

**Peppersauce Graffiti Removal Proposal
2017 – 2018**

Peppersauce Cave Conservation Project (PCCP)
Central Arizona Grotto (CAG) of the National Speleological Society (NSS)
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Summary: Peppersauce Cave is located on the north side of Mt Lemon in the Santa Catalina RD. The cave has approximately 7300 feet of passage and is the most visited wild cave in Arizona with an estimated 15,000 visitors per year. Visitors provide their own lights. There is no on-site management. Peppersauce is heavily graffiti'd. This is a proposal to Coronado NF is for approximately \$76,722 of **volunteer value** over a ten month period, calculated at \$15/hour and \$.54/mile.

This proposal has five goals:

- Clean/remove all graffiti in Peppersauce Cave. The primary graffiti removal tool will be sand blasting. Conservation and safety measures will be taken for the volunteers. Spent blast media will be removed from the cave
- Restore the kiosk sign on the trail to the cave
- Replace reflective IN/OUT arrows in the ceiling to reduce graffiti arrow tags
- Make no cost demands to Coronado NF
- Establish surveillance equipment to get photos of taggers, and vehicle license plates used by these taggers.

Proposed time frame: September 2017 through summer 2018

Brief History: Two significant graffiti removal efforts were taken; December 2001 through June 2002 (eight trips), and February 2010 through June 2010 (three trips). These were coordinated by the Central Arizona Grotto (CAG) and the Peppersauce Cave Conservation Project (PCCP). The first effort cleaned all graffiti from the Entrance through the Big Room/Lake Room passages and some passages beyond the Rabbit Hole. After the first cleaning effort, the cave remained relatively free of new graffiti until the summer of 2009. Then graffiti started coming back and graffiti begets more graffiti.

In 2010 the equipment was again used and graffiti removed through the Big Room/Lake Room passages. Though there were hundreds of tags, the graffiti was not as bad as the first effort with decades of tags. In 2014, an inventory was made of tags in the front part of cave. Approximately 350 tags were mapped.

Necessary permits were received from the Santa Catalina RD on both occasions.

The equipment has been used in three Arizona caves (Coronado NF, White Mountain Apache Tribe, Coconino NF), and caves in five other states for the NSS, BLM, and a city municipality.

Figures 1 and 2 show the extent of the Peppersauce Cave graffiti removal by 2003, and the 2010 cleaning. The 2010 August trip was cancelled due to a monsoon rain that sumped access through the Rabbit Hole to the back of the cave. Immediately after, the equipment was scheduled at another cave.

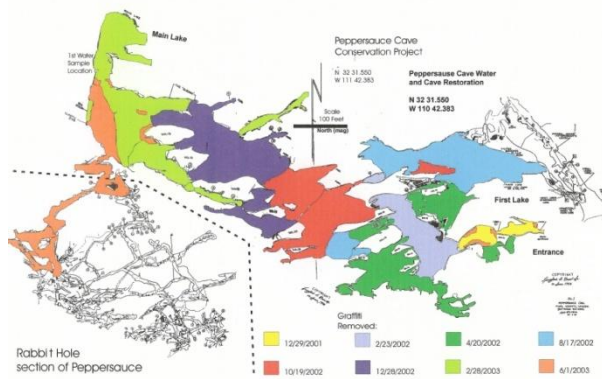


Figure 1. Dec. 2001 through June 2003
2010

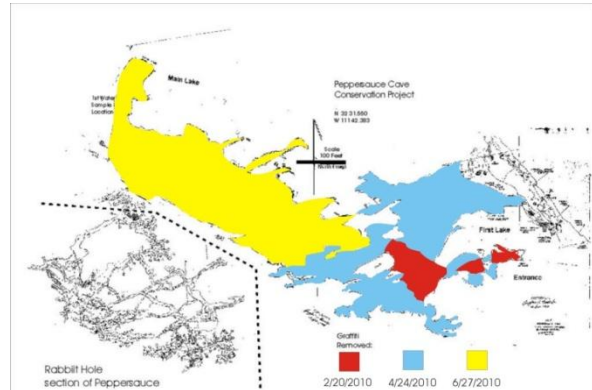


Figure 2. Feb. 2010 through June 2010

All necessary permits were received from the Santa Catalina RD on both occasions.

