Section B—Organizing Cave Projects

Bucket Brigade at Caverns of Sonora

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Opening a cave to the public often requires the enlargement of passages, which generates literally tons of rubble that sometimes get left in the cave. Caverns of Sonora, located near Sonora, Texas, is full of delicate, spectacular speleothems and has earned the reputation of being the world's most beautiful show cave.

Though the rubble left during development wasn't particularly noticeable, the owners wanted to return the cave to as natural a state as possible. Fourteen restoration projects between 1990 and 2005 have removed over 200 tons of rubble from the cave. Each annual project required 70 volunteers as described in the following excerpt from a project report (Veni, 1998).

Buckets from Pit to Entrance

Shuttling the buckets from the pit to the entrance was done along a rotating chain of cavers. Twenty cavers dug in the pit, with one shift often working from morning until lunch, and a different ten working from after lunch until supper. The ten cavers produced enough rocks to keep everyone else busy moving the buckets of rubble out of the cave. The start of the haul line began with the "mules" pulling the buckets up the pit. Someone else off-loaded the buckets, and passed them to another caver who carried them down to a set of truck dollies where they were rolled off to the first set of stairs. Three cavers passed the buckets up the stairs and into the arms of 14 cavers lined through a narrow section of passage to where another set of dollies awaited. After another roll through a couple of passages, the buckets were then passed up three flights of stairs, two landings, and out of the entrance where they were emptied into a flatbed truck trailer.

On the following page are photos of a typical restoration project at Caverns of Sonora in 2002.

Cited Reference

Figures 1-5. Removing construction rubble from Caverns of Sonora in Texas. The annual restoration event uses a rotating chain of 70 cavers. Photos show some of the steps in the process. Haul line pulling buckets up the pit (top left). Truck dollies rolling buckets to the stairs (top right). Chain of cavers passing buckets up the stairs (middle left). Passing buckets up a pit (bottom left). Passing buckets along one of several corridors (bottom right).