HISTORICAL RECORDS OF THE GLOSSY BLACK COCKATOO *CALYPTORHYNCHUS LATHAMI* AND RED-TAILED BLACK COCKATOO *C. MAGNIFICUS* IN SOUTH-EASTERN AUSTRALIA

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SUMMARY

This article discusses the historical records of red-tailed black cockatoos in south-eastern Australia (including Victoria, South Australia and Tasmania), and attempts to discern whether they refer to the Glossy Black Cockatoo *Calyptorhynchus lathami* or the Red-tailed Black Cockatoo *Calyptorhynchus magnificus*. The emphasis is on *C. lathami*, as the historical records for *C. magnificus* have been adequately covered elsewhere. The discussion covers the past distribution of *C. lathami* and *C. magnificus*, and suggests the reasons for these distributions.

INTRODUCTION

The reasons for undertaking this exercise are twofold. First, several workers have suggested past distributions of both *C. lathami* and *C. magnificus*, using historical records, without critically examining these accounts (*e.g.* Ford 1980, Forshaw 1981, Wakefield 1958). Secondly, through my own work on subfossil and fossil avian remains, I have described the fossil remains of *C. lathami* excavated from a cave in south-eastern South Australia (Baird 1985). This record presents tangible evidence for the palaeo-distribution of *C. lathami* and allows for further speculation on its subsequent withdrawal from the area between Mallacoota (in the far east of Victoria), Kangaroo Island (South Australia), and Tasmania.

All records from the literature are quoted. This will allow readers to make their own judgement as to the quality of each record. Because of the anecdotal nature of many of the historical reports, I have used characters that might not stand up to rigorous analysis but which I believe can, in these cases, be used to separate the two species. I assume that the species have not changed their diets in the last 17,000 years, and that the reports of red-tailed black cockatoos in the literature are correct and not misidentifications of the Yellow-tailed Black Cockatoo *Calyptorhynchus funereus*. Any reference in this text regarding distributions can be considered to be only for south-eastern Australia, (*e.g.* Kangaroo Island, King Island, south-eastern South Australia, Tasmania, and Victoria).

The evidence used to identify the occurrence of the two species includes skins, eggs, fossils, and published records. The accounts in the literature have been assigned to species using the following four guidelines.

A. Colour of the banding in the tail of females. In *C. lathami* the tail band is red with a uniform ventral wash of yellow, whereas in *C. magnificus* it shades proximally to pale orange-yellow (see Joseph in Parker 1982).

B. Timidity of the birds reported (tame = *C. lathami*, timid = *C. magnificus*). This behaviour was noted by North (1896), Gould (1865), and Joseph (1982a).

C. Association with a particular region and food-type (coastal records, near Drooping Sheoak *Casuarina stricta* = *C. lathami*, non-coastal records, near Bull Oak *Casuarina luehmannii* or Brown Stringybark *Eucalyptus baxteri* = *C. magnificus*).

D. Geographic probability.

At present the ranges for *C. lathami* and *C. magnificus* in south-eastern Australia are (see Fig. 1): *C. lathami*, currently recorded from Kangaroo Island, South Australia (Joseph 1982b), and just west of Mallacoota, Victoria (Norris & Mansergh 1981) and *C. magnificus*, currently recorded from western Victoria and adjacent areas of south-east South Australia (Joseph 1982c).

Recorded food-items of the two species differ quite markedly. *C. lathami* feeds almost exclusively on *Casuarina*, including *C. stricta*, *C. littoralis* and *C. torulosa*. Food-items of minor importance include *Angophora*, *Acacia*, and *Eucalyptus* (Forshaw 1981). The main food item on Kangaroo Island is *C. stricta*. Because *C. torulosa* is restricted to northern New South Wales and *C. littoralis* is sparsely distributed in eastern Victoria, I assume that *Calyptorhynchus lathami* depended on *C. stricta* as its main food source in south-eastern

Australia. *C. magnificus* is also restricted in its range of foods. Joseph (1982c) mentions that this species, in south-eastern Australia, is dependent upon *Eucalyptus baxteri* for food and shelter. The only *Casuarina* sp. reported as a food-item of this species is *C. luehmannii* which it uses while summer fruiting is in progress, January to March (Joseph 1982c). Because large stands of *C. luehmannii* are restricted to the north-west of Victoria and the upper south-east of South Australia, a northward migration is necessary to utilize this resource. Food-items of minor importance include *Banksia* and *Hakea* (Attiwill 1960).

