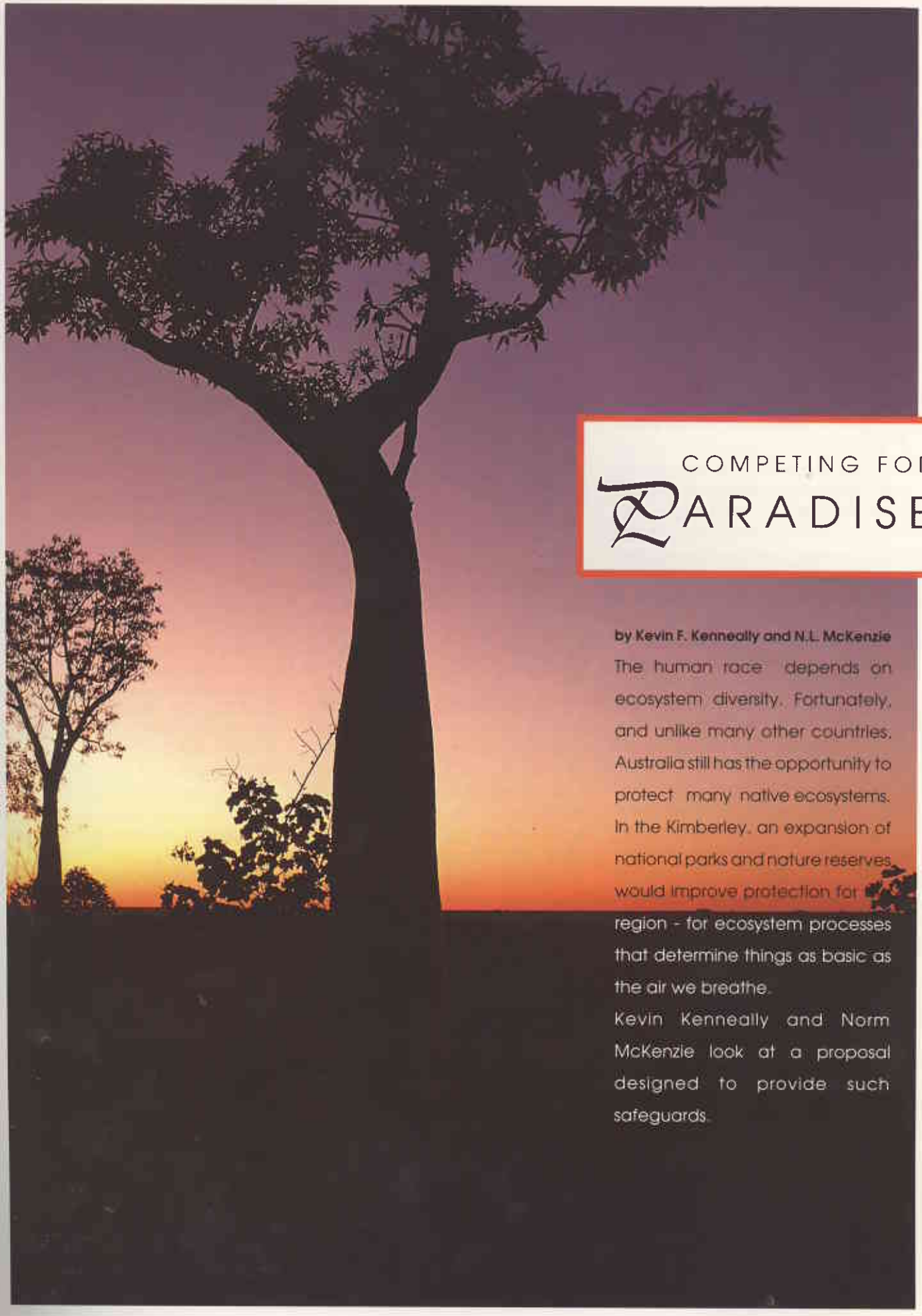

# COMPETING FOR PARADISE

by Kevin F. Kenneally and N.L. McKenzie

The human race depends on ecosystem diversity. Fortunately, and unlike many other countries, Australia still has the opportunity to protect many native ecosystems. In the Kimberley, an expansion of national parks and nature reserves would improve protection for the region - for ecosystem processes that determine things as basic as the air we breathe.

Kevin Kenneally and Norm McKenzie look at a proposal designed to provide such safeguards.

The World Conservation Strategy supports the idea of conservation reserves to protect representative areas and indigenous species. Earlier this year the Western Australian Government, which is committed to the Strategy, released the Kimberley Regional Planning Study - a long-term plan for the region that includes proposals by the Department of Conservation and Land Management (CALM) for a number of additional conservation reserves. These have now been published in a comprehensive report (*Nature Conservation Reserves in the Kimberley, Western Australia*).

The proposed reserves were selected to make conservation areas more representative of the region's wildlife and landscapes. They are based on current biological data, taken largely from ecological surveys made since 1970, but should not be considered the final word on reserves in the Kimberley.

