

The FLOWSTONE

Vol 25 Issue 1

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A Monthly Newsletter of the Cullman Grotto of the National Speleological Society

CULLMAN GROTTO FLOWSTONE



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Inside This Issue

- 2 Echo Chamber
- 4 Tag Calendar
- 5 Crews Pull Injured Man from Utah Cave
- Frick's Cave Preserve Clean-up...
- 6 Minutes

The Flowstone is published monthly by the Cullman Grotto of the National Speleological Society. Items submitted for publication must be received by the 20th of each month for inclusion in the following month's issue.

The Cullman Grotto will exchange by request with any publishing grotto. Republication of items within *The Flowstone* is allowed provided credit is given to author and source.

Membership to the Cullman Grotto is fifteen dollars (\$15) per year for individual or twenty dollars (\$20) per year for family. Dues are payable at the first grotto meeting of each year (January) and includes subscription to *The Flowstone*. Subscription rate for non-members is fifteen dollars (\$15) per year.

The Cullman Grotto meets on the first Monday of each month unless the first Monday falls on a holiday or otherwise noted. In those cases the meeting will be held on the second Monday. Meetings begin at 7:30 p.m. and are held at the old L&N train depot, Arnold St., Cullman, AL. All visitors and prospective members are welcome.

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Front Cover: Some weird Batman picture I found on Google

Photo by: I found it on Google...who knows!?

ECHO)))) CHAMBER

Lethal Fungus that Causes White-nose Syndrome May Have an Achilles' Heel

Science Daily
Jan.2, 2018

The fungus behind white-nose syndrome, a disease that has ravaged bat populations in North America, may have an Achilles' heel: UV light. White-nose syndrome has spread steadily for the past decade and is caused by the fungus *Pseudogymnoascus destructans*, known as *P. destructans* or Pd.

In the course of genomic analyses of *P. destructans*, a team of scientists from the U.S. Forest Service, U.S. Department of Agriculture and the University of New Hampshire found that the fungus is highly sensitive to UV light. *P. destructans* can only infect bats during hibernation because it has a strict temperature growth range of about 39-68 degrees Fahrenheit. However, treating bats for the disease during hibernation is challenging, so any weakness of the fungus may be good news to managers trying to develop treatment strategies.

In a study published on Jan. 2 in the journal *Nature Communications* titled "Extreme sensitivity to ultraviolet light in the fungal pathogen causing white-nose syndrome of bats," the research team suggests that *P. destructans* is likely a true fungal pathogen of bats that evolved alongside bat species in Europe and Asia for millions of years, allowing Eurasian bats to develop defenses against it. In the course of comparing *P. destructans* to six closely related non-pathogenic fungi, researchers discovered that *P. destructans* is unable to repair DNA damage caused by UV light, which could lead to novel treatments for the

disease. The study was funded by the U.S. Fish and Wildlife Service.

"This research has tremendous implications for bats and people," said Tony Ferguson, Director of the Forest Service's Northern Research Station and the Forest Products Laboratory. "Bats play a key role in the health of forests as well as the production of food in the United States, and developing an array of tools with which we can treat bats for white-nose syndrome is important to preserving these very important species."

The research team generated annotated genomes for *P. destructans* as well as six non-pathogenic *Pseudogymnoascus* species in an effort to gain insight into the origins and adaptations of the fungal pathogen of WNS. Using comparative genomics, the research team noticed that *P. destructans* lacked a key DNA repair enzyme, prompting them to expose the fungi to DNA damaging agents, including different wavelengths and intensities of UV light. They found that a low dose exposure of UV-C light resulted in about 15 percent survival of *P. destructans* while a moderate dose exposure resulted in less than 1 percent survival. These values translate to only a few seconds of exposure from a hand-held UV-C light source.