At present the food trees important to the two *Calyptorhynchus* spp are distributed as follows.

Casuarina stricta is widespread throughout southern Victoria, south-eastern South Australia, Kangaroo Island, King Island, and Tasmania. In the classification system of Specht *et al.* (1974), *C. stricta* is considered both a low open-forest and a low woodland component on King Island and eastern and south-eastern Tasmania, tall shrubland in Victoria, and low woodland throughout south-eastern South Australia. The densest stands occur coastally. Around Port Phillip Bay, *C. stricta* occurs on all shorelines and slightly inland in the east (Beauglehole 1983). In the foothills and coast around Adelaide, *C. stricta* was once abundant but has since been cleared wholesale and selectively removed as it was considered good for both firewood and ornamentation (Cleland & Sims 1968).

Casuarina luehmannii is restricted to the north-west of Victoria and eastern South Australia, extending eastward to 40 km north-west of Port Phillip Bay (Churchill & deCorona 1972, Beauglehole 1983). Holliday & Hill (1969) mention that this species is restricted to "moderately dry inland areas of eastern Australia". It does not occur on King Island or Tasmania.

Eucalyptus baxteri is widespread throughout south-eastern South Australia and Victoria (Beauglehole 1980). Specht *et al.* (1974) classify it as a major component of open-forest in the western coastal plains and western highlands of Victoria, open-forest in south-eastern South Australia, Mt Lofty Ranges and Kangaroo Island and only a small component in the eastern sections of Victoria. This species does not occur on King Island or Tasmania.

RECORDS

Figure 1 shows the position of the records detailed below.

1. Journal of Francois Peron, translated by Plomley (1983 p29)

26 January 1802. ". . . large flocks of birds darting about under their evergreen foliage. I noted particularly among them . . . the large black cockatoos whose tails are elegantly adorned with transverse bands of a beautiful rosy hue."

The sighting was made while Peron, and several others, were on a reconnaissance trip travelling up the Derwent River, Tasmania. The approximate position of the party on 26 January was Sandy Bay. I refer this to *C. lathami* by the colour of the tail, the coastal nature of locality, and the domination of the local woodland by *C. stricta.*

2. Journal of Robert Brown, published in Whittell (1954 p53)

"Port Phillip was entered on April 26, [1802] and the next day a landing was made on the east side". Brown notes in his journal, "Many birds were seen and heard and C. Flinders thought he heard the notes of all at Port Jackson. The *Psittacus banksii,* a new white crested species, *Merops carunculatus, Merops* sp. nov., *Corvus corax* . . .".

His *Psittacus banksii* is referred to *C. lathami* by the coastal nature of the record and the domination of the local woodland by *C. stricta.*

3. Journal of Nicolas Baudin, translated by Cornell (1974 p468)

14 January 1803. "The red-tailed birds reported turned out to be merely black cockatoos with splashes of red in their tail-feathers, and were exactly the same as those we had obtained at Port Jackson."

The locality at which these observations were made was near American River, Kangaroo Island. It is referred to *C. lathami* by geographic probability, only this species having been subsequently recorded from Kangaroo Island.

4. A.M. Knopwood, published in Shillinglaw (1879 p95)

"Friday, 18 [of November, 1803] A.M. – At 8 we observed H.M. ship *Calcutta* standing for Arthur's Seat; and at O [12:00 a.m.] Liet. Johnson, of the Royal Marines, Mr. Hum-

