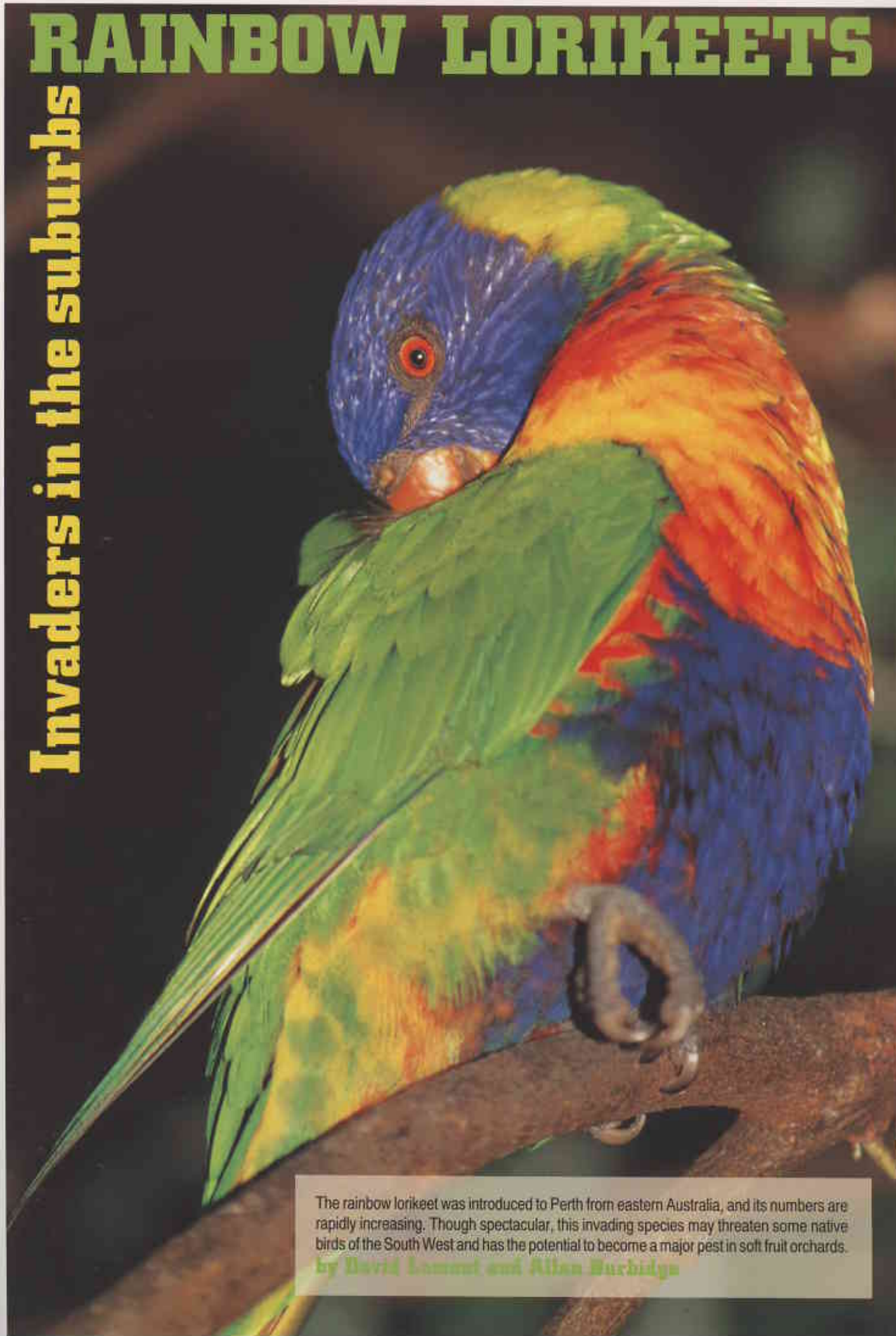
RAINBOW LORIKEETS

Invaders in the suburbs



The rainbow lorikeet was introduced to Perth from eastern Australia, and its numbers are rapidly increasing. Though spectacular, this invading species may threaten some native birds of the South West and has the potential to become a major pest in soft fruit orchards.

by David Lamont and Allan Burbidge

The rainbow lorikeet (*Trichoglossus haematodus*) is the largest of seven species of lorikeet in Australia, measuring about 30 centimetres in length and weighing about 130 grams. Like most lorikeets, it has glossy, brightly coloured plumage. This highly gregarious bird has swift and direct flight, useful traits for a bird that exploits temporary food resources, and needs to be highly mobile to locate productive feeding sites.

