

# Using Sandblasting to Removal Graffiti in Bloomington Cave, Utah

Jon Jasper & Kyle Voyles

## Executive Summary

Between January and April 2005, 48 volunteers worked 7 weekends sandblasting off the graffiti in Bloomington Cave outside of St. George, Utah. This monstrous effort was able to remove graffiti from the main visitation areas and has greatly increased attention and appreciation of the cave. Due to show of effort, the St. George BLM is writing a cave management plan which is considering an information kiosk, improved parking, bathroom facilities, and possible gating. The project began as a huge restoration effort and is quickly becoming a catalyst for the long-term management of the cave.

## Description of Bloomington Cave

Bloomington Cave is an awesome maze of passages formed along a 60-degree dipping fault. It is presently mapped to 1.3 miles in length – the fifth longest cave in Utah! Being a short drive from the city of St. George in southern Utah, the cave is quickly growing in popularity.

## Problems Arise

In the 1950s in response to the unmanaged increase in visitation, the local *Dixie Grotto* blasted the entrances shut to protect to the cave and its visitors; twice. The entrances were dug open and the visitation continued to rise. Today, the cave's visitation is 644 visitors/year - that's 1.8 visitors/day! However, the visitation is not the only problem.

Most of the visitors to Bloomington Cave are vastly unprepared. Most are only equipped with one, possibly head mounted, light - no backups, no helmets, improper clothing, gym shoes, and no previous caving experience. To keep from getting lost in the labyrinth of passageways, visitor's routes have been marked with graffiti and miles of string. Over the years, the lack of any management and visitor education has greatly deteriorated the cave.

The cave's Big Room has a high-angle drop of about 150 ft. Many tales have been told of folks sliding out of control onto its bottom. In the summer of 2002, a Boy Scout was rescued after taking this fall and breaking his leg. Later the same year, on Christmas Eve, a 17-year old girl accidentally backed off the ledge called the *Boardwalk* where the cave's register is found. She rolled through a small opening and down through the Big Room to the bottom of the cave. She became the cave's first fatality.



Brandon Kowallis picks up garage in a room full of graffiti.

# Fatal fall appears to have been an accident, police say

By JANE ZHANG

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ST. GEORGE — The fall of a 17-year-old girl into the Bloomington Cave on Tuesday afternoon appears to have been an accident, investigators said Thursday.

Kiley Jaquays of Plainfield, Ill., was pronounced dead at the scene. The Washington County Sheriff's Office is still waiting for the autopsy result, but for now it was ruled as accidental, Sheriff Kirk Smith said.

Jaquays was standing at a corner on the cave's edge when the incident happened between 12:05 p.m. and 12:10 p.m. on Christmas Eve, he said. She was hiking with a group of 15 students and five counselors from the Integrity House, a Cedar

City treatment center for teen-agers with emotional, behavioral or substance-abuse problems. Officials Thursday still refused to answer repeated inquiries from The Spectrum.

Jaquays suffered massive trauma, Smith said. Her heart was in full arrest when the EMTs performed cardiopulmonary resuscitation.

The Bloomington Cave, located on the Utah Hill toward the Apex Mine, is a large rock fracture with a cliff standing in the bottom, said St. George Fire Chief Robert Stoker, who has hiked in the cave. Washington County Search and Rescue and a detective from the Washington County Sheriff's Office were still investigating the scene.

News clipping of Bloomington fatality

This fatality marked a need for change – a need to improve public education of proper cave safety and a need to restore the esthetic and recreational value of Bloomington Cave. The removal of the graffiti throughout the main part of the cave was just the first step.

## Sandblasting 101

To remove any significant amount of graffiti in Bloomington Cave is a massive undertaking. Kyle Voyles reserved the use of Ray Keeler's sandblasting equipment as the primary method to remove the graffiti. For 7 weekends, volunteers converged on Bloomington Cave to sandblast off the many tags from the walls and ceilings.

Setting up of the sandblasting equipment in itself is an amazing feat. High-pressure hose and electric cords need to be run from the air compressor and generator on the surface to be split to the 3 sandblasting guns removing graffiti in the cave.

Safety is a high concern for all of the volunteers. Diving goggles and respirators are worn to protect the workers from the sandblasting media that blasted everywhere as the graffiti is being removed.

Many drops had to be worked around for the thorough removal of the graffiti. Safety lines were rigged to prevent injuries from falls. The sandblasting equipment and 5-gal buckets of media beads were rappelled to the bottom reaches of the cave.



