

Crystal Caverns at Hupp's Hill Management Plan

Introduction

The Virginia Region (VAR) of the National Speleological Society (NSS) is a non-profit organization incorporated in the state of West Virginia in 1986. The VAR is an umbrella organization consisting of over 40 Grottoes, or local chapters, of the NSS, and represents these Grottoes on matters of regional importance. The VAR follows the NSS's stated Mission Statement, which is dedicated to the scientific study of caves and karst; protecting caves and their natural contents through conservation, ownership, stewardship and public education; and promoting responsible cave exploration and fellowship among those interested therein.

Formerly known as Hupp's Cave and Battlefield Crystal Caverns, Crystal Caverns was one of the earliest discovered caves in Virginia and is located about one mile north of Strasburg, Virginia. Native Americans knew of and used the caverns, and they were rediscovered by the first white settlers in the valley in the mid-1700s. The caverns were opened to the public in 1922 and have been continuously operated as a tourist attraction until 2010, when financial considerations forced their closure.

The Hupp's Hill property, including Crystal Caverns, is currently owned by the Leo M. Bernstein Family Foundation (Bernstein Foundation) of Washington, D.C. The Cedar Creek Battlefield Foundation (CCBF) has proposed to lease approximately 18 acres on Hupp's Hill from the Bernstein Foundation and to partner with the NSS and the Town of Strasburg to run the property. The CCBF would operate the Stonewall Jackson Museum on the property, and sponsor events such as its annual Battle of Cedar Creek reenactment in October of each year; the Town of Strasburg proposes to develop a tourist information center on the property and will provide support for road clearance and grounds maintenance; and the NSS would be responsible for the cave and the karst trail. The NSS and VAR both recognize the significance of this cave, as well as its convenient and centralized location, and believe it to be a great venue for furthering their goals of education and public outreach about caves.

The NSS had originally planned to appoint the VAR as caretakers, with the NSS providing guidance and insurance by placing Crystal Caverns under its umbrella insurance policy. After initial interest and much discussion, the NSS has declined to accept the Hupp's Hill property, has declined to provide any financial support whatsoever, and has declined to place the cave under its insurance policy. The VAR believes it should be the sole partner if the NSS refuses to support the venture.

The Lease Proposal

The Cedar Creek Battlefield Foundation (CCBF) has proposed to lease approximately 18 acres on Hupp's Hill from the Bernstein Foundation for 10 years at a cost of \$500 per year, with an option for the Bernstein Foundation to gift the property to CCBF at any time during the lease period and the option for CCBF to pull out of the lease deal any

time after five years. They have proposed partnering with the City of Strasburg and the NSS to help manage the property. The NSS would be responsible for the cave. According to the terms of the lease proposal:

- (1) The Cedar Creek Battlefield Foundation and/or its partners will provide routine maintenance of the property and buildings.
- (2) The Cedar Creek Battlefield Foundation and/or its partners will provide insurance on the building contents. The NSS will provide liability insurance on Crystal Caverns and that building's contents.
- (3) The Bernstein Foundation will provide insurance on all the buildings and any taxes owed.
- (4) The Bernstein Foundation will provide maintenance of all building systems and structures.
- (5) The Cedar Creek Battlefield Foundation will have a right of first refusal in the event that the property is ever put up for sale.

History

Crystal Caverns was been used by Native Americans long before white settlers ever came to the Shenandoah Valley and their arrowheads and other artifacts have been found in the cave. Along with other early immigrants to the Shenandoah Valley, the Hupp family moved to the area in the 1750s and settled a plantation of over 1000 acres about one mile north of current day Strasburg, Virginia. The cave, long known as Hupp's Cave, was discovered around 1755 and was use by the Hupp family for food storage. George F. Hupp, paymaster in the War of 1812 and owner of several local charcoal furnaces, moved to the plantation with his bride, the former Miss Spengler, whose family built the buildings. A spring on the property provided water for the adjacent distillery. The manor house partially burned down in 1877. The family would sometimes host Grand Illuminations, with the cave lit up by candles and lanterns for the occasion.

Hupp's Hill saw action of all kinds during the Civil War. It provided a hiding place for deserters from both sides during the Civil War, as well as slaves escaping on the Underground Railroad. It is known to have been used as a prison and field hospital and may have also been used as an ammunition dump and bomb-proof shelter. Two important Civil War battles, the Battle of Cedar Creek and the Battle of Fisher's Hill took place right outside the cave during Sheridan's Valley Campaign. Breastworks, consisting of a long line of trenches on ridge of Hupp's Hill by Sheridan's troops.

