

National Forest Cave and Karst Management Plans— The need to include “Hotw to” Wording

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Abstract

A significant number of National Forests have caves and karst, but very few National Forests have personnel whose primary duties are to support and manage that cave/karst resource. Most of the National Forests have managers that have caves and karst among their assigned duties, but many other duties that are higher on the priority list. Additionally, there is entropy associated with normal changes in personnel assignments and new staff coming onboard. Many of these same Forests have established caver communities that can support in the transitions and tasks.

Forest level cave and karst management plans need to include wording that not only provide the legal mandates and policies, but the also the management parameters for the five primary user groups of caves; the Forest managers, for profit companies whose actions affect caves and karst, researchers, recreationalists, and the organized caving community that help with the cave management and tasks. These cave and karst management plans need to provide clear concepts and structure that can be understood by diverse user groups and training levels. These guides also need to include Forest specific examples to help the “new-to-caves” manager effectively come up to speed.

A cave/karst recommendations document has been written for Forest managers who have little allocated staff for caves /karst management. The document uses the authorities (CFRs) and Forest Service Manual



Figure 1. Forest Service Region

(FSMs) sections as the foundation to implement in a management in a uniform manner. There are short, Forest specific sections addressing the individual Forest’s resource. The documents are located at: <http://centralarizonagrotto-cavemanagement.webstarts.com/>. Recommendations for five forests are presented along with the bibliography and revision log.

Introduction

In the nine regions there are 155 National Forests and 20 National Grasslands. Most of the Forests have caves and karst. Very few have Forest level cave management plans. Figure 1 shows the forest regions and Table 1 shows number of forests within regions¹ with

¹<http://www.fs.fed.us/wildflowers/regions/>

²<http://www.fs.fed.us/maps/forest-maps.shtml>

Area of U.S.	States	National Forests in Region *	Cave Resource Specialists in Region
Northern	ID, MT, ND	12	?
Rocky Mountain	CO, KS, NE, SD, WY	18	?
Southwestern	AZ, NM	11	2
Intermountain	ID, NV, UT, WY	13	1
Pacific Southwest	CA, HI	17 + 2 "Other areas"	1
Pacific Northwest	OR, WA	18 + 5 "Other areas"	2
combined with Eastern region	n/a	n/a	n/a
Southern	Southern and SE states	36	?
Eastern	Eastern and northcentral states	13	?
Alaska	Alaska	2	0
Washington Office	All	155	1

Table 1 Number of forests within regions

an estimate of cave resource specialists² that have a working knowledge of caves and karst. There are a few more.

There is an ongoing flow of forest personnel changing locations with transfers, promotions, and retirements. With forest level cave/karst management plans, transferring personnel at the district level have the same working document. When personnel move between forests or to the regional level, very similar, approved documents will greatly reduce the learning curve and getting up to speed time.

This is beneficial for both those forest personnel that are familiar with caves and karst, and forest personnel starting positions where caves and karst are on their list of responsibilities, but the employee has little background in this area.

Having forest level cave/karst management plans benefits the four other forest user groups:

- For profit companies whose actions affect caves and karst (Egs. timber and grazing) will have consistent parameters for the businesses.
- Cave researchers have consistent criteria for the research process across multiple forests.
- Caver support (Egs. NSS, CRF) have the same working criteria for projects and supporting the cave management.
- Recreational spelunkers have an easy access to caving ethics on the forest.

The forest level cave management plans need to include clear, practical wording to be useful.

Recommendations for Cave and Karst Management

The document has been compiled using multiple sources besides the CFRs and FSM; the previous USFS cave and karst management coordinator documents, Jim Nieland's XYZ Cave Management Plan, and individual cave and forest level cave management plans.

The document contains:

- Authorities
- Forest Service Manual and handbook Direction
- Cave and Karst Management Policies and Objectives
- Extent of the Resource – Individualized for the Forest
- General Administration and Public Involvement
- Cave Management Categories
- A cave evaluation and classification system
- Cave inventory procedures
- The Significant Cave Nomination Process including nomination forms, and Finding/Decision Form signed by the Forest Supervisor.
- Cave management techniques
- Cave ethics (do's and don'ts)
- Research guidelines

- Monitoring categories
- For cave files, what is kept in the Master File and what is allowed in the Public File
- Management guidelines and techniques for karst
- Cave Entry Permit
- Terms and Definitions

The document provides the “how to” information that allows application for specific projects. For example when a cave has been nominated for Significance, the steps and responsibilities are listed when the Forest Supervisor signs the Finding/Decision for the cave to receive permanent significant status.

