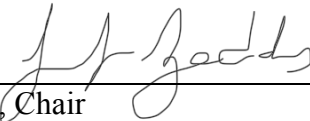


Cave Management Plan

Groaning Cave

06/2024

White River National Forest
Eagle-Holy Cross Ranger District



Jennifer Zedalis, Chair
Colorado Cave Survey

Date

Chad Pedigo, Vice Chair
Colorado Cave Survey

Date

Alex Lyles, Cave and Karst Manager
White River National Forest

Date

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White River National Forest

Date

1.0 Introduction

1.1 Purpose and Need

Groaning Cave has been designated as a "Significant Cave" through the nomination and evaluation process as defined and described in the Federal Cave Resources Protection Act of 1988 (FCRPA-1988), (PL 100-691). The Act mandates that caves on USDA Forest Service lands are, in part, regulated by the Act, which states that:

1. Significant caves on Federal lands are an invaluable and irreplaceable part of the Nation's natural heritage, and;
2. In some instances, these significant caves are threatened due to improper use, increased recreation demand, urban spread, and lack of specific statutory protection.

The stated purposes of the FCRPA-1988 act are:

(1) to secure, protect and preserve significant caves on Federal lands for the perpetual use, enjoyment, and benefit of all people, and;

(2) to foster increased cooperation and exchange of information between governmental authorities and those who utilize caves located on Federal lands for scientific, educational, or recreational purposes.

The Washington Office Manual amendment 2300-91-3, (2356-CAVE MANAGEMENT) states that: caves are dynamic natural systems affected by surface and subterranean environmental changes. While similar in many respects to surface resources, cave resources present some unusual management challenges because of the nonrenewable nature of cave contents and the sensitivity of cave ecosystems to human caused changes.

The White River National Forest is mandated to manage Groaning Cave in a manner that protects and maintains, to the extent practical, significant caves under the following Authorities (2356.01) by means of these principal Federal laws and regulations:

(1) **The Organic Administration Act of June 4, 1897.** 16 U.S.C. 551. This Act authorizes the Secretary of Agriculture to regulate occupancy and use of the National Forest System (NFS) lands. Regulations issued under the Act authorize protection of cave resources from theft and destruction (36 CFR 261.9a, 9b, 9g, 9h and 9i). Under 36 CFR 294.1, classification is authorized for special interest areas that are managed for recreation use substantially in their natural condition. Special closures are authorized under 36 CFR 261.53 to protect threatened cave resources. The Code of Federal Regulations (36 CFR 261.9a, 9b, 9g, and 9h), (36 CFR 294.1), and (36 CFR 261.53) mandates regulation of occupancy, use, protection, and preservation of Groaning Cave and gives authority to regulate visitation and installation of a control gate and gives authority for special closures to protect threatened cave resources.

(2) **The National Environmental Policy Act (NEPA) of 1969** is itself only a couple of pages long and simply compels all Federal Agencies to do the following prior to undertaking an activity:

- Consider environmental impacts (environmental analysis) in decision making,
- Involve the public,
- Document the process by which the agency made its informed decision.

Federal Agencies are required to evaluate the relevant environmental effects of federal actions. This is accomplished by one of three levels of analysis depending on the complexity and type of action being analyzed: a Categorical Exclusion (CE), an Environmental Assessment (EA)/Finding of No Significant Impact (FONSI), and, Environmental Impact Statement (EIS).

(3) **The Antiquities Act of 1906** (34 Stat.225; 16 U.S.C. 431 et seq.) provides for protection of historic or prehistoric remains or any object of antiquity within Groaning Cave. Uniform rules and regulations pursuant to this Act are in FSM 1530.12.

(4) **Endangered Species Act of 1973** (87 Stat. 884m as amended; 16 U.S.C. 1531) describes the process for determining endangered and threatened species, and the protection of those species using the entrance and other portions of Groaning Cave. The Act was established to prevent the extinction of plant and animal life and to recover and maintain their populations by removing or lessening threats to their existence. The Act describes the process for determining endangered and threatened species, establishes prohibited acts, prescribes penalties, mandates a recovery plan, and defines cooperative relationships between agencies and states.