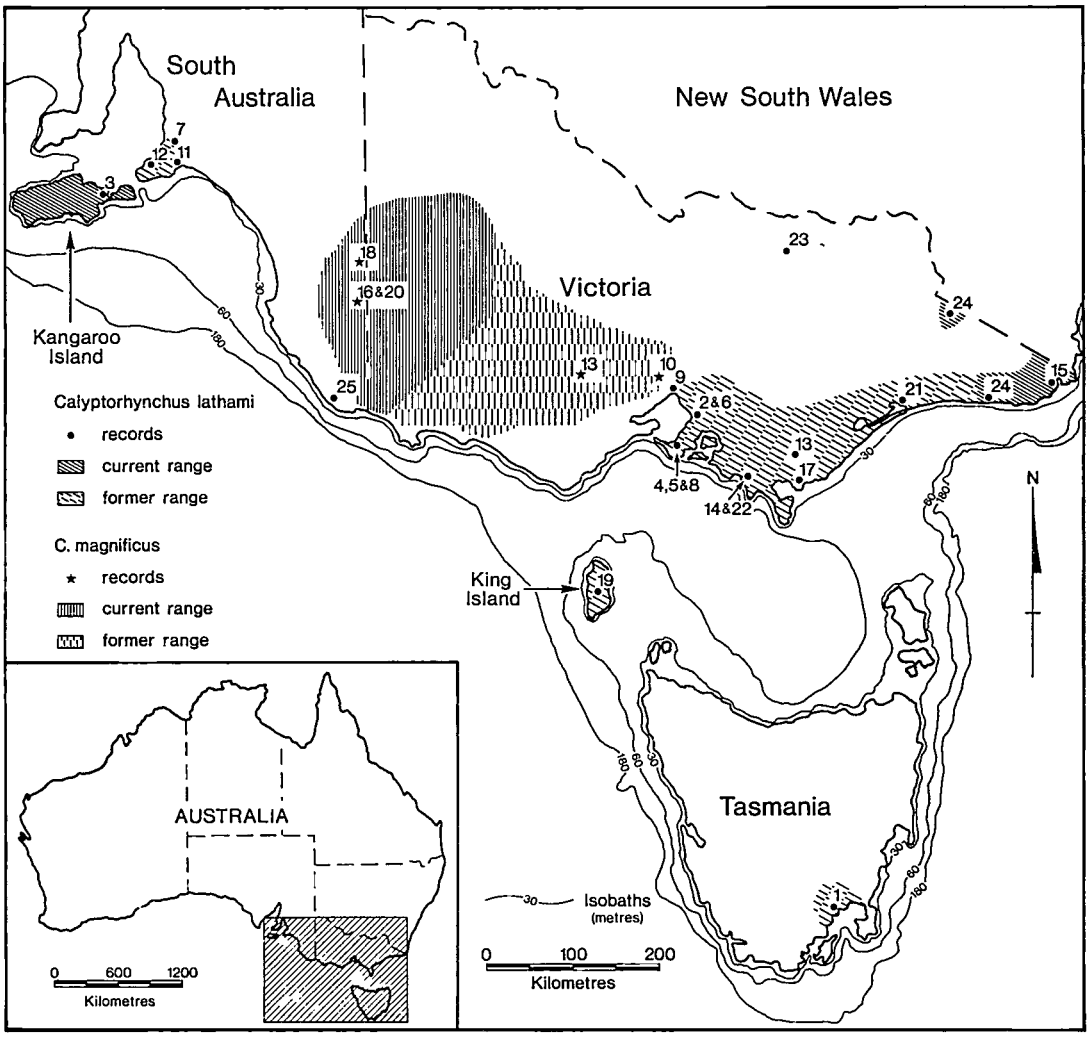

Figure 1. The current and former ranges of *Calyptorhynchus lathami* and *C. magnificus* in south-eastern Australia. The current ranges are those areas delineated by the continuous lines. The former ranges are those areas delineated by the discontinuous lines. The ranges for both species at the time of European contact included both the current and former ranges. Records of each *Calyptorhynchus* species are numbered and discussed in the text. The 180 metres isobath approximates the coastline during the height of the last glacial at 17,000 years before present. (Figure adapted from Head & Stuart 1980).

Note added in proof:
See Joseph (1982a) for an additional record, referred by him to *C. magnificus,* from Tyrendarra (= 20 km E of Portland). — Editor.

phries, and self went in my boat for the first time to Yellows Point; we caught some fish, but killed a couple of very handsome [specimens] of Banks Cockatwo; . . ."

This is referred to *C. lathami* by the coastal nature of the locality and the domination of the local woodland by *C. stricta.*

5. A.M. Knopwood, published in Shillinglaw (1879 p96)

"Thursday, 24 [of November, 1803]. A.M. – At 8 rain; 10, fine settled wr. 3 p.m. I walked to the opposite shore, across the island to S.S.E. part of the shore; see a great many of the Banktian cockatoos."

The island referred to is the Mornington Peninsula so he probably reached Western Port Bay. This is referred to *C. lathami* for reasons given under 4.