Cave Management Categories

There are two management categories of caves on National Forests; Generally Known Caves and Lesser Known Caves. This is a root consideration for how the Forest determines the management.

Category 1: Generally Known Caves

- Highly Developed (trails/lights/parking), directed access
- Developed Natural (parking/signage), directed access
- Natural (little/no improvements), no directed access

Category 2: Lesser Known Caves

- Primitive, no directed access
- Sensitive and Pristine, no directed access

There are several advantages having these two categories:

- Current conditions and the general knowledge base are considered up front.
- Classification of the cave (Preserve, Permit, Non-Permit, and Directed Access) can be applied where needed.
- Management policies can be made for the caves in each category. Individual cave management plans address more specific needs.

Research Guidelines

There are guidelines addressing the steps from the proposal submittal, techniques, deliverables, and resource degradation.

File Management

There are federal restrictions on information may be publicly available. The **Master File** contains complete information on the cave including the cave management plan. The **Public File** contains non-sensitive information including any closure orders, key checkout/return policy. For example, the Public File helps the person at front desk with what information can be discussed during key checkout and return.

Karst Management

Mitigating unnecessary surface destruction in karst areas is an ongoing awareness problem. There are guidelines to help reduce the impact of surface operations on the sub-surface karst ecosystems while still extracting the surface resource. Three examples include:

- Grazing: Locating salt stations away from karst features. The unnecessary disturbing of the surface upstream of recharge entry points causes unnecessary siltation and impact.
- Timber harvesting: In upstream areas of karst features, do not use tracked vehicles in the drainages, and fell trees away from the drainage. Avoid throwing slash into karst features.
- Non-hard-surface roads: Avoid karst features and avoid road runoff going into karst features.

Unfortunately, lack of awareness is a primary enabler to bad practices.

Significant Cave Nomination Forms

After the initial surge of Significant Cave nominations in 1994, new nominations have

become rare. The nomination forms have been updated to include submitter email address, cave GPS location and other information that was not readily available at that time.

Also included are cave inventory forms. These help with the “things to think about” when inventorying the cave.

Management and Monitoring Categories

Several monitoring categories are discussed to provide an acceptable tool box for the given caves being considered. Some of the areas include:

- Trip size limits
- Trip limits
- Visitor registers
- Photo monitoring
- Signage
- Gates
- Maps
- Trails

Before a cave gate is installed a closure order and at least an interim cave management plan is needed. This has been a long, ongoing problem with cave gates. The gates are put on but follow up management parameters are not written down.

Forest Specific Wording

There are four areas in each document that contain Forest Specific wording.

- The **Title Pages** currently use “Recommendations for XYZ Cave and Karst Management”. When approved by each Forest the title pages would change to “XYZ Forest Cave and Karst Management Plan”.
- **Extent of the Cave and Karst Resources** – This contains a high level description of the caves and karst on the

particular forest. For example, some Forests have large areas of active karst while other Forests do not. Some Forests have lava tubes.

- The **cave numbering system** contains **examples** of the forest being addressed.
- A fourth area addresses karst. Some Forests have large karst areas. Other Forests do not. For the Forests without large karst areas a reduced karst management Appendix J has been created to reduce the unnecessary burden.

These forest specific items make the implementation local and less abstract. The remainder of the cave and karst management guides is the same for all of the Forests.

Forest Plan Integration

Updating each National Forest Plan is a long and involved process. If the Forest plan references (linked) to the Forest’s cave and karst management guide, the process of updating the can be achieved with considerably less overhead.

In Arizona in the last two years we have achieved getting these links into the Forest Plans for four National Forests. A fifth Forest is currently updating their Forest Plan and the link is expected.

Areas of Discussion

The Recommendations for National Forest Cave and Karst Management has not yet been approved by a national forest. The costs associated with achieving approval have become more and more restrictive due to budget issues. The budget issues are expected to become more prohibitive.

However, having forest level cave and karst management guidelines provide the tools for forest personnel to substantially

leverage their time through the use of volunteers. The cave guide provides the working structure for individuals and groups to proactively address the caves through Challenge Cost Share agreements and Volunteer contracts.

Conclusions

- Forests with significant caves need Forest level cave and karst management guides.
- There are very few cave resource specialists in the National Forest system.
- Personnel “new-to-caves” are assigned cave management as one of their responsibilities.
- Recommendations for cave and karst management is available at <http://centralarizonagrotto-cavemanagement.webstarts.com/>
- The management guidelines need to be understandable to multiple user and training groups. The guidelines provide tactical direction for day-to-day activities.
- The cave and karst management guides need to be linked in the Forest Plan.

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