



United States Department of the Interior FISH AND WILDLIFE SERVICE

Eastern Idaho Field Office
4425 Burley Dr., Suite A
Chubbuck, Idaho 83202
Telephone (208) 237-6975
<http://IdahoES.fws.gov>

September 10, 2012



TO: Doug Owen, Park Geologist, National Park Service

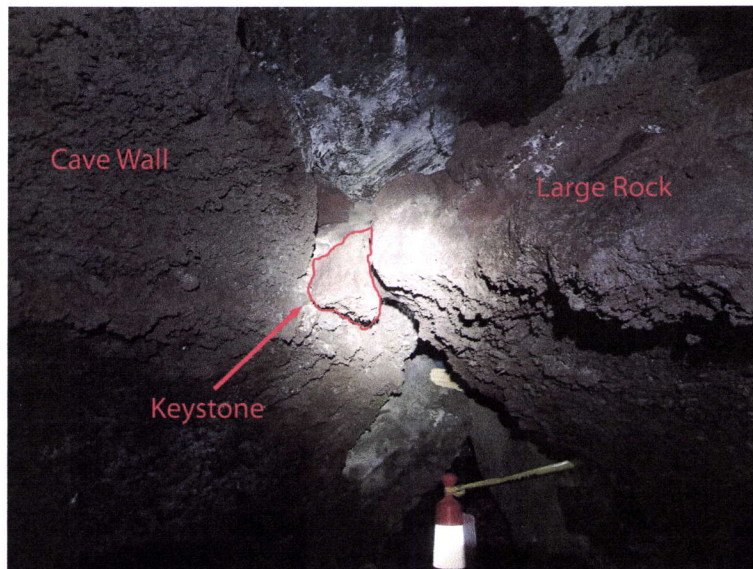
FROM: David Kampwerth, Field Supervisor, US Fish and Wildlife Service

SUBJECT: Cave Safety Evaluation and Trash Removal

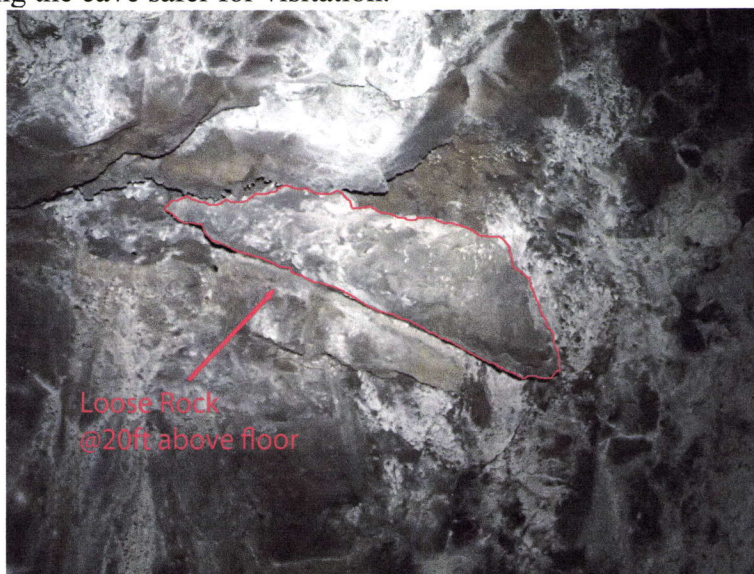
On August 19, 2012, a team of experienced cavers guided by Doug Owen the Park Geologist conducted an evaluation of rock stability with regards to visitor safety. This report compliments a similar report written by Doug Owen regarding this trip. The Team consisted of Brian Gindling, a member of the Alpine Karst Foundation, Thomas Haskett and Aaron Christensen of the National Speleological Society Bear River Grotto, and David Kampwerth of the Bear River Grotto and the National Interagency Cave/Karst Coordinator with the US Fish and Wildlife Service. This team brings extensive cave experience with specific skills in vertical cave entry, cave survey, cave safety, cave biology, and hydrogeology. We appreciate the Parks confidence in this team, and authorizing us access to the Parks subterranean treasures. We look forward to a partnership, aiding you in future cave/karst endeavors.

