

American Caves



American Cave Conservation Association

Spring 2002

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American Caves

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Managing Editors: David Foster, Debra Heavers

Contributing Editors: Gary Gibula, C. Earl Ellis, Jim Nieland, Michael Ray Taylor

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Forum



From the Director

A Big Win For Cave Conservation

Our feature article on page six of this issue of *American Caves* should give heart to conservationists everywhere. Against tremendous odds, local caving groups managed to win the fight in Spencer, Tennessee and save Rumbling Falls Cave from sewage pollution. In doing so, they were going against an entrenched bureaucracy with a vested interest in doing the job cheaply and quickly as opposed to doing it correctly.

Having won this battle in no way means that the war is won. As long as the vast majority of people in karst areas in the United States are uninformed about the natural resources conditions where they live, they will continue to make land use mistakes which damage cave environments and lead to expensive fixes.

The big wins which occurred in places like Spencer and Horse Cave are rare and misleading. Far too often the damage to cave country is a slow and insidiously growing cancer. It occurs a little at a time as a multitude of land use decisions are made across the nation's karst areas.

Thousands of homes in karst areas are not connected to waste treat-

ment systems. Where does the sewage go? Street drains in cities and towns across America discharge pollutants into the ground every time it rains. As individuals, we make countless small decisions which affect the land on a daily basis.

ACCA has made a major commitment to public education because we need for government officials, land use planners, builders, and citizens to be aware that there are right and wrong ways to do things in karst areas. The wrong way leads to the kind of costly scenario which was played out in Spencer, Tennessee over the past two years.

In the long run, the best way to protect our natural environment is to help the thousands of decision makers out there make the right decisions ... before they make them.

We welcome and encourage your feedback on our news and issues. Please write to:

Editor
American Caves Magazine
P.O. Box 409
Horse Cave, KY 42749

To the Editor

Hello! I have just received the new *American Caves* issue and it looks great! I was pleasantly surprised to find a short blurb about the New Mammoth Cave gate project. It was a much needed effort for that cave. I did want to mention to you some of the people and organizations who were invaluable to the project. Would it be possible for you to include these groups in your next issue as an addition to the article? They truly deserve a lot of credit for their help and support.

* USFWS and the Wallace Research Foundation funded the project

* Tennessee Wildlife Resources Agency volunteers from the Royal Blue Wildlife Management Area

* volunteers from the Cookeville, Tennessee office of the USFWS

* volunteers from Tennessee Dept. of Environment and Conservation's Division of Natural Heritage

* East Tennessee Grotto provided many hours of volunteer work and will now be management partners at the cave.

I always enjoy reading your magazine and learning about all of the wonderful projects that the ACCA is involved in. Take care and I hope to talk to you soon.

Heather Garland
Cave Program Coordinator
The Nature Conservancy of Tennessee



ACCA News

New Cave Animal Exhibits at the American Cave Museum!



A variety of seldom seen life forms are now inhabiting the basement floor of the American Cave Museum in Horse Cave. The major new exhibit, titled *Cave and Karst Ecosystems* features an up close look at some of the rare and unique animals that inhabit cave systems.

The new exhibit, which was designed by Chase Studios, fills more than a thousand square feet of wall space in the museum. Children visiting the Museum are already delighted by the new interactive exhibits which feature lots of push button exhibits which showcase models of



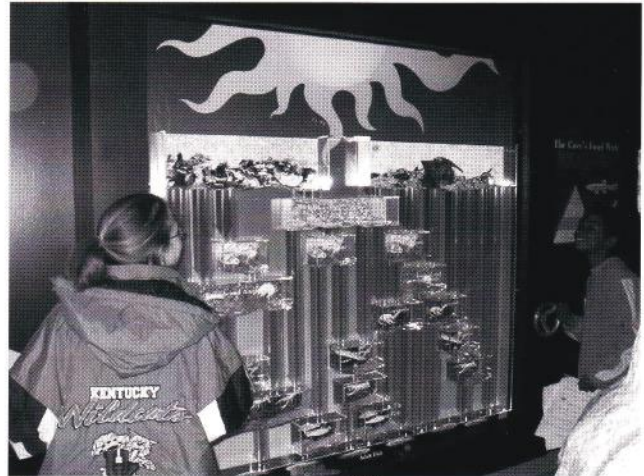
Brian from Chase Studio installs a new exhibit.

cave animals in lifelike habitats from the twilight entrance zone of a cave to its deepest inner recesses.

One of the more popular exhibits is a food chain game which enables participants to manipulate a set of balls

through various levels of the cave food chain. The exhibit is set up kind of like a giant biological pinball machine.

A common theme throughout the new exhibit section is the importance of clean groundwater to cave habitats. One of the exhibits compares a healthy cave stream with eyeless fish and crayfish to a contaminated stream filled with sewage bacteria and tube worms. The exhibits also provide a close look at many tiny cave organisms that are difficult to see without amplification.



Kids interacting with the Food Chain exhibit.

Funding for the new cave ecosystem exhibit was provided by Section 319(h) funding from the U.S. Environmental Protection Agency through the Kentucky Division of Conservation and the Kentucky Division of Water. Support for the project was also received from the W.L. Lyons Brown Foundation, Dart Corporation, Brown-Forman Corporation, Mr. and Mrs. Robert Danielson, Friends of Dr. George N. Huppert, Mr. and Mrs. Allen M. Bond III, and Bat Conservation International.

We also want to thank Dr. William R. Elliott, Dr. Michael J. Harvey, Dr. Horton Hobbs, III, Dr. John R. Holsinger, Dr. Julian J. Lewis, and Dr. Thomas J. Pouson for reviewing the text of the exhibit for scientific accuracy. The new exhibits will be a marvelous new educational tool for teaching about cave ecosystems and the fragile life forms that live in them.

ACCA Volunteers Clean Sinkhole Dump

Approximately 30 volunteers descended upon an old dump site in a sinkhole near Horse Cave, Kentucky on April 27th as part of the American Cave Conservation Association's "After Earth Day" event. The volunteers were members of the American Cave Conservation Association and the National Speleological Society.

The cleanup has become an annual event for the Association. The volunteer workday not only helped cleanup an unsightly dump, but it serves to remind the public that dumping in sinkholes is illegal and poses threats to groundwater quality.

Nearly 50% of Kentucky is in a type of terrain that geologists call "karst." Groundwater is easily contaminated in karst areas because of the numerous sinkholes and caves which allow water to move long distances through underlying bedrock.

The volunteers in Horse Cave filled two large dumpsters with debris. Hart County Solid Waste provided the dumpsters and hauled the refuse to a permitted landfill area. Much of the metallic material removed from the sinkhole will be recycled.

