

GREAT EXPECTATIONS CAVE PRESERVE

MANAGEMENT PLAN

March, 2003

INTRODUCTION

In January, 2003, the National Speleological Society (NSS) purchased 40 acres of land in Big Horn County, Wyoming, that contains the upper entrance to Great Expectations Cave as well as Johnny Creek Cave. The Society acted on the opportunity to acquire access to a significant “world class” cave in the western United States and specifically to ensure that NSS members would continue to be able to visit this very special cave. This property and cave entrances make up the Great Expectations Cave Preserve of the National Speleological Society (“the Preserve”). The Preserve Management Committee, chaired by the Great Expectations Preserve Manager, is responsible for effectively managing the Preserve as outlined in this Management Plan. All changes in the Management Plan require approval by the NSS Board of Governors.

The primary objective of this Plan is to establish processes and guidelines that will allow the Society to effectively manage the use of the Preserve, and to monitor and gauge the effects of this use. It is the intention of the Society that NSS members shall be ensured reasonable access and use of the cave and the surface property for recreation, exploration, science, and surveying.

PRESERVE LOCATION AND DESCRIPTION

The Great Expectations Preserve is located on the western side of the Bighorn Mountain range in north central Wyoming. The Preserve is 16 miles northeast of Hyattville, Wyoming, at an elevation of approximately 8,500 feet. It is bounded on the north by land managed by the Bureau of Land Management (BLM), on the east by the Bighorn National Forest, and on the west and south by privately held property. The previous owner of the Great Expectations Preserve owns the property on Preserve’s southern border. A graded U.S. Forest Service road (FS 17) passes east of the Preserve boundary, and two unimproved roads entering from Federal property to provide access to the property.

At present, there do not appear to be any use conflicts with the Federal agencies managing the surrounding properties or with the rancher who owns the property immediately to the south.

The Preserve primarily consists of the Trapper Creek Drainage, a broad sagebrush-covered valley running east-west across the Preserve. The southern side of the valley is a steep, forested ridge containing the Great Expectations entrance. North of the valley is a gradual sagebrush covered ridge bisected by the Johnny Creek drainage. Aspen trees cover the southwest portion of the Preserve.

The upper entrance to Great Expectations Cave is adjacent to the sinks of Trapper Creek in the southeast corner of the Preserve. Johnny Creek Cave is located in the northwest portion of the Preserve in the Johnny Creek Drainage. Trapper Creek flows onto the Preserve from the east before sinking at the Great Expectations entrance rock shelter alcove.

ACCESS TO THE PRESERVE

The Great Expectations Cave entrance is located 0.4 miles west of National Forest Road 17, a graded dirt road accessible by two-wheel drive vehicles.

Visitors to the Preserve will be asked to park in the parking area on the east side of National Forest Road 17, just north of South Trapper Creek. From there, it is less than a 1/2-mile hike across National Forest land on FS Road 604 to the Preserve's east boundary.

BLM Road 336.01 passes within a few feet of the northwest corner of the Preserve. An unimproved two-track road follows Johnny Creek from this road onto the Preserve.

Generally, only Preserve maintenance and construction workers will use this two-track road to access to the Preserve. Preserve visitors will be given special permission to use the road if loads of heavy gear need to be transported by vehicle to the cave.

FS Road 604 enters the Preserve from the National Forest on the eastern border, but is closed by the Forest Service.

RESOURCES OF THE PRESERVE

Underground Resources

Caves

The Great Expectations Cave Preserve contains the upper entrance to Great Expectations Cave and Johnny Creek Cave. Johnny Creek Cave is a small cave located in Johnny Creek Drainage on the Preserve.

Great Expectations contains almost 8 miles of surveyed passage with a vertical extent of over 1,400 feet. It is the third deepest limestone cave in the United States, the second deepest cave in Wyoming, and the second longest cave in Wyoming. Great Expectations Cave contains Wyoming's largest room, The Great Hall, which is over 2,000 feet long and up to 100 feet high and wide.

The cave has two entrances: an upper one located on the Preserve, and Great Exit, a small, lower entrance approximately four miles down Trapper Canyon from the upper entrance, on land managed by the U.S. Bureau of Land Management. One-half of Great Expectations cave lies under Federal property.

