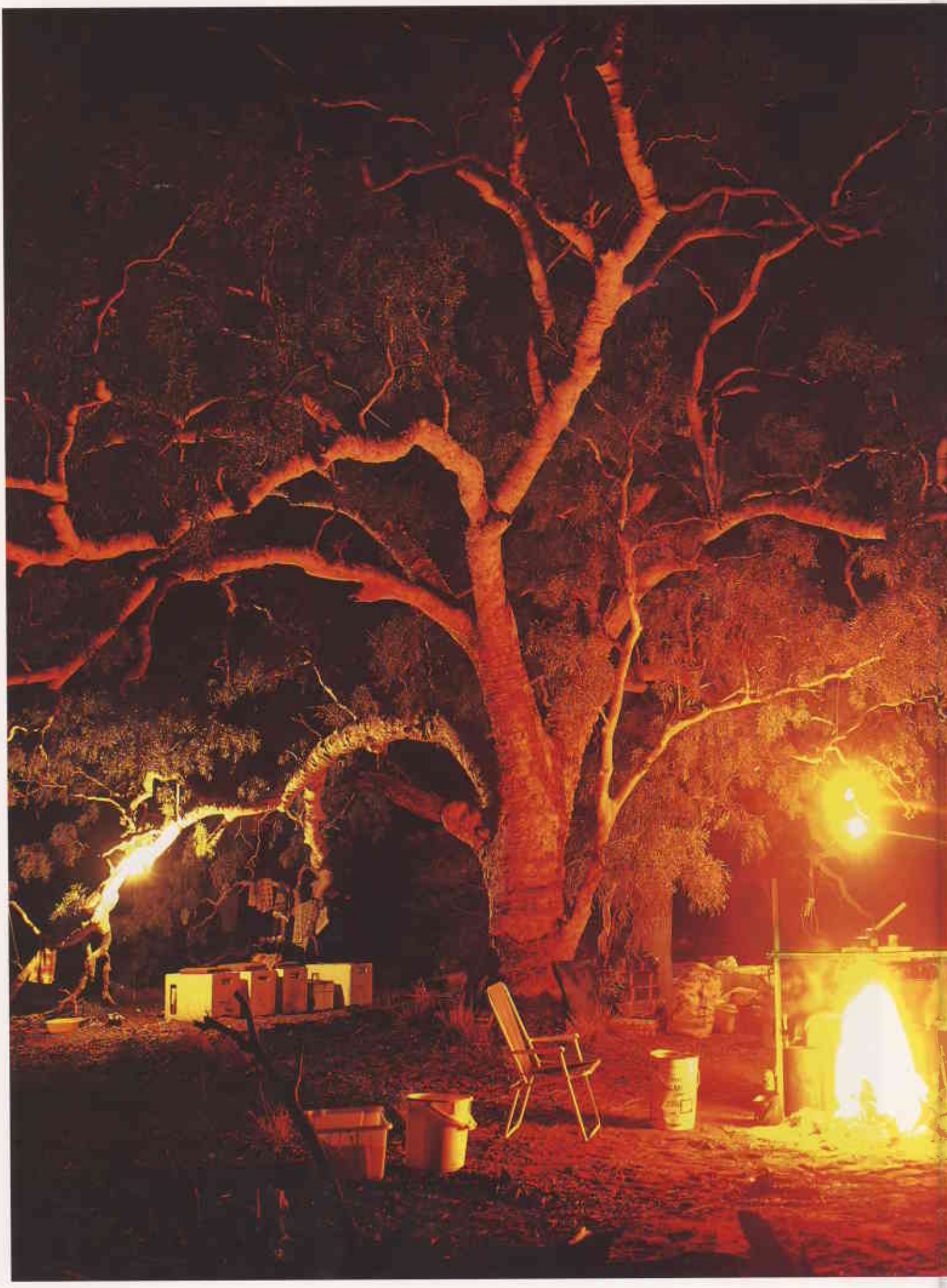


O U T

B A C K *in the* B A C K

Endangered mammals, a remote desert location, the spectre of feral predators, an environmentally conscious oil-extraction company, Aboriginal people who once hunted the mammals and cared for the land that sustained them, and paying tourists providing volunteer labour.

