

THE JOHN GUILDAY CAVES NATURE PRESERVE

Revised June 12th 2019

INTRODUCTION

The John Guilday Caves Nature Preserve property, in Pendleton County, West Virginia, contains several caves, including three well known, significant caves:

Trout (12,458 ft. long)

New Trout (14,908 ft. long)

and Hamilton (25,037 ft. long)

The caves have been visited by many tens of thousands of people over the course of at least 200 years, and continue to be popular with recreational cavers, particularly youth groups. The property has historical value as an 18th century saltpetre site, and all three of the main caves are important paleontological sites.

The National Speleological Society (NSS) purchased the property in 1983 to protect the caves and their resources, and to ensure perpetual access to the caves. Every year, more landowners in the area close their caves to visitors and the NSS believes it is worthwhile to maintain a site that can accommodate groups of recreational cavers with minimal impact on the caves.

The property has been designated the John Guilday Caves Nature Preserve in honor of the late John E. Guilday, who was one of the foremost paleontologists in the country working with cave-deposited material. John was a long-time NSS member. While research curator at the Carnegie Museum of Natural History he made the initial paleontological studies in Trout Cave. John undertook some of his best work while severely disabled by Polio. John Guilday was an amazing man and The NSS feels proud to have named the preserve in his memory.

OBJECTIVES

The objective of this management plan is to establish processes and guidelines that will allow the Society to effectively manage and monitor the use of the Preserve in a way that will maintain and protect the property's natural environment, maintain visitors' access to the caves, allow historical, paleontological, biological, and other speleological work to continue, and protect and encourage the habitats and populations of endangered species while optimizing cave access. This management plan replaces the previous management plan developed for the Preserve.

MANAGEMENT COMMITTEE

The Preserve Management Committee, chaired by the John Guilday Caves Nature Preserve Manager and Assistant Manager, is responsible for effectively managing the Preserve as outlined in this Management Plan. The Preserve Manager and Assistant Manager are appointed by the NSS Board of Governors, and select those committee members as deemed appropriate in achieving the objectives of this management plan.

HISTORY OF THE PROPERTY

The caves on this property have been known since the earliest settlement of Pendleton County, Virginia (now West Virginia), which at the time of first settlement was part of Augusta County. It appears that the caves first came under private ownership on July 19, 1787, when they were surveyed for John Penninger. The caves were already being worked for saltpeter, or were so worked shortly after that date. The first operator whose name we have was John Mefford, who leased a property across the river from John Penninger in 1795. The caves were worked for saltpeter from then until the end of the Civil War, though not continuously. According to the 1810 Census of Manufactures, the annual production of saltpeter was 4,000 pounds. According to the 1820 Census, 12,500 pounds of gunpowder was manufactured on the site during the War of 1812, using saltpeter extracted from the caves. At the time of the 1820 census however, it states (the) "works are presently not worth attending to."

During the Civil War, the caves were operated for the benefit of the Confederacy and were frequently raided by Union troops. There are no references to further economic uses of the caves themselves following the Civil War.

In 1867, the property changed hands, passing from the McCoy family to the Hiner family. Over the period 1870-1880, it passed from the Hiners to James W. Kee, who sold the property to Martin Moyers on March 1, 1882. The cave tract remained in the Moyers family, being part of a larger tract of some 1,142 acres at one time, from that date until March 15, 1983 when the NSS purchased the tract.

It appears that New Trout Cave had been forgotten for some time after the Civil War. It is sometimes referred to as "Little Cave". Trout Cave is sometimes referred to as "Great Cave". Hamilton Cave is named for the first clerk of the Pendleton County Court, Gavin Hamilton.

The caves were among the earliest ones explored and mapped by members of the NSS. Non-comprehensive maps of all three are included in William E. Davies Caverns of West Virginia (1958). Members of The DC Grotto and The Potomac Speleological Club re-mapped the caves in the 1980's and it is these maps that are now considered the most up-to-date, and comprehensive.

PRESERVE DESCRIPTION

When the NSS acquired the property in 1983, it consisted of 42 acres and was divided into two parcels by a north-south line. The Moyers family retained some timber rights on the western parcel for a period of seven years after the transfer, along with all necessary rights of access for the purpose of obtaining the timber. There were no such reserved rights on the eastern parcel that contains all three caves. Those rights for a one-time harvest were concluded in 1984, and the property is returning to a more natural state.