"It is unusual that *P. destructans* appears to be unable to repair damage caused by UV-light," said Jon Palmer, a research botanist in the Northern Research Station lab in Madison, Wis., and the lead author of the study. "Most organisms that have been found in the absence of light maintain the ability to repair DNA caused by UV light radiation. We are very hopeful that the fungus' extreme vulnerability to UV light can be exploited to manage the disease and save bats."

Research on potential treatment using UV light is under way. Daniel Lindner, a research plant pathologist with the Northern Research Station in Madison and the corresponding author on the study, is leading follow-up research to determine if UV-light can be used as a treatment for bats suffering from white-nose syndrome. The study will measure the survival of little brown bats during hibernation after being treated with UV-light compared to control groups. The researchers are also exploring whether there are any non-target effects by measuring changes in the bat skin microbiome (both fungal and bacterial communities). The study, which is funded by a grant from the National Fish and Wildlife Foundation, Bats for the Future Fund began late last year.

Co-authors on the study include Kevin P. Drees and Jeffery T. Foster of the University of New Hampshire.



Call for Candidates for BOG Elections

NSS



Throughout the fall and winter, we'll be searching for qualified and talented candidates for the Spring 2018 Election of Directors of the National Speleological Society. Because the search for these individuals is nationwide, we need the help of the entire NSS membership! What can you do to help?

1. Consider serving the Society and your fellow members by running for a seat on the Board of Governors.
2. Recommend qualified cavers as potential Director candidates from your Grottos, Regions, Surveys, and Sections.
3. Take time to read the candidate platforms and vote in the Director election each and every year.

If you're considering running for an NSS Director position and need more information after studying our Committee pages, please contact the Nominating Committee Chairman. The deadline for submission of your candidacy is April 10, 2018.

Please be sure to keep your membership information updated with the NSS Office to ensure that you will receive voting information—either by regular mail or e-mail.



NSS Convention 2018 - Helena, Montana July 30-August 3 Welcome to NSS Convention 2018



Montana's first NSS convention is scheduled to occur in our state capital, Helena, July 30th - August 3rd and boy are we excited! Attendees can plan to arrive at our beautifully scenic and historic 30-acre campground, just at the edge of town, starting on Saturday, July 28th. Our main event center, Capital High School, is just 2 miles down the road! You can look forward to:

- Amazing Presentations from Cave Explorations Across the World
- Academic Presentations from Some of Cavings Most Renowned Scientists
- Dozens of Hands-On Caving Workshops
- Caving Gear Vendors with all the Newest Gear
- Connecting with Cavers from Across the Globe
- Selling Your Old Gear, or Buying Someone Else's at the Caver Consignment
- Exquisite Cave Art Salons
- Two Nights of Campground Parties and a Campground Dinner
- A Formal Dinner and Awards Banquet
- Dozens of Caving (and a few canyoneering) Trips
- and so much more!

Following a week of spelegasms, we expect attendees will hit the open range for their next Montana adventure by Sunday, August 5th. We're looking forward to sharing the

Big Sky State with you, and we think you're going to especially love our capital city!

Helena is centrally located within Montana, and while it is our state capital, it is relatively small and quiet with a population of about 30,000 people. Helena lies between Glacier National Park (~3.5 hrs) and Yellowstone National Park (~3 hrs), but there are many attractions in and around Helena which we are excited to share with you!

Here are just a few of the opportunities near Helena: Montana's only public show cave, Lewis and Clark Caverns State Park; the Gates of the Mountains Boat Tour, a 2-hour scenic boat tour of a 1,000 foot tall limestone canyon; Canyon Ferry, a large reservoir for swimming and boating; excellent mountain biking and hiking trails within Helena city limits; and of course, many caving opportunities within 20-150 miles of town.

The Amenities

The campground will be located on 30 acres of grassy, treed property just outside city limits. Campers can choose their spot in the shade of the 100+ year-old Cottonwood and American Elm trees, or next to Ten Mile Creek, which runs through the campground. We even have a "backside" to the campground complete with rocks, sagebrush, and cactus for our SW region friends! There are also many great choices for budget to luxurious hotels and restaurants within a few miles, and there is even a small bar and a corner market right across the street from our campground.