(5) **Archaeological Resources Protection Act (ARPA) October 31, 1979** (16 U.S.C. 470aa) prohibits removal of archaeological resources and authorizes confidentiality of site location, authorizes permit procedures for study and investigation of archaeological resources by qualified individuals. The Act supplements but does not replace the Antiquities Act of 1906.

(6) **Federal Cave Resources Protection Act of 1988 (290.4)** mandates confidentiality regarding the location of Groaning Cave. (16 U.S.C. 4301-4309; 102 Stat. 4546). The purposes of this Act are to secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment, and benefit of all people; to foster increased cooperation and exchange of information between governmental authorities and those who utilize caves located on Federal land for scientific, education, or recreational purposes. The act sets forth management actions, confidentiality of significant cave locations, and describes permitting, prohibited acts, and penalties <https://www.govinfo.gov/content/pkg/STATUTE-102/pdf/STATUTE-102-Pg4546.pdf>

(7) **Code of Federal Regulations (CFR) Title 36: Parks, Forest and Public Property, Part 290 Cave Resources Management.** June 17, 1994. These are the implementing regulations applying to cave management on National Forest System lands. They provide definitions pertaining to the processes for nomination, evaluation, and designation of significant caves set forth rules regarding the confidentiality of cave location information and the collection of cave information.

- **Part 290** Cave Resources Management: <https://www.govinfo.gov/content/pkg/CFR-2014-title36-vol2/pdf/CFR-2014-title36-vol2-part290.pdf>

(8) **Title 36 CFR, Part 291: Paleontological Resources Preservation Act of 2009.** These regulations set forth the requirements for managing, protecting, and preserving paleontological resources in the National Forest System land using scientific principles and expertise.

(9) **Freedom of Information Act (FOIA) of 1967** (5 U.S.C. 552(b)(3)) allows the public to seek disclosure of Federal agency information, but also requires agencies to protect some classes of material from disclosure including documents that are not formal products of the agency or official correspondence.

1.2 Objectives

1. A primary objective for the management plan for Groaning Cave is to protect and conserve the cave resources while providing reasonable and appropriate public access for recreation, education, exploration, scientific studies, monitoring, and training activities. This management plan is intended to balance use in keeping with protecting a known, well-decorated, pristine cave, as well as other sensitive resources within the cave, while metering certain amounts of recreational trips and scientific studies.
2. A second objective of the management plan is to minimize the human-induced risk of White Nose Syndrome (WNS) to bats and to communicate the current decontamination protocols to prevent any possible spread of the fungus (*Pseudogymnoascus destructans* [Pd]) that causes WNS. Reducing human disturbance during the fall swarming period, and minimizing human disturbance during the critical winter hibernation period ensures bats maintain the best health possible to try and persist when WNS inevitably reaches the White River National Forest (WRNF)

3. A third objective is to continue and to improve the working management plan between the Colorado Cave Survey (CCS) and WRNF and to support continued involvement with the recreational caving community, scientific organizations, and other interested parties.

1.3 Description

1. The longest cave in Colorado, and one of the 60 longest caves in the United States, at a surveyed length of nearly 15 miles and depth of 169 feet, Groaning Cave represents a unique and fragile resource. Perched atop a spectacular sub-alpine limestone canyon, Groaning Cave's network of crawls, fissures, domes, and caverns has attracted cavers for more than 50 years after discovery in 1968. Although not technically difficult, Groaning Cave is a very complex, cold, strenuous high-altitude maze cave, which can pose serious challenges and dangers to the inexperienced or unwary caver. Additionally, the cave is well-decorated in many places and thus susceptible to irreparable damage from careless individuals.
2. Groaning Cave is cooperatively managed by the CCS and the WRNF. While the goals of the Groaning Cave Management plan include the enjoyment of the cave through recreation, education and exploration, the long-term preservation of this unique wonder remains its foremost objective.
3. Groaning Cave is gated year-round. A 2021 Region 2 Order for Cave Access (#R02-2021-02) prohibits unauthorized entry into the cave. The reason for the order is to protect the pristine condition of the cave, protect against the spread of WNS, and provide a measure of public safety. Requests to enter Groaning Cave are to be submitted to the Regional Cave Permit System (which is managed by the WRNF) at least three days in advance. (See section 11. Access Procedures) Language from this order excludes:

“...entering any cave within the Restricted Area not listed on Exhibit A (of Order #R02-2021-02) or any cave listed on Exhibit A during any time of the year outside of the dates specified on Exhibit A without:

- a. Complying with decontamination guidelines in the National White Nose Syndrome Decontamination Protocols (appendix B, updated Oct. 2020).
 - b. Ensuring that equipment and clothing used in areas where WNS or *Pd* fungus has been detected (listed at <https://www.whitenosesyndrome.org>) are not used in areas where WNS or *Pd* fungus has not been detected. Prevention of further spread is of high importance.
 - c. Possessing a signed and approved Forest Service Rocky Mountain Region Cave Access Registration Form.
4. Groaning Cave is also closed by the aforementioned Order during the fall bat swarming and winter bat hibernacula period, from August 15 to April 15 (dates inclusive). A special exception access authorization request is required to access the cave for work trips, surveys, or scientific studies between August 15 and April 15 and must be submitted to WRNF staff by April 30th of each seasonal year with a response expected by July 31st. Exception permit requests for access during these closure dates may be granted on a case-by-case basis.
 - a. Cavers may request an exception for access authorization for the period of August 15 to October 14, yearly, to extend up to when the hibernation season begins on October 15.
 - b. Cavers will follow current WNS decontamination procedures, avoid the entrance during dawn and dusk periods, and lead only small, experienced groups of cavers with explicitly heightened awareness of any possible disturbance of the bats.
 - c. Cavers using the exception for access authorization may be asked to provide additional reports or data, such as inventory of newly surveyed areas, bat monitoring observations, detailed photos of gates, ladders and/or ropes in the cave and general observations of vandalism or other impacts.

2.0 Cave Management Directives and Policies

2.1 Directives for the Management of Groaning Cave

1. Protect and perpetuate the natural cave and karst systems from internal and external threats.
2. Classify Groaning Cave in a management category based on sensitivity, resource evaluations, and hazard characteristics.
3. Provide limited educational, recreational, and scientific study opportunities of the cave's resources and systems.
4. Establish regulations, guidelines, and access stipulations that ensure maximum safety for the cave visitor and protection of wildlife species and their habitat within the cave.

5. Develop monitoring techniques that will determine if management activities are protecting and preserving all aesthetic, recreational, and scientific resources within the cave.
6. Encourage conservation of cave resources during visitor contacts.
7. Analyze projects and logistics needed to resolve any identified problems in managing the cave, collaborating with local caving organizations. Include estimated needs for manpower, materials and equipment, volunteer help, interpretation, and specialists with the possible use of challenge cost share agreements.

2.2 Policies (WO Amendment 2300-91-3, 2356.03)

1. Manage Groaning Cave as a nonrenewable resource to maintain its geological, scenic, educational, cultural, biological, hydrological, paleontological, and recreational values per FSM 2356.
2. Emphasize wild cave management with few or no facilities to aid or facilitate use.
3. Coordinate surface and cave/karst resource management activities.
4. Protect threatened, endangered, proposed and sensitive species in accordance with the Endangered Species Act (16 U.S.c. 1531) and FSM 2670.
5. Protect cultural and Nation's natural heritage sites in accordance with FSM 2361.03.
6. Develop and foster communications, cooperation, and volunteerism with recreational caving and scientific communities, other interested publics, Federal agencies, States, and local governments.

3.0 Resource Evaluation

Forest Service manual Chapter 2356 and 2356.06 presents a rating system for the resource values used in the criteria for evaluating a cave as Significant under FCRPA guidelines. Cave Significance is determined by a rating system of Low, Moderate, or High for various values. The values considered are Biological, Cultural/Historical, Geological/Mineralogical/Paleontological, Hydrological, Recreational, and Educational/Scientific.

Criteria for Resource Evaluation is found in the Code of Federal Regulations (CFR) Title 36: Parks, Forest and Public Property, Part 290 Cave Resources Management.

