

Ecological Fire Management Strategy

Department of
Environment and
Natural Resources

South-eastern Red-tailed Black-Cockatoo (*Calyptorhynchus banksii graptogyne*)

Purpose

This strategy focuses on fire management for the south-eastern Red-tailed Black-Cockatoo (RtBC), identifying a number of issues that should be considered before, during and after fire. Proposed activities that don't meet this strategy's guidelines should be discussed with the Regional Ecologist or the south-east Red-tailed Black-Cockatoo Recovery Team.

Species Information

Rating	ENDANGERED – NPW Act 1972, ENDANGERED – EPBC Act 1999.
Identification	Average length 55 to 60 cm, weight 570 to 870 grams. Males have glossy black plumage with bright red tail panels and a grey bill. Females have duller brown-black plumage but the feathers of their head, neck and parts of their wing are speckled with yellow. From below, their body is barred in pale orange-yellow. Their tail barring can be almost all pale yellow or pale yellow grading to pale orange-yellow at the tip. Juveniles one to three years old are difficult to distinguish from adult females.
Distribution	The RtBC occurs as a single population in a small area of south-eastern Australia delimited in South Australia, by Keith to Lucindale and Mt Gambier. The total extent of occurrence is 18,000 km ² which includes south-western Victoria.
Habitat	RtBCs are restricted to <i>Eucalyptus arenacea</i> (Desert Stringybark) and <i>E. baxteri</i> (Brown Stringybark) woodlands occurring on deep aeolian sands in the Glenelg, Wimmera and Naracoorte Plains, and adjacent woodlands of <i>E. camaldulensis</i> (River Red Gum), <i>E. leucoxylon</i> (South Australian Blue Gum) and <i>Allocasuarina luehmannii</i> (Buloke). RtBCs generally roost in flocks in clumps of tall eucalypt trees and have been known to use the same site for many months. RtBCs require old, large, hollow eucalypts for nesting, preferring dead trees, but also use live trees. Nests have been recorded in a variety of eucalypt trees including <i>E. camaldulensis</i> , <i>E. baxteri</i> , <i>E. arenacea</i> , <i>E. viminalis cygnetensis</i> (Rough-bark Manna Gum), <i>E. leucoxylon</i> and <i>E. fasciculosa</i> (Pink Gum). RtBCs have preference for nests in vertical to near vertical hollow spouts. Most nest trees are within two kilometres of suitable feeding habitat.
Populations	RtBCs occur as a single population in far south-western Victoria and adjacent parts of South Australia. There are estimated to be 1,000 individuals including 600 to 700 breeding birds.



Photo: (left) B. McPherson, (right) W. Bigg

Reproduction	RtBCs breed annually between September and February as monogamous pairs. Nesting can also commence as late as January or February if nesting failures occur. Both males and females reach sexual maturity at four years. The female generally lays one egg which is incubated for 30 days. The nestling period is 90 days. Juveniles may be fed by their parents for up to six months after fledging.
Longevity	Average life expectancy unknown. Believed to live 25 or more years in the wild.
Dispersal	RtBCs do not make regular annual movements, but move throughout their range in response to changes in food availability.
Home Range	Records of seasonal home ranges vary between 24 to 110 km ² .
Diet	Specialist feeder. The staple diet for most of the year is <i>E. arenacea</i> and <i>E. baxteri</i> seed. For a period between December and April the seeds of <i>A. luehmannii</i> are favoured.

Fire and south-eastern Red-tailed Black-Cockatoos

Risks to RtBCs

Fire that scorches or consumes some of the stringybark canopy can significantly reduce fruit production for 9 to 11 years post fire and thus depleting food resources. The indirect impacts stemming from severely depleted food resources are likely to have more severe, short and long-term implications for the RtBC population. Furthermore, lower seed availability impacts on the successful recruitment of juveniles. Extensive high intensity fire has the potential to burn entire patches of feeding habitat and displace the RtBC to less suitable habitat areas.

Fire is considered an important factor for the creation, development and destruction of hollows. High intensity fires appear to be a major factor determining hollow formation in trees that have reached a certain minimum dimension and age. However frequent moderate to high intensity prescribed burns, and/ or the incidence of bushfires, destroy hollows and reduce the availability of nesting sites for the RtBC.



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RtBC Fire Response

Stringybark is a key habitat component due to the specialist feeding requirements of the RtBC. Stringybark seed availability is variable in space and time, and this variability is recognised as a significant threat to RtBCs. Both *E. arenacea* and *E. baxteri* produce a large seed crop approximately once every 3 years. However, best fruiting years do not always coincide.