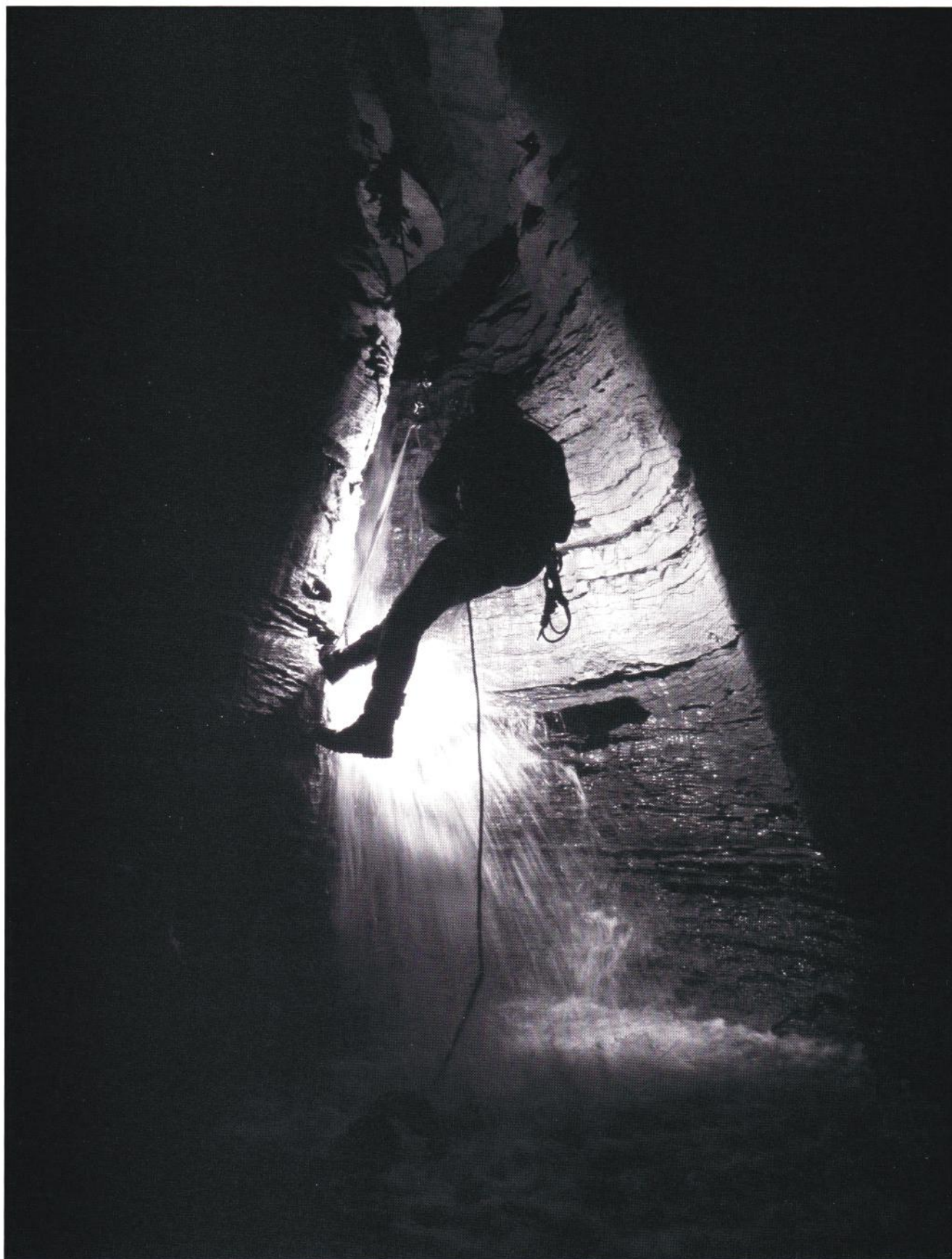
Following the event the group was treated to caving trips in Hidden River Cave and a party at The Bookstore featuring the bluegrass band "Buck Creek." The ACCA plans to stage another cleanup event in the Fall of 2002. To get involved contact David Foster at (270) 786-1466 or send e-mail to acca@cavern.org or write to ACCA, P.O. Box 409, Horse Cave, KY 42749.

Special Thanks To Volunteers

The American Cave Conservation Association wishes to thank the following organizations and volunteers for participating in the volunteer sinkhole cleanup in Horse Cave on April 27.

Cleveland Grotto of the NSS
Hart of Kentucky Grotto of the NSS
Bill Hack, Hart County Solid Waste
Beverly and Bob Danielson
Curt Harler
Cherie McCurdy
Paul and Janet Mihalak
Bill and Donna Nordgren
Cynthia Norris
Charles Pflanze
Micky Skowronsky
Jeanie Trowbridge
Tom Miller, Jr.
Lacie Braley
Tom Brent
Dale Andreatta
Allan and Taeko Farman
Dave Rowe
Jeff Partlow
Jim Richards
Kendall Matthews
Paul Matthews
Dave Matteson
Ann Marie Hemmer





Rumbling Falls

A Great Cave Under A Great Threat

MICHAEL RAY TAYLOR

Chris Anderson stared at the pounding waterfall, wondering whether he could go on. It was a Friday evening in February. A rare Tennessee snowfall the week before had melted off, fueling the cold spray that thundered through the cave passage. Anderson, a Kentucky state trooper with a passion for underground photography, was leading a small team along what had become the familiar entrance route to the Rumble Room—the second largest underground chamber in America, after the Big Room in Carlsbad Cavern.

The cave was Rumbling Falls, named after the spot where Anderson stood now, watching as Mark Ruocco approached the slick face to climb toward the water's source. The passage lay beneath popular Fall Creek Falls State Park, home of the tallest surface waterfall east of the Mississippi—although to date the park's management had shown no interest in gating or otherwise protecting the entrance. Nearly three years earlier, famed TAG (Tennessee-Alabama-Georgia) caver Marion O. Smith had been the first human to make the dicey scramble up Rumbling's namesake waterfall. That day Smith rigged a line cavers had used ever since, and pushed on beyond the waterfall, canyons and pit that followed, ultimately finding a six-mile

underground river and an amazing ecosystem at the heart of a world-class cave.

But now Smith's rope was gone, removed by the explorer two weeks earlier as a result of media attention. CNN wanted into Rumbling Falls. A Nashville network affiliate had sent a camera crew to the 67-foot entrance drop the Saturday before. An exact map of the cave's location had been published in the local Spencer newspaper, and a reporter from the Boston Globe had been asking around town about the cave. Rumbling Falls was no walk in the park (although it lay beneath one) and Smith worried about injuries, should some inexperienced caver follow his ropes.

Between the two waterfall climbs and the massive pit that lay beyond it, Anderson's weekend photo excursion had become as endangered as the cave itself, as threatened as the rare life the cave sheltered. In two weeks, if the town of Spencer had its way, the pure water that pounded and rumbled through the cave would become effluent, as the town opened the valves on a \$6.5 million, "state-of-the-art" sewage plant. Just three days earlier, Shelby Rhinehart, a local legislator who had been instrumental in procuring funding for the new plant, had told the Conservation and Environ-

Opposite: First Falls in Rumbling Falls Cave. Photo by Chris Anderson ©2002



Chris Anderson ©2002

Spencer Mountain.

ment committee of the Tennessee House of Representatives that the sewage plant was "none of its business."

"I just cannot fathom why people that's probably never been in that area very much would all of a sudden make this a project," Rhinehart had told his fellow legislators. "The federal government gave this plant to Van Buren County. They certified that it was a good project—whole, fit—before they gave it to the county. You're jumping on the wrong horse. You'll have to go after the whole federal government, the president and the congress, to stop it now."

How a pristine cave system beneath a state park became a target for treated sewage, and how cavers and environmental groups rallied against the plan in order to save Rumbling Falls, is the saga of an uphill battle as difficult and treacherous as the climb Ruocco began on this damp Friday evening, one slippery foothold at a time.