Trapper Creek and Johnny Creek, and their tributaries combine to form the Lost Worland River inside Great Expectations.

A trip through Great Expectations is one of the most sporting and dangerous caving trips in the United States. It involves traversing the Great Hall and upper passages before dropping into the Lost Worland River. The trip through the river canyons includes descending next to several waterfalls, swimming through plunge pools, wading down sinuous water passages, and finally negotiating the Grim Crawl of Death, a 1500 foot long flat out belly crawl in quickly flowing water to the Great Exit.

A trip through the cave between the two entrances involves vertical alpine caving techniques, however the upper portions of the cave are accessible to properly equipped and qualified cavers without using these specialized skills. Trips to this part of the cave include traversing the Great Hall and visiting the Cephalopod Malt Shop, a room where large slabs of sandstone covered with fossils are exposed beneath a ceiling full of soda straws. This trip involves wading in the cave streams, significant crawling, and scrambling over unstable breakdown and talus in the 39°F cave environment.

Great Expectations and Johnny Creek are pristine caves. There is no graffiti inside the caves and no known damage caused by cavers, other than minor trampling in some areas. In the lower parts of Great Expectations, the stream washes away most traces of passage through the cave.

Biological

The biological resources of Great Expectations Cave and Johnny Creek Cave have not been inventoried. The only species observed are marmots in the Great Expectations entrance rock shelter, pack rats just inside the Great Expectations entrance, and lost trout in the streams and pools of the cave. Due to the cave's cold temperature, cave life is probably very limited. Bats have not been observed in either cave.

Geological

Both Great Expectations Cave and Johnny Creek Cave are developed in the Ordovician Bighorn Dolomite. As Trapper Creek and Johnny Creek cut into the dolomite near Trapper Fault, a portion of the stream flow was pirated into the fractures, starting the dissolution of the dolomite. Eventually all of the stream flow was diverted into the cave system that had formed.

The main trend of Great Expectations Cave follows the dip of the Bighorn Dolomite, with the stream undulating between the dolomite and the underlying sandstone. When superimposed over the topographic map of the area, the cave passages of Great Expectations Cave follow the surface trend of the Trapper Creek Drainage. Most of the passages within Great Expectations Cave are vadose in nature, having been formed by the down cutting of underground streams. There are, however, a number of phreatic passages including the Great Hall.

Dripstone formations are infrequently found in Great Expectations. With the exception of the Cephalopod Malt Shop, where soda straws cover the ceiling, and the formation passage in the lower cave containing soda straws and cave pearls, formations in the cave are few and far between.

Numerous black chert ledges and nodules occur throughout the cave, protruding from the bedding planes of the dolomite. Fingers of sharp rock, called "Cave Velcro," make travel through the cave difficult. There are numerous areas of granite boulders, cobbles, and gravel throughout the cave, as well as breakdown and talus.

There is no known significant damage to dripstone formations in the cave. No special measures should be required to protect these resources other than encouraging careful and conscientious caving practices.

Hydrological

Trapper Creek and Johnny Creek are the primary hydrologic resources of the cave system although Jack Creek and other unnamed tributary drainages provide input into the system during periods of high runoff. These combine to form the "Lost Worland River" within the cave. The Lost Worland River resurges approximately seven miles below the Sinks of Trapper Creek at a spring in the lower part of Trapper Canyon.

- Paleontological** Where the cave passage in Great Expectations Cave is incised into the underlying sandstone, numerous cephalopod fossils are exposed. In the Cephalopod Malt Shop large blocks of fossil-covered sandstone cover the floor. Mammal bones have been found in several places within the cave and are marked for protection.
- Archeological** No archeological resources are known to exist in the caves. Due to the nature of the entrances, the caves do not appear to have been visited or used by Native Americans. There is no evidence of exploration by early settlers or ranchers.
- Historical** No historical resources are known to exist within the caves.

SURFACE RESOURCES

- Biological** Surface biological resources observed on the Preserve include large mammals, small mammals, fish, birds, and a variety of plants, from grasses to mature pine trees. There are no known endangered species on the Preserve.

