

The Western Cave Conservancy

Protecting the West's Last Frontier

Vol 2 No 2 Spring 2005

Eastern Nevada Caves in Trouble

But you *can* help!

Southern Nevada Water Authority (SNWA) is proposing to drill over 100 wells, build over 400 miles of pipeline, construct pumping stations, water treatment facilities, support facilities, and install power lines to transport up to 200,000 acre-feet per year from Clark, Lincoln and White Pine counties to the Las Vegas area. The magnitude of the pumping would have huge impacts on area springs, wells—and caves!

A recent USGS study, “The Susceptibility of Water Resources in Great Basin National Park to Groundwater Pumping in Adjacent Valleys” to be published later this year, shows that the pumping will affect several watersheds in the park, including the Lehman Cave area, Baker Creek Cave System, Snake Creek Cave, and areas outside the park, like Indian Burial Cave, Forgotten Cave, and others. In addition, the proposed pipeline has conduits into Cave Valley (Cave Valley Cave) and White River Valley (Whipple Cave area).

Without water in the Baker Creek cave system, many cave biota species, including endemic species like the newly discovered springtail in Model Cave, could disappear. In addition, cave-forming processes could greatly be reduced in all of these areas. Just because caves are un-



Photo: Matthew Leissing

Whipple Cave, one of the spectacular Nevada caves potentially threatened by the proposed water projects.

derground and not easily seen doesn't mean they should be ignored.

What can you do? Send your comments to: Bruce Flinn, Bureau of Land Management, Attn: Clark, Lincoln, and White Pine Counties Groundwater Development Project, HC33, Box 33500, Ely, Nevada 89301-9408.

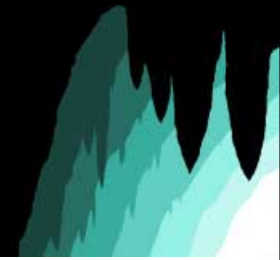
In May 2006, a draft Environmental Impact Study (EIS) will be written and distributed for public comment, followed by the final EIS in May 2007. A concurrent USGS study about the hydrology of the area is also due out in May 2007.

It is very important to get as much public input as possible about how we want the resources we care about to be protected. If you'd like to learn more about this issue, you may contact Marianne Russo: mrusso@westerncaves.org (916) 663-2571.

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WESTERN CAVE CONSERVANCY

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RECOMMENDED READING

http://www.nv.blm.gov/ely/SNWA_GWProject/snwagp_intro.htm

Kirby, Stefan, and Hugh Hurlow. 2005. BLM EIS site. Hydrogeologic setting of the Snake Valley Hydrologic Basin, Millard County, Utah, and White Pine and Lincoln Counties, Nevada

<http://geology.utah.gov/utahgeo/water/index.htm#resources>

Implications for possible effects of proposed water wells. Utah Geological Survey Report of Investigation 254. 39 pp.

<http://www.NVgroundwaterproject.org>

Southern Nevada Water Authority Groundwater Project Website.

<http://nrwt1.nr.state.ut.us/>

Utah Division of Water Rights. This website is particularly informative, with publications available about the Snake Valley area and meeting minutes, powerpoint presentations, and questions and answers for the March 2005 meeting with the Utah State Water Engineer.



Photo: Kip Baumann

Just a Thought

For some time now folks have been nagging me to get into a revocable trust and make out a will. Being single, this has been not without some frustration. Whom do I leave "it" to? So for the last five-to-ten years I have been trying to think of some creative way of disposing of my assets after I will no longer need them.

The nagging continued and I guess it was finally the time to bite the bullet and do it. So on the advice of a friend I found myself an estate lawyer, sat down, and made out a revocable trust and will.

Now why am I telling you this? Well, the caving community has given me a great deal of pleasure and friendship over the last 40 plus years and with the creation of the Western Cave Conservancy, I thought, "what better place for some of my assets." So now the WCC is included in my will.

Maybe some of you have already done this too.

