
July 8-10, 2022 — Karst-O-Rama at Great Saltpetre Cave Preserve, Mt. Vernon, Kentucky. Great cave trips and camping, vendors, and a live band with a costume party pair well with our sauna, hot tub, creek splashing, and, of course, feeding your thirst at the Guano Grill for three days of downright speleo-fun! This year’s theme is “Down the Rabbit Hole”. KOR is hosted by the Greater Cincinnati Grotto with pre-registration discounts and info available soon! For more information, see our website at: karstorama.com


June 25, 2022 — Join us for a fund-raising lecture “Pre-Contact Native American Cave Art in the Southeast” by renowned presenter Dr. Jan F. Simek. Dr. Simek is Distinguished Professor of Science at the University of Tennessee and the current volunteer Chief Scientist with the Southeastern Cave Conservancy, Inc. This fascinating multi-media presentation occurs 7:00pm ET Saturday, June 25, 2022 at the UC Auditorium on the University of Tennessee Chattanooga campus. VIP tickets include a reception in the Foundation Room after the lecture with Dr. Simek. Tickets are $25 regular admission and $50 VIP admission and can be purchased at: https://ancientcaveart.brownpapertickets.com

Proceeds benefit Southeastern Cave Conservancy, Inc. a 501 (c) 3 not-for-profit corporation protecting caves and karst environments for over 30 years.

September 1-5, 2022 — CaveFest. Sewanee Mountain Grotto is hosting their annual auction and party in the heart of TAG over Labor Day weekend. There will be the auction, led cave trips, bat flight float trips, music, dancing, homebrew (available ALL weekend with the purchase of a $10 mug) and a potluck dinner. Please bring a side dish for the potluck if you wish to participate. SMG will provide the meat. Caver’s Paradise Campground amenities include: Bath house with hot showers, volleyball court, dish washing station, RV hook ups, hot tub and a sauna... And not to mention thousands of caves within an hour drive or less. Please refer to the Caver’s Paradise website (http://www.caversparadise.com/) for directions. There is no registration fee but the campground does charge a $10.00 camping fee for the entire weekend and RV hookups are available for an additional $25.00. All of the proceeds from our event go back into the caving community!


In this issue we are pleased to present a combined Spelean and Photographer Spotlight on Robbie Shone. This image was my other contender for this month’s cover.

Krem (cave) Chypme is a resurgence cave, which is currently surveyed to be 10.5 km long. It is the fifth longest cave in India. The river that flows through Krem Chympe is approximately 3.5 km long with giant lakes that have formed inside the cave. There are more than 50 naturally formed dams inside Krem Chympe, which prove to be quite a sight. The cave also has colonies of bats and cave-adapted fish.

Swimmers illuminate underwater in the downstream resurgence entrance to Krem Chympe. From foreground to background an all female team comprising of Nicky Bayley (UK), Simone Buchmann and Marie-José Gilbert (both from Switzerland) help illuminate the cave. This is the longest swim in the entire cave.
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A group of California sea lions greets a caving team arriving at Santa Barbara Island

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Front cover:
The drop into Titan pit in the Peak-Speedwell Cavern System in England was one of Robbie Shone’s most challenging photos. It is the deepest drop in England at 141.5 m (464 feet).

Back cover:
The back cover images all relate to the feature on Santa Barbara Island.

Right: Kayaking into Webster Cathedral Cave. Photo by Dave Bunnell.
Left: A view of the south side of Webster Point and Littoral Sink Cave. NPS photo.
Bottom: Djuna Iverleigh and a seal surprise each other as she enters Glowing Door Cave through its small back entrance. Photo by Dave Bunnell.

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Sea Caves of Santa Barbara Island
Text and photos by Dave Bunnell, maps drafted by Derek Wolfe

Introduction

Lying off the coast of southern California, a group of 8 islands is known collectively as the California Channel Islands. Five of them comprise Channel Islands National Park (CHIS): San Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara. The California Channel Islands were an early focus of the California Sea Cave Survey, as two of the islands were known to have numerous large caves. Our efforts started with surveys out at Santa Cruz Island, largest of the group, in 1982, with a book on the island caves published in 1988. Subsequent trips have brought the survey out at that island to 132 caves and a second edition on the island caves has been prepared and will likely be published this year.

Anacapa island was another focus point, with 115 caves surveyed, and a book on those caves was published in 1984. The other islands weren’t known to have as many caves and are less accessible. Trips were made to San Miguel Island in 1989, one to Santa Rosa Island in 1993, and a single trip to Santa Barbara Island in 1995. The latter two were in cooperation with the Park Service, which provided transport. For years I thought that we would make a return trip to finish caves there but in recent years the dock on the island was destroyed by a storm so the scheduled trips with the park concessionaire, Island Packers, have been discontinued as landing and getting up on the island is quite problematic until it is repaired—and apparently not a high priority for the park.

Santa Barbara Island

Santa Barbara Island is the smallest (about 1 square mile) and most remote of the islands (about 40 miles out) but our trip there noted a surprising number of caves. It’s ringed almost completely with the same Miocene-age volcanic rocks that are the major cave formers on the other islands. Like its fellow islands in the chain, the volcanics were extruded underwater and later uplifted not only brought it to the surface but left a series of faults that provided the zones of weakness that have allowed the sea to carve some fairly deep caves here, as sea caves go.

What follows is the story of our one sea cave expedition here, which noted about two dozen caves and surveyed 9 of them.

November 3rd through 6th 1995

Djuna Bewley and I rode down to Ventura, California with Damien Ivereigh, arriving at Don Morris’ place about 2:00 AM and getting about four hours of sleep. Don was then working as the CHIS Archaeologist and had helped arrange for our group to stay out at the island and get some assistance from the ranger stationed there.

Next morning we rode out to the island on the Park Service’s boat, the Island Ranger, with a stop at Anacapa island enroute and taking about 3 hours altogether. This journey was part of a regular route to resupply personnel on the islands and take other researchers out and back. No sooner had we arrived then another of our group members, Carl Reuter, pulled up at the dock in his own sailboat, which he had sailed separately with a lady friend, Karen. It was the first leg of a longer sea voyage to Costa Rica for them and we had arranged to meet at the island. At the Landing Cove we were struck by all the seals lounging in the main anchorage who seemed totally nonplussed by our presence. We ended up taking a scouting tour around the island soon after arrival with the NPS Ranger there, Renee Buehl, in a Zodiac style inflatable. We circumnavigated the island and marked all the prospective caves that we saw, the largest entrances being near Webster point and at the south end. We also observed some on the smaller offshore island, Sutil.

The geology is more varied and striking here then on the other Channel Islands, with alternating layers of agglomerate, mudstones, and basalt. Most impressive of all were the vast numbers of sea lions all hanging out on broad benches of mudstone and shale, possibly marine terraces. Some were a good 100 feet above the water and we saw some working their way up higher. Renee said they’ve climbed all the way up the stairway to the bench above the dock. Later on the trip we would see Harbor Seals, who unlike sea lions, are unable to use their hind flippers as “feet” in this manner, so they don’t get far past the beach.

We ended up the day climbing Signal Point, highest point on the island at 635 feet elevation, to watch the sunset.
Nov 4-Arch Point Caves

As a general plan, we would use the Park’s inflatable boat to cover ground faster but tow our kayaks to use for approaching the caves. Inflatable can be risky in caves if there is surge, or especially at low tide if rocks or barnacles are exposed. This morning we were headed toward Webster Point but got sidetracked to a couple of large cave entrances just around Arch Point, which Renee said some fishermen had been working in. The first had a gentle swell rolling in and after scouting in the kayaks we anchored them to some floating kelp and opted to swim in with fins and snorkel gear. There were many seals and it was fun to watch them underwater. They seem to like to follow us around here too as they had the day before when we returned to the dock. This morning we were headed toward Webster Point but got sidetracked to a couple of large cave entrances just around Arch Point, which Renee said some fishermen had been working in. The first had a gentle swell rolling in and after scouting in the kayaks we anchored them to some floating kelp and opted to swim in with fins and snorkel gear. There were many seals and it was fun to watch them underwater. They seem to like to follow us around here too as they had the day before when we returned to the dock.

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Then just a bit further west was another cave with a prominent upper level covered with sea lions and a 12 to 15 foot wide bedrock agglomerate floor. This floor was encrusted with red and green algae and puddles of what proved to be fresh water based on Carl tasting it. This ledge ran back some 200 feet along the edge with a 20 foot drop off into a surge channel on the right. This area below at first seemed very rough but it looked more mellow as the time approached to check it. We had almost blown it off and it did provide a bit of adrenalin rush. We swam back below a chockstone and then the passage widened into a terminal room with a rocky beach with loads of seals. We named the cave Seal Soup for the view from the top of the seals and kelp sloshing around beneath us.

