THE FUNEREAL COCKATOO ON EYRE PENINSULA

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SUMMARY

A study was conducted into the status and conservation requirements of the isolated population of the Funereal Cockatoo *Calyptorhynchus funereus* on Eyre Peninsula. Thirty-eight birds, including four nestlings, were observed. At least five breeding pairs were detected. The cockatoos were found most often in an area 50 ha in extent of Sugar Gum *Eucalyptus cladocalyx* woodland in the Wanilla district. They were recorded feeding on seeds of Aleppo Pine *Pinus halepensis, Hakea rugosa* and larvae extracted from flower spikes of Broad-leaved Yacka *Xanthorrhoea tateana.* An orange wash in the tail of a nestling, a plumage feature previously unrecorded in this species, suggests that this population may be subspecifically distinct.

INTRODUCTION

The Funereal Cockatoo *Calyptorhynchus funereus* occurs in south-eastern Australia from south-eastern Queensland to the Mount Lofty Ranges, Kangaroo Island and Eyre Peninsula; an isolated subspecies, *C. f. latirostris* occurs in south-western Western Australia (see Saunders 1979 for details). The subspecific identity of the Eyre Peninsula population is not precisely known although the only known specimen (in the S.A. White Collection, Adelaide) appears to resemble closely the Kangaroo Island and mainland South Australian populations of *C. f. xanthanotus* (S. Parker, pers. comm.).

Few published records of the Eyre Peninsula population exist. Hall (1910) found the birds in the vicinity of Wanilla and Marble Range between 5 and 16 October 1909, and recorded that they tore at wattle trees in search of grubs. Condon (1969) recorded them from Marble Range and Wanilla, probably on the basis of Hall's (*op. cit.*) record. Interestingly, Storr (1947) did not record the birds at Wanilla between 20 September and 24 October 1946. Smith (1972) made a northern observation of the birds at Uncontitchie Rock 40 km SW of Kyancutta.

Discussions with residents of the Wanilla area in 1984 revealed that large flocks of approximately 100 birds were observed feeding between the Koppio Hills and the Marble Range in the 1920s and 1930s. The cockatoos were observed feeding on the seed of a *Hakea,* possibly *H. cycloptera,* the fruit of which had been cracked open by fires associated with land clearing activities. The *Hakea* was, and still is, locally called "Cockatoo bush".

Due to the small size of the population and its likely decline, a study of it was commenced in January 1984. This paper presents results of the study using data collected up to May 1984.

METHODS

Field work was conducted in the Wanilla-Koppio region (Figure 1) on twenty-eight days: 8-12 January; 30 January – 3 February; 13-17 February; 6-10 and 26-31 March and 5-7 May.

Searches were made at dawn and dusk, when the birds were active, for evidence of nesting. Notes were made on the sex, behaviour and food of birds observed. Three age and sex phases, adult male, adult female and immature male, were distinguished by plumage and behavioural characters (see Saunders 1979). The position, height and aspect of hollows used for nesting were noted.

After gaining preliminary indications of habitat requirements, aerial photographs were used to assess the suitability of other areas in the Wanilla-Koppio region. Ground surveys of chosen areas were then conducted.

In addition to my own observations, a questionnaire requesting accurate counts and notes on any flocks seen was circulated to residents of the Wanilla district. Searches for the birds were made during the day, particularly around favoured food sources, which were soon identified (see below). Evidence of feeding (described below) assisted in the determination of the cockatoos' favoured areas and overall range.

RESULTS

Distribution and nesting

Figure 1 shows where the birds or evidence of their having fed were recorded. This provisionally defines their apparent summer range (see *Movements* below) as being bound by the localities Koppio, Edillilie, Wanilla, Wanilla Forest, Coffin Bay, Big Swamp, Greenpatch and the Tod Reservoir.