Think about it. If you have enjoyed cavers and caving as much as I have, what better place to put some bucks. After all, the caves will be there long after we're gone and new cavers will come to take our places. So let's leave them something to keep the spirit of caving alive in the future. I realize there might not be many virgin passages in the caves we preserve, but who knows? It's just about the best that we can do for future and present day cavers.

Of course, if I live long enough, there may not be much left in the trust. But it is the thought that counts. And you can be in on it as well.

Bill Papke

Bower Cave:

A Journey from Private to Public Ownership

by Bruce Rogers and Pat Helton

Bower Cave is one of the nearly forgotten caves of the Mother Lode. Long known to Native Americans, the cave has also had a convoluted history of use by Euro-Americans, and was the site of one of the first cave dives in the United States.

The cave consists of a collapse sinkhole in marble, nearly 100 feet in both diameter and depth, with a small pool at its bottom. Formerly, a “bower” of maple trees partly canopied this large roofless chamber. Several short, decorated passages can be reached by exciting climbs up the walls. An enormous submerged passage only accessible by cave diving leads over 800 feet into the hillside bordering the Merced River, dropping to at least 240 feet deep. The cave continues inward and downward, but to follow it would require extreme cave diving expertise.

The early human history of the Bower Cave area has been difficult to unravel. At least 3,500 years ago, the area was occupied by people who roamed both the Great Central Valley and the Sierra Nevada foothills. These folks were truly the first California cavers, burying their dead in many other Mother Lode caves. While we know little about their culture, they probably viewed the cave as a “portal to the Otherworld.” It is likely that they explored the cave, but left no evidence of their passing.

The northern Me-wuk arrived in the area about 1,200 years ago. Though the tribe feared caves, they called this one “Ootins” and considered it to be one of the places from which humans emerged into the world.

The recent history of Bower cave began just after the Gold Rush of 1849. On March 19, 1851, a miner known only as

“Shore” went looking for lost horses and reported finding a large spring in a lime deposit along the North Fork of the Merced River. He also mentioned that he found and explored “a very remarkable cave” in the ledge, christening it Marble Springs Cave. (Jean-Nicolas Perlot, a Belgian gold seeker, may have found the cave at about the same time, but his remembrance of dates is somewhat suspect.) Lacking modern vertical gear, Shore shinned down one of the immense maple trees covering the “Outer Vault,” as the collapse sinkhole was called.

A long series of owners, many immigrant Frenchmen and Germans, subsequently bought, commercially developed, and sold the cave over the next 100 years.

Nearly everyone suspected the cave extended underwater, but only brief glimpses were possible of a darkened hole leading down through the pellucid waters. But in March 1953, Jon Lindbergh (son of Charles Lindbergh, the first Trans-Atlantic flyer) brought some new fangled Aqua-Lung gear to Bower Cave. Jon studied at Stanford University and had used Scuba equipment for several years. He’d met Ray deSassure and other members of the now near-mythical Stanford Grotto there and was persuaded to visit Bower Cave. Although the use of Scuba was beginning to be common in open water diving, few dared enter caves. Jon Lindbergh’s dive was the first cave dive in the west (and came shortly after the first US cave dive, in Florida in late 1951.)

Donning his thin “frogman” suit and single air tank, he dove into the frigid waters of the cave. Swimming under a natural bridge of jagged ceiling pendants, Jon swam into the cave some 39 ft., then gradually descended nearly 121 ft. to a mud-covered breakdown floor, then followed his air bubbles up about 65 feet into a blackened void. Breaking the water’s surface, he found himself in a large chamber some 46 ft. in diameter and nearly 60 ft. high, unfortunately without any beach or landing spot. The domed ceiling rose up out of sight. Some 20 feet

above the pool, a high ledge was festooned with white stalactites, flowstone, and draperies.

Jon paddled around a bit, then, chilled by the 50°F water, returned to the Outer Vault. The organizers were delighted, and newspapers ballyhooed his dives across California.