Midway through the passage was a side lead on the left, a very tight-looking and surgey crack through which we could see light in the distance. It became evident that this was the entrance we had seen in-between the two caves, so on the accompanying map we’ve sketched it in since we knew where it was on the survey. Had we done so it would likely have added about 40-50 feet to the survey.

Nov 5
In the morning the group joined Renee the island Ranger for a hike over to Webster point to try and reach the upper level caves we’d seen on our scouting trip the first day. We went off trail on a broad terrace that was bereft of vegetation from so many the seals dragging themselves up. This afforded some fantastic views of arches and sea stacks. The few seals up there started moving down in response to our presence. The high and dry, relict cave proved only some 85 feet long in the volcanic agglomerate but rounding the corner was a huge alcove with two levels, a skylight, and a hole on the other side. Carl did a climb over to it and reported a good cave around the corner. We all decided we ought to hike back and get our kayaks, which we did. A huge group from a cruise ship came by and Renee gave them a spiel on the island and some 1800 more visitors logged in!

Renee proposed ferrying us in our kayaks out to survey some caves at Webster Point. While awaiting his tour group, we surveyed Landing Cove Cave. It went only

Seals hauled out near the arch at Arch Point

Kayaking into the large Seal’s Delight Cave entrance. The red encrusting algae is exposed only at low tide.
97.5 feet. Across from it was an evidently submerged cave, left for a future visit with SCUBA. In the cove we enjoyed great views of seals underwater.

Joining Renee a bit later, we set off in the Park Service inflatable along with our kayaks, reaching the Webster Point area in short order. We began at the arch complex, which was an amazingly large chamber with three large entrances, each around 20 feet high, with great visibility in the water and hordes of seals underwater, along with orange and red sponges and white anemones. I tried some photos of the seals underwater and then after completing this cave which we named Webster Cathedral, we headed further west. Next up was The Cave below where Carl had climbed up this morning. I didn’t go in, but Djuna and Damian did. They said it was fair-sized, and went straight back. Next was a pair of large entrances that went back and joined together. At the rear was a small opening through which light could be seen. Carl had gone through into another cave beyond. We went to a large volume cave next door and surveyed that to almost 300 feet long. Lots of large breakdown and a harbor seal in the rear, so we named it Harbor Seal’s...
Harbor. I shot over around the corner to see a cave that Renee and Damien had checked. About 100 feet of narrow rift led into a large chamber beyond, very dark. That one would have to await another day. From here, we all powered back in the Park inflatable, arriving by moonlight back at the landing dock.

Monday, November 6th.

We bought an extra day out here, by having Don Morris bring out a tent and some sleeping pads as we had had to give up our space in the Park accommodations for other researchers. We began with a dive at Landing Cove to kill time until the late afternoon low tides. We tried recover a “super SWAT light” which had gotten away from me when I was removing a cord wrapped around Renee’s prop the day before. I didn’t find it, but we again had some fun with the seals underwater. They are both curious and playful, sometimes grabbing a fin. We poked into some of the submerged caves in Landing Cove. One had a nice oval cross section and was chock full of swimming seals. I didn’t go in far because my remaining light died, but it looked good. The underwater terrain here was pretty decent and very clear.

Around noon, we headed off in our kayaks for Webster Point once again. The seas were rougher today. We went over to the arch complex on the southwest side where it was a bit calmer and found that some of the four or five channels we’d seen earlier were indeed interconnected. We landed on a beach near the innermost, onto an incredible scene: dozens of female elephant seals hauled out on the beach with Sutil Island in the background. We were in awe listening to them bark. We were able to approach quite closely without spooking them. Current regulations require visitors to stay 50 feet from marine mammals hauled out on land.

We mapped that first big Arch cave, 162 feet long, part of which had clearly collapsed into a littoral sink, for which we named the cave. Then we headed across to the “back door” of the cave Damian had explored the day before. There was a little pool before it that required some tricky kayak maneuvering to get into. Damian made the turn in his shorter kayak, a river kayak much shorter than our 14-foot long sea kayaks. The small entrance broadened underwater and admitted a blue green glow with a single frolicking seal to amuse us. The large chamber beyond was floored with numerous tidepol life encrusted on the rocks, and a small cobble beach in the back housing the requisite seals. The survey was hampered by our sketcher Djuna having a weak headlamp (good waterproof headlamps were hard to come by back then. Today Zebralights and their ilk make sea caving much easier). At one point we had
only one bright light between us all. The swell was very high and a problem when near the rocks, but the survey of Glowing Door went quickly. The ceiling had lots of white calcite crusts. We kayaked back after completing this cave, arriving after dark. Despite the full moon, it was dark as there was a cloud cover, but that night it came out for a spectacular moonlight view and we took a stroll on the Cove Canyon Nature Trail.

**Nov 7**

Next morning we hiked the Arch Point Loop and found it quite spectacular. One had a great view of the large pinnacle, or “rhinos horn” of the North Shore, but not a great view of Webster Point. We returned to the dock with plenty of time to pack before arrival of the NPS boat to return us to Ventura.

**Postscript**

I think there are at least a dozen or more significant caves yet to be surveyed out on Santa Barbara Island, perhaps someday someone will complete a survey of them. If and when the dock is repaired and Island Packers resumes transport there, one could plan to camp for several days with sea kayaks

Above: Images shot underwater in Webster Cathedral Cave of California sea lions. In all our work in the other Channel Islands we have never seen so many seals present in and around the caves. They seemed to be curious about us, following us around and observing.
and finish up the island in a week of work. But that would require being lucky enough to have decent low swell conditions. Perhaps in the future the Park might again be interested in working with us on survey out there—now that we are finally delivering some maps to them after 27 years!

Acknowledgments
I want to thank Channel Islands National Park for their support of this work on Santa Barbara Island. And a big shout out to master cartographer Derek Wolfe for turning our sketch maps into a finished product so that our long ago efforts on this amazing island finally see the light of print.

Two images of seals that have climbed a good hundred feet above the water.
Above: NPS image showing hikers above Littoral Sink Cave and below, a kayaker’s view of the arch and sink cave.

These 3 images show Elephant Seals adjacent to Littoral Sink Cave. The islet in the lefthand photo is Sutil Island, SW of the main island.
Richard ‘Roo’ Walters employs pioneering 3D laser scanning technology to find the answers to mysteries such as why clouds form inside the giant cave called Cloud Ladder Hall in China.

Alongside this key quest, the expedition also explores additional underworld stories, shedding light on the science, natural history, mythology, and culture around the featured caverns. Experienced cavers, indigenous people, and scientific experts are our trusted guides. Extraordinary UHD footage brings this subterranean world to life in all its glory, while GoPros and helmet cameras give the viewer an intense POV, as the team navigate extreme environments. (Quote from the teaser text).

Note: Underworld is probably one of the most overused film titles around. The series is not easily found with a Google search.

Documents about caves are typically one-offs, so I was intrigued after learning about the Underworld series in Descent. I watched it as an Amazon Prime channel which offers a 7 day free trial and 2.99/month thereafter.

The UK-based series consists of five, 52-minute episodes devoted to different regions:

- The UK, with a focus on the making a 3D scan of Titan shaft, the deepest in the country at 464 feet.
- Gibraltar, with a focus on Gorhams’s Cave, famous for arachaeology, and miles of manmade tunnels in limestone.
- Slovenia, where the team visits the ice cave Paradna to measure depth of the ice and allow visit some classics such as Krizna Jama.
- Belize, with a focus on why the Mayan civilization collapsed. Highlights are Actun Tunichil Muknau, the cave famous for human skeletons embedded in macrocrystalline flowstone.
- China, with a focus on the huge cave chambers there, including the world’s largest.

Weaving the stories together is the work of British caver Roo Walters who has done 3D Lidar scans in “over 200 caves” and in each episode he produces a scan of a cave presumably to answer a scientific question.

**Slovenia**

In Slovenia with its 14,000 caves the focus was an ice cave. Paradna. Of interest was to scan the cave and by using GPR in addition to the Lidar, determine how thick the ice was and hence how many years back potential samples could be examined for climate change research. Intriguingly in the lower depths of the cave no true bottom to the ice could be found, suggesting tens of meters of thickness and possibly ice dating to over 100K years old in the lowest reaches. If the ice could be cored that far, one might be able to sample these layers. We are also treated to some footage in a couple more famous caves, Krizna Jama, which is explored by rafts, and Postojna Jama, a show cave so large that tourists traverse portions of the cave in a small guage railroad (which I once rode, and almost learned the hard way to keep your appendages well inside the open-sided cars as they come quite close to the walls at high speed).