The species is Australia's most widespread lorikeet. It is found naturally across the top end of Australia, from the Kimberley to Cape York, right down the east coast, across to South Australia. It is also a vagrant in north-eastern Tasmania. In the Kimberley it occurs as a different colour form known as the red-collared lorikeet. Here, it inhabits tropical forests and woodlands, south to Broome. The rainbow lorikeet is a variable bird with a number of subspecies and it extends to south-eastern Indonesia, Papua-New Guinea, the New Hebrides and New Caledonia.

The only species of lorikeet native to south-western Australia is the purple-crowned lorikeet (*Glossopsitta porphyrocephala*). This bird inhabits open forests and woodlands and the drier mallee areas south of Northampton through the South West and out to the eastern Goldfields and the mallee area south of the Nullarbor.

Wild rainbow lorikeets were first recorded in south-western Australia in 1960, when six or seven birds escaped from an aviary on Rottnest Island. Their ultimate fate is not known, but the next record was in Wembley, an inner suburb of Perth, in 1968. During the 1970s, the aliens were seen at Gooseberry Hill (east of the city), Harvey (130 kilometres south) and Safety Bay, near Rockingham (38 kilometres south). However, it was in the western suburbs of Perth that they became permanently established, more or less within a triangle bounded by Mosman Park, Scarborough and South Perth. It is suspected that this population was derived from birds that escaped from aviaries in the area from the mid-1960s and onwards.

COUNTING LORIKEETS

In 1984, the Agriculture Protection Board (APB) estimated that there were 54 rainbow lorikeets in Perth. In 1987, a survey recorded a flock of 74 birds and more than 10 flocks with between 10 and 20 birds. By 1994, the APB's estimate stood at more than 1 000 birds. At about this time, the number of birds being seen increased substantially. This prompted a study of the rainbow lorikeet in Perth, to determine whether or not the bird was likely to threaten native species. To help with the study, about 50 volunteers were enlisted to observe the behaviour, food preferences, breeding, numbers and frequency of observation of the birds during the second half of last year.

The survey indicated that rainbow lorikeets were confined to the Perth metropolitan area. The total number of wild lorikeets in Perth at the end of 1995 was estimated at about 2000 birds (a population model, based on known and estimated characteristics such as clutch size, breeding success and mortality, gives a similar result). At the present rate of increase, the population could reach about 4000 birds by the year 2000, and rainbow lorikeets may spread well beyond the metropolitan area.

