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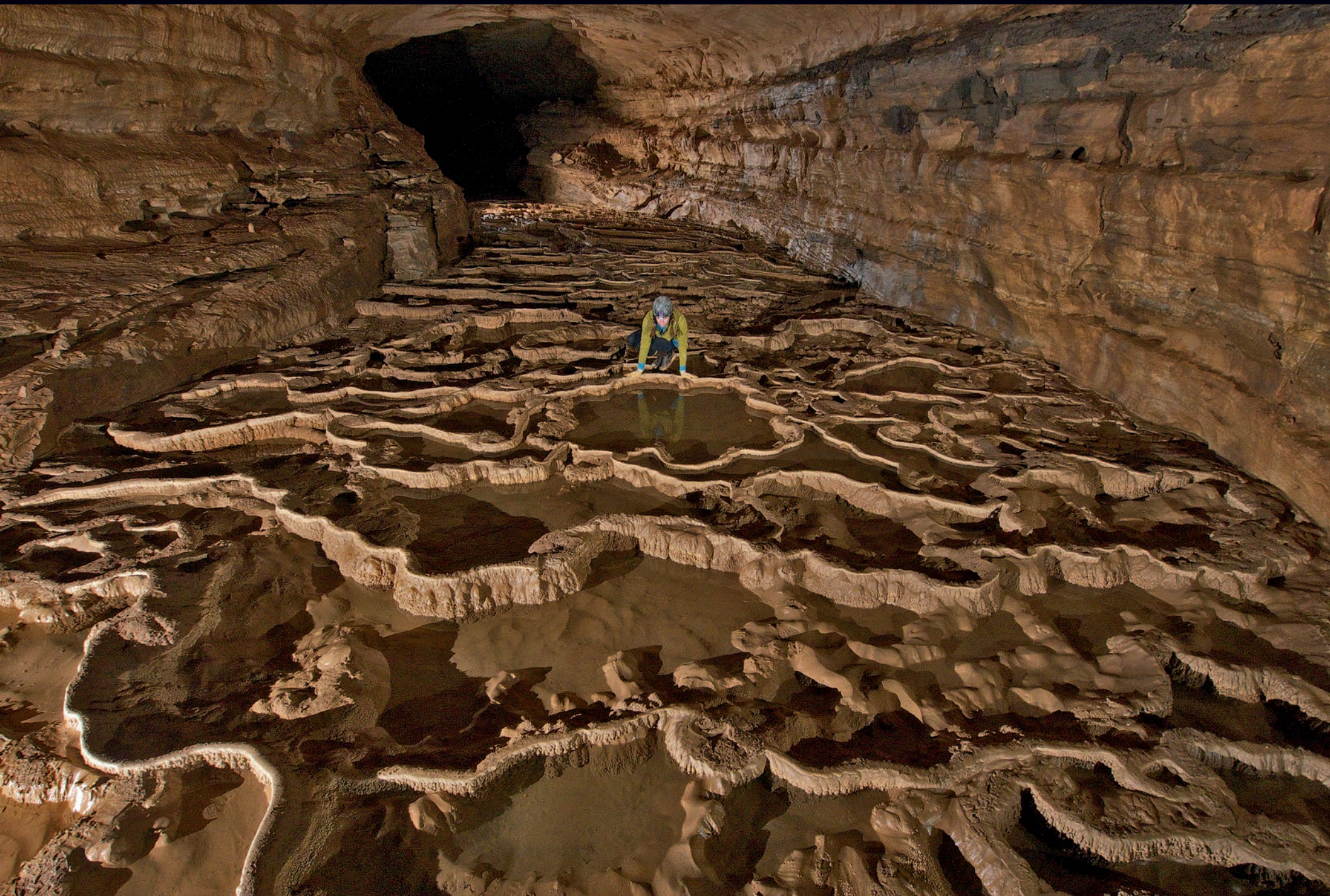