**Belize**

In Belize the cover story is that Roo and fellow cavers are doing Lidar survey in a cave with various Mayan artifacts such as stone walls in an attempt to understand something about the collapse of their civilization. I found this to be a less compelling ratio-

**China**

If you only watch one episode, this features the most spectacular footage. Beautiful drone footage of the south China tower karst and the massive tiankengs such as Dashwei set the stage. We learn that 3 of the world’s largest rooms are here and see them compared on maps. Then we follow a team of 5 cavers descending into the massive Cloud Ladder Hall chamber in Quankou Dong, ostensibly to figure out why clouds form there (this image is on the cover of Robbie Shone’s new book, Hidden Worlds, reviewed in this issue). Their mission involves simply taking some temperature and humidity readings on small handheld units, so it’s not clear why they need such a large group each carrying large, apparently heavy packs. And of course this team makes the “discovery” that there are entrances accessible from the base of the chamber, many of them in fact. The conclusion, probably well formulated beforehand, is that warm air is sucked into the cave through these entrances, rises in the 925 feet of Cloud Ladder Hall, and cools, thus creating a cloud or fog.

Dave Bunnell
Robbie Shone
Innsbruck, Austria

A cave explorer and visual storyteller, Robbie is recognized as one of the most accomplished cave photographers in the world. He is based in the heart of the Alps in the scenic alpine town of Innsbruck, Austria. Whilst completing a B.A. in Fine Art and Photography, Sheffield, UK, Robbie pursued his love of the outdoors. He developed a strong interest in caving, and in particular the challenges that cave photography has to offer.

Over the past twenty years, Robbie has lit up and captured stunning images of the naturally pitch-black world beneath our feet. His work has featured in national and international publications including magazines National Geographic, National Geographic Science, GEO, Intelligent Life, Stern, View and Terra Mater; and books @NatGeo – The Most Popular Instagram Photos, Night Vision (Nat Geo), Spectacle (Nat Geo), Almanac 2019 (Nat Geo), Bear Grylls Great Outdoor Adventures, and Robin Hanbury-Tenison’s The Great Explorers and Finding Eden. Robbie has also worked for the European Space Agency (ESA) on the PANGAEA and PANGAEA-X programs in which he documented astronauts undergoing geological and microbiological field training.

Robbie’s exciting expedition photography has taken him to the remotest parts of the world where he’s photographed the ‘deepest’, ‘largest’, ‘longest’ cave systems known. In September 2018, Robbie spent two weeks underground as part of a National Geographic-funded expedition to the bottom of Veryovkina (-2,212 m), the deepest-known cave in the world located in the Caucasus Mountains of Abkhazia (Georgia). After being at the bottom for a whole week, things turned for the worse when a flood pulse hit; in order to save his own life and not endanger the lives of others, Robbie took only his valuable memory cards with him and left everything else to the mercy of the rising waters.

Besides exciting times at the bottom of the deepest-known cave in the world, he’s hung on a thin rope, photographing 200 m above the floor in the world’s deepest natural shaft; explored the far ends of a 189 km long cave system; and photographed Sarawak Chamber, one of the world’s largest underground chambers, the size of eight soccer pitches. In pitch blackness with no natural light, these are all amazing achievements!

Robbie has received many national and international awards, and is often an invited speaker, workshop lecturer or competition judge. Robbie is not restricted to cave photography, with several of his wildlife, travel and landscape images achieving finalist status in highly acclaimed international travel and wildlife competitions. Robbie works as an expert on National Geographic Student Expeditions, and has worked for major film and television crews including the IMAX film Ancient Caves, BBC ‘Earth – The Power of the Planet’, ‘Ultimate Caving’ and ‘Blue Peter’.

(Extracted from a Press Release for Robbie’s new book, Hidden Worlds. See the review on page 23 for more information.)

It sounds like you were studying photography before you took up caving? And tell us about your first caving trip?

I was studying Fine Art at University not really knowing where it was going to take me. I loved making giant paintings that I painted on the floor. At the time, a friend on the course persuaded me to try caving. Reluctantly I said yes, but immediately I was hooked! I was thrilled by the adrenalin and rush that came with rappelling 4m down a small waterfall into a small circular room with a pool in the middle. We waited whilst all the other novice cavers came down and I remember the shouts and screams from the others that echoed around the chamber. It was almost overwhelming. To the right of me a black space carried the stream into the unknown. Unfortunately, I had to wait. But as soon as everyone was down safely, I was off!

From that point on, I wanted to be underground 24/7. I quickly realized I wanted to make pictures of the caves too, but the giant paintings were way too impractical, so at that point I kind of put down the paint brush and picked up the camera. The camera was the perfect tool to fulfill my desires. I had to teach myself cave photography, because nobody at Uni knew anything about it. I picked up a copy of Images Below by Chris Howes and off I went.

Do you have a standard photo kit for “normal caves”, ie, those that aren’t giant rooms or pits?

Now I use a combination of two camera setups depending on how extreme the journey is to the photo locations. It varies from a heavy Nikon D850 DSLR & Nikon 14-24mm F/2.8 lens and a Nikon Z7 MKII mirrorless camera with the Nikon Z 14-24mm F/2.8.

What was your approach to shooting in big rooms like the Sarawak Chamber, I’d guess radios and flashbulbs, and how many assistants?

For the big rooms like Cloud Ladder Hall and Sarawak Chamber, yes we had to use PMR walkie talkie radios to communicate because our voices simply get lost in so much space. I love to use the Megagflash PF200 and PF300 flashbulbs. I love the light and the crackle of those things going off.

What’s been your most challenging shoot?

Titan in Peak Cavern was the first ‘big’ shoot that took three years to perfect, and I suppose as it was the first, it was probably the most challenging. After that, there is so much experience and knowledge under the belt to draw from. I suppose, anything that involves hanging on a rope and bolting the tripod to the wall makes the shoot a little more challenging, but fun at the same time.

Are you active in the general caving community in the UK? If so what club(s) are you part of?

No, not since emigrating to Innsbruck, Austria (11 years ago).

What cavers have most inspired you or served as role models?

Cave photographers would be, Chris Howes (Images Below), Jerry Wooldridge and his Mulu work, Paul Deakin, Urs Widmer and his Lechuguilla work along with Nick Nichols and his TAG and Lech work, Stephen Alvarez (Nat Geo) and Carsten Peter (Nat Geo).

Cavers would be Dave (Moose) Nixon for his dedication and commitment to exploring (digging) Titan and Peak Cavern. I learnt a lot from his attention to detail and work ethic. Dave Gill, Jean-Paul Sounier, Al Warld and Julia James for their work in PNG and New Britain.
What’s your favorite type of photography outside of caves?
I don’t have any.

What advice would you offer the beginning cave photographer?
Good luck! It’s a hard slog. Never give up, especially when things fail. In the early days, I used to destroy cameras in the mud, knock tripods over by mistake, electrocute myself with strobes touching water, flood Peli Cases by not sealing them properly, over and under expose film to the point nothing was recognizable, but by not giving up, means you won’t make that mistake again. For the biggest mistake to make with something so hard won is to give up! The reward with success is so special.

In the same vein, have you conducted cave photography workshops?
No

What award or honor are you most proud of?
Hmmmmm, not sure really. When I was young, I really wanted to win the Premier Trophy at the Hidden Earth conference three years on the bounce because it had never been done before. I wouldn’t say that’s my proudest honour, but back then I was driven by these kinds of achievements.

You may be too young for a bucket list yet, but if you were making one what would be your top caves or places to visit that you haven’t yet done?
I would love to visit Hang Son Doong in Vietnam with my camera. When I was there in 2010 with Carsten Peter for Nat Geo, I was just the mere assistant and not allowed to take photographs. I feel there’s a missing portfolio to that cave that hasn’t been taken yet.

Photos, top to bottom:
Pictured here is the main upstream entrance of Krem (cave) Chympe, India. Two waterfalls cascade over the lip and plummet down to a pool of waist-deep water. Swiss cavers Marie-José and Simone Buchmann wade through the water towards Rich Hudson (UK) who is busy unpacking his caving bag before another trip underground.

A British caver wanders down a sandy ramp in this giant fossil passage called ‘1954’ deep underground in Clearwater Cave, in Gunung Mulu National Park, Sarawak, Borneo.