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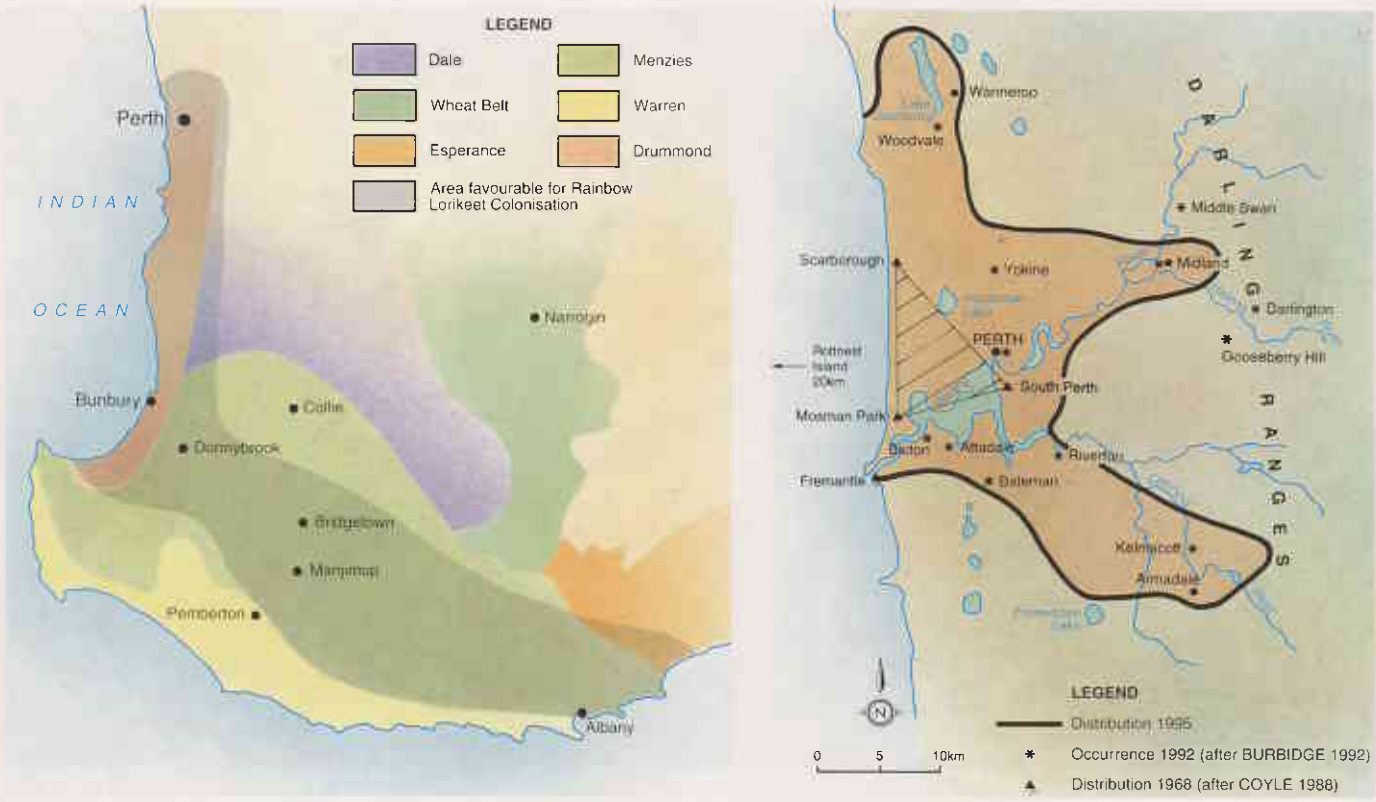
Rainbow lorikeets, the most wide-spread in Australia, have, in recent years, become permantly established in Perth.
Photo – Marie Lochman

Left: Seen here, drinking from a sprinkler, are birds of the red-collared subspecies from northern Australia.
Photo – Bill Bachman



Above: The known range of rainbow lorikeets in the metropolitan area of Perth.

Above left: Areas of the south-west considered favourable for rainbow lorikeet colonisation, based on habitat, climatic suitability and agriculture activity.

At present, rainbow lorikeets can be seen from Fremantle to Wanneroo and from Guildford to Armadale. They occur in areas with a combination of natural open woodland, exotic vegetation, such as parks, golf courses and other areas of open space, and open water, such as natural or artificial lakes and rivers. Mature exotic vegetation (usually from the eastern states), such as eucalypts, figs and palms, has been a significant factor in rainbow lorikeet colonisation of Perth. They are thus attracted to the older suburbs, which were generally those first settled by Europeans and thus carry mature exotic vegetation.

FINDING FOOD

The food sources used by rainbow lorikeets in Perth are similar to those within its natural range. Rainbow lorikeets have traditionally been considered to be nectar and pollen feeders, but recent observations in Perth and elsewhere have indicated that their diet is much more general than this. Flower parts are a major part of their diet, with pollen and nectar being less important. Fruits are important at times, and insects and seeds are occasionally taken. This flexibility in diet has, no doubt, played an important part in their success in invading new areas.

During the 1995 survey, most birds were seen feeding on the blossoms of local or introduced eucalypts, but coral trees were most often visited and preferred to other available food. It is interesting that rainbow lorikeets colonised Bali, from nearby Lombok, after the coral tree was extensively planted there. Cultivated bottlebrushes (*Callistemon* spp.) were also an important food source, together with the seed of sheoaks from the eastern states and foliage of Norfolk Island pines.

Right: Eastern states eucalypts such as the lemon scented gums in Kings Park, have helped the birds to establish in Perth. Photo – Marie Lochman

Above left: Cultivated bottlebrushes are a favoured food source.
Photo – Mike Braham/Lochman Transparencies

Above: The red wattlebird, native to the south-west, also feeds on introduced eucalypts.
Photo – Peter Marsack/Lochman Transparencies

Figs, dates and cotton palm fruits were also popular, particularly at the end of winter. As these fruits often remain attached for some time in a desiccated state, they may provide an alternative food source when blossoms are scarce. Apart from mulberries, there were no records of other soft fruits, such as apricots or peaches, being eaten in the Perth survey, despite being available in some home gardens. However, in South Australia rainbow lorikeets are quickly establishing themselves as major orchard pests.