On later dives, Jon, along with Sterling Pierce of the Western Speleological Institute, explored inwards for nearly 350 ft. to a depth of 124 ft. Art Lange used their notes and sketches to draw a detailed block diagram of the cave.

Jon Lindbergh faced a complex series of obstacles in his dives. No one had any idea of the length or depth of the submerged cave passage, and little was known at that time about cave diving in general. He used the best gear he could muster, but still it was ill suited to cave diving. The single tank and regulator were standard scuba issue, though Jon also had a pair of small “bail out” oxygen bottles. Lindbergh used a single electric lantern.

A length of rope tied around Jon’s waist functioned as a return line for exiting the cave: important, since no one knew if sediment might be kicked up, blotting out visibility. The line could also be used for body recovery (politely not discussed at the time), and provided some idea of the length of the passage.

On his second dive into the cave, he carried a small life raft. Upon arrival in the interior chamber, he pulled the inflation cord and the raft ballooned up like a sausage, as the carbon dioxide bottle was meant for a raft twice this size. Jon realized this as he surfaced and frantically valved off “quite a bit of pressure,” hoping the raft wouldn’t explode.

He returned to the Outer Vault to warm up, then dove into the lake again, this time with a camera and flashgun wrapped in plastic bags. He awkwardly climbed into the raft—no mean feat in the darkness. Unfortunately, he also shipped a great deal of water into the raft, and ripped a large

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Bower Cave, continued from page 3
hole in his suit. He used his mask to bail the boat until the thin glass faceplate broke in two, and then unlimbered his camera gear and proceeded to take nearly a whole roll of black-and-white photographs. This done, he rewrapped the camera and photoflash gun, geared up, and started back. He felt a bit dizzy from nitrogen narcosis and cold due to the hole in his suit. Grasping his photo bag and holding

his nose (remember that broken mask?), he calmly swam back out into the light.

After one last dive to retrieve the raft, Bower Cave lapsed into obscurity. Despite closure in 1955 (due to the demise of an unauthorized visitor who got too close to the sinkhole edge and fell to his death) more dive attempts were made by Cave Research Associates and the Stock-

ton Sport Divers in the late 1960s, but little came of them.

Enthralled by Jon's discoveries, cave owner James Rice wanted to make the hidden chamber accessible to visitors. His scheme of pumping out the cave was scrapped after it was politely pointed out he would have to lower the regional water table. He then suggested blasting a low tunnel into Lindberghs Room, but fortunately this plan never came to fruition.

In 1969, a San Francisco Bay Area group became interested in diving Lilburn Cave in Kings Canyon National Park. Though they were highly experienced ocean divers, they lacked experience diving in caves. I suggested they first train in Bower Cave. During the next four years, the Bower Cave Diving Group (BCDG, as I christened them) plumbed the frigid depths of the cave on a bi-weekly basis, pushing the limits of Bower Cave and their gear.

They found a huge passage beyond Lindberghs Room nearly 100 feet in diameter that sloped down to the east. Piles of slabby breakdown were scattered over the silty floor and a clutter of artifacts, including old ale and champagne bottles, cascaded down from the shoreline. One still-sealed ale bottle was retrieved and a diver volunteered to sample it. The bottle was carefully cleaned, the stopper gingerly removed, and, with a grand flourish, the diver quaffed a mouthful of California's best ale of 1880...and immediately spat out the vile-tasting

Aprons and Notches

The Speleogens of Bower Cave

The southeast wall of Bower Cave's Outer Vault has an outstanding record of the cave's geologic history on display. Faint traces of the originally horizontal bedding of the Paleozoic age marble are visible as nearly vertical bands along the overhanging part of this wall. Their skewed and folded orientation reflects the nearly quarter billion years of inexorable tectonic forces crumpling the rocks of the Sierra Nevada along the west coast of California.