Large stalagmites at the foot of a giant ascending ramp to another level of development in San Wang Dong create a spectacle midway through a section of cave called Crusty Duvets. The jagged and uneven floor surrounding the three isolated formations is as delicate and untouched as the stalagmites themselves.
Robbie’s new book, *Hidden Worlds*, contains a number of anecdotes garnered from his cave photography. What follows below is one of these:

“In 2006, during the Untamed Rivers Expedition in Papua New Guinea, our team was joined by National Geographic photographer; Stephen Alvarez and his two assistants; Nancy Pistole and Matt Oliphant. As a budding cave photographer trying to absorb as much as I could from a great master, one day Stephen had asked me to help him with a photograph of ‘Myo Lake’ deep in the giant river passage of Phantom Pot. Of course, I jumped at the chance. Stephen set up to take a photo on a small island. My job was simply to help him out when he needed it. Once he’d finished, I got to work dutifully assisting, as I knew I should. The tripod seemed an obvious thing to pack away so I headed for that. Things went wrong though when I spun the tripod head a bit too much. It flew straight out of my hands into the depths of Myo Lake. There was only one thing for it. I couldn’t lose the tripod head of the Nat Geo photographer. I took off my buoyancy aid and dived in head first. In the clear water against a white limestone background, the shiny black tripod head was easy to spot, though several metres down and situated in a canyon between the two islands. I wasn’t going to be defeated. I swam as hard as I could, worried that the ropes on my harness might get snagged on a sharp rock. It was a relief when I grasped it in my hand and rose to the surface. My arm rose out of the water in a pose like the Statue of Liberty. I said to Stephen, ‘you might need this’. He looked shocked. I think he hadn’t realised what was going on until it was all over. Thanks Stephen for a great memory and a great story and of course for providing the lighting setup for this photograph.”

Photos, top to bottom:

- Suspended on a rope many meters below the surface of the glacier, Italian cave explorer Daniela Barbier climbs towards the top of a vertical shaft in a moulin on the Gornergletscher in Switzerland.

- The view looking across the wall at the cave entrance and at Gasterntal valley disappearing off into the distance. Huk (yellow pants) and the team begin their decent down from the Geltenbach cave to the valley below.

- In 2006 I took this photo in Ora River Cave whilst on an expedition to explore some of the worlds largest river caves in the Nakanai Mountains, Papua New Guinea. I was just starting out with cave photography back then and was learning a lot from Nat Geo photographer Stephen Alvarez (@salvarezphoto) whilst on this trip. I was excited to see this image used on the front cover of Cave and Karst Science.
Imawari Yueta (cave) on top of the Auyan Tepui is arguably one of the most spectacular caves on the planet Earth and we were fortunate enough to spend a week camped up by the entrance and given full access into its amazing network of beautiful galleries and stunning passages. A giant skylight entrance allows a waterfall to cascade down into the cave below. Two members of La Venta add scale to this amazing space. Francesco Sauro is an Italian geologist who studies bioorganisms found in rare quartzite caves that are located inside Tepuis in Venezuela. He is a member of the Italian geographic exploration group called La Venta. He is also a recipient of the 2014 Rolex Award that partly funded the expeditions to the Auyan Tepui and Sarrisarin-ama Tepui in Venezuela in 2016.
The highlight (for me) of the 2006 expedition to Papua New Guinea was definitely finding the huge river passage in Phantom Pot. That said, it was made extremely hard and painful by having a cracked rib. The first 2.5 km of the cave was tight, meandering, and like a cheese grater. When we broke into the river passage, we first headed upstream. Swimming 300 metres was difficult with the pain in the chest, but well worth it as we were rewarded with the discovery of this stunning and beautiful ‘Myo Lake’. It is quite simply one of the most spectacular sights I have ever seen underground. The passage in the distance on the other side of the lake is the one that we came from. We named the lake after the newly released Petzl Myo head torch, which was revolutionary at the time and most of the expedition members were using it. Myo Falls, which is the 10m high waterfall on the right of the picture, was climbed with the aid of a piton that we discovered in Ora cave. The piton had been left behind by the original explorers in 1972 and a rather nice homage to that first pioneering expedition to Ora.

Below: a highly decorated stunning side gallery in Krem (cave) Chympe in India known as the Perfect Passage.
The most iconic and most famous part of Lechuguilla is The Chandelier Ballroom. It is an area of the cave that contains the largest and most beautiful cluster of gypsum chandeliers underground in the world. This picture is the rarest of them all. Nobody in the world has ever had the opportunity to photograph this set of gypsum chandeliers. Huge thanks to Hazel Barton for asking permission for me to go off the pathway to photograph them. Pictured here, Gina Moseley carefully walks in amongst a group of gypsum chandeliers never photographed before.

Lake Castrovalva in Lechuguilla offers unique and other-worldly formations. Pictured here, Gina Moseley paddles in a small inflatable boat we used to cross the lake. Everything we wore and took into Lake Castrovalva had to be super clean. We had to change our clothes before entering this pristine section of Lechuguiilla. Giant cave mammillaries grow underwater and a section of them are now exposed since the water levels have dropped.
An article titled “The NSS Vertical Training Commission” in the NSS News (October 2021) introduced the membership to a proposed new commission that would create a national-scale vertical training program for cavers. This article summarizes our progress and outlines the steps that we are taking to realize this exciting vision.

VTC Charter

In August 2021, the NSS Board of Governors (BOG) approved the creation of a Vertical Training Transition Committee, which they charged with drafting the Vertical Training Commission (VTC) charter. In October 2021, the transition committee, led by Hazel Barton and consisting of 13 NSS members with strong and diverse vertical caving backgrounds, solicited input on a draft charter from the NSS membership. As part of our outreach, Hazel also created an NSS YouTube channel video presentation, and hosted an online “town hall” for the NSS membership.

The draft charter received more than 1,000 online views and 87 written comments. The transition committee considered these comments as it created the final charter draft, which was submitted to the NSS BOG and approved in December 2021.

The approved charter charges VTC with:

- Creating a training curriculum to help interested individuals obtain the appropriate and sufficient competencies, critical thinking, and problem-solving skills needed to be safe while using vertical caving techniques.
- Developing and maintaining a vertical training program that provides hands-on experience and training through vertical training courses that are accessible, attainable, and understandable to people of diverse knowledge sets and backgrounds, while maintaining minimal costs and bureaucratic processes.
- Training competent, safe, and active vertical trainers to be proficient in teaching VTC educational materials.

As outlined in our charter, VTC has adopted a “train-the-trainer” model for our educational programs. A key advantage of this model is that it allows VTC to rapidly scale up our vertical training program, enabling us to deliver high quality vertical training to a large number of students. Nationally trained and qualified “master trainers” will train and qualify “trainers” at the regional level. These trainers will in turn deliver VTC-approved vertical training curricula, primarily in conjunction with NSS grottos.

VTC Structure and Initial Personnel

The VTC charter, available soon at vtc.caves.org, created the VTC board to manage the overall affairs of the organization. The board, which consists of three officers and eight regional coordinators, also develops master-trainer and trainer qualification and evaluation criteria, facilitates training opportunities, and reviews and approves course curricula. The VTC curriculum committee, consisting of up to seven individuals with strong and diverse vertical caving and/or educational backgrounds, identifies the core competencies for safe vertical caving and creates the vertical training courses. The VTC advisory board, established by the VTC board at its first meeting, serves as an informal resource to both the board and curriculum committee, but has no specific responsibilities. The charter also establishes a webmaster, who develops and maintains the VTC website.

After reviewing online applications from 73 prospective VTC volunteers, we are excited to announce that NSS AVP Adam Weaver has made the following initial appointments:

- National Coordinator: Ron Miller
- Secretary/Treasurer: Jenny Tison
- Education Chair: Hazel Barton
- Regional Coordinators:
  - North Eastern: (CT, ME, MA, NH, NY, RI, VT): Jessica van Ord
  - Eastern: (VA, WV, PA, NJ, MD, DE, DC, OH): Kurt Waldron
  - South Eastern: (FL, GA, SC, NC, TN, AL, MS, PR, VI): Philip Rijkwelker
  - Central: (IL, IN, IA, KY, MI, MN, MO, WI): Anmar Mirza
  - South Central: (AR, LA, NM, KS, OK, TX): Geary Schindel
  - Rocky Mountain: (CO, WY, MT, SD, NE, ND): Georgia Schneider
  - Western: (NV, UT, AZ, CA): Annelisa “EC” Moe
  - Pacific Northwest: (AK, ID, OR, WA, HI, GU, AS, MP): Eddy Cartaya

Curriculum Committee

- Hazel Barton (chair)
- Reilly Blackwell
- Derek Bristol
- Emily Davis
- Jesse Houser
- Jeremy Weremeichik
- Tim White

Advisory Board

- Pat Kambesis
- Bruce Smith
- Gary Holliday
- Devra Heyer (ex officio)
- Interim Webmaster
- Aaron Irons

The VTC board is still working to establish qualification and evaluation criteria for master trainers and trainers. If you applied to be what was initially described as a VTC “instructor,” we greatly appreciate your patience. If you have not yet applied but are interested in serving VTC in either capacity, online applications should be available soon at our website.

