

NSW SCIENTIFIC COMMITTEE

Red-tailed Black-Cockatoo (coastal subspecies) *Calyptorhynchus banksii banksii*

Review of Current Information in NSW

May 2008

Current status:

The NSW Scientific Committee recently determined that the Red-tailed Black-Cockatoo (coastal subspecies) *Calyptorhynchus banksii banksii* meets criteria for listing as Critically Endangered in NSW under the *Threatened Species Conservation Act 1995* (TSC Act), based on information contained in this report and other information available for the species. Currently, neither the species (*Calyptorhynchus banksii*) nor the relevant subspecies (*C. b. banksii*) of the Red-tailed Black-Cockatoo are listed under any other State or Commonwealth legislation.

Species description:

The Red-tailed Black-Cockatoo is a large (60 cm) black cockatoo with a bushy crest and a red tail panel; the female has a white bill, fine yellow spots and bars on the head and body, and an orange tail panel with fine black bars. It is very similar to the smaller Glossy Black-Cockatoo *Calyptorhynchus lathami*, which has a small crest, softer and less discordant calls, and females have a grey bill and large yellow blotches on the head. The Yellow-tailed Black-Cockatoo *C. funereus* has a yellow ear patch and tail panel, and loud wailing calls.

Taxonomy:

Calyptorhynchus banksii (Latham 1790) (Cacatuidae) is an endemic Australian species and genus in an endemic Australasian family. The taxon in coastal NSW is the nominate subspecies *C. b. banksii*, which extends throughout eastern and northern Queensland. The separate population in inland NSW, in the Murray-Darling Basin, is subspecies *C. b. samueli* Mathews 1917 of the arid zone (Higgins 1999), listed as Vulnerable in NSW. The isolated forest subspecies *C. b. graptogyne* (south-east South Australia/western Victoria) and *C. b. naso* (south-west Western Australia) are Endangered and Near-threatened, respectively (Garnett & Crowley 2000); they are officially listed as Endangered in South Australia, Victoria (Advisory List; Threatened on the *Flora & Fauna Guarantee Act 1988*) and nationally (*graptogyne*), and Rare or likely to become extinct in Western Australia (*naso*).

Distribution and number of populations:

Despite some earlier doubts expressed in the literature, the coastal Red-tailed Black-Cockatoo has been confirmed as historically occurring south to Sydney (McAllan 2002), but it rapidly contracted to the North Coast rivers (Bellinger and Macleay), and was last seen regularly on the Tweed River in the 1970s (Higgins 1999). Since that time there have been very occasional sightings in extreme north-east NSW, around the Tweed and lower Richmond Valleys (NSW Wildlife Atlas). There were no records in the first national bird atlas, and record(s) in only one 1-degree grid (extreme north-eastern, 28°S/153°E), at the lowest reporting rate, in the second

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national atlas (Blakers *et al.* 1984; Barrett *et al.* 2003). Recent reports of 'Red-tailed' Black-Cockatoos on the slopes and tablelands of NSW, and almost all reports from the coast, are almost certainly referable to the Glossy Black-Cockatoo, and there are some museums specimens of the Glossy Black-Cockatoo misidentified as Red-tailed Black-Cockatoos (expert advice). There are no records of the coastal Red-tailed Black-Cockatoo since 1980 in the NSW annual bird reports (published by the NSW Field Ornithologists Club), although this is a noisy and conspicuous species. Expert ornithological surveys in the Richmond Valley (Gosper 1986, 1992; Gosper & Holmes 2002) and Byron Shire (Milledge 1991) obtained no records of the species.

Valid records of the coastal Red-tailed Black-Cockatoo (*C. b. banksii*), and those likely to be valid, since 1980 are tabulated below (source: NSW Wildlife Atlas). Only one sighting, at Bungawalbin Nature Reserve, was supported by a description, eliminating Glossy Black-cockatoo, and one other, at Round Mountain, was an expert identification. The record at Cabarita described feeding on a known food source of the Red-tailed Black-Cockatoo, and is taken at face value, but may be incorrect as the Glossy Black-Cockatoo has since been observed feeding on the relevant food species (*i.e.* Horsetail She-oak).

| Location | Date |
|----------------------------------|-----------------------|
| Round Mtn, Bogangar | 01/1995 |
| Bungawalbin NR | between 1995 and 1997 |
| Cabarita (Bogangar, Tweed Coast) | 03/2000 |

Gilmore & Parnaby (1994) quote 'recent' (*i.e.* pre-1994) sightings restricted to the northern parts of the Richmond Range in the upper Clarence and Richmond Valleys, but without supporting details or date, and a historical record (1960s) from the Koreelah Range (Norris 1964). However, Norris could not positively distinguish the birds from Glossy Black-Cockatoos.

Note: a distribution map is not provided, because the NSW Wildlife Atlas database (all records and post-1980 only) for this subspecies includes many records of probably misidentified Glossy Black-Cockatoos on the tablelands and North Coast. These false records of the Red-tailed Black-Cockatoo give a misleading impression of its geographical distribution as well as an inflated impression of its abundance.

Ecology:

The level of knowledge on the ecology of the coastal Red-tailed Black-Cockatoo is considered moderate, but is better understood for some other subspecies (*C. b. graptogyne*, *C. b. naso* and *C. b. samueli*: Higgins 1999; Johnstone & Kirkby 1999; Cooper *et al.* 2002, 2003; Maron & Lill 2004).