Tasks were to assess open visitation caves to determine potential safety issues due to loose rock, and to access two spatter cones to remove trash. We began by entering the open visitor caves, concluding with trash removal and minor exploration of the spatter cones.

Dew Drop cave was our first cave evaluation and consisted of a large rock observationally keyed to the wall by a small rock. If someone were to climb underneath and dislodge the rock, there is potential for significant injury or death. It's the team opinion that the smaller key stone could be removed with a large pry bar, or potentially by drilling a small hole and conducted a limited charge to dislodge the key stone. We can describe the charge concept in greater detail if requested, but feel the first attempt should be made with the team in a safe zone and by dislodging the keystone manually with a long pry bar.



In Indian tunnel we found two perched rocks with potential to fall causing injury or death. The first is high on a ledge, observationally held also by a key stone. It's thought that a section of webbing could be secured around the rock by climbing up using an extendable ladder, and attaching a pulley cable system to an anchor outside the fall zone. It's felt this could be done with safety of the team ensured. The second rock is perched just over the edge of a sky light and a person could rappel over the edge and then physically dislodge it. Anchors points for a rope were discussed and a temporary anchor may need to be installed. While exiting, we located several areas where loose rock was removed making the cave safer for visitation.



Boy Scout cave had an area already posted with rope/posts and signage. The rope/post system needs to be anchored more effectively to ensure visitation to this area is reduced. It's currently easy to climb around. Another area to the right of the current flagged area was deemed hazardous and appeared unsafe for this team to remove loose rock while on

scene, so with Mr. Owen's permission we flagged that area. Flagging is only temporary, and this area should be closed with rope/post, or potentially backfilled with rock to restrict access. If bats or other biological resources are absent, the team's opinion was to backfill this passage with adjacent rock. Rock was removed at the north entrance, further demonstrating the unstable nature of this opening. Consideration for stabilization include building a mine portal collar (visual impairment), filling with loose rock (reduces bat flight and modifies air flow), building a cupola (specific bat gate design), or grout/mortar/epoxy rocks together (least effective). The preferred solution is to fill with rock if biological resources aren't impacted.

Beauty cave appears internally stable from a rock fall standpoint. It was understood that injuries have occurred at the entrance due to loose unstable rock. A hand rail was discussed, but would visually impact the aesthetics of the cave entrance. An alternative is to build stairs using native rock. It appeared with limited excavation and rock movement that basic steps could be built.

Brian and Aaron entered the Curving Trail Spatter Cone to remove trash and conduct a quick evaluation. Trash was removed and a lower internal pit was discovered. If this portion of the Spatter cone cave hasn't been mapped, it's recommended that that work be completed for resource management purposes.



These same individuals, along with Thomas entered Snow Cone to remove trash and conduct a quick evaluation. They removed about 2/3 of a garbage bag of trash, and while on rope rappelled down to a frozen lake with 4-10 inches of water on top. No further access was available during this entry to the lower portion of the cave. One bat was photographed, visually suggestive of a Small Footed Myotis (*Myotis ciliolabrum*). A noticeable white spot on the ear and forearm appear in this picture.



At Buffalo Caves we removed some loose rock for safety reasons, and determined that the internal and external pole/rope signage/barricade system needed to be more effectively established.

We again want to thank Craters of the Moon for providing us access to the cave resources you manage and providing us with Doug Owen as the guide for the day. His knowledge and experience was invaluable to our team both geologically and educationally. If in the future it's determined that the stabilization work should occur, we appreciate the opportunity to assist. Most safety remedies could likely be implemented this fall. Any future cave work that you require assistance on, please consider us a resource that is willing and professionally capable of completing.