Next Steps

The initial VTC staff are actively engaged to realize the vision of an NSS-led national vertical training program. To that end, we are currently working on a number of “next steps”:

- Developing a “Level 1” vertical training curriculum;
- Developing training curricula, qualification criteria, and policies and procedures for trainers and master trainers;
- Developing a robust risk management program to maximize safety and minimize liability exposure;
- Developing content for the web site;
- Revising the draft bylaws that were referenced in VTC charter;
- Assessing our capital and initial operational needs, and developing a fundraising program to meet those needs;
- Developing an outreach program to make sure that prospective trainers, other volunteers, and students are aware of what we are doing;
- Evaluating approaches necessary to maximize opportunities for the training of interested cavers; and
- Developing a strategic plan to guide our operations and growth over the next 3-5 years.

We believe that VTC represents an exciting change for the NSS, and one that has the potential to benefit our caving community for generations. We greatly appreciate the contributions from all of the NSS members who have offered both supportive and constructive input on this new venture. Going forward, we will need the help of many more volunteers to build out our ranks of master-trainers and trainers.
and to help ensure the success and long-term sustainability of VTC’s educational programs. We look forward to doing that in partnership with all of you.

Interested in helping?
VTC is currently looking for the following types of assistance; please reach out via our soon-to-be-live website (vtc.caves.org) if any of the below are a fit for you:

- **Volunteers:** it’s not too late to let us know if you’re interested in becoming a master trainer or trainer, or to volunteer in other ways.
- **In-Kind Donations** (new, unused condition only): ropes and rigging gear; personal vertical gear for “loaner” systems.
- **Financial Donations:** to help defray capital and initial operating costs, and to help endow a scholarship program to ensure that prospective students, trainers, and master trainers are able to participate in VTC’s vertical training programs.

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**NSS Conventions Patch Series Finally Completed!**

**Gary K. Soule, NSS 11198**

In a remarkable turn of events, the day has finally come that I thought I would never see. The last gaps have now been filled in so that every single NSS Convention since the first landmark patch for the 1966 California NSS Convention appeared, are now all represented by an embroidered cloth patch!

It was at the 25th Anniversary NSS Convention held at Giant Forest, a village in Sequoia National Park, that for the first time ever, a commemorative NSS Convention patch was produced. It was a yellow 3 3/8’s inch diameter, circular patch that showed a green tree on it. The convention was held from June 11–19, 1966.

No convention patches were made for the next three years until the 1970 NSS Convention in Pennsylvania was held. After that, gaps occurred for the 1971, Blacksburg, Virginia, convention, and no official patches were issued for the 1973, 1974, 1977, and 1987 NSS Conventions either.

Ernst Kastning (NSS 12164) of Radford, Virginia, stepped forward and years later had made the missing 1977 and 1987 Michigan NSS Convention patches. After this, no future NSS Convention patches were missed, but not without an additional effort.

When it appeared that the Covid 19 virus would create a virtual NSS Convention in 2020, Richard Raber (NSS 6695) of Effingham, Illinois, came forward and saw to it that not only was a 2020 NSS Convention patch made, but a pin as well! Since the 2021 NSS Convention at Weeds, California, was also a virtual convention, Richard once again nicely stepped forward and handled the ordering and sales of both a 2021 NSS Convention patch, and even a 2021 NSS Convention pin.

Patch collectors, and even cavers in general, had long given up hope of ever filling in the earlier missing NSS Conventions patch gaps after the initial 25th NSS Convention Anniversary patch.

Now, despite considerable time and expense, caver Steve Taylor (NSS 52318) of Lee’s Summit, Missouri, stepped up to the plate and put his considerable graphic arts talents and personal experience to good use. Steve is extremely good at what he does. He has now not only filled in all the patch gaps in the NSS Conventions patch series, but has turned his attention to many NSS affiliated grottos that have never even had a patch! He has produced many other cave anniversary and event patches over the years as well. He has only ten patches made of each design by a patch company, but has already done some 40 different patches!

It was way back in the March, 1995, NSS News, when my initial feature article on archiving fascinating U.S. cave patches first appeared. Numerous black and white grotto patches were illustrated and described at that time. The first official, color grotto patch pages appeared in the June, 2002, issue of the NSS News. The major milestone of reaching 150 different NSS affiliated grottos who have had at least one representative patch made, was in an article I did on page 26 of the August, 2005, NSS News. Some seven years later, the significant milestone of 175 different NSS affiliated grottos represented by a patch was reached in an article that I did on page 29 of the March, 2011, NSS News.

Now as you read this article a decade later, just over 200 different NSS affiliated grottos are now represented in my extensive patch archives thanks to Steve’s commendable efforts, and others. Previously, only three states have, or had, an NSS-affiliated grotto, but having no patch, these grottos and states were not able to be represented. They were Hawaii, Louisiana, and South Carolina. All three of these states have now had their grottos represented, and even Guam, which had an NSS affiliated grotto at one time!

A total of 203 NSS affiliated grottos are now represented by archived patches. These grottos are from 45 different states, plus the District of Columbia, Costa Rica, Germany, Guam, and the Philippines. Missouri and Tennessee lead the states by each having 14 different grottos represented.

Steve is very proud of the fact that he selected the New England Grotto as the 200th NSS affiliated grotto to ever have had the honor of having had a representative patch produced. This was through the more recent efforts of Steve’s fine artwork and funding. The New England Grotto of Middlebury, Connecticut, was officially the very first NSS grotto. This grotto existed from 1941 through 1953, and then again from 1981 through 1984.

Whenever possible, Steve likes to try and find a graphic reproduction of the grotto symbol, or insignia, on the internet, or elsewhere. He then reproduces it as a patch, or else does his own original graphic design to represent the grotto. Due to only ten patches being made of any one patch style, it is a very expensive route to go. But it is history that has been missing, and thanks to cavers like Steve, Rich, and Ernst, plus my own extensive patch researching, archiving, and promotional efforts over many decades, that my eventual donation to the permanent NSS archives will eventually have well over 3,000 patches. My entire cave library, mail records, and archival notes on who, and where, they came from, will all be eventually passed on to the NSS. In the meantime, my personal archives of patches, brochures, and numerous other show cave collectibles, continues to grow.

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**World’s largest “crystal cave”**

Discovered in 1999 inside an abandoned mine in southern Spain, Pulpi Geode is the largest crystal ‘cave’ of its kind in the world according to this BBC video. While overshadowed by the later discovery of the huge Naica mine crystals in Mexico, that one has been inundated and can no longer be viewed. According to the video, the public can visit this one. Check out their short (just under 6 minutes) video about it here: tinyurl.com/ksfsrz9t
Cloth Patches Part 36: NSS Conventions and Grottos

From the archival collection of Gary K. Soule

1967 NSS Convention
Birmingham and Huntsville, Alabama

1968 NSS Convention
Springfield, Missouri

1969 NSS Convention
Lovell, Wyoming

1971 NSS Convention
Blacksburg, Virginia

1973 NSS Convention
Bloomington, Indiana

1974 NSS Convention
Decorah, Iowa

2021 NSS Convention
Weed, California

NSS 80th Anniversary
1941 - 2021

Balcones Grotto
Austin, Texas

Central Alabama Grotto
Sylacauga, Alabama
1993

Colorado Western Slope Grotto
Cedaredge, Colorado
2006

Crescent City Cavers
New Orleans, Louisiana
1998-Present

Fort Rucker-Ozark Grotto
Ozark, Alabama
1972-1985

Gypsy Underground Grotto
Eugene, Oregon
2000

Hawaii Grotto
Hilo, Hawaii
1991-2010, 2011-Presen

Jackson County Grotto
Scottsboro, Alabama
1998
Cloth Patches Part 37: NSS Grottos, Caves, and Miscellaneous
From the archival collection of Gary K. Soule

Micronesian Cavers
Piti, Guam
1994-1995

New England Grotto
Middlebury, Connecticut
1941-1953, 1981-1984

South Carolina Interstate Grotto
Lexington, South Carolina
1991

South Jersey Grotto
Swedesboro, New Jersey
1995

Stanislaus Grotto
Modesto, California
1967-Present

Upper Cumberland Grotto
Cookeville, Tennessee
1985-Present

Missouri NSS Conventions

Ruskin Cave / Jewel Cave
Dickson, Tennessee
(two ex-commercial caves)

Alberta / British Columbia Cave Rescue
Canada

Canadian Cave Conservancy
Canada

Cave Research Foundation (CRF)
Central Kentucky

Grutas De Cacahuamilpa
Taxco, Mexico
(a huge show cave)

Missouri Speleological Survey
7000 Caves

Pulaski County Cave Project
Missouri
2002-2009

TAG Annual Fall Cave-In
Tennessee, Alabama, Georgia

Western Region 2021 Speleo-Ed (NSS)
Weed, California

NSS News, June 2022 21
In our February issue we published a TIC article by Ergor entitled “AI Explains how caves change”. Then I received the following letter from Philip Heavrin, which I forwarded to Ergor, and he replied with another whole article, printed below it:

I was participating in a multi-grotto cave survey class last weekend. During this class, I read statistics aloud from the NSS News as a piece of fun trivia. I was immediately questioned about it by multiple people—including the instructors. The reason for this e-mail is to verify the statistics.