Stacked notches, vertical walls, and aprons reflect the slowly and sometimes no so slowly dropping ground water that dissolved out this huge cavern. The older overhanging walls record a steady enlargement as the ground water began to drain from the cave's uppermost chamber we now call the Outer Vault. Sections of vertical wall are the result of steady lowering of the ground water. Narrow, horizontal slots reflect short stops in the water's withdrawal, allowing deeper lateral solution of the marble. The lower walls are made of several narrow and one very wide aprons formed as the water fell at a rapidly increasing rate—probably caused by entrenchment of the adjacent Merced River—and solution slowly waned.

The massive dripstone in the background frames the entrance to The Bat Roost, a domed room now reoccupied by Pale Townsend's big-eared bats (*Corynorhinus townsendii pallescens*). These decorations date from when the cave chambers breached the surface. After this momentous event, the cave atmosphere equilibrated with the outside and seeping waters dropped their mineral load. As the ground water providing buoyant support for the roof drained away, the roof itself collapsed, leaving the table-sized, moss-covered breakdown blocks littering the floor. Red terra rosa soil has cascaded down through fissures, appearing as a reddish "river" at the far end of the largest apron.

Originally, four huge Broad-leaf/Big-leaf Maple trees (*Acer macrophyllum*) grew in the Outer Vault. These were used by the first Indian and White explorers of the cave to negotiate the overhanging 30-meter drop into the Outer Vault. Only one remains, visible at the upper left of this photograph; a relic of years long past. Mosses, ferns, green algae, and a host of other moisture-loving plants cover the walls and floor during the wet winter season.



Photo: Bruce Rogers

fluid.

The BCDG decided to make a movie on Super-8 film, the best they could afford. That type of film required lots of light, so a rig was concocted using a 12-volt automobile headlight and needing vast amounts of amperage. We christened it “The Water Heater,” and sealed the mighty battery pack into a large aluminum cylinder attached between the diver’s twin air tanks.

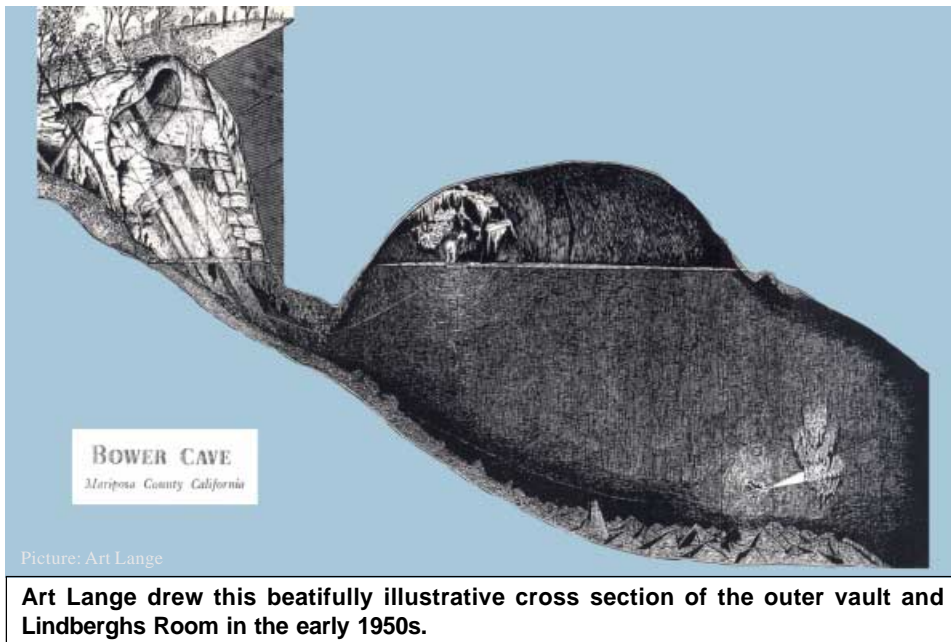
On its initial use, the diver plummeted to the bottom in a flurry of bubbles, and lay flailing about like an upended beetle. Upon hauling him up, we were astounded to find that the rig weighed over 180 pounds. But the Water Heater did give a tremendous amount of light and gave the divers some idea of the size of the cave. And true to its name, divers could toast their hands nearly a foot away from the lens (even through wetsuit gloves.) Their film, by the way, garnered several awards.