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Key habitat requirements

In coastal NSW, the Red-tailed Black-Cockatoo probably occurred mainly in subtropical rainforest, dry rainforest, gallery forest, and mature riparian and floodplain eucalypt forest or woodland. Such lowland forests have been extensively cleared, logged and fragmented.

Breeding biology

The coastal Red-tailed Black-Cockatoo breeds in large hollows near the tops of old-growth eucalypts and paperbarks, living or dead. A clutch of usually one egg (only one chick hatches) is laid between spring and autumn. The incubation period is one month, the nestling period 10-14 weeks, the post-fledging dependence period lasts at least three to four months, and juveniles stay with parents until start of next breeding season.

Diet

The coastal Red-tailed Black-Cockatoo feeds on a variety of seeds (obtained arboreally from eucalypts, wattles, she-oaks, Proteaceae, and rainforest trees and vines) and on wood-boring insect larvae. Its food sources have been extensively cleared, logged and fragmented.

Social biology

The coastal Red-tailed Black-Cockatoo occurs in pairs, family groups and small flocks (and in large flocks in Queensland where the species is sufficiently abundant).

Territoriality/home range

Coastal Red-tailed Black-Cockatoos breed semi-colonially, defend only the immediate area of the nest hollow, and range widely to forage.

Generation length

Generation length is estimated as 20 years for other subspecies (Garnett & Crowley 2000).

Ability to disperse/susceptibility to population fragmentation

The coastal Red-tailed Black-Cockatoo is highly mobile and able to disperse widely, but habitat fragmentation may mean that it is energetically inefficient to commute long distances to remaining feeding patches (Cooper *et al.* 2002), as for the nationally Endangered Carnaby's Cockatoo (*C. latirostris*) (Higgins 1999; Garnett & Crowley 2000).

Number of mature individuals:

The number of mature individuals is uncertain for this subspecies, but the number of birds is now extremely low in NSW. The last reports were of small groups of birds (fewer than 10).

Threats:

Historically, the main threat to the coastal Red-tailed Black-Cockatoo has been clearing of forest for agriculture and settlements, and degradation of forests by logging. The Black-Cockatoo's most productive habitat, *i.e.* the fertile riparian flats and floodplains, were most heavily targeted.

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Another subspecies (*C. b. graptogyne*) is adversely affected even by loss of dead nesting trees in paddocks (Maron 2005), a situation that is inferred to apply on much of the coastal plain north of Sydney. 'Clearing of native vegetation' and 'Loss of hollow-bearing trees' are listed as Key Threatening Processes under the TSC Act in NSW.

Extreme fluctuations:

There is no evidence of extreme fluctuations in population size or habitat of this subspecies.

Population reduction and continuing declines:

The subspecies' population and geographic distribution have declined greatly in NSW, from historical occurrence south to Sydney, to a remnant population on the Tweed River that has not been seen regularly in the past 30 years. Over the 60 years (three generations) up to 2000, the subspecies declined progressively at its last regular site on the Tweed River from flocks of more than 60 birds in the early 1940s, to 25-30 then fewer than 25 birds in subsequent years, to three to five birds in the 1960s and two birds by 1975; it has been seen only occasionally since (Higgins 1999).

Extent of Occurrence (EOO) & Area of Occupancy (AOO):

The subspecies' estimated EOO in NSW is now about 5 000 km² (about half of one 1-degree grid of c. 100 km square), and its estimated AOO is now about 600 km² (*i.e.* four 10-minute grids each of c. 10 x 15 km).

Severe fragmentation:

The subspecies' prime habitat in coastal NSW has been severely fragmented. Although the coastal Red-tailed Black-Cockatoo is highly mobile and can disperse tens of kilometres, or commute up to 40 km to feeding areas, most movements are of less than 10 km (Higgins 1999). Habitat fragmentation, with long distances between nesting areas and food sources, may have energetic consequences for the Cockatoo's foraging efficiency (Cooper *et al.* 2002), and hence for chick growth and survival, and breeding productivity, leading to population decline (as for Carnaby's Cockatoo: Garnett & Crowley 2000).

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Explanatory note

Between 2007 and 2009 the NSW Scientific Committee undertook a systematic review of the conservation status of a selection of plant and animal species listed under the Threatened Species Conservation Act. This species summary report provides a review of the information gathered on this species at the time the Review was undertaken.

The Scientific Committee's report on the Review of Schedules project and final determinations relating to species that were either delisted or had a change in conservation status can be found on the following website: www.environment.nsw.gov.au.

The Committee gratefully acknowledges the past and present Committee members and project officers who ably assisted the Committee in undertaking the Review of Schedules Project. Information on the people involved in the project can be found in the Acknowledgement section of the project report entitled "Review of the Schedules of the Threatened Species Conservation Act 1995. A summary report on the review of selected species" which is available on the abovementioned website.

This species summary report may be cited as:

NSW Scientific Committee (2008) Red-tailed Black-Cockatoo (coastal subspecies) *Calyptorhynchus banksii banksii*. Review of current information in NSW. May 2008. Unpublished report arising from the Review of the Schedules of the Threatened Species Conservation Act 1995. NSW Scientific Committee, Hurstville.