All these elements have come together in the Department of Conservation and Land Management's Desert Dreaming project - one of the most ambitious research projects ever seen in Australia.

by Per Christensen and Carolyn Thomson

Last September, endangered burrowing bettongs and golden bandicoots were returned to the Gibson Desert for the first time in decades. They were airlifted by CALM from a healthy population on Barrow Island Nature Reserve, off Western Australia's north-west coast.

It was fitting that at the time the mammals returned to the mainland, providing hope that one day the desert ecosystem can be restored close to its original state, the desert was in full bloom. In the wake of the best rainfall in the area for years, the normally drab mulga and spinifex of the Gibson Desert Nature Reserve had turned to a richer hue of green. Wildflowers were blooming and herbs and grasses were sprouting from the red earth.

Ironically, the rain that rejuvenated the parched deserts, following a three-year drought, caused an agonising delay in the reintroduction experiment. The release was originally meant to go ahead in May this year. However, for the first time since meteorological records commenced in the 1950s, there was widespread flooding in the Gibson Desert. CALM officers could not even reach the release site as the roads were covered with temporary lakes. So they had to organise the entire release operation, vehicles, planes, equipment, supplies and so on, all over again.

CONSERVATION TRAGEDY

The Desert Dreaming project offers the chance to rectify a conservation tragedy of enormous dimensions and solve a decades-old mystery (see 'Vanishing Desert Dwellers', *LANDSCOPE,* Winter 1987). Previous studies have shown that more than a third of central Australia's original mammal species have vanished. As well as the burrowing bettong and the golden bandicoot, the Gibson Desert was once home to the desert bandicoot, pig-footed bandicoot, lesser bilby, spectacled hare-wallaby, rufous hare-wallaby, central hare-wallaby, red-tailed phascogale, the woylie, brushtail possum and numbat. This accounts for more than 90 per cent of medium-sized mammals weighing between 35 grams and 5.5 kilograms. Tragically, all these creatures have disappeared from the area during the past 20-60 years.

At the time of the release, the desert was in full bloom - providing plenty of food for the reintroduced mammals.
Photo - Barbara Madden

Previous pages
The campsite at Eagle Bore Research Station in the Gibson Desert.
Photo - Ray Smith
Insets (top) Endangered golden bandicoot.
Photo - Ray Smith
(bottom) Burrowing bettong.
Photo - Marie Lochman

Before European settlement, burrowing bettongs were one of the most common and widespread species in Australia. They are now extinct on the Australian mainland. Golden bandicoots once occurred over half of Australia, but are now found only on three Western Australian islands and in a few remote parts of the Kimberley. Fortunately, both species still thrive on Barrow Island. The aim of Desert Dreaming is to find out why such widespread extinctions occurred. Introduced predators such as foxes and feral cats, competition for food by rabbits and the cessation of traditional Aboriginal burning patterns are all factors that could have contributed to the disappearance of many desert mammals.

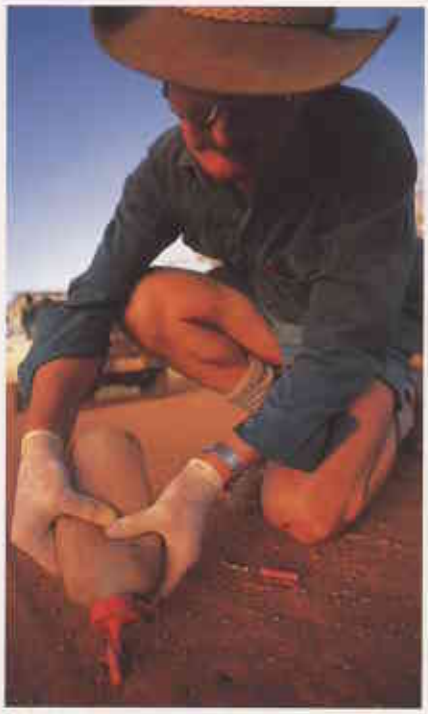
To investigate these hypotheses, CALM researchers baited a 40-square-kilometre area around the release site for foxes and cats and conducted prescribed burning to prepare the habitat for the animals. The bandicoots and bettongs were initially released into fenced compounds and given food to supplement their natural diet. The animals settled down and began foraging for themselves almost immediately, paying little attention to the food supplements. Within a few days the fences were lifted so that animals could disperse naturally.

