

Ten amazing things about Red-Tails



Photo: Bob McPherson



Government
of South Australia

South East
Natural Resources
Management Board



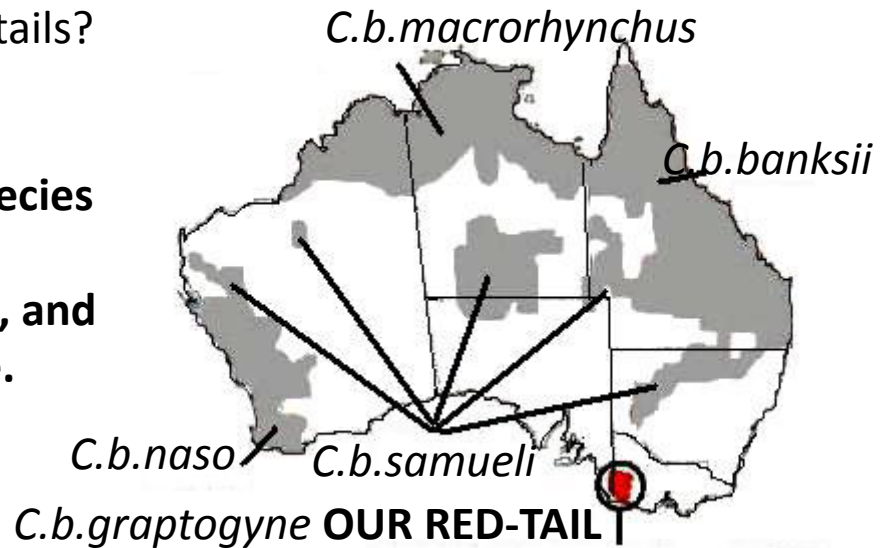
Birds Australia
CONSERVATION THROUGH KNOWLEDGE



**Conservation
Council SA**

There are five unique subspecies of Red-tailed Black-Cockatoo in Australia. Our local subspecies, the south-eastern Red-tailed Black-Cockatoo (*Calyptorhynchus banksii graptogyne*), is found only in south-east South Australia and south-west Victoria. With likely no more than 1400 birds left in the wild, our red-tail is in danger of extinction. Well, everyone knows that. But did you know these ten amazing facts about red-tails?

The five sub-species of Red-tailed Black-Cockatoo, and where they live.



1. What does *Calyptorhynchus banksii graptogyne* mean?

The scientific name is broken down into the genus, *Calyptorhynchus*, the collective genus for Black-Cockatoos, derived from the Greek words for 'covered' (*calypto*) and 'bill' (*rhynchus*) referring to the thick feather covering of the lower mandible (jawbone).

The species (*banksii*) is named in honour of Sir Joseph Banks (1743-1820) who sailed on Captain Cook's voyage (1768-71). Banks was the first person to take botanical samples of Eucalypts.

The subspecies name *graptogyne* comes from the Greek for 'painted lady' referring to the female being the brightest (and thus loveliest) of the subspecies.

2. Our Red-Tail is the brightest coloured of all

It's also the smallest of the five red-tails in Australia. Adult males and females are strikingly different. However from about one year of age when all the downy feathers are lost, young female and male red-tails look a lot like adult females. At about four years of age males develop their distinctive adult plumage.

Sometimes if plumage is not clearly visible you can distinguish between males and females by the bill. The females have an off-white bill; males a grey bill.



