

# COLD WATERS

A Minnesotan drilled his own entrance to one of Iowa's spectacular resources. What does the future hold for Coldwater Cave, a natural wonder? Who protects this cave?

BY NATE HOOGEVEEN PHOTOS BY SCOTT DANKOF



**B**eneath northern Winneshiek County runs a stream. Eons ago, it began as a mere trickle, exploiting cracks and crevices in the bedrock. Over thousands of years, it scoured a larger pathway, leaving space for air, joined by numerous rivulets from all directions. Mineral-laden water filtered through, dripping and flowing, depositing brilliant white calcite and colorful substances into smooth formations. Stalactites grew down from ceilings; stalagmites up from floors. Sometimes they met to create columns that grew

microns wider with each passing season. Others grew across walls, making “flowstone,” which undulated into myriad outlandish shapes and sizes.

In many ways, a cave is like an ancient, living entity, constantly morphing across a geologic timeframe into something new, leaving recordings of what it was with each layer of muddy sediment or crystalline stalactite.

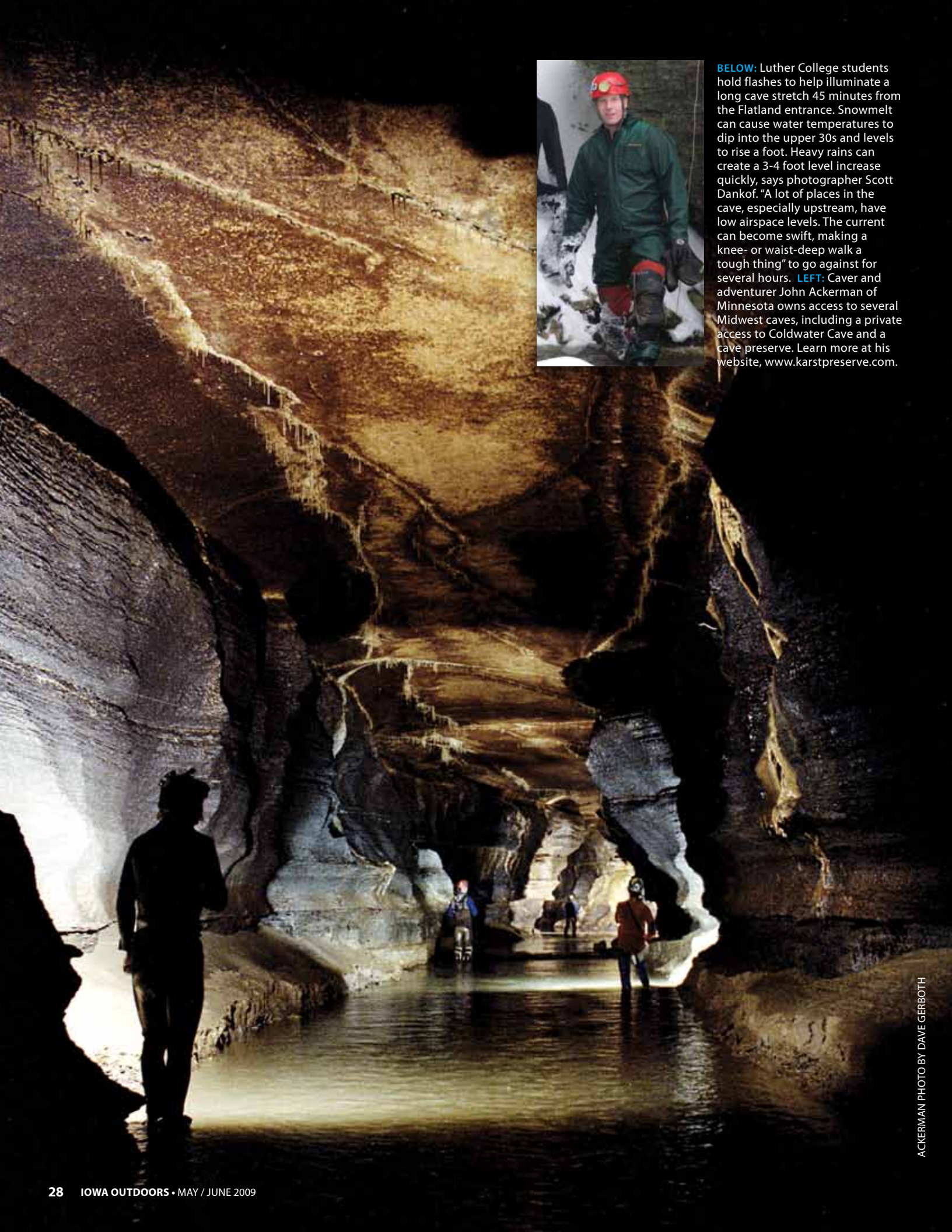
Iowa has eight National Natural Landmarks, and Coldwater Cave is one recognized for its outstanding geological significance. This status, however, doesn't