Large mammals include mule deer, elk, moose, and the occasional black bear, coyote, and mountain lion. Small mammals include rabbits, marmots (which may nest in the entrance to Great Expectations Cave), pack rats (which have been seen inside the Crisco Crack), and a variety of mice and other rodents. Although no bats have been seen in the cave, they may roost in trees on the Preserve and in the entrance rock shelter of Great Expectations. Fish, most likely common brook trout, have been observed in Trapper Creek, and a few have inadvertently ended up inside Great Expectations. It is possible that prairie rattlesnakes and other reptiles could be found on the Preserve but the high elevation would make this extremely rare. A variety of birds may be seen on the Preserve.

Preserve flora includes grasses, wildflowers, sagebrush, shrubs, and several species of trees, typical of the sub-alpine mountainous environment. It is possible that non-native and weed species have been introduced to the Preserve through grazing

There is no apparent need for trees to be harvested on the Preserve.

Wildfire presents the greatest danger to the plant community on the Preserve, particularly to the wooded areas. The Forest Service, the BLM, and Big Horn County are responsible for suppression of wildfires in the area of the Preserve, even on private land.

- Geological** Outcrops of Ordovician Bighorn Dolomite cover most of the Preserve. In the southeast corner of the Preserve, near the Great Expectations Cave entrance, the Trapper Fault is exposed. This fault has Bighorn Dolomite on the western up-thrown side and Madison Limestone on the eastern down-thrown side. The Trapper Creek Drainage and the Johnny Creek Drainage are partially filled with granite cobble alluvium that has washed down from the granitic core of the Bighorn Mountains to the east of the Preserve. Cambrian sandstones and granites that form the core of the Bighorn Mountains underlie the Ordovician rocks in which the caves are formed.

The mineral rights to the Preserve are within the Federal mineral estate. Limestone and dolomite are the only economically recoverable mineral resources known to exist on or beneath the preserve. There has been no hard-rock mining activity on the Preserve or in the vicinity of the Preserve.

Hydrological	Hydrological resources of the Preserve include Trapper Creek and the Johnny Creek Drainage. There are no water rights attached to the Preserve. North Trapper Creek and South Trapper Creek join to become Trapper Creek just east of the east boundary of the Preserve. The creek flows onto the Preserve and sinks within several hundred feet of the boundary. Trapper Creek flows year around with the greatest flows during spring runoff. Most of the year, Johnny Creek sinks before reaching the Preserve. During periods of high runoff, the flow reaches Johnny Creek Cave on the Preserve and goes underground at that point
Paleontological	No paleontological resources are known to exist on the Preserve. There may be isolated marine fossils in the rock outcrops on the Preserve.
Archeological	There are no archeological sites known to exist on the Preserve. Native American hunting parties may have been visited the Preserve but there is no evidence of habitation.
Historical	No historic structures or evidence of human habitation are evident on the Preserve. The two-track roads and fences are the only evidences of human impact

PERSERVE MANAGEMENT

General Management

- a. The NSS Administrative Vice President (AVP) will create the Great Expectations Cave Preserve Management Committee. The Management Committee will recommend a chairman of the Management Committee to the AVP.
- b. As soon as possible after approval of this management plan
 - A Permitting Group within the Management Committee shall be formed
 - A permit and cave access system shall be created
- c. The Management Committee may negotiate cooperative agreements with Federal agencies or with private landowners for approval by the NSS BOG. All such agreements shall be attached to this Management Plan

Cave Management The caves shall be managed to ensure use by NSS members and qualified cavers, while promoting conservation practices to limit any decline in the condition of the caves and their contents.

Cave Resources

- a. Great Expectations and Johnny Caves will be monitored for visitation impact and deterioration. Baseline photo documentation of the formations in Great Expectations Cave will be made within one year of the adoption of this Plan to provide a reference for monitoring their condition.
- b. Within twelve months of the adoption of this Management Plan, the Management Committee will produce a written plan for monitoring the caves and their contents for vandalism, damage, water quality, and other evidence of deterioration of the resource.
- c. The Management Committee will negotiate for NSS Board approval, an agreement with the U.S. Bureau of Land Management to permit the use of the Great Exit.