The BCDG also discovered four more air pockets along the tunnel-like passage. The small pocket just beyond Lindberghs Room was decorated with two large shields and patches of helictites. The shields were partly submerged, indicating a lower water level sometime in the past. Attempts to climb the walls of Lindberghs Room were made, all ending in spectacular splashes back into the pool. Unfortunately, no cameras recorded these fountaining water belays.

The group found, to its dismay, that the water was grossly polluted with “sewage-type coliform bacteria.” Several trips were cut short due to the entire team having extreme lower GI tract distress and hav-

ing only one restroom.

Extreme depth, frigid waters, and the limitations of compressed air diving eventually halted progress at 1,387 feet of passage at a depth just over 262 feet. In addition to a wealth of artifacts strewn along



the bottom of the Outer Vault, a troglobitic amphipod—*Stygobromus wengerorum* (Wenger’s Cave Amphipod)—was found. This amphipod is listed as a California “Special Animal” and was formerly a Category 2 candidate for federal endangered species status before the C2 list was eliminated by the Fish and Wildlife Service in 1996.

After BCDG moved on to diving Lilburn Cave, the bats, salamanders, and cryptic invertebrates had Bower Cave mostly to themselves for almost 17 years.

In February of 1981, the property was sold to Jack Linkletter (son of entertainer Art Linkletter) and his wife Barbara. Jack was an avid diver, and the following year, with a party of Mariposa County Sheriff’s Deputies, dove as far as the portal to Lindberghs Room. They knocked loose great amounts of silt that nearly blotted out their vision. “It got a little scary down there. For a while I couldn’t see. It was very disorienting,” remarked Jack. The group was cool-headed but overwhelmed by the immensity of the cave. By 1983,

Linkletter had decided to sell the land, but didn’t want the ranch and cave to be developed for summer resorts or made into an underwater Disneyland for sport divers. He began negotiations with the U.S. Forest Service (USFS) to transfer ownership to them.

In April of 1990, the loosely affiliated “Friends of Bower Cave” held a fundraiser to purchase Bower Cave and give it to the USFS. Nearly 300 people ran amuck on the tract, trampling the grounds. Entertainment of “old time music by Sorenson’s Cave Dwellers” was a picnic highlight.

Today the cave quietly slumbers. Since its purchase by the USFS in 1991, Bower Cave has been managed in a “benign neglect” mode, with permission to view the entrance sinkhole readily given by the District Office. In reality, few apply; but then, few know of the cave’s existence. Once again the squirrels and bats have free reign of Oo-tins, and little has changed since old “Shore” first shinnied down a tree trunk over 150 years ago.

Be sure to check out the Western Cave Conservancy website:

<http://www.westerncaves.org>.

It’s the place to go for all the latest information about WCC acquisitions, activities, and history, and it boasts a gallery of photographs of threatened, protected, or otherwise interesting caves.

Our thanks to webmaster Matt Bowers, matt66@thirdmedia.com, for both hosting and managing the site, and Peri Frantz, peri@frantzfamily.us, for content coordination.

WCC Goes to the Western Region Speleo Ed

The Western Cave Conservancy has established itself as the meal purveyor of choice at several recent National Speleological Society (NSS) Western Regional activities. We promise the fastest food, the widest choice of libations and boundless quantities. This April at the Western Region Speleo Ed was no exception.



Chief Cook Eileen Belan graciously donated time that would have otherwise gone to the cooking channel. She personally created six batches of home-made spaghetti

sauce from a secret recipe. Batches of meat sauce, vegetarian sauce, and hot sausage were simmered until they were just right.