The property is essentially the southwest face of Cave Hill, an offshoot of Pickle Mountain, which lies to the northwest. The survey of the property at purchase begins at the intersection of US Highway 220 and Powder Mill Run Road, runs along the center of Powder Mill Run Road, to an iron pin at the side of the road, and then climbs the hill to the crest. From there it runs through woods to the southeast and curves gradually to the south until it reaches another iron pin at a point above where Trout Rock was once located. It then passes to the centerline of US Highway 220 and follows that centerline to the point of beginning. At the time the property was acquired, there was no fencing along either of the road frontages, and only a small amount of wire fence along the curving portion of the boundary through the woods. The boundary between the two parcels within the property was marked with surveyors flagging tape, with the southern end of the dividing line marked by a broken topped cedar tree and the northern end of the line marked by an iron pin. There are two historic markers on the opposite side of the highway, and the only parking for vehicles is in the vicinity of this sign on the wide gravel pull-off . There are a few places along Powder Mill Run Road where vehicles can be parked but this road is quite narrow. Over the years, cavers had entered the property at any point convenient to their vehicles and, due to the steepness of the slopes on the south side of the property, this has led to some erosion. New signs and trail fencing seems to have solved this problem. The vast majority of visitors to the property use the marked trail to the kiosk and then proceed on trails to the caves.

The property is a wooded hillside; with a prominent cliff clearly visible from the south as one approaches by automobile. that wooded hillside contains three major caves (Hamilton - 25,037 ft., Trout - 12,458 ft., and New Trout - 14,908 ft.) and a few much smaller caves (Film Can -21 ft., Trammelton - 35 ft., Cathy's Crack - 42 ft.). It is bounded on the south by US 220, on the west by Powder Mill Run Road, on the north by (generally) the crest of the hillside, and the east by a sandstone cliff where Trout Rock was once located. Trout Rock was a rock formation that looked like a trout jumping out of the water, and was mined away when the highway was widened. Two talus caves (Spider Cave - 97 ft. and Boulder Crawl - 23 ft.) are here, but reside on our neighbor's property. A small stream, Powder Mill Run, runs on the property along the road named for it, and NSS Flood Cave (1542 ft.) has its entrance in this streambed.

The property contains all of the limestone exposure in the hillside.

BIOLOGY

The caves are home to the usual assortment of bats common in West Virginia, and as already noted, Trout Cave harbors a winter hibernaculum site for a number of the endangered Indiana Myotis, and summer residency of the endangered Virginia Big Eared Bat. Bat census counts are conducted in the winter annually in Hamilton and New Trout Caves, and semi-annually in Trout Cave in accordance with the U.S.F & W.S. species recovery plan. Many of the caves on the hillside are home to the Allegheny woodrat, a "species of concern" in West Virginia as its habitat is dwindling. The caves are generally dry, and a search for invertebrates conducted by Dr. Dave Culver and Dr. Dan Fong produced a few cave adapted species, but nothing of major interest. An unusual spider previously reported in Trout Cave was not seen during this sampling.

GEOLOGY

The caves at Trout Rock, taken separately, are excellent examples of cavern development in the Alleghany Mountains. All three major caves are formed in the New Scotland Formation near its lower contact with the Coeymans Formation (Devonian Helderberg Group). NSS Flood Cave is formed lower in the Keyser Formation. New Trout Cave is primarily a single tube with some branching tributaries. Trout Cave, a parallel system just to the west, also contains one or more master conduits, but in addition has developed rudimentary branching and networking maze sections. Hamilton Cave, further to the west, is an archetypical network maze cave with passages developed along two primary fracture sets intersecting at right angles. NSS Flood Cave exhibits similar development to Hamilton Cave, but is less extensive. These caves, taken as a system, tell yet another story, and their interrelationship makes the geospeleology of the Preserve special among Appalachian caves. All three major caves conform well to the same stratigraphic unit, the New Scotland Limestone. New Trout, Trout, and Hamilton Caves are all relatively horizontal, but are at progressively higher elevations. This is because the beds of limestone dip (tilt downward) to the east, forming a broad anticlinal fold. The front section of Hamilton Cave is located along the nearly flat crest of the anticline, while Trout and New Trout are lower, on the dipping flank of the fold. The back section of Hamilton Cave is developed along the opposing flank of the fold. NSS Flood Cave, like the front section of Hamilton, is also formed on the flat crest of the fold, but at a lower elevation, just above the current water table. The caves of the John Guilday Caves Nature Preserve provide a prime locale for observing the influence of geologic structure on the development of caves. Proximity of the caves to one another and their stratigraphic positions emphasize the spectrum of structural control more than at any other locality of similar size and accessibility in the West Virginia cave region. With the exception of NSS Flood Cave, there are few calcitic formations in the caves on the property. Visitation to NSS Flood has been limited almost exclusively to the initial exploration and mapping of the cave. The entrance has been returned to its natural state and its location is not well known. Access is highly restricted to protect the unusual number of formations therein. The NSS holds all mineral rights to the property.

