Cave Survey Integrates Natural, Cultural Resources With Readiness

By Dana Finney

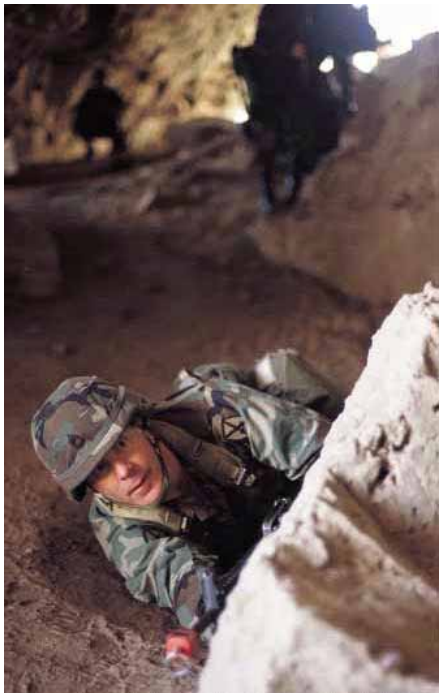
Soldiers may soon be able to train in and around caves at Fort Leonard Wood, Mo., thanks to proactive efforts by the DPW Natural Resource Branch. Scientists have completed an exhaustive survey of cultural and biological resources in 13 of the fort's 63 known caves. The resulting detailed maps and baseline data will allow managers to inventory and protect these resources while Soldiers gain a realistic training experience.

"From the Vietnam War until Afghanistan the strategy with caves was to just seal them up with explosives and bury the enemy inside where they were hiding," said Dr. Richard Edging, Fort Wood's Cultural Resource Manager. "Starting with Afghanistan, the recovery of assets —both human and recorded data — has become essential. The goal now is to know who's in the cave and to confiscate materials like hard drives that support intelligence gathering."

Caves have been off-limits for training at the fort due of troop safety and the potential to damage archeological sites and biological species, including the endangered Indiana and gray bats and the State-listed grotto salamander. Numerous Federal laws mandate protection of these resources, such as the Native Americans Graves and Repatriation Act (NAGPRA), Federal Cave Resources Protection Act, and National Historic Preservation Act.

According to Dr. Michael Hargrave, "Caves may contain significant cultural deposits and important biological communities. The environments are very fragile. These caves couldn't be used for training without a baseline inventory so we can monitor for any impacts." Hargrave is an archeologist at the Engineer Research and Development Center, Construction Engineering Research Laboratory (CERL), who was project manager for the cave study.

The research team identified 3 to 9 caves that could support training activities. Joe Proffitt, Natural Resource Specialist at Fort Leonard Wood, has been working with military training units and Engineer unit leaders to develop cave friendly "programs of instruction" (POIs) for each activity.



Training in and around caves will give Soldiers a valuable, realistic experience.

"A POI is basically a lesson plan for the military training activity. The trainers put in all the detailed military activities and instructions planning they need from their side of the house. Then I suggest training protocol guidelines that reflect the safety, biological and cultural resource concerns – essentially a list of the do's and don't's for using the caves," he said. "For example, they won't be doing any small arms blank-fire training, grenade simulator, or stun grenade activity inside the cave because sound vibrations could create unstable geological conditions, such as rock falls or collapse, and would present a safety hazard."

The protocol categories will cover Safety and Training (geological stability), Biology (cave life), and Cultural Resources (artifacts and NAGPRA issues). The protocols limit certain types of uses in sensitive areas," but the concept is to use caves as close as possible to field conditions for military training scenarios. In this way, troops will get a real feel of what they may be up against in the future," Proffitt said.

Units will train using three scenarios:

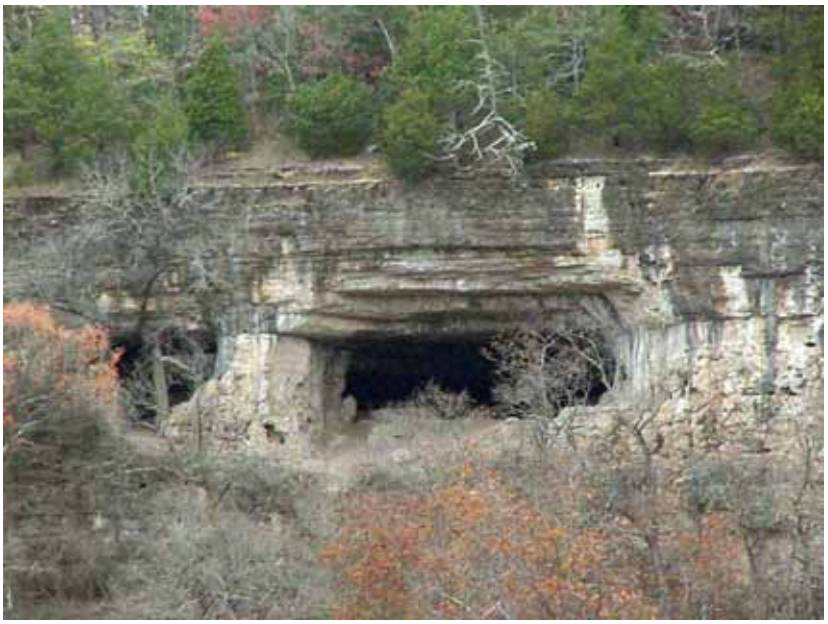
- ❑ Determining the best avenues of approach to the cave entrance(s)
- ❑ Securing the face (regular units chase the enemy into the cave) then hold the area and call in the advanced engineers and/or robotics
- ❑ Cave penetration - group entry into caves by specialized units such as advanced Engineer Units, Sappers and robotic specialists.

Cave training will be coordinated with Directorate of Plans, Training, and Mobilization scheduling and a notification process between Range Control and the DPW Natural Resource Office will be in place to ensure that all participants know about the cave training activity. Military units wishing to train in caves must have approved POIs and a safety risk assessment on record at both the Natural Resource and Range Control offices.

Natural Resource Office personnel will do routine monitoring after training events to ensure impacts on caves are limited. If each cave training scenario has 2 or 3 caves eligible for that specific activity, then caves can be rested as potential impacts become apparent. In this way, if a training cave needs to be mitigated or cycled out of use for some period, military trainers have an alternative cave training site.

Fort Leonard Wood's cave survey is one of the most comprehensive within the Department of Defense (DoD), both in its scope and for combining cultural and natural resources. Funded under the DoD Legacy program, it involved expert archeologists and ecologists from the Illinois State Museum Society, Illinois Natural History Survey, and University of Arkansas in addition to the Fort Wood and CERL personnel. The maps, digital photographs, and data will enable a quick assessment of the cave's condition after long-term use for training.

The information will also make illegal looting of cultural resources obvious since previous damage is clearly documented. Although it's a Federal crime to remove cultural artifacts, the potential is always there because of the high black market value of these items. Edging and Proffitt have taken measures to protect some of the more sensitive sites, such as installing gates to block entrance.



Caves are culturally significant for having hosted various tribal activities in the past as evidenced by Native American artifacts.

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