After the conclusion of World War I, family heir Bruce Hupp acquired the plantation in January 1922 and immediately set about improving the cave by constructing paths and installing lighting. He opened the cave to the public on May 30, 1922. Renowned psychic Jeanne Dixon visited the cave in 1956 and after an in-cave meditation, made a prediction

that is usually interpreted as foreseeing the assassination of John F. Kennedy. The lighting system was overhauled in 1998 and the new system was debuted over the Memorial Day weekend that year.

Resources

Biological: There have been no known studies of the biota of Crystal Caverns. One of VAR's goals would be to inventory the biota of the caverns.

Geological: Crystal Caverns is formed in limestone of the Chambersburg formation of Ordovician age. and contains the high and narrow fissures, with heavily decorated shafts and dome pits at the intersections of the fissure passages common to caves of this origin. The limestone of the Chambersburg formation is relatively pure, with few impurities, so the formations in this cave are very white and shimmer like crystals, hence the name. The most notable formation in the cave are the microgours, tiny rim stone pools covered with calcite crystals.

At the entrance of the caverns, at an elevation of 701 feet, the Chambersburg formation displays a strike of N60-65°E and a dip of 12-14°SE. The surveyed relief of the cave is about 55, feet with 1,250 feet of passage on three levels. At least two maps of the cave are known to exist, one by W. M. McGill in 1931 and a second by Armstrong, et al. in 1991.

Two other small caves are known on the property, Keyhole Cave and Panther Cave. Cold air has been detected in other sinkholes and may indicate other caves that have not yet been entered.

Hydrological: The cave contains two substantial pools of standing water, the level of which rises and falls significantly with local precipitation. A spring, formerly used for a distillery, is also located on the property. It is unknown if any hydrological connection has ever been attempted or made.

Paleontological/Archaeological: Native American arrowheads and other artifacts have reportedly been recovered from the cave.

Historical: General Sheridan's troops built breastworks and dug a system of trenches on ridge of Hupp's Hill during the second year of the Civil War, and the remains of these are still visible from the Karst Trail.

Surface Resources: While most of the property consists of wide open fields, the property contains a small wooded area on the crest of Hupp's Hill. A Karst Trail, part of the Virginia Karst Trail system, winds through these woods and passes the other small caves on the property. Interpretive signs along the way describe the karst and historical features of the property. This wooded area also contains remnants of the breastworks.

Research

The VAR encourages research to explore the preserve's historical, biological, geological, mineralogical, hydrological, paleontological and archaeological potential. Researchers who desire access to the preserve should submit a brief, written synopsis of their project to the VAR for consideration. Researchers are also required to submit a written report to the VAR within 180 days after the completion of their project. Any research project that involves removal of cave soils, digging, mineralogical or biological sampling must first receive the approval of the VAR's Management Committee and comply with all applicable local, state, and federal laws.

Management Committee

The VAR will designate a Management Committee to oversee the property. The Management Committee will schedule public openings of the cave, handle requests for visitation, review and approve all applications for scientific study, replenish supplies as necessary, and handle any necessary maintenance. The Management Committee will report regularly on any issues concerning Crystal Caverns during the VAR's semiannual meetings.

News/Publication Policy

The VAR seeks to publicize caves only as befits our mission as stated in our bylaws and constitution: for education of the public about caves and karst resources; for published scientific studies in cave-related publications, and depending on the sensitivity of the material, on the VAR website (www.varegion.org) and in its publication, the *Region Record*.

Unlike many other cave preserves, this cave was formerly commercial and its location is well known and documented. Furthermore, the entrance is inside a locked stone building and is not easily accessible to the public. Therefore, no restriction is made on publicizing the cave's location or describing trips to the cave.

Surface Management

The CCBF, if successful, will be the lessee of the Hupp's Hill property. CCBF or the Bernstein Foundation will be responsible for the maintenance of the cave entrance building. The VAR will have no responsibility for maintaining surface portions of the property, with the exception of the maintenance of the Karst Trail.

Budget Assumptions

The estimated budget below assumes the following:

- That by providing wide access for educational and recreational purposes and only accepting donations, the VAR will have sufficient and reasonable protection from liability concerns under the Virginia Cave Law.

- The maintenance of the building and lands will be provided by CCBF or the Bernstein Foundation.

