



## **TYTOONA CAVE NATURE PRESERVE MANAGEMENT PLAN**

*(Blair Co., Pennsylvania)*

The following Preserve Management Plan was adopted by the Board of Governors of the National Speleological Society to define management of Tytoona Cave Nature Preserve. The intention of this plan is to protect the property and promote good relations between the NSS and neighboring landowners. Please observe the rules and encourage others to do the same so that this unique and outstanding cave may be enjoyed by all. Contact the NSS Property Managers at [TytoonaPreserve@caves.org](mailto:TytoonaPreserve@caves.org) if you have any questions or need to request special arrangements.

### **INTRODUCTION**

The Tytoona Cave Nature Preserve of the National Speleological Society will be managed as a natural area. A Management Committee consisting of members of the Huntingdon County Cave Hunters (NSS G314) will implement the Management Plan approved by the NSS Board of Governors.

Tytoona Cave Nature Preserve has one of the most significant caves in the state of Pennsylvania. Besides significance of historical and geological value, this cave is one of the best educational caves in this part of the country. This cave has attracted many people into joining caving organizations not just for its recreational but also the scientific value. The cave plays host from time to time, to youth groups (i.e. Boy & Girl Scouts) and college students.

The Management Committee's policy is to continue with past practice of allowing people on the property with minimum restrictions. The restrictions are only for reasons of better management, to protect the property through recommendations of the Tytoona Cave Nature Preserve Committee and by the Western Pennsylvania Conservancy easement. Restrictions may be changed as warranted or by directive of the NSS Board of Governors.

### **HISTORY**

Tytoona has been a subject of folklore and fact dating back to at least 1788. The cave was noted on county maps of the 1800's. The cave has been noted by such renowned cavers and non-cavers as: Henry Rogers (Pennsylvania's first state geologist 1853), Franklin Platt (1881), Dr. Ralph Stone (1924 & 1953), Bill DeVitt (1951), Rick Rigg (1966), Mike Cullinan & Jack Speece (1972), Professor William White (Penn State University), and others. The cave is considered by many as a historical and natural landmark.

Two attempts to commercialize the cave occurred in 1947 and 1972. Both of these business adventures were short-lived and unsuccessful because the cave is not near large highway arteries and occasional high water would close some of the small roads leading to the cave.

Besides the easy general exploring of the first 1,000 feet of passage by cavers, Tytoona has been subject to research by cave divers. Beginning in 1965, significant discoveries were made by diving through sumps. Continued cave diving from 1984 to 1988 resulted in penetration of the cave system from both the Tytoona entrance and the Arch Spring entrance, where the cave's stream reappears on the surface. It was proven that both caves connected with about a mile of passage. Many large rooms were discovered and water depths in at least one of these rooms have been reported to be over 100 feet deep. Diving explorations ended when tragedy struck in June 20, 1988. An experienced cave diver (Roberta Swicegood) died while surveying in a large room from the Arch Spring side. Although she was in company of another diver during some of those explorations, she died on a solo cave dive.

The Huntingdon County Cave Hunters have been managing Tytoona Cave for the former owner (the Western Pennsylvania Conservancy) since 1990. Prior to that, many HCCH members took an interest in the cave as far back as 1982. The HCCH has sponsored clean-up trips to remove spray paint, pick up garbage, restore damaged facilities, and generally police the area. Many youth groups were introduced to caving in Tytoona through educational trips. The HCCH has also been responsible for having vandals arrested or removed by the State Police. The WPC has expressed its appreciation many times for the efforts of the HCCH.

Encouraged by Dr. Will White (NSS 2237), the WPC acquired the Tytoona Cave property in 1985 and designated it the "Tytoona Natural Area." The WPC reviews its land holdings approximately every five years and had decided to sell the property because the Conservancy's focus is on rare and endangered plant and animal species, and not on geological features.