6. E.C. Hobson, published by Kenyon (1930 p96)

1 April 1837 (Monday). "The forest between Melbourne and Arthur's Seat teems with life . . . . The splendid black and scarlet Macaw is also a beautiful addition to the coterie."

The area mentioned is on the east side of Port Phillip Bay. This is referred to *C. lathami* for reasons given under 4.

7. E. Ashby, published in Matthews (1916-1917 p131)

Sometime during the 1840's. Mr Ashby mentioned the following in reference to *Calyptorhynchus lathami,* "Mrs. Coleman tells me that about seventy years ago, when she was a girl, that cockatoos with red tail-feathers used to come to Echunga in the Adelaide Hills to eat Wattle seed *(Acacia pycnantha).*"

Although only a minor source of food, *Acacia* is considered part of the diet of *C. lathami.* This is referred to *C. lathami* by the type of food being eaten and biogeographic probability.

8. Backhouse (1843 p505)

15 November 1837. In describing the birds of the Port Phillip and Western Port Bay area Backhouse mentions ". . . there are also Yellow-tailed and Red-tailed Black Cockatoos. . ."

The latter record is referred to *C. lathami* for reasons given under 4.

9. Haydon (1846 p69)

In discussing the animals seen during his stay in Melbourne between 1840 and 1844. "Two kinds of black cockatoos are found here; one having a red tail, the other yellow."

From the text the locality in question is apparently in the vicinity of the then newly-founded city of Melbourne referred to as Australia Felix. The former record is referred to *C. lathami* for reasons given under 4.

10. Batey (1907 p11)

As part of his listing, he included "Banksian Cockatoo *(Calyptorhynchus banksii)* – two on Redstone Hill about 1849; one shot".

The area, as Batey states, is 20 miles north-west of Melbourne. The area is just on the border of *Casuarina luehmannii* territory of today. This record is referred to *C. magnificus* by the non-coastal nature of the locality and the presence of *C. leuhmannii* in the local woodland.

11. S.A. White, published in Mathews (1916-1917 p131)

". . . quite numerous in the seventies of the last century in the southern portion of the Mt. Lofty Ranges . . ., I saw it myself in Black Swamps in 1885. Many of the old settlers have told me that the Red-tailed Black Cockatoos were very plentiful in the ranges south of Adelaide in the early days of the colony."

This is referred to *C. lathami* by the dominance of the local woodland by *C. stricta.*

12. Clark (1888-1889)

In discussing distributions of parrots in the Mount Lofty Ranges mentioned, "One of my brothers who visited Encounter Bay passing through Willunga and Yankililla in 1850 or 1851 saw black cockatoos some of which had yellow and others red in their tails . . . and I have heard of red-tailed birds being seen in the hills."

The record is referred to *C. lathami* by the dominance of the local woodland by *C. stricta.*

13. North (1896 p136)

Three sightings were mentioned: "Near Ballarat, in Victoria, and in the Illawarra district of New South Wales, I found this species unusually wary, keeping to the tops of the tallest Eucalypti and seldom coming within shooting range." The third continues the same train of thought, "But when the heavily

timbered clad ranges of South Gippsland, in Victoria, were first settled upon by selectors, I have frequently stood under a dead *Acacia* while several of these birds have been busily engaged. . .".

The first Victorian sighting is referred to *C. magnificus,* due to the elusive nature of the individuals and their presence in an area where *Casuarina luehmannii* occurs. The New South Wales sighting will not be discussed here as it is outside of the area considered. The third sighting is referred to *C. lathami* on the grounds of tameness and geographical probability, *contra* North (1896). Ford (1980) also believed this record to be *C. lathami.*

14. Blakers *et al.* (1984 p241)

Under the heading for *C. lathami* the authors mention a breeding record for the species, "in 1899 at Tarwin [Victoria]". The breeding record is based on a single egg (South Australian Museum (SAM) B2785) collected by R. Heard on 4 June 1899 at Tarwin. The dimensions of the egg are 48.13 x 33.57 mm which are equivocal for either *C. lathami* or *C. magnificus* (Parker pers. comm.). I refer the record to *C. lathami* by the coastal nature of the site and geographical probability.

