Carnaby's Black-Cockatoo Recovery Project

Cocky Notes

Birds Australia
CONSERVATION THROUGH KNOWLEDGE

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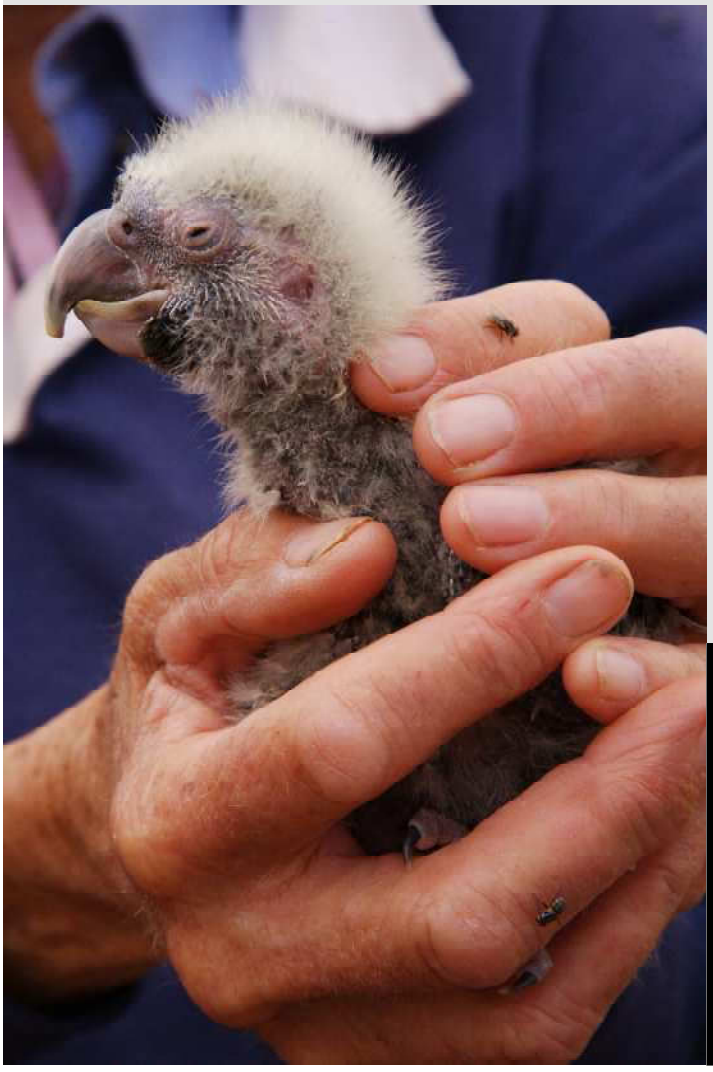
NEW NESTING SEASON, NEW BABIES AND NEW METHODS!

By Dejan Stojanovic, Cross Regional Project Officer, Carnaby's Black-Cockatoo Recovery Project

The 2008/09 nesting season has seen at least 45 chicks successfully fledge at the sites monitored by Birds Australia (BA)! Additionally, on the south coast, 20 chicks were found in hollows and a total of 131 trees were checked for nesting in that region. Once again, Koobabie stole the show, with nearly 20 chicks fledging from that property alone! This year, BA staff visited chicks in their nests once weekly to monitor their survival over the breeding season. Interestingly there was high survival of most chicks at the majority of sites; causes of mortality included predation (2 chicks), illness (1 chick), natural death of the younger sibling (at least 10 chicks) plus several deaths from unknown causes. Nestling survival data are still being collected as some late chicks are still being reared at the time of writing (mid February).

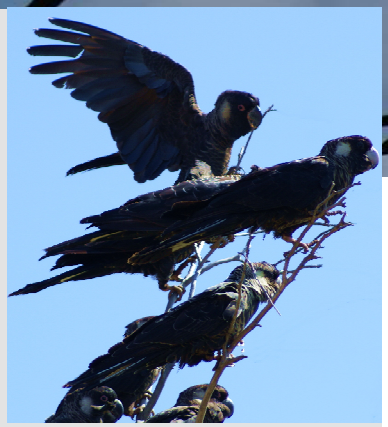


This year saw five pairs of twins raised to at least eight weeks of age in the Northern Agricultural Region. Of these, three pairs both fledged successfully, one pair saw the fledging of the elder chick and the death of the younger while still in the nest. Most interestingly, the elder of the remaining pair of twins fledged successfully and the younger chick stayed in the nest for an additional two weeks before it also fledged successfully!