Members of Iowa Grotto, a caving club, wade the main stream passage on a photographic trip in Coldwater Cave. Such trips, usually 3-7 hours, help document areas of the cave. Comparing them with older photos shows any damage or changes over time. "I started photographing here in the late 1980s," says caver Scott Dankof of Grimes. The main trunk passage is nearly 3 miles with water depths varying from ankle deep to over a caver's head in a section enclosed by high walls and deep water called, The Swim.

result in anything but voluntary protection. Among cavers, it has a mystique with more than 17.5 miles of passage—the longest in the Upper Midwest—and the 33rd longest in the nation. Festooned with formations, it is better decorated than any other in the region. A small river courses through its belly, actively cutting new passages and forming new features. Despite having few legal protections, the cave had limited protection from the people who owned the only usable entrance, Kenny and Wanda Flatland. Cavers have

come to realize that their own presence can be a problem. Delicate formations are easily shattered or broken off, and beloved caves across the country have been trashed, inadvertently or intentionally. When Coldwater's traffic got heavy, and they learned cavers had tracked mud across some formations and broken soda straws or a stalactite, the Flatlands shut cavers out for a few months to reassess. Then they worked with cavers to get formations cleaned and enlisted their help to repair damaged formations. In 2003, a grinding sound filled the cave. A bit of



**BELOW:** Luther College students hold flashes to help illuminate a long cave stretch 45 minutes from the Flatland entrance. Snowmelt can cause water temperatures to dip into the upper 30s and levels to rise a foot. Heavy rains can create a 3-4 foot level increase quickly, says photographer Scott Dankof. "A lot of places in the cave, especially upstream, have low airspace levels. The current can become swift, making a knee- or waist-deep walk a tough thing" to go against for several hours. **LEFT:** Caver and adventurer John Ackerman of Minnesota owns access to several Midwest caves, including a private access to Coldwater Cave and a cave preserve. Learn more at his website, [www.karstpreserve.com](http://www.karstpreserve.com).

ACKERMAN PHOTO BY DAVE GERBOTH

rubble fell from the ceiling, and a six-inch drill emerged. A camera emerged from the bored hole, right next to a clump of stalactites. On the surface, one man, John Ackerman, was giddy. What would this mean for the future of Coldwater Cave?

### HIS OWN UNDERGROUND WORLD

On a 10-degree winter's day six years ago, I caved with an energetic and successful furniture restorer named John Ackerman near Spring Valley, Minn. We were at his own cave system, Spring Valley Caverns, part of what he calls the Minnesota Karst Preserve, or "The Cave Farm," more than 500 acres of what appears as typical farmland. Examined closer, you'll notice a grassy depression, at the center of which protrudes a 30-inch-diameter culvert tube, with a steel lid. There are 18 of these dug with Cave Finder, his own Caterpillar, fitted with an extended boom.

Each tube is equipped with a thick, steel ladder. Ackerman and his caving friends installed them to access an underground labyrinth and to rescue someone quickly if needed. Each was originally a sinkhole, a spot where the earth had sunk due to a gap below. Like other cavers, his obsession has been to wiggle, dive and contort his way into new passages—to be first to lay fully dilated pupils on a crack in the earth unknown to humans.