These numbers are a fun bit that can be added to the survey class powerpoint or other presentations.

In the February issue, on page 19 in Ergor Rubreck’s article “AI Explains How Caves Change”, there was a quote of there being 69,561,905 survey shots in the Mammoth Cave Database when it was at 2,191,200 feet in length.

But, using the average of 31.51 ft per shot as quoted in the article, that would lead to it being in the range of ~69.5 thousand shots, not ~69.5 million shots.

According to those numbers, that means there are approximately 31.7 survey shots in the database for every foot of mapped passage of Mammoth Cave. Even taking into account resurveys and assuming the inclusion of LRUD shots, it seems like a high amount of survey shots. Is the 69,561,605 survey shots number correct?

Phillip Heavrin
NSS # 204617

**Survey Accuracy**

**Ergor Rubreck**

All cavers want to make an accurate cave survey. Pride in work, if nothing else, demands that cave surveys be accurate to 1% if possible. Ideally your cave survey could be used to install an elevator from the Visitor Center down to the Dining Room without missing the place and hitting the Men’s Room by mistake. But the hand-held survey instruments cavers use for mapping simply never yield correct surveys. Compass cards can be slightly elliptical or unbalanced, or irregularly attractive to magnetic north. Metal objects such as headlamps, zippers, or steel-toe shoes may distort the bearing. The clinometer for measuring vertical angles up or down may wiggle. In short, the likelihood of getting two cave surveys over the same set of fixed survey stations is zilch.

As if instrument limits are not sufficient to preclude accurate surveying, human blunders will certainly rule and produce inaccuracy. The note taker who writes “12.1” but shouts back “10 point one,” has closed the door on the accurate survey.

Don’t expensive all-in-one survey instruments surely eliminate errors? The Disto-X and BRIC-4 use marvelous combinations of magnetometers, accelerometers, and range finders to solve the accuracy problem every time? Just point and shoot? NO! It is fast and easy to bounce the laser beam off the point on the wall—really the point 234 feet down the passage instead of 13.4 feet. The inaccurate bearing or distance (or both) are locked in memory along with 999 other sets of bearings, distances and elevations. High instrument cost gives a spurious sense of confidence to the owner. I have heard proud cavers say, “Oh, I never calibrate my Disto-X.”

I have surveyed so many caves that nobody challenges my survey accuracy. If they do, I am ready for them! Here are my ways to achieve 100% accuracy in every cave survey.

**Rubreck’s Accurate Survey System**

1. **Accuracy by Assertion.** TIOLI. “It’s accurate, take it or leave it.”

2. **Cave Full of Shift.** “Artificial Intelligence, AI, explains that caves change all the time. This cave is full of shift.”

3. **Rounding Adjustment.** “The map is accurate, we just made a survey-rounding adjustment.”

4. **Digital Displacement.** “Every digit in the survey is accurate. Some digits are misplaced.”

5. **Radian Substitution.** “The switch flipped on our Disto—it gave us readings in 400 radians instead of 360 degrees.”

6. **Metric Conversion.** “Distances merely look larger; Old Metric converts to millimeters.”

7. **Decimal Displacement.** “The numbers are okay, the decimals points moved.”

Keep the elements of the Rubreck Accurate Survey System handy in case any caver finds fault with your cave survey. If the audience is two or more, you may want to cite two or more system elements to get all onlookers nodding up and down. At an International Speleological Congress you’d better have three elements ready. For emergencies, a quick, “Everybody to the bar for freebies in five minutes!” will clear the aisle.

Another approach altogether is to go on the offensive when anyone questions your survey’s accuracy. At the Sinkhole Conference one year I had displayed a poster discussing a road collapse. Gradual subsidence looks different from catastrophic collapse in profile. As mitigation, the contractor had excavated the breakdown to the cave river floor, installed a few one-foot tiles, and piled loose spoil back onto the tiles. The point of the poster was that repair of a karst collapse needs to preserve the cross-section of the conduit that previously had run pipe-full. Instead, the small tiles backed up the drainage and had begun to pressure-wash the spoil downstream. The road had started to sag again. I had not included a scale on the diagram because I had drawn the sinkhole to be representative. The cars and trucks on the diagram provided all the scale clues most people would want.

A person asked me about the scale. I said it wasn’t a scale diagram, but representative of the distance from the road surface to the cave river bed of about 70 feet. “Don’t you think your diagram would be more accurate if you drew it to scale?”

I said, “What would you do if you knew the scale?” The poster was not supposed to be prescriptive. Rather its point was, If you interrupt the horizontal flow of karst water by adding restrictions, you build up pressure and sweep away loose material.

When I described the 420 mile survey of Mammoth Cave in an article, I said the Cave Research Foundation survey database contained 69,561,909 survey shots making the cave 2,191,200 feet long. I said the average shot was 31.51 feet long. Philip Heavrin gracefully said I was wrong—there should be 69,500 shots, not 69,561,909. How could the figure I used be correct? Could Ergor be wrong???

I recalculated: 420 miles x 5,280 = 2,217,600 feet long x 12 = 26,611,200 inches long x 25.4 = 675,924,480 mm in length (the first time Mammoth Cave has been described in millimeters). Without suffering the embarrassment of being proven wrong, I have quietly corrected myself. Also, thank you Mr. Heavrin. You have helped me add two additional elements to Rubreck’s Accurate Survey System. 8. **O.P.Data.** If somebody questions your survey accuracy, explain that you relied on Other People’s Data, and 9. **Times 12 times 25.4.** Shower them with millimeters. The larger the number, the more accurate it looks. The average survey shot in Mammoth Cave is x 31.5 feet x 12 x 25.4 = 9,601.2 mm.
SID PEROU: 30 YEARS AS AN ADVENTURE CAMERAMAN. BOOK TWO – HANGING ON A THREAD


Celebrated British caver Sid Perou continues his autobiography tracing a remarkable life with this second book, which covers his career as an adventure filmmaker between 1979-2020. This volume is equally enthralling and will be of interest to cavers as well as many outdoor enthusiasts, as the cameraman strives to create solace in his orbit, sharing his experiences of filming documentaries above ground, as well as underneath it. Much like the first volume, the narrative is swiftly paced, and the author recollects more hilarious stories, as well as some hair-raising close calls, while filming in locations across Europe, North America, and a variety of other exotic locations around the world.

In the first few chapters of the book, Perou describes the inherent challenges to film the best British rock climbers of the era, as they tackle some of the most imposing vertical walls in England and Norway. In order to capture the footage of the climbers, the cameraman was obliged to ascend hundreds of feet of fixed ropes, spend multiple nights of cold bivouacs on tiny ledges, and endure long periods of hanging in a seat harness, often dangling in space twenty or thirty feet away from the wall!

During the next few years, Perou would focus his lens on a group of kayakers as they attempted to make an epic first descent of a treacherous River in the Annapurna Range of Nepal. Other Film projects would take him to the sky, literally “hanging on a thread”, attached to a seat harness connected directly to a hot-air balloon (as opposed to the basket), enabling him to capture a unique camera viewpoint while floating over the English countryside of Yorkshire. Other “lofty” assignments involved the filming of an Ultralight Aircraft rally in Great Britain from the angle of the pilot’s seat, and then following the migration of geese across the deserts of Africa from the lofty perspective of a hang glider.

