and we decided this would be what we dropped from our offer. We submitted a formal offer letter with a map showing the area we now wished to purchase. The sellers made a counter offer and we agreed for a price of $550,000. Before a contract could be signed though, that 40 acres parcel we excluded had to be sold to a neighbor, otherwise it could not be split off as it had no road access.

At the end of August, we learned that the neighbor was in contract to buy the parcel mentioned above and we had a firm deal for the portions we bid on. The paperwork for our purchase was being submitted to the title company and the owner, who happens to be a civil engineer, was completing a couple of lot line adjustments that were needed to ensure that all of the other caves were well within our purchase area. While waiting for escrow to close we have begun our fundraising in earnest.

The Caves

The property includes two caves well known to central California cavers and local residents. These two are Connie’s Cave and Santa Claus Cave (also known as Pearl Cave). Two other fairly well-known caves are Lulu Bell Caverns and Mushroom Cave, which are in the vicinity of Santa Claus/Pearl Cave. Santa Claus/Pearl and Mushroom are well decorated and photogenic, while Lulu Bell is a very unusual cave for this region: it has several entrances, is almost entirely horizontal, and for much of the year is flooded, although only to a depth of one to two feet on average. It also has a very interesting history. Prior to the Gold Rush, it was probably totally filled in with gravel and sediment, but early miners found gold in the gravel and totally cleaned out the cave. In fact, in places you can still see pick marks on the walls.

In another portion of the property is an area which includes at least eight smaller named caves, known mostly to the Mother Lode Grotto. Most of these are vertical in nature, some but not all with decorations. On a hike through almost any portion of this property, one will see numerous enticing cracks, solution holes, and sinks. It seems very reasonable to assume that there are a few more caves just waiting to be found.

Please help the WCC with this terrific purchase!

Privately-owned karst properties of this sort are very, very rare in California, and it’s even rarer for one of them to be available for purchase. Cavers can’t afford to lose this opportunity to permanently secure access and protection for such a piece of property.

With your help the WCC can keep these caves safe from development, or damage from logging or mining activities, while keeping easy access to them for recreation, exploration and research.

Please join us in this effort by giving as generously as you can to make sure we are successful. We will happily accept any donations of any size. (And don’t forget, it’s tax deductible!) Currently, we are soliciting donations to match a grant of $50,000 by the Mother Lode Grotto. So far, we have collected over $31,000. Won’t you help us finish this match and double every dollar you give?

Go to “westerncaves.org” and click on “Donate Now” to donate via credit card or PayPal, or send a check, payable to the Western Cave Conservancy, to the address below.

Western Cave Conservancy
P.O. Box 230
Newcastle, CA 95658
Management Beginning

At the time this is being written we are beginning to build our plans regarding management. Mother Lode Grotto member Paul Greaves has agreed to take on the job of preserve manager. Paul is very familiar with the property and the caves and is excited to help us with this project. We have a great relationship with one of the outgoing owners, who for many years has lived nearby and been very generous giving cavers access to the caves. We plan to spend time with him in the coming months, learning more about the property. We anticipate that work trips to create a new access trail and cave trips by local grottos and other experienced cavers will resume in 2021.
Indiana Cave Survey Notebook
Indiana Cave Survey Inc.
September 2020, Number 104

Ryan Cox spent part of 2020 exploring and documenting the unknown and “lost” caves of Indiana’s Harrison and Crawford Counties. Cox was able to survey and publish the maps of three of these caves, including Packrat Nesting Hole, 66 Road Cut Cave and Chapel in the Hill Cave. None of these are over 100 feet in length, but they still provide an opportunity for some sporty caving with wet pits and challenging climbs.

Sag Rag
Shasta Area Grotto
May-June 2020, Vol. 39, Number 3

Bill and Judy Broeckel completed “trade route” surveys of Deanna Lynn Cave and After Thought Cave, opting to ignore side passages that were deemed too risky to enter given their small group size. Deanna Lynn, a limestone cave, was first explored in the 1990s but has never had a map published. It has a surprising amount of decorations for its relatively small size. After Thought Cave is located in a lava field that houses several other nearby tubes.

