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# PARTNERSHIPS IN CAVE MANAGEMENT ON LINCOLN NATIONAL FOREST

## **Jason Walz**

Cave Ecosystem Program  
Lincoln National Forest  
5203 Buena Vista Drive  
Carlsbad, NM 88220  
jawalz@fs.fed.us

## **Abstract**

National forests face many challenges in managing caves. Forming external and internal partnerships are important in managing caves in today's budget climate. This paper discusses the Lincoln National Forest's effort to form partnerships to advance its ability to manage caves.

## **Introduction**

The US Forest Service Southwestern Region consists of eleven national forests in New Mexico and Arizona. Together these units manage over 1000 caves with limited budgets. Facing numerous challenges, many national forests have turned to partnerships to combine efforts and to co-manage cave areas. The Lincoln National Forest (LNF) has followed this trend by developing partnerships with other federal agencies, the National Speleological Society (NSS), and the US Forest Service Technology and Development Program (T&D Program) to complete cave management goals.

## **Interagency Partners**

Across the southwest, national forest lands are bordered by different federal and state agencies along with private lands. The Lincoln National Forest is no different and shares borders with the Bureau of Land Management (BLM) and the National Park Service, as well as others. Significant cave areas cross political boundaries making partnerships with area agencies a natural priority for the LNF. By working together, overall cave management has improved and become more consistent. This combines strengths and financial support from each agency for a better outcome.

Another agency-like LNF partner is the National Cave and Karst Institute (NCKRI). This partnership includes support for environmental education, cave rescue training and organizing and supporting the National Cave and Karst Management Symposium.

In the Carlsbad area, interagency partnerships are easier to arrange, as cave managers from each agency are based in the same community. From co-management documents to local interagency meetings, these partnerships help managers discuss widespread issues and take specific actions.

## **National Speleological Society Partners**

Organized volunteer groups from the National Speleological Society have developed partnerships of various kinds with the Forest Service. These groups have played a vital role in everything from co-writing cave management plans to surveying and inventorying caves. The LNF has expanded this partnership to include restoration, monitoring, cave survey, research, expedition coordination, training and recreational access.

For example, the NSS manages restoration projects on the LNF. Completing cave restoration after vandalism or overuse is a serious issue for many national forests. Damaged caves are usually the easier to access ones, but even the remote caves of the LNF are not immune. Prior to the late 1990's, periods of overuse caused noticeable impacts to several of the Lincoln's most precious caves. In 1999, the High Guads Restoration Project (HGRP) formed as a NSS Conservation Task Force to fix these issues. A strong partnership between the LNF and the HGRP has lasted more than 13 years. The HGRP has led expeditions and donated more than 16,000 hours restoring caves by removing human impacts. The group also completes monitoring, formation repair, trail flagging repair, and summer exit bat counts (Foote, 2012). This past year the group finished several projects including the restoration of two cave areas on the Lincoln. These areas have reopened for recreation because of their work.

Providing for recreational cave access is a big issue that causes many national forests in the southwest to look to the NSS for assistance. The Lincoln National Forest relies

on its partnerships nationally with the NSS and locally with grottos or clubs. The Pecos Valley Grotto in Carlsbad is a key partner in administering its recreation program. Volunteers within this local NSS Grotto facilitate the inclusion of the new visitors to LNF caves. The LNF also depends on the Pecos Valley Grotto and other NSS Grottos within the area to assist the LNF Trip Leader Program. Experienced NSS cavers train other potential leaders in specific cave routes, cave conservation and vertical caving safety. This way, the most current in-cave knowledge is passed directly between the individuals. This increases overall conservation and especially for more sensitive cave areas. The Lincoln National Forest completes the partnership by managing the cave permit access system, providing a Trip Leadership training class, and approving the new leaders.

Completing and collecting data of cave surveys is another monumental task facing the Forest Service. The Lincoln National Forest, like many other national forests, has large areas where cave surveys have not been completed and has many existing cave maps that were made prior to improvements in cave survey standards. The LNF has partnerships with numerous groups within the NSS that use old maps to complete resurvey projects which often lead to great discoveries. Other NSS partners routinely take lost cave locations from the past and combine them with other information they have gathered to search the hills. Many caves on the LNF have been relocated, mapped and reestablished in the cave files through these partnerships.