Male tail feather

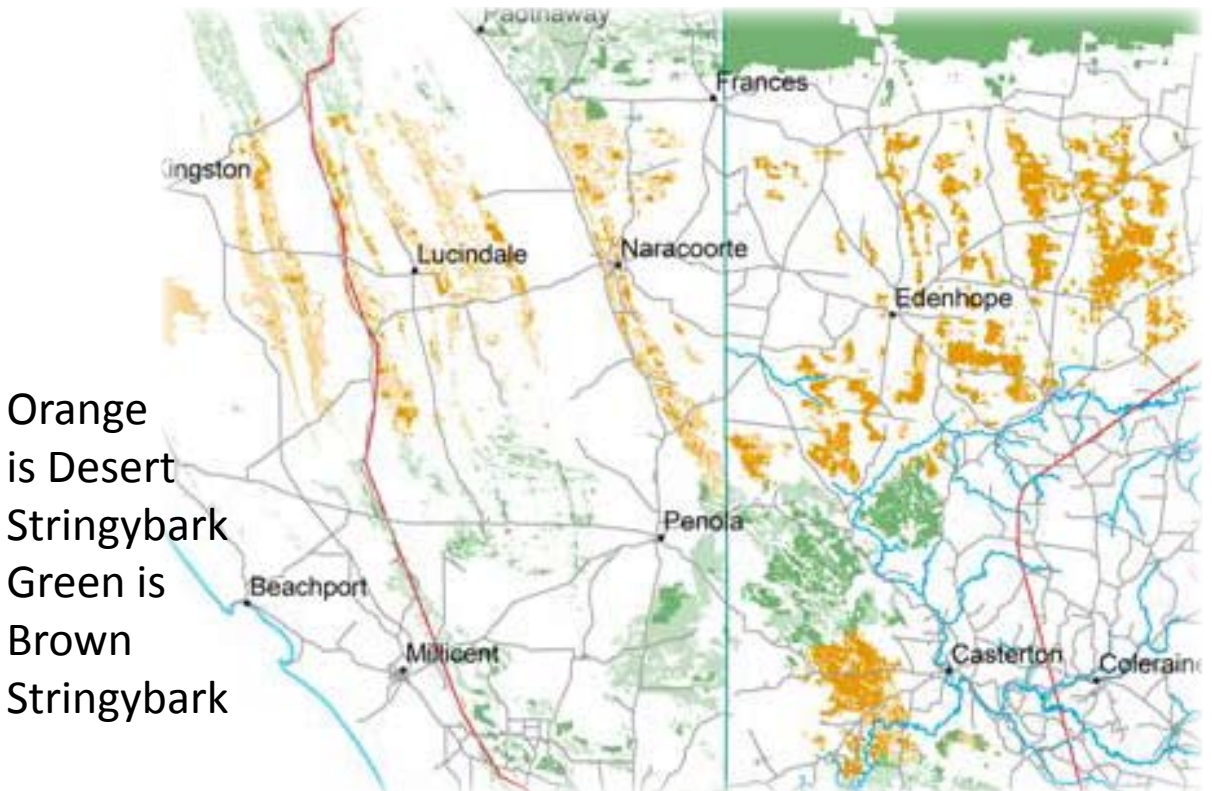


Female tail feather

Our red-tail (female) is the brightest of the five sub-species

3. What Red-Tails eat

Unlike other subspecies of red-tails, ours is a fussy feeder relying almost exclusively on the seeds of Brown Stringybark, Desert Stringybark and Buloke. The remaining brown and desert stringybarks flower on different cycles, making nuts or fruit available in different years throughout the red-tail's range. If there was only one local food tree species, the birds would go hungry as food would be available only periodically. For example, the bountiful Brown Stringybark forests near the Grampians are not used by red-tails, presumably because only one type of stringybark is available. It appears that our red-tails persist only where the range of the two stringybark species overlaps, even though the two stringybarks are rarely found in the same 'patch'.



While neither of the stringybarks flower annually (Desert Stringybark fruit on a three year cycle and Brown Stringybark is more variable, closer to a 2-4 year cycle) both species hold seed in their capsules for more than one year, which contributes to a year round supply of food. However, it has been shown that freshly matured crops are far more nutritious for red-tails.

They can get their daily food requirements in half a day in a fresh crop compared to 90% of the day in a crop over 12 months old.

As seed matures it also becomes drier and harder and takes more time to crack open. Importantly, the older the seed, the less likely that red-tails will raise chicks successfully. Not surprisingly they will move throughout their range to feed almost exclusively on the species most recently fruited. Because the two species of stringybark occur in separated patches throughout the red-tail range, the birds move around to locate the fruit.

Relatively large remnants of both species of stringybark woodlands remain in western Victoria because these nutrient poor soils were not well-suited for early agriculture or farming, this is less so in South Australia.



4. Buloke

Buloke, the only other food source regularly used by red-tails, takes 100 years for trees to become suitable red-tail foraging habitat. Buloke seed is only available from January to March, and they don't produce a big crop every year. In some good years, hundreds of red-tails flock to Buloke areas, to feed while they can.