**Environmental
Resources**

- a. Collecting of any kind is not permitted in the caves without specific written permission. This shall be stated on the caving permit.
- b. Baseline measurement of the quality of water entering the Great Expectations entrance, entering Johnny Creek Cave, and discharged from Great Exit will be made at least twice within 12 months of the adoption of this plan. One sampling event will be under base flow conditions and one under summer storm flow conditions. These data will allow for comparison of future water quality in the cave system.
- c. A biological inventory of both caves will be conducted within one year of this plan's adoption.
- d. Opportunities for Federal support to cover the costs of environmental assessment and monitoring, and biological and paleontological inventories will be explored.
- e. The Forest Service and the BLM will be encouraged to limit grazing in riparian areas and any activity that would cause erosion or potential pollution of the streams on Trapper Creek, Johnny Creek, Jack Creek, and the tributary drainages.
- f. All Federal planning documents pertaining to the area near the Preserve will be obtained, and comments that are in the best interest of the Preserve and the caves will be made to the issuing Federal agency.
- g. A digital map of the cave will be prepared as soon as possible and a repository of all of the data relevant to the Preserve (including usage records) will be established. The map, usage records, surface map, and key information and data on the cave shall be made available to NSS members on the Preserve web page. Copies of all data will be placed in the archives at the NSS Office.
- h. Paleontological resources will be inventoried and monitored

Visitors

- a. A permit system will be established by the Management Committee that complies with the Access Policy outlined in this Management Plan.
- b. A web site will be maintained providing a range of information and permit procedures for NSS members and qualified cavers, as outlined in the Access Policy in this Management Plan.
- c. Recreational tours of the cave by commercial groups are not permitted.
- d. Commercial photo, film, or video projects will not be permitted without a specific written contract with the NSS.
- e. The Great Expectations cave entrance on the Preserve shall remain gated and locked
- f. Within 6 months of the adoption of this management plan, policies and procedures for distributing the key or combination to the lock on the cave gate will be developed by the Management Committee and made available on the Preserve web site.
- g. For security purposes: If a combination lock is installed on the gate, the combination shall be changed at least once a year. If a lock accessed by a key is installed, the lock shall be changed at least once a year.
- h. The Management Committee shall inspect the gate on Great Expectations Cave annually, and maintain or replace it as required. They shall inspect the lock at least twice each year.
- j. Johnny Creek Cave will not be gated unless it is found to be significantly longer, or connects to Great Expectations Cave.
- k. Visitation registers will be constructed and placed inside the entrance alcove of Great Expectations and in a convenient place in Johnny Creek Cave. Cavers will be asked to complete a register with the following information: name; the date and time in and out of the cave; and the purpose of the trip. Other registers will be placed in appropriate locations in the cave, as determined by the Management Committee, including the Great Exit. These other registers will be checked and replaced on an annual basis by the Management Committee. The Management Committee will analyze Post-Trip reports as they are available.
- l. The Management Committee, in conjunction with the National Cave Rescue Commission (NCRC) Rocky Mountain Regional Coordinator, will develop an Emergency Incident Response Plan for the Preserve. The Big Horn County Sheriff's department is responsible for search and rescue within the County. Cavers visiting Great Expectations must have an emergency plan based on self and/or group rescue, since there are very few cavers in the area qualified or capable of participating in a rescue in Great Expectations Cave.

Surface Management

The surface property will be managed to ensure its use by NSS members, while limiting any changes in the condition of the land, and damage to its flora and fauna.

Access.

- a. The Management Committee will discuss foot access to the Preserve from FS Road 17 to the east of the Preserve with the U.S. Forest Service and develop a use agreement if necessary

- b. The road onto the Preserve from BLM Road 336.01 will be maintained on the property to ensure it is accessible by four-wheel drive vehicles.
- c. Agreements with the Forest Service and the BLM will be negotiated to secure continued vehicular access to the Preserve via the unimproved track
- d. The gates on both of the roads entering the Preserve will be locked to prevent unauthorized access.
- e. Use of FS Road 604 by visitors to the Preserve will be determined in discussions with the Forest Service.