Acquisition of the Paul Wightman Subterranean Nature Preserve

Carl DauBach, Pen DauBach, and Steve Taylor

Perhaps it really is a metaphor. Getting the "cave project" through the acquisition phase could be compared to the Fogelpole Cave system itself: areas of 'high 'n wide' passages; streambed sightings of fauna found nowhere else on the planet; speleothems that provide clues to date earthquakes within the New Madrid seismic zone; Pleistocene-era relics of now-extinct animals preserved in a muddy alley-like passage; and, precisely metaphor-worthy of our organization's passage-to-project-success, areas of low-crawl, nose-held above water during a difficult push. Clifftop's Board of Directors discovered the metaphorical counterparts of the cave system's 'high 'n wide' and sightings of rarities, wonders, and research projects galore in the pure pleasures of active collaboration, sharing, and the heady sense of working jointly to preserve and protect something really special. But we had our low-crawl moments, too, when it seemed we'd hit a sump of non-cooperation, with expenditures of organizational funds that could have procured at least a mastodon's tusk, we sometimes wondered if a Pleistocene-era length of time would be needed to get the deal done.

Steve Taylor

Panorama of the karst-sinkhole plain in Monroe County, Illinois, showing a portion of the Paul Wightman Subterranean Nature Preserve and the Fogelpole Cave Nature Preserve

Karst Protection At Its Best

Karst conservation and cave protection are not easy. Often the large size of a cave system's groundwater recharge basin and the associated costs and cooperation required for landscape-level property acquisition preclude the whole-scale purchase of large tracts of karst and cave terrain. That's why so many postage-stamp-sized small parcels around the country simply protect a cave's primary entrance.

Secondly, while we know the basic do's and don'ts to limit groundwater contamination, rigorous long-term scientific studies and research have not provided definitive recommendations for best management and stewardship practices to preserve the biota of important cave systems. In an ideal land use condition, we would undertake practices allowing us to live **on** karst without damaging the ecosystem of the fauna that live **within** karst.

Cast of Karst Experts and Partnerships

With these obstacles and realities in mind, several collaborative partnerships and a cast of engaged actors began to address karst challenges in Southwestern Illinois and the Fogelpole Cave system's protection beginning decades ago. First and foremost, the Reverend Paul Wightman (NSS 835FE), the earliest surveyor and explorer of the Fogelpole system, remains a consistent proponent for the causes of cave protection.

During the 1990s, Diane Tecic, (Illinois Department of Natural Resources (IDNR) Regional Natural Heritage Biologist at that time), and Joan Bade, formerly of the Monroe County Health Department and then IDNR, focused attention on and galvanized science and support for karst conservation in the Sinkhole Plain of Southwestern Illinois.

Geologist Phillip Moss (NSS 15977RLFE) conducted numerous dye tracing studies and mapped groundwater recharge basins in the area.

Dr. Frank Wilhelm, formerly of Southern Illinois University-Carbondale and now at the University of Idaho, began studies on the Illinois Cave Amphipod (*Gammarus acherondytes*), a federally listed endemic crustacean species found only in six cave systems in the Sinkhole Plain.

Dr. Julian ('Jerry') Lewis (NSS 13576FE, Science Award) began systematic survey studies for the Illinois Cave Amphipod.

Dr. Steve Taylor (NSS 29460RLFE), Biospeleolgist, Illinois Natural History Survey and University of Illinois-Urbana, conducted research on cave-dependent fauna and the groundwater systems that sustain life.

Bob Weck (NSS 57202), head of the Biology Department at Southwestern Illinois College, and self-described as "a biologist with a cave, not a cave biologist," conducted and participated in backyard-based studies of the Stemler Cave system.

