



Carnaby's Black-Cockatoo
Recovery Project

Cocky Notes

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Birds Australia
CONSERVATION THROUGH KNOWLEDGE

A personal journey in the field with Carnaby's Black-Cockatoo

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In January 1968 I joined CSIRO Wildlife Research to conduct research on the ecology of what was then known as the White-tailed Black Cockatoo. The species was classified as vermin. In some shires it had a bounty on its beak due to its fondness for apple and pear seeds. It was also a pest in pine plantations, not because of its liking for pine seeds, but because the weight of the birds often caused the leaders of the pines to break, which resulted in bent trunks, of which the foresters did not approve. This was the start of my 40-year association and detailed research on the wonderful black cockatoo.

In my early work I had to figure out the taxonomy of the White-tailed Black Cockatoo. I confirmed Ivan Carnaby's suggestion that there were two species of black cockatoos with white tail-bands in south-western WA (see Saunders, 1979 *Emu* 79: 215-27). These are now known as Baudin's Black Cockatoo, responsible for orchard damage, and Carnaby's Black-Cockatoo (CBC), responsible for the damage to the pine trees.

I focussed my research attention on CBC and documented the rapid and extensive decline of the species. By the late 1980s the species had disappeared from over 30% of its pre-clearing breeding range (see Saunders, 1990 *Biol. Cons.* 54: 111-24) and was soon placed on the WA and Federal Governments' endangered species lists, and a recovery plan was devised. The main reason for its decline was habitat loss, which affected its food resources. Due to the extremely fragmented pattern of native vegetation we have imposed on the Wheatbelt, in many

districts the birds were unable to gather sufficient food to breed successfully. It was heart-breaking to see nestlings starve as the parents tried in vain to maintain them and themselves. One of my study areas, Manmanning, illustrated this pattern dramatically. Even at the start of the breeding season, incubating females spent some of the day foraging with their mates, leaving their eggs exposed; incubating females never foraged in areas where there was sufficient food available (see Saunders, 1982 *Ibis* 124: 422-55), as they were maintained by

their mates who did the foraging for both. The population at Manmanning was extirpated by 1977. This same disastrous pattern repeated itself in many districts across the northern and eastern Wheatbelt, leading to the extensive range contraction of the species. In the spring of 1969, on the advice of an avid egg collector and farmer at Cockleshell Gully, I visited a woodland at Coomallo Creek. He regarded this

as the best CBC breeding area of which he was aware. And so it has proved. The woodland was effectively a long thin island of trees, mainly Wandoo, surrounded by extensive kwongan in which the birds fed. My first survey of the area was made in September 1969 and began what has turned out to be a 40-year study of a breeding population which was coming to terms with human-induced changes to its landscape.

I was fortunate to be joined in the research by John Ingram in the early 1970s. With John's hard work and dedication we conducted studies of the breeding behaviour,

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Above: Female 210-01876 on 17th September 2009. This female was at least 25 years old. Photo: Rick Dawson, DEC

A tough six months for our feathered friends

*The sun don't shine, it burns and it don't rain, it hails. Carnaby's Black-Cockatoo across their range have had it tough in the past six months: fires took out active nesting hollows in the north, a heatwave in Hopetoun killed at least 250 in January, and a hail storm in Perth resulted in 36 recorded deaths in March. At times like these it can be easy to get distressed and wonder 'what is the use off it all?' But throwing your hands in the air won't achieve much. **You can take action and help these critters out!** We are always looking for **volunteers** - in fact we're looking for a volunteer to co-ordinate volunteers, among other odd jobs! If you can help us with either of these tasks or would like to assist with any activities, please contact Raana (contact details on back page).*



Photo: Sandra Griffin, Toodyay

Carnaby's Black-Cockatoo Campout: Ravensthorpe 2009

By Rodger Walker, on behalf of the Friends of the Fitzgerald River National Park

The weekend of 10-11 October 2009 saw the annual Cocanarup nesting survey campout held in partnership with the Friends of the Fitzgerald River National Park. This two day event focuses on locating active nesting trees used by Carnaby's Black-Cockatoos and observing the birds in their natural environment.

Volunteers arrived on Friday afternoon, motivated as ever — you can always count on this area to harbour these beautiful birds at nesting time.