"Ever since I was a little boy, I was always interested in caves," he says. "As you can see, it just got out of control."

### WONDROUS, DARING DISCOVERY

Iowans Steve Barnett and Dave Jagnow first celebrated the splendor of Iowa's Coldwater Cave in 1967. They discovered the cave by scuba diving into Coldwater Spring through 2,000 feet of underground river. They were astounded to pop up into a long, air-filled cave. For two years, they conducted secret journeys to their massive find. They relayed their find to the Iowa Conservation Commission, the predecessor to the DNR, in 1969.

Soon after, Des Moines Register outdoors writer Otto Knauth crafted a prominent article replete with photos. The cave captivated the public. Iowa's legislature found it fit to explore the possibility of using the cave for tours, and appropriated \$58,000, which culminated in a lease agreement with farmer Kenny Flatland in 1971. The Iowa Geological Survey had a 94-foot shaft drilled to make a safer entrance.

But the State deemed it infeasible for tourism. It was far from highways. Many areas require crawls through tight passages. Flooding would complicate electric lighting. Constructing concrete walkways high above the main stream would be expensive.

### DANGER IN THE DEPTHS

The cave itself is a dangerous place, where water levels fluctuate by several feet. Some cavers, scooting on their bellies through tight, tube-like passages, have torn up knees while crawling for their lives as rising waters lapped closer and closer to their mouths.

As the name implies, no one gets anywhere without encountering very cold water. Winter water temperatures in the 30s make wetsuits necessary for survival.

Whereas mountaineers experience thin air, in Coldwater Cave washed-in vegetation decomposes and can produce large amounts of carbon dioxide, or thick air. The result is the same: hypoxia, or less oxygen than humans are accustomed to. Sometimes levels drop hazardously low. Cavers have found themselves suddenly short of breath, with headaches or nausea, on the verge of blacking out.

Not interested in such liability, the State let its lease expire in 1975. Flatland had the option to have the entrance sealed. "I chose to leave it as it was so that other people could enjoy the cave," he said.

And enjoy it they did. Streams of cavers arrived. A group affiliated with the National Speleological Society called the Coldwater Cave Project (CCP) formed. Until a heated shed over the entrance was completed, Kenny and his wife, Wanda, invited cavers into their home to change into wetsuits. Visiting with the Flatlands in their living room became part of caving at Coldwater, and Kenny donned a wetsuit himself to go on epic journeys.

Grand adventures ensued. Far back in the cave where there are only a couple inches or less of air above flooded pools, brazen caver Mike Nelson perfected a method of pulling his floating body along the ceiling.

"There's enough air to get one nostril out of the water—it doesn't need to be but an inch or so to do that—but you do need nerve," says Patricia Kambesis, who has caved Coldwater since the 1970s, and now is assistant director of the Hoffman Environmental Research Institute in Kentucky. "You cannot freak out. You'll drown in there."

Humans became flies, scaling walls after a grappling hook was thrown to scale a waterfall. They became worms, wiggling through muddy passages. They became otters, swimming frigid snowmelt waters.


### A CHASM AMONG CAVERS

Cavers became good friends of the Flatlands, and the Flatlands were good friends of the cave. CCP cavers showed up monthly, and it became expected that outside cavers would work themselves into CCP projects, primarily surveying, exploring and photographing.

Over the years, in the absence of government ownership or control, the CCP became protective of the cave. Some cavers and scientists grew critical, saying the CCP was overly restrictive. But the CCP's relationship with the Flatlands was strong, and ultimately, as owners of the entrance, the Flatlands could decide how access to the cave would work.

John Ackerman had never been in Coldwater Cave, but his caving buddy, David Gerboth, got them invited on a CCP trip after several months of trying.