Sensitivity levels of Low, Medium, or High are meant to show how sensitive the resources are to disturbance. For Groaning Cave, the cave resources were evaluated as follows:

3.1 Biological Resources: High

Components are present and highly sensitive to disturbance. Fauna present is uncommon in other sites and may include rare species and designated Forest Service Sensitive Species. The cave provides seasonal or year-long habitat for organisms or animals, or contains species or subspecies of flora or fauna native to caves, or are sensitive to disturbance, or are found on State or Federal sensitive, threatened, or endangered species lists. Habitat in the cave may also be important to these species occurring on a local level.

3.2 Cultural/Historical Resources: Low

Does not contain evidence of use from early peoples, or evidence of use prior to its discovery in 1968. Has been explored and surveyed for over 50 years, and some original survey markers may still be in place. Historical graffiti and artifacts are low to nonexistent.

3.3 Geological/Mineralogical and Paleontological Resources: High

Preliminary geologic/mineral inventory indicates components are numerous and/or sensitive to disturbance. Deposits of sediments or features useful for evaluating past events are present within the cave. The cave contains speleothems of unusual quality or are extremely delicate and/or susceptible to breakage. Speleothems may include stalagmites, stalactites, curtains, flowstone, travertine dams, cave coral, cave popcorn, helictites, and/or other mineralogical formations. These features are very delicate, non-renewable, and of regional and scientific significance. They could be seriously disturbed or destroyed by the poorly informed visitor. There is currently relatively little damage. There are unique opportunities for scientific study.

3.4 Hydrological Resources: High

Groaning Cave formed primarily in the Leadville Limestone through dissolution from hypogenic waters and is now disconnected from those waters. As such, it plays a different role in the hydrologic system of the area

compared to more actively forming caves. Groaning Cave contains many lakes, pools, and areas with dripping water fed by epikarst drainage that infiltrates from the surface through faults in the overlying Belden Formation. The water within the cave plays a vital role in continuing to form speleothems and habitats for troglobites that help make this cave an important resource.

3.5 Recreational Resources: High

Scenic appeal is very high. There are unique opportunities for recreation and interpretation. Groaning cave is a complex, alpine limestone cave with many unique features in an area in which extensive hypogenic caves are rare.

3.6 Educational and Scientific Resources: High

This cave is extensive and unique in its development on the White River Flat Tops plateau. The high altitude and remote condition, as well as its status as the longest cave in Colorado, qualifies Groaning Cave as a possibly unique situation for educational and scientific study.

4.0 Resource Classification

Based upon the management classification identified in the FS Manual 2356 and 2356.06, Groaning Cave is classified as a "**Class-3-H-H**" Cave, which is described, in part, as:

4.1 Management Class

Class 3 caves are Active Management Caves. These caves have sensitive features and/or safety hazards but may be entered without significant adverse impacts or undue danger by properly equipped and experienced cavers. These Active Management Caves are designated Class 3 because they require further exploration, research, and/or inventory to evaluate how they should be managed and monitored, and although they have been explored and known for years they may not have been sufficiently studied or inventoried. Currently, survey projects may continue to extend the limits of the known cave and to discover new features.

4.2 Resource Level - (H)

Caves with a Resource Level of High contain at least one if not more of the criteria for evaluation of Cave Significance (see section 3). Under the Federal Cave Resources Protection Act of 1988 (FCRPA), the U.S. Forest Service evaluates the cave resource values for determining cave significance.

4.3 Hazard Level - (H)

Caves with a Hazard level of High are considered difficult to traverse. Visitation should be conducted by no less than two cavers, all of whom have considerable caving experience. All team members must observe caving safety rules and use the following basic equipment: helmets, three light sources per person, etc. (see Section 11.1 for further details). The following are some of the characteristic hazards found in Groaning Cave:

- a. "Maze" passageways, complex navigation.
- b. Vertical drops over 15 meters.
- c. Loose ceiling rocks on crawlways under 2 meters.
- d. Tight crawl ways of less than one foot.
- e. Technical climbing areas.
- f. High elevation, cold environment with risks for hypothermia.