The only area in which the birds were found nesting, and indeed in which they were found at all with regularity, was 8 km ENE of Wanilla (see Figure 1). This area is predominantly Sugar

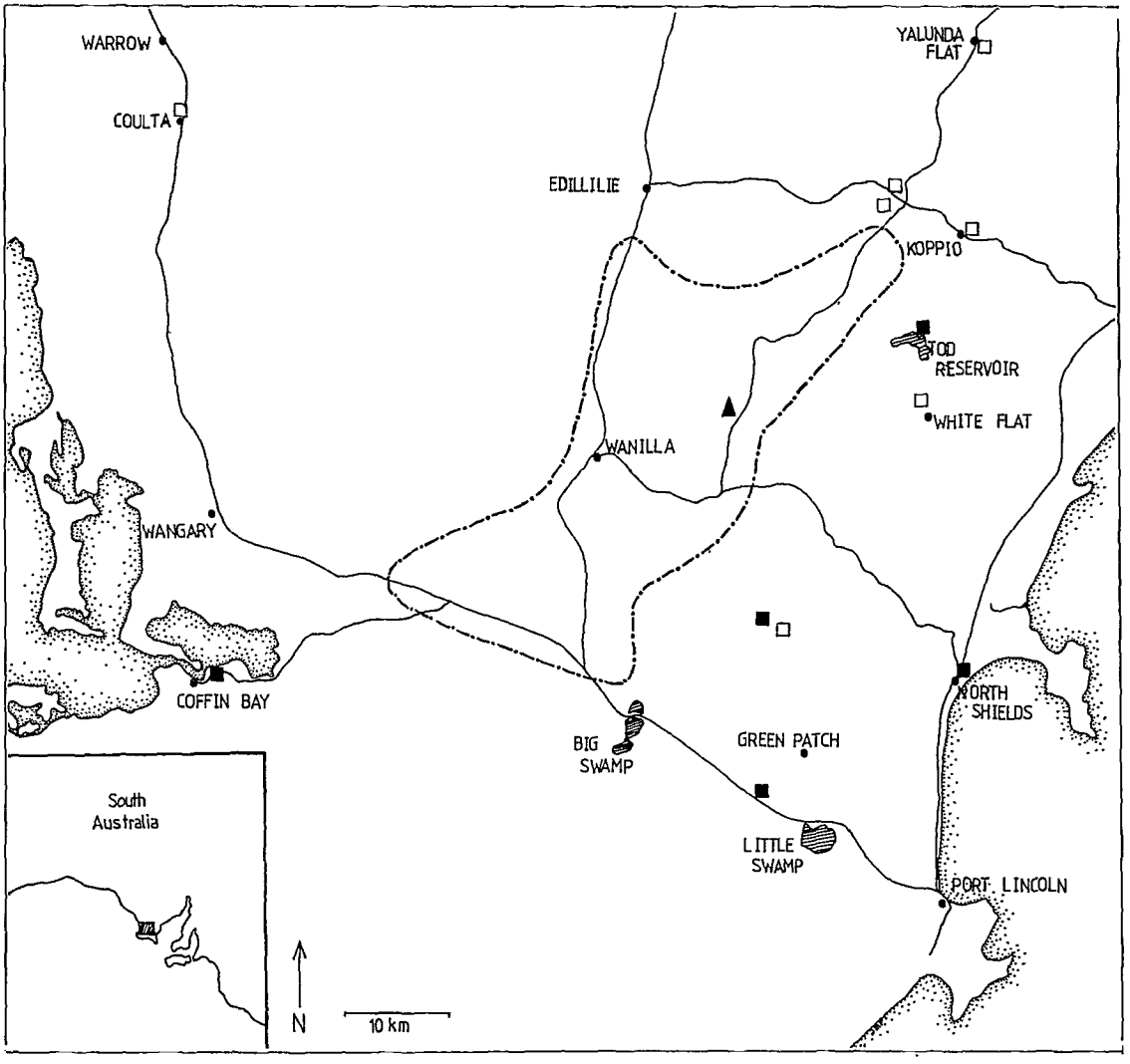

Figure 1. Map of distribution of *C. funereus* on lower Eyre Peninsula. Key: Dotted line indicates boundary of Main Summer Range 1983/84, ■ = Summer sightings since 1970 outside of main summer range, □ = Feeding evidence in 1983 or 1984 outside of main summer range, ▲ = Breeding Area 1983/84.

Gum *Eucalyptus cladocalyx* low open woodland over a sparse tall shrub layer of Golden Wattle *Acacia pycnantha,* in turn over a low shrub layer of Broad-leaved Yacka *Xanthorrhoea tateana,* Spiny Heath *Lissanthe strigosa* and Flame Heath *Astroloma conostephioides.*

Four nests, each with one nestling, and one further probable nest, were located. By using the data in Saunders (1977) to estimate the duration of incubation and nestling periods and nestlings' ages from photographs, one can deduce that laying commenced in November 1983.