Early in 1996 members of the National Speleological Society were contacted by the WPC to discuss the possible interest of the NSS in purchasing the Conservancy's Tytoona Cave Natural Area in Blair County, Pennsylvania. Members of the Huntingdon County Cave Hunters, who currently have been functioning as property managers for the WPC, believed that it would benefit the NSS to own this cave and petitioned the NSS Board of Governors to act favorably on this acquisition opportunity. The WPC had expressed understandable concerns that the Tytoona Cave property would continue to be managed as a natural area and that any significant natural resources on the site be protected by the NSS. The Tytoona Cave Nature Preserve Management Committee believes that the goals of the WPC are consistent with its own and with the management given to NSS Nature Preserves.

On December 23, 1997, the deed was signed and the 6.8 acre Tytoona property became the property of the National Speleological Society. The property gives the Society ownership of one of the premiere caves in Pennsylvania and its first cave preserve in the State.

### **UNDERGROUND RESOURCES**

**Biological:** The Little Brown Bat has been found in the cave, and some other identified species are occasional visitors. Other types of life include fish and crayfish (some with light pigment) but all appear to have eyes (no complete study has been made). Very large salamanders appear near the first sump -- one variety is black with white spots, and the other is orange with black spots. Also, an occasional muskrat and raccoon have been spotted near the entrance. As reported by caver Jim

Kennedy (now employed with Bat Conservation International), "Tytoona Cave is an excellent place for a textbook lesson in cave ecology." Although little is known about the biological life of the cave, the WPC has done some research and suggests that some isopods are present. Since nitrates from nearby farm fields might be affecting the water supply to the cave, further study is needed to identify aquatic organisms and the impact of any surface pollution. The Management Committee will solicit the expertise available from WPC to identify both surface and aquatic life forms that can be found on the property.

**Geological:** The large open sinkhole entrance, located in the massive beds of Trenton limestone, measures about 40 feet across and 12 feet high, with the limestone bed dipping at 15 degrees. A small stream which emerges from under the southwest sinkhole wall enters the cave entrance on one side and continues through the entire cave system. The first 1,000 feet is easy horizontal walking passage, but further penetration requires diving to access large rooms. The stream surfaces after about a mile at another well-known landmark called Arch Spring. The Arch is a geological feature similar to Natural Bridge in Virginia, only on a smaller scale.

The cave passage in general maintains dimensions of 30 or more feet wide and a 12-foot or higher ceiling. The cave system has few noticeable bends but rather is quite linear in its development.

**Hydrological:** Sinking Run, the stream whose watershed includes Tytoona Cave, flows through the cave, rising over a mile away at Arch Spring. This watershed has an area of about 27 square miles. The Management Committee will work with neighboring landowners to help improve the quality of the water flowing into Sinking Run as through the cave. Dr. Will White and students at Penn State University have been studying the hydrology of this karst area.

**Paleontological/Archaeological:** Reports from 100 years ago describe a human skull and arrowheads that were found at the nearby Arch Spring resurgence. This would strongly suggest that early Native Americans were in the area and no doubt knew of the cave. No known study of early human use has been made at Tytoona. This would be an ideal site to conduct such a study since the cave entrance has the natural catchment basin mechanism in place that could yield valuable discoveries.

### **SURFACE RESOURCES**

This heavily wooded property is located in a rural, hilly area consisting primarily of small farms. Intermittent streams that dry up during summer are found throughout the area. For some period prior to and around 1972, a trailer was located near the road on the property. The trailer no longer exists but there is a drilled water well on the property. There are no plans by the Management Committee to maintain this well unless otherwise directed to do so by the NSS Board of Governors.

Forest resources of the property include oak and pine trees. Ginseng, a State protected plant, also has been reported on the property. The WPC believes that there are other significant plants in this area and is concerned that limestone-dependent rare species may be present. The WPC has also indicated the presence of a rare form of sedge grass on the property. The wildlife using the Tytoona Natural Area, common to most rural areas of Pennsylvania, includes deer, turkey, and many bird species.

## **RESEARCH**

Tytoona has been in the CCUS study program for the past 5 years. In 1995, at least 545 people entered the cave. The cave register installed in the cave by the HCCH will be maintained. Tytoona Cave was also involved in a radon gas study conducted in 1992. Radon results showed very low levels compared with most caves in Pennsylvania. Water studies were also conducted by the Pennsylvania Dept. of Environmental Resources in 1941 and 1971.