In 2008, under Diane Tecic's leadership, a new conservation partnership was framed to redouble and better organize conservation efforts in the Sinkhole Plain and contiguous Hill Prairie Corridor of Southwestern Illinois. Since its founding, the Southwestern Illinois Wildlife Action Plan Partnership has brought an additional 1,579 natural area acres into permanent protection, garnered $1.4 million dollars for stewardship work in the region, and conducted 104 conservation-oriented, public outreach events, with 7000 attendees.

Principal Partnership members include IDNR, the Illinois Nature Preserves Commission, the Natural Resources Conservation Service, the University of Illinois Extension Service, the Illinois Speleological Survey, the Illinois Natural History Survey, the Friends of Stemler Nature Preserves, the Salt Lick Point Stewardship Committee, and Clifftop. An all-volunteer nonprofit conservation organization, Clifftop serves as administrative agent.

Big Farm For Sale – At First

In late 2012, the Clifftop Board of Directors took an initial look at the proposed sale of a large farm property in Monroe County's karst sinkhole plain.

It was supposed to be sold as farmland: one big piece of land that, from the evidence of erosive run-off rills, probably should have been farmed for grass or forage. But it was used for row crops and would be sold as row crop acreage by the parties to the estate that inherited it. Our land acquisition committee took a brief look at the farmland sale and noted that the farm surrounded the 27-acre Fogelpole Cave Nature Preserve, a site owned by IDNR. Committee members talked a bit, again, about the difficulties and lack of clear guidance on the issue of protecting lands in the karst sinkhole plain, and concluded that even continued row cropping probably wasn't the worst thing that could happen on top of a cave system.

With plenty of tasks to focus on, our all-volunteer organization was growing and expanding both our public engagement activities and the boots-on-the-ground labor-intensive land stewardship work that underpinned our start in 2006.

In three years, Clifftop had successfully concluded two major land conservation acquisitions and had put time and resources into three additional but unsuccessful efforts. Despite interest in taking a larger role in the conservation of our area's cave resources, members of the committee tasked with the

first look at potential land acquisitions felt a sense of relief that the sale of the big farm property was not an immediate threat to karst fauna.

"Farmette" Division Looms

Then, the sellers changed their strategy. The 535 acres were plated into 14 "farmettes," each of which would be subject to further subdivision, part of the too-frequent Midwest modern shift from corn and soybean crop rotation systems to rural residential subdivisions. This development merited a new review with emphasis on potential consequences. Excerpts from the near-immediate responses to our requests for advice gave urgency to our decision process:

"A conservation-focused purchase of the parcels going up for auction would be a huge step towards protecting one of Illinois' most vulnerable habitats and our largest cave system." Steve Taylor

"Fogelpole Cave in southwestern Illinois is a valuable state and international resource that should be protected to the fullest extent possible." Frank Wilhelm

"Having worked with the cave fauna of Illinois for over 40 years, I've witnessed the change in land usage in the sinkhole plain karst in Monroe County. In my estimation, Fogelpole Cave is now hanging in the balance. If the karst lands above the cave are subdivided and blanketed with homes, the fate of the cave and its community will be sealed. Fogelpole will become an empty shell where once a vibrant subterranean community thrived, only to become a conduit for carrying away the waste of those blissfully living above. I cannot express an endorsement that is stronger than that of the need to purchase the land above Fogelpole Cave. It is a globally significant site that must be preserved." Julian (Jerry) Lewis

Those first answers to the "why do this project" question turned into a torrent of additional information. The Fogelpole Cave system is Illinois' longest and most biologically diverse, with 18 globally rare species. It is one of the half-dozen sites that host populations of the federally listed Illinois Cave Amphipod (*Gammarus acherondytes*).

The site also holds Pleistocene-era fossils and its speleothems have provided dating information on earthquakes within the New Madrid seismic zone.

Due to the efforts of Paul Wightman, the Fogelpole family—early and long-term owners of the primary entrances to the system—and IDNR, successor owners to the Fogelpole family ground, visitation to the system was limited and selective, primarily including researchers and agency managers, supported by organized cavers.