In SA stringybark is much rarer than in Victoria and the little that remains occurs as individual paddock trees.

Amazingly the trees in paddocks appear to be very important as they tend to produce heavy crops of fruit – perhaps because of less competition for space, light, moisture or nutrients. Unfortunately, paddock trees are very vulnerable to damage from stock ringbarking and other impacts.

About 54% of stringybark woodlands within the red-tail range have been cleared. Young plants take at least 15 years before their seed will be on the menu for red-tails. Not long really, compared to Buloke...



Recent work has suggested that Buloke growth rates are very slow, with 19 cm diameter trees (measured at breast height) estimated at about 100 years old. While red-tails have been observed feeding in trees 100 years old (19cm), they prefer those over 200 years of age.

About 97% of Buloke woodlands, within the red-tail range, have been cleared. Buloke woodlands are listed as Endangered under the national Environment Protection and Biodiversity Conservation (EPBC) Act. Bulokes occur on heavier soils and have been cleared in earnest for agriculture.



Most remaining Buloke woodland is in poor condition and much consists of scattered trees in paddocks. The most significant reason for the loss of further trees in recent years is the installation of centre pivot irrigation systems. Burning crop stubble also results in Buloke loss. Adding to red-tail woes, much of the Buloke regeneration along roadsides (which at first looks promising) is too dense to provide suitable feeding habitat. Given the desperate state of Buloke, a goal to plant 10,000–18,000 Buloke trees per year for 20 years has been established to secure a recovery in Buloke resource levels after 100 years.

5. Effect of fire on food supply

While stringybarks and Buloke can both respond well to fire, frequent burning can reduce seed availability in stringybarks for at least nine years, with some effects persisting for more than 11 years. The impacts on Buloke can be much longer.

Deliberate burning of stringybark woodlands has been widely practised within the red-tail range over the last 100 years. It is likely that indigenous people performed deliberate burns for hunting and to clear a path through dense vegetation for travel, but the extent and frequency of these burns in stringybark vegetation is unknown. From the 1900s to 1920s, burns were performed



predominantly by farmers to reduce the wildfire risk and increase the palatability of plants for cattle. These burns reportedly occurred every few years, or as often as a fire would carry through the scrub. A fire exclusion policy was implemented in the 1920s, but was terminated 35 years later, followed by a moratorium, in 1988, specifically to address concerns about food supply for the red-tails. More recently, the moratorium was lifted in favour of block burns that produced low levels of canopy scorch. Low canopy scorch is achieved with a cool burn that minimises damage to the tree (see above for an example of a cool burn).

The frequency, intensity and extent of wildfires is likely to increase as our climate becomes hotter and drier, increasing the impact of wildfire on seed availability and narrowing the annual climatic window during which prescribed burns can safely occur.

6. The importance of food trees

Food shortages are the main threat to the long-term survival of our red-tails. This is not uncommon; food availability is an important factor influencing the survival and range of several cockatoo species. The cockatoo species that have increased their numbers and range since European settlement are generalists such as the Galah and inland Red-tailed Black-Cockatoo that now eat many introduced plants. Other cockatoos such as the Long-

billed Corella declined markedly with the decline of their dietary staple, Murnong (yam), but recovered by switching to onion grass and other introduced plants. Similarly, the Yellow-tailed Black-Cockatoo appears to have significantly increased in numbers in recent years. It is thought that adapting to eating the seeds of plantation pine has played a big part in this. By contrast, those cockatoos that have declined to the point of being threatened such as the South Australian Glossy Black-Cockatoo (Kangaroo Is), Carnaby's Cockatoo (WA), South-western Red-tailed Black-Cockatoo (WA), and our red-tails are all largely restricted to feeding on just a few native plant species.



left: that's all they get from each capsule.

right: what's left after a feed



7. Strange behaviour observed

Having just described the few food sources available to red-tails, in April 2009, two DENR staff spotted a flock of 34 red-tails feeding on Coastal Mallee (*Eucalyptus diversifolia*), north-east of Kingston, instead of the usual stringybark or Buloke. Over the same weekend a landholder from Parrakie (20 km northeast of Kingston) also observed the birds feeding in Coastal Mallee.



