TAILENDER CAVE: MANAGEMENT by CAVERS

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ABSTRACT: Tailender Cave has suffered considerable visitor damage since its discovery. Karstcare undertook to clean up much of this damage and install some infrastructure to mitigate further visitor damage. This was a long-term project over 10 years.

Tailender Cave (MC64) is in the Mersey Valley, near Mole Creek, Tasmania. It is on Forestry Department controlled land under a joint management plan between Parks & Wildlife Service and Forestry Tasmania. The cave is so called because it is on the very edge of the limestone bed in the Mersey Valley: the "tail end" of it.

The cave was discovered in the late 1960s with some dispute over who actually found it, and how much of it was explored. Tailender has, ineffect, two distinct sections; about 600m of old stream way/collapse through to a sump, and above this, another totally different section after an eight metre climb, which after passing through a large chamber of breakdown rockfall becomes truly beautiful, with a spectacular variety of speleothems.

Karstcare, an environmental group of cavers looking after caves, was formed in early 2001 under the Wildcare banner: volunteers assisting the Parks & Wildlife Service in reserves. Our focus has been mainly the caves and karst areas of Mole Creek Karst National Park although considerable work has been conducted in other karst areas.

Tailender became our first formal project with a site visit together with karst officer Rolan Eberhard on April 29 2001. Most of the cave was visited with various sections examined with regard to cleaning, and determining what areas needed to be track marked and string- lined off.

Stringline and message

Local cavers considered that the difficult eight metre climb would dissuade most casual visitors and so the more decorated section would be considerably protected. Regretfully this was not the case, particularly after the gating of a more popular cave downstream (Lynds Cave) seemed to result in a renewed interest in Tailender Cave.

In 2001 on my first visit to Tailender after many years I was shocked by the damage that had occurred, particularly muddying of speleothems. It appeared that many members of the "non-caver" community have been visiting this cave; people had been pushing through highly decorated areas with dirty clothes and leaving muddy residues, plus considerable mud tracking had occurred on the floor in previously clean areas. We felt that much of this damage would unlikely to be from "legitimate cavers" as clearly there were alternate routes and options to avoid such damage. Discussion ensued as to the possibility of gating to gain some control and this occurred in about 2003, with access at the discretion of the local PWS office.

We determined that although much of the mud in this cave occurs naturally, only certain sections could be targeted for cleaning, with installation of some boot washing stations to protect these areas once cleaned.

Our next visit a few months later involved one group doing a line survey to determine the development of the cave compared to two others in the same valley. This proved to be virtually identical (NNE from memory) to both Lynds Cave and Croesus Cave. Some of the group not surveying commenced cleaning some of the worst muddied speleothems: the "Sharks Teeth" plus one other area. These cleaned up quite well, however it was noted that orange clay seems to have penetrated well into microgours and some calcification had occurred over the top.

Photos were taken of pre and post cleaning efforts. We marked off three delicate areas to hopefully limit how far visitors penetrate, whilst still giving a view of what we were attempting to protect. We also placed two advisory signs- one on a lead that was a dead-end but needs removal of boots if visiting, and another towards the back of the main lead suggesting that continued traffic was causing massive erosion on the mud banks beyond, hoping to dissuade future visitation.We also replaced the tape at the top of the eight metre pitch and left an improved ascent system (cordelette) in order to greatly increase the safety of this climb.
At this stage we felt that we had certainly left the cave in a better condition for our visit, however considerable expense would be involved in providing boot washing stations and matting.It was a few years later when funds became available to enable us to achieve more.

In 2008 a group of volunteers transported five metres of plastic matting, one backpack sprayer, and one boot washing bin in to the upper section. We encountered one nasty restriction getting the washing bin through. A lesson was learned regarding determining the dimensions of any infrastructure vs. the restrictions of access!

Much of the access to the working area involves about 400m of crawling; this was difficult with heavy rolls of matting, backpack sprayers and a boot wash bin. I found most volunteers fairly exhausted by the time they got to the place they were required to commence work.

Paul Darby at a wash station

Our cordelette system to climb the pitch was always viewed as temporary; on this trip we installed two P-hangers with a fixed rope, appropriately labelled. This made the access much safer and quicker. The P-Hangers were tested a few hours later and passed the appropriate stress test. All tape and maillons were removed and we installed a new boot wash station at the beginning of a beautiful pool area, to reduce future mud tracking. We also string-lined a route to limit further traffic in this area.

The traditional approach to cleaning is to use 20 litre backpack sprayers, however this would have involved considerable climbing, and the possibility of some damage to the cave. It was decided that trowels, a water pump and plastic piping would allow much easier cleaning in the future.

