

= Red @-@ tailed black cockatoo =

The red @-@ tailed black cockatoo (*Calyptorhynchus banksii*) also known as Banksian- or Banks ' black cockatoo , is a large black cockatoo native to Australia . Adult males have a characteristic pair of bright red panels on the tail that gives the species its name . It is more common in the drier parts of the continent . Five subspecies are recognised , differing most significantly in beak size . Although the more northerly subspecies are widespread , the two southern subspecies , the forest red @-@ tailed black cockatoo and the south @-@ eastern red @-@ tailed black cockatoo are under threat .

The species is usually found in eucalyptus woodlands , or along water courses . In the more northerly parts of the country , these cockatoos are commonly seen in large flocks . They are seed eaters and cavity nesters , and as such depend on trees with fairly large diameters , generally Eucalyptus . Populations in southeastern Australia are threatened by deforestation and other habitat alterations . Of the black cockatoos , the red @-@ tailed is the most adaptable to aviculture , although black cockatoos are much rarer and much more expensive in aviculture outside Australia .

= = Taxonomy and naming = =

The species complex was first described by the ornithologist John Latham in 1790 as *Psittacus banksii* , commemorating English botanist Sir Joseph Banks . The red @-@ tailed black cockatoo also has the distinction of being the first bird from Eastern Australia illustrated by a European , as a female , presumably collected at Endeavour River in north Queensland , was sketched by Banks ' draughtsman Sydney Parkinson in 1770 . Narrowly predating Latham , English naturalist George Shaw described *Psittacus magnificus* from a specimen collected somewhere in the Port Jackson (now Sydney) region . For many years , the species was referred to as *Calyptorhynchus magnificus* , proposed by Gregory Mathews in 1927 as Shaw 's name had predated Latham 's 1790 description . For several decades , Mathews ' proposal was accepted by many authorities , although it was unclear whether the original Port Jackson reference had actually referred to the red @-@ tailed black or , more likely , the glossy black cockatoo . In 1994 , an application to conserve *Calyptorhynchus banksii* as the scientific name was accepted by the ICZN . The red @-@ tailed black cockatoo is the type species of the genus *Calyptorhynchus* , the name of which is derived from the Greek *calypto-* / ??????- " hidden " and *rhynchus* / ?????? " beak " . The change was first made by Anselme Gaëtan Desmarest in 1826 .

In 1827 , Jennings proposed the name *Psittacus niger* for the bird . The binomial combination had already been used by Carl Linnaeus for the lesser vasa parrot in 1758 , and by Johann Friedrich Gmelin for the palm cockatoo in 1788 ; it was thus invalid even though both other species were already known by different names at the time . Alternate common names include Banks ' black cockatoo , Banksian black cockatoo , or simply black cockatoo . Indigenous people of the central Cape York Peninsula have several names for the bird : (minha) pachang in Pakanh ; (inh -) inhulg in Uw Oykangand ; and (inh -) anhulg in Uw Olkola . (The bracketed prefix (inh- or minha) is a qualifier meaning ' meat ' or ' animal ' .) Ngarnarrh or KarnamarrTo are terms used by the Gunwinggu of Arnhem Land . In Central Australia , southwest of Alice Springs , the Pitjantjatjara term for the subspecies *C. b. samueli* is iranti . Karrak is a Noongar term derived from the call for the southwestern race *C. b. naso* . In the language of the Bungandidj of south @-@ eastern South Australia and western Victoria this bird was called treen .

= = = Classification = = =

The red @-@ tailed black cockatoo 's closest relative is the glossy black cockatoo ; the two species form the subgenus *Calyptorhynchus* within the genus of the same name . They are distinguished from the other black cockatoos of the subgenus *Zanda* by their significant sexual dimorphism and calls of the juveniles ; one a squeaking begging call , the other a vocalization when swallowing food .

A 1999 mtDNA phylogenetic study of cockatoos utilizing among others , the red @-@ tailed black

cockatoo supported the hypotheses that cockatoos originated in Australia before the Paleogene and Neogene periods (66 mya , marking the end of the Mesozoic , to 2 @. @ 6 mya) and that the genus *Cacatua* diversified in two separate radiations to the islands of Indonesia , New Guinea , and the South Pacific . It concluded that the first extant cockatoo to diverge from the ancestral cockatoos was the palm cockatoo , followed by a subclade containing the black cockatoos .

