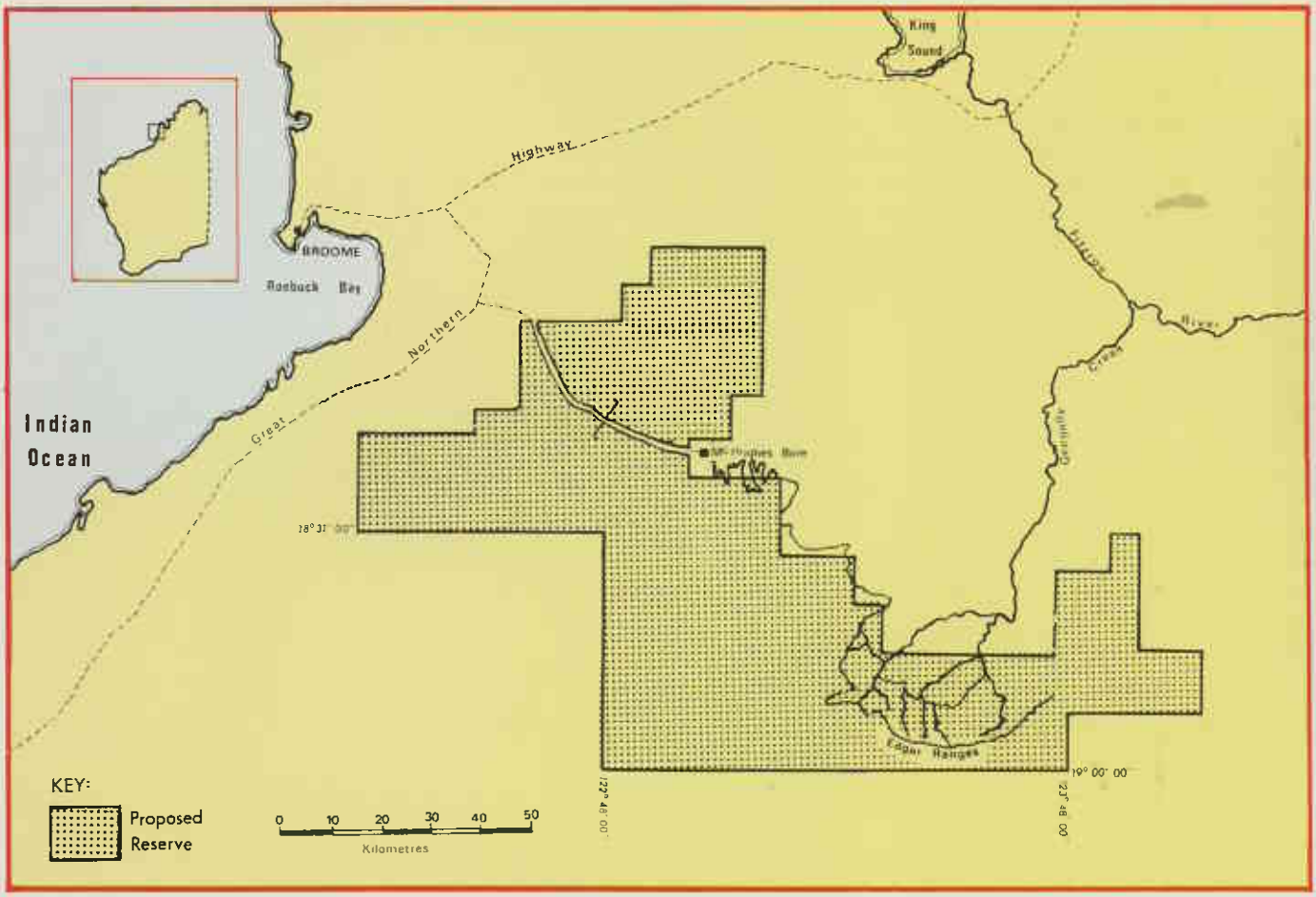
Edgar Ranges — A good case for conservation

A picturesque sandstone scarp with outlying mesas, the Edgar Ranges forms a physical boundary between the Kimberley and Western Australia's inland deserts. It also lies toward the south-eastern end of one of the last extensive areas of uncommitted land in the South-west Kimberley, a district which has been largely (86%) turned over to an intensive pastoral industry.