Gerboth hoped to show Ackerman a showy column in the Monument Passage called the Pillar of Light Arising Out of the Divine Reasoning. Gerboth says CCP cavers said no, because formations were being restored. They did, however

A photograph of a cave interior. In the foreground, there is a large, textured rock formation, possibly a stalactite or a large rock overhang, with a rough, layered appearance. The lighting is warm and orange, highlighting the textures of the rock. In the background, a person wearing a blue uniform and a white helmet is standing near a body of water, looking towards the right. The cave walls are also visible, showing some smaller stalactites hanging from the ceiling.

see the Windmill Passage, where the pipe of a windmill-powered pump built in the early 1900s bisects the cave downward through the floor to water in the limestone just below. It is a place that clearly shows the direct connection between surface and underground water quality.

Later that year, Ackerman asked Wanda Flatland if she and her husband would sell their entrance to the cave. They said no. When Ackerman read an editorial “Is Cold Water Cave Really Open?” in a 1997 caving newsletter, he made open access his goal, standing up for the little guy, wresting control from elitist cavers.

“Whether or not this was an accurate portrayal of how things were run there, it greatly influenced John,” says Gerboth.

Men of means typically pick hobbies or sports other than caving. Instead, Ackerman obtained five acres of land surrounding the windmill above the cave’s Windmill Passage. Now he actually owns the Pillar of Light Arising Out of the Divine Reasoning.

By March 2003, he’d first had the exploratory hole drilled, dropped a remote camera down the hole, saw stalactites, and rethought. A larger, human-sized, 30-inch-diameter hole was drilled farther away, where it wouldn’t damage formations. He spent more than \$80,000 on land, drilling a 188-foot deep access shaft and purchasing a cave easement (if more cave is found to exist) on 200 acres underground.

He announced his new shaft in a post on the National Speleological Society website. He titled his somewhat warlike manifesto “So whose cave is it, anyway?” and ended it with, “Now who owns this cave?”

The announcement launched some cavers into a tizzy. Some decried the event as the worst thing to happen to the cave. Others applauded. All were shocked.

“In a lot of ways, it was the last little bit of true wilderness in the Upper Midwest,” said John Lovaas, science coordinator for the CCP, shortly after the new shaft was drilled in 2003.

Ackerman believes his entrance is less invasive than the original state-drilled entrance, partly because it is in a side passage. He takes pains to point out that he had the drillers use the least invasive techniques possible, at his own personal expense. Others counter that that’s fine, but a second entrance was just not needed.

In the six years since Ackerman drilled his entrance, the cave has seen some changes. Shortly after his new entrance was installed, Ackerman improved his access in the Windmill Passage by cutting through a flowstone formation, digging a trench, and blasting through small rocky dams to drain the water. To the untrained eye, at this point, the changes may not be apparent. Ackerman said he did it because he needed to lower the floor in order to protect stalactites that people would have knocked off while stoop walking through the passage.

Few argue that Coldwater has lost its luster due to the second entrance. Ackerman, like the CCP group, doesn’t let just anyone into the cave, for a mix of safety, liability and conservation reasons. When a group requests to go, they must have the necessary gear and experience, and Ackerman or an associate must go too. The initial controversy has reduced to a low simmer.



**THE GALLERY**—Multicolored with walls of spectacular flowstone for several hundred feet make Coldwater Cave a treasure hidden deep beneath scenic northeast Iowa. Soaring 20 feet high, the flowstone has constant water flowing over, building and adding layers over hundreds of years. “It’s just a spectacular place to walk through,” says photographer Scott Dankof.

“Everyone tries to stay out of each others’ way,” says Lovaas, the CCP science coordinator.

Controlling caves is about controlling access. Ackerman turned that regime on its head at Coldwater and other caves, including the Minnesota DNR-controlled “Goliath’s Cave,” which had been closed for scientific survey. There, he drilled a new shaft he calls “David’s Entrance.” Predictably, he’s at odds with the Minnesota DNR over the access issue. His main concern for access developed when the Minnesota DNR obtained access to Mystery Cave, a southeast Minnesota cave now part of a state park, where he and Gerboth had caved for years.