The matting was cut into 300mm wide sections and placed over the cleaned flow stone. We had discovered that aluminium pegs corrode considerably in the cave environment, so all pegs were replaced with stainless steel, and signage also replaced with a better-laminated type. A number of string-lines were placed to limit cavers to a main track.

On our next working bee we carted in 15m of matting, cut in 300mm wide strips, plus a boot washing station, 40m of plastic piping, a pump and fittings. We set up the pump and 20m of piping and commenced at a high level of the route, working back to the lower areas. We formed teams of two to clean various sections: one sprays while the other scrubs.

It was found that a 12v pump and 12mm black piping terminating with a fire fighting sprayer worked extremely well, with water on site and able to be pumped with force to lift and wash away the mud.

After cleaning off a section of the track, tube matting was laid to keep muddy boots above the cleaned flowstone. A new boot washing station was located at the end of the higher muddy section, for boot & glove cleaning for returning groups, and a further new boot wash station at the top of the rock fall.

Matting was placed over sensitive areas

At one stage we had commenced cleaning on a considerable slope and it was decided that a better type of matting would be required to reduce the slipperiness of this area, whilst keep boots high above the (not cleanable) mud underneath.

On our next visit to Tailender Cave we had quite heavy packs - each with a roll of matting. We were trying a new type of matting - thinner & black, which seems to slip less on a slope. Unfortunately it also shows up the slightest bit of mud, but should still be effective in preventing mud tracking.

After further cleaning, matting was placed in all the appropriate areas to keep boots above the mud. More matting was also placed around the two upper two boot wash stations and across the floor of the pool area. Fortunately where the matting was on a slope we managed to locate some natural tie points, negating the possibility of requiring “dynabolts”.

Our final working bee in May 2010 we found the crawl was considerably easier without the huge load of gear that we had to transport into the cave in the past. This time we carted in a fourth boot wash bin, signage for each bin and pumps and batteries. This trip completed cleaning all areas planned and we photo-documented the project and some of the more beautiful parts of the cave. Laminated signage was installed to explain the intended use of each boot wash station, encouraging cavers to keep these stations filled.

We noted that the far boot wash station, being the first encountered returning from the muddy sections of the cave already contained a considerable amount of mud

since installed. This station will require regular 'servicing' to remove accumulated mud.

All previously installed signage was checked; only one showing slight moisture damage. All matting seemed secure, and although showing some mud on the surface, appears to be adequate to ensure mud is not picked up from underneath. The cleaned track seems to be remaining as such, with non cleaned areas to the sides sometimes in stark contrast.

We also took particular note of the condition of our boots after returning through the rock fall: the matting and cleaned track had dramatically reduced the accumulation of mud, even after the muddier sections of the rock fall. After determining that all sections of the upper part of the cave that could be practically cleaned had indeed been done, we removed all polypipe and cleaning equipment.

There were a number of lessons learnt from this project.

1. Natural rock is usually easier to clean than flowstone
2. Broad, long-term planning is required: it's disheartening to see more needing to be done at each visit.
3. A 12v pump and 12mm polypipe is an excellent method of transporting water: minimal impact on the cave and less physical effort for cavers.
4. With polypipe joined to a fire-fighting sprayer, good pressure can achieve lots of cleaning.
5. Each 10Ahr battery lasted about one hour of pumping; this could be extended with a caver switching the pump on/off as needed.
6. Choice of matting is important: it's expensive, heavy and can be slippery. We cut all matting into 300mm strips: just wide enough to walk.
7. Location of boot washing stations is critical for long-term management. These require periodic servicing and may need refilling with water by casual visitors.
8. All signage needs to cater for groups going in/out respectively; advising on when to clean boots and carry water to recharge the washing station.
9. Long-term solutions like P-hangers & replaceable rope optimise safety on a regularly climbed pitch.
10. Volunteers need a variety of jobs/cave to work in: my greatest fear was that they'd be burnt out by Tailender before completion of the job.
11. I noted quite an unexpected lack of recharging of the main water pool in the cave over some years: I feel our own impact this pool to be negligible, however even after some winters minimal recharging had occurred. Of late this pool is the lowest I've seen, perhaps a result of climatic change? (We've just experienced an extremely wet summer, which is unusual: the results on this pool may be interesting to see now).

CONCLUSION

A total of 237.5 manhours work has been contributed to this cave. (Not including travelling and administration). The cleaning has left the cave in a much better condition than pre-2001, with infrastructure in place to limit further mud-tracking well into the future. Periodic maintenance of the boot washing stations will be required and perhaps some re-cleaning over ensuring years.

Advisory signage cannot stop visitors from progressing, however most cavers would accept the reasons stated on this signage and limit further impact. Installation of infrastructure such as boot wash stations and matting should ensure that future visitors understand that someone cares greatly about this cave, hopefully that will impact on their own attitudes as well.

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