5.0 Visitor Use Management

5.1 Access Registration and Hazards Disclosure

Pursuant to Forest Service Order R2-2021-02, a signed Cave Access Registration Form and a signed Groaning Cave Hazards Disclosure will be required for entry into the gated portions of the cave (see details in Section 11 and appendixes C and D).

5.2 Group Size

Group size will be not less than 2 and not more than 6 per trip leader, unless special permission is obtained from the WRNF Cave Specialist or designated WRNF employee for special projects, etc.

5.3 Visitor Usage Reports

The CCS may provide an annual report to the WRNF of visitor usage for Groaning Cave by December 31st of each year.

6.0 Research

An access authorization will be required for research activities. Guidelines for issuing an access authorization are found in the Region 2 Cave and Karst Management Plan. For Groaning Cave, the following will also be considered:

6.1 Research is of a regional or national nature.

6.2 Research will emphasize nondestructive activities.

6.3 A WRNF employee or a qualified and approved volunteer will be present during data collection in the cave.

6.4 The specific location of the cave will not be disclosed.

The approval of an intensive research study may require a Special Use Permit.

7.0 Administrative Use

Administrative visits by WRNF employees and volunteers will normally be limited to trips necessary for monitoring, maintenance of materials such as trail markers and gates, checking the register, training of guides, reviews of the management prescription, and inventory such as mapping and bone identification. Trip frequency is normally once per season unless emergencies arise. If possible, and to reduce the number of administrative trips, some maintenance and monitoring may be done during approved trips.

8.0 Restoration

There may be restoration project trips as needed through special permit requests. Cave restoration projects usually include litter removal, graffiti removal, and speleothem reconstruction. Volunteers are sometimes sought to assist in these projects. However, WRNF coordination is required to ensure historical graffiti and artifacts are not inadvertently removed, and that glues and other chemicals used are not toxic to cave life or human visitors. Cleanup and restoration projects can improve the cave experience, but once non-renewable resources are damaged, they cannot be restored to their original value.

9.0 Search and Rescue

Search and rescue is primarily the responsibility of the county and state Search and Rescue Associations. Due to the sensitive nature of Groaning Cave, a WRNF employee will be present during any rescue operation to ensure resource values are protected. When a WRNF employee is not available, a previously approved volunteer will represent the WRNF. Procedures for emergency use of key volunteers, such as the Colorado Cave Rescue Network, will be established.

If the need for a cave rescue is determined by a cave user or other party, that individual should request immediate assistance from calling 911 and/or the Garfield County Sheriff, Glenwood Springs, CO (303)945-9151.

10.0 Law Enforcement

Cave visitors will not take direct action against violators. The visitor's role will be to provide information on violators to WRNF staff, who will then take appropriate action.

11.0 Access Procedures

1. Pursuant to Forest Order #R2-2021-R2; an access authorization is required for entrance to Groaning Cave. Persons should apply for an access authorization with the WRNF at least three days in advance and follow the instructions at the following site: <https://www.fs.usda.gov/detail/whiteriver/home/?cid=fseprd515209> This access authorization will describe the responsibilities of visitors and access procedures.
2. WRNF employee(s) will review applications for the access authorizations for those requesting access to the cave. Due to the length and difficulty level of Groaning Cave, a knowledgeable caver who is experienced and qualified to lead the appropriate section of the cave to be visited must be present on the allowed trip. Additionally, only those individuals known to be regular and skilled cavers by either the WRNF staff or the local Grottos may be granted access to enter Groaning Cave.
3. Cave users will be required to sign a Groaning Cave Hazards Disclosure Form prior to entering the cave (see appendix D).
4. In addition to screening caver applicants, the CCS Groaning Access Coordinators will assist the WRNF in maintaining the cave portal gate, locks, and appropriate signs. Applicants will gain access by receiving the gate lock combination once their access authorization is approved by the WRNF and their Hazards Disclosures submitted to the CCS Groaning Access Coordinators. The CCS Groaning Access Coordinators will maintain the current lock combination, which is changed regularly throughout the season, and the WRNF staff also maintains a key for their lock.