“Imagine how I felt, after their success, when we were banned from the cave the day they received the keys,” he wrote in his open-letter to the Minnesota Speleological Society after drilling his entrance into Coldwater Cave in 2003.

Caves in Iowa, and elsewhere, are a legal no-man’s land, with little legislation or case law. Ackerman owns “underground rights,” or easements, to hundreds of acres for cave access, an untested legal concept.

“This is kind of the Wild West of our time,” says Iowa DNR ecologist John Pearson, who has received requests to make the cave some sort of preserve. “Can someone put up a fence in a cave? It’s going to be up to Marshall Dillon and Judge Roy Bean to sort this out.”

### WHO PROTECTS CAVES?

An area of agreement between Ackerman and the CCP relates to protective laws for caves, which Iowa lacks.

“Every state that has caves should have a cave protection act,” says Lovaas, the CCP science coordinator. “They are unique ecosystems. They are a very alien landscape that’s very fragile.”

Because of their unique natures, caves can be tremendous repositories of knowledge. The rates at which they form and move water tells much about surface water quality. The stone through which they are cut is essentially made of compressed fossils and record a geological legacy. Upper Midwestern caves usually don’t have the specialized animal life that can evolve in caves a bit closer to the equator (blind cave fish, etc.), but some were inhabited by ancient humans, and portions of others contain bones of Paleolithic species.

Ackerman agrees cave protection for the purposes of water quality and formation protection is sensible, and acknowledges caves are no place for free-for-all access.

“My idea is that, yes, you need to have severe penalties for wrecking speleothems or otherwise vandalizing caves. In Minnesota, I need to go through a serious permitting process to (excavate in sinkholes), and that makes sense to me.”

While attending college in the mid-1990s, I became a trained volunteer at Rock Bridge Memorial State Park near Columbia, Mo. There was a significant cave called Devil’s Icebox that threaded below the park, and its allure beckoned. Over time, I became an assistant wild cave tour leader.

Under tutelage of Missouri DNR staff, I was taught to convey the idea of caving ethics. Gone are the days of smudging your initials into the walls with carbide lamps, chipping out pristine formations to place them on fireplace mantels, or even touching formations due to oils on your hands, which could affect its growth. We did not bring shovels, rock chipping tools, or, God forbid, dynamite.

That didn’t really tell the whole story. The same Missouri DNR owned caves strung up with lights as show caves and other caves with lesser protection. And, deep in my own psyche, while I was interested in conservation ethics, what kept me coming back? The urge to explore. For those moments where everyone turns off their lights and all you hear is the trickling of a cave stream or a distant dripping. Or pushing through a narrow tube that opens up into a huge, glorious room.

Our planet has two places left to explore—the deepest trenches of the seas, and the voids of the earth. Cavers are today’s Amundsens, Earharts and Magellans.

Ackerman fits this mode. He has entrances into six caves, and gets giddy when discussing the results. Bat River Cave, discovered by cave diver John Preston in 2007, unveiled a massive roosting cavern of bats. Prehistoric bones of saber-tooth cats, an extinct species of moose, and other now-extinct mammals discovered in Holy Grail Cave have evoked much scientific interest.

“Nobody’s going to spend \$100,000 to drill into a cave just so they can trash it,” Ackerman says. “There should be access for responsible cavers. If nobody can explore, no one would know about these caves, and no one would be protecting them. You can’t protect what you don’t know.”

