

IF you lived in the Northern or Eastern Wheatbelt half a century ago, you probably didn't need a barometer to forecast a good downpour. A sky darkened not by clouds but by Carnaby's Black-Cockatoos was believed to be a good indicator that rain was on the way. If few black cockies fly in to herald the rain now, it's less to do with drought and more to do with the changing fortunes of a species once so plentiful in number that a government bounty was placed on its head to control its numbers.

Over the years since then, widespread clearing, poaching, shooting, and increasing competition from other species have all taken their toll on the world's only population of Carnaby's Black-Cockatoo, *Calyptorhynchus latirostris* (Carnaby's). In the past 45 years the cockatoo's population is estimated to have more than halved and the species is now listed as endangered and likely to become extinct. It is already locally extinct in some areas.

In 1999, in an effort to prevent the cockatoo's extinction, the Carnaby's Black-Cockatoo Recovery Team wrote a recovery plan for the years 2000-2009. The recovery team consists of members from several professional organizations, including Birds Australia, DCLM, CSIRO and WA Museum, and a landholder who is successfully conserving and developing Carnaby's habitats.

Carnaby's and Baudin's

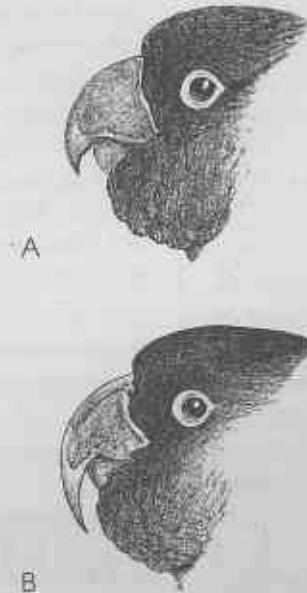
Carnaby's is closely related to Baudin's Black-Cockatoo, *Calyptorhynchus baudinii* (Baudin's). Both species are endemic to the southwest of WA, both are now threatened with extinction, and both look virtually identical. In fact, they were initially considered to be the same species. The main physiological difference between them is that Baudin's has a longer, narrower upper mandible than Carnaby's.

A good knowledge of the differences in their feeding habits and calls is useful in telling the two species apart, as is an awareness of

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CARNABY'S BLACK-COCKATOO: A COCKY IN CRISIS

Leonie McMahon



Heads of Carnaby's Cockatoo (A) and Baudin's Cockatoo (B) (J. Darnell) from WA Birds Vol 1, Johnstone and Storr.

their preferred ranges. The range of Carnaby's stretches from the Lower Murchison River, down along the west coast, across to Esperance and inland to such places as Coorow, Kellerberrin, Lake Grace and Lake Cronin. Carnaby's congregate in large feeding flocks in coastal regions over summer and autumn, sometimes sharing the range of Baudin's, especially in pine plantations.

Baudin's has a smaller range than Carnaby's, being found just to the north-east of Perth and then south through to Albany. It resides throughout the year in areas that receive an average annual rainfall of 750 mm and above. Carnaby's, on the other hand, disperses out into the wheatbelt at the onset of winter to breed, typically in regions that receive an average annual rainfall of between 300-750 mm.

Breeding against the odds

Carnaby's tend to mate for life and the same pairs return year after year to the same breeding grounds and often the same hollows. Over the months that follow, the battle to successfully fledge a chick is fought. It's a battle the species as a whole is losing. The odds are stacking up against it on several fronts.

Carnaby's rely on several very different habitats during the breeding season. They nest in the large hollows of mature eucalypt species, in particular, salmon gum, *Eucalyptus salmonophloia*, and wandoo, *E. wandoo*, but breeding has also been reported in other species including red morrell, *E. longicornis*, York gum, *E. loxophleba*, and marri, *Corymbia calophylla*. Carnaby's feed in shrubland or kwongan heath on insect larvae and seeds from native species such as banksia, grevillea, hakea, dryandra and marri. It has also adapted to feeding on introduced species including pines, wild geranium (also called erodium or corkscrew) and wild radish. In some places, these have become important food sources in the absence of its native food.

Research by CSIRO has shown feeding habitats must be in close proximity to the breeding site (ie within 20 km) for breeding success. The female lays up to two eggs though it is rare for two chicks to fledge unless there is a good and constant source of food nearby. In many areas the second egg will not even get a chance to hatch, or if it does, the second chick dies in the first couple of days.