Nest monitoring this past season was primarily focussed on established monitoring sites in the Northern Agricultural Region although in the South Coast and Avon regions, nests identified last year were revisited. As part of her ongoing Phd. on cockatoo genetics, Nicole White, with the assistance of Department of Environment and Conservation staff, collected genetic samples from nestlings across an extensive geographic area, including several of the newly discovered south coast populations.

Once again volunteers were a critical part of the process and well over 1000 volunteer hours were clocked up over the course of the season! Thanks again to all the people that gave up their time to contribute to the monitoring efforts. The success of Carnaby's Black-Cockatoo Recovery Project is strongly dependant on the passion and involvement of landholders with cockatoos on their properties and this nesting season was made even more of a success by the continued support and enthusiasm of these great people!

Help us monitor roost sites near Perth!



By Dr Geoff Barrett, Regional Ecologist, Swan Region, DEC

Monitoring numbers of adult and juvenile Carnaby's Black-Cockatoos was a high profile issue at the December 2008 symposium and workshop (see overleaf). This lovely bird is listed as endangered and has shown a 50% decline in numbers over the last 45 years, particularly to the north of its range. The stress of finding sufficient food resources has been studied by Leonie Valentine from Edith Cowan University and the Department of Environment and Conservation (DEC). Leonie's research indicates that the Gnangara, Pinjar and Yanchep pine plantations could provide food for up to 10,000 cockatoos, and the proposed clearing of the pine plantations are likely to result in food shortages. So the need to put in place a rigorous monitoring program has never been more urgent. Before the Carnaby's return to the wheatbelt in July we would like to get a feel for how their numbers have changed since the last BAWA survey in 2006 organized by Bansi Shah. That work suggests that estimating numbers of birds as they arrive at roost sites in the evening is the most reliable way to monitor changes to the broader population. Paddy Berry, who was one of the volunteers who contributed to the BAWA study, has continued surveying a roost near Hollywood Hospital in the Perth suburb Nedlands. As well as giving an accurate estimate of the number of birds using the roost each year, Paddy's counts give us an estimate of the number of juvenile birds, based on the number of birds seen as pairs or triplets. A group of three birds represents two adults and a first-year juvenile. Counts of birds at roost sites need to be carried out at least once a week between March and April 2009. Initially the project will focus on Carnaby's Cockatoos in the Swan Region, with a view to expanding to the whole of the bird's range as further funds are secured. If you know of a roost site and would like to help us by doing some counts, or would be willing to count birds at a roost site we have located, please contact Geoff Barrett from DEC (9423 2907). We are particularly interested in hearing from observers who took part in the 2006 BAWA survey

Canola and Carnaby's Black-Cockatoos

By Chris Jackson, Masters Candidate, University of Sydney

Carnaby's Black Cockatoo C*alyptorhynchus latirostris* population declines are closely linked to habitat availability. In the face of an altered landscape, Carnaby's have adapted to alternative, non-native food sources and recently reports have surfaced of the species feeding on canola, a popular and lucrative seed crop. With funding from WWF-Australia and support from Birds Australia, I developed a research program for my University of Sydney Masters Project aimed at assessing levels of Carnaby's Cockatoo canola crop damage and answering questions about what factors may increase the chance of a crop being damaged.

Crops were assessed for damage using two methods: a perimeter point survey, where damage was assessed at predetermined 100 metre intervals, and a quadrate survey, where damage was assessed using 110 random quadrates measuring 1 ha in area. I found that several bird species feed on canola. We recorded and classified foraging behaviours of those species as they fed on the crop and these data were used to develop a damage scale, enabling the quick and accurate rating of crop damage in the field.

Fieldwork was carried out between October and November 2008. In total 23 paddocks of canola were surveyed on 13 properties. The properties fell into three rough locality areas; Moora, Katanning and the southern wheat belt around Jerramungup and down to Gairdner.