The Region Record
Virginia Region of the NSS
Fall 2020, Vol. 33, Number 3

Dug open in 2018, cavers found Blitz Cave to be far from virgin. Surprisingly, much of its tight, muddy canyon passage showed signs of previous visitation. Casey Tucker is presently leading the project in Blitz with aims to continue surveying and virgin exploration in the 1,200-foot long cave. A drain on the southwestern end of the cave, where water can be heard flowing below, offers a promising technical dig site.

Rocky Mountain Caving
Colorado Grottos of the NSS
September 2020, Vol. 38, Number 3

With the help of several friends, Donald Davis explored and mapped Pipeline Cave, a claystone/sandstone piping cave in Garfield County, Colorado. The nearly 700-foot long cave slopes steeply from its upper entrance, reaching a depth of 95 feet. Numerous slickensides are encased in the walls of the cave, while a rare and potentially new species of spider, genus Hypochilus, was discovered during a biological inventory.

Doug Medville is in the process of documenting and exploring a group of piping caves he located in the Kamloops Bluffs of British Colombia. Medville has explored several short caves, all being somewhat vertical in nature and resembling the piping caves of Colorado. A return trip is planned to explore and further document what is thought to be the only known example of piping caves in all of Canada.

The Potomac Caver
Potomac Speleological Club
July-August 2020, Vol. 63, Number 4

Returning to Lambert Air Blower to push the leads discovered on the last trip, cavers quickly ran into unappealing and impassable passages. However, after moving on to the fourth and final lead, cavers finally had some luck. Digging for several hours through extra-thick and sticky mud paid off with the discovery of a 25-foot domepit. While no descent was made, clean-washed canyon passage can be seen below continuing off into darkness.

Subterranean Journeys
Springfield Plateau Grotto
September 2020, Vol. 15, Number 3

Jon Beard joined Matt Beeson to help resurvey Barry County’s Onyx Cave, a cave which Beard had already surveyed once 39-years ago. The duo spent two days collecting data, utilizing all three of the cave’s entrances to avoid extra tight squeezes that separate the main three sections of the cave. The middle level of the 506-foot long cave is by far the most scenic with soaring canyons and an abundance of speleothems.

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The Albert and Ethel Ogden Undergraduate Research Scholarship in Geology and Geography

This scholarship has been established to encourage karst research by geology and geography undergraduate students. A $1,000 award is available for spring or summer research conducted in the United States. The applicant must be a member of the National Speleological Society. Example projects include dye tracing, spatial analysis of karst landforms, water quality of springs and cave waters, cave sediment analyses, etc. Applications describing the proposed research are limited to three pages of text. Send or email your application to John Hoffelt, 208 Cheatham Ave., Smyrna, Tennessee 37167-4766; mossyguy@comcast.net. A letter of recommendation by the professor overseeing the research should be included in the proposal. Application deadline is January 10th, 2021 with the award being announced on January 15th.

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Jim Patera
1948-2020

Jim and I met in September 1971 while planning a trip to yoyo pits in Mexico. This was the first of many trips we took together. Some of our trips lasted over four months. Jim was the kindest, calmest person I have ever met. No matter how bad the situation we were in, his cool head calmed all the people around him. He had an amazing energy and desire to explore the world, caving in Cuba, Mexico, Hawaii and more. He loved to hike and trod thru deserts, forests, mountains, and jungles. He did not turn into an armchair caver—he caved to the end. The only thing I can remember that he did wrong was he stirred his pancake batter too long. As anyone who corresponded with him knew, he signed off with this quote: “Life’s journey is not to arrive at the grave safely in a well-preserved body, but rather to skid in sideways, totally worn out, shouting “Holy shit…What a ride!”

I’ll miss you buddy! I’d write more but my tears are shorting out the keyboard.

Joe Slivinski
In THE JEWEL CAVE ADVENTURE, Herb and Jan Conn trace the early history of Jewel Cave. Sixteen excellent maps, including an over-sized folded map, guide the reader through the maze as the cave is extended mile by mile. This expanded third edition has many added photos: it now includes 16 pages of full color images, and over 150 black and white photos digitally remastered from transparencies and negatives.

Herb and Jan Conn

204 pages, softcover, $20.00