A 2008 mitochondrial and nuclear DNA phylogenetic study of the parrots , cockatoos and related taxa by utilizing among others the yellow @-@ tailed black cockatoo , provides confirmatory evidence for a Gondwanaland origin of the ancestral parrots in the Cretaceous period , and an Australasia divergence of the ancestral cockatoos from the parrots in either late Cretaceous (66 mya) or Paleogene (45 mya) periods depending on baseline assumptions .

Five subspecies are recognised ; they differ mainly in the size and shape of the beak , the overall bird size and female colouration :

C. b. banksii is found in Queensland and , rarely , in far northern New South Wales ; it is the largest subspecies by overall body size and has a moderate @-@ sized bill . It merges with subspecies *macrorhynchus* around the Gulf of Carpentaria . It has disappeared from much of its former range in northern New South Wales and southeast Queensland .

C. b. graptogyne , (Endangered) known as the south @-@ eastern red @-@ tailed black cockatoo , is found in southwestern Victoria and southeastern South Australia in an area bordered by Mount Gambier to the west , Portland to the south , Horsham to the northeast and Bordertown to the north . The smallest of the five subspecies , it was only recognised as distinct in the 1980s . It is predominantly dependent on stands of *Eucalyptus baxteri* (brown stringybark) , *Eucalyptus camaldulensis* (river redgum) and *Allocasuarina luehmannii* (buloke) for feeding and nesting . These tree species have been all threatened by land clearing and most remaining are on private land ; possibly only 500 ? 1000 individuals remain . The subspecies and its habitat are the subject of a national recovery plan . In 2007 local landowners are being reimbursed for assisting in regenerating suitable habitat .

C. b. macrorhynchus , given the name great @-@ billed cockatoo by Mathews , is found across northern Australia . Although thought to be widespread and abundant , this subspecies has been little studied . It is also large and has a large beak , as its subspecific name implies . Females lack red colouration in their tails .

C. b. naso (Near Threatened) is known as the forest red @-@ tailed black cockatoo and is found in the southwest corner of Western Australia between Perth and Albany . This form has a larger bill , and favours marri (*Corymbia* (formerly *Eucalyptus*) *calophylla*) , jarrah (*E. marginata*) and karri (*E. diversicolor*) .

C. b. samueli exists in four scattered populations : in central coastal Western Australia from the Pilbara south to the northern Wheatbelt in the vicinity of Northam , and inland river courses in Central Australia , southwestern Queensland and the upper Darling River system in Western New South Wales . Birds of this subspecies are generally smaller with smaller bills than the nominate *banksii* .

= = Description = =

Red @-@ tailed black cockatoos are around 60 centimetres (24 in) in length and sexually dimorphic . The male 's plumage is all black with a prominent black crest made up of elongated feathers from the forehead and crown . The bill is dark grey . The tail is also black with two lateral bright red panels . Females are black with yellow @-@ orange stripes in the tail and chest , and yellow grading to red spots on the cheeks and wings . The bill is pale and horn @-@ coloured . The underparts are barred with fine yellow over a black base . Male birds weigh between 670 and 920 grams (1 @. @ 5 ? 2 lb) , while females weigh slightly less at 615 ? 870 grams (1 @. @ 25 ? 1 @. @ 75 lb) . In common with other cockatoos and parrots , red @-@ tailed black cockatoos have zygodactyl feet , two toes facing forward and two backward , that allow them to grasp objects with one foot while standing on the other , for feeding and manipulation . Black cockatoos are almost exclusively left @-@ footed (along with nearly all other cockatoos and most parrots) .

Juvenile red @-@ tailed black cockatoos resemble females until puberty , which occurs around four years of age , but have paler yellow barred underparts . As the birds reach maturity , males gradually replace their yellow tail feathers with red ones ; the complete process takes around four years .

As with other cockatoos , the red @-@ tailed black cockatoo can be very long @-@ lived in captivity ; in 1938 , ornithologist Neville Cayley reported one over fifty years old at Taronga Zoo . Another bird residing at London and Rotterdam Zoos was 45 years and 5 months of age when it died in 1979 .

Several calls of red @-@ tailed black cockatoos have been recorded . The bird 's contact call is a rolling metallic krur @-@ rr or kree , which may carry long distances and is always given while flying ; its alarm call is sharp . Displaying males vocalize a sequence of soft growling followed by a repetitive kred @-@ kred @-@ kred @-@ kred .