On July 4, 1998, Marion Smith, Gerald Moni, and David Johnson set out to map a cave that had been discovered two years before by John "Fred" Hutchison of White Horse, Tennessee. Hutchison had returned in May 1997 to make the short entrance drop and wander a few hundred feet inside, but the cave had remained unexplored and unmapped. Smith, 59, had found hundreds of feet of additional virgin passage beyond a noisy waterfall climb, and thought that Rumbling Falls, as he named it, would make a fine "old man's mapping project."

Not that these were exactly geezers from the local retirement home.

Smith and Moni are legendary names in TAG caving circles. Both are recipients of the Lew Bicking Award, the highest honor for cave exploration bestowed by the

National Speleological Society. Smith has descended a greater number of vertical pits—2 736 of them as of March 2002—than any other caver, as recorded in his meticulous logs. In search of new pits, time and again he has pushed his way through tight squeezes, up exposed climbs, and down miserable wet crawls that have proved too daunting for previous explorers. In the summer of 1998, Moni had only just returned to caving after recovering from a horrendous accident in Tennessee's McBride's Cave the year before, during which he had spent 15 hours trapped in waterfall spray with a badly broken leg. The titanium pin that had fused his bone back together had finally been removed, and Moni had turned it into a break bar for his rappel rack. At only 34, Johnson was by far the baby of the group, but he too was no stranger to the pits and crawls of Tennessee, Alabama and Georgia.

The mapping went well that day and on a subsequent trip, and on October 23 Smith returned with another group for what he expected would be the "last" mapping trip in Rumbling Falls.

"But something happened that wasn't supposed to," he recalls. "At what was supposed to be the 'end' of the cave we found a big pit." Beyond the lip, the mapping team could see only blackness and mist. Smith tossed a rock over the side—the long delay before it echoed from the bottom confirmed that they had indeed found a deep drop into a large room. How large that room would prove to be, they couldn't imagine.

The next day, Smith returned with a larger team to make the 200-foot rappel into the find. John Swartz, of Rome, Georgia, was the first caver down what the team decided to name "Stupendous Pit." A coffee-table-sized boulder was balanced precariously on a ledge about 30 feet down. He kicked it clear, launching a brief avalanche that filled the air with thunder before he proceeded downward and was soon joined by his fellow explorers.

The chamber belled out in out directions. The "bottom" of the pit was the top of a 150-foot-tall mound of breakdown, scattered with house-sized boulders. The room enclosed eight acres of floor space—by far the largest chamber Smith found in 35 years of exploring virgin caves. At the low end of the breakdown slope a deep, swift river flowed through borehole that stretched as far as the eye could see.

It was a caver's dream come true.

That night, Smith and his team mapped 800 feet toward one alcove of the chamber, never reaching the river. In 70 subsequent—and highly secret—survey trips, the dream continued to grow beyond all expectations.



Spencer, Tennessee, the seat of Van Buren County, was established in 1840 and claims a population of 1,713. According to Mayor Terry Crain—a high school basketball coach and part-time real estate salesman—the town also boasts a world-class sewage problem. A 1996 study showed that 45% of the town's 538 septic tanks were releasing sewage on top of the ground.

"You have a couple of days of rain, and the ground gets saturated," Crain says. Overflow from the town's septic tanks oozes onto lawns; a telltale stench seeps through the town's schools and businesses.

"It backs up here and you can't stand the smell," says sheriff Donnie Evans of the building that houses the county jail. When the two county septic tanks overflow, Evans says the sewage sometimes pools on the floors of the cells. "You just have to put up with it."

Among the downtown businesses long affected by the problem is the Spencer Drug Company, a pharmacy owned and operated by Shelby Rhinehart. Rhinehart, 75, a Democrat, is the most senior member of the Tennessee legislature. First elected to the statehouse in 1958, by 1989 he had become chair of the house commerce committee and one of the state's most powerful lawmakers.

His family had long been one of Spencer's principal landowners. One Rhinehart tract just outside of town had been recently logged and cleared. With its mountain views, it might provide ideal vacation home sites if not for the lack of a municipal sewage system. Mayor Terry Crain was one of the real estate agents who had tried, with little success, to push the rural acreage and lots that bordered Fall Creek Falls State Park. (Crain's

real estate license later expired, and he now claims to be out of the business.)

Rhinehart had himself served as the town's mayor for 12 years, and like Crain he had heard many sewage complaints from residents over the years. As chair of the Van Buren County Board of Education since 1956, Rhinehart had also heard from parents and teachers upset about the suspicious pools that sometimes seeped into public schoolyards. In short, he possessed the sort of connections and expertise to get something done about the Spencer sewage problem.

In the mid-1990's, Rhinehart quietly worked to procure federal grants and long-term federal loans for a \$6.5 million sewage plant. The city would pay interest on the loans of about \$28,000 per month, or \$41 per sewage customer (not counting the cost residents would pay for the operation of the plant.) Original plans for the plant included discharge into the Caney Fork River eight miles away, but the additional cost of procuring easements and building a pipeline would have pushed the monthly residential sewage bill close to \$100 when the plant opened.

So instead the town settled on nearby Dry Fork Creek, a stream the state had designated Tier II, or highest quality; town managers insisted that the treated outflow from the plant, which would serve fewer than 700 households, would not degrade the stream. State officials offered only minimal public notice and held no public hearings on the plan. But before it could become official, the town had to obtain a permit to discharge effluent into Dry Fork from the state's Water Quality Control Board. By early 2000, more than one board member had privately assured Rhinehart that it was a forgone conclusion the permit would be granted.



Jack Thomison, a Knoxville caver, had joined the increasingly lengthy survey trips into Rumbling Falls, including a 79-hour marathon with a deep in-cave camp. The known length of Rumbling Falls now stood at 15 miles. Thomison began persuading Smith that it was time to go public with the find.

"I didn't want to let the cat out," Smith recalled in an interview with the Nashville *Tennessean*. "I wanted to keep it in the bag longer."

With every survey trip, Smith and his crew found new large chambers and passages. There was Gary's

Chamber, approximately 350 by 150 feet, with a 100-foot high ceiling; John's Room, 300 by 100 feet; an 800-foot-long breakdown chamber with walls 200 feet apart; and several other large chambers beside. Not to mention the hidden formations.

"A lot of people will tell you Marion Smith is greedy," Smith told a reporter who later questioned him in about the policy of secrecy. "Well, we were greedy. It was a gift from the caving gods late in my career."

But Smith had also observed blind cavefish, crayfish, and other delicate cave organisms in great profusion. He recognized that Thomison was right, and in March 2000 met with officials in the Tennessee Department of Environment and Conservation.

Sidney Jones, an engineer in the department's Cookeville office, immediately recognized the potential threat the sewage plant would pose to rare and delicate cave species. No environmental study or impact statement had been done on the effect of the plant on Dry Fork Creek, let alone on the cave it emptied into. No biological survey of Rumbling Falls had ever taken place. Jones wrote to TDEC's commissioner, Milton Hamilton, that the department should take immediate steps to delay the permitting process so that further study could be done. Jones also suggested that it seemed certain that if a permit were granted, irreparable damage to the cave would result.