1982 was a critical turning point in the filmmaker’s career, when he received a commission from the British Broadcasting Corporation (BBC) to make a series of one-hour caving films called: Realms of Darkness. The notable titles included “Hollow Mountain of Mulu”: showcasing some of the world’s largest caves located in Sarawak, Borneo; “Elusive depths of Mexico”: an expedition to locate and explore caves in Chiapas, Mexico, where explorers came face to face with the dreaded “Curse of Borovitz”; “Otterhole”: a well-known and challenging cave in England where the cameraman records the spectacularly decorated “Hall of the 30 Chamber” on film for the first time; Caves of Glass: A physically challenging movie project to record the stunning ice caves located high in the mountains of Austria; “Forbidden Chambers of the Cigalere”: A historical re-creation of the early exploration of a cave in the French Pyrenees mountains by famed explorer, Norbert Casteret; and “Drowned River of Dracos”: where cave divers encounter “Naturalists” sunbathing at the sea-side entrance to an extensive underwater cavern.

In 1992 Sid Perou was contracted by National Geographic to film portions of Lechuguilla Cave in Carlsbad Caverns National Park in New Mexico, for a new documentary called “Mysteries Underground”. Two six-day subterranean expeditions were organized to visit and film several well-known, highly decorated regions of the cave (Lake Lebarge, The Chandelier Ballroom, Lake Ccastrovalva, and the Pearlshian Gulf). National Geographic insisted on shooting the documentary on film, rather than video footage, which created a technical challenge for the film crew, requiring many extra hours and a larger underground camera team. However, the spectacular footage he captured (arguably the best-ever shot in Lechuguilla cave) would earn Perou a well-deserved Emmy Award for his efforts.

The final chapters of the book are dedicated to a tribute to the author’s committed wife, Alison, whose role as a nurse and an invaluable assistant on many of his movie projects, died tragically of cancer in the 1990s. We then learn of his subsequent retirement in northern Thailand, where he meets his second wife toward the end of a very unique and accomplished film career.

It would be difficult to underestimate the valuable contribution of Sid Perou as an early pioneer of caving films and the important legacy he left behind. The forward of the book is written by Dave Gill, one of the legendary cavers of Great Britain (who has also published an excellent autobiography of a life dedicated to “journeys Beneath the Earth”) and ends with a very poignant, but all too accurate quote about the films of Sid Perou: “Sadly, in today’s safety-conscious world, many of these films would never be made as they would be classified as far too dangerous, especially with the basic film equipment at the time”.

Todd Warren
I explain below, our friendship and caving, much a greenhorn caver at that point. As Anker and John Mittendorf. generation including Bob Kerry and John in Alaska. He climbed with the best of his alpine routes in the Canadian Rockies and Taos, New Mexico. He also tackled difficult climbing putting up the first 5.12 route near ascents of big walls in Zion that have become are considerable including several first. His accomplishments as a rock climber are considerable including several first ascents of big walls in Zion that have become classic test pieces for today’s generation of climbers. He also pushed the limits of free climbing putting up the first 5.12 route near Taos, New Mexico. He also tackled difficult alpine routes in the Canadian Rockies and in Alaska. He climbed with the best of his generation including Bob Kerry and John Hayes as well as climbing legends Conrad Anker and John Mittendorf.

I met Dave on his first trip to Lechuguilla Cave in the 1980s. Dave was still pretty much a greenhorn caver at that point. As I explain below, our friendship and caving careers became inexorably linked from that moment on. I wrote this more personal tribute (with a little updating) to Dave a day or two after his passing:

I bring the sad news that Dave Jones passed the night of December 27th. The cause of death is unknown but he was doing fairly routine things when he said he didn’t feel well and laid down on the couch where his wife, Jackie, found him deceased the next morning. To those of us in the caving community, especially those involved in Lechuguilla Cave, Dave’s contribution to exploration is legendary. He made such discoveries as the Pearlside Gulf, the NW Passage including Hudson Bay, The Wild West, South Winds including the Southern Climes and the Rock and Rillen Room, Firefall Hall, La Morada Room, Ghostbusters Hall. the PhD Room and many, many more.

And while he was a friend to many in the caving community, he was an especially close friend to me. I would go even further; we were full partners in cave exploration from the time I met him to the moment of his passing. Don Kluever and I took Dave and his brother Peter into Lech for their first trip. And though we had no leads after our first push of the day, we ended up discovering The Big Country including the Pearlside Gulf, the Lip Service Room and the Temple of Dagon. From that point on, we caved together whenever we could and had long talks of our own separate adventures when we couldn’t, constantly strategizing where the cave might yield its secrets.

Fifteen years later when Lechuguilla access dried up, Dave and I were invited on a cave trip to Cerro Rabon in the Mexican State of Oaxaca. The trip started out disastrously but ended up being one of the luckiest things that ever happened. We’ve kept this story secret for decades but the time has come to share it. We met with the rest of the expedition in the local town of Ayuatla and made plans to return the next morning at 7:00 AM. We were told that we would each have a porter to help haul gear to the high camp which they described as a death march. When we returned at the appointed time, the rest of the expedition had already left and there were no porters waiting. Later that day when the porters returned, they were tired and grouchy and not at all interested in helping us the next day, or possibly ever. So there we were stranded in this village with no way to join the expedition. But in talking with one of the locals, he described finding a cave entrance 20 meters wide with horizontal passage beyond he had discovered on a hunting trip. We gave Enrique a ride down the road where he pointed vaguely to a spot on a five-thousand-foot jungle cliff and said “There”.

As we waited around another day with no progress in getting to the expedition camp, I suggested we investigate this report of a big cave entrance. “Ron, I’m a professional field geologist and I know from experience that these jungles are impenetrable. And you heard him, it was a two-hour hike.”

“Humor me.” I replied. Eventually he came around and an hour after embarking on this fool’s errand we were standing in the entrance. I said, “Well let’s head in!”

“But we don’t have any survey gear.”

“No problem, I brought it.” I replied smugly as I pulled the gear from my pack. The main passage gradually narrowed and didn’t look too promising. There was a balcony on the right side and with a boost, Dave topped out.

“There’s a T intersection... The right side is dead... I’ll check the left but it looks dead too...” Fifteen minutes later he returned but refused to tell me what he found. “You’ll find out tomorrow.”

After a fitful night, we returned and fixed a handline. It turned out the left “dead” lead was actually an ancient wall with a nicely constructed doorway. Beyond was wide, decorated passage with pots and bones (including human skulls) that led to a balcony looking down into even larger passage more than 30 meters wide with even larger formations worthy of a show cave.

For the next two weeks, Dave and I explored this magnificent cave alone. We would spend one day together shooting a survey line and after plotting the lines on our sketch pads at the hotel room we would then return and split up to sketch our area of the cave. We found huge passage more than 40 meters wide, more ancient walls, cane torches, pots, more human skeletons and even preserved footprints from the ancients. We were typically an hour travel time apart in this magnificent cavern working in solitude knowing that no one else in the world knew where we were. It is a memory I will always cherish.

We ended up mapping two and a half kilometers and decided that we owed no loyalty to the expedition that ditched us. Thus began a project with Dave and I as project leaders and our friend, Chris Andrews, as our chief cartographer. We held expeditions for eight years. And while some notes have been lost, I would estimate our surveyed length to be around 26 Km.

We took a hiatus from this cave we
called Chine Xao about ten years ago. I wanted to explore the other side of the river where a huge limestone mountain named Cerro Verde loomed mysteriously from our perch at cave entrance campsite. Dave became too busy with work during this time though he’d call regularly and we’d talk for hours telling old Lech stories and recounting each new expedition. Finally this year, he made plans to join us on a special project on Cerro Verde. We’d been in close contact and talked frequently these last few weeks. He was so looking forward to this trip. Our flight was to leave January 3rd.

We have no doubt that Dave would have wanted us to continue with our expedition. He’ll be with us in spirit.

As for Chine Xao, I talked with Chris Andrews and Steve Maynard, an expedition regular and a great friend to Dave and I, soon after Dave’s death. With Dave’s passing, there was a promise we made those many years ago I needed to keep. With our full blessing, Chris and Steve are now new co-leaders of the Chine Xao exploration project. We have been in touch with the local authorities and are on track to start up the project soon. We plan to share more about the cave as expeditions resume in the years to follow. Plans for an early return are already taking shape.

Regarding the “special project” in Cerro Verde, this work continues and a second trip is now planned in the very near future. Continuing his good work is the best way we can think of to honor Dave’s cave exploring legacy.

We miss you dear friend.

