



Brad Collis meets an ecologist imbued with the spirit of the desert.

# Dreamtime science

**T**he journey starts at Ajaii, a place not found on maps, but which exists nonetheless near the western Macdonnell Range in central Australia. It is a journey begun by the Dreaming ancestor of the red kangaroo, a mythological creator who travelled through the land of the Aranda people, placing stepping-stones of life – green vegetation, waterholes and shade in an otherwise dry, treeless landscape.

For tens of thousands of years it became the road of plenty for every red kangaroo that made the journey thereafter, and for the Aranda people who followed the kangaroos across their ancient, ancestral home.

Then came Europeans, ignorant of the land and disinclined to learn from its people. They tried to change what they found too harsh

or strange, and inevitably failed. Then came Alan Newsome.

In the 1950s, a pinprick of time in the history of this cyclical journey, Newsome was a young biologist drawn to Australia's red centre by its mysteries, such as the actual geological drainage line that established the Dreamtime journey from Ajaii. He developed a close bond with the indigenous communities and as he gently probed their ancient, sacred stories, he discovered an enormous source of knowledge.

Newsome penned his observations in a controversial 1980 paper, 'The Eco-Mythology of the Red Kangaroo in Central Australia', which explored the Ajaii journey. Although initially frowned upon by the scientific community, it was to become a groundbreaking

treatise in its use of Aboriginal mythology to throw new light onto ecological puzzles. Newsome became one of the first scientists in Australia to realise that much of the knowledge needed to better manage the land and its ecosystems already existed.

In tracing the red kangaroo's mythology, Newsome was able to establish the first biological profile of this, Australia's largest, native mammal. The totemic sites, and the stories and songs that accompany each site, were components of a bigger picture. When pieced together it gave a detailed account of red kangaroo ecology: social habits, breeding patterns, migration, diet and eating habits, and links with other stories that instructed people how to live with this land.

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The same myth also revealed a profound understanding of the principles of conservation. Hunting was forbidden close to totemic sites to protect the kangaroo in its best habitats, so the population would always be sufficient to survive drought.

Newsome’s introduction to the central Australian desert came after he left university in the mid-1950s and got egan working with the animal industry branch of the Northern Territory Administration. He was sent into the hot, lonely

landscape to learn, and also to see if he could cope with a landscape that will kill the careless or ill-prepared. The young biologist not only survived, he developed an abiding passion for the desert, its people and its creatures.

It was during this period, at the very start of his career, that Newsome entered central Australian folklore after making one of the most momentous wildlife discoveries of the century.

After being shown the ways of the desert by a botanist, George Chippendale, Newsome began operating alone and decided to use his work – a study of the kangaroo and dingo ‘pest’ situation – as the basis of a masters degree. A noted reproductive physiologist from Adelaide University, Geoff Sharman, agreed to be his supervisor. In 1959 the pair went into the Tanami Desert, Sharman also hoping to find a small, rare fat-tailed marsupial called a dasycercus.

‘It was October, very hot and no trees,’ Newsome recalls. ‘The only shade was from these massive termite mounds. So we were alongside one of these trying to grab some shade in which to eat a bit of food and I noticed a sand dune a little way off.

‘This was unusual. It wasn’t sand dune country. So we drove over and there were tracks all over it . . . tracks we didn’t recognise, although we could see it was some kind of wallaby. So we decided to stay the night to find out. We flashed the torch around every half hour or so, saw nothing and fell asleep. When we awoke about five, the same strange tracks were all around us, but no sign of any animal.’

The two men drove 100 kilometres to a cattle station to ask if they could borrow an Aboriginal tracker named Murray, who returned with them. On being shown the strange tracks he simply said, ‘oh, mala’.

Trying not to get too excited, Newsome asked Murray if he could find one. The mala, known by whites as the Rufus hare wallaby, was supposed to be extinct.

‘He started to walk away and I thought he was looking for a track,’ Newsome says. ‘I asked and he said, “no I got ‘im”. We hadn’t seen anything, but suddenly Murray jumps two or three paces and out runs this little animal, a mala, which tears away across the scrub. I was staggered. We asked what else was around and he



The mala’s hold on life remains tenuous.



Alan Newsome. His revelations about Australian biological systems attracted worldwide acclaim.

said walbagiri, the Aranda name for bilby. This was amazing. He also showed us tracks of the pakuru, a little bandicoot also thought to be extinct.'

Sadly, 30 years later, the pakuru is extinct, as are at least 23 species of vertebrates, mostly small mammals and marsupials unique to the Australian continent and wiped out by the impact of European settlement. A further 119 native animals remain on the endangered list.

Evidence, much of it gathered over the years by Newsome, pointed to the devastating impact of overstocking a fragile landscape with cattle, which destroyed the small marsupial's shelter. Newsome had observed just how defenceless this had made them against the unholy trinity of introduced foxes, feral cats and rabbits.