The South-west Kimberley is a complex array of unique environments and wildlife communities brought about by abrupt geological changes, rapid climatic gradients, disection by a major river system and the presence of a large peninsula with its coastal environments and accompanying oceanic influences. To date, there are only four conservation reserves in the South-west Kimberley, each of which conserves an array of relatively restricted environments rather than the more widespread landscapes of the district. The Coulomb Point Nature Reserve comprises coastal environments and certain high rainfall 'pindan' (loosely described as grassland wooded by a sparse upper layer of trees and a dense middle layer of *Acacia* thicket) formations on 'through drained' sandplains of the Dampier Peninsula. The three other reserves are National Parks and are all restricted to scenically attractive sites on the limestone Oscar and Napier Ranges on the northern edge of the district. The combined area of these National Parks, Winjana Gorge, Tunnel Creek and Geikie Gorge, is less than 5 400 ha.

Consequently, it was felt there was an urgent need to set aside additional reserves to protect a more representative array of the natural environments of the South-west Kimberley district even though many are perhaps not as pristine as they were late in the last century when first visited by biologists. The Edgar Ranges area as shown on the accompanying map was one of several chosen with this purpose in mind and, after being subjected to several rounds of extensive

▼ *Eucalyptus brevifolia* as a dense stand on the alluvial floor of a valley in the Edgar Ranges area. Note the hummocks of *Triodia pungens* on the scree slopes. (Photo N.McKenzie.)



▼ Western Flyeater. (Photo copyright A.G.Wells.)

environmental surveys carried out between 1976 and 1980, an application was submitted to the State Government with the view to setting aside most of the area as a Class A Nature Reserve vested in the Western Australian Wildlife Authority.