Fire greatly reduces food availability for the RtBC in the short term, since fire can scorch tree canopies and cause seed capsules to open, releasing stringybark seeds. Furthermore, crown scorch causes a significant reduction in fruit production for 9 to 11 years post fire. Food shortages influenced by inappropriate fire management practices exacerbate the natural variability of food availability.

Fire Management Objectives for RtBCs

- To minimise the risk of bushfires impacting on a significant portion of RtBC population and their feeding habitat.
- To minimise the risk of fire management activities, including prescribed burning and fire suppression operations which impact on the long term viability of the RtBC population.
- Ensure that significant fruit-producing stringybark woodland habitat is maintained by implementing appropriate fire regimes across known and potential RtBC feeding habitat areas.
- Implementing appropriate fire regimes to promote the health and regeneration of stringybark woodlands.

Strategies for Fire Management in RtBC Areas

- Ensure bushfire risk mitigation and suppression activities reduce the likelihood of decreasing the RtBC population or causing significant feeding and nesting habitat losses due to fire.
- Ensure that at least 85% of the RtBC stringybark feeding habitat remains free of crown-scorch for at least 10 years.
- The current distribution of the two stringybark species across South Australia's RtBC distribution is comprised of 37% *E. arenacea* and 63% *E. baxteri*. Thus, if possible avoid or burn minimal areas of the less dominant food source *E. arenacea*.
- Delay burning in areas where 20 or greater RtBCs are currently feeding.
- Minimise burning RtBC feeding habitat that has produced high fruiting seed crops. Thus, minimise burning the favoured seed source in any given year.
- Minimise burning nesting habitat during the breeding season (September to February).
- Protect known nesting sites from burning.
- Ensure fire management planners and incident managers are provided with key RtBC information (ecological fire management strategy, maps and information contacts).
- Employ adaptive management: have more than one option on the burn programme so that if seed crops are high fruiting or birds are feeding or nesting, deferring burns is an easy decision.
- Revise and update the RtBC ecological fire management strategy with any emerging science.

Actions for Risk Management - Prescribed Burning

Fire Management Planning

Preliminary Planning

- Define and map significant feeding, roosting and nesting sites and use to assist in fire management planning.
- Include reference to this information in all relevant DENR Fire Response Plans.
- Assign significant areas of RtBC feeding and nesting habitat to C-zones.

Risk Assessment

- Prioritise fire management activities to protect key RtBC feeding and nesting habitat areas and those identified as being at greatest risk from bushfire.

Planning Prescribed Burns

High intensity burns in RtBC feeding habitat are likely to have a major impact on food availability. Where prescribed burning occurs across RtBC feeding habitat, aim to achieve low intensity, patchy burns to avoid scorching the canopy and impacting on the stringybark seed production.

- In C-zones, all planned burns in stringybark woodlands will be managed to minimise stringybark canopy scorch.
- Undertake pre-burn surveys to identify feeding habitat patches carrying fresh and abundant seed crops, and where necessary reschedule planned burns to avoid these.
- Protect trees with known large hollows (entrance >15cm width) or artificial hollows by ensuring a mineral earth break or foam line surrounds the base of the tree.
- Undertake post-burn canopy scorch monitoring to determine if the burn management targets are met.
- Occupied nesting habitat should not be burnt until the young has left the nest.
- Allow for research using prescribed burning as a means to gather new RtBC fire response information.

Size of burn

As RtBCs are known to range widely, the burn size should be considered in regard to reducing the amount of stringybark woodland that would be impacted upon. Ensure a minimum 85% of stringybark woodland has not experienced a crown-scorch fire event for at least 10 years.

Location & frequency of burn

- Ensure a minimum fire interval of at least 10 years between crown-scorch fire events for RtBC feeding habitat within C-zones.

Actions for Risk Management - Bushfire

During Bushfires

Incident Management

- Technical advisors to be appointed to Incident Management Teams to advise bushfire suppression planning activities in or near RtBC feeding habitat.
- Promote and inform all relevant agencies to consider RtBC in fire management planning.

Protect local sites

Bushfire suppression strategies and efforts should aim to protect local RtBC feeding and nesting habitat by:

- Avoiding contiguous habitat patches RtBC habitat sites from burning.
- Minimising crown scorch in stringybark trees.
- Minimising the loss of the less dominant food source *E. arenacea* from burning.
- Minimising impacts to old hollows.
- Ensuring to consider tree species, stage of fruiting, and presence of RtBCs at habitat sites prior to back-burning operations.

After Bushfires

Research

- Assess spatial variation in recovery of fruit production following crown-scorch and the impact of low intensity fire events.

Recruitment

- Notify the RtBC Recovery Team Project Officer of fire within RtBC feeding and nesting habitat.

