

Werner's Copy

MANAGEMENT PLAN FOR GREAT SALTPETRE CAVE

ROCKCASTLE COUNTY, KENTUCKY

12/8/89

This is a revised version
of a plan of 10/89

I. INTRODUCTION

The Great Saltpetre Cave and the associated property was acquired by the Greater Cincinnati Grotto for the N.S.S. in August of 1989. The property is located approximately 9 miles east of the town of Mt. Vernon, Kentucky.

The cave and surrounding property was originally used as a tourist attraction and campground until the last owner, John Lair, sold the property in the early 1980's. The property was allowed to sit idle and unattended until its acquisition by the Greater Cincinnati Grotto. The property has now been turned over to a management committee consisting of the Blue Grass Grotto and the Greater Cincinnati Grotto. This committee will act as an independent entity of both groups for the management of the property as an educational, scientific, and nature oriented preserve. As the committee gains further momentum the solidification of its priorities and goals will be updated. This will result in modification of this management plan. As of this writing this is a first draft of this plan.

II. HISTORY OF PROPERTY

While there is no proven record of Indians ever using the cave, it was probably known to them and entered by them. Any artifacts could very well have been covered up by the process of saltpetre mining that took place. Possibly careful excavation in the entrance areas could furnish evidence that the cave was used by the Indians.

In the year 1789, an early settler of Rockcastle County, John Baker, entered a cave located close to the banks of Crooked Creek. This discovery is the first written documentation of modern man entering Great Saltpetre Cave, or as the cave was known in those days, the "Great Cave" on Crooked Creek. After entering the cave for the first time John Baker returned to his cabin and brought along his family to show them the cave. They entered the cave with a torch and while exploring the cave, the torch was dropped. This left them without a source of light. After spending at least one day inside the cave they finally found the entrance.

It was discovered that the soil in the cave was rich in nitrates from which saltpetre was mined. Around the year 1802, saltpeter mining commenced in the cave. While no records exist that show how much saltpeter was mined in the cave it is generally believed that only Mammoth Cave exceeded Great Saltpeter Cave in saltpeter production from this period until the end of the War of 1812. The saltpeter operation at the cave was a large operation, probably employing as many as 70 men at the height of production. The saltpeter that was mined at the cave was then shipped to Lexington, Kentucky to the powder mills located there to be further refined and made into gunpowder. The saltpeter mining stopped with the cessation of hostilities in 1815. The cave contains artifacts from this era such as remains of leaching vats and wooden pipes for carrying water.

Later during the Civil War the cave was used briefly as a hospital for soldiers. There is an area in the cave with earthen mounds that are allegedly burial mounds for soldiers who died in the hospital; this is questionable.

Mr. Lair operated Great Saltpetre Cave as a commercial cave as well as a museum. Some of the saltpeter mining artifacts were placed in the cave at this time. He also installed a stage, dance floor and chairs to seat up to 1000 people in a large room in the cave. This room was used for dances and country music shows. Mr. Lair was a pioneer in developing and promoting country music. On one occasion a live radio broadcast was made from this room in the cave. Mr. Lair also operated a campground on the premises where the cave is located. The commercial operation which was managed by Richard Mullins ceased in 1985.

III. PROPERTY RESOURCES

A. UNDERGROUND RESOURCES

1. BIOLOGICAL

A recent biological investigation of the Great Saltpetre Cave (GSC) has not been undertaken mostly due to the cave being gated. A complete biological inventory is needed and will be started this fall by Dr. Thomas Barr Jr. and William M. Andrews.

Any extensive research in the cave should follow the guidelines of the N.S.S. Research Advisory Committee in order to help promote conservation, safety and Accountability of the research.

Even though the cave is considerably dryer than some other caves in the area, it has significant and interesting fauna.

Great Saltpetre Cave was the first cave where biologists actually saw the troglobitic cave cricket *Hadenocetus* coming out of a cave at night to feed, so now they are considered troglaphiles. The cave was first visited for biological investigation by Dr. Barr in December, 1956 and by Barr and others many times subsequently. Since cricket observations in the mid 50's other significant finds have developed.

It appears that this cave is going to be the Type-Locality for at least two troglobitic or true cave dwelling animals: *Kleptochonius* sp., a pseudoscorpion, and the cave millipede *Pseudotremis* sp. Being the type-locality for two cave dwelling species makes this cave system significant biologically and therefore very worthy of protection.

Other troglobitic fauna observed, mostly prior to the 1980's, include: *Flusiocampa*, a cave bristletail, an *Asellus* type isopod, probably *Caecidatea*, a springtail *Sinella* *Krekeleri*, and cave beetles *Darlingtonia* *Kentuckensis* *lexingtoni* Val., *Ameroduvallius* *jeanneli* *rockcastlei* Val. and *Nelsonites* *jonesi* subsp.. A troglobitic cave spider *Phanetta* sp. was also seen in the cave.