By the time of the May meeting of the Water Quality Control Board, members of the Nashville Grotto of the NSS had formed alliances with the several local environmental organizations to fight the sewage permit. They presented an alternative plan for land application of the effluent from the new plant – a system many municipalities now use to keep effluent out of streams and wilderness areas, which involves spraying treated sewage onto a parcel of land, where it is absorbed by the soil. The Atlanta office of the Environmental Protection Agency endorsed this plan, and an EPA representative advised the town to consider it. Without specifically revealing the existence of

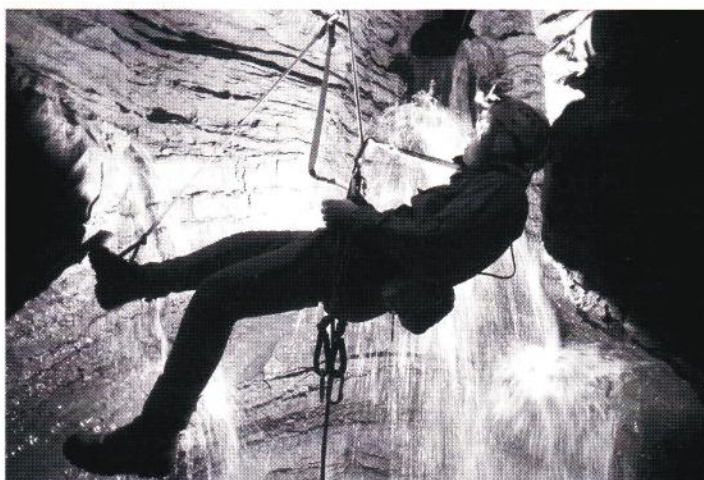
the Rumble Room, Smith described the wonders of the cave system and its rare life to board members, and urged them not grant the permit as worded.

Despite these efforts and strong internal dissent from within TDEC, the board granted a discharge permit for Dry Fork Creek on May 23, 2000, igniting a two-year legal battle.



Construction on the sewage system was soon underway. If the board's decision were not reversed, the effluent would begin to flow as soon as the plant was finished. Chuck Mangelsdorf, a Nashville lawyer and NSS caver who had long assisted the caving community in legal matters, became instrumental in assembling an environmental coalition to attempt to reverse the permit. Mangelsdorf enlisted the help of environmental attorney Joe McCaleb and John Noel, a Sierra Club environmentalist who soon had more than a dozen volunteer groups working together to oppose the sewage discharge.

In September 2000, the groups filed suit in federal court, seeking an injunction that would stop the town from using federal funds for the plant until an alternative discharge method could be found. That lawsuit ultimately failed, but continued efforts by the coalition and supporters from within the TDEC and EPA led some members of the governor-

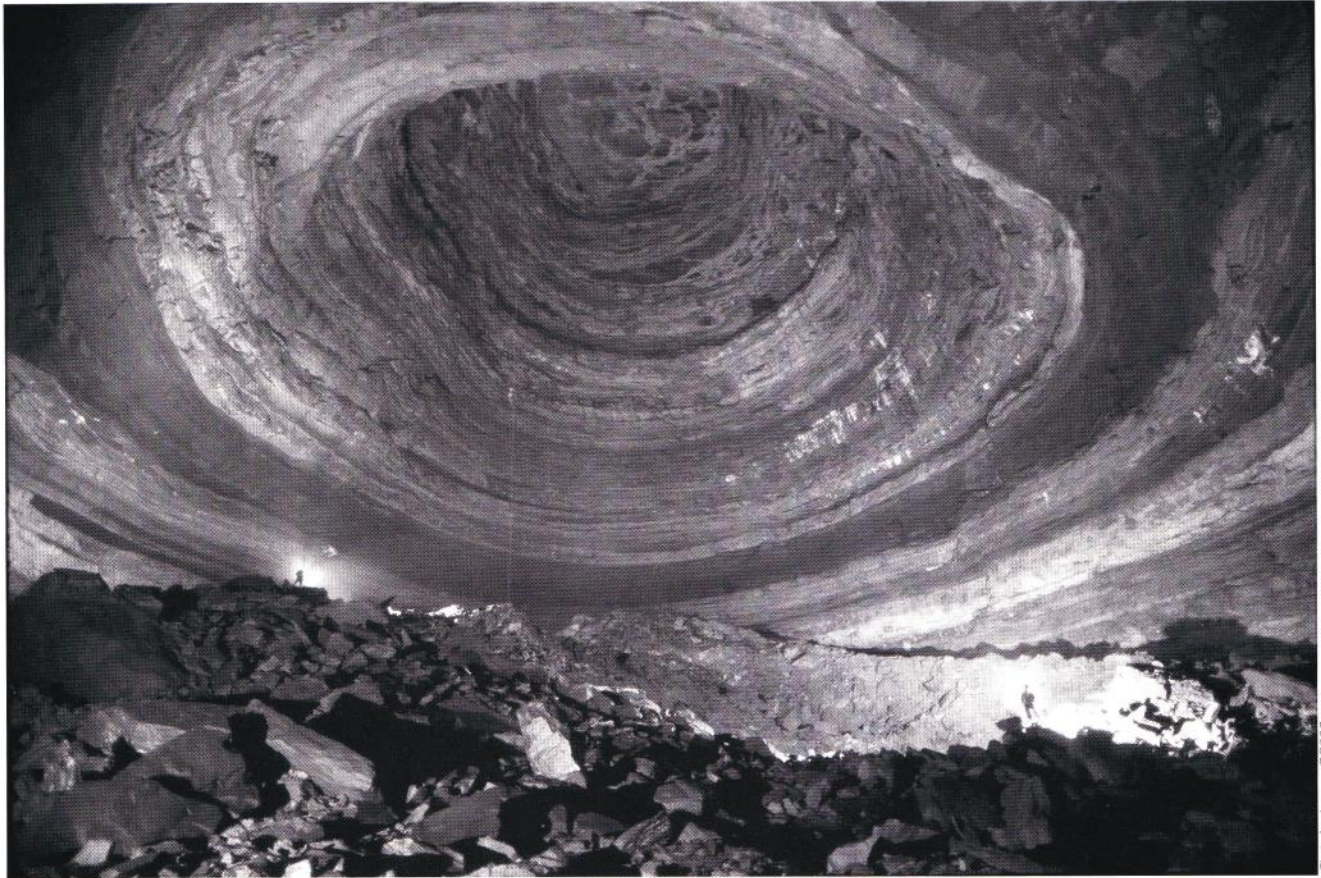


The Second Falls.

Chris Anderson © 2002

appointed Water Quality Control Board to indicate that they might reverse their earlier decision.

In September 2001, they did just that, voting 7-2 that the original permit decision had not followed standard procedures and should be invalidated. But even this decision was not final: it merely allowed for the public commentary that had been wrongly denied the first time. During one meeting where commentary was allowed, Rhinehart attacked the environmental coalition as "a bunch of city people from Nashville" who knew nothing about the area or the needs of its citizens. William Overton, chair of the Nashville Grotto of the NSS, was able to point out to the legisla-



Chris Anderson ©2002

The Rumble Room – Second largest cave room in the United States after Carlsbad Caverns “Big Room.”

tor that Overton County, just north of Van Buren County, was named after his ancestor, and that he had been raised there in a town smaller than Spencer. But Rhinehart’s message seemed to carry the day, as the board delayed any decision and gave the town an opportunity to respond.