= = Distribution and habitat = =

The red @-@ tailed black cockatoo principally occurs across the drier parts of Australia . It is widespread and abundant in a broad band across the northern half of the country , where it has been considered an agricultural pest , with more isolated distribution in the south . It is found in a wide variety of habitats , from shrublands and grasslands through eucalypt , sheoak and Acacia woodlands , to dense tropical rainforests . The bird is dependent on large , old eucalypts for nesting hollows , although the specific gums used vary in different parts of the country .

Cockatoos are not wholly migratory , but they do exhibit regular seasonal movements in different parts of Australia . In the northern parts of the Northern Territory , they largely leave areas of high humidity in the summer wet season . In other parts of the country cockatoo seasonal movements tend to follow food sources , a pattern recorded in Northern Queensland , and New South Wales . In southwest Western Australia , both extant subspecies appear to have a north @-@ south pattern ; northwards after breeding in the case of subspecies naso , while movements by subspecies samueli in the wheatbelt can be irregular and unrelated to the seasons .

= = Behaviour = =

Red @-@ tailed black cockatoos are diurnal , raucous and noisy , and are often seen flying high overhead in small flocks , sometimes mixed with other cockatoos . Flocks of up to 500 birds are generally only seen in the north or when the birds are concentrated at some food source . Otherwise , they are generally rather shy of humans . In northern and central Australia , birds may feed on the ground , while the two southern subspecies , graptogyne and naso , are almost exclusively arboreal . They tend to fly rather slowly with intermittent deep flapping wingbeats , markedly different from the shallow wingbeats of the similar glossy black cockatoo . They also often fly at considerable height .

= = = Diet = = =

Although red @-@ tailed black cockatoos feed on a wide variety of native and introduced grains , the mainstay of their diet is eucalyptus seeds . There is a specific relationship between the species and larger @-@ fruited species of gums . These vary across Australia but include the marri in Southwest Western Australia , Darwin woollybutt *E. miniata* across the north of the country , *E. baxteri* in Victoria and the bloodwood species *Corymbia polycarpa* and *C. intermedia* in Queensland . Cockatoos bite off branchlets with clusters of seed capsules , then hold them with their feet while chewing and harvesting seeds before littering the ground with debris . Among other seeds and nuts consumed are those of Acacia , Allocasuarina , Banksia , Grevillea and Hakea , as well as berries , fruits and various insects . Cockatoos have adapted to eating some introduced plants such as the doublegee (*Emex australis*) . There is some evidence of consumption of wild radish (*Raphanus raphanistrum*) , wild turnip (*Brassica tournefortii*) and melon (*Citrullus* or *Cucumis*) . Red @-@ tailed black cockatoos have been implicated as agricultural pests of peanut and other crops at

Lakeland Downs in Far North Queensland . Here the cockatoos , in flocks of up to several hundred birds , have learned to sever the peanut plants above ground level before pulling the peanuts out of the ground by their stems and shelling them . They also damage electrical cables on pivot irrigators .

= = = Breeding = = =

The male red @-@ tailed black cockatoo courts by puffing up crest and cheek feathers , and hiding the beak ; it then sings and struts , ending in a jump and a flash of red tail feathers toward the female who will most often reply by defensively biting him . Breeding generally takes place from May to September except in the case of the South @-@ eastern subspecies , which nests during summer (December to February) . Pairs of the subspecies samueli in the Wheatbelt region of Western Australia may produce two broods , while those of South @-@ eastern subspecies only produce one . Nesting takes place in large vertical tree hollows of tall trees . Isolated trees are generally chosen , so birds can fly to and from them relatively unhindered . The same tree may be used for many years . Hollows can be 1 to 2 metres (3 ? 7 ft) deep and 0 @.@ 25 ? 0 @.@ 5 metres (10 ? 20 in) wide , with a base of woodchips . A clutch consists of 1 to 2 white , lustreless eggs , although the second chick is in most cases neglected and perishes in infancy .