The most longstanding LNF partnership with the NSS is the Fort Stanton Cave Study Project (FSCSP). Through 40 years of dedicated survey efforts, FSCSP has discovered miles of cave passages for the BLM and LNF in and around the Fort Stanton Cave area (Lindsley, 2013). The BLM maintains a field house for expeditions that forms a base for scientific projects completed for both agencies. The entrance to Fort Stanton Cave is on BLM-managed land. Recent exploration of Fort Stanton Cave has extended the mapped portions of the cave under adjacent areas managed by the LNF. With these new discoveries, the longstanding partnership between the FSCSP and the LNF has progressed to a new era of cooperation.

Each one of these NSS groups is a very important partner to the Lincoln National Forest. Each group works

independently to accomplish their specific tasks through expedition management and internal training. The Lincoln National Forest builds strong bonds with NSS grottos and their leaders to promote a true partnership in cave management.

### ***Partner Within the Forest Service***

A wildlife issue facing every national forest is the management of caves that have bats roosting in them.

In addition to the difficulty that comes from locating and studying these creatures, each national forest is now required to manage for the potential spread of the bat disease, White-nose Syndrome. This requires establishing a more comprehensive picture of bat populations and their locations. Currently, national forests are collecting this population data with techniques ranging from simple ones like visual counts, to more elaborate ones which use electronic dataloggers to record or count ultrasonic bat sounds over an extended period of time.

Using dataloggers to collect data on bat activity has been proven to be very useful, but requires a significant investment in equipment, training and field time. Understanding the different systems that are available can be a daunting task for a cave manager on a tight budget. At the same time, incorporating the newest technology and setting up the right system has the potential to enhance reliability, improve sensitivity in data collection, and minimize costs in material, training, and field time (Farve, 2013).

From this need has come a powerful LNF partnership with the internal Forest Service Technology and Development Program (T&D Program). The partnership, as designed, also includes a bat bioacoustics specialist contractor, NSS volunteers and commercial manufacturers. The T&D Program is a specialized unit of the Forest Service, Washington Office Engineering Staff. The mission of the T&D Program is to assist Forest Service employees and cooperators in doing their work more efficiently, effectively and safely, through the development of advanced technology (USDA, 2013). The T&D Program accepts applications for new projects each year from every national forest in the country. After acceptance the T&D Program manages and co-funds partnerships that bridge a technology gap with an individualized design.

This LNF partnership with the T&D Program has initiated a multi-year and multi-season demonstration

deployment to test the newest bat dataloggers against each other. The results will be compiled into a report that will document the advantages and cost effectiveness of using the different equipment under actual field conditions. This information will provide Forest Service managers with the information needed to choose which datalogger best fits their individual management priorities. In addition, the results will provide researchers and manufacturers with a wealth of new data for understanding bats and thinking ahead to the next generation of devices (Farve, 2013).

The design of the project is comparing the technical aspects of the Anabat Roostlogger<sup>®</sup>, Batlogger II<sup>®</sup>, Pettersson D500x<sup>®</sup>, and the Wildlife Acoustics SM2BAT+<sup>®</sup> across their respective operational abilities. Qualities like battery life, humidity resistance, and ease of use are of particular interest, along with bat species inclusiveness, bat call sensitivity and data accuracy. At the date of print, the project had successfully completed the first half its two-year schedule. As a leader in cave management, the LNF hopes that this partnership will serve as an example of the Forest Service's ability to innovate in the field of cave science.

### **Conclusions**

Managing caves with limited personnel and finances is a task facing many national forests. Developing partnerships to combine efforts and to co-manage significant cave areas is an alternative chosen by many managers. The Lincoln National Forest is actively working with partners from other agencies, the National Speleological Society and the Forest Service Technology and Develop Program to enrich its ability to manage caves.

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### **Biography**

Jason Walz is currently the Cave Specialist for Lincoln National Forest and lives in Carlsbad, NM. For 10 years prior to his current position, he worked as a Cave Technician for the National Park Service in South Dakota and New Mexico.