Not only is this a long way out of its normal range, it's feeding on the wrong plant! Maybe it's because of food shortages that they have strayed so far and tasted new fruit? Remember that our red-tails have also been reported to occasionally feed on the seeds of banksias, hakeas, small casuarinas and other native shrubs and these have not been taken up as a regular food source. It will be interesting to keep an eye on the area over the next few years to see whether this was a one off, or if the range has really been expanded and a new food source adopted.

8. Where to find Red-Tails

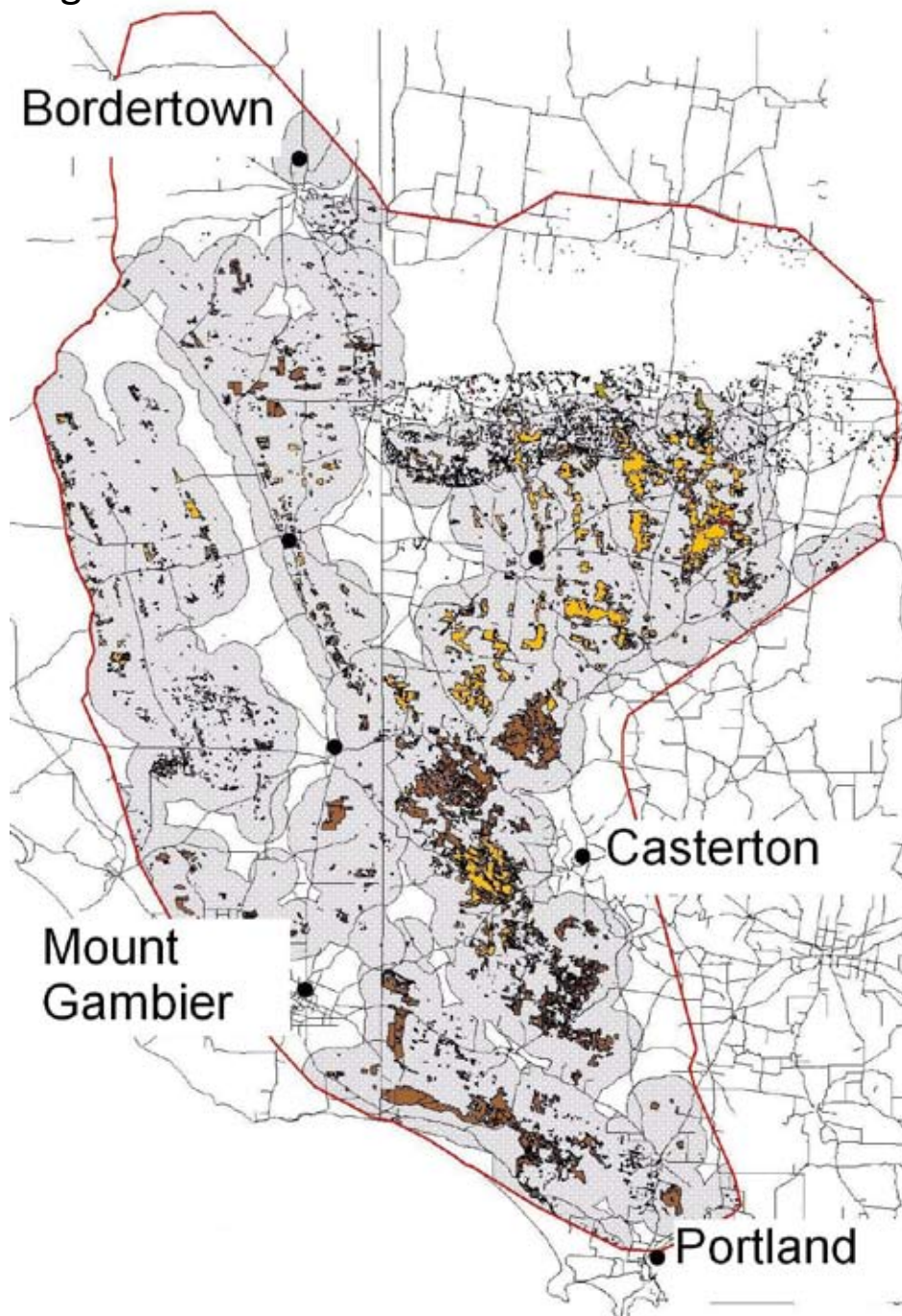
The total range of our red-tails covers an area of about 18,000 km². They spend most of their life in the tree tops, landing only briefly each day to drink. They are wary and often move on if an observer gets closer than about 50 m. They tend to stick to the forest, rarely flying across cleared land unless nesting or feeding in paddock trees. This is likely a strategy to decrease their exposure to predators such as Wedge-tailed Eagles.