PALEONTOLOGY

All three major caves on the John Guilday Caves Nature Preserve have been found to have deposits of fossil bones and teeth dating from the Pleistocene Epoch, ranging in age from about 17,000 to about 70,000 years before the present. Each of the three caves contains several bone sites. Carnegie Museum employees under the direction of John Guilday made the first discoveries of fossilized bones at Trout Cave in the late 1960s. These excavations were important because the bones found proved to be older than most of those found at other cave sites in the Northeast. Beginning in the late 1970s and continuing to the present, additional sites have been found in New Trout, Trout, and Hamilton Caves. Workers from several museums and universities have been studying the fossils. Thousands of specimens have been collected and identified, including fish, amphibians, reptiles, birds, and mammals. Several extinct species have been identified from the Preserve caves, including ground sloth, dire wolf, short-faced bear, saber-toothed cat, and extinct relatives of the horse and musk ox. Other specimens recovered from the caves include existing species that no longer live in West Virginia, such as caribou, badger, pocket gopher and water rat. During the past several hundred thousand years as the glaciers advanced and retreated, the climate fluctuated in the area around the caves, causing remains of animals with different climatic preferences to be found. Historic Trout and New Trout Caves were extensively mined for Saltpetre in the 19th century. Few artifacts remain, although the occasional paddle or timber is found. Most common are spent faggots (torches). Tally marks are also seen on occasion, as well as sporadic drill holes from blasting.

The management committee has received reports that a "back" entrance to Trout Cave was observed in the 1950s, and also that Peter Hauer during his saltpetre research discovered an upper level that was a 600-foot-long passage paralleling the main passage containing many undisturbed artifacts. In an effort to preserve artifacts in situ, he reportedly then completely filled in the connection to the main cave. He then passed on without providing adequate information about the location of this connection to allow its restoration. Evidence of such a passage has been observed. The committee believes the so-called back entrance (reportedly too small for entry) and the lost passage are connected, and that restoration of the connecting passage may restore the habitat in addition to providing a site for further study on saltpetre mining of the 19th century. Promising sites are examined and pursued as they come to view, usually by digging.

HYDROLOGIC

Within the various caves on the property, only NSS Flood has any permanent moving water, a small impenetrable sump at its lowest point. In Trout Cave, an intermittent stream can be found in the Square Room. The few formation areas in Hamilton Cave contain small pools that are generally present all year.

PUBLICITY

An information booth has been constructed at the base of the cliff at a point nearest the highway. Information is provided regarding the property and its legal uses. Conservation, safety, and general informational brochures are available for visitors, and a sign in/out log is made available. A John Guilday Cave Preserve Facebook page exists which is regularly updated and maintained by the Preserve manager. The NSS maintains a web page on its site (caves.org) dedicated to the Preserve.

SURFACE MANAGEMENT

Flora on the property consists of that which is typical for the area. Its development is neither directed nor hindered. A wide area of erosion was present below Trout Cave at the time of the property's purchase, but this has since become more stable with the acceptance of the natural trail at the base of the cliff by the vast majority of visitors. The trail is maintained only to the extent that deadfall is not necessarily permitted to block it. A plastic fence helps to identify the trail in some areas. 100 Red Bud trees were planted on the hill several years ago which were paid for by the WV Highway Department, after an overly aggressive pruning along the road on their part. The hillside is now largely back to its previous natural state.

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