Twelve animals of each species were fitted with radio collars and were tracked constantly for the first six weeks after their release. Radio-tracking will provide valuable information about their ability to adapt and breed in their new environment, the preferred habitat of each species, and will establish how the animals use burnt and unburnt habitat.

Already in the first few weeks, animals were gaining weight and two of the larger joeys had left their mother's pouches to fend for themselves. On the negative side, six burrowing bettongs are known to have been taken by feral cats and another died of unknown causes.

Many of the burrowing bettongs have settled into old warrens in the area where they were released and are travelling up to two kilometres at night into burnt and regenerated country to feed. Others have left the warrens to search for greener pastures. A set of bettong tracks were seen six kilometres away in the first week after the release. The bandicoots are selecting preferred habitat, some having left the release area to settle in dense spinifex in at least two spots two kilometres away. We are not aware of any losses among the bandicoots so far.

Many important questions have already been answered. Animals brought from an offshore island to the remote inland deserts are able to fend for themselves and locate food and shelter with no apparent problems. The burrowing bettongs are re-excavating old warrens and the bandicoots are settling in near the release site. Animals are all gaining weight. Many of the



The release area and a large buffer zone were heavily baited for foxes and feral cats.
Photo - Evan Collis

The mammals were fitted with radio collars and tracked constantly for the first few weeks after their release.
Photo - Ray Smith

bandicoots are now carrying young.

Predator control has been successful in reducing the number of foxes, but feral cat numbers remain fairly high. It remains to be seen how both species will fare in the next few weeks, and whether or not they cope with predation from feral cats. Many species coped with feral cats before the advent of the fox. Meanwhile renewed effort is being put into more successful methods of cat control.

Establishing mainland populations of these species will give them a greater chance of long-term survival. However, even if the animals fail to establish, scientists will obtain valuable information about why they became endangered in the first place, and this may ultimately lead to the repopulation of all our desert nature reserves.

MORE THAN MONEY

Desert Dreaming is sponsored by West Australian Petroleum Pty Ltd (WAPET) which operates the Barrow Island oilfield in harmony with the indigenous wildlife. WAPET environmental staff have also played an active part in the project. In addition to Desert Dreaming, WAPET co-operates closely with CALM by providing facilities and financial support for other important research and management programs that the Department is carrying out on the island.

WAPET see themselves as 'protectors' of the island and its indigenous species. Because of its native fauna, Barrow Island was made a nature reserve in 1910. When it was realised that the island would become an important oilfield, the company commissioned well-known naturalist Harry Butler to investigate the environmental impact of extracting petroleum products from the island. As a result, a quarantine program was established and disturbed areas will eventually be rehabilitated as close as possible to their original state. Every two years, the National Parks and Nature Conservation Authority (NPNCA) inspects WAPET's operations and discusses flora and fauna management programs with the company.

Involving the private sector through WAPET has many more benefits than their financial contribution to the project. During Desert Dreaming and other joint conservation initiatives, such as recent work to eradicate feral rats from the island, CALM and WAPET have built a

Researchers from the WA Department of Conservation and Land Management radio-tracking the released mammals in the Gibson Desert.
Photo - Evan Collis

co-operative relationship. The collaboration with WAPET has worked well and the Department sees it as a model for future ventures with the private sector.

The Federal Government, through the Australian National Parks and Wildlife Service (ANPWS), has also provided funding for fox-baiting work around the release site.

DESERT DREAMING

Since they began working in the desert regions, researchers have always been intrigued by the important link between Aboriginal people and the disappearing mammals. The mammal fauna of the desert was very important to Aboriginal people for food and is a significant part of their mythology and culture.