15. White (1915 p138)

White records having collected an adult male, adult female and a one year old female of *C. magnificus* from Mallacoota, Victoria. Lea & Gray (1935) referred to one of these birds as *C. lathami* but did not correct the original identification. Wakefield (1958) questioned the original record based on biogeographic probability, and Lendon (1968), acting on Wakefield's query, demonstrated that the specimens were in fact referable to *C. lathami.*

16. E. Ashby, published in Mathews (1916-1917 p131)

In referring to *C. lathami* he was quoted as saying, "a few years [ago] a pair of this species nested at Naracoort[e] [South Australia]. . .". Parker (1982) considers this record equivocal. Due to the overwhelming evidence of *C. magnificus* around Naracoorte, it is referred to *C. magnificus.*

17. Ray (1933)

As part of a listing of birds seen during a field trip in the Tarraville district, Victoria she includes "Black Cockatoo, *Calyptorhynchus lathami* Temminck". This record is referred to *C. lathami* based on geographic probability.

18. Sutton (1937)

This record is based on three tail feathers (SAM B30809) referred to *C. lathami* from the Bangham scrub between Frances and Wolseley. It was discounted by Lendon (1946) who referred it to *C. magnificus.* Condon (1962) on the other hand vouched for the record. Parker (1982) identified the three tail feathers as two females and one male. The feathers referred to females are undoubtedly *C. magnificus* and the feather referred to a male is indeterminate but Parker suggests that it is *C. magnificus* by association.

19. Green & McGarvie (1971 p17)

As part of a listing of the birds of King Island they wrote; "264. Red-tailed Black Cockatoo *Calyptorhynchus banksia.* This species, or possibly the Glossy Black Cockatoo, once occurred on the island but disappeared about 1920 following extensive fires (pers. comm. B.C. Heddle)." This is interesting for in Lendon (1973 p65) McGarvie states, "An old resident says red-tailed black cockatoos were on King Island fifty or more years ago; these were likely to be Glossy, the habitat being more suitable in those days." In fact *Casuarina stricta* makes up a large part of the coastal component of the forest cover on the island. This record is referred to *C. lathami* based on the local woodland dominated by *C. stricta* and geographic probability.

20. Attiwill (1972 p61)

In discussing the breeding records of birds in the Naracoorte district, south-eastern South Australia, he mentions *C. lathami* "October only month when eggs recorded. Rare. Feeds on seeds of *Casuarina* species." Parker (1982), through discussions with Mr Attiwill was informed that the *Casuarina* sp. referred to in the record was *C. luehmannii.* The locality was approximately 10 km north of Naracoorte, South Australia. Based on this information Parker (1982) referred this record to *C. magnificus.*

21. Fell (1962)

On discussing birds that have at one time visited Fell's property at Metung, Victoria he included, "In certain autumns both the black cockatoo and the banksian black cockatoo appear when the pine seeds are ripening." The latter record is referred to *C. lathami* based on the coastal nature of the locality, *Casuarina stricta*

forms a part of the local woodland, and geographic probability. The former record is presumably *C. funereus.*

22. Blakers *et al.* (1984 p241)

Under the section on *C. lathami,* the authors mention a recent record, of the species, for Tarwin, Victoria. The record was submitted by Adrian Walker. The sighting was made in August 1974, not October as stated, and a total of four individuals were seen. The record also considered to be *C. lathami* by geographic probability.

23. Forshaw (1981 p83)

In his discussion of the distribution of *C. lathami* in Victoria, Forshaw mentions a skin in the Museum of Victoria collections from Wangaratta (Museum of Victoria (NMV) B7606). This specimen may be an individual from the population of *C. lathami* north of Narrandera, N.S.W. (Llewellyn 1974). Forshaw (1981 p84) in fact mentioned that individuals of the inland populations both have pronounced local movements and occasionally are found in areas "where they are virtually unknown".

24. Norris & Mansergh (1981)

In their species lists on pages 171, 177, 191, 197, 247, 251, 265, and 312 they list *Calyptorhynchus lathami* as occurring in the field areas with midpoints of Mt Stradbroke, Little River Gorge, Mallacoota Inlet (North), Mallacoota Inlet (South), Shipwreck Creek, Genoa Peak, Sydenham Inlet, and Wigan Inlet respectively. Due to the number of reports, in an area already known to be frequented by *C. lathami,* I have only denoted the westernmost records on Fig. 1.