Troglophiles observed include the cave crickets *Hadenocercus* and *Ceuthophilus*, springtails *Arrhopalites* and *Tomocerus* which is an unusual purple colored springtail.

Also spiders, *Meta* and *Liocranoides* were seen as well as predatory mites and a fly, *Leia striata* and other Dipterans.

Three species of bats were seen in 1956, *Eptesicus*, *Pipistrellus*, and *Myotis sodalis*. The potential for increased bat populations will improve as entry to the cave will remain very limited. *Myotis sodalis* is a Federally Endangered Species!

The new Kentucky Cave Law and this Management Plan should help protect and maintain the biological resources of this cave system, vegetation, wildlife and other Natural Resources, and the processes that sustain them, free, to the extent possible, from the adverse influence of human Activity.

2. GEOLOGICAL

Does not Apply (except to formation inventory).

3. HYDROLOGICAL

To be determined in future investigations.

4. PALEONTOLOGICAL

Significant discoveries have been made in the past as detailed below. There is potential for future discoveries. Pleistocene fossils in the cave are likely to have been destroyed, removed or disturbed by the saltpeter mining and the intense human use of the cave.

5. ARCHEOLOGICAL

To be determined in future investigations. No Archaeology assessment of the site has been made. However, any in-cave artifacts were probably destroyed or covered up by the saltpeter mining.

6. HISTORICAL

Inventory of artifacts, type of inventory to be determined.

B. SURFACE RESOURCES

1. INTRODUCTION

a. PROPERTY LOCATION

The property which contains the main entrance to Great Saltpetre Cave is located in Eastern Rockcastle County, Kentucky. It is bounded approximately by West Longitude 84 deg. 12 min. 50 sec. and 84 deg. 11 min. 20 sec.; and North Latitude 37 deg. 21 min. 35 sec. and 37 deg. 22 min. 15 sec. The elevation limits are approximately 915 to 1380 ft. above MSL, and both occur near the southeast corner. A map of the property is attached as an appendix.

It is about nine miles east of Mt. Vernon, Kentucky on state route 1004; and is represented just left of center, very near the top of the Livingston, Kentucky 7 1/2 minute topographic quadrangle. A legal description of the property is attached as an appendix.

b. PROPERTY DESCRIPTION

The property is comprised of 306.51 acres and has an irregular shape roughly similar to a crescent with its "horns" pointed to the south. The terrain on which it is located is very hilly with a minimum of level ground, the main part of which occurs near the cave, and a another portion near the eastern edge of the property.

Crooked Creek, the main drainage, enters the property near its westernmost point, swings south, then north close to the cave entrance where it turns eastward before exiting the property near the southeast corner. Several unnamed branches also enter the property from the north and east; these are probably seasonal.

Most of the property is covered with forest. Extensive logging has occurred in the past. A Number of primitive roads exist on the property. One goes directly to the cave entrance, another loops below and goes to a house and on to the site of a campground. Others, probably used in the logging efforts, go to more remote parts of the property. State route 1004 loops into the property a short distance near the northwest corner, then roughly follows the northern boundary for a little less than a mile.

c. STRUCTURES & FACILITIES

A number of structures and facilities are present on the property in various states of repair.

1) A small log and stone building is located at the cave entrance and served as a ticket and information booth during the time that the cave was commercialized. It is basically in good shape, although some settling has occurred as evidenced by cracks in the tile floor of the restrooms and the stone walls. None of the doors will close due to the settling.

2) A house is located a short distance south of, and below the cave. It has indoor plumbing, including a kitchen and bathroom. It also has electricity, and does have telephone service. The house is structurally sound.

3) Near the house is a covered pavilion with storage facilities.

4) Several animal cages located near the road to the cave apparently contained small animals of some sort, possibly raccoons, when the cave was commercialized.

5) A campground is located on the level ground between the house and the creek. It has a number of electrical hook-ups for recreational vehicles, as well as a washroom with toilets and showers. All facilities are in usable condition with the exception of water. Major repairs in the form of laying new pipe may be necessary to get water to the washroom and the RV sites. There are also two small shed-like structures at the campground. Their purpose is unknown at this time.

6) A pit toilet is located across the creek from the campground at the site of a picnic area (?). It is in very poor condition and probably not repairable.