Other research projects and educational programs utilizing the property will be encouraged, and the involvement of the NSS Research Advisory Committee will be solicited. A large sign erected previously by the WPC which states that Cave Diving is prohibited will be maintained.

## **RECREATION**

Tytoona has an exceptionally attractive entrance when compared to most other caves in the State. Its photogenic qualities helped to make it a significant attraction. Tytoona Cave has been visited by many cavers in the State and is an important recreational resource for people in the area. The first 1,000 feet of the cave are easily accessible by novices and is an excellent location to educate visitors about the cave's geology and hydrology. Future placement of an information booth may strengthen our ability to educate the public about caves and cave conservation. The cave is a great site for all cavers (young and old) to enjoy.

## **PUBLICITY POLICY**

As a well-known and valuable natural resource, Tytoona attracts its own publicity. Tytoona has been mentioned in newspaper articles, scientific journals, outdoor magazines, and other literature. Much has been written about the cave over the years. We feel that information about this cave can be printed containing educational and conservation values without giving exact location. Tytoona Cave is well-known by the local public, and Arch Spring is located on the USGS topographic map. The Management Committee does not intend to advertise the location of the property widely but instead will concentrate on providing education on the values of underground resources to those already visiting the cave. Options include developing a brochure about the property and giving talks to local school classes and civic groups to encourage support for protection of the cave's resources. The cave is vulnerable to vandals who have caused damage for years. Ten years ago, part of the cave looked like a New York subway, covered with spray paint and garbage. Today the cave is clean and minimal trash is being picked up by HCCH members on a semi-monthly basis. The HCCH also periodically polices the area around the cave for vandals with the help of the Pennsylvania State Police. Under the access guidelines, the police and Management Committee will have a stronger tool to protect the property. Vandals caught destroying property will be prosecuted to the fullest extent of the law.

## **DEPTH AND LENGTH**

Tytoona has a surveyed relief of well over 100 feet with 3,740 feet of passage, ranking it 19th in length in the State, and 28th in depth. A stream connection to nearby Arch Spring has been proved by dye tracing, however, and when the surveyed passage in Arch Spring is added, the total known length of the system is 5,850 feet, making it the 8th longest in the State. With a passage length of over one mile, the Tytoona Cave System exceeds the half-mile mark at which Pennsylvania caves are considered significant.

## **SURFACE MANAGEMENT**

Wooden steps have been constructed part-way into the sinkhole entrance by a local Scout troop. The Management Committee intends to leave the existing steps in place but monitor them closely to ensure that any degradation that occurs over time is identified quickly and corrected. Other areas of the path into the sinkhole will be monitored and, in areas where significant erosion is identified, methods of erosion control will be implemented. Consideration will be given to construction of additional steps or a ramp to avoid additional damage and erosion.

A parking area previously available on the property was blocked off at the direction of the WPC to help reduce visitation and possible vandalism. Currently, visitors park along the sides of the Township road that abuts the property. Parking on the road has raised some safety concerns because of the width of the road, particularly in the winter. The Management Committee will investigate the possibility of some widening of the road at the site to allow safer parking at the property or to restrict a small portion of the property for management parking purposes.

## **ACCESS POLICY**

Access to Tytoona Cave is controlled by the Tytoona Cave Nature Preserve Management Committee. This Committee is responsible for enforcing both NSS and Tytoona Cave Nature Preserve access guidelines. Tytoona Cave will be open to responsible caving all year.

The property is available for use by the general public, including Scout troops and university classes. The Management Committee believes that sufficient and reasonable protection of the NSS from liability concerns is provided by the Pennsylvania Landowners Liability Act. General policy rules for access to the cave and for visitation on the preserve property are as follows:

1. The Tytoona Cave Nature Preserve shall not be used in an activity by which organizations can directly profit. This specifically prohibits "cave-for-pay" endeavors.
2. No one is allowed on the property between the hours of 9:00pm and 6:00am, except for members of the Tytoona Cave Nature Preserve Management Committee, (other exceptions may be authorized in writing by advance permission of the Committee on a case-by-case basis). There is to be no camping on the property or in the cave at any time.
3. Illegal drugs, drug paraphernalia, alcohol and alcohol beverage containers are prohibited on the property.
4. No open flames are allowed on the property except in the use of carbide lamps for underground exploration.
5. Visitors must use only established surface trail paths. To protect surface flora and to reduce erosion, no off-trail activities or use are permitted, including climbing and rappelling.
6. Disturbing or destroying plants or animals on the property or in the cave is not allowed.
7. There are no sanitation facilities on the property or in the cave. All waste and trash must be carried away.