One hypothesis is that the disappearance of so many mammal species resulted from Aboriginal people leaving the land and ceasing their traditional burning practices. As Aboriginal people moved to European settlements and the deserts became depopulated, a 'natural' fire regime took over - one of infrequent but very extensive hot summer wildfires, usually started by lightning. This change is thought by some scientists to have had a profound effect on the mammals, depriving them of diversity of shelter and feeding areas, and leading to rapid decline and local or total extinction.

Researchers were understandably keen to find out as much about the mammals and the Aboriginal use of fire as possible. They also believed that it was important to keep Aboriginal communities informed about Desert Dreaming. This interest was reciprocated. Representatives from the Aboriginal communities at Leonora and Wiluna travelled hundreds of kilometres to take part in the project and help CALM officers release the animals.

When the bettongs and bandicoots were flown into the desert on September 11, four Aboriginal elders were there waiting. It was an historic moment. It was the first time in several decades that the elders had seen the animals. Despite the fact that extensive boodie warrens still exist in the desert, the elders did not seem to recognise the boodie. But the bandicoot was a different story. One old man, Mr Willy Hill, said he remembered hunting bandicoots when he was younger, before his people left their country. He was very excited and kept saying *kuka palya* (good meat).

After watching the mammals being radio-collared and helping to release them, the old men returned the next day to look for tracks. Mr Hill immediately pointed to diggings made by the bandicoots. He told researchers that the animals had been digging up seeds collected and buried underground by ants. This information, together with other data collected by the scientists, is adding to the knowledge being gathered in the desert about the two species.

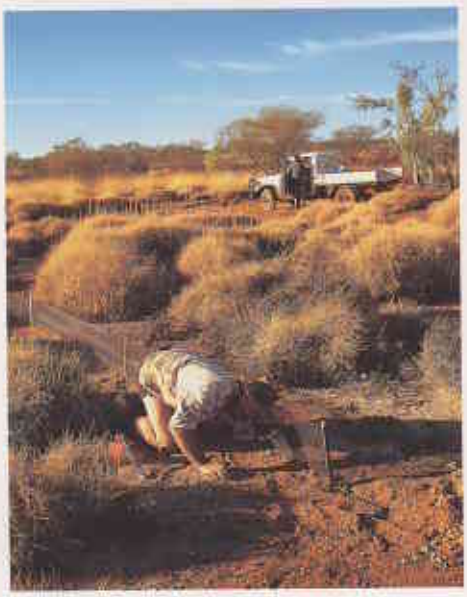
PEOPLE POWER

Researchers have always enjoyed working in this remote but beautiful area. The amenities are rough, but the pleasures of escaping 'civilisation' more than compensate. They believed it would also appeal to others - so why not bring tourists out to the area and use the proceeds to help pay for the research? Similar schemes have worked well

The golden bandicoot, extinct on the mainland, thrives on Barrow Island with the spectacled hare-wallaby.
Photo - Ray Smith

CALM research scientists pit-trapping other small animals to monitor the effects of burning programs and feral animal control.
Photo - Ray Smith

Forty burrowing bettongs and forty golden bandicoots being loaded onto a plane ready to be air-lifted to the Gibson Desert.
Photo - Ray Smith



Aboriginal people help researchers track a feral cat. Cats are thought to be the greatest threat to the animals' survival.
Photo - Ray Smith

More than 90 per cent of central Australia's original medium-sized mammal species have vanished. Ray Smith releases a golden bandicoot, one of the lucky ones.
Photo - Evan Collis

overseas. In Europe and North America dinosaur sites are being run along commercial lines: tourists pay to work there and thus provide funds and volunteer labour for research.

As a result, the very first *LANDSCOPE* expedition was set up. The aim was to provide an opportunity for environmentally conscious tourists to join CALM research staff in monitoring the animals. Between September 18 and 27, 20 volunteers worked alongside CALM research scientists; handling and identifying animals and radio-tracking the burrowing bettongs and golden bandicoots. They also helped to pit-trap other small animals to monitor the effects of burning programs and feral animal control. Two hundred and fifty plant species were collected by some of the party and keen bird watchers added to the bird list of the area.