25. Baird (1985)

Baird has recorded fossils of *magnificus* and *lathami* from Green Waterhole Cave, Tantanoola, South Australia.

DISCUSSION

The nadir of sealevel produced by the last glaciation would have been between 120 - 175 metres below the present sealevel, sometime between 20,000 - 14,500 y.B.P. (Jongsma 1970, Veeh & Veevers 1970, Bloom *et al.* 1974). At this time the distribution of *Casuarina stricta* may have included the coastline encompassing all of south-eastern Australia, including Tasmania (see Fig. 1) and likewise the distribution of *Calyptorhynchus lathami* may have encompassed a similar area. But as the sealevel began to rise, in synchrony with the retreat of the glaciers in the northern hemisphere, the distribution of *C. stricta* would have altered in response to the changing of the coastline. *C. stricta* would be relict on those areas with sufficient elevation to remain above the rising sealevel (*e.g.* Kangaroo Island, King Island, Tasmania and mainland Australia), which reached its present-day level by 6000 y.B.P. (Thom & Chappell 1975). Analysis of microfloral remains from sediments distributed around the present coast should demonstrate an increase in *Casuarina stricta* at this time. In fact *C. stricta,* or a *Casuarina* sp. with similarly-sized pollen-grains, is known to dominate microfloral assemblages associated with sediments deposited around the time of maximum sealevel (Singh *et al.* 1981, Dodson 1974a, Head 1983). *C. stricta* forms an abnormally large percentage in the pollen-grain samples dated between approximately 7,000 to 5,000 y.B.P., after which, the abundance of this species decreases dramatically. It has been suggested by Dodson (1974a) that during the period between 7,000 to 5,000 y.B.P. the south-eastern part of Australia was marginally wetter than today. After 5,000 y.B.P. the rainfall decreased (Kershaw 1981). This change in the climate, according to Singh *et al.* (1981), "is probably sufficient to explain . . . the major vegetation change".

At the same time that *C. stricta* was apparently enjoying maximum growth and distribution, *C. lathami* may have also enjoyed a similar expansion of both its numbers and range. Joseph (1982d) has indeed suggested the idea of a continuous distribution at some time for *Calyptorhynchus lathami.* But as Baird (1985) has mentioned, the species may never have been distributed continuously across the present coastline of south-eastern Australia. This was put forward because the distribution of *C. lathami* may have been broken by the vegetation of the volcanic plains of Victoria, due to its resistance to vegetative changes brought on by climatic fluctuations (Dodson 1974b). The already fragmented distribution of *C. lathami* may have been separated by increasingly larger distances with the decline of *C. stricta* in the latter half of the Holocene.

With the onslaught of tree felling brought upon by the European settlers, the then marginal areas may have been cleared to the point of not being able to support the species

any longer, as may have happened in the Mt Lofty Ranges of South Australia, eastern Victoria and Tasmania. Fire was apparently the cause of the extinction of *C. lathami* on King Island (Green & McGarvie 1971).

At the same time that *C. lathami* was declining in south-eastern Australia (after 5,000 y.B.P.), *C. magnificus* may have been expanding along with its more arid-adapted food-plants *(C. luehmannii* and *E. baxteri*). Hence the presence of both species in Green Waterhole Cave (Baird 1985) may indicate that the deposit exhibits sampling from different periods and is not necessarily an indication of sympatry of the two species. The increased range of *C. magnificus,* during the late Holocene, may have also been the species' former range during the height of the last glacial, 20,000 – 9,000 y.B.P., when drier conditions also prevailed.

I suggest that at the time of European contact the distribution of *C. magnificus* was much the same as today with a possible extension of its range as far as Melbourne on the western plains. *C. lathami* was probably in the southern-most part of the Mount Lofty Ranges, throughout eastern Victoria (as far as the eastern side of Port Phillip Bay), King Island and Tasmania (at least the eastern side).

Since the advent of European settlement of south-eastern Australia, the range of *C. lathami* has continued to decrease. The few records of the species in its former range in eastern Victoria (Ray 1933, Fell 1962) are probably the post-breeding wanderings of individual birds or groups. Parker (in Forshaw 1981) mentions that the later records of *C. lathami* from the Fleurieu Peninsula may be the result of individuals crossing the Backstairs Passage from Kangaroo Island to the mainland during post-breeding dispersal.

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