Saturday saw the group systematically criss-cross parts of the Reserve looking for trees harbouring nesting female Carnaby's Black-Cockatoos, and the group also split up to search new areas.

The day presented a great opportunity for participants to explore the bushland in spring, observe other wildlife, note disturbance from feral animals and weeds, and practice their birdwatching skills. The weather was great for birdwatching, with little to no wind and overcast skies. A highlight for many was seeing a number of flocks of 15-30 Cockatoos fly in during the day and roost in trees along the banks of the beautiful Phillips River.

Camping out that night we experienced 20 minutes of intense rainfall which dumped 5mm on us. Luckily this did not spoil our cooking dinner (thanks Chris)! Later, those

lucky people with campervans were eagerly eyed off by those with swags as more rain looked imminent.

Sunday morning saw some volunteers return to Perth, with the remaining group snaking their way through the reserve to the 10am rendezvous point (stopping along the way to note and record more nesting trees). Trying to get the group back to their vehicles was a struggle at times and finally the convoy arrived (just a little late) at the designated meeting point. After completing the lengthy walk, the team fanned out at the nesting site, where only one nesting tree was located, all due to the skills of Rodger. Unfortunately this site is facing extreme pressure from bees and Galahs, and this may be why so few nests remain at the site. At lunchtime we examined the discarded contents of a Wedge-tailed Eagle's nest, after which we returned to our cars and made our way home.

Once again the Cocanarup Timber Reserve has confirmed itself as the epicentre of Carnaby's Black-Cockatoo nesting on the South Coast. The presence of its large and mature Salmon Gum trees and dense heath are likely the key to its being used by nesting Black-Cockatoo's. **Thanks** to the Friends of the Fitzgerald River National Park members and all participants involved in making the weekend such as success.



Carnaby's Black-Cockatoo are big news!

Thanks to all those volunteers that helped out with the Great Cocky Count in April this year (see over for results). The Great Cocky Count is one of a number of research projects being carried out currently in WA. In this edition we hear from four people carrying out research on Carnaby's Black-Cockatoo. Currently there are at least six post-graduate research projects focusing on the species. These outcomes will provide us with important information relating to their seasonal movements, biology and detailed habitat requirements, and will help us determine the direction of future conservation efforts.

Carnaby's Black-Cockatoos are big news these days, particularly in the Perth metro area where they are under immense pressure from urban expansion. If you want to find out more, check out Kath Howard's article on page 4 for details of what's going on and how you can exercise your right to be heard on matters relating to Carnaby's Black-Cockatoo and the EPBC Act.



Great Cockey Count 2010

By Quinton Burnham, Roost count Coordinator

The start of 2010 saw the re-launch of volunteer surveying of Carnaby's Black-Cockatoo roosts on the Swan Coast Plain, aiming to build on information recorded in Birds Australia's 2006 Swan Coastal Plain project. The goal of this project is to identify as many roost sites as possible and to record the number of Cockatoos using each roost. This is used to determine a minimum population estimate of Carnaby's Black-Cockatoos that overwinter in the wider Perth Metropolitan area. Since January we have identified approximately 45 additional roost sites used (regularly or irregularly) by Carnaby's Black-Cockatoos, taking the total number of roost sites identified on the SCP to approximately 130.

The highlight of this project has been the 'Great Cockey Count' roost survey held on Wednesday 7 April. We had over 350 volunteers survey 189 sites. Thanks to their efforts we obtained some interesting results. Fifty of these sites were used by Carnaby's Black-Cockatoos on the evening of 7 April, with an estimated minimum number of 6,500 Carnaby's Black-Cockatoos using the area. Previous estimates were 8,000-10,000 (Mawson and Johnstone 1997) and 4,500 from the 2006 Great Cockey Count (Shah, 2006); bear in mind that in 2006 only 16 roosts were monitored and the difference in numbers is likely due to survey effort, not an increase in population.

Since the Great Cockey Count in April, there was a follow-up count in May, and monthly counts are planned until August, by which time, most of the Carnaby's Black-Cockatoos will have returned to the Wheatbelt to breed.

The response by Birds Australia members and the general public has been fantastic, ensuring that this project will make a considerable contribution towards the long-term goals of the recovery plan for this wonderful bird. A huge thank you goes out to all those involved. If you would like to help with future surveys, register your interest with Raana.