The Facilities

The main venue will be Capital High School, just a 5 minute, 2.3 mile drive from the campground. Don't

feel like driving? Take one of the shuttles. Or even better, bring your bike and take the half-paved/half-graveled bike path from the campground to the high school! All sessions, vendors, and the like will be held at the high school, with the exception of the vertical sessions, which will be held at the Lewis and Clark County Fairgrounds (~0.5 miles across the street from Capital High). The Photo/Video salon will be held at the Helena Middle School auditorium, just a 7 minute drive from Capital High School or the Campground.

Caving and the Outdoors

Montana is called "Big Sky Country" with good reason. The contrast between our river valleys and the high, glacier-carved peaks creates the dramatic landscape that we are known for around the world. Our outdoor explorations can satisfy the most adventurous cavers. Montana caves are typically high elevation, cold (35-45 degrees F), and are often highly vertical and challenging. If you plan to cave during your time in Montana, be sure to bring plenty of warm clothes to wear under your cave suit!

Whether your interest is in geology, wildlife-watching, fishing, water-skiing, or underwater basket weaving, you'll find it in Montana. There are more grizzly bears in Montana than any other state in the lower 48.

****If you plan to recreate in grizzly bear country during your visit, get bear spray and know how to use it! Bear spray is sold in most outdoor stores in the state, and can be rented for the day or the week from Yellowstone National Park. Follow the directions on the label and use ONLY as a deterrent.****

Endangered Bats Found in Montgomery Middle School

Thursday, January 4th 2018
By WSFA 12 News Staff

MONTGOMERY, AL (WSFA) - Some rare gray bats have taken up residence at a Montgomery middle school, school district officials confirmed Thursday.

Montgomery Public Schools has contracted with a company to remove the bats from Southlawn Middle School.

The number of bats and the location within the school wasn't released, but school officials say the bats aren't dangerous.

They were identified as the gray bat, which is an endangered species. They will be captured and released.

According to the U.S. Fish & Wildlife Service, gray bats live in caves year-round, but they are losing their habitats. They were added to the endangered species list in 1976.



TAG Calendar

January 9
Grotto Meeting
L&N Train Depot, Arnold St 7:30PM

January 13
Grotto Trip
TBA

May 3-6
67th Annual SERA Summer Cave Carnival
Scottsboro, AL
Hosted by the Birmingham Grotto

May 10-19
NCRC National Training Seminar
Camp Skyline - Mentone, AL

July 28 - August 4
2018 NSS Convention
Helena, MT

Crews Pull Injured Man from Utah Cave Following 12-hour Rescue

By Pat Reavy

Deseret News

Published: January 8, 2018 5:33 pm

SALT LAKE CITY — A California man who fell while exploring Utah's longest cave near Vernal remained hospitalized Monday following a dramatic 12-hour rescue.

On Sunday, a 24-year-old man and three friends were exploring Little Brushcreek Cave, located in the Ashley National Forest near Dinosaur National Monument, when the man slipped and fell approximately 50 feet, breaking both of his arms, said Utah County Sheriff's Cpl. Brian Fletcher. The men were an estimated 500 feet inside the cave when the accident occurred.

"These aren't easy caves. There are some technical parts. There are some areas that are pretty sketchy," Fletcher said.

It took one of the man's friends about an hour to get back to the cave entrance where he was able to call 911 about 9 p.m. He had to free climb two sections of cave that were approximately 50-foot high to get there, Fletcher said.

After learning how far down the injured man was, resources from the sheriff's office, Utah County Search and Rescue, Vernal Fire Department, crews from Wasatch, Utah and Salt Lake counties, as well as the Utah Cavers Association and National Cavers Association all responded to the cave to help.

Rescuers had to rappel in several areas to get to the injured man. Two rescuers, a Vernal firefighter and a search and rescue member stayed by the man's side through the night as

others prepared for the extraordinarily technical rescue.