Ron DeLano

The Passing of my Brother, Dave Jones:

On December 28th, 2021, we received a phone call from my brother Dave Jones’s wife, Jackie Rodriguez, that Dave had died. This seemed to be so unbelievable that I had to call the Tucson, AZ Police Dept to confirm his passing. How in the world a man who was in excellent physical shape with no known medical issues could have passed away in his sleep was simply impossible, yet it was the truth. It still seems to be a bad dream that I have yet to wake up from…

Dave was born in Greenwich, Connecticut on April 6th, 1956 to our family of father Alexander Jones, Jr, mother Elizabeth McKinlay Jones, 7 year old me and yet to be born youngest brother Doug. We grew up in Darien, CT and benefitted from what I have yet to wake up from…

Dave graduated from Dartmouth College in 1978 and left behind him the first climb of the smokestack of the college power plant. His strong interest in geology led him to moving to Arizona for his Masters Degree. He spent much of his free time rock climbing throughout the southwest. As a caver myself for 10 years in the Guadalupe Mountains of New Mexico, I invited him to go caving with me at some time in the early 80s, several years before the digging discovery of Lechuguilla Cave. It took no time for him to become enamored of caving and our first trip into Lech in 1989 cinched his future as one of the strongest climbers and discoverers in the cave.

Dave was married to Jackie Brisen Rodriguez on August 7, 2004 and became step-father to her daughter, Jacqueline Ortiz.

To my brother Dave, you certainly have lived a stellar life as a geologist, rock climber and caver extraordinaire. You deserve all the accolades that have been pouring in on you. Somehow, I have survived as the oldest and last of us three brothers. We all lived a wonderful life with great parents and siblings. I will miss you a lot…

Peter Jones

Clifford F. Lindsay

(1946 to 2022)

NSS 11224RL, FE

Cliff Lindsay, 75, of Frankford, W.Va., passed away on Monday, Jan. 10, 2022. Cliff was born on Nov. 13, 1946, in Bedford, Va., and was the son of the late John Crawford and Joyce Fry Lindsay. Cliff graduated from William and Mary with a B.S. in chemistry and Virginia Tech with an MS and PhD in Mining Engineering. He was a retired mining engineer who worked for the Mine Safety and Health Administration his entire career.

Cliff had passion for everything that dealt with geology, and was an avid mineral collector, but his primary obsession was the caves of the Greenbrier Valley, where he spent over 50 years exploring and mapping. Cliff was a life member and fellow of the National Speleological Society (NSS) where he served on the Board of Directors and as an officer, and a founding member of the WVACS where he served on the Board of Directors and as an officer, and a founding member and director of the West Virginia Cave Conservancy. Cliff was also working on a book about the caves and karst in the area around Renick, which will soon be published.

Cliff was introduced to caving in 1969 in Organ Cave. After that, he was hooked and made the trip from Northern Virginia almost every week-end to explore and map. He became an expert minerology reader and was happy to run the instruments. He surveyed in all the major contact caves in Greenbrier and was especially fond of McClung. On Sept. 14, 1986, he was one of the few cavers who could navigate the cave well and cut a path for McClung to find a missing caver. It was his team who found Jeff Dersch of Ohio in the Seven Fingers area.

He was also interested in documenting and surveying the smaller caves. While still living in Virginia he purchased the property containing the Fuller Entrance to the Culverson Creek Cave System with the idea of a retirement farm. Over the years he added to more adjacent property and built his home on the ridge above. Cliff’s love of caves is what brought him to settle in Greenbrier County for the last 30 years of his life. He and his wife, Lois, received the Virginia Region’s Landowner of the Year award for their stewardship of Fuller Cave in 2020. On the second Saturday of April 1969, he was invited to a WVACS field day in Organ Cave. This marked his first trip in the Organ Cave System, his first caving trip in Greenbrier County, and his first trip with Bill Balfour. Exactly 50 years later, a celebration of this event took place at Organ Cave on April 13, 2019 with live music, pizza, beer, and caving.

In addition to his parents, he was preceded in death by a brother John M. Lindsay and his wife, Jane. Survivors include his loving wife of 43 years, Lois Blevins Lindsay, a very special niece and goddaughter, Jessica C. H. Lindsay, and fiancé Nathaniel Milder of Rockville, Maryland.

A celebration of Cliff’s life is being planned for sometime in the early summer of 2022.

Bill Balfour and Nikki Fox

NSS News, June 2022

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the lost cave. Initially unsuccessful, careful analysis of LIDAR resources and old texts eventually led Michael to success. Located at the bottom of a steep-walled gorge in Wildcat Hollow, the elusive cave’s unique combination of geological makeup and directional orientation makes it a cold air sink.

Steve Higham surveyed and photographed two talus caves on the slopes of Hedgehog Hill in Sutton, New Hampshire. Hedgehog Hill Cave #1 and Hedgehog Hill Cave #2 are both surprisingly spacious and long for talus caverns, with both having ceilings at least 10 feet tall and passages nearly 100 feet long.

Intrigued by Ice Gulch Cave’s appearance in publications dating from the 19th and early 20th centuries, Michael Girard explored the overgrown slopes and gorges of Salisbury Connecticut’s Wildcat Hollow hoping to find Karst Chronicle
Mid-Atlantic Karst Conservancy
Fall and Winter 2021, Vol. 24, No.2 and 3

Numerous trips into Sarah Furnace Cave over the entirety of 2021 grew the mazy, tight cave bit by bit, slowly pushing it over the five-mile mark in June and then over the six-mile mark in early November. Now the longest cave in Pennsylvania, Sarah Furnace is currently 6.44 miles long with dozens of tight muddy passages still in need of exploration and mapping.

Relatively new to caving, Carson Leatherland sought the help of Blue Ridge Grotto members Dave Socky and Doug Feller to explore and map Cow Cave, which is located on Caron’s property. A 16-foot downclimb leads to 120 feet of rubble-filled passages and climbs, with a significant amount of surface debris and garbage littering the floors.

A large crew of Indiana cavers have focused their efforts on Butch’s Dig Cave, which based on airflow and dye traces appears to hold the secret to a large cave complex below the Indiana sinkhole plains. Knowing a large dig effort was needed, Gary Roberson and Rand Heazlitt rented an excavator to get the digging process started. A lot of rock and dirt removal has generated a going stream lead with strong wind; however, additional digging will be needed to access the anticipated large cave beyond.

A team of cavers descended on the Shoveleater/Hellhole System for a weekend of technical digging and aid climbing. While the dig dead-ended in scary, loose breakdown and tight passages, the climbing team was able to make a fair amount of progress up Waterfall Dome, which is estimated to be over 400 feet tall.
Decade Pins have been sent out! Every year our office staff manages and mails out the decade pins to our membership based on the number of years as an active member. The pins celebrate 5, 10, 20, 30, 40, 50, 60 and even 70+ years of membership to the NSS! I am looking forward to my 20-year pin very soon!

We have updated our membership platform, YourMembership (YM) to now display membership start dates so that folks can also track their membership length. Please check it out next time you login and let the office know if you feel there is an error. Please be aware that per a board act, the membership start date resets after the membership has lapsed for 90 days. This reset rule was not in effect from 2016-2019 as we transitioned into the new membership software.

We also have updated the Primary Affiliation Grotto field in YourMembership member’s profile. “Primary Affiliation” is often confused with “Groups Affiliation” in YourMembership. There are “groups” where people can join multiple grottos, this is more for the social aspects of YourMembership. You can keep up with multiple locations if you wish. The purpose of the Primary Affiliation is for voting rights of the grotto. The Primary Affiliation Grotto should be the grotto they are paying yearly dues to. You can only select 1 grotto as your Primary.

Exciting Updates from our OVP, Maureen Handler

The NSS Museum has new display cases! The existing cases have been filled up with our museum displays. In order to display more museum items, the NSS purchased 19 new display cases. These cases arrived earlier this year and are now set up in the museum area at the HQ. Our volunteers, under the leadership of Scott Shaw, our museum curator, are working hard to display and label more of our items. This area is a highlight for tours of the headquarters. We are working on additional displays for items such as the evolution of caving helmets and our beautiful collection of cave related quilts. Individual and grotto sponsorships are available for the display cases. Case sponsorships are $1000 per case. Partial sponsorships are also available. Contact the office staff or Maureen Handler, NSS OVP if you have interest or questions about sponsoring a case.

Membership

Our membership numbers continue to rise. As of May 1, 2022, we have 7,884 members. That is a net increase of 31 members from the April 1, 2022 membership stat of 7,853.

I am looking forward to spending time with our caving family in South Dakota at the NSS Convention. I hope to see you there! The 2022 NSS convention will be held June 13-17th in Rapid City. Register at https://nss2022.caves.org/

Kristine Ebrey
58439 RL FE
President, National Speleological Society