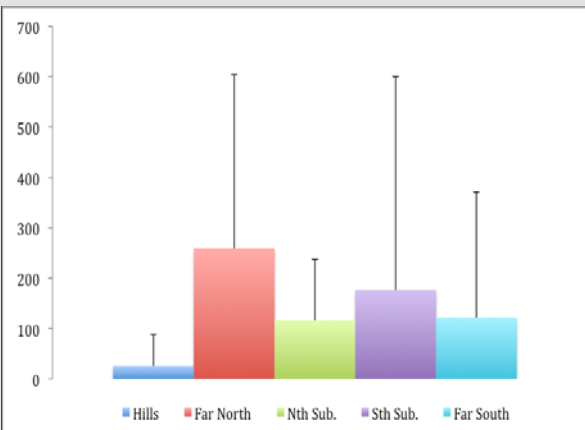


Fig 1. The relative percentages of CBCs found in the different areas of the wider Perth Metro area (hills, far north, northern suburbs, southern suburbs and far south areas) on 7 April 2010.

Conserving Carnaby's Black Cockatoos in a Mining Production

By Jessica Lee, PhD Candidate, School of Biological Sciences and Biotechnology, Murdoch University

Fragmentation as a result of production landscapes is a major threat to biological diversity globally. Reserves are only part of the solution, and production landscapes must also contribute to biodiversity conservation goals. This three-year study, which commenced in 2008, uses the threatened Carnaby's Black-Cockatoo (and other black cockatoos) as a model for achieving biodiversity conservation in fragmented mining landscapes. The study site, Newmont Boddington Gold Mine, is located in the jarrah forest 130km south-east of Perth. It recently underwent an expansion project, which involved the clearing of native forest. This had a localised but intensive impact on the surrounding environment and will also be associated with an extensive and challenging rehabilitation period after the mine closes. Hence, this study addresses not only the impacts of gold-mining activities, but also identifies key habitat requirements, how to best conserve CBC habitat and how to restore it after mining. The key habitat features studied are food, water and nesting hollows. This project uses both experimental and observational studies directed at three key issues: (1) protecting and enhancing roosting and breeding habitat, which involves the assessment of the effectiveness of artificial nest hollows; (2) understanding foraging ecology and how the CBC uses the mine-site and surrounding areas for feeding, with a view to enhance food resources in rehabilitated areas; and (3) examining the role of availability of artificial and natural water in determining suitable feeding/breeding habitat by identifying key dawn/dusk drinking points, as well as investigating the provision of artificial watering points. This project aims to integrate production and conservation within these landscapes by contributing to the development and establishment of industry best-practice principles and management strategies for the conservation and restoration of CBC habitat. This approach will also serve as a model for the conservation of other large, mobile fauna in resource-production landscapes.



Food Resource Availability and Systematic Conservation Planning for Carnaby's Black-Cockatoo on the Swan Coastal Plain

By Teagan Johnston, Project Officer, Carnaby's Black-Cockatoo, Department of Environment and Conservation.

During the non-breeding season Carnaby's Black-Cockatoo typically migrate to higher rainfall coastal regions, including the Swan Coastal Plain (SCP) in search of food. Due to continued pressure on food resource availability as a consequence of clearing for development the sustainability of the Cockatoo population on the SCP is unclear. At present little is known about the limiting factors for species, in particular food availability and the potential population carrying capacity of remnant vegetation on the SCP. Understanding the food resource base for the Cockatoo and determining whether those resources can support the existing population is crucial for successful conservation of the species.

The Department of Environment and Conservation (DEC) has commenced a three year project to address these questions. The project is funded from part of the monies provided in the off-set package negotiated for the Fiona Stanley Hospital project. The aim of this project is to quantify the native food resource availability on the SCP, determine whether those resources can support the existing population, and examine how threatening process (e.g. fire, disease) impact on the availability of these resources to provide critical information to guide future management and conservation of the Carnaby's Black-Cockatoo on the SCP. In an attempt to assess relative habitat importance, survey data collected on productivity, distribution and abundance of key food resources for the Cockatoo across the representative vegetation types on the SCP will be modelled. Information generated from the model will provide a management tool to assist with ranking habitat priorities on the SCP. In addition a comprehensive, concise and rapid assessment protocol will be developed to guide surveys of prospective sites for conservation land acquisition for offsets or when evaluating proposed conservation areas for the species.