The Kimberley is one of the last great wilderness regions of the world. It extends from the red sand dunes of the Great Sandy Desert to the rugged sandstone escarpments and coastal and oceanic islands of the humid north-western Kimberley. It includes savannas, riverine forests, floodplains, pindan, rainforests and mangroves. The last two are so scattered that it is particularly difficult to represent their diversity in reserves. Like Arnhem Land and far north Queensland, the Kimberley presents a rich tapestry of tropical plants and animals. Each year, the great complexity of its landscapes attracts ever-increasing numbers of tourists.

*Previous page:* Boabs add a sense of strangeness to the Kimberley landscape.
Photo - Marie Lochman

Sandy embayments, rugged sandstone headlands and mangroves are a feature of the Kimberley coastline.
Photo - Kevin Kenneally ▲

Permanent rivers are fringed by dense and often luxuriant vegetation.
Photo - Jiri Lochman ▲►


The Kimberley offers a special magic to those modern visitors who fall under its spell. Its apparent splendid isolation, its tropical climate and vegetation, a history linked with exotic industries such as pearling, and its proximity to south-east Asia all tend to give this remote area of the State a romantic and pristine image. But this hasn't always been so - the Kimberley was once regarded as a place to avoid.

## HUMAN IMPACT

Aborigines arrived in Australia perhaps 30-50 000 years ago, but the effects of their colonisation on the Kimberley area are shrouded in the Dreamtime, and occurred against the backdrop of climatic fluctuations. Only fragments of their history have been constructed by archaeologists.

The next visitors to the Kimberley were probably Indonesian-Macassan fishermen who spent time ashore seeking water and a place to boil down their catches of bêche-de-mer, also known as trepang or sea cucumber. Contact between the Macassans and the Aborigines resulted in some trade, but the Macassans did not venture inland. Evidence of their visits remains in archaeological pot shards and stone hearths; they also introduced the tamarind trees found growing at abandoned campsites along the Kimberley coast.

At this time the sea gave explorers their only access to this highly dissected coastline fringed by tall cliffs, mangroves and saline flats and inundated by twice-daily tides of up to 11 metres. Many of the early European sailors quickly learned to stay well clear of the Kimberley coastline with its treacherous reefs, racing tides and swirling whirlpools. Other hazards encountered were the man-eating saltwater crocodiles that lurked in the creeks and rivers, and the numerous biting sandflies and mosquitoes - which drove one navigator so mad that he named his landing site Point Torment.

It was the reports of European visitors that caused a lack of further interest in the area. William Dampier, who anchored in the *Cygnet* in King Sound in January 1688, described the countryside as 'dry and sandy and destitute of water'. When the French began showing an interest in northern Australia, the British

government despatched Lieutenant Phillip Parker King to undertake hydrographic surveys along the Kimberley coast between 1819 and 1821. King was accompanied by botanist Allan Cunningham, and a significant number of plant collections were made and new species described. This provided the first major botanical collection from the Kimberley. Cunningham noted the absence of what he termed 'useful plants', and attempted to rectify this by sowing orange and lemon seeds at Careening Bay north of the Prince Regent River. None survived.

In 1838, as HMS *Beagle* explored the Kimberley coast, Captain Stokes provided evidence that widespread bushfires predated European settlement when he wrote: 'Indeed, during the dry season it not infrequently happens that an immense tract of land is desolated by fire, communicated, either by design or carelessness of the natives, to the dry herbage on the surface.'

European exploration by land began with George Grey's expedition of 1837-38. Following Alexander Forrest's expedition of 1879 the region was named after the Earl of Kimberley, then Secretary of State for the Colonies. As a result of this expedition millions of hectares were quickly taken up in pastoral leases. But even then the rugged terrain, lack of water, the presence of poisonous plants that killed stock and horses, diseases such as cholera and typhoid and hostile Aborigines, all proved an enormous barrier to expansion of the pastoral industry. As early as 1864 a settlement at Camden Harbour on the north Kimberley coast had to be abandoned after one year; the inhabitants succumbed to pestilence and the hostile environment, and perished like flies in a country one settler later described as 'God-forsaken and God-forgotten'! Even so, pastoral pursuits have been the major land use in the Kimberley for nearly a century. Cattle and donkeys are now found throughout the region, and only the most rugged areas of sandstone are free of feral stock.

On some of the offshore islands such as the Lacepedes, mining for guano had commenced in the early 1870s, stripping these islands of their mantle of rock phosphate and disrupting the colonies of breeding seabirds. Turtles were also exploited and an attempt was made to establish an industry on the Lacepedes. Feral pigs have been recorded on Sir Graham Moore and Sunday Islands.

This gradual exploitation of marine and terrestrial ecosystems and their wildlife has been a continuous theme in the Kimberley. We now have the opportunity to design an extensive reserve system whilst large areas remain with their ecosystems relatively intact.

## PROTECTION OF REMOTE AREAS

The Kimberley can be divided into six distinct districts, each with different landforms and wildlife communities. The north Kimberley includes the most rugged landscapes in the State, and is the only area of Western Australia where there have been no documented animal extinctions since European settlement. This area features spectacular escarpments, waterfalls, rainforests, palm forests, stately paperbark groves, and picturesque swamps rich in aquatic life.