The male feeds the female while she broods the eggs and during the first weeks of the chicks' lives. The further the male has to fly for food, the more energy it requires of him and the less he has to take back to the female and the rapidly growing chick. In this instance the female must leave the nest sooner in order to maintain her own health, leaving the chick vulnerable and less likely to survive to fledging.

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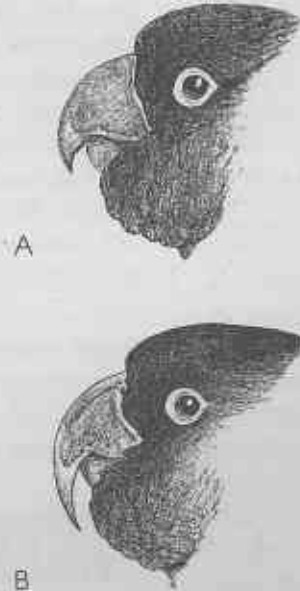
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That nesting can take place at all presumes that the preferred nursery of the pair is there for the taking when they return from their summer feeding grounds. Increasingly, Carnaby's are losing their hollows to the more aggressive Galahs, *Cacatua roseicapilla*, and Long-billed Corellas, *Cacatua pastinator*. While the opening up of farmland has proved detrimental to Carnaby's, it has enabled galahs and corellas to successfully colonise new areas. Other bird species, including several species of wild duck, also nest in hollows favoured by Carnaby's and in some areas feral bees are also taking over traditional hollows. Additionally, hollows may have degenerated or been damaged, or the trees containing them may have fallen, or been burned or cleared. Trees are usually more than a hundred years old before they are large enough to support a hollow of the size required by a large cockatoo. For every tree that reaches this age many more die. The degeneration of a suitable stand of eucalypts through clearing, grazing, weed invasion, salinity and fire happens far more quickly than natural regeneration can replace them. The bottom line is that hollows are becoming scarcer. In the future they will be even fewer and the competition will be even fiercer unless existing stands are protected now.

Poaching of wild chicks and eggs to be reared and sold as cage birds on the black market, both locally and internationally, is another danger the species faces. DCLM has conducted a captive breeding program since 1996 aimed at flooding the market to bring down black market prices. The advent of DNA testing has also aided in regulating the market.

Shortening the odds

Other moves are afoot to prevent this large, sometimes loud, sometimes larrikin, 'Rainbird', loved by many a farming family, from disappearing (some might say un-naturally quietly) from our skies forever.

A project supported by the Recovery Program is currently being

proved to be an effective way of increasing breeding success.

- ▶ Fencing off stands of eucalypts used for breeding to slow down degeneration and allow natural revegetation to occur.
- ▶ Fencing off remnant bush and/or revegetating areas with suitable feed species.
- ▶ Covenanted habitats of breeding and feeding significance to be protected in perpetuity.
- ▶ Observing and recording the behaviour of Carnaby's, eg the time of the year they arrive at your place, when they leave, regular flight patterns, breeding activity such as chewing or entering and leaving hollows, or male birds feeding females.

It is important to note that these conservation measures will not only assist Carnaby's, but will flow on to other species and the environment as a whole.

Observation sheets and further information about the project and conservation of Carnaby's Black-Cockatoo habitats can be obtained from the project officer, Leonie McMahon. Phone: 9287 2448, Mobile: 0438 678492 (after hours calls are okay), email ljmcmahon@bigpond.com



Hollows don't have to be high up!

Meg and Simon Travers of Mt Helena watched Tawny Frogmouths use this hollow in a fallen log as a nesting site last season!
Photo: Sarah McEvoy

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run by Birds Australia WA Inc with funding from the NHT. The project has several aims. These include:

- ▶ Alerting people to the fact that Carnaby's Black-Cockatoos are endangered, and why.
- ▶ Ascertaining where they are still breeding and where their corresponding feeding sites are.
- ▶ Informing private landholders of how to assist the birds if they so choose.
- ▶ Establishing conservation measures to ensure long-term survival.
- ▶ Establishing community action groups and liaising with existing conservation groups to assist in conservation measures.

Many significant breeding sites are in remnant vegetation on private land. Should you wish to assist Carnaby's breeding on your property there are several things you can do. These include:

- ▶ Leaving standing dead trees that have hollows.
- ▶ Keeping Galahs and Long-billed Corellas under control in areas where Carnaby's breed. This has