

DEALING WITH THREATS

One of LANDSCOPE's themes over the years has been that natural ecosystems are dynamic and that what the natural forces we see operating every day are doing is striving to achieve a balance. Sometimes when we see natural forces, like fire, it is hard to believe that nature is right, because the short-term effects can look like a disaster. But inevitably when natural forces are working, given enough time, the balance will return.

One of the challenges of land managers is to 'read' nature and attempt to duplicate the natural processes. There are lots of ways that modern science can help reconstruct what ecosystem processes were in the past, but having an insight into how Aboriginal people managed land over a period of thousands of years (see 'Karla Wongi Fire Talk') is of incredible value. In the next issue of LANDSCOPE we will be publishing an article which describes a scientific approach to reconstructing past fire regimes in the forests of the south-west. Hopefully, these articles will help community understanding of the important role that fire plays in shaping our ecosystems.

Most of our major environmental problems result from artificial disturbances of ecosystems. A new balance will occur—but one that inevitably has no room for significant parts of the original ecosystem. Sometimes, it is hard to pick what is the new disturbance that is causing a degradation of the ecosystem. For example, who would have thought that the decision by an Englishman to enjoy some motherland recreational pursuits by releasing foxes into the Australian environment, would create a new balance in our animal population, which resulted in no space being left for many of our unique species?

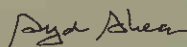
Some disturbances are obvious. Land clearing in the agricultural region has resulted in a dramatic new balance being established, which has already resulted in 44 local extinctions and has pushed some of our unique 'old growth' woodland forests to the brink (see 'Small Steps to Save Salmon Gums').

Restoring the balance back towards what nature intended, inevitably involves looking at ways to restore or duplicate the natural process, which is not functioning because of the artificial disturbance. A classic example of this approach is the use of the naturally occurring poison '1080' to control foxes (see 'What about the Animals').

The science that underpins the so-called Kingston Study is impressive, but I was encouraged even more that the fox control program was working, when I was told that CALM had to install a 'scare gun' in a local farmer's paddock adjacent to the Peron Nature Reserve to keep what was once an endangered species—the Tamar Wallaby—from grazing agricultural crops.

CALM's approach to the salinity problem has been to restore the water balance that existed prior to clearing by growing 'tree crops', which use the water stored in the soil profile over summer. That was the way the natural balance was maintained. Using a commercial tree crop (see 'From Blue Sky to Blue Chip') that benefits from exploiting the cause of the environmental problem—excess water—has the additional advantage that the community is making a profit out of rehabilitation of the environment.

This issue of LANDSCOPE, I hope, also reflects a balance of stories and philosophies about our natural environment. While it is essential that we alert the community to the importance of the environment, I don't believe a polarised debate, in which ideology rather than reason prevails, benefits anybody. Hopefully, LANDSCOPE can make a small contribution to achieving the right balance in the community debate about the environment.



The Publisher

VISA CARD UPDATE

Since its successful launch in June 1993, the BankWest LANDSCOPE Conservation Visa Card has provided funding for several important nature conservation projects in Western Australia.

Thanks to Visa cardholders, 11 important conservation projects were funded in 1997–1998. Here are descriptions of a few; others are still in progress.

On the mainland, the spiny-tailed skink (*Egernia stokesii badia*) has suffered a considerable decline over the past century as a consequence of land clearance, and has been officially listed as Threatened, and ranked as Endangered. Funding saw a project carried out by the Western Australian Museum of Natural Science, which indicated that the animal is still present over a large part of its known range in the central northern Wheatbelt, as far east as Kalannie. All the records were in York gum woodland, where the best habitat had numerous hollow logs and no grazing by stock.

Some caves in Yanchep National Park contain unique communities of equally unique species of invertebrate freshwater organisms. One minute species of crustacean has been listed as Threatened and ranked as Critically Endangered. Understanding the relative water levels in the caves is an important step to managing the water needs of these communities, which are under considerable threat because of falling water tables. The results of a recent Visa card-funded survey will help CALM implement an Interim Recovery Plan for the species.

A small area of bushland beside Johnson Road, Kwinana, is managed by CALM, mainly for the conservation of the threatened swamp donkey orchid (*Diuris micrantha*). The population has been declining, but Visa card funding has provided rabbit-proof netting, which CALM staff attached to the existing ring-lock fence. This should prevent further damage to the plants.

The Talbot Road reserve is an important area of remnant bushland in Stratton, a Perth suburb. The reserve contains two threatened ecological communities ranked as Critically Endangered, and a population of the threatened grand spider orchid (*Caladenia huegelii*). A management plan being written for the area is a joint effort by the Shire of Swan, Friends of Talbot Road, Blackadder-Woodbridge Catchment Management Group, the Fire and Rescue Service and CALM. Information on the occurrence and distribution of dieback disease, caused by *Phytophthora cinnamomi*, is considered highly important for future management of the area, and the Visa card funded a dieback survey by experts from CALM.

Many populations of the Critically Endangered Wongan cactus (*Daviesia euphorbioides*) have declined or disappeared, partly because of the species' short life span. This cactus regenerates from seed only after soil disturbance or fire, so funding was used to have a gravel pit in the Elphin Nature Reserve near Wongan Hills ripped, and topsoil spread over it to help

stimulate seed germination. This will be monitored along with the planting out of seedlings of the Wongan cactus, raised at Kings Park and Botanic Garden from seed collected nearby.

