



THIRSTY BATS

- Steve Bourne

Southern Bentwing Bats *Miniopterus bassanni*, have been the subject of many years research at Naracoorte Caves National Park.

One facet of this research has been determining the population and how stable this is, after a significant decline was observed to have occurred between the 1965 count of over 100,000 and the 2000 estimate of 35,000.

No one factor has been isolated to be responsible for the decline, with changing land use – including land clearing and drainage and use of chemicals in primary production probably each contributing.

Recent observations now suggest that climate change can also be added to the bat's problems. This will be reported in more detail in the upcoming Australasian Bat Society newsletter.

A healthy discussion with ASF members, during their recent conference field trip to Naracoorte, as to how the situation might be managed came up with some of the suggestions.

This article presents what management actions have been implemented and what else might be undertaken to ameliorate the effects of dry seasons on the Southern Bentwing Bats.

Weather is something that humans have never managed to conquer and most scientists now agree that human activities are now having a profound impact on Earth's climate. In *The Weathermakers* Tim Flannery suggests a small

frog in Costa Rica may be the first extinction caused by climate change and up to 60% of all species could be wiped out by global warming.

The weather recorded at Naracoorte this year may be an example of climate change and there is little doubt that if such conditions continue the Southern Bentwing Bat population will be severely stressed.

A record low rainfall was accompanied by record numbers of cold nights through spring and early summer. This in turn led to low insect levels and little water dripping in Bat Cave – that the bats rely on during the breeding season.

All bats are normally in Bat Cave during the breeding season, however many were observed in nearby caves just after the main flush of pup births.

Not only do the females require water to assist in milk production, Elery informed us that insufficient water supplies can lead to desiccation of a bat's wing and splitting of the membrane.

There is nothing that could be done to offset the dry season or the cold nights external to Bat Cave, but attempts were made to provide a water source within the cave for the bats. The bats might be hungry but we could prevent the thirst!

Bat Cave has a thin roof, only a few metres thick. One option put forward was to leave a hose running above the chamber where most of the normal drinking sites are.

The nursery of pups in December, with many emaciated and dying pups visible at the extremity of the main cluster



The “Hansford”



Naracoorte Caves is limited in its water extraction from the aquifer and has to show wise water use to the public, so this was dismissed as an option. The second option was to place water directly in the cave.

Andy Spate devised a drinking station using a plastic tub with towels draped over the edge outside the tub and into the tub full of water, held in place by the lid. Water was also placed on the lid, which seemed to attract the bat’s attention as a few were observed diving the lid.

The surface area was inadequate for this type of drinking strategy and raised the possibility of placing a large tray of water in the cave. This would require constant cleaning though, as it would be quickly fouled by guano.



The “Spate”

No bats were ever observed at the drinking tub and the reasons for this are probably easily to determine:

- It was placed on ground and bats drink from ceiling features in the cave. In time they may be accustomed to the source.
- To drink from the tub required them to land on the towel – an unnatural substance for them.

Naracoorte Caves park assistant Andrew Hansford then devised another water supply, being a plastic bottle with a rope “wick”. This was attached to a large stalactite from which bats drink.

Southern Bentwing Bats in Bat Cave, Naracoorte



Water was then available from the wick itself or from the normal drinking site at the end of the stalactite. Bats were observed drinking at both sites on the night this device was installed.

And then 100mm of rain fell across the weekend and all this work became unnecessary! This was more than a third of the previous year's total. We had much discussion about intervention in placing artificial water points in the cave. Given that the reason for so little surface water in the region is due to over drainage, providing a substitute water source seems perfectly reasonable.

There is little that can be done with regard to a dry season and cold nights reducing the available insect supply, but water supplies can be maintained.

A close watch will be kept on water availability in Bat Cave as the birthing season approaches this year and should it be as dry as last year, artificial "Hansford" water supplies will be installed.

There are many things that fall outside the control of management, but this situation has presented some challenges we can deal with.



A mother Southern Bentwing Bat and her pup