Environmental

- a. Weed and non-native species will be identified and an attempt made to control them
- b. The Management Committee will pursue the possibility of the Federal Government withdrawing the Preserve from mineral leasing.
- c. The Management Committee will request all Federal planning documents pertaining to the area near the Preserve and make comments that are in the best interest of the Preserve and the caves.
- d. The Management Committee may consider granting grazing rights on the Preserve to the previous owner, if this will be beneficial to the Preserve and will not conflict with caver visitation. This would require an amendment to this management plan, and NSS BOG approval.
- e. The Management Committee will encourage the Forest Service and the BLM to limit grazing in riparian areas as well as any activity that would cause erosion or potential pollution of the streams on Trapper Creek, Johnny Creek, and Jack Creek.

Visitors

- a. “No hunting, fishing or trespassing without written permission” signs shall be posted on the Preserve as soon as possible after this management plan is adopted.
- b. Open fires are permitted only in designated areas on the Preserve and in accordance with the USFS fire restrictions on the day of use.
- c. A permit from the Management Committee shall be required to camp, and camping is allowed only in designated areas.

Property

- a. The fences that are property of the NSS and signage will be maintained on a regular basis, and when necessary.
- b. Trails will be established on the property to help contain travel.
- c. An archeological survey of the Preserve will be undertaken.
- d. The Management Committee will search for any existing leases or claims that include any section of the Preserve
- e. The property owner to the west will be contacted in order make him aware of the change in ownership and to establish a good relationship.

Access Policy

Access to the Preserve is somewhat self-restricting due to the high altitude of the cave, in combination with deep winter snows. Winter conditions will likely require visitors to use a snowmobile to access the Preserve. Therefore, caving in the winter will be discouraged due to limited rescue potential. The Bighorn National Forest road (FS 17) and the BLM alkali road may be closed to traffic at various times throughout the year due to weather, mud, or snow conditions.

Access to Great Expectations Cave is self-restricting due to high water within the entrance passage series during spring runoff, and the potential for flooding in the cave. The ideal time frames in which to visit the cave are from mid to late summer and in early fall, when the potential for flooding is low, even during thunderstorms.

To gain access to the upper entrance of Great Expectations Cave, every caver must sign a liability release and obtain a permit. A "Permitting Group" appointed by the Management Committee will be responsible for issuing caving and other use permits and ensuring compliance.

All individuals visiting the cave who have not signed the liability release will be considered to be in trespass for liability purposes. (Wyoming Law - Title 6 - Crimes and Offenses Section 6-3-303 Criminal Trespass covers this eventuality.)

The permit application shall contain a brief description of the cave, its hazards and dangers, an explanation concerning the absence of rescue personnel within the region; importance of a self- and group rescue plan; and a description of necessary caving gear and clothing which are suitable for the nature of the cave.

A web page on the NSS web site shall be maintained to facilitate the permit process. The web page shall include: Information on the cave including maps; a map of the Preserve property; environmental assessment, monitoring, and visitation data; a description of the permit process; through-trip information and requirements; all appropriate forms for completion; instructions for applying for a permit; available visitation dates; and appropriate Preserve Committee member contact information.

Groups requesting to do a through trip in Great Expectations Cave are required to take several additional steps in the permitting process, which shall be explained on the web page. One of the steps is to secure written permission to cross the private lands required to reach the Great Exit, and to provide written proof of this to the permitting group.

Appendix One – Trip/Liability Card

Great Expectations Cave Preserve Trip Card	
Date & time in ___/___/___ _____	
Date & time out ___/___/___ _____	
Trip leader _____	
Number in party _____ (Please list the trip members on the back.)	
Purpose of trip _____ _____ _____	
Was there anything unusual or any problem you noted on the property of which the manager should be aware? _____ _____ _____ _____	
Liability Release I, the undersigned, do hereby release forever the NSS or anyone acting directly or indirectly on the part of the NSS, from all liability, damages and responsibilities of any nature whatsoever incurred by my hiking, educational or research activities on said property. I agree that any personal injuries, accidents, death, damage to my property, or health problems incurred by me on said property are my responsibility, not the NSS's. I promise to bind myself, my family, and my heirs to the aforementioned terms of this release. I have carefully read the foregoing release and indemnifying agreement and understand the contents thereof, and sign this document of our own free will.	
_____ Signature	_____ Date
_____ Signature	_____ Date