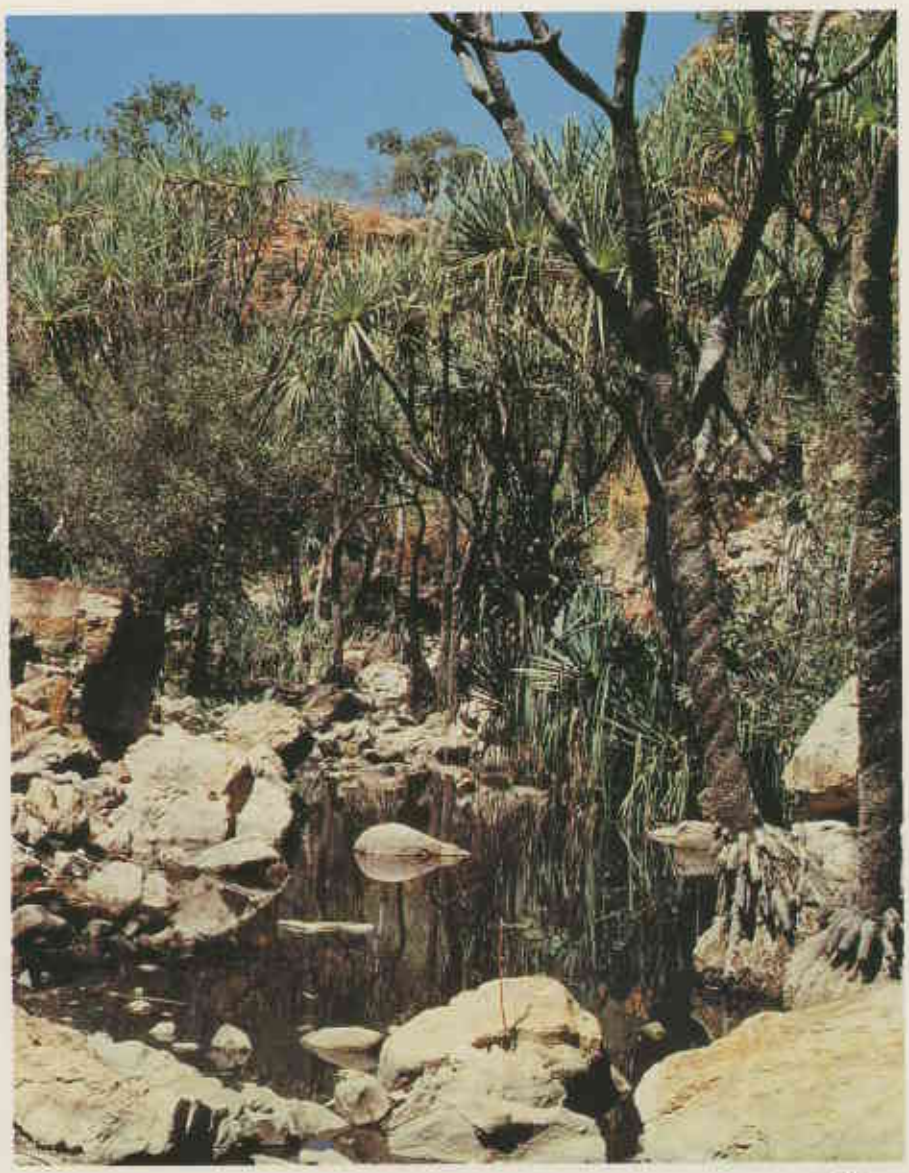
The area of vacant land centred on the Edgar Ranges covers a total area of 1 012 600 ha, of which 561 000 ha are composed of sandplain country supporting dry-country versions of the pindan vegetation endemic to the district i.e. low woodlands to low open-woodlands structurally controlled by species of *Acacia, Eucalyptus* and *Grevillea* over mixed hummock and tussock grasslands. Sandplains are an important component of the South-west Kimberley, occupying about 25 per cent of its land surface. The pindan vegetation they support varies across the district. Sandplains in the Edgar Ranges area support a vegetation distinct from their better watered equivalents on the Dampier Peninsula and near Derby.

A further 35 per cent of the Edgar Ranges area is occupied by dunes and swale plains typical of the north-western margin of the Great Sandy Desert. This surface supports shrub and grassland communities with occasional low trees. The vegetation found on the swale plains is generally composed of a stunted selection of plants from the pindan community with a greater percentage of desert species such as *Acacia anaticeps, A.ancistocarpa,* and *Newcastelia cladotricha.*

The Edgar Ranges area also includes 78 000 ha (7.7%) of sedimentary ranges. These range surfaces support a variety of fairly sparse plant formations. Open woodlands of River Gums, *Eucalyptus brevifolia* and *E.confertiflora* fringe the watercourses.Hummock grasslands with scattered *Acacia* thickets dominating the gravel and scree slopes. Isolated fig trees cling to the sheer sandstone cliffs but perhaps the most striking find during the surveys was a solitary colony of a new variety of the Screw Pine (*Pandanus spiralis* var. *flammeus*) at Logues Spring.

▲ The rare Princess Parrot has been recorded in the Edgar Ranges area. (Aviary photo copyright A.G.Wells.)

Another important aspect of the Edgar Ranges area is that it includes a few of the alluvial sand, earth, clay and loam surfaces associated with the drainage valleys of the Fitzroy and Lennard Rivers. Elsewhere in the South-west Kimberley, these surfaces are almost totally committed to viable pastoral leases and would not be available for conservation purposes in the foreseeable future unless a pastoral



▲ Pool in the gully below Logues Spring showing *Pandanus spiralis* var. *flammeus*. (Photo N.McKenzie.)