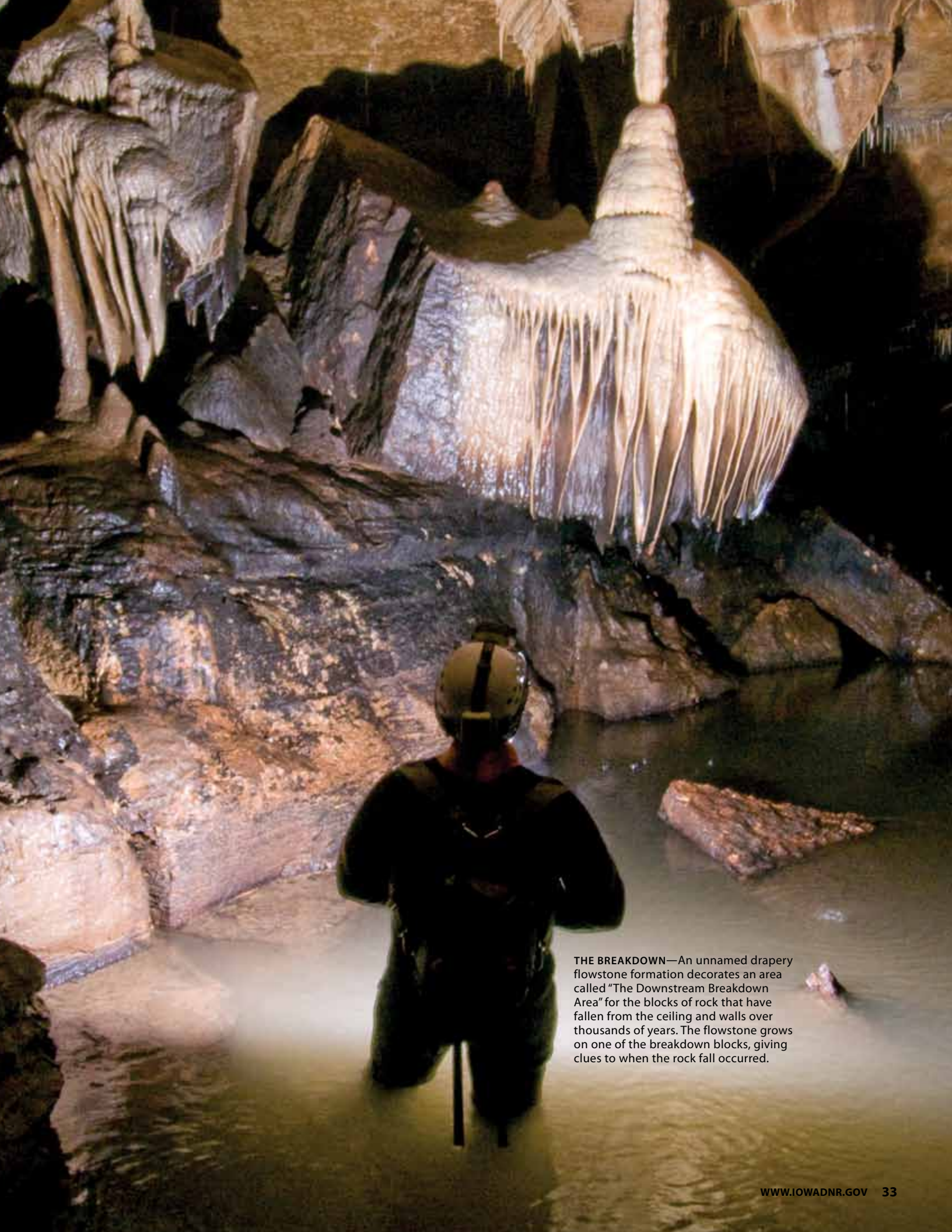
Ackerman is an objectivist, pressing ahead to open access to skilled cavers. He clearly doesn’t mind flummoxing natural resource managers. A good number of Coldwater Cave Project cavers have simply accepted Ackerman’s cave presence, modifications and all. Although she doesn’t believe his access was necessary, Kambesis, who’s caved on high-profile exploratory trips in the country’s longest caves, points out that Ackerman is certainly within his legal rights.

“Cavers modify caves all the time,” she says. “Most major discoveries have resulted in some kind of modification to get into them.”

