

# NSW SCIENTIFIC COMMITTEE

## Glossy Black-Cockatoo *Calyptorhynchus lathami*

Review of Current Information in NSW

September 2008

### Current status:

The Glossy Black-Cockatoo *Calyptorhynchus lathami* is currently listed as Vulnerable in Queensland under the *Nature Conservation Act 1992* (NC Act). The subspecies *lathami*, is listed as Threatened in Victoria under the *Flora & Fauna Guarantee Act 1988* (FFG Act; Vulnerable on Advisory List). The subspecies, *halmaturinus*, is listed as Endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and Endangered in South Australia under the *National Parks and Wildlife Act 1972* (NPW Act). The NSW Scientific Committee recently determined that the Glossy Black-Cockatoo meets criteria for listing as Vulnerable 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.

### Species description:

The Glossy Black-Cockatoo is a small (48 cm long) black cockatoo with a small crest, brown-tinged head and a red tail panel. The female has large yellow blotches on the head, and an orange-red tail panel with fine black bars. Juveniles show some yellow spots on the wings and yellow ventral barring. It is very similar to the larger Red-tailed Black-Cockatoo *Calyptorhynchus banksii*, which has a large crest, louder and more discordant calls, and females have a white (not grey) bill and fine yellow spots and bars on the head and body. The Yellow-tailed Black-Cockatoo *C. funereus* has a yellow ear patch and tail panel, and loud wailing calls.

### Taxonomy:

*Calyptorhynchus lathami* (Temminck 1807) (Cacatuidae) is an endemic Australian species and genus in an endemic Australasian family. The taxon in eastern NSW is the nominate subspecies *C. l. lathami*, which extends into south-eastern Queensland and also into Victoria, but became extinct in Tasmania and on King Island in historic times. The separate population in inland NSW, in the Riverina, is the same subspecies but is an Endangered Population in NSW. Farther north, in mid-eastern Queensland, is subspecies *C. l. erebus* Schodde & Mason 1993, considered Least Concern (Garnett & Crowley 2000). Subspecies *C. l. halmaturinus* Mathews 1912 now occurs only on Kangaroo Island, having been extirpated on the South Australian mainland, but vagrants from the recovering island population visit the mainland occasionally.

### Distribution and number of populations:

The Glossy Black-Cockatoo is distributed in the eastern one-third of NSW from the coast to the tablelands, with populations on the western slopes and plains (e.g. Pilliga-Goonoo to Weddin

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Mtns) tenuously (if at all) connected to those on the tablelands. The small population in the Riverina is isolated (*e.g.* Higgins 1999; Barrett *et al.* 2003). The species is known from the following local government areas: Cobar, Carrathool, Narandera, Leeton, Griffith, Bland, Lockhart, Wagga Wagga and Lachlan.

## **Ecology:**

The knowledge on general biology and ecology of the NSW and South Australian subspecies of the Glossy Black-Cockatoo is considered to be good (Higgins 1999; Garnett *et al.* 1999; Pepper *et al.* 2000; Walpole & Oliver 2000; Pedler & Mooney 2003; Lenz 2004; Cameron 2005, 2006, 2007, 2008; Stock & Wild 2005; Cameron & Cunningham 2006; Chapman & Paton 2005, 2006; Chapman 2007; Robinson & Paul 2009).

## Key habitat requirements

The Glossy Black-Cockatoo inhabits eucalypt open forest and woodland with hollow-bearing trees and a midstorey of sheoaks. It nests in tree hollows, and forages exclusively in sheoak species.

## Breeding biology

The Glossy Black-Cockatoo's nest is a hollow in a eucalypt, live or dead, commonly in a dead spout in a living tree, about 26 cm wide and up to 1.4 m deep. A clutch of usually one egg is laid in autumn or winter, raising only a single chick per year if successful. The incubation period is one month and the nestling is period three months. The post-fledging dependence period lasts at least three to four months, and young remain with their parents until the onset of the next breeding season and sometimes until the next year's young fledge.

## Diet

The Glossy Black-Cockatoo feeds exclusively on sheoak seeds, taken from cones in living trees (Higgins 1999; Chapman 2007). Its key food species on the coast and tablelands are *Allocasuarina torulosa* (Forest Sheoak) and *A. littoralis* (Black Sheoak), with some *A. distyla* taken. Inland, its key food species include *A. verticillata* (Drooping Sheoak) and *Casuarina cristata* (Belah); also *A. inophloia* (Stringybark Sheoak), *A. diminuta*, *A. gymnanthera*, and sometimes *A. leuhmannii* (Buloke). Its food trees are obligate seeders killed by fire (except for Forest Sheoak when mature), and cone production is greatly reduced during drought, leading to a reduced food supply and a diminished seedbank for regeneration (*e.g.* Cameron 2007, 2008; Robinson & Paul 2009). The Glossy Black-Cockatoo needs to forage for much of the day in order to obtain sufficient food, especially during the breeding season (Garnett & Crowley 2000).

## Social biology

The Glossy Black-Cockatoo occurs in pairs, family groups and small flocks.

## Territoriality/home range

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Glossy Black-Cockatoos breed semi-colonially and pairs defend only the immediate area of the nest hollow, ranging widely to forage.

## Generation length

The generation length of the Glossy Black-Cockatoo is estimated as 15 years (Garnett & Crowley 2000).