Onsite cooking began in the early afternoon.

The kitchen was at the entry way to the seminar rooms, making it convenient for attendees to peek in. Though nearly everyone offered to help, the small kitchen could only accommodate a few people. Thanks to the hard-working kitchen crew: Pat Helton, Bruce Rogers, Peri Frantz, John Hargreaves, Morley Hardaker, Marianne Russo, Don Dunn, Martin Haye, and of course Eileen Belan!

A special thanks is also owed to Ben Robinson, who thinks big! He hauled a complete kitchen stove up from Modesto so we would have an oven to toast the bread in and enough burners to heat up all that sauce.

The crowd of 75 diners poured into the double lines for spaghetti, salad, corn, garlic bread, and many beverages. All alcoholic beverages were donated by Marianne Russo, Eileen Belan, Dan Snyder, Martin Haye, Bill Frantz, Mark Scott, Doug Bradford, and Fetzer Wineries. Dan, Mark, and Martin donated Black Oak Porter and Thunderhead Amber and Bill Frantz pro-



vided a keg of his homebrewed ale. Finally, attendees tossed \$21.00 into a donation cup.

WCC President Marianne Russo decorated a beautiful cake with a design inspired by the WCC logo.



Update: M2 and Rippled Caves

WCC has various projects throughout the West, and we will occasionally use the email discussion list to tell our members about news or projects that are just in the beginning stages or are too sensitive to mention in our public newsletter. If you want to join this members-only moderated discussion list, send email to: list-admin@westerncaves.org.

Here are the two publicly announced projects:

M2 Cave (southern Oregon)

Progress continues in the effort to preserve this beautiful and important cave. Mike McNichols, an Oregon caver, lawyer, and conservationist, has taken a lead role in this project, and his first task was to contact the federal Bureau of Land Management (BLM) to gauge their interest in arranging a land swap to acquire the cave and the property around it. Mike found the right people to talk to and learned that a BLM land swap is unlikely. In recent years they have identified high priority target areas such as the Rogue River Valley. The BLM has been aware of M2 cave for many years and the topic of a land swap has come up before, but at this time they probably won't approve a project outside their target areas.

Several excellent conservation options remain for M2, and WCC is working with the owners to find a way to protect the cave while still satisfying their needs. Related to that, we're arranging a trip to the cave and plan to invite Conservancy members and cavers from the northwest to join us for a weekend of caving, camping, and working at M2. To address some of the owners' concerns, we need to establish the precise relation between the cave and the surrounding rock, and other work projects are also being discussed. Watch the email list for an announcement when trip details are finalized.

Rippled Cave (central California)

Though progress is slow, it is steady. As mentioned in previous newsletters, we have a basic agreement with the property owner, but some family matters had to be taken care of first. Most of these appear to be resolved, and we are optimistic that we can soon complete our first cave purchase.

Thanks for your support. Our members give us the financial and moral support we need to keep our spirits up and our patience intact during these long negotiations. You make WCC's work possible.

During dinner, Marianne introduced the first slide show of caves the WCC wants to save. Many of these slides will be part of the WCC's presentation program that will begin touring to interested groups this year. Hats off to Dan Snyder and Bill Papke for bringing the show to life.

Bern Szukalski donated a copy of the ESRI Arcpad software for an ad-hoc auction. The highest bidder, Steve Hobson of the Shascade Grotto, purchased it for \$250.00. Thank you Bern, ESRI, and Steve!

Later in the evening, Marianne Russo's traditional Schnapps tasting and wallet emptying ensued around the campfire. The lively group joined in "drinking for charity," raising \$120.00 for the Conservancy.

Once again, cavers of the Western Region have shown their generosity. The reasonably priced ten-dollar meal was a great moneymaker. After expenses, the Conservancy earned just over \$500.00 on the dinner alone. All activities combined raised \$870.00 for the WCC.

Special thanks to all the contributors and helpers who made this a wonderful fundraiser.