Out of approximately 1300 points surveyed, only 62 recorded Carnaby's damage. No property experienced damage levels above 1% of total yield, with several properties experiencing no damage at all. This compares with over 250 recorded points for other parrot damage (primarily galahs and twenty eight parrots). Carnaby's population levels and densities are insufficient to pose a risk to canola growers in the foreseeable future. Stochastic events such as bush fires could cause abnormal aggregations of the birds as they forage for food, resulting in a higher level of localised damage, but these are very unlikely scenarios.

In general, most landholders did not view Carnaby's as a problem (though their perception of twenty eight parrots and galahs was less positive!). After this study is complete, the Recovery Project will be able to use these baseline data to help landholders monitor trends in damage, enabling them to develop management plans if necessary.

Cockies get wired! Working towards tracking black-cockatoos.

By Anna Le Souef, Phd. Candidate, Murdoch University

Unfortunately, significant threats to Carnaby's Black-Cockatoo populations include injuries caused by vehicle strikes and shootings. The Perth Zoo veterinary department, working with DEC, contributes to conservation efforts to protect black cockatoos by providing intensive veterinary treatment to injured and debilitated wild cockatoos. Those that are saved are then handed over to wildlife rehabilitators for further care before being released back into the wild where possible. The skills involved with caring for and treating the cockatoos have been well-honed over many years but there is still no information on the survival and movements of released rehabilitated cockatoos. Such information would contribute greatly not only to the rehabilitative process it would also provide critically-needed knowledge on the migration and movements of wild Carnaby's Black-Cockatoos. For wild cockatoos, there is no detailed information on movements in the wild; although they are known to move over large areas in their annual migration, we don't know the path they take or how far different populations move during migration. We also have limited knowledge about local movements of cockatoos and better understanding of their movement at this scale will be very valuable for conservation organizations. Past research on movements of wild black cockatoos has focused on using wing tags and tail painting, however there is a need for more precise and detailed information than is currently available. Tracking black cockatoos using radio or satellite transmitters has never been done in WA and has been undertaken with only small groups of birds elsewhere in Australia. Challenges associated with tracking wild parrots include the risk of damage to the transmitters by the birds' powerful beaks, injury to birds caused by snagging of the transmitter attachments and obtaining transmitters within the very light weight range required to lessen the impact on flight. Perth Zoo veterinarian Anna Le Souëf, a PhD student studying black cockatoo rehabilitation, recently collaborated with the Birds Australia's Carnaby's Black-Cockatoo Recovery Project Officer Dejan Stojanovic on a study to trial different types of radio and satellite transmitter attachments on captive black cockatoos. The trial is still underway and involves fifteen Carnaby's cockatoos (along with seven Baudin's cockatoos and six forest red-tailed black cockatoos). The cockatoos appear to be very comfortable wearing their transmitters and the majority have not attempted to remove them. Some of the cockatoos have shown a curious interest in the strange object on their backs and have had a bit of a nibble. As you can imagine, a cockatoo 'nibble' can result in considerable damage to a small transmitter unit. For this reason, the next stage of the trial involves reattaching transmitters strengthened with layers of clear dental acrylic. The outcome of the study will be to provide recommendations on which types of transmitters and attachment systems are suitable for use on Carnaby's and other black cockatoo species. This information will be vital to future tracking studies and will help direct conservation efforts and the rehabilitation of wild black cockatoos. The study has been made possible by two generous and much appreciated private donations to Birds Australia. A huge thanks must go to the dedicated team of volunteers who helped us enormously in making observations of cockatoo behaviour before and after the attachments of the transmitters. We are so grateful and hope you enjoyed the time spent watching the cockies! Also, the project would have been impossible without the generous help and support of the Black Cockatoo Rehabilitation Centre and the DEC. We are very grateful to everyone involved and will continue to update you on the progress of the trial.

South Coast project Update

By Raana Scott, South Coast Project Officer, Carnaby's Black-Cockatoo Recovery Project

Yet another nesting season done and dusted! The 2008 nesting season saw a total of seven new nesting sites discovered across the South Coast and south eastern Avon Basin. We have also continued to learn about our already known hollows, having revisited each nesting site recorded last year for the second consecutive season.

For all Carnaby's Black-Cockatoo nesting sites, each breeding population faces its own unique pressures.