Major recommendations of *Nature Conservation Reserves in the Kimberley* include extending the Prince Regent Nature Reserve's boundaries to take in marine environments, most of the Hunter River catchment and parts of Mitchell Plateau, then declaring the whole area a national park. Other national parks are proposed at Walcott Inlet, Lake Argyle and Cape Londonderry.

Other recommendations cover the permanent wetlands at Parrys Lagoons in the eastern Kimberley. Their great variety of water birds and aquatic plants can be more easily seen in the proposed Packsaddle Nature Reserve, an extensive network of waterways and swamplands created by damming the Ord River at Kununurra.

In the south-west Kimberley, part of Broome's Roebuck Bay is being proposed as a marine park - a major step in meeting Australia's obligations as a signatory to international treaties that protect migratory wading birds and their habitat. A vine thicket reserve is proposed inland from Broome's Cable Beach, an area containing many plants with edible fruit that are still an important food source for Aborigines. Existing small reserves in the Oscar and Napier Ranges are inadequate and are under increasing tourist pressure. These limestone ramparts formed a barrier reef about 350 million years ago; today they are a treasure-house of endemic species and fossil deposits. It is for this reason that existing and proposed reserves will

The scrambling vine *Caesalpinia major* has a spiny pod which, when cut, reveals two marble-sized seeds.
Photo - Kevin Kenneally ▲

Saltwater crocodiles are now less rare around the Kimberley coast.
Photo - Robert Garvey ◄

In the Kimberley, deeply dissected sandstone gorges create a permanent humid microclimate, allowing dense banks of ferns to flourish.
Photo - Jiri Lochman ◄

*Polyalthia australis*, a relative of the custard apple, is confined to rainforest.
Photo - Kevin Kenneally ▼◄

combine to create the Devonian Reef National Park.

Extensive red dunefields dominate the southern margin of the Kimberley. They are represented in reserves proposed in the Great Sandy Desert, including the Edgar Ranges, the Mandora Saltmarsh and the McLarty Hills. Gregory Lake on the north-eastern edge of the Great Sandy Desert is a unique arid-zone lake with an enormous diversity of water birds. As a wetland of international importance, the lake and its environs should be conserved.

People may think that areas suffer less from human disturbance if they are remote. But remote is not the same as pristine. At first glance, the size of these ancient, often massive landscapes can mask their fragility. The Kimberley's vast savannas are sparsely settled, but have been exploited by humans for at least 40 000 years. During this period an entire fauna of great mammals disappeared. Other mammals have disappeared since European settlement began about 100 years ago, and many of the region's smaller animals have declined, in number as well as in geographical range. Pervasive damage from cattle, donkeys, feral pigs, cats and inappropriate fire regimes are now apparent in many parts of the region. Experience world-wide has proved that wilderness has few defences against the exploitation of destructive humanity. Establishing conservation reserves in the Kimberley should ensure that future generations will have the opportunity of a wilderness experience and that the untapped genetic diversity of the region will remain. ⊡

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# LANDSCOPE

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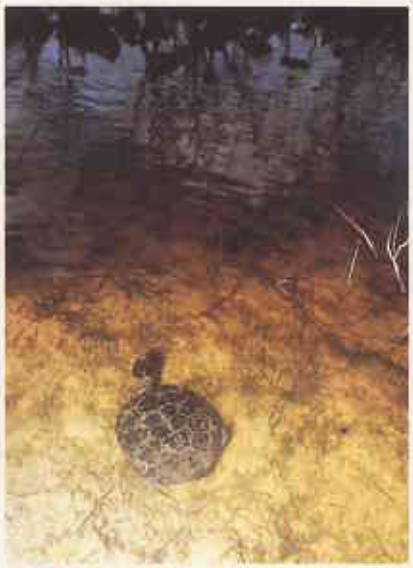
*Cloud-capped Bluff Knoll, majestically brooding sentinel of the Stirling Range. Does it hold a secret in its stony heart - perhaps the answer to the missing mammal mystery? See story on page 9.*

*Mulga and fire - at best an uneasy relationship - sometimes symbiotic, sometimes disastrous. Find out when and where on page 20.*

*The Kimberley's rugged grandeur is deceptively fragile. Additional reserves managed by CALM help protect the region's delicate, complex and diverse ecosystems. See page 35.*



*A western swamp tortoise* (Pseudemydura umbrina). *Could this be one of the last to be photographed? Not if CALM's ten-year recovery plan succeeds. See page 28 for details.*

*An uncommon dragon,* Caimaniops amphiboluriodes *inhabits mulga shrubs. Many other dragon lizards prefer harsher habitats such as rock-piles and salt lake beds. See page 51.*

## FEATURES



## REGULARS



## COVER

*Central netted dragon* (Ctenophorus inermis), *one of the more than 60 species of dragon lizard that inhabit the arid and semi-arid parts of Australia. The acute eyesight and swiftness of dragon lizards are essential in order to avoid predators and to capture food. See page 51.*

*Illustrated by Philippa Nikulinsky*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