## Ability to disperse/susceptibility to population fragmentation

The Glossy Black-Cockatoo is highly mobile and able to disperse widely (up to 60 km), but habitat fragmentation may mean that it is energetically inefficient to commute long distances between feeding patches, as for the Endangered Carnaby's Cockatoo *C. latirostris* and the Forest Red-tailed Black-Cockatoo *C. banksii naso* (Higgins 1999; Garnett & Crowley 2000; Cooper *et al.* 2002).

## **Number of mature individuals:**

The number of mature individuals of the Glossy Black-Cockatoo is estimated as 12 000 globally for the nominate subspecies, with low reliability (Garnett & Crowley 2000). On the basis of geographic distribution and density of records (Barrett *et al.* 2003), about 70% would occur in NSW, or about 8 400 birds.

## **Threats:**

Historically, the main threat to the Glossy Black-Cockatoo has been clearing of forest for agriculture and settlements, and degradation of forests by logging, firewood harvesting (with sheoaks targeted for their fuel properties), frequent intense fire and 'timber stand improvement' (*i.e.* culling of sheoaks); all of which remove the Glossy Black-Cockatoo's nest hollows and food sources. Grazing and frequent fire also suppress regeneration of sheoaks (Higgins 1999; Garnett & Crowley 2000). Over 50% of forest and woodland in NSW has been cleared (Lunney 2004), and the process is continuing (Johnson *et al.* 2007; Robinson & Paul 2009). Prime habitat on richer soils and gentle terrain has been targeted for agricultural clearing, logging, conversion to pine plantations, firewood harvesting, and urbanisation. Habitat fragmentation, especially near agriculture, leads to increased competition for nest hollows by common cockatoo species (e.g. galahs, corellas) and increased nest predation by Common Brushtail Possums (*Trichosurus vulpecular*, Garnett & Crowley 2000). Global warming may increase the frequency and intensity of fire, with increased impact on the Glossy Black-Cockatoo's food supply and nest sites. For instance, an intense fire in 2007 burned 40% of Goonoo National Park, removing core habitat for the central NSW population and destroying all 24 known nest trees in the reserve (Cameron 2007, 2008). 'Clearing of native vegetation', 'Loss of hollow-bearing trees', 'High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition', and 'Anthropogenic Climate Change' are listed as Key Threatening Processes under the TSC Act in NSW.

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## **Extreme fluctuations:**

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

## **Population reduction and continuing declines:**

The Glossy Black-Cockatoo is known to have declined with habitat loss (Higgins 1999), and the nominate subspecies' population was assessed as decreasing, with medium reliability (Garnett & Crowley 2000). Its NSW distribution has remained essentially unchanged, with no significant national change in reporting rate ( $-5\%$ ,  $P = 0.62$ ) over 20 years between 1977-1981 and 1998-2002 (*cf.* Blakers *et al.* 1984; Barrett *et al.* 2003). Its NSW reporting rate over this period also showed no significant change ( $+17\%$ ,  $P = 0.236$ ), with the proviso that sample size was small (88 atlas units) and any apparent increase in reporting rate for high-profile rare species may be exaggerated because such species were targeted for survey during Atlas 2 (Barrett *et al.* 2007). It is not possible to demonstrate a more than 30% decline in three generations, and the historical baseline for this species is uncertain. Most of the Glossy Black-Cockatoo's population now exists in state forests and NSW National Park Estate. The species is data deficient for the purpose of assessing population recovery (if any) in NSW, and it is also conservation dependent with respect to security of nest sites and feeding patches; notably protocols that protect nest sites and foraging habitat in state forests. Its remaining habitat, especially isolated inland patches, is also vulnerable to fire and may become increasingly so with climate change (Cameron 2008).

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

Global EOO of the nominate subspecies is estimated as 450 000 km<sup>2</sup>, with high reliability (Garnett & Crowley 2000), of which about 70% falls in NSW, or about 315 000 km<sup>2</sup>. Global AOO of the nominate subspecies is estimated as 50 000 km<sup>2</sup>, with low reliability (Garnett & Crowley 2000). Assuming that a similar proportion of the population, or roughly 70%, falls in NSW, the AOO for the species in this state is estimated as 35 000 km<sup>2</sup>. The EOO for the species is therefore assessed as stable with high reliability and AOO as decreasing with medium reliability (Garnett & Crowley 2000).

## **Severe fragmentation:**

The species' habitat in eastern NSW has been fragmented and its habitat in inland NSW severely fragmented. Although the Glossy Black-Cockatoo is highly mobile and can disperse tens of kilometres, or commute up to 12 km between the nest and feeding areas, most movements appear to be local (Higgins 1999). Habitat fragmentation, with long distances between nesting areas and food sources, may have energetic consequences for foraging efficiency, and hence for chick growth and survival, and breeding productivity, leading to population decline (as for Carnaby's Cockatoo *C. latirostris* and Forest Red-tailed Black-Cockatoo *C. banksii naso*: Garnett & Crowley 2000; Cooper *et al.* 2002).

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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](http://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) Glossy Black-Cockatoo *Calyptorhynchus lathami*. Review of current information in NSW. September 2008. Unpublished report arising from the Review of the Schedules of the Threatened Species Conservation Act 1995. NSW Scientific Committee, Hurstville.