Over the last six months, I have noticed some general trends. To the east of their nesting range there are a lot of suitable looking nesting trees, however there are also extremely large populations of galahs and numerous colonies of feral bees utilising hollows, therefore reducing the availability of hollows for Carnaby's Black-Cockatoo. The birds are being out-competed at these nesting sites by other species. Also, at a number of sites, galahs are ringbarking Salmon Gums, killing the tree before its time and, with low levels of recruitment of young trees, this will pose a problem for hollow availability in the future. In comparison, in the more central areas of the south coast, we tend to see pressure resulting from lack of trees suitable for nesting, reduced quantity and quality of food resources and a higher reliance on agricultural weeds. Here the birds are not facing competition, rather they are less able to utilise the landscape successfully because of limited resources.

However, it's not all doom and gloom. Over the next six months we will be protecting and enhancing habitat with fencing and revegetation at two significant nesting sites to the east of the region, as well as to roll out a Threatened Species Network grant for on-ground work in the Tambellup area. This grant will facilitate protection of 95 hectares of nesting and feeding vegetation, provide plants for 27 hectares of infill revegetation at degraded sites and purchase 5 artificial hollows to supplement natural nests.

R. Scott

This past nesting season saw a number of keen volunteers participating in campouts around Ravensthorpe and Tunney as well as helping out on a number of day trips throughout the region. Although both campouts were rained out, and birds were still in courting mode at Tunney, we managed to find three new nesting sites and build significantly on the number of potential hollows marked out at other known nesting sites.

A big thank you to all who were involved. You have helped the Recovery Project to extend our knowledge of nesting distribution through the South Coast and Avon Basin and have added to data from sites found last season .

R.Scott

Help needed!

This nesting season we found some dead chicks in hollows. Although some nestling mortality is natural, a number of these mortalities occurred in hollows needing repair. In an effort to reduce the mortality of chicks and increase the availability of hollows, we are looking to carry out hollow repair at a number of sites through the South Coast and Avon regions in the next couple of months. If you would like to lend a hand, please contact Raana.

Planning for Carnaby's Recovery

By Mike Roache, Threatened Species Network Regional Manager- West, WWF Australia

On the 1st and 2nd of December 2008, 75 scientists, conservation workers and community members attended a symposium and work-shop to discuss the status and recovery of Carnaby's Black-Cockatoo. The objective was to promote collaboration and information sharing, identify key recovery issues for the future and set priorities for research and management. The delegates' combined knowledge about the ecology and conservation management of the bird provided a solid basis for a new recovery plan for the species.

A similar symposium was held in 2003, but in recent years there has been a noticeable increase in research and conservation activity related to this iconic species and it is becoming increasingly difficult for individuals working in this area to keep up with developments and maintain effective 'networking' amongst participants.

The 2008 symposium provided the perfect opportunity to capture and share knowledge. Participants were able to use this symposium as an opportunity to get to know others involved in research and management of the cockatoos, develop visionary ideas to assist in recovery of the birds and also develop collaborative partnerships that will contribute to the realisation of those ideas. Topics covered during the symposium included conservation, monitoring, landholder insights, cockatoo rehabilitation, compliance, captive management, development pressures, research and future directions.

The product of the two days is a comprehensive strategic framework for the long-term recovery and management of the species. This will form the basis of a revised recovery plan to be written in 2009. The event was organised jointly by Birds Australia, The Department of Environment and Conservation (through the Carnaby's Black-Cockatoo Recovery Team) and WWF-Australia. Additional funding was also provided by Avon Catchment Council.

Artificial hollow trial update - By Raana Scott

In the last edition of Cocky Notes I reported on a trial of artificial hollows on the south coast across five sites. The trial aimed to investigate whether Carnaby's Black-Cockatoos will utilise artificial hollows at a site where breeding has not been recorded previously. At one of our sites where Carnaby's Black-Cockatoos already breed, we had two nesting attempts in two artificial hollows installed in July 2008. Unfortunately one set of twins died, but at our last check in January 2009, the second pair were still alive. None of the other twenty hollows at four other sites had any breeding activity. These results are interesting given the context of previous research by Dr. Stephen Davies and the WA Museum that Carnaby's Black-Cockatoo will use artificial hollows in areas where they already breed.