The exclusion of partying spelunkers and souvenir-seekers resulted in preservation of the system's near-pristine wilderness nature, with nearly no graffiti-scarred walls and mostly well-preserved unbroken speleothems. The cave system is a treasure trove and keeping the land above it intact and undeveloped became our goal.

Land Valuation

No matter how precious, rare, or valuable to wildlife habitat a given property may be, it is simple reality that land is valued and appraised on human-use terms. Valuation is based on the "highest-and-best-use" principal, which in our rural area means either continued row-cropping agriculture and recreational-hunting or residential development.

Our appraisal indicated a per-acre average valuation of nearly $5,000. The land price and value of two buildings on the property, and associated deal costs including an appraisal, estimates of attorney's fees, boundary survey, and additional costs put the total purchase price tag at more than $2,760,000.

Foundations and Telling the Wonderful Story of Karst

We turned to representatives of two private foundations to begin answering the "how to do this project" questions. Clifftop had worked with both the Illinois Clean Energy Community Foundation (ICECF) and the Grand Victoria Foundation (GVF) for funding assistance for earlier acquisitions. Both foundations are committed to helping Illinois' land trusts and conservation organizations acquire and protect natural areas lands.

But this was a different type of acquisition, not just in terms of dollars, although the budget itself was huge, but the property itself—row-cropped farmland—made this an unusual request. "We're buying a cave, not a farm" was the narrative we had to bring forward and to do this we turned to master storytellers to help us frame our grant proposals.

Clifftop collaborated with Steve Taylor as an advisor for both for the acquisition and still-hoped-for-but-only-planned future research efforts that would take place if we successfully purchased the property. The foundations' project officers needed to transmit the importance of the overall endeavor to their Boards of Directors and Trustees. The spirit of joint work to good ends became infectious as all of us—Clifftop's Board, science advisors, and foundation representatives—wrestled through the tough questions and timing of the project.

Foundations exist to fund; again, a simple reality. But what foundations want to fund are successful projects. Success grows from well-thought-through plans for long-term management, stewardship both of a property and the organization, and long-term

Michael Bradford

Michael Bradford and Chad McCain surveying in Fogelpole Cave, Illinois

Michael Bradford

Chad McCain looks upstream towards miles of passage during a Fogelpole Cave mapping trip in 2015.

financial and organizational stability. From January to May we wrote, edited, re-wrote and honed initial letters of interest and then the prized, by invitation only, full proposals to the two foundations.

Generational Questions

Our own Board undertook a series of important questions, some spurred by concerns raised by the foundations, others due to our realizations that this would be a "generational project," a commitment by our Board to carry through management and surface restoration of the property for decades to come. Did our organization, an all-volunteer, relative newcomer on the conservation land trust landscape, have the capacity, the will, and the means to bring this project forward?

Clifftop's Board is comprised of community business leaders, farmers, conservationists, and teachers. The process of exploring, assessing, and ultimately pursuing this purchase also resulted in these community members developing a much deeper understanding of caves, karst, shallow groundwater, and subterranean ecosystems.

Both foundations carefully scrutinized our policies and procedures, our finances and audit reports, our past work, and our lengthy full proposals with management and stewardship planning documents for the property. Foundation representatives visited, both to tour the site and better understand the nature of Clifftop's working board structure.

Once again, collaboration made our case, as Steve Taylor and Bob Weck showed a portion of the Fogelpole Cave system to foundation representatives, two tours made possible by special permits using the state-owned cave entrance.

Fundraising Leaps Forward Through Foundation Approval

In late April ICECF approved our grant request for up to $1,905,050 for the purchase and an additional $10,000 for initial restoration. In late May, GVF approved our request for $796,960 towards the purchase and additional acquisition costs and $21,000 for restoration and initial public access infrastructure costs.