Doug Powell with full safety equipment



Kyle Voyles setting up to sandblast graffiti

Keeping the project going took great effort combating weather, recruiting of volunteers, maintaining equipment, and cost of acquiring sandblasting media.

The project started just after a large flood hit St. George. The flood was large enough that FEMA arrived to help. Several bridges were washed out. The route we successfully used took us 4 hours of digging to finally reach the cave.

A large number of volunteers were needed to keep such a large project moving forward. Oddly, the majority of the volunteers traveled more than 4 hours to reach Bloomington Cave. Matched with the great amount of snow and rain, some weekends were extremely lean with only 3 to 4 people showing.

The project came with many costs. Amazingly, cavers contributed approximate 90% of the project's total cost. The equipment, such as the air compressor, generator, miles of hose and electrical cords, lights, and repairs, were estimated donation of \$65,000! The volunteers donated over 1,000 hours or an estimated value of \$18,000! In the end, the total project costs were estimated at \$85,000!

The main consumed expense was the sandblasting media. Even being able to recover and re-use about half of the media, 40 buckets were needed at \$55 per bucket – that's over \$2,000 in sandblasting media alone! This cost was covered by the funding received by the St. George BLM Office, Kolob Care and Rehab, Color Country Grotto, and Outdoor Outlet.

With all things said, the sandblasting was extremely affective in removing the graffiti.



Before and after photo of graffiti being removed.

### **What's next?**

What's next? The 7 weekends were only able to remove the graffiti from the main trail from South Entrance to the bottom of the Big Room. Much graffiti still exists the northern part of the cave, so future efforts are being considered.

Currently, a Management Plan is being written to outline the future management actions for the cave. Routes through the cave are planned to increase the cave's appreciation while minimizing the need for marking the cave with miles of string and graffiti. These routes are to be marked with different colored, numbered reflectors. A kiosk is being designed to include a detailed cave map showing marked routes and information on proper caving and conservation techniques to educate visitors. A gate is being considered to get rid of the undesired "party" visitation. The plan may also include delineated parking, installing restrooms, and improvements to the cave trails.

This project is a great example of how volunteer restoration projects can create needed management change.

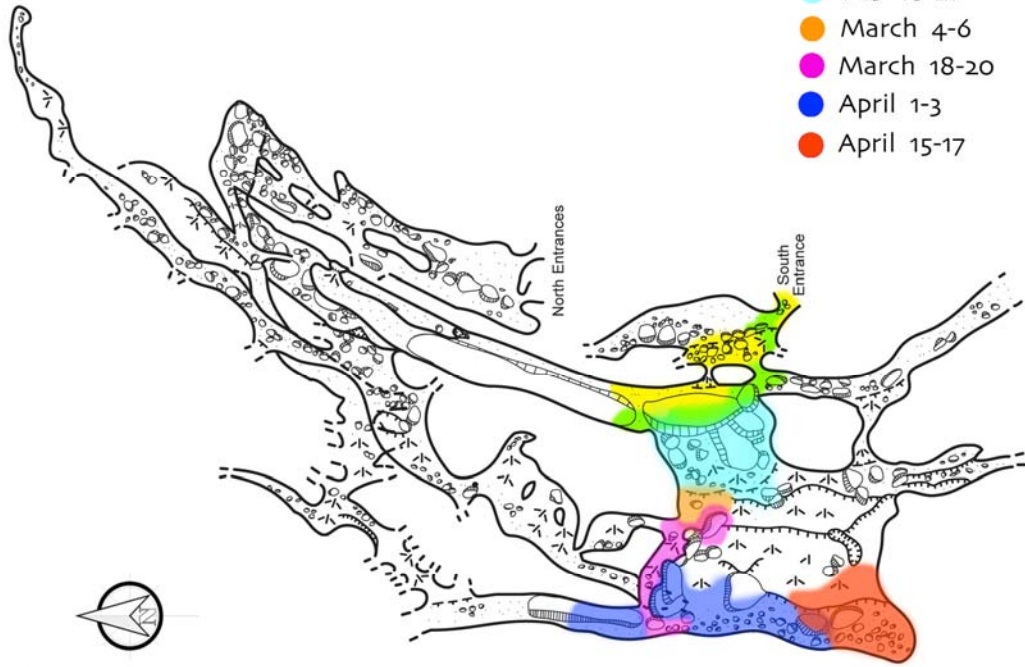


# Graffiti Removal

Bloomington Cave, UT

## Project weekends

- Jan 14-16
- Feb 4-6
- Feb 18-21
- March 4-6
- March 18-20
- April 1-3
- April 15-17



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Map showing the project's progress