That month the town hired a high-priced Nashville law firm to argue its cause, and began pressuring the board to re-grant the discharge permit for Dry Fork Creek. Since no environmental study of the cave had yet been done or ordered by the state, area cavers and environmentalists decided to counter the town’s efforts by funding one on their own. Well-known cave biologist Julian “Jerry” Lewis began a biological inventory of Rumbling Falls and other area caves that received water from Dry Fork Creek. Lewis discovered organisms in the cave that could be federally classified as G1, G2, and G3. A species termed “G1” is considered “critically imperiled globally” because of extreme rarity or because of other factors making it especially vulnerable to extinction; it is typically found in five or fewer locations worldwide. Among the several G1 species Lewis discovered in Rumbling Falls was *Diacyclops yeatmani*, a groundwater copepod that had

been previously found at only one other locality. At least two other species had never been found in any other location, and many species Lewis identified in the cave were G2 – imperiled globally – or G3, vulnerable globally.

“That puts it among the most biologically diverse caves in the United States, and among the top 20 on the entire planet,” Lewis later told reporters. “This is an extraordinary cave system. It’s an incredibly rich community. It should be protected instead of making it into an outlet for sewage.”

Armed with the biological survey, cavers of the Nashville Grotto decided to go public with the Rumble Room, to generate public attention and support for preserving Rumbling Falls. Chris Anderson, a photographer known for his well-lit images of the large rooms of Camp’s Gulf – another Spencer area cave, previously known for some of the largest chambers in Tennessee – agreed to take the first-ever photographs of the chamber. Using nearly \$300 worth of oversized flashbulbs, Anderson produced a breathtaking image that was revealed in a press conference on November 20, 2001.

The discharge of effluent into this cave “would poison it just as surely as if you put arsenic in it,” Lewis said. “It would have a devastating impact.”

Tom Barr, author of *Caves and Tennessee* and long considered one of the leading experts on the state’s caves, urged protection of Rumbling Falls represented, and attacked Rhinehart’s “utter disregard for this outstanding natural resource.”

As cavers had predicted, massive media attention quickly followed.

None of it, however, seemed to influence the Water Quality Control Board, which again reversed itself and granted a “final” discharge permit for Dry Fork Creek on December 18, 2001. Terry Crain announced that the plant would be finished and begin discharging effluent in late February or early March 2002. After failure in federal court, the final legal recourse left open to environmental groups was to seek an injunction against the plant in local chancery court, considered a chancy proposition by local legal observers. A few weeks later, Joe McCaleb filed the last possible effort at what many considered a stay of execution for the Rumbling Falls cave ecosystem, even as Rhinehart told the legislature’s Conservation and Environment to “mind its own business” and let the sewage flow.

Sidney Jones, the TDEC engineer who had advised the Water Quality Control Board against granting the decision nearly two years earlier, resigned over the issue, writing to his supervisor, “The opinions of field staff like you and I, who deal directly with the consequences of any problems created by the discharge, apparently counted for very little.”

A hearing was set for February in Davidson County Chancery Court, less than 10 days before the sewage plant was to come online.



Slowly, one soaking foothold at a time, Mark Ruocco made his way up the rumbling waterfall. When Marion Smith had made the original climb up the falls, conditions had been much drier – now Ruocco had to fight the forces of pounding spray as well as gravity. But he made it without mishap, and rigged a new line to both falls. The next morning, Anderson and his crew returned to take additional shots of the Rumble Room, as well as the first images of the massive borehole holding the Rumble River, in a grueling 12-hour photo trip.

A few days later, Chancellor Ellen Hobbs Lyle heard arguments from Joe McCaleb as to why effluent should be kept from the cave. On February 28, she ruled that the state’s permitting process for the plant was “substantially flawed by incorrect procedure, and incorrect application and construction of the law.” Lyle declared Spencer’s permit invalid; the cave, for the time being, was safe. However, the judge stopped short of ordering Spencer to use land-application for the plant’s effluent, claiming her court lacked that authority.

She ordered the city and the environmental coalition to attend an arbitration hearing on March 26 in order to find a mutually agreeable solution, and set a final hearing on the matter for May 23, 2002. The environmental groups were ordered to pay \$15,000 to cover the town’s interest payments on the sewage plant during arbitration.

“I don’t think anyone else noticed it,” McCaleb said, “But she set the hearing for May 23, 2002 – two years to the day from the date the Water Quality Control Board granted the first permit. I don’t think that was accidental. I think that’s a good sign.”

The closed arbitration meeting the following month “went poorly” according to McCaleb. “Everyone was posturing and beating their chests. The town made the same old demands, and nothing was gained.” In another meeting a few days later, the town offered to build a pipeline redirecting the discharge to the Caney Fork River, as its original plan called for. But Spencer lawyers added that this process would take up to two years, and thus the town was requesting a “temporary” permit to discharge effluent into closer Lick Creek. Like Dry Fork, Lick Creek is a pristine, little studied stream; most of its water vanishes into swallets and, presumably, into still undiscovered cave systems.

The mediation judge pushed for a settlement, but lawyers for the environmental coalition claimed discharge into Lick Creek was as unacceptable as discharge into Dry Fork Creek. “It saves Rumbling Falls at the cost of another stream and unknown cave,” McCaleb said later. While discharge into the Caney Fork River would not be an “ideal” solution as compared to land application, McCaleb said it would probably be acceptable to the environmental coalition.

Shelby Rhinehart, who has been in poor health, announced in April that he would not seek reelection to the Tennessee legislature. Spencer mayor Terry Crain continues to argue for an immediate permit to operate the plant. “We have raw sewage on the

ground," he said after the heavy February and March rains, "and it's only going to get worse."

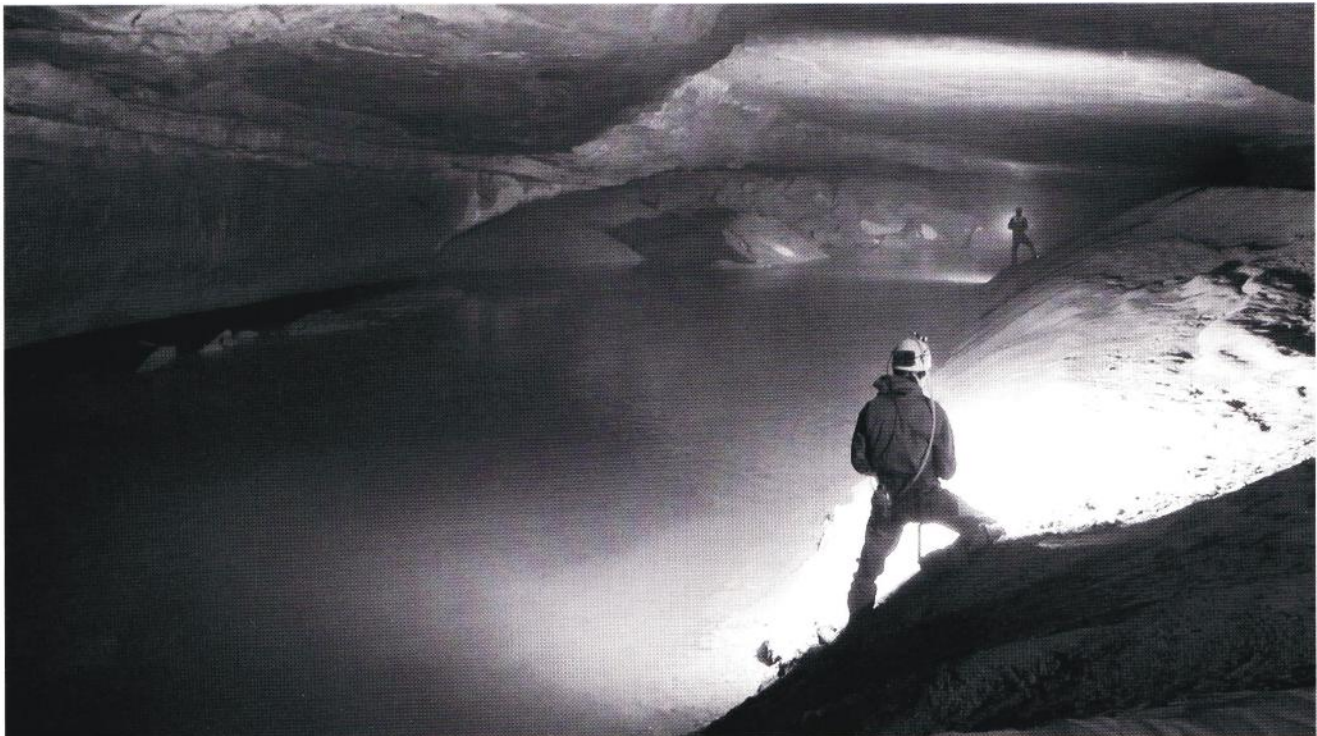
Under increasing pressure to reach a settlement, both sides began to make meaningful concessions, and on April 26, 2002, an agreement was reached. The city promised "never" to discharge effluent into Dry Fork Creek (and thus Rumbling Falls Cave) as well as to build a protective berm that would catch any accidental discharge, keeping the effluent away from the cave watershed. The state promised to modify its procedures for granting sewage discharge permits, so that never again would public input and environmental concerns be barred from the permitting process, as they were when Spencer's first permit was granted. In return for these concessions, Spencer would be allowed to discharge a limited amount of effluent into Lick Creek for a period of no more than two years, and would build a pipeline to the Caney Fork River, as outlined in the original plans for the sewage plant. While the final agreement ran 16 pages and included some 30 separate points, the bottom line was clear: Rumbling Falls Cave, its wild underground river, and the diverse life that it inhabited it, had been saved.

