

Natural heritage values and (mis) management of the Camooweal karst and caves

David Gillieson¹ and Keith McDonald

Northern Branch, Wildlife Preservation Society of Queensland

Email: dsgillieson@gmail.com¹

Abstract

The Camooweal caves and karst lie close to the Northern Territory border in northwest Queensland. The karst provides a good example of semi-arid dolomite karst, a style under-represented globally in protected areas. Although a great deal is known about the geology and geomorphology of the Camooweal karst, little is known about its biology, especially underground. Over fifty caves have been explored and mapped since the 1970s, with the longest being in excess of 5000m long. The caves descend in a series of steps to the regional water table about 75m below the surface. The caves have populations of endangered or vulnerable bat species, specifically the Ghost Bat *Macroderma gigas* and the Orange Leaf-nosed Bat *Rhinonictis aurantius*. A new species of amphipod of the genus *Chillagoe* has been collected from the Nowranie caves. An extensive karst groundwater body is fed by seasonal runoff and is subject to pollution from cattle grazing within the Camooweal Caves National Park. Weed invasion and fire management are ongoing issues for protected area management. There is an urgent need for implementation of a cave and karst specific management plan.

Update on conservation issues

Our observations indicate that runoff into cave entrances is generated from exposed dolomite pavements surrounding them, plus shallow surface channels with a lag gravel of chert. Under heavy grazing pressure there is soil compaction and incised cattle tracks channel water and sediment into cave entrances. Increased flow down these channels also entrains fine gravel which enters the caves along with organic flood debris. This can only have a detrimental effect on the cave biology. The Camooweal town water supply is drawn from the karst aquifer, which is continuous and fed by this surface runoff. So there is the possibility of polluted water being ingested by residents and visitors.

Wildfires in November 2011 burnt approximately 50% of the Camooweal Caves National Park. The natural Mitchell Grass communities on cracking clay

soils should never be deliberately burnt nor should fires be allowed to spread into them. Although rainfall in 2013 was in the severe rainfall deficit category, subsequent years have received average or above average rainfall; thus claims by the management authority that drought was the underlying cause of poor vegetation recovery are not borne out by data. Rather overgrazing has removed perennial grassy vegetation and depleted the soil seed bank.

There is a strong need to develop and implement a cave and karst specific management plan to protect the caves and their fauna from impacts resulting from overgrazing, plus remove the cattle! Coupled with this would be control of expanding areas of Buffel Grass (*Cenchrus ciliaris*) and Prickly Acacia (*Vachellia farnesiana*). Erosion needs to be effectively managed, especially around dolines, waterholes, along creeks and roads. An appropriate fire management program should also be implemented and monitoring sites established, and actually monitored! The involvement of the local Indjalanji – Dhidhanu traditional owners as Rangers will be crucial in any future management.

The authors wrote to the then Minister for the Environment in Queensland, Dr Steven Miles, and received a reply which did not adequately address any of the concerns raised. Accordingly ACKMA and the ASF wrote to the new Minister for the Environment in Queensland, Hon Leanne Enoch, and received a reply which goes some way to addressing the concerns raised. She indicated that a management statement had been prepared in 2013 and so there were no plans to revise this to specifically include cave and karst management. She also indicated that negotiations were underway with the lessee to remove the cattle by the end of the lease in 2020. It remains to be seen if there will be any ongoing action by the Queensland Parks & Wildlife Service.

An extensive review of the conservation and management issues at Camooweal was published in the ACKMA Journal Issue 110, March 2018, pages 13-28. The original paper published in North Queensland Naturalist is available at <https://www.nqnat.org/volume-48>