11.1 User Qualifications and Equipment Checklist

The National Speleological Society (NSS) maintains a comprehensive recommended gear list found at <https://caves.org/safety/YGLC%20Equip%20List.%20May%202005.pdf>

1. Be in good physical condition.
2. Agree with cave conservation principles and proper safety practices.
3. Understand the potential risks involved.
4. Be at least 18 years of age or have the permission of parent or guardian to enter the cave.
5. Agree to the authority of the trip leader.
6. Comply with the WNS decontamination protocols listed in appendix B of this document.
 - a. If possible, use gear that is dedicated specifically to Groaning Cave.
 - b. Additionally, contain all gear and equipment in plastic bags upon exit until decontamination procedures can be followed.
7. Sign a hazards disclosure that details many of the hazards that may be experienced in the cave, and that emphasizes the sensitive nature of the cave.
 - a. Please note that disclosures for all cavers must be received by one of the Groaning Access Coordinators found at <https://coloradocavesurvey.org/managed-access-caves/groaning-cave/> before a gate combination will be provided.
8. Be equipped with the appropriate caving equipment:
 - a. A helmet with a chinstrap.
 - b. Three sources of light, main source helmet mounted, spare power source for main light, enough to keep it running for 30% longer than the expected trip length, spare parts for main light, and two portable backup sources of light.
 - c. At least one liter of drinking water and high energy food in a rugged container.
 - d. Heavy clothes with long sleeves and legs, suitable clothing for 40 degree caving temperatures with rugged, good traction footwear, preferably waterproof.
 - e. Compact first aid kit, one for every two or three people, and a rugged waterproof pack.
 - f. Recommended heavy duty gloves and knee pads.
 - g. Magnetic compass and map or line plots are suggested.
 - h. A 'Wag bag' and a pee bottle is recommended for carrying out any human waste.
9. Be accompanied to the cave on your first visit by a qualified Groaning Cave trip leader and demonstrate proper caving ability and etiquette. This requirement is intended to provide protection to both the cave and the caver. Cavers who exhibit a disregard for the cave environment may have their access privileges revoked.

11.2 Trip leader Requirements

1. Meet all the requirements of the permitted caver stated above in 11.1.
2. Complete and submit the permit application.
3. Have been in Groaning Cave at least twice before and should be familiar with the section(s) of the cave that they intend to visit.
4. Be experienced with cave conservation principles and proper safety practices.
5. Be experienced with the gate procedures of Groaning Cave.
6. Agree to implement cave access and conservation rules and must ensure that everyone on their trip has

- signed the Groaning Cave Hazards Disclosure Form.
7. Be at least 18 years of age.
 8. Prepare a trip plan and leave it with a surface contact or another responsible party. The trip plan should include the list of cavers entering the cave, the date of entry, estimated date and time of return, and instructions to notify the Garfield County Sheriff (303)945-9151 if the cavers do not return within a reasonable time after the scheduled return.
 9. **Additional Trip Leader tasks:**
 - a. Scan and submit the Groaning Cave Hazards Disclosure form for all new participants to the Groaning Access Coordinator.
 - b. Have all members in the group sign the permitted trip form and scan and submit this form to the Groaning Access Coordinator.
 - c. Be required to lock the entry gate upon entering the cave and ensure that it is locked upon exiting the cave.
 - d. Once inside the gate, Trip Leaders are required to record the name of all cavers, as well as date and time of entry and intended area of the cave to be visited in the logbook located at the register. Upon exiting the cave, the trip leader shall note the exit time and date as well as any relevant notes of their trip in the logbook.
 - e. Ensure that all materials carried into the cave be removed and disposed of off Forest service land.

11.3 Prohibited Activities and Conservation Practices

1. Leave all formations untouched, even if broken.
2. Prevent spreading of mud, especially on formations.
3. Remove all materials carried into the cave.
4. Do not disturb cave life.
5. Do not leave marks (other than survey markers or flagging to mark sensitive features) that would spoil the appearance of the cave for future visitors.
6. No pets will be allowed into the cave.
7. No smoking is allowed in the cave.