"This one of the most significant victories for environmental conservation in a very long while," declared a jubilant McCaleb. "It means the Department of

Environment and Conservation will be taken more seriously in the future."

Two and half years after Marion Smith first climbed past the pure, rumbling water that pounded into the cave, it had been protected. While Smith believes the main passages of the cave have now been mapped, and there are few leads left to push, the scientific work within Rumbling Falls has only just begun.

Michael Ray Taylor is author of the books Caves, Dark Life, and Cave Passages. He is an associate professor of journalism at Henderson State University in Arkadelphia, Ark.



Chris Anderson ©2002

Safe.

Bat Gate Design

... A Technical Interactive Forum

JIM NIELAND

On March 4-5, 2002 experts from around the US met in Austin, Texas to discuss the design and installation of bat friendly closures to habitat in caves and underground mines. The conference was sponsored by the DOI Office of Surface Mining, the US Fish and Wildlife Service, Bat Conservation International, and others.

The forum was organized into five sessions: why we protect mines and caves, project planning, closure design, construction management, monitoring and maintenance. The session chairs invited expert speakers to discuss a variety of topics, with the intent of publishing the proceedings both in hard copy and electronically to serve as a manual on bat gate design.

This forum is the second in a series to address bat conservation in mines. A year ago a Bat Conservation and Mining interactive forum was held in St. Louis, MO. The proceedings from that conference are available in CD format from the Office of Surface Mining, MCRCC, Belle Street, Alton, IL 62002.

The first forum covered topics relevant to bat conservation, and provided many examples of the importance of mines as bat habitat, as well as exploring current efforts around the US to create bat-friendly closures on mines as an alternative permanent closure by filling portals. People attending the first forum expressed interest in a second conference dealing with bat gate design.

Following the forum the Texas Cave Management Association offered a day-long field tour to local caves to view

various gates, discuss the protection of bat and other endangered species. Most of the caves visited are located on private land with many protected as required mitigation for surface development. Many are now located in parks as small cave preserves. There is great local concern for protecting water quality in the Edwards Aquifer, a karst terrain underlying Austin and the surrounding area. Water quality is critical since the aquifer is the primary water source for area residents.

Tour participants were provided a technical guidebook describing the efforts of the TCMA, as well as treated to a catered lunch. The dedication of this organization was amply demonstrated by the many protected caves visited during the tour. The field trip was a highlight of the forum.



Below America

BY GARY GIBULA AND C. EARL ELLIS

Rocks Shifted in Cave Collapse

A geologist said shifting rocks caused the recent collapse of State Trooper Cave, near a residential area in Bowling Green, Kentucky. In published reports, the director of Western Kentucky University's Center for Cave and Karst Studies, Nick Crawford, said the roof of the cave probably collapsed thousands of years ago and unstable rocks slid sideways further into the cave. Crawford studied the collapse at no charge to the city and made recommendations to the Bowling Green city engineer.

[Source: <http://www.bgdailynews.com>]

Agencies Investigating Cause of Texas Salamander Deaths

The U.S. Geological Survey and others are investigating why several endangered Barton Springs salamanders were found dead earlier this year in Barton Springs, a popular Austin, Texas swimming spot. Officials are trying to determine if contaminants somehow entered the water, which discharges from the Edwards Aquifer. USGS reports say soluble contaminants have previously been found to occur in the water. Other agencies involved in the investigation include the U.S. Fish and Wildlife Service, the City of Austin,

the Texas Natural Resources Conservation Commission, and the EPA.

[Sources: <http://statesman.com>, <http://tx.usgs.gov/reports/dist/dist-2000-02/>]

Lava Flows Close Part of Hawaii Volcanoes National Park

Activity at the Mt. Kilauea volcano has prompted the closing of certain hiking areas at Hawaii Volcanoes National Park. Reports by the U.S. Geological Survey explain that lava flows have been forming structures called "rootless shields," which are broad dams topped by ponds of molten lava. The levees can fracture without warning and send rivers of lava toward hiking areas. Superintendent Jim Martin closed the area to the public in late February.

[Source: <http://hvo.wr.usgs.gov/kilauea/update>]

Missouri Geology Website Created

A new website on the geology of the state of Missouri has been created at <http://members.socket.net/~joschaper/geo.html>, thanks to Jo Schaper. The site details the historical geology of the Show-me State (also known as "the Cave State") period by geological period.

[Source: <http://members.socket.net/~joschaper/geo.html>]

Climbers Appeal Central Oregon Cave Decision

Rock climbers say they will appeal a recent decision to remove bolted sport climbing anchors in Oregon's Hidden Forest Cave. In taking the action, the Bend/Fort Rock Ranger District of the Deschutes National Forest reversed a decision made earlier last year to "authorize" the installation of large numbers of bolted sport climbing anchors. Public comment letters were two-to-one in opposition to the plan, however. Noting that the Confederated Tribes of the Warm Springs Indian Reservation holds the cave in high regard as a spiritual site, the agency will "eliminate climbing and bolted routes," citing the National Historic Preservation Act (36 CFR 800.49(a)(4)) and Executive Order 13007 for Indian Sacred Sites. Hidden Forest Cave contains faint prehistoric pictographs that have been damaged by rock climbers. The "No Climbing" sign at the cave's rock art panel has been torn down 30 times since 1997. In 1992-1993 local climbers installed approximately 160 bolted sport climbing anchors at the cave's entrance, extending about 80 ft. into the cave. The Forest Service decision has been appealed by the Access Fund, a Colorado-based climbers' advocacy group. The appeal requests a reversal of the decision

"for arbitrarily and capriciously (1) failing to support its findings on sacred sites, and (2) discriminating against climbers." An informal deposition was held and the Access Fund indicated it will pursue its appeal at the regional administrative level.