Although artificial hollows seem like a great 'fix' to the problem of hollow loss and competition, they do not solve the larger problem. Artificial hollows require regular care, maintenance and monitoring. If you are considering erecting your own artifi-cial hollows, remember that they are used by birds most quickly in areas where nesting already occurs. Also, great care should be taken to ensure they are not hung in areas that are vulnerable to poaching. Most importantly though, please remember that it is always preferable to retain natural trees with hollows and to encourage regeneration of young trees that will ultimately provide natural nesting habitat in the future which will not require regular maintenance by people.

R. Scott

Innovation in Managing Carnaby's Habitat within Production Landscapes

By Hugh Finn, Postdoctoral Fellow, School of Biological Sciences & Biotechnology, Murdoch University

A collaborative research project between Boddington Gold Mine (BGM) and Murdoch University is examining ways to better manage black cockatoo habitat within production landscapes in the jarrah forest. BGM, located 130 km southeast of Perth, is currently undergoing an expansion project. Black cockatoo habitat management has been a key environmental management priority at the BGM because of the need to clear areas of native forest to allow for construction of new mining areas and infrastructure. BGM initiated a 3 year study with Murdoch University to better integrate objectives for black cockatoo habitat restoration within the rehabilitation and mine closure planning process. The initial focus of the study has been on understanding how Carnaby's Cockatoos (and other black cockatoos) use the jarrah forest surrounding mining areas at BGM as feeding, breeding and roosting habitat. The study has found that while Carnaby's feed in native forest habitats at BGM, they more generally feed on regenerating *Banksia*, '*Dryandra*', and *Hakea* in rehabilitation areas on-site and on pine in the Sotico plantations north of the BGM. Nesting pairs of Carnaby's have been observed in marri and wandoo. The study also examined the incidence of potential black cockatoo nest hollows at BGM, and found that marri and wandoo provided a disproportionate number of large hollows. "There's a couple of interesting findings that have come out of the research so far," says Hugh Finn, a research scientist at Murdoch University working on the BGM project. "One is that Carnaby's prefer to feed in rehabilitation areas at a successional stage in which species like *Banksia* and *Hakea* predominate, particularly if there are large trees around for them to roost in. The other is that jarrah is such a poor producer of hollows, just as previous studies have found." The initial findings hint at the complexity of thinking about how to best restore Carnaby's habitat in mining landscapes at BGM, as well as in other degraded or disturbed areas. Some principles are clear. In particular, impacts on breeding habitat can be minimised by conserving areas that are rich in marri, wandoo, and other species that are good hollow producers. In the northern jarrah forest, for example, marri and wandoo tend to be concentrated lower in the landscape, while bauxite reserves are found on ridges and upper slopes. This pattern suggests that bauxite mining operations can reduce impacts on breeding habitat by minimising clearing of lower slopes and valley floors.

Other principles require further research and discussion. Tom Muth, environmental manager for the BGM expansion project offered that, "restoring breeding habitat really means thinking 150 years down the track, since it's going to take that long before a tree is large enough to bear a hollow. And in that case, we probably should be thinking about climate change, rainfall patterns, and what species are going to best for that environment." Some issues involving feeding habitat are similarly complex. Observations of Carnaby's at BGM would suggest that the restoration of some areas to a woodland-type habitat with greater densities of *Banksia* and *Hakea* may benefit Carnaby's. There is also the question of whether non-native food sources, such as pine, should be integrated into rehabilitation protocols. Finn notes the importance of collaboration for resolving these questions. "Almost everyone involved with the recovery of Carnaby's Cockatoos is working through the issues associated with restoring habitat. Management of Black Cockatoo habitat is a lot about communication, and that's particularly true for Carnaby's."

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Contact us:

Dejan (Dee) Stojanovic
Cross Regional Project Officer
M: 0428 762 292
P: 08 9383 7749
167 Perry Lakes Drive, Floreat Perth 6014
d.stojanovic@birdsaustralia.com.au

Raana Scott
South Coast Project Officer
M: 0427 707 047
PO Box 1801, Esperance WA 6450
r. scott@birdsaustralia.com.au

Michael Roache
WWF Threatened Species Network Regional Manager WA
M: 0447 988 478
mroache@wwf.org.au

www.birdswa.com.au

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