12. Monitoring

Monitoring this cave resource with the assistance of volunteer cavers will determine if activities permitted by the standards and regulations are maintaining or improving the conditions of the Pristine and Primitive recreation classes and the resources evaluation ratings. They will also be the basis for making changes to the management objectives and the policies and regulations.

Monitoring of some conditions will require long-term efforts before trends can be established.

Appendixes

Appendix A—Definitions

The **Federal Cave Resources Protection Act of 1988** defines a *cave* as:

Any natural occurring void, cavity, recess, or system of interconnected passages that occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any vug, mine, tunnel, aqueduct, or other man-made excavation), and that is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made. Such term shall include any natural pit, sinkhole, or other feature that is an extension of the entrance.

Appendix B—White Nose Syndrome Decontamination Products and Applications

Table 1. Applications and products with demonstrated efficacy against *Pd*^{3,4,5,6,7}. Remember to consult equipment labels, registered product labels, and the appropriate SDS for regulations on safe, acceptable use.

	Tested Applications & Products ^{3,4,5,6,7}	Federal Reg No.:	Laboratory Results
Preferred Applications	Equipment Dedication	N/A	Clean according to manufacturer standards and dedicated to a site.
	Submersion in Hot Water ^{4,6,7}	N/A	Effectiveness demonstrated when submerged for 5 continuous minutes in water ≥55°C (131°F).
Other Products	Isopropyl Alcohol (50% to 70%) ^{4,6,7}	CAS - 67-63-0	Effectiveness demonstrated upon exposure in solution for >20 seconds.
	Isopropyl Alcohol Wipes (70%) ^{4,6,7}	CAS - 67-63-0	Effectiveness demonstrated immediately following contact and air drying.
	Hydrogen Peroxide Wipes (3%) ^{4,6,7}	CAS - 7722-84-1	
	Clorox® Bleach (Sodium Hypochlorite 8.25%) ^{3,4,5,6,7} 2400 PPM or 3600 PPM (see label for dilution volumes and required exposure times)	EPA - 5813-100	Effectiveness demonstrated when used in accordance with product label.
	Accel® ^{4,5,6,7}	EPA - 74559-4	
	Clorox® Clean-Up Cleaner + Bleach ^{4,5,6,7}	EPA - 5813-21	
	Clorox® Disinfecting Wipes ^{4,5,6,7}	EPA - 5813-79	
	Clorox Healthcare Hydrogen Peroxide Disinfectant Cleaner ^{4,5,6,7}	EPA - 67619-24	
	Lysol All Purpose Cleaner Lemon Breeze ^{4,5,6,7}	EPA - 777-66	
	Lysol Disinfecting Wipes ^{4,5,6,7}	EPA - 777-114	
	Lysol® IC Quaternary Disinfectant Cleaner ^{3,4,5,6,7}	EPA - 47371-129	
	Rescue Hydrogen Peroxide Personal Wipes ^{4,5,6,7}	EPA - 74559-4	
	Sani Cloth Germicidal Disposable Wipes ^{4,5,6,7}	EPA - 9480-4	
	Up and Up Disinfecting Wipes ^{4,5,6,7}	EPA - 6836-336-56952	
Virkon® S (1%) ^{4,5,6,7}	EPA - 39967-137		

Other effective treatments with similar water-based applications or chemical formulas (e.g., a minimum of 0.3% quaternary ammonium compound) may exist but remain untested at this time. Find more information on the USEPA or FDA registered product labels by accessing the individual hyperlink or searching USEPA or FDA Registration Numbers at: <http://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1> or <http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm>

Appendix C—U.S. Forest Service Region 2 Cave Access Registration Form (non-fillable pdf, example only)

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd514725.pdf



USDA FOREST SERVICE, ROCKY MOUNTAIN REGION CAVE ACCESS REGISTRATION FORM 2020



PERSONAL INFORMATION

First Name:

Last Name:

Email Address:

Mailing Address Zip Code:

Phone Number:

CAVE VISIT INFORMATION

Forest Name:

Cave Name:

Proposed Visit Date:

Expected Number in Group:

Are You an NSS Member?

Are You a Local Grotto Member?

