

Cleaning Caves, Taking Control and a Catalyst for Change

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Abstract

The show-caves of the Margaret River Region, Mammoth, Lake, Jewel and Ngilgi have long been major draw cards for visitors to the region and over time have become one of the essential 'must do' activities, and their popularity continues to increase in line with increasing visitation.

In operation for over 100 years they are some of the state's oldest tourist attractions and represent some of the best-preserved examples of caves formed in the dune limestone of the Leeuwin-Naturaliste Ridge. However this long history of tourism and increases in visitation has had a significant environmental impact on these sites, of greatest concern has been the continual accumulation of dust, lint, fluff and other airborne contaminants.

In early 2015 a critical position had been reached, accumulated lint and dust was observed beneath the boardwalks inside the Mammoth Cave ranging from a few mm's to several cm's in depth, equally, large amounts of dust, lint and fluff could also be detected on either side of decks and boardwalks several metres beyond.

This accumulation of material could clearly be seen to have dulled the brilliance and colour of cave decorations and features to such an extent that it was clear the limits of acceptable change had been passed. Later investigation of the Jewel and Ngilgi caves also revealed similar conditions. It was clear that remedial action needed to be taken, not only to begin cleaning and removing this material but also to reverse this trend and develop a strategy for long-term management of the problem.

Past attempts to monitor dust have been undertaken in the caves, however these programs aimed only to monitor and attempted to establish levels of deposition, results from these observations were never developed into any formalised works plan or remedial solution.

Dust removal in the caves has always remained an ad hoc approach always subject to staffing levels and ability to work around tours, work was seldom carried out beyond the surface and boundaries of cave boardwalks.

In June 2015 an opportunity arose that if successful would potentially change the face of cave tourism and management in the region, this being the merging of the two peak tourism bodies, both 'cave managers'. The merge of the Augusta Margaret River Tourism Association and the Geographe Bay Tourism Association would see unified management of the four show caves and perhaps allow an opportunity to review and reset environmental policy for future cave management.

The amalgamation went ahead and the newly formed Margaret River Busselton Tourism Association (MRBTA) provided the catalyst for change and the beginning of a new chapter for caves and karst management in the show-caves of the Margaret River Region.

Introduction

The Margaret River Region is one of the most popular and fastest growing holiday destinations in Western Australia, the caves are key attractions.

In 2015 the effects of continual high visitation to the caves became increasingly evident. This presentation sets out the events and actions that caused and prompted a need for change.

The Attractions

The show-caves Ngilgi, Mammoth, Lake and Jewel are major draw-cards and have been in operation for over 100 years, they are some of the state's oldest tourist attractions. They have become an essential 'must do' activity and their popularity continues to increase.

Wrong Directions

A change in management direction resulted in visitation being prioritised before conservation which resulted in numbers increasing without maintaining conservation efforts. A culture of visitation first, conservation second had developed, with no clear plan for sustainable management into the future.

In 2015, extensive amounts of accumulated lint and dust were identified in the show caves. The problem was of such magnitude that it forced action and change.



Figure 1: 12kg Dust collected from Jewel Cave

Change Arrives

In 2015 the two local tourism associations (AMRTA & GBTA) amalgamated to form the Margaret River Busselton Tourism Association this brought about a renewed focus on cave conservation. The amalgamation created unified management, allowing the opportunity to develop staffing profiles that focus on conservation and to reset environmental policy.

Addressing the Issue of Dust

With a renewed focus on conservation MRBTA deployed additional funding and staffing that would address the issues of accumulated dust and lint in the caves. The existing management plans provided the direction needed to develop strategies and principals to gain control of this problem.

Regular 'in cave' vacuum work focusing on boardwalks and cave surfaces;

Vacuum work is carried out in all of the show caves with boardwalks and stairs cleaned every three months, in addition cave surfaces beyond formed trails are monitored and cleaned as required.

The development of dust collection and mitigation techniques;

This includes the installation of fixed mats at cave entrances 'The Dust Dumper', plastic 30mm diameter poly pipe kick rails along boardwalks 'The Dust Pipe' and plastic sheeting suspended under staircases, platforms and boardwalks 'The Dust Diaper'.

Development of dust and lint data recording practices;

Material collected from the sites is recorded, amount collected, location in cave and a description of material for ongoing review.



Figure 2: Dust diaper install and flowstone vacuum.

Conservation Becomes Priority

MRBTA developed a dedicated conservation team known as 'Conservation & Technical Services'. The success of conservation initiatives has largely been through the development of the CATS team.

Their role is twofold;

- To undertake conservation and rehabilitation projects and promote cave and karst conservation through public awareness; and
- To undertake technical and maintenance projects to ensure a safe and operational environment.

Welcome to Mammoth one of the great caves in our region, “ and we reckon it’s worth making a bit of noise about ”

Caves are unique places, fragile and delicate, they require special care to help protect them. To make sure Mammoth stays in top condition and delights visitors for years to come we are working on a “Mammoth” conservation project. After 106 years of operation it’s time for a bit of a spring clean inside and we think she has earned it.

During your visit you may see one of our conservation cavers busily working behind the scenes. At times they can be a bit noisy and we do apologise for any distraction, but please if you see one of them stop and say hello, they like a chat and love talking about this great project.

Enjoy your visit to Mammoth Cave!



A Conservation Initiative of the Margaret River Busselton Tourism Association

Figure 3: Cave conservation visitor information sign.

So what did we learn?

1. It is essential to avoid isolation in cave and karst management, the association continues to grow relationships with land managers and management associations.
2. Working with the guidance of the management plans and continue to review conservation practices.
3. The Conservation policy needs to be fully embedded into MRBTA cave & karst management, ensuring ongoing compliance, it needs to be part of the culture.
4. Maintaining a balance between visitation and conservation, the two are linked and require a

close liaison, as one increases, so should the other.

Conclusion

By placing a higher priority on increasing visitation, established conservation policies for the caves were not maintained and established environmental management plans were not fully utilised. This created an environment that lacked balance with little or no communication within the association as to the importance of cave conservation or indeed how to go about it. Had it not been for the amalgamation of the two local tourism associations and the reaching of a critical situation of dust contamination it is unlikely that change would have occurred, these two events provided the necessary catalyst to bring about new management directions.