8. Parking on the property is not permitted. Visitors must park on the berm of the township road at their own risk.
9. Cave diving without the express written consent of the Tytoona Cave Nature Preserve Management Committee is prohibited. (see Tytoona Cave Diving Policy Guidelines).
10. The National Speleological Society, Tytoona Cave Nature Preserve Management Committee and members of the Huntingdon County Cave Hunters (NSS chapter); will not be liable for any damages, accidents, injuries, or death, on the surface or subsurface of the property.

### **CAVE DIVING POLICY**

In the past, Tytoona Cave has been off-limits to cave diving. The Management Committee will allow access to NSS cave divers providing that the diving policy guidelines are followed. These guidelines are as follows:

- A. A letter of intent specifying reason, planned dive date, group size, experience, and participant credentials must be received by the Tytoona Cave Nature Preserve Director no later than 30 days prior to the planned dive.
- B. All planned dives into Tytoona will be reviewed by the Tytoona Cave Nature Preserve Management Committee. The Committee reserves the right to accept or reject all diving requests unless told otherwise by the NSS Board of Governors.
- C. Each diver must be certified NSS/CDS Full Cave or equivalent and should have sump diving experience or should be willing to be guided.
- D. Each diver who qualifies under these guidelines must sign appropriate liability forms.
- E. As part of the submitted dive plan, an appropriately trained and willing rescue dive team contact must be provided to the Committee. Availability will be confirmed by the Committee.
- F. Approval or denial will be given to the person submitting the dive request at least seven (7) days prior to the proposed dive date. Management Committee members will be on-site at the time of the dive and reserve the right to call or abort the dive due to the condition of the cave, equipment or personnel.
- G. Copies of photos, dive trip reports, accident reports, scientific study or survey data and any other documentation resultant from the dive must be provided to the Tytoona Cave Nature Preserve Director. Non-compliance on this point will result in denial of all future diving privileges at Tytoona.

### **FUTURE PLANS**

Maintenance of boundary markings, trails, and signage will be necessary and carried out by the Management Committee. A kiosk or information booth is being considered for placement on the property. Cleanup trips to the cave will also be a continuing effort, although recent graffiti is minimal. The condition of surface resources, including sedge and other flora will be monitored in cooperation with the WPC. Widening of the road to permit safer parking will also be investigated.

**Management Committee**

The Tytoona Cave Nature Preserve Management Committee will consist of at least five and no more than nine HCCH members, headed by a Director. The Director will report to the NSS Cave Ownership and Management Committee. Vacancies will be filled by a majority vote of the current members of the Tytoona Cave Nature Preserve Management Committee. Founding members of the Management Committee are:

**Director:**

Garrett Czmor, NSS# 22709 (Fellow of the Society & HCCH Sec./Treas.) Huntingdon, Pa.

**Committee Members:**

Derek Flaig, NSS# 34158 (HCCH Chairman), Altoona, Pa.

Mark Geleskie, NSS# 42698 (HCCH Board member), State College, Pa.

Mark Lancaster, NSS# 37747 (HCCH conservation & rescue), Mill Creek, Pa.

Gene Jones, NSS# 5430, Huntingdon, Pa.

John K. Blough, NSS# 45635, Altoona, Pa.

Mary Czmor, NSS# 28663, Huntingdon, Pa.

**Tytoona Fund Raising:**

Mike Cullinan, NSS# 5203 (HCCH asst. editor), Hampton, Va.

Commercial Use Statement: The Board of Governors of the National Speleological Society reaffirms its standing policy that bans the commercial use of our properties, and specifically, prohibits any activity where a charge of any type is made or a payment of any type made to anyone organizing or leading a trip to the cave preserve.