[Source: digest by Larry King, Northwest Chapter, ACCA; The Access Fund (www.accessfund.org)]

Sinkhole Forms Underneath Road in Kentucky

A road slightly over a year old became part of a sinkhole collapse in Bowling Green, Kentucky, as did four bewildered motorists. A section of Dishman Lane collapsed into a 40-foot sinkhole the size of a football field, taking four vehicles that were traveling on the road with it. There were no known injuries resulting from the collapse, however all four vehicles were damaged including a compact pickup that fell to the bottom of the sinkhole. Also, there was no damage to nearby businesses and churches other than a slight inconvenience.

Experts disagree on what caused the collapse. A Kentucky state geologist feels that the incident occurred when the bedrock over a cave collapsed. However, a geologist from Western Kentucky University believes that opinion is wrong. He feels that the roof of the cave collapsed thousands of years ago causing the area to be unstable. Human activity reactivated the unstable area, causing the collapse.

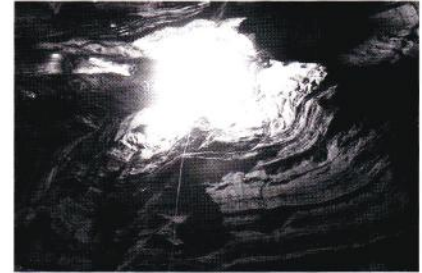
Only forty miles from Mammoth Cave, Bowling Green is situated in the midst of a karst area. The area (often called "Cave Country") is underlain by caves and riddled with sinkholes. It was for this reason that the city completed a thorough study of the area before the road was constructed but found no reason not to proceed with the project. A dip in the pavement where the collapse occurred was noticed several months earlier but an investigation into the cause of the dip was inconclusive.

(Source: Gaines, Steve et al. "Dishman Lane Collapses." Park City Daily News. 26 February 2002.)

Southeastern Cave Conservancy Buys Valhalla

Following two years of negotiating and fund-raising, the Southeastern Cave Conservancy Inc. (SCCI) has

purchased Valhalla Cave, Jackson Co., Alabama. The March 8 acquisition will reopen the popular

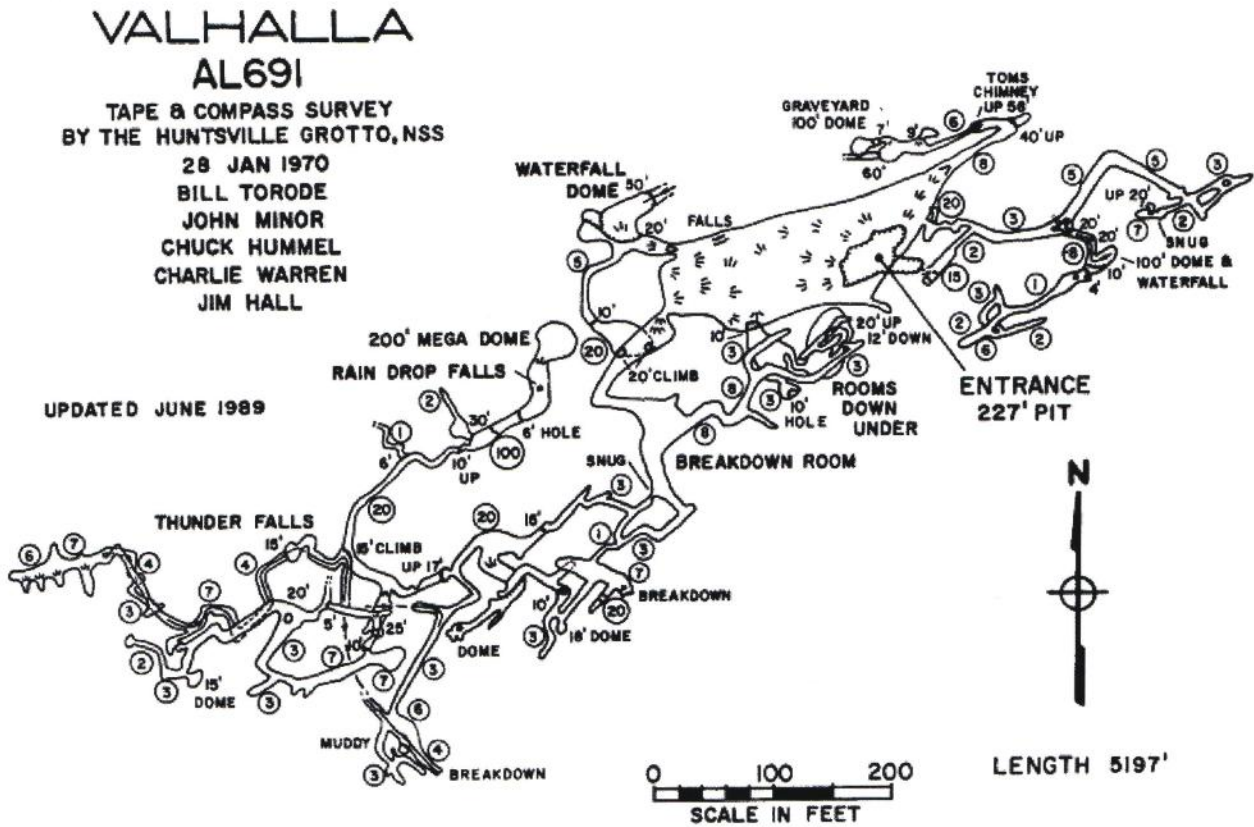


Valhalla Cave's vertical entrance.

pit cave after it was closed in the early 1990s due to problems between landowners and allegedly irresponsible cavers. The 125-acre purchase includes the cave entrance and some, but not all, of the access road leading to it. The SCCI has secured passage to the cave through agreements with the hunting clubs that own most of the surrounding property. The new owners say visitation will be minimal during deer and turkey hunting seasons in order to maintain good relations with the



The Dishman Lane sinkhole collapse in Bowling Green, Kentucky.



Valhalla Cave. Map used by permission of Bill Torode.

neighbors. Otherwise, cavers must obtain permission from the SCCI to pass through the locked entrance road gate, and must have at least one SCCI or National Speleological Society member in the group. The new property managers of Valhalla may be contacted at valhalla@scci.org.

Valhalla Cave consists of a beautiful 70-meter entrance drop, with over 1.5 kilometers of cave at the bottom. The SCCI, a non-profit organization based in Chattanooga, Tennessee, financed the \$100,000 purchase with a five-year \$80,000 mortgage from a local bank. To that end, the SCCI is gratefully accepting contributions to its Valhalla Purchase Fund and is planning a

“Buy a Piece of Valhalla” promotion.

[Sources: Bill Putnam, www.scci.org/preserves/valhalla]

Protecting Kentucky's Green River

One of the largest agricultural conservation programs in the nation is underway in south-central Kentucky following the announcement of a \$110 million program to protect more than 100,000 acres of farmland within Kentucky's ecologically significant Green River watershed.

Farmers who participate in the Kentucky Conservation Reserve

Enhancement Program by taking portions of their land out of production or by preventing water pollution will be able to collect payments from a pool of federal, state and private money.