### UNDERWORLD WINDOW OF WATER QUALITY

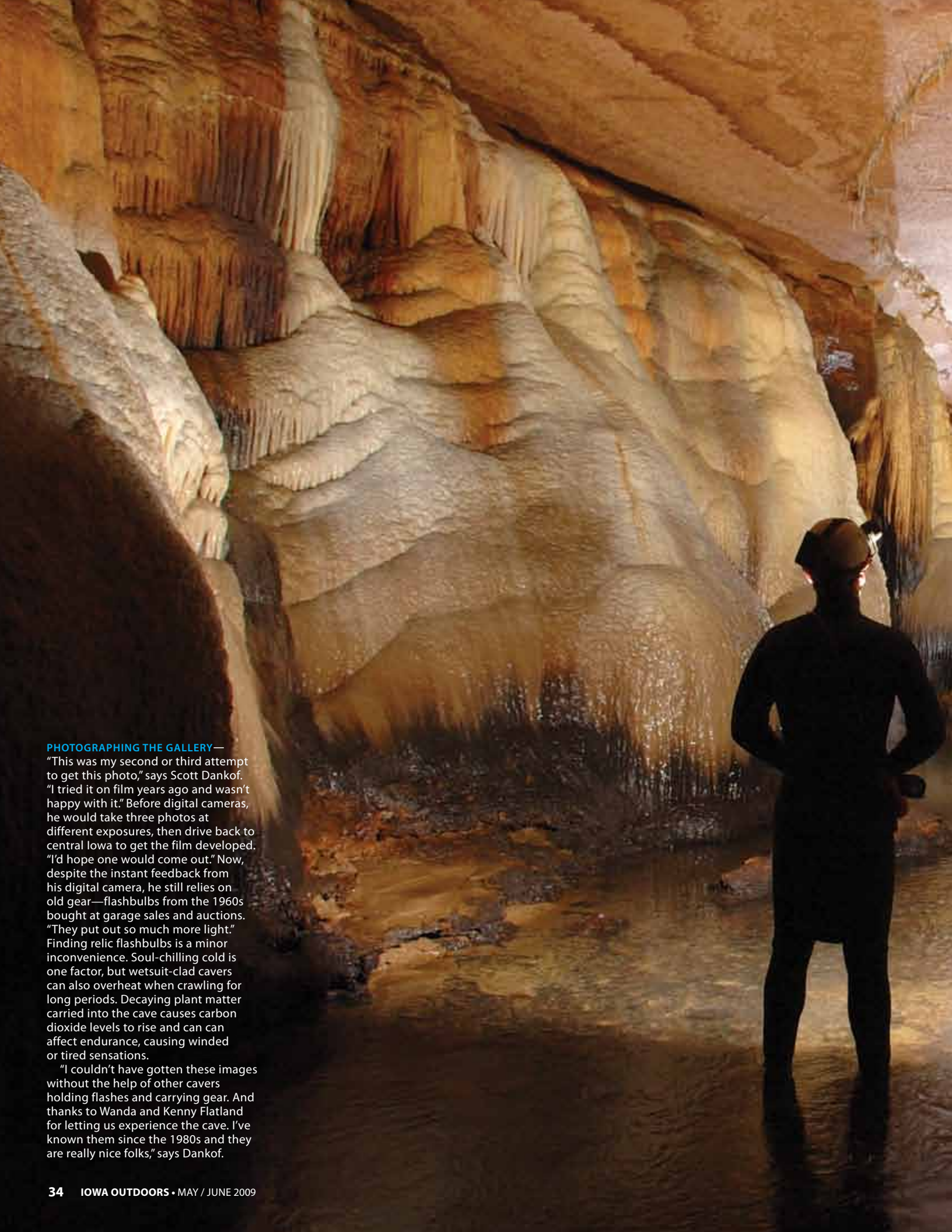
The Coldwater Cave Project group has supported numerous scientific projects, including studies on temperature, water stage levels, cave chemistry and atmosphere. Kambesis’ master’s thesis was on pollutant transport through Coldwater Cave, and the effort translated into water quality work for the Upper Iowa River Alliance.