Visa card funding has enabled the production of 13 colour posters, each on a Critically Endangered plant species. They are being displayed in areas near where populations of the plants are known or thought to occur, in venues where local people are likely to see them, and are part of a public awareness campaign that includes the use of local media.

Gilbert's potoroo, rediscovered only a few years ago at Two Peoples

Bay Nature Reserve, is Australia's most endangered native mammal. A grant helped purchase equipment for monitoring the behaviour of animals in the captive-breeding colony, where breeding success has been lower than desirable. Edith Cowan University student Kylie Burke carried out a behavioural study, followed up later by a detailed study of the animal's reproductive behaviour. It seems that Gilbert's potoroos may be monogamous, and the females are very choosy when selecting mates! However, a joey was conceived during the study.



Above: Spiny-tailed skink
Photo - Ric How/WA Museum

The research has contributed significantly to knowledge of the reproductive behaviour of the species, and will have implications for managing the colony. Sony Australia Limited also contributed to this work by lending some

specialised equipment. For further information on the BankWest LANDSCOPE Conservation Visa Card, please see below.

A message to our sponsors from the Gouldian finch.



You're terrific. Thanks to you and the LANDSCOPE Conservation Visa Card from BankWest, the Gouldian finch's threatened habitat at Pumpkin Spring is increasingly protected. Your support—and this card—are helping other threatened species and ecological communities: the dwarf bee orchid, Gilbert's potoroo, mound spring communities, the western spiny-tailed skink etc.

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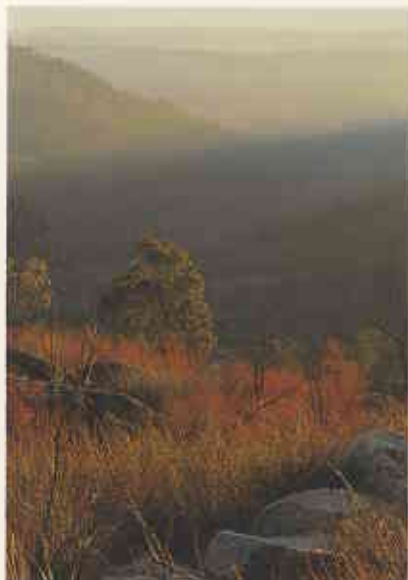
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VOLUME FOURTEEN NUMBER 2, SUMMER 1998-1999



This land, where the Avon River cuts through the Darling Range, was home to WA's most notorious bushranger. His story is on page 10.



Just when everyone thought it was extinct, this small mammal suddenly reappeared. See 'Dibblers' on page 28.



100,000 hectares of bluegums by the year 2000. Was it a realistic target? See 'From Blue sky to Blue Chip' on page 35.



'What about the Animals', on page 21, discusses early findings from the Kingston Study.



'Karla Wongi: Fire Talk', on page 48, is a Nyungar perspective on the use of fire in the south-west of WA.

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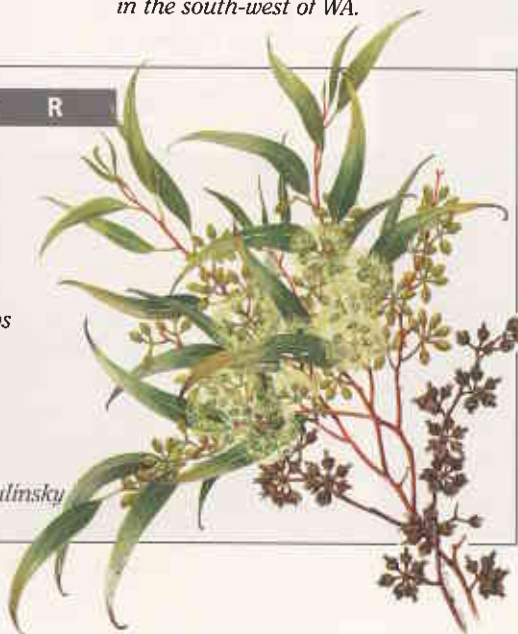
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COVER

One of Western Australia's best-known woodlands may be under threat now, but research by CALMScience Division staff is playing a key role in safeguarding their future. See 'Small Steps to Save Salmon Gums', on page 17

Illustration by Philippa Nikulinsky



Executive Editor: Ron Kawalilak
Managing Editor: Ray Bailey
Editor: David Gough
Story Editors: Mandy Clews, Verna Costello, David Gough, Nigel Higgs, Louise Johnson, Mitzi Vance, Penny Walsh
Scientific/technical advice: Andrew Burbidge, Ian Abbott, Neil Burrows, Paul Jones and staff of CALMScience Division
Design and production: Tiffany Aberin, Maria Duthie, Sue Marais
Illustration: Gooitzen van der Meer
Marketing: Estelle de San Miguel ☎ (08) 9334 0296 Fax: (08) 9334 0498
Subscription enquiries: ☎ (08) 9334 0481 or (08) 9334 0437
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 Department of Conservation and Land Management,
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