The outcomes from this research will provide a greater understanding of the food resource availability for Carnaby's Black-Cockatoo on the Swan Coastal Plain, identify limitations and impact of threats and develop a method to rank remnant vegetation quality/importance. All of which will guide future management decisions for the sustainability and persistence of these iconic birds. *For more information contact Teagan on: (08)9334 0196 or email Teagan.Johnston@dec.wa.gov.au*



Carnaby's Black-Cockatoo in the City – but for how long?

By Kath Howard, Southwest Australia Ecoregion Policy Officer, WWF-Australia

From 2001 to 2004, almost 1000ha of native vegetation was cleared every year in the Perth metropolitan region – that's more than one football oval every day.

Thousands of Carnaby's Black-Cockatoos rely on native bushland and pine plantations on the Swan Coastal Plain in the non-breeding season. Perth is one of the most biodiverse capital cities in the world and (obviously!) the only capital city where you'll find this charismatic threatened bird.

But our State legislation does little to protect habitat for threatened fauna, and across the city the ongoing clear-felling of bushland threatens vital roosting and feeding habitat for Carnaby's Black-Cockatoos. Jandakot Airport, Wanneroo, Shenton Park and Beeliiar Wetlands are just a few examples of proposed development of their habitat, but there are many more.

Everyone has the right to comment on actions affecting nationally threatened species under the national *Environment Protection and Biodiversity Conservation Act 1999*. If you know of a proposal to clear Carnaby's Black-Cockatoo habitat and would like some advice on how to engage with the EPBC assessment process, email Katherine Howard at WWF at khoward@wwf.org.au

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diet, movements, nestling growth, vocalisations and breeding success of the species (see Saunders 1979 *Aust. Wildl. Res.* 6: 205–16, 1980 *Aust. Wildl. Res.* 7: 257–69, 1982 *Ibis* 124: 422–55, 1983 *Aust. Wildl. Res.* 10: 527–36, 1986 *Aust. Wildl. Res.* 13: 261–73; Saunders and Ingram 1998 *Pac. Cons. Biol.* 4: 261–270). We conducted detailed studies of the population at Coomallo Creek from 1969 to 1977, visiting the area up to 25 times in some breeding seasons. Between 1978 and 1996 we monitored the population over 12 seasons. Monitoring consisted of visits to the area for three days in September and again in November. During these visits all nest hollows were checked, hollow contents recorded, all chicks measured and banded, and searches conducted for banded adults. Between 1969 and 1996, as result of clearing of native



A Carpet Python in hollow after eating a Carnaby's Black-Cockatoo. Note the CBC-shaped bulge.

vegetation for agriculture in the area, the CBC population at Coomallo Creek dropped from over 100 breeding pairs to fewer than 40. Despite this, the health of the nestlings in the 1990s was as good as that of the 1970s, and breeding success remained high (see Saunders and Ingram 1998 *Pac. Cons. Biol.* 4: 261–270). Although some of the woodland had been lost

due to clearing for agriculture, there were still ample hollows in the area.

In 1997 I was transferred from WA to Canberra in 1997 and no longer had the opportunity to monitor the population at Coomallo Creek, but I retained my interest in the Cockatoos as an inaugural member of the species Recovery Team and by attending several conferences on the species. The most recent conference was in December 2008. There I discussed with Rick Dawson and Peter Mawson (Department of Environment and Conservation [DEC]) the idea that the Coomallo Creek population should be re-surveyed using the same protocols as we used in 1996. To my delight, DEC agreed and completely supported the field work.

In the mid-1970s the staff from the Australian Survey Office (ASO) produced a detailed map of the Coomallo Creek study area. Rick and GIS staff at DEC were able to geo-reference the ASO map to give the exact locations of nesting trees. In early September 2009 Rick, Peter and I spent a week in the area and visited the site of all but one of the marked trees which had previously supported cockatoo nests and looked for any new nest hollows. Some hollows were no longer available. We also spent time looking for banded birds. Rick brought his digital camera with a very long telephoto lens, and the legs of any birds we saw were examined through binoculars and if they were banded, Rick circled under the bird, taking up to 96 photographs. As a result, three banded females were identified. Two were at least 19 years old and nesting within 2km of the trees where they were originally banded as nesting hens or as chicks. The third bird was at least 25 years old and was nesting in a hollow about 180 metres from where she was nesting when she was banded (see photograph on front page).

