Department of Biodiversity, Conservation and Attractions

Biodiversity and Conservation Science

Final-term Review of the Recovery Plan for the Carnaby's Cockatoo (May 2025)

Introduction

Carnaby's cockatoo, Ngoolark, (*Zanda latirostris*, previously *Calyptorhynchus latirostris*) is listed as endangered under the *Biodiversity Conservation Act 2016* and the *Environment Protection and Biodiversity Conservation Act 1999*. The Western Australian *Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan* (2013) was adopted by the Commonwealth Government in 2014.

The aim of this review is to look at recovery actions undertaken over the life of the Recovery Plan and consider key achievements and learnings to facilitate setting the direction for future conservation action.

The overarching objective of the Recovery Plan is:

> "To stop further decline in the distribution and abundance of Carnaby's cockatoo by protecting the birds throughout their life stages and enhancing habitat critical for survival throughout their breeding and non-breeding range, ensuring that the reproductive capacity of the species remains stable, or increases."

This Department of Biodiversity, Conservation and Attractions (DBCA) review considered the status of Recovery Plan actions implemented between 2012 and December 2024 in the context of the objective of the Recovery Plan, with input from the Carnaby's Cockatoo Recovery Team (Recovery Team) and other key stakeholders. The review incorporates findings from a workshop held in November 2024 with key stakeholders and results from an online questionnaire that engaged a broader group of stakeholders. The review also focuses on the scientific research that underpins our knowledge of the species and informs its conservation management.

Key Achievements

The review highlighted key achievements that have occurred over the life of the Recovery Plan, including:

- The Great Cocky Count citizen science program provided an estimate of minimum total population size.
- Improved understanding of roosting locations and use.
- Identification of diseases affecting Carnaby's cockatoo, including those that are significant.
- Installation of well-made, safe and permanent artificial black cockatoo watering points increased on the Swan Coastal Plain, with some installed in regional areas.
- An understanding of breeding biology and factors that influence breeding success (e.g. declining number of nest trees due to attrition and climate change) were identified and published in peer-reviewed scientific journals.
- An improved understanding of movements throughout the landscape, particularly in the northern wheatbelt and metropolitan areas through bird banding and satellite tracking studies.
- Increased knowledge of important sources of food and which species of native and introduced plants the birds use for foraging.
- Identification of the importance of maintaining artificial nest hollows used by this species to ensure availability and safety.
- Community outreach by multiple stakeholders that has raised the profile of the species.
- Improved black cockatoo rehabilitation processes through collaborative efforts of Perth Zoo, DBCA, Murdoch University and established rehabilitation centres, with 1000

rehabilitated black cockatoos successfully released into the wild as of September 2024.

Key Learnings

This review and engagement with threatened black cockatoo stakeholders have highlighted key barriers and learnings that will direct future conservation effort for the species, including:

- There is continued loss and fragmentation of all habitat types (breeding, roosting, foraging and movement corridor) important across all life stages.
    - Long lead times for replanting are required to deliver any benefit in provision of habitat and the value of this habitat compared with retained habitat has not yet been established.
    - The rate of loss of black cockatoo natural breeding hollows is concerning and considered likely to be unsustainable for persistence of the species.
    - Appropriately placed and maintained artificial hollows successfully sustain Carnaby's cockatoo breeding attempts in some areas and aid recruitment of new individuals into the population in the short-term.
    - Maintenance and repair of existing natural hollows has successfully extended their life as breeding hollows.
    - Appropriately managing and retaining existing habitat and creating more habitat is key for Carnaby's cockatoo conservation.
- Conservation efforts have largely relied on short-term, project-specific grant funding provided to multiple different organisations and volunteers. This approach has hampered strategic and cohesive conservation planning across the species' range, resulting in poorly coordinated conservation action (e.g. revegetation efforts and monitoring) and la lower conservation outcome return on investment.
- An appropriate black cockatoo data sharing and management system is not available to inform conservation planning, implementation, and environmental impact assessment processes.
- Identifying the relative value of Carnaby's cockatoo habitat in the context of environmental impact assessment can be complex, with habitat value changing depending on the degree of habitat degradation and local knowledge of black cockatoos in the area.
- Monitoring populations consistently across the range of Carnaby's cockatoo is challenging. The Great Cocky Count provides an indication of population trends in the south-west of WA. Inconsistencies in collection, coordination and analysis of the limited breeding monitoring data has hampered efforts to use this data to inform conservation management actions.
- Environmental offsets that have relied largely on tenure change have resulted in net loss of available Carnaby's cockatoo habitat. It is recognised that ongoing loss of habitat is one of the biggest pressures on black cockatoos.
    - Where an offset or mitigation action is required, there is a preference for a revegetation action to occur to minimise net loss in native vegetation. Consideration must be given to the time lag in the productivity and value of a revegetated area as Carnaby's cockatoo habitat; ongoing protection of offset areas; and funding for long-term monitoring and management of the offset, regardless of offset type.
    - Offsets could also assist in addressing knowledge gaps that would inform conservation management of Carnaby's cockatoos.
- Whilst progress has been made to manage some threatening processes at a local scale