Our fundraising efforts continued through summer and fall. The cave-sciences community, including the Subterranean Ecology Institute, the National Speleological Society Save-the-Caves Conservation Grant, and the Illinois Speleological Survey, made donations of nearly $4,000. An additional foundation also contributed $5,000 to this acquisition, and members of our local community rallied to the cause and took the necessary final fund-raising of more than $40,000 needed for the purchase over the top.

Months More to Close the Deal

With the ICECF and GVF approvals in hand, we asked our attorney to contact attorneys for the estate and made our first formal offer to purchase the property in June 2013. Almost without warning our seeming high 'n wide passage turned a corner and we entered a months-long sump of dealing with parties to an estate seemingly committed to making their probate process as protracted and difficult as possible. Visits to court as observers, e-mails and telephone calls to and from our attorney and their attorneys, were punctuated with reports back to our Board and to the foundations' representatives as we were forced to passivity while probate slowed, hearings were postponed, and the heirs' emotional states were reported to be ever more on edge. We finally closed on the purchase on December 30, 2013.

Celebrating Success

Our membership came together to celebrate the acquisition less than a month later and to ask about future plans and volunteer opportunities at the site. Opportunities abound and volunteers already are at work assisting with research and with developing our public access infrastructure so that passive recreational hiking and nature observation can occur on the restored surface of the land.

Clifftop's first actions as owners of the property were to ensure its permanent protection from development. The property has been dedicated by the Illinois Nature Preserves Commission, a designation that affords the highest possible legally binding land protection in perpetuity in the state.

To honor and recognize his contributions to the Fogelpole Cave system, Clifftop has named the site the Paul Wightman Subterranean Nature Preserve.

Land Use Studies – A Model for Karst Management

Clifftop's management plan centers on enrolling a large portion of the row-cropped highly erodible fields into USDA's Conservation Reserve Program and using CRP income and cost-share funding through USDA's Natural Resources Conservation Service to plant a pollinator-friendly mix of native grasses and flowers in the first steps to returning land use to its historic prairie/savannah cover.

Our USDA enrollment eligibility only opened after one year of ownership, so, during 2014, we leased 400 acres for row crops. Far from seeing one more year of soybeans on our fields as another slowdown, we facilitated a set of research activities that will serve as baseline data for ongoing studies into the effects of land use transformation on wildlife.

During the year, Dr. Walt Kelly, a geochemist with the Illinois State Water Survey, Sam Panno, a geochemist with the Illinois State Geological Survey, and Steve Taylor tested groundwater in the cave system and established a baseline for monitoring changes in groundwater quality, with the conversion of 282 tilled acres to prairie in spring, 2015. Water testing will continue over the next decade, as the entire tract's land use is transformed.

Several additional research studies are underway. Aaron Addison (NSS 30495 RLFE), Washington University, assisted by Chad McCain (NSS 60641), are leading the multi-year effort to resurvey Fogelpole Cave, with the help of a select group of caver volunteers from local Illinois and Missouri Grottos. This effort is undertaken primarily to support management and research within the Fogelpole Cave system.

Sam Panno is continuing several geological and seismological studies in the cave.

INHS mammalogists are conducting bat surveys in the cave, and, with the help of University of Illinois microbiologists and mycologists, are undertaking studies of white nose syndrome.

INHS and Illinois State Museum researchers are conducting paleontological studies in the cave and in associated sinkholes. Within the cave, several entomological, crustacean, invertebrate and herpetological studies are under development.

Finally, working with various Universities and other researchers, aboveground biodiversity surveys have begun to catalogue avifauna, herpetofauna, insects, and mammals, allowing us to monitor long-term changes in biota as surface land use practices are transformed.

Ultimately, our collective goal is simple enough: improve conditions in the cave by transforming land use practices within our preserve, then using this model to help educate surrounding landowners within the Fogelpole Cave drainage basin, gently nudging them to shift from old attitudes to adopt land use practices to help protect the hidden world beneath their feet.