7) An extensive farm was located on the level land near the creek near the southeast corner of the property. According to Mr. Mullins, nothing remains of any structures at this time. This may be the site indicated on the topographic map approximately at that location.

d. DOMESTIC WATER SUPPLY

A well is located near the pavilion which supplies water to the house and supplied water to the log/stone building at the cave entrance, as well as (presumably) to the campground. A jet type pump and a large galvanized tank with pressure gauge are in good operating condition.

2. SURFACE ECOLOGY

The ecology of the Great Saltpetre Cave area has not been fully investigated, although the surrounding region has been thoroughly investigated. An inventory of the local Flora and Fauna should be done along with the underground resources study of the area. The effect of clear-cutting and other human activities on bats and other cave fauna needs to be examined.

3. GEOLOGICAL

Summary: Rockcastle County is situated on the Western edge of the Appalachian Basin at the margin of the eastern coal field. Along the western margin of the basin limestones of Mississippian age crop out. It is within these formations that Great Saltpetre Cave is formed. The geology, paleontology and archaeology of the Great Saltpetre Cave property has not been thoroughly investigated and deserves a more intensive study than the time available for the preparation of this management plan allows.

a. Structure: Great Saltpetre Cave is situated on the eastern edge of the Maple Grove anticline. This anticline strikes east-west and creates steep dips on its southern limb to the southeast. The cave sits approximately on the axis of the anticline which plunges to the northeast. There are no mapped faults on the Great Saltpetre Cave property.

b. Stratigraphy: The strata in the Great Saltpetre Cave area range in age from lower Mississippian to Middle Pennsylvanian. The ridge above the cave is capped by sandstones and shales of the Middle Pennsylvanian Breathitt Formation. The next unit lower is the Mississippian Pennington Formation which is chiefly comprised of silty shale and lenticular limestone beds. Below the Pennington Formation is the Newman Limestone. The Newman is divided into the Upper Member, the Ste. Genevieve Member and the St. Louis Member. The Renfro Member of the Borden Formation is partially exposed along Crooked Creek. The entrances to Great Saltpetre Cave may be in the Upper Member of the Newman Limestone.

c. Mineral Resources: Potential mineral resources on the property are meager. There are no oil or gas wells known on or near the property. Further, there are no known coal beds except for a thin bed exposed behind the current living quarters. This is thin and of poor quality. The limestone is the only mineral resource of mineable quality, but the preservation of the cave and the property renders this resource unusable.

4. HYDROLOGICAL

The hydrogeology of the Great Saltpetre Cave property has not been thoroughly investigated and deserves a more intensive study than the time available for the preparation of this management plan allows. The karst and cave development on the property is typical for the Cumberland Escarpment in southeastern Kentucky. Caves are developed along ridge flanks paralleling intermittent and perennial streams. Springs occur at the down gradient (frequently down dip) ends of the ridges. Caves vary in size from less than 100 feet to many miles. Large caves occur where the Lower Pennsylvanian cap rock has been partially removed, yet the underlying carbonates are relatively uneroded. A good example is Goochland Cave, the largest in the county, several miles north of Great Saltpetre Cave.

The only sources of water at Great Saltpetre Cave are the aforementioned well near the pavilion and Crooked Creek a major base level perennial stream flowing through the property. There are no large springs on the property but there are likely to be many wet weather springs. The tillable land is also along the creek bottom. Because the Borden Formation is a fine-grained calcareous siltstone, and does not form karst features, there is little potential for groundwater contamination from routine agricultural activities along the creek. On-site sewage disposal would also pose minimal problems provided septic fields and water wells were properly sited. The paleohydrology of Great Saltpetre Cave has not been studied. From the cave map and the caves position relative to Crooked Creek it is possible that the cave is a subterranean meander cutoff.

5. PALEONTOLOGICAL

The fossils in the limestone are commonly found Mississippian fauna. These are mostly brachiopods, bryozoans, rugose, colonial corals, blastoids and crinoids. A zone of concentrated crinoid fossils occurs about 80 to 110 feet the base of the Upper Member and could possibly be intersected by high passages in great Great Saltpetre Cave. The fossil bed is approximately 40 feet above the southern entrance.

a. PREHISTORIC

No Archaeology assessment of the site has been made.

b. HISTORICAL

The condition of historical resources is as yet undetermined. A physical inventory of such artifacts as might exist will be undertaken.

IV. ACCESS POLICY

A. INTRODUCTION

1. Law - The cave shall be managed in compliance with all applicable state and federal laws.
2. Liability - No charge shall be made for use of the cave. Liability releases will be signed by all individuals prior to entry to the cave.
3. Cave Key Control - There shall be four keys, two in the hands of the Blue Grass Grotto and two in the Greater Cincinnati Grotto. There will be no duplication of keys! Periodic changes of the lock may be made if the need arises. Failure to secure the cave after leaving may be reason to revoke future entrances to the cave. The gate shall be locked while the visiting party is in the cave.