Kambesis’ work showed that pollutants dumped into sinkholes and other crevices flow directly into the cave, and are rapidly transmitted through subterranean streams to the outflows, ending up eventually in Coldwater Creek and the Upper Iowa River. In particular, high concentrations of bacteria stemming from animal feeding operation run-off



**THE BREAKDOWN**—An unnamed drapery flowstone formation decorates an area called “The Downstream Breakdown Area” for the blocks of rock that have fallen from the ceiling and walls over thousands of years. The flowstone grows on one of the breakdown blocks, giving clues to when the rock fall occurred.





#### PHOTOGRAPHING THE GALLERY—

"This was my second or third attempt to get this photo," says Scott Dankof. "I tried it on film years ago and wasn't happy with it." Before digital cameras, he would take three photos at different exposures, then drive back to central Iowa to get the film developed. "I'd hope one would come out." Now, despite the instant feedback from his digital camera, he still relies on old gear—flashbulbs from the 1960s bought at garage sales and auctions. "They put out so much more light." Finding relic flashbulbs is a minor inconvenience. Soul-chilling cold is one factor, but wetsuit-clad cavers can also overheat when crawling for long periods. Decaying plant matter carried into the cave causes carbon dioxide levels to rise and can affect endurance, causing winded or tired sensations.

"I couldn't have gotten these images without the help of other cavers holding flashes and carrying gear. And thanks to Wanda and Kenny Flatland for letting us experience the cave. I've known them since the 1980s and they are really nice folks," says Dankof.



on the surface is considered a problem by cavers.

“I respectfully suggest that if the DNR is concerned about cave protection, they take a closer look at the real threats to caves,” says Ackerman. “Look at the 100-plus domes in the cave that have water spilling down them. Stand (on the surface) and see multiple sinkholes that are responsible for what cavers call ‘agrifoam’ that bubbles up and can block cave passages. Watch the cattle bathing in the streams and follow that water into the cave.”

Lovaas, the CCP science coordinator and a long-time IOWATER volunteer water monitor, agrees with Ackerman on the water quality issue, saying the water quality “sucks,” and is “chock full of (fecal) coliform, in particular.” He is particularly concerned about animal feeding operations as a future threat to the cave.

#### DREAMS TO PROTECT RAW BEAUTY

Ackerman brought me to his Spring Valley Caverns because he wants me to understand that, while he’s taken cave modification to a new level, he’s also constructed his very own conservation ethic. After he blasts, rubble is piled in low spots, covered in mud. From a purely aesthetic point of view, Ackerman is correct. His cave, once you’re inside it, appears natural. For future generations, he believes, cavers will still cave here, giving nary a thought to the modifications. The caves he has developed accesses to will be his legacy. Perhaps they will be held in a trust, run by a conservation organization, or perhaps even by government entities.

After we emerged from a pipe at Spring Valley Caverns, Ackerman and I drove across the border into Iowa. Ackerman unlocked the lid on a tube. We began climbing 188 feet down. Rung after rung, the circular patch of gray sky gradually became a dim star above. As the shaft angled slightly, it disappeared altogether.

We only spent a half hour in Coldwater Cave, but it lived up to the hype. The Pillar of Light Arising Out of Divine Reasoning was as glorious as its name implies. An impressive waterfall dumped into the main stream a short hike from Ackerman’s entrance. Formations are everywhere.

Ackerman appeared infatuated. “This cave makes (Spring Valley Caverns) look like a gopher hole,” he said. He wanted me to see this, to feel the excitement, and I did.

In the end, enthusiasm for Coldwater Cave may be the only thing that can protect it. If above-ground neighbors can understand the cave’s importance not just to Iowa, but the entire Midwest, perhaps attitudes can adjust to value and protect it. If the entire state can wrap its collective mind around the raw beauty that exists underground, perhaps cave protection laws can emerge here as they have in almost all other cave-rich states.

Because Coldwater Cave is part of his Minnesota Karst Preserve, he plans for his portion to one day have the same protective status he hopes Spring Valley Caverns will.

“Let’s educate folks about what incredible resources they own,” says Ackerman. “Soon, they will be proud of their resource. A proud landowner will no doubt defend their resource.” 🐾