= = Conservation status = =

The red @-@ tailed black cockatoo is protected under the Australian Environment Protection and Biodiversity Conservation Amendment (Wildlife Protection) Act 2001 . These birds are listed internationally under Appendix II of CITES , which allows international trade in live wild @-@ caught and captive @-@ bred specimens , if such exports are not detrimental to wild populations . However , the current Australian restrictions on commercial exports from Australia are not imposed by CITES . C. b. graptogyne is also specifically listed as endangered on the Australian Environment Protection and Biodiversity Conservation Act 1999 .

Status of the red @-@ tailed black cockatoo as a species , and as a subspecies , also varies from state to state within Australia . For example :

The south @-@ eastern red @-@ tailed black cockatoo subspecies C. b. graptogyne is listed as endangered on Schedule 7 of the National Parks and Wildlife Act 1972 of South Australia. and is the smallest of the species . Though a June , 2012 count of approximately 1500 individuals is a notable increase from the 2007 count of just 1000 , it remains in danger of extinction .

C. b. graptogyne is also listed as threatened on the Victorian Flora and Fauna Guarantee Act (1988) . Under this Act , an Action Statement for the recovery and future management of this species has been prepared . However , it should also be noted that the red @-@ tailed black cockatoo is listed under this Act under its previous Latin name , Calyptorhynchus magnificus . On the 2007 advisory list of threatened vertebrate fauna in Victoria , this subspecies is listed as endangered .

The red @-@ tailed black cockatoo is listed as vulnerable on the NSW Threatened Species Conservation Act (1995)

Like many Australian cockatoos and parrots , the red @-@ tailed black cockatoo is threatened by the thriving illegal trade in bird smuggling . High demand and high transit mortality mean that many more birds are taken from the wild than actually sold .

In 1997 , the Northern Territory Government 's Department of Natural Resources , Environment and The Arts (now defunct) proposed a plan for management of the trade in eggs and nestlings of C. b. macrorhynchus . To date the plan has not been implemented . The Australian Senate inquiry into the Commercial Utilisation of Australian Native Wildlife concluded in early 1998 that routine capture and commercial use of adult wild birds should be prohibited .

= = Aviculture = =

In the late 1990s , red @-@ tailed black cockatoos fetched prices of \$ 1750 in Australia and \$ 8900 (~ US \$ 6000) overseas . Hand @-@ raised birds can be bought for anywhere between \$ 15 @,@ 000 to \$ 40 @,@ 000 in the United States , where they are seldom seen in aviculture . Hand @-@ reared birds are able to learn a few words and can be quite affectionate , although males may become imprinted and unlikely to breed . The red @-@ tailed black cockatoo is the most commonly seen of the black cockatoos in captivity , and can be hardy and long @-@ lived if given plenty of space . Until now , most birds in captivity have been of subspecies *C. b. banksii* and *C. b. samueli* . Birds were often previously bred without much attention to subspecies of origin . However , with an increase in interest in conservation , more aviculturists are concerned about maintaining the integrity of the separate subspecies in cultivation , and so avoid crossbreeding .

The birds breed easily in captivity and can lay eggs every 3 weeks between February and November . Once the female has one egg in her nest , she will not lay another . An egg takes about 30 days to hatch . The eyes of the young open around 3 weeks and the yellow down will show black pin feathers at about 6 weeks . The best time for hand raising is at about 10 weeks when their black feathers are in place but the tail feathers are still short . Young birds fledge after about 4 months and both sexes have the colouring of their mother . Mature male birds will become aggressive to young male birds at puberty (4 years) ; they must be separated if caged .

The large and powerful bills of these birds can quickly and easily open a Brazil nut (normally requiring crushing in a vise or pounding with a hammer) , shearing it as neatly as a laser.They can also demolish a whole coconut with husk in 3 days

Captive breeding guidelines may be found in Husbandry Guidelines for the Red @-@ tailed Black Cockatoo (Bennett , 2008) .

= = Cultural depictions = =

A red @-@ tailed black cockatoo , named Karak , was the official mascot of the 2006 Commonwealth Games held in Melbourne . Promotion coincided with an implementation of initiatives to ensure the survival of the South @-@ eastern subspecies *graptogyne* , as well as increased environmental awareness at the games .

A traditional story from western Arnhem Land tells of Black Cockatoo and her husband Crow , who are Bird @-@ people , sprouting black feathers after becoming afflicted with a sickness from across the sea to the north . In fear of being buried underground , they transform into birds and fly high in the sky .

In the folklore of the Tiwi people , the red @-@ tailed black cockatoo is said to accompany the dead to heaven .