▼ View from the rim of the scarp overlooking the plains country of Dampier Downs station. (Photo N.McKenzie.)

lease was purchased specifically for that purpose

In all, a total of 213 species of plants were recorded from the Edgar Ranges area. They were a mixture of Torresian (sub-humid Kimberley) and desert species, many of which were near either the southern or nothern limits of their known ranges in Western Australia. The coverage of the South-west Kimberley and the Great Sandy Desert by conservation reserves is so poor (0.39% and 2.7% respectively) that many of these plant species, and all but a few of the communities they form, do not occur on reserves elsewhere in this state.

Fauna

The fauna of the Edgar Ranges area is a mixture of Torresian and desert species. During the recent surveys of the area, a total of 24 species of mammals was recorded which represents nearly half of the known mammal richness of the district. Of particular significance is the presence of an outlying population of the Brush-tailed Rock Wallaby (*Petrogale penicillata*) as the next nearest known population is in the Pilbara on the other side of the Great Sandy Desert. Other mammals of particular importance recorded in the area include the Bilby (*Macrotis lagotis*), Forrest's Mouse (*Pseudomys forresti*) and the bat, (*Tadarida* cf. *beccarii*.) These animals have not been recorded from any other conservation reserves in Western Australia and at least one of them, the Bilby is in urgent need of protection and study as its range throughout Australia has undergone a massive decline since the advent of European man.

One hundred and twenty one species of birds have been recorded in the Edgar Ranges area including three of specil significance to conservation, the Princess Parrot, Peregrine Falcon and the Major Mitchell's Cockatoo. Although resident populations of the latter two species were recorded in the area during the 1976 to 1980 surveys, the rare and vargrant Princess Parrot is thought to be only an intermittent visitor.