Photographs were taken of two nestlings. The broad subterminal tail band of one of these was orange and yellow on the dorsal surface instead of yellow as is usual in *C. funereus.* This has not been noted previously in wild birds (e.g. Lendon 1973, Forshaw 1981) or captive individuals (J. Courtney, pers. comm.). It is not known whether this is a juvenile trait peculiar to the Eyre Peninsula population or merely an individual variation.

Population

A maximum of 38 birds was counted and consisted of three distinct groups:

a) five pairs and a trio (two females, one male), and four nestlings; this group constituted the breeding colony.

b) a flock of twelve non-breeding birds made up of six females (one of which was probably a juvenile judging from its behaviour), five adult males and one immature male.

c) a flock of nine non-breeding birds that usually fed together and which was comprised of five females, three adult males and one immature male. This flock, unlike the other birds, did not appear to roost in the nest area.

Food

I observed the Cockatoos feeding on the seeds of Aleppo Pines *Pinus halepensis* (one occasion), *Hakea rugosa* (three occasions) and a wood-boring larva obtained from the centre of flower spikes of *Xanthorrhoea tateana* (several occasions, 8-10 January).

On *P. halepensis,* they fed in the same manner as described by Perry (1948) in Western Australia. Numerous signs of the birds having fed on *P. halepensis* indicate that the birds seek out even small stands of this tree and feed on it extensively.

To extract *Hakea rugosa* seeds, a cockatoo would chew through a twig up to one centimetre in diameter and bearing one or more fruits. Holding the twig in the left foot, the cockatoo would either split the fruit longitudinally or chew through the middle of the fruit. Evidence that the birds fed on the seeds of *Hakea cycloptera* could not be found.

To obtain the larvae from *X. tateana* the bird would stand on the flower spike, break the spike with its maxilla and remove the larva. Many spikes had one entire side removed in this fashion. By February, every suitable spike in the nest area had been thus attacked.

Movements

Evidence on this subject remains largely anecdotal. Local residents in the Wanilla district report that *C. funereus* arrives there in mid-October and departs in mid-April. Only four winter records of the population are known, three from more northern parts of Eyre Peninsula (Smith 1972, Bransbury 1984) and one from near Wanilla (G. Bishop, pers. comm.).

Mr M. Oswald has recorded approximately 12 Funereal Cockatoos at Mt. Dampier (*ca* 40 km W of Kyancutta) in May of 1984 and of six years previously, and Mr K. Darenburgh has observed that the species is a regular winter visitor to Wietra, a few kilometres north of Port Kenny (G. Bishop, J. Reid pers. comm.).

DISCUSSION

The scant historical data suggest that until 20 or 30 years ago, *C. funereus* was declining on Eyre Peninsula. This would undoubtedly have been due to the extensive clearance of Sugar Gum woodland. Since then, the population there has remained relatively stable. Possibly, the introduction and maturation of stands of *P. halepensis* in the Wanilla area has halted any such decline.

Stands of Monterey Pine *P. radiata* in the Wanilla area were not used by the birds for food during the survey period. Most published sources suggest that *P. radiata* is the preferred *Pinus* species over most of the range of *C. funereus* (see Forshaw 1981), but, unfortunately, most observers have not recorded the actual species of pine involved.

Before the introduction of *P. halepensis* it is probable that *H. rugosa* was the population's major source of seeds.

Gilbert (1935) noted that *C. funereus* in New South Wales extracted the larvae of a species of cerambycid beetle from *Xanthorrhoea* flower spikes in the same manner as described above for the birds on Eyre Peninsula. It is interesting to note that although the cockatoos were clearly visiting areas in search of larvae in *Xanthorrhoea* spikes, they did not use certain large areas of *X. tateana* despite these areas being in the birds' flight path when travelling to stands of *P. halepensis*. D. Hollness (pers. comm.) has observed *C. funereus* in the nesting area tearing at galls on *Acacia pycnantha;* presumably, the birds were in search of wasp pupae (see, for example, Robinson 1965).

Further work on the Eyre Peninsula population's breeding and feeding biology, population structure and movements is clearly desirable if the birds are to be successfully conserved. Also necessary is continued effort to conserve the little-remaining Sugar Gum woodland of lower Eyre Peninsula. A full report setting out more detailed recommendations for such further action has been submitted to the South Australian Department of Environment and Planning.

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