We revisited the area again for a week in November. On this trip we were joined by Raana Scott of Birds Australia. During this trip we were able to check all known hollows and found several new nest sites. We measured and banded all nestlings and collected DNA samples from nestlings, as well as egg fragments and feathers from the hollows. We also looked at the health of the Wandoo immediately around all active nest hollows. In one active hollow we found a female Carpet Python

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Nesting season 2009 wrap-up

The 2009/10 nesting season seems so long ago: the 2010/11 season is nearly on our doorstep!

With the help of over 40 volunteers we surveyed 25 sites across the South West during the last nesting season. A total of 115 potentially active nesting hollows were identified (this does not include the survey at Coomallo Creek — see Denis' article for details). We also identified two previously unrecorded nesting locations east of the species' previously known range.

Thank you to all volunteers who dedicated time to assisting us with surveys — there is a lot of ground to cover! A special thanks to John Lauri, Wayne Zadow, Chris Biddulph, David Secomb and Ruth Greble for their above-and-beyond efforts in monitoring the sites, organising surveys, support and kind words during this challenging year!



(Continued from page 5)

curled up on the floor, having just eaten the breeding female and pushed the small, recently dead, nestling to one side. This was an interesting observation as the only other Carpet Python recorded (see p. 5) in a hollow in the area was in 1969, and that was not an active cockatoo nest. In between these two sightings we had conducted over 4000 hollow inspections.

The results of this resurvey of the population at Coomallo Creek will be published in due course. In summary, there were 41 active nests, up from the 37 recorded in the last complete survey in 1996. One indication that the area supports adequate food resources is the health of the nestlings and the number of twins. Each nestling is aged by measuring the length of its folded left wing and checking this measurement against a growth curve (see Saunders 1986 *Aust. Wildl. Res.* 13: 261–73). The health of the nestling is then assessed by comparing its weight at that age against a curve of nestling weights constructed from 246 nestlings at Coomallo Creek between 1970 and 1976; any nestling falling below that curve is deemed unhealthy. In 2009 the nestlings were mainly within the healthy weight range.

Although the CBC mainly lays two eggs, it usually fledges only one young, but occasionally twins are reared successfully, only where there is sufficient food to maintain the population. In 2009, six of the 41 nests at Coomallo Creek had twins, the equal-highest number of twins recorded from the area (41 sets were also recorded in 1983).

The first egg of the 2009 season at Coomallo Creek was laid on 5 August, and 50% of the eggs had been laid by 30 August. This is well within the range of past seasons (5 July to 26 August for first eggs; 17 August to 13 September for 50% of eggs).

It was a wonderful experience to resurvey the population at Coomallo Creek which has provided so much information on the species. Provided the woodlands and adequate food resources in the district and in its non-breeding range are protected from clearing and grazing (see Saunders et al 2003 *Biological Conservation* 110: 245–256), this particular population has a reasonable future.

Acknowledgements

I am grateful to the great support and hard work of John Ingram over the period of this study and Rick Dawson and Peter Mawson for their support and hard work during the 2009 field work. All of the work was carried out under the appropriate permits and ethics approvals.

Want to get involved in the Carnaby's Black-Cockatoo Recovery Project?

*Birds Australia has recently received the good news that the Carnaby's Black-Cockatoo Recovery Project has been successful in attracting funding through WA's State NRM funding program for the 2010–2011 financial year. If you're a landholder in the Wheatbelt and have these special birds visit your property, contact us and get involved! We will be carrying out **fencing of nesting and feeding sites as well and revegetation and hollow repair programs!***

Volunteers, we need you too! We're looking for office assistance as well as field work (nesting surveys). We are currently seeking the assistance of a volunteer to support project staff in co-ordinating nesting surveys this year. If you want to get involved in any way, please contact Raana to register your interest or for more information.

This Birds Australia project is supported through funding from the Australian Government's Caring for Our Country Program and the Department of Environment and Conservation State NRM project. The project is also supported by the Project Advisory Group, WWF–Australia, and South Coast NRM Inc.



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Photos by Raana Scott unless otherwise stated.