The man was loaded onto a backboard and had to be completely immobilized, Fletcher said. From there, crews slowly maneuvered him through the cave, pulling him up the steep drop-offs, and through one narrow point of the cave where only one person can get through at a time, he said.

Just before 10 a.m. Monday, crews were able to bring the injured man to the surface. He was flown by medical helicopter to a hospital to be treated for multiple broken bones and other injuries, sheriff's officials said.

Two other men who were also with the group had become fatigued by that point and also needed the assistance of search and rescue crews to get out of the cave, according to Fletcher.

The incident serves as a good reminder to the public to be prepared before exploring caves and know what they're getting into before arriving. In this case, Fletcher said the men didn't have the expertise to climb in the caves.

"Realistically, these guys didn't have any climbing experience," he said. "These guys weren't prepared. They just saw an adventure and decided to try it."



Frick's Cave Preserve Clean-up and Visit by the Veterans Adventure Group

[Exploring This Blue Dot](#)



Frick's Cave, owned by the Southeastern Cave Conservancy sits on 33.8 acres and contains 2.7 miles of passages. It is home to 10,000 endangered gray bats and has Georgia's only known population of the rare Tennessee Cave Salamander. Due to its sensitivity, this cave is closed to all visitation (except the annual Member Appreciation Day when the bats aren't present or rare Board approved trips). Unapproved entry is illegal and can be considered harassment under the Endangered Species Act.

In December of 2017, special approval was provided by the SCCi board in support of the Veterans Adventure Group to allow a chance to see this special (horizontal) cave as part of a clean up effort of the preserve by the Veterans and SCCi volunteer ET Davis.



For a little background, the Veterans Adventure Group is a non-profit open to all veterans that is passionate about helping and supporting veterans through the difficult transition from a military world to civilian life. They provide support,

guidance, and a strong network for them as they train and prepare towards a positive extreme goal that develops a sense of purpose and pride in the teams.



Meeting in the morning, the team proceeded with clearing leaves, removing invasive vines, and clearing fallen trees. The effort lasted into the mid afternoon, but accomplished more than had originally been anticipated for the day.



With the clean up effort complete, the group made its way to Frick's Cave under the lead of SCCi volunteer ET Davis with extreme caution as not to disturb the bat population. A special thanks to SCCi and it's board for providing this tour for the veterans of this special (horizontal) cave.



On entering the cave, Mr. Davis took the time talk about the Southeastern Cave Conservancy's (SCCi) conservation efforts around the 10,000 endangered gray bats that reside here and the archaeological assessment that was done in 2001. Aquatic gastropod shells with broken ends (food source), tempered pottery shards, cane torch marks, and several petroglyphs were found indicating that Native Americans had visited and explored this site.

If you'd like to help support ongoing research and habitat protection for endangered bats, please considering participating in the Adopt a Frick's Bat fundraiser:
<https://store.scci.org/adopt-fricks-bat>



Minutes of the Meeting of the Cullman Grotto of the National Speleological Society

December 4, 2017

The regular monthly meeting of the Cullman Grotto of the National Speleological Society was called to order on Monday, December 4, 2017 at 7:45 pm by Harold Calvert, Chairman. 5 people were present.

The minutes from the November meeting were read. A motion was made by Kuenn Drake to accept the minutes as read and was seconded by Arlon Baker. The motion was approved.

The Treasurer's report was given.

Announcements:

Cullman Grotto Christmas Party & Dirty Santa at Jeff & Mandy's house December 9 at 6pm.

Montgomery Grotto Christmas Party at Bo & Jelene's house December 16 at 6pm.

NSS Bat Ball – New Year's Eve

Old Business:

Nominations for Grotto Officers:

Chairman: Harold Calvert

Vice-Chairman: Scott Murphy

Treasurer: Tracy Calvert

Secretary: Evon Thompson

New Business:

Ideas needed to revive the Grotto.

The meeting was adjourned at 8:30pm.