Potential Expenses

- Expendable supplies, including replacement lights and janitorial supplies \$400/year
- Electricity to run the lights in the building and cave, estimated at \$1500 per year
- Insurance on the contents of the building, provided through CCBF, estimated at \$1600 per year, payable monthly
- Liability insurance estimated at \$4000/year
Even if we were totally donation driven, and thus protected by the Virginia Cave Law, that would not protect us from costs associated with being sued.
- Heating/cooling costs estimated at \$1000/year
- No phone service is planned because of the infrequency of use and ubiquity of cell phones.
- Estimated total expenses: \$8500/year

Potential Income Sources

- Donations by tourists on quarterly open weekends
\$10 suggested donation, 50 visitors/weekend, estimated income \$2000
- Renting the building to Project Underground for training courses
\$10 suggested donation per attendee, 100 students/year, estimated income \$1000
- Donations by local Grottoes who use the cave
\$25 suggested donation per visit, 5 visits/year, estimated income \$250
- Local scout and other youth groups
\$5 suggested donation per attendee, 100 scouts/year, estimated income \$500
- School groups on educational trips
\$5 suggested donation per attendee, 250 students/year, estimated income \$1250
- Travel groups associated with the Smithsonian Institution
\$10 suggested donation per attendee, 200 visitors/year, estimated income \$2000
- Suggested donation waived for scientific exploration with no lights.
- Note that scout, school, and travel groups should be escorted by volunteers. In the case of school groups, volunteers would have to be available during weekday school hours.
- We might consider a surcharge if lights are desired.
- Estimated total income: \$7000

Access Policy

Access to Crystal Caverns is controlled by a Management Committee appointed by VAR. This Committee is responsible for enforcing these access guidelines. Crystal Caverns will generally be considered closed, with limited trips allowed by permission of the

Management Committee only. The Karst Trail will be open and available for public use at all hours that the property is open to the public.

General policy rules for access to the cave and for visitation on the preserve property are as follows:

1. It is VAR's intention that Crystal Caverns shall be opened to the public on at least four publicized weekends each year. One of these weekends should correspond to the CCBF's annual October Battle of Cedar Creek reenactment weekend. Volunteers from local Grottoes will serve as guides and interpreters.
2. Crystal Caverns shall not be used in any non-educational activity by which organizations other than VAR can directly profit. This specifically prohibits recreational "cave-for-pay" endeavors. Organizations like Project Underground and the Smithsonian, whose activities are primarily educational, are allowed to make a reasonable profit.
3. Crystal Caverns shall be available to NSS Grottoes and other responsible caving organizations, recognized individual cavers, scout groups, youth groups, and other educational groups on a first come, first served basis, with at least 2 weeks prior notice to the Management Committee. Only one group may be at the cave at any one time, though sequential groups on the same day are allowed. Because of the key handling (see 5 below), trips will generally only be scheduled during CCBF's normal operating hours (currently assumed to be 10 AM-5 PM Monday to Saturday, 12 PM-4 PM on Sundays).
4. Visitation to the cave is limited to groups of no more than 25 people per trip, unless a waiver is obtained from the Management Committee.
5. For all visitors other than the VAR's scheduled public weekends, the Management Committee will transmit the name of the person in charge to the CCBF's Stonewall Jackson Museum, where groups can pick up and return the key. The building must be locked while the group is in the cave. All lights must be turned off when the group leaves. All groups must leave the cave before CCBF's closing time.
6. Illegal drugs, drug paraphernalia, tobacco use of any type, alcohol, and alcohol beverage containers are prohibited in Crystal Caverns and within twenty-five (25) feet of the entrance building.
7. All prohibitions of the Virginia Cave Law, which prohibits the destruction or mutilation of the cave, will be enforced to the fullest extent of the law.
8. Disturbing or destroying plants or animals on the property or in the cave is not allowed.

9. No digging without prior written permission of the Management Committee will be permitted. This includes relic hunting as well as digging for new caves.
10. Cave diving without the express written consent of the Management Committee is prohibited.
11. Visitors using the Karst Trail must remain on established surface trail paths. To protect surface flora and to reduce erosion, no off-trail activities or use are permitted, including biking.
12. The CCBF, VAR, and the Town of Strasburg will not be liable for any damages, accidents, injuries, or death, on the surface or subsurface of the property.
13. Any group visiting the cave without the explicit approval of the Management Committee, or who are found to have violated these access restrictions, will be banned from further use of the cave.

Liability Disclaimer

The VAR, its constituent local chapters (Grottos), or any individual members thereof will not be liable for any damages, accidents, injuries, or death on the surface or subsurface of the property (Addendum I). All the above named organizations will also not be liable for any damage or loss of personal property while visiting Crystal Caverns.

Future Updates

This management plan [was] approved by the Virginia Region on Month Day, Year. The VAR reserves the right to update, adjust, alter or amend this plan at any time without notice. Changes in the management plan must be sanctioned by the VAR and thereafter will be publicized in the *Region Record* and/or VAR website at the discretion of the VAR.