REGISTRATION REQUIREMENTS/CONDITIONS

By Clicking on Each Box Below, I Accept the Following Conditions of this Cave Entry Registration:

"Prohibition of gear and clothing from WNS confirmed or suspected sites. No one in my caving group will use any equipment, clothing, or other gear that has been used in States or Canadian Provinces where White-nose Syndrome or *Pseudogymnoascus destructans* (the fungus that causes the disease) has been confirmed. As of April 13, 2017, this includes Arkansas, Alabama, Connecticut, Delaware, Georgia, Indiana, Illinois, Iowa, Kansas, Kentucky, Maine, Massachusetts, Maryland, Michigan, Mississippi, Missouri, Minnesota, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, Wisconsin and the Canadian Provinces of New Brunswick, Nova Scotia, Ontario, Prince Edward Island, and Quebec. This list is subject to change and the most recent information can be found at <https://www.whitenosesyndrome.org/resources/map> .

"Decontamination procedures will be followed by all members of my group using the procedures described on this website. A copy of the decontamination procedures will be included with the authorization form."

You can submit your request using any of the following methods:

- (1) **Recommended:** save the completed form, and email it as an attachment to SM.FS.r2wns@usda.gov
- (2) Submit the completed form by clicking [here](#)
- (3) Print, scan (or take a picture) and email it as an attachment to SM.FS.r2wns@usda.gov

Some caves on the Bighorn National Forest, the Black Hills National Forest, Shoshone National Forest, and the White River National Forest are seasonally closed. Please refer to our website for additional information: <http://www.fs.usda.gov/goto/r2/cavingpermit> .

Your request will be reviewed and, if accepted, the approved Cave Authorization form will be sent to the email address you provide above. If your request is not approved, you will receive an email explaining the reasons.

Appendix D—Groaning Cave Hazards Disclosure (non-fillable, example only)

GROANING CAVE HAZARDS DISCLOSURE

Last Name (Print clearly)	First Name, Middle Initial	Date (MM/DD/YY)
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How many times have you been to Groaning Cave? Please circle one:

0 - 3 4 - 9 10 or more

This disclosure form is to be read and signed by all persons desiring access to GROANING CAVE. The purpose of this document is to help cavers understand the risks and hazards that may be encountered in the cave. GROANING CAVE is a wild, undeveloped cave which presents numerous hazards to anyone entering the cave. These hazards include, but are not limited to the following:

- 1 Difficult Terrain--A normal trip requires crawling, squeezing through constrictions, climbing, skirting and bridging deep pits and canyons, walking on loose rocks, and walking and crawling through mud and water.
- 2 Climate--Cavers will be exposed to the extremes of dry and wet conditions. Temperatures are normally below 40 degrees F (4 degrees C).
- 3 Rock Falls--Cave floors, walls, and ceilings contain loose rock. Rock falls are a normal and frequent occurrence.
- 4 Complex and Restricted Passages--Groaning Cave contains extensive, complex and sometimes restricted passages, some of which are confusing, maze-like, unmarked and unmapped. There is a high risk of becoming lost, disoriented or trapped in the cave.
- 5 Poor Light Conditions--Groaning Cave is totally dark.
- 6 Harmful Organisms, Animal, Mammals, Reptiles, Insects and Toxic Gases--Some or all may be present in Groaning Cave.
- 7 Gate Failure--Cavers could be trapped in the cave due to improper use or mechanical failure of the gate or lock.
- 8 Physical and Psychological Stress--Caving subjects individuals to extreme and abnormal stresses. Cavers also tend to experience psychological stresses such as claustrophobia, agoraphobia and acrophobia.
- 9 Rescue Difficulty--Cave rescue is difficult, dangerous and expensive. Cost of the rescue may be borne by the rescued individual.
- 10 Other Hazards--A trip into Groaning Cave will subject a caver to other unknown hazards and risks. This document attempts to list the most commonly encountered hazards and risks, however, it should not be considered as an all inclusive listing.

Address:		
Street	Apt./unit #	
City	State	Zip
Date of Birth:		
Month	Day	Year

Signature
Signature of Parent or Guardian (if under 18)

Print Clearly

Incomplete or illegible forms will be rejected.