Red-tails don't follow a regular migration but move throughout their range following available food. In some years, most birds are in the northern part of their range as they feed on Desert Stringybark and in other years most move south to feed on Brown Stringybark. During summer/autumn some or most of the known population feeds on seeds of Buloke. Through the breeding season, in spring and early summer, red-tails are generally seen alone or as family parties of 2 or 3 birds. In autumn and winter, flocks of 100 to 250 birds can be seen in areas with a good food supply. The sites where very large flocks of our red-tails have been recorded are Rennick State Forest (360 birds), Pieracle Swamp south-west of Casterton (~500), and Dunrobin (460). Large flocks can form when available food is concentrated in just a few patches. They usually roost in clumps of tall eucalypts, and sometimes use the same site each night for many months.

How do you find them? It's easiest to wait until you know they are in an area and then drive through the forest, stopping every 500 m to listen for cockatoos. Flocks of red-tails are very vocal and their call can be heard in woodland for at least 250 m, except in very windy conditions.

You can tell if they've been in an area by the obvious mess of pruned leaves and crushed nuts on the ground under feed trees. If the leaves are still green then the birds have been feeding recently and are still likely to be about as they stay in a general feed area for weeks.

If you want to try pot luck, just drive through any stringybark bush, but remember, there are just 1400 birds in over 18,000 km². The pleasure of coming across a flock unexpectedly is hard to describe but is one of life's great moments for most!



9. Family life

Red-tails stay with the same partner, probably for life. In captivity they can first breed when 5-6 years old but are usually older. In the wild they have been recorded nesting successfully in all seasons but generally the breeding season commences in September. Nests with one egg are often found until December. Nests started in January to autumn are likely to be re-nestings after initial failures.

The female remains in the nest with the male returning to feed her in the evening (and perhaps also the morning). He will call on and off as he approaches the nest and then settles in a nearby tree, occasionally calling (more quietly now). After a short time the female will drop silently out of the hollow and quickly join the male. This behaviour reduces the likelihood of predation by possums or ravens or other perceived threats by making it harder to detect the nest. Some feeding will occur straight away and then the pair will move to water. The male will continue to feed the female at intervals and they may even feed directly from trees. The pair returns in about an hour with the female backing into the nest hole to resume place. The male will roost elsewhere.

Red-tails lay one egg, which is incubated for about 30 days. On hatching the chick remains in the nest for about 87 days. It may continue to be fed by parents for another six months after leaving the nest.

Our red-tails range widely and individual birds, from year to year, can nest in quite different areas. Over 95% of known nest sites are within 2 km, and all within 5 km, of blocks of stringybark. They can nest in loose colonies with several nests within 1 km² and a minimum of 40 m between active nests. Nests are most often found in farmland, perhaps because they are more easily spotted by observers in this more open country.

They require large hollows in either trunks or branches but they can't be more than 45° off vertical. This is because the birds enter the hollow tail first descending backwards to the floor of the hollow where they have made their nest. The same nesting hollow may be used in successive years or could be re-used after being vacant for several years. They show a preference for dead trees (81%), but also use live trees. Dead nest trees are collapsing at 4-7% per year and this rate is likely to increase as the trees age.

Given that trees containing larger hollows used by red-tails are probably over 220 years old, there is likely to be a serious shortfall in suitable hollow-bearing trees in the decades to come. One strategy we can employ to ensure our big, old trees have new gums to replace them is to fence off big old paddock Red Gums to allow for regeneration.



photo: Wayne Bigg

10. Are all Red-Tails left footed?

Our red-tails use their left foot almost exclusively to feed; interestingly, red-tails from the Northern Territory, which feed on the ground, use both feet.