Among the Torresian bird species were the Red-collared and Varied

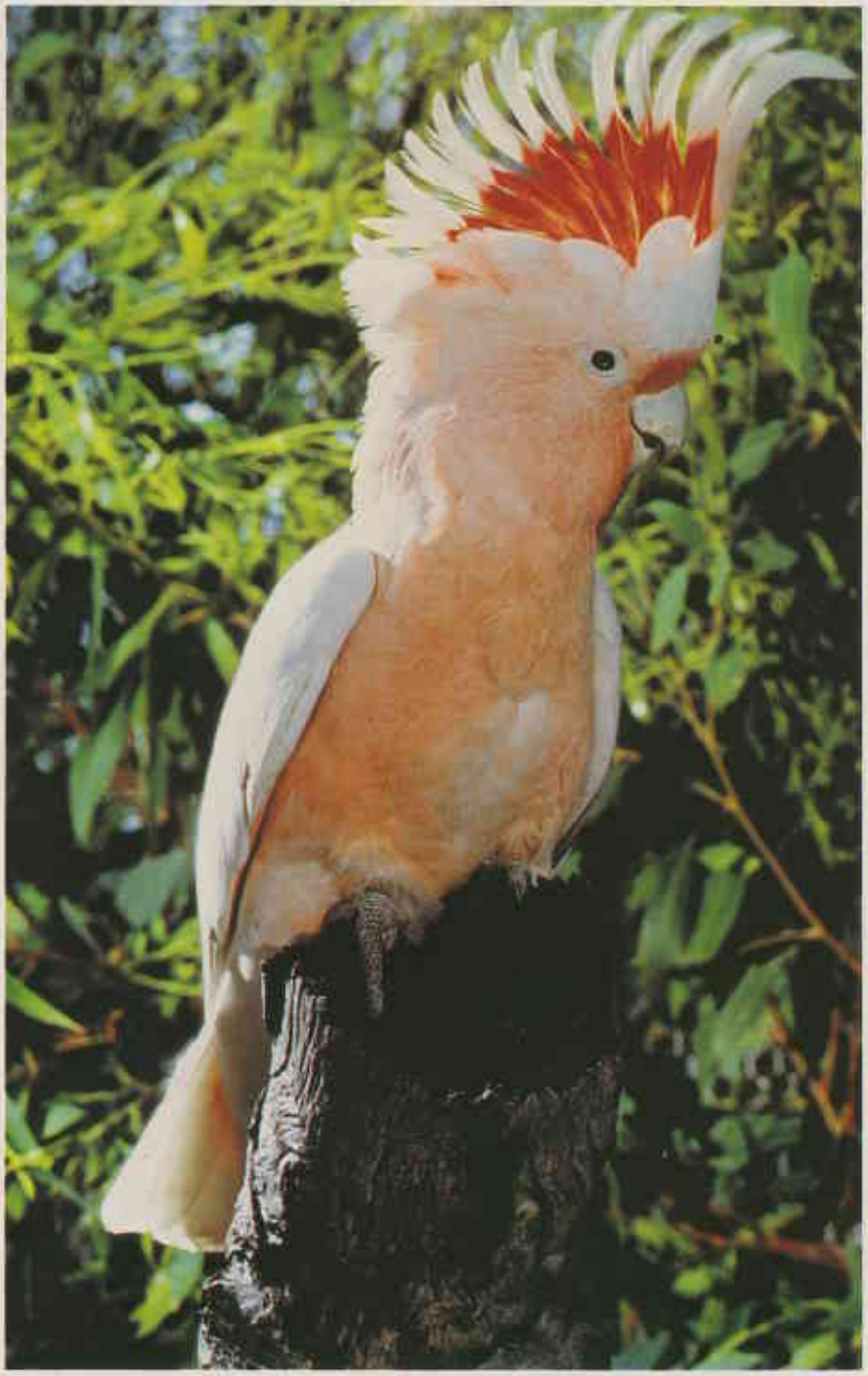
Lorikeets, Rufous-throated Honeyeater and Pictorella Finch. A larger component of arid zone bird species has been recorded including the Princess Parrot, White-fronted Honeyeater and Western Flyeater; many of those recorded are on the north-western limit of their known ranges.

Many bats are known from the area including at least one species, the Hoary Bat (*Chalinolobus nigrogriseus*), which is generally confined to wetter parts of the state such as the North Kimberley. The presence of this and some other species so far into the semi-arid zone is probably due to Geegully Creek. The headwaters and upper reaches of the main bed of Geegully Creek are mostly contained within the Edgar Ranges area. This creek is one of the major tributaries of the Fitzroy River which arises in the North Kimberley; the fringing formations of River Gums and paperbark trees that line these water courses probably act as corridors connecting the two districts.

Five species of amphibians and 40 species of reptiles were also recorded in the Edgar Ranges area and, again, the fauna is a mixture of Kimberley and desert species although, the latter are more numerous because of the relatively dry climate.

The insect collection from this area contained 949 species with a further 31 species from Logues Spring, most of which would almost certainly occur at pools elsewhere in the Edgar Ranges. Of the species collected, the order Lepidoptera (moths and butterflies) predominated and represented 514 of the species caught. Considering how poorly the Kimberley insect fauna is known, it is not surprising that many of these records have extended the known range of species. It should also be noted that the insect collection was made at the driest time of the year and no doubt fails to include fauna which are active at other times of the year particularly during and after the rainy season.

As a result of the survey, it was considered by wildlife researchers that reservation of 807 000 ha of the Edgar Ranges area as a Nature Reserve would substantially improve the coverage of both the Kimberley and desert systems of conservation reserves. So much land remains dedicated to purposes incompatible with conservation in the South-west Kimberley that even if the above proposal is given the go ahead, only eight of the 28 distinct surfaces (land systems as mapped by the C.S.I.R.O. Division of Land Research) in the district would be represented on reserves.



▲ Major Mitchell's Cockatoo. (Photo copyright A.G.Wells.)

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