Management of Parks and Reserves in far South West Victoria

Peter Novotny, Brett Beecham and Bruce Allen

National Parks Service,
Department of Conservation and Natural Resources, Portland

This paper provides some information on parks and reserve management in far south west Victoria which will be of interest to members of the Australian Speleological Association and those with an interest in the area's caves and karst features.

Mt Eccles National Park and Mt Napier State Park Proposed New Works

These parks contain a range of volcanic features that are of world and national significance, including volcanic caves, cones, craters and eruption points. We consider them the most accessible and extensive lava caves in Australia.

Our aim is to protect these features by encouraging responsible recreational caving in accordance with accepted caving ethics.

A management plan has been prepared in recent years with the assistance of a local advisory body which included representation from the Australian Speleological Association. The management plan is a public document published by the Department of Conservation and Natural Resources and is available for sale from local offices and the Department's bookshop in Victoria Parade, East Melbourne.

One of the many management strategies relevant to caves is to develop the Byaduk Caves within Mt Napier State Park. The proposed development is currently in the design stage and includes the provision of established walking paths, safe access into Harman One Cave for members of the general public and the installation of interpretation information on the area's many natural values. It is hoped that such developments will stimulate greater public appreciation of lava caves and their many other volcanic features in these parks. In addition, by providing this quality access to selected sites capable of withstanding visitor pressure, the National Parks Service aims at minimising adverse pressure on other sites that contain important natural features including rare plant species.

Managing recreational impacts on threatened flora in cave and karst areas: Two case studies

When we think of the negative aspects of people visiting cave environments we usually consider the impacts that visitors have underground. However, visitors can also have a substantial impact on the environment surrounding a cave. The following two case studies will hopefully illustrate that cave and karst areas can be managed successfully for both recreational activities and the conservation of threatened plants.

Limestone Spider-orchid, Bats Ridges Wildlife Reserve

Bats Ridges Wildlife Reserve has an area of approximately 320 hectares and lies 10 kilometres west of Portland. Some of the caves are well visited by both locals and organised parties from outside the area. The reserve is also home to several rare or threatened plant species. The Limestone Spider-orchid (Caladenia calcicola) is perhaps the most significant of these.

The Limestone Spider-orchid (Caladenia calcicola) was only recognised and described as a distinct species in 1986 (Carr, 1986) and is regarded as vulnerable in Victoria. It is endemic to south-western Victoria, and grows in open shrubland on limestone ridges (Beecham & Fisher, 1992). The largest known population for this species occurs in Bats Ridges Wildlife Reserve in close proximity to one of the more frequently visited caves. Uncontrolled visitor access has damaged some of the orchid's habitat through the creation of an informal car-parking area and a well worn track leading to the cave. Whilst intensive monitoring of the species only commenced in 1993 it is apparent that some damage to individual plants close to the car-park and walking track is occurring (B. Beecham, unpubl. data). As this is habitat critical to the survival of this species it was decided to re-route and formalise access to the cave to minimise further degradation and protect the area.

A number of actions are proposed to implement the habitat protection objectives. These will involve:

- Turning the existing vehicle track leading to the car-parking area into access for walkers and management vehicles only.
- Creating a new walking track to provide access to the cave away from important areas.
- Placement of signs to alert visitors to the new walking track.
- Blocking-off the old car-park and walking track to allow revegetation and regeneration to progress. Some brush matting and signposting may also be required.

Once this work is completed future monitoring should reveal an increase in the numbers of the Limestone Spider-orchid as individuals re-establish in the regenerating areas.

Lime Fern, Lower Glenelg National Park

Lower Glenelg N.P. lies in a large karst province covering parts of south west Victoria and south eastern South Australia. Numerous caves occur within the park and 61 are considered significant.

In Australia the Lime Fern (Pneumatopteris pennigera) is found close to water in limestone areas (in New Zealand it is not restricted to limestone and is widespread). In Victoria the fern is known only from a few populations in the Lower Glenelg National Park and the Otways region.

In 1988, the Draft Management Plan for Lower Glenelg National Park was released for public comment. One of the recommendations made was that Davey and White (1986) classification of Curran's Creek cave as an 'adventure cave' not be adopted due to the presence of the Lime Fern near the cave's entrance. Subsequent monitoring of the fern populations in the vicinity revealed that an unknown pathogen was seriously damaging one of the populations, leading to dieback of the fronds and possible death if defoliation continued.