Blossom from eastern states eucalypts have helped rainbow lorikeets to establish in Perth. Extensive plantings of trees such as spotted gum (*Eucalyptus maculata*) and lemon-scented gum (*E. citriodora*) are present in the area where rainbow lorikeets first became naturalised, particularly in Kings Park. Rainbow lorikeets will glean lerps (see 'Lerps, Bugs and Gum Leaves', *LANDSCOPE*, Spring 1992) from leaves and twigs of jarrah and tuart during September and October. This is a time when many young are being hatched, so the lerps and their insect inhabitants probably provide a source of carbohydrate and protein for the young birds growing in the nest.

Rainbow lorikeets are often aggressive at feeding sites, driving other birds away. However, in a few instances red wattlebirds turned the tables on the lorikeets and drove the aliens away from food resources.

REPRODUCING

Nests are often in local trees like jarrah and tuart. However, nesting chambers are sometimes constructed among the bases of the dried fronds of date and cotton palms, especially in Kings Park and in the business precinct of West Perth, where tree hollows are scarce. One report suggested that rainbow lorikeets may actually dig out hollows in palms.

Rainbow lorikeets may nest in large trees with numerous hollows along with 'twenty-eight' parrots (the south-western WA subspecies of the Australian ringneck, *Barnardius zonarius*), galahs (*Cacatua roseicapilla*) and laughing kookaburras (*Dacelo novaeguieae*). However, lorikeets and 'twenty-eights' often squabble over these arrangements. On several occasions 'twenty-eight' nestlings were dragged from hollows and dropped to the ground. These nest sites were subsequently occupied by rainbow lorikeets. 'Twenty-eights' have also been seen evicting lorikeet nestlings from hollows. However, lorikeets are usually the successful aggressors.

Breeding in Perth may begin a little earlier than at similar latitudes on the east coast of Australia. Courting birds have been seen feeding each other in June, with nestlings being hatched by early August. Sometimes a second brood of nestlings has been recorded in December. Some pairs have been seen inspecting potential nest sites in December.

Rainbow lorikeets breed at the same time as local parrots. In natural woodland or forest there are generally more potential nest sites than are used, and rainbow lorikeets have shown they are adaptable with regard to nest sites. However, at partially cleared sites there might be competition for suitable nest hollows, which could disadvantage the more timid native species such as the western rosella.

At present, the suggestion that rainbow lorikeets pose a threat to native species is conjecture. While it might be assumed that—being smaller—the purple-crowned lorikeet could suffer, it is unlikely to be displaced by the larger rainbow lorikeet because it uses smaller nest hollows and feeds primarily on small eucalypt flowers such as karri. Nevertheless, the aggressive behaviour shown by rainbow lorikeets suggests that more timid species could be disadvantaged in conflict situations. The numbers and range of species such as the western rosella could contract as a result.

During field observations in Perth, about 70 per cent of rainbow lorikeet interactions with other birds were aggressive, and lorikeets were 10 times more likely to be the aggressor.

ORCHARD RAIDERS

Australian authors from earlier this century unequivocally damned rainbow lorikeets as destroyers of fruit crops. In 1912, A.J. North described rainbow lorikeets as 'incorrigible fruit eaters...[which] do much damage in orchards, especially with the soft summer fruits'. Gregory Mathews stated in 1916 that 'they eat a certain amount of pears and apples that are sweet and ripe'. Others made similar comments.

Despite these early comments, until recently there have been few reports of fruit damage by rainbow lorikeets. But it appears their potential impact was either grossly underestimated or there has been a marked change in feeding behaviour. Five years ago, pest control authorities in South Australia were expressing few concerns about the rainbow lorikeet. Now, the bird is considered to be as big a pest in that State as the introduced starling.

In Darwin, rainbow lorikeets are destroying up to 90 per cent of crops of the tropical fruit rambutan, and up to 60 per cent of cultivated mangoes on some properties. In Queensland annual crop losses in avocados and lychees exceeds $1 million and may be as high as $20 million. Soft fruit crops such as apricots, prunes and peaches being grown in northern Victoria and near Adelaide are now suffering increasingly heavy losses from rainbow lorikeets. So, clearly, they could also become a serious pest in Western Australia.