The expedition, offered by CALM in conjunction with UWA Extension at the University of Western Australia, was a resounding success. The first *LANDSCOPE* expedition proved so popular that another expedition to the Gibson Desert is being arranged in May 1993 for people who missed out.

While the number one priority of the Desert Dreaming project is research and the welfare of the animals, CALM officers see the involvement of paying volunteers as a vitally important part of the whole project. CALM appreciates the support of sponsors such as WAPET and the ANPWS. However, in the longer term the project has to stand on its own feet. It is hoped that *LANDSCOPE* expeditions will ultimately allow the Desert Dreaming project to be self-funding.

BEFORE IT'S TOO LATE

Desert Dreaming will be featured in a major documentary on world-wide efforts to protect endangered species. The documentary, *Before It's Too Late*, will eventually be shown all around the world. In Australia it will be screened on Channel 7.

The film's director, Peter Du Cane of Australian Film Associates, and producer Mike Searle of Storyteller Productions, take the view that examples of 'good news' stories will have a much greater influence on all sides of the environmental debate than seeking out sensationalist negative situations.

The crew filmed burrowing bettongs and golden bandicoots being trapped on Barrow Island and airlifted to the desert. They also spent several days filming in the Gibson Desert - a far cry from the other locations in Perth, San Diego, London, and Melbourne zoos and the Bronx Zoo in New York.

CALM officers involved with Desert Dreaming have done their utmost to co-operate with the film crew. The researchers see their involvement with such projects as vital for educating the public about important conservation issues. *Before It's Too Late* will help people come face-to-face with the plight of endangered species, the serious problems with feral animals and the importance of research in addressing conservation problems.

NEW GROUND

Desert Dreaming seems to have captured the imagination of the public. It is hoped that the burrowing bettongs and golden bandicoots will repopulate the deserts in the years to come. However, whatever the final outcome of the reintroduction experiment and the fate of the animals, Desert Dreaming is breaking new ground. CALM sees this project as having other benefits beyond purely scientific research. For Aboriginal people of both this and future generations, the project may lead to the return of species that were important in the traditional economy and are still revered as living embodiments of 'Dreamtime' ancestors. ■

Per Christensen (097 711788) is a CALM Senior Principal Research Scientist and project leader of *Desert Dreaming*. Carolyn Thomson (09 389 8644) is a CALM Communications Officer and has been closely involved with the project.
Neil Burrows, David Pearson and Keith Morris have also contributed to this article.

LANDSCOPE

VOLUME EIGHT NO. 2 SUMMER ISSUE 1992-3

Twenty-three captive-bred chuditch were recently released in the Julimar forest in an attempt to establish a new population. The story of the 'Return of the Chuditch' is on page 10.

In a remote corner of the Gibson Desert lies Lake Gregory, a birdwatcher's paradise. See page 16.

A silent workforce of volunteers assist CALM with a multitude of projects. Colin Ingram tells us more about these 'Volunteers for Nature' on page 28.

'Back in the Outback' (page 34) follows the trail of endangered mammals recently reintroduced into the Gibson Desert from Barrow Is.

The urban cat vies with its feral cousin and the fox for top spot in the predator stakes. See 'Masterly Marauders' on page 20.

FEATURES

REGULARS

COVER

*The chuditch (*Dasyurus geoffroii*) was once found in every State and Territory of mainland Australia. Now it is only found in the jarrah forest and parts of the southern wheatlbelt in the south-west of WA - about two percent of its former range.*

The illustration is by Philippa Nikulinsky.

Managing Editor: Ron Kawalilak
Editor: David Gough
Contributing Editors: Verna Costello, Helenka Johnson, Carolyn Thomson
Scientific and technical advice: Andrew Burbidge, Roger Underwood
Design and production: Sue Marais, Sandra Mitchell
Finished art: Gooitzen van der Meer, Sue Marais
Advertising: Estelle de San Miguel ☎ (09) 389 8644 Fax: 389 8296
Illustration: Ian Dickinson, Sandra Mitchell
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