The U.S. Department of Agriculture will provide about \$88 million towards the program. Kentucky's contribution is \$17 million from a legal settlement with the tobacco industry. The Nature Conservancy has pledged the remaining \$5 million to help the state meet its 20% matching share.

The Conservancy considers the Green River among the 10 most threatened rivers in the United States. According to Jim Aldrich, who runs the Nature Conservancy's

Kentucky office, the "Green River has more species of fish than (in) all of Europe."

Several of the world's longest caves, including Mammoth Cave National Park, are located in the Green River's watershed in South-central Kentucky. The effort to protect the Green River will undoubtedly benefit efforts to protect one of the world's most significant karst areas.

BEYOND AMERICA

South African Cave Yields Ancient Art

A cave excavation in South Africa has yielded what researchers believe to be the oldest example of stone age art. Paleontologists discovered two pieces of ochre rock decorated with geometric patterns in Blombos Cave near the country's southern shore of the Indian ocean. Researchers have dated the artifacts back over 70,000 years, which is over 35,000 years older than the cave paintings of Chauvet and Lascaux.

The stones measure about two and three inches long and are reddish in color. It is believed that the ancient artist first scraped and ground the surface of the stones smooth. They were then marked with cross hatches and lines in a systematic pattern.

The fact that ochre rock was found in this location shows some degree of culture as the nearest source of this rock is at least twenty miles from Blombos Cave. This ancient

example of abstract art is believed to reveal that humans were able to demonstrate what is considered modern behavior much earlier than previously thought. Some experts feel that the stones may have had some symbolic meaning which is now unknown, however the transmission of this meaning could have relied on a well developed system of language. (Sources: Whitehouse, David. "'Oldest' Prehistoric Art Unearthed." BBC News. [http://news.bbc.co.uk/1/hi/english/sci/tech/newsid_1753000/1753326.stm]; Henahan, Sean. "Art Prehistory." Access Excellence. [<http://www.accessexcellence.org/WN/SU102001/caveart.html>]

2002 Samcheok International Cave EXPO Slated For July.

The 2002 Samcheok International Cave EXPO will be held from July 10 to August 10. The opening ceremony will take place on the evening of July 10 and there will be some wild caving trips from July 11 through July 13. The caves to be explored are three wild caves near Samcheok City, which are also all national monuments: Kwaneum, Hwanseon, and Chodang Caves. Preparations for the Expo have been ongoing since July 2001. For further information contact Dr. Kyung Sik Woo of the Cave Research Institute of Korea at wooks@cc.kanwon.ac.kr or telephone number 82-33-250-8556. (Source: Personal email from Dr. Kyung Sik Woo at wooks@cc.kanwon.ac.kr to the ACCA at acca@cavern.org)



ACCA Board Meeting Summaries

December 1, 2001 Meeting

New officers were elected. They are Dave Derrick, President; Reggie Van Stockum, Vice-President, Jim Richards, Treasurer; and Jim Nieland, Secretary. A 2002 operating budget of \$348,700 was approved. The Board approved a motions to purchase board liability insurance and set up retirement plans for ACCA employees. Dave Foster reported on the status of new museum exhibits and the ACCA's educational programs.

April 27, 2002 Meeting

In-house financial statements and a contract with the fundraising consulting firm Global Advancement were approved by the Board. The price of ACCA's copies of Living With Karst was set at \$10.00. The staff was authorized to convert stock donations to cash for general purposes or as specified by the donor. Tom Aley reported on the donation of Ray DeSaussure's library to ACCA. The Board reviewed and approved a draft 99-year management lease for the American Cave and Karst Center between ACCA and the City of Horse Cave.

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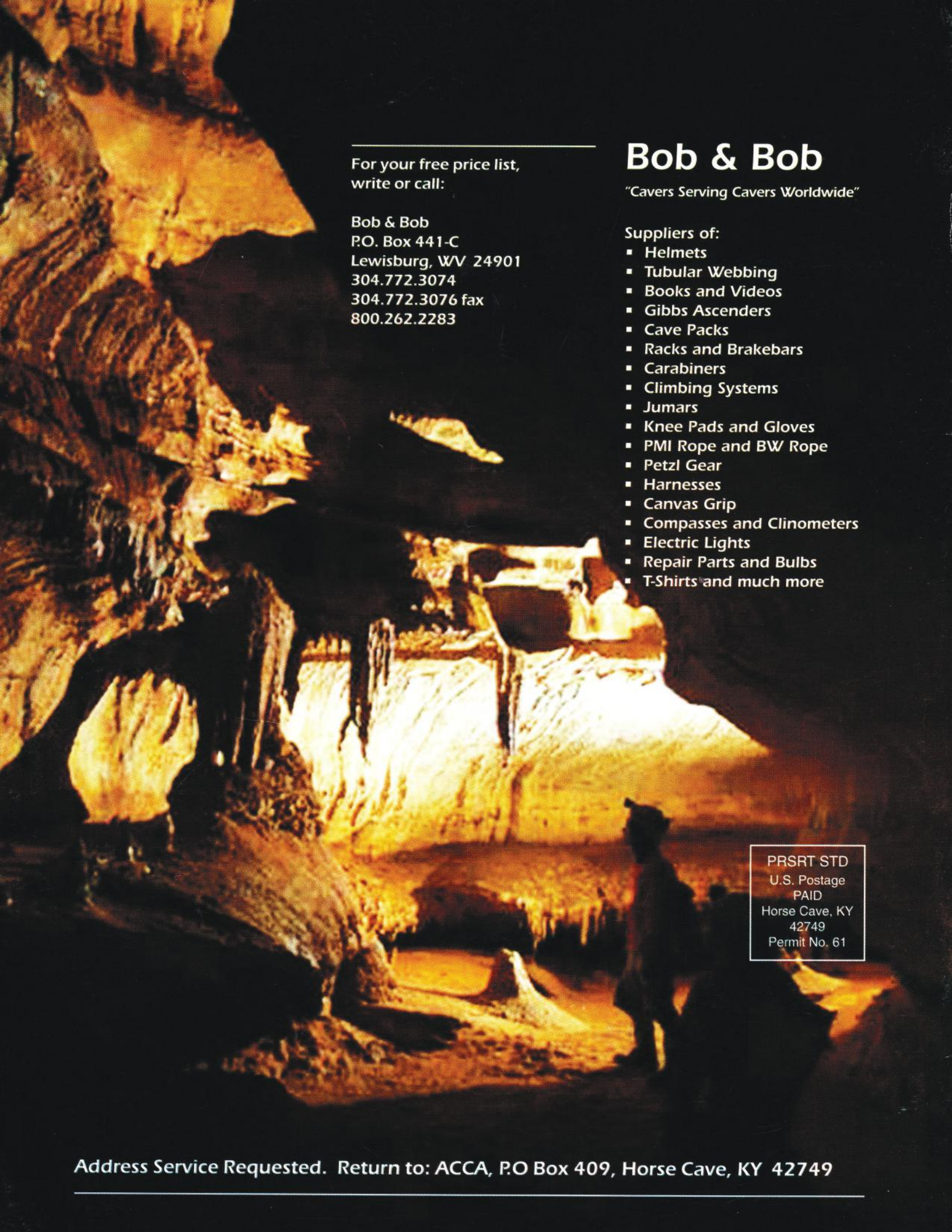
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