in some areas, these pressures remain largely unmanaged at a landscape or species range scale, with management often tied to funding availability.
    - Management of threatening processes, e.g. competition for breeding hollows with European honeybees, inappropriate fire regimes, breeding competitors and vehicle strike due to grain spillage, needs to be ongoing.
    - Emerging threats to the species include climate change and associated stochastic weather events (such as periods of extreme drought and heat that impact food and water resource availability or the future viability of important breeding sites) and diseases such as Carnaby's hindlimb paralysis syndrome.
- Guidance documentation that translates scientific learnings and expert technical advice into a format applicable to a non-expert audience is required.
- Knowledge gaps remain, which will be important to guide future species recovery efforts.

Meeting Recovery Objectives

Criteria for success	Comments
The species' area of occupancy does not decline.	Carnaby's cockatoo area of occupancy is likely to have declined over the life of the Recovery Plan, as clearing of land has continued and breeding sites have senesced or been lost.
The number of breeding pairs of Carnaby's cockatoos at pre-determined (and recorded in advance) breeding sites across the breeding range remains stable or increases, averaged over three consecutive years.	The number of breeding pairs was not adequately recorded at pre-determined breeding sites across the breeding range, although the number of breeding attempts was. It is reasonable to infer that the number of suitable natural breeding hollows is likely a limiting factor across the range of this species, as evidenced by rapid uptake of strategically placed artificial hollows in known breeding areas and a rapid observed decline of usable natural breeding hollows in monitored areas.
Estimates of the number of birds and proportion of juveniles across the entirety of known (standardised) night roost sites across the range of the species remains stable or increases, averaged over three consecutive years.	The Great Cocky Count citizen science program estimated Carnaby's cockatoo population size and the proportion of juveniles across multiple roost sites, mostly in the Perth metropolitan area. Due to the complexity and broad distribution of these birds, a definitive population estimate is not available. The Great Cocky Count 2021-2022 report estimated that the Carnaby's cockatoo population in the Perth-Peel Coastal Plain had declined from 2010-2015 estimates and has remained constant from 2015. The overall decline in the number of birds for this area between 2010 and 2022 is estimated to be 25 per cent.
The extent of nesting habitat (trees with nesting hollows), feeding habitat (as defined by vegetation complexes or suitable revegetation), and night roosting	This criterion was not met across the species' range. It may have been met in full or in part at some sites, at a local scale.

habitat (as identified through community survey) are maintained throughout the species range.	

Discussion

The review has highlighted the extent and breadth of activity that has occurred over the last 10 years. There have been advances in technologies to support information gathering, research to inform knowledge gaps, on-ground conservation actions, increased public awareness and community participation, examples of effective collaborations to achieve positive conservation outcomes and an increased awareness of the role offsets could play to support recovery actions.

Key actions of habitat protection and management, monitoring, research, management of threats, community engagement and undertaking information and communication activities remain critical for conservation management of the species. Conservation requires collaborative efforts from Landcare and natural resource management groups, volunteer organisations, research institutions and landowners, with leadership from government agencies and Traditional Custodians.