Equipment and Methods: PCCP owns a trailer mounted compressor with over 1000 feet of ¾ inch high pressure hose. The hose is placed from the road into the cave at the work sites. The cave side large hose goes to a regulator with the compressed air being divided up to three work teams (3/8 inch diameter hoses). Each three to four person sand blast team addresses tags in their work areas. Blue tarps are used to restrict media spread and collect spent media which is removed from the cave. The blast media is small glass beads. Personnel are rotated in with additional equipment. Communication between the cave and the surface is through military field telephones. Safety equipment is provided for the volunteers (see attachment). A safety briefing is required at the start of each work day. Volunteer logs are kept. Lighting is via a generator on the surface using extension cords through the cave to each work site.

The cave has not been closed during prior graffiti removal trips. These trips become an excellent visitor education experience. We have also found that cave visitors want to help. We use this by having them transport equipment both in and out of the cave (which is great when we are tired).

Personnel: Volunteers will be coordinated by CAG using cavers from NSS grottos and others.

Proposed Schedule: A project need is access to the **group campsite at the Peppersauce Camp Ground on work weekends**. The preferred the graffiti removal is:

- 9/22-24, 2017 (1st choice) or 9/29-10-1, 2017 (2nd choice). Fall AZ region meeting
- 11/17-11/19, 2017
- 2/9-11, 2018 (1st choice) or 2/16-18, 2018 (2nd choice)
- April, 2018
- June, 2018
- August, 2018 (if needed)

Each weekend includes:

- Friday afternoon equipment set up. 2-4 people, more if possible. Equipment check.
- Saturday: Safety briefing/assignments start at 8 am. Stop work at 5 pm. 20-25 volunteers.
- Sunday: Safety briefing/assignments start at 8 am. Stop work at noon. Equipment is pulled and packed. 20-25 volunteers.

This is enough to run 3, three person sandblasting teams, provide equipment, and, and rotate in replacements.

Funding: Private and group funding, small grants. No Coronado NF funding required.

Kiosk Restoration: The two panel kiosk in the wash along the trail to the cave needs repair. The Plexiglas covers protecting the signage and possibly the signs need replacing. PCCP has the necessary artwork and dimensions. Kiosk repair can go on simultaneously with graffiti removal.

Reflective OUT Arrows in passage ceilings: When these were in place, few new graffiti arrows were made. Once removed, graffiti increased more rapidly.

Surveillance: In cave trail cameras can catch visitors tagging. Outside trail cameras can determine which tagger gets into which car. A trail camera can log the license plate. All trail cameras will have date/time stamps. Memory cards/batteries will be replaced monthly. Volunteers will check the camera logs and assemble reports on malicious activities. Cost estimates have been calculated but are not included in this proposal. A meeting with Coronado NF law enforcement (telecom) is necessary to confirm scope and compliance. Coronado NF law enforcement will receive reports on the project as needed. I.e. when tagging with photo documentation can provide actionable results.

The PCCP equipment is designed to allow three sandblasting teams to remove graffiti in caves, simultaneously and efficiently.

Equipment Details: a trailer with a perpetual Arizona license contains all the gear, which includes:

Compressor: weighing 475 pounds, this largest and heaviest component, the compressor is bolted to the trailer, but can be removed and relocated if needed. Dimensions: 30 inches wide x 4 feet long x 4 feet high.

High Pressure Hoses: More than 1000 feet of large (3/4 inch) and 550 feet of smaller (3/8 inch) hose in 50-foot sections.

Gas-powered generator & lights: for running electric power for lights and other tools inside the cave. Included is 1900 feet of 12-gauge extension cord and lights. 2-20 Amp 110V socket capability. Recommended generator placement from cave entrance is +100 feet.

Misc. equipment: three tubs, each containing goggles, dust masks, gloves, and other misc. items, including one power drill (capable of being equipped with a wire brush attachment) per team. Phone line is also included.

Compressor pressure: 175 PSI; an in-line regulator drops pressure down to 90 PSI per team/hose.

Blast medium: glass beads.