At present, there is no effective control measure for rainbow lorikeets. There are no known ways of effectively trapping or removing the birds, and they fail to respond to a variety of scare techniques. Research into the use of chemical deterrents for fruit crops is under way, but effective methods have not yet been developed. As rainbow lorikeets have not previously been considered an agricultural pest in Western Australia, they have not been declared a pest species under the Agriculture and Related Resources Protection Act 1976. Perhaps this status should now be reviewed.

Under the Wildlife Conservation Act, all animals native to Australia are protected in Western Australia, even if the do not normally occur here. The rainbow lorikeet, however, has been declared unprotected under the Act.

Rainbow lorikeets are a gregarious species often seen in large flocks.
Photo – Marie Lochman

WHAT CAN WE DO?

Some people enjoy the sight of these spectacular birds in Perth, while others have grave concerns. They include immediate concerns, such as noise levels near roosting sites and potential problems, such as possible negative impacts on native species or on horticultural activities.

A computer model, based on climatic variables together with an assessment of availability of suitable habitat, has revealed a number of potential sites in south-western Australia. The most suitable were between Bunbury and Albany, where there is a favourable mix of climatic conditions, native vegetation and extensive fruit orchards. Interestingly, several years ago, CALM officers Andy Chapman and Sean Hazelden found escaped rainbow lorikeets breeding in the Kalgoorlie area, which demonstrates the bird's capability in colonising new areas.

Since we know that they escape from captivity and become established in the wild, and have a high potential to become a serious pest, it is important to report all observations of these birds outside the Perth metropolitan area (see map). In addition, rainbow lorikeets held by aviculturists outside Perth should be housed under especially secure conditions.

While the implementation of control will be very difficult and expensive, the alternative to doing nothing could well prove to be far more expensive in the long term.

David Lamont is Executive Officer of the Roadside Conservation Committee located in CALM's Wildlife Branch at Como. He has just completed a post-graduate study at the University of New England investigating the changing status of rainbow lorikeets in south-western Australia, and their potential for range extension. David can be contacted on (09) 334 0423.

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The contributions of the 57 volunteers who provided input to David's study of rainbow lorikeets in Perth are gratefully acknowledged.

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Rainbow lorikeets. Are they pests? Will they displace our native birds? Do we need to control their numbers, and if so, how? Find out more on page 17.

*A subspecies of granny bonnets (*Isotropis cuneifolia *subsp.* glabra*) found in a threatened community on the Swan Coastal Plain. See story on page 35.*

'The Magic of Magenta' co-author Mal Graham clearing an Aboriginal soak in Lake Magenta Nature Reserve. See our story on page 41.

A rat by any other name...? In 'Dinkum Aussie Rats' Andrew Burbidge discusses the use of common and Aboriginal names for native rodents.

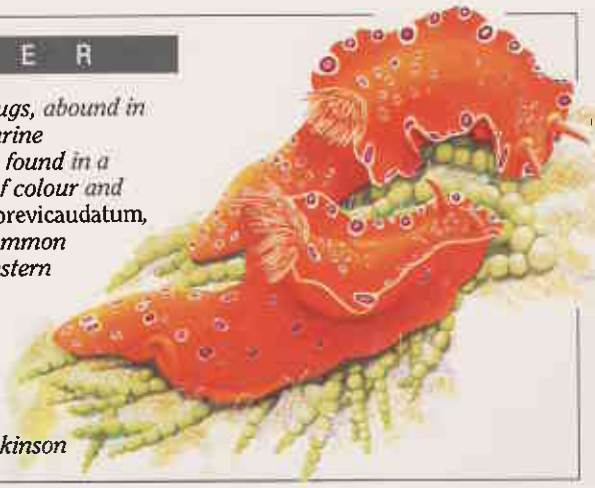
In 'Saving the Giants', read how a new Tree Top Walk in WA's south-west is set to become one of Australia's nature-based tourism icons.

FEATURES

REGULARS

COVER

Nudibranchs, or sea-slugs, abound in Western Australia's marine environment. They are found in a tremendous diversity of colour and form, the Ceratosoma brevicaudatum, *illustrated here, is a common inhabitant of south-western waters. See page 28 to learn more about the 'Slugs of the Sea'.*



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