B. UNDERGROUND

1. All trips must be approved by the management leader for either the Blue Grass Grotto or the Greater Cincinnati Grotto.
2. Only NSS members or those accompanied by NSS members will have access to the cave. Any exceptions will be referred to the Management Committee.
3. The committee should have one Cave Trip Coordinator, he must be informed of all trips.
4. Scientific Access - Individuals may conduct scientific projects in Great Saltpetre Cave as long as it is approved by the committee. A written summary of the type of research to be done shall be submitted to the committee and must follow N.S.S. policies. A copy of the completed research must be submitted to this committee to be placed in archives.
5. Access for Educational Programs- Educational trips may be conducted as long as it is approved by the committee. All people taking part in an educational trip must sign a liability release.
 - a. All trips must be accompanied by a responsible N.S.S. member
 - b. A trip report must be written and submitted to this committee for our records.

6. Conservation Access - This activity should be encouraged but extreme caution should be used so as not to unknowingly erase an important part of history. Any conservation trips should be kept small in numbers of participants and should be very closely monitored.

7. Access for "Sport" Caving Activities - Should be taken up by committee on a case by case basis. Care should be taken that excessive traffic in the cave does not further damage historical artifacts. Minimal impact caving will be encouraged at all times.

C. SURFACE

Recreational uses (camping, picnicking, hiking, etc.) may be allowed on a case by case basis, providing they are not in conflict with the management goals in this plan. Any outside group using any facilities would be encouraged to contribute either labor or money in exchange for such use.

Camping - Small groups of N.S.S. members that would like to camp on the property must first get the permission of at least one member of the Great Saltpetre Cave Committee. Large groups of non N.S.S. members seeking permission to camp on the land must meet the proper approval of the management committee members in advance, for example Boy Scouts, horse clubs, etc. All campers are to follow proper rules for camping, proper use of fires, camping procedures, respecting the rights of your fellow campers etc.

Hunting - Hunting shall be by permission only, and the property shall be so posted.

V. PUBLICITY POLICY

Great Saltpetre is a cave of great historic significance, to Kentucky and the nation, therefore publicity of this cave should be encouraged, both by those involved with the Great Saltpetre Cave project and by interested parties outside the project. Articles should be written for publication in the normal caving periodicals and scientific journals. Any such articles should be submitted to the committee, but otherwise there should be little if any limitations on these articles.

Appropriate news releases should be made to the local newspapers. All news releases must be approved by the Management Committee prior to submission to news agencies. These releases should cover the history and the present effort by the groups trying to preserve this natural resource. A long term goal would be to release historical papers to local schools to teach children that this cave in their community had great historical significance.

VI SURFACE RESOURCE MANAGEMENT

A. LAND MANAGEMENT

Land that is currently in forest will be maintained in that state. No commercial logging will be allowed, and the logged areas will be examined in detail to see what may be needed to prevent possible damage by erosion or pollution caused by the logging operations. Non-forested areas not required for other uses will be encouraged to return to a woodland condition.

A survey of the property will be made to identify any possible sources of pollution such as previous or illegal dump sites, abandoned or in-use septic tanks, cesspools, or pit toilets. If any are found that are deemed to be a source of possible pollution, methods of cleanup will be evaluated.

The campground will be mowed and kept in a usable condition for use by N.S.S. work parties and the aforementioned outside groups. Any facilities such as showers, wash rooms, plumbing, electrical, etc. may be restored within limits of available resources.

B. EXISTING ROADS

The road to the cave, as well as the road to the rented residence and the campground will be maintained, and adjacent areas will be mowed or kept clear of brush. Other roads may be maintained to a lesser degree or allowed to return to wilderness if they serve no specific purpose.

C. EXISTING STRUCTURES

The renting of the house on the property will provide some degree of protection of the property as well as a needed source of income.

All structures on the property will be examined and appropriate action will be taken as resources permit.

D. MISCELLANEOUS

It will be ascertained whether a tobacco allotment is still assigned to the property. If there is, it will be leased out to obtain additional operating income.

VII. FUTURE PLANS

All future plans for the property should be an issue of the Management Committee. Until a proper assessment of the property resources as well as the Management Committee's financial resources can be completed, all projects will be based on a case by case basis to minimize financial drain.

Future plans will be part of each annual report.

VIII. APPENDICES

- A. LEGAL DESCRIPTION OF PROPERTY
- B. MAP OF PROPERTY
- C. KENTUCKY CAVE LAW
- D. SAMPLE WAIVER FORM