Aside from the environmental damage the rabbits did themselves, they also acted as easy prey for foxes and cats during dry seasons. When a drought broke, weakened native populations have had little chance to rebuild against predators that had survived in great numbers, courtesy of rabbits.

The mala population found by Newsome and Sharman was also hit by foxes not long after its discovery. Later researchers found the predators had killed about 50 mala, and an urgent assault was launched on the foxes. But just when the mala population was starting to recover, a fire sparked by lightning swept through the area and killed them all – the last known mala population in the wild.

'In the past such a fire wouldn't have mattered,' Newsome says. 'Aborigines often used fire to flush out animals for a feed. But there weren't the predators that are there today so the populations were always remained large enough to withstand fire and hunting.'

For the moment, the mala has been saved from total extinction through a breeding program started by Ken Johnson, a researcher from the Parks and Wildlife Commission of the Northern Territory. Johnson collected several animals before the last fatal fire and succeeded in breeding them in captivity at Alice Springs.

The species' hold on life remains tenuous, but there are hopes that a larger breeding program in a predator-

free environment on Trimouille Island off the Western Australian coast will eventually build up mala numbers. The long-term hope is for these animals to be returned to their natural habitats if fox and cat numbers can be reduced and controlled.

The struggle by Australian wildlife to survive European settlement has become an epic saga and mala came to represent the perilous state of all small native animals on this continent. But for Newsome it was just the start of a personal journey of discovery that time and again drew public and scientific attention to the uniqueness of many Australian creatures.

His revelations on the remarkable biological systems that have evolved here, and the mechanisms that mammals have developed to survive even the harshest dry-periods, were soon attracting wide scientific interest and acclaim.

One of his first referenced discoveries was the extraordinary way in which a female red kangaroo can switch her fertility on and off according to the availability of food and water.

## ‘Alan Newsome went into the desert with a scientist’s dispassion, and came out with a philosopher’s sorrow.’

Newsome’s painstaking study over many months began with the usual head-scratching: ‘During a drought you’d find these females with a pouch joey but all the signs indicated they were no longer breeding. So how did they have a joey?’

Newsome eventually discovered that to give its newborn joey the best chance to outlive a drought, the female’s reproductive system would shut down to prevent another pregnancy.

The last born would be suckled for as long as possible, two to three months, by which time if it hadn’t rained it died. Then in a marvel of climatic adaptation the female would come back on heat.

Another joey would be born and again oestrus production would be stopped to allow the female to concentrate on suckling this one, extending by another two to three

months the chances of getting a new generation through the drought. This cycle would keep repeating for as long as the female was also able to survive.

As a biologist, Newsome was simply mesmerised: ‘A magnificent adaptation: replacement, after replacement until the last born is still being suckled when finally it rains.’

Alan Newsome was exposed to desert living and desert people from the start of his working life. It was perhaps inevitable then, that his science would become more holistic than the norm, and it’s said to be why he was one of the first to realise that many notions about land management and pest control in Australia were simply wrong. He subsequently emerged as one of the country’s foremost authorities on Australia’s only native mammal predator, the dingo, and new predator-prey

relationships being forged as foxes and feral cats followed rabbits inland and began to also hunt native fauna.

Newsome was among the first to understand what was happening in the desert – well out of sight of city and town dwellers. He spent years talking to pastoralists, persuading them that the dingo was in fact their ally against foxes, cats, rabbits and excessive kangaroo numbers. In the 1950s, kangaroo populations had exploded due to the construction of water bores for cattle and to ‘mistaken efforts’ to wipe out their only predator: the dingo. Over time, most northern cattlemen came to accept Newsome’s arguments supporting the dingos’ place in their world.

Newsome, now retired and living in Canberra after a long career with CSIRO Sustainable Ecosystems, is quietly spoken and introspective. He lived for the desert and its rare, threatened creatures and over a colourful career built up an extensive knowledge of native flora and fauna.

His 40-year career was devoted to better understanding the land and its unique creatures – a land that European Australians call home, yet in the main have done little about understanding the mysteries of its natural world or the ancient, sacred stories of its original people.

Alan Newsome went into the desert with a scientist’s dispassion, and came out with a philosopher’s sorrow. Most of his career was spent wrestling with the seemingly impossible quest of saving Australia’s many unique, small, mammals from extinction as introduced foxes, cats, rabbits, sheep and cattle savagely redrew the landscape.

During his time in central Australia he established a special relationship with traditional Aboriginal communities and in his heart the red desert became his home: ‘When my time comes, that’s where I want to take my last walk,’ he said, at the start of his retirement last year.

Alan Newsome (right) and colleague Steve Henry at their Burrendong Dam field site near Mudgee in central west New South Wales.