To ensure that the unidentified pathogen was not unknowingly spread to other healthy populations by visitors of park staff a quarantine zone was established to restrict access to the site, including the Curran's Creek cave. Implementation of the quarantine area was achieved by:

- Inspecting the site with representatives from the Australian Speleological Association and DC&NR to discuss the issues and informing them of the restrictions.
- Placement of signs and production of pamphlets informing visitors of the restricted area.
- Erecting barriers and the revegetating key access points to discourage visitors from entering the quarantine area.

Recent monitoring revealed an increase in the numbers and health of ferns in the affected population, and the pathogen did not appear to have spread to other sites. It has taken several years to identify the pathogen responsible for the fern dieback but it appears that at least two species of fungus were responsible (Cropper, 1993). More recently a species of thrip has also been implicated in causing frond dieback. At this stage quarantine is still in effect and monitoring of the Lime Fern is continuing.

During the disease outbreak spores were collected from nearby healthy populations and propagated at the Royal Botanic Gardens in Melbourne. This was done to ensure that if the Lime fern was eliminated from the area there would be a chance to re-introduce it. This has proved unnecessary and the 140 plant successfully grown have recently been returned to the Lower Glenelg National Park and re-established at several sites, including Curran's Creek.

There are numerous plants and vegetation communities that are only found in association with limestone areas. Thus there may sometimes be a potential for conflict between recreational access to a cave or karst area and the need to protect the surrounding environment. Hopefully the above examples show that with careful management both recreation and conservation can be accommodated.

The Rewiring of Princess Margaret Rose Cave

In January 1993, Bruce Allen took over as ranger in charge of the P.M.R. Cave, moving over from the park headquarters at Nelson. With his background in cave management from South Australia where he managed Kelly Hill Caves on Kangaroo Island, and the Naracoorte Caves, he could see the need for various improvements and upgrading of facilities.

The lighting system in the P.M.R. Cave had been in operation for around 20 years. It was a 32 volt system running off a bank of batteries which were constantly charged by a load regulated charger. The cabling was all exposed running along the cave walls about 3 metres up, and its entire length. The cables and fittings were all about at the end of their life span and the system was very restrictive in that it only just had enough power to take one group of people at a time into the cave and with large groups, two guides had to be used, one at each end of the group to operate the switches. A main priority was identified to rewire the cave.

Towards the end of the 1993 financial year there was some uncommitted money available, enabling the purchase of one hundred 12 volt lights and transformers and fittings. This was about $11,500 plus $7,500 for cable, conduit and fittings. A further budget was made available for '94-'95 year and in July Bruce Allen started on a design plan for the new system whenever time could be found in before tours of a morning.

A couple of large 12 volt tractor batteries, heaps of old lighting cable and several of the new lights were used, and with the help of two guides, three categories of light were set up:

- Path lights for going in section by section.
- Two way switched scene lights to point out features rather than using a torch.
- Exit path and feature lights, two way switched at either end of the cave.

In hindsight it would have been better to have closed the cave for two or three days, rather than run out and pack up cables and lights numerous times.

Preparation of the cave in readiness for the new system was undertaken by upgrading the pathways, taking out some of the rises, widening and cutting and digging cable trenches in the floor of the cave and down the wall of the stairway into it.

The electricians that wired the Naracoorte and Tantanoola caves were chosen because of the expertise they had developed, this proved to be very valuable and save considerable time and hence money. The cave was closed on 1st September 1993 and the Thursday, Friday, Saturday and Sunday were used to open up the trenches and install a polythene water line through the cave. On the Monday the three electricians arrived and commenced the wiring, while this was going on the transformer and switch enclosures were recessed into the cave walls. The system was running by Friday and over the weekend most of the lights were fitted and grooves cut into the walls for the cables to each one. The next five days were used to remove the old cable and lights and to back fill the trenches and grooves after the S.E.C. inspection on the Wednesday and the cave was reopened on the Saturday, 16th September 1993.

The work was undertaken by the chief guide for sixteen long days, the cave's maintenance worker, the cave's two casual guides, two maintenance workers from Nelson Work Centre for the last three days to carry in about forty bags of premixed concrete and concrete over the mains cables under the floor, and three electricians for 6 days. All this was done for a total cost of $40,000. The tourist cave now has updated wiring.

References

Beecham, B. and Fisher, J.T. (1992). Action Statement No. 23. Limestone Caladenia Caladenia calcicola. Department of Conservation & Environment, Melbourne.

Carr, G.W. (1986). Caladenia calcicola (orchidaceae), a new species from Victoria, Australia. *Muelleria* 6:185

Cropper, S.C. (1993). *Management of Endangered Plants.* CSIRO, Melbourne.

Davey, A.G. and White, S. (1986). *Victorian Caves and Karst: Strategies for Management and Catalogue.* Applied Natural Resource Management, Canberra.