Progress Report SP 2018-025

Survival and dispersal of black cockatoos in south-west Western Australia

Perth Zoo Science

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Update requested

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Project Team	granted
Program Leader	required
Directorate	required

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Context

There are three taxa of black cockatoos (*Calyptorhynchus*spp.) endemic to south-west Western Australia. All three are listed as threatened (two are Endangered, one is Vulnerable), and all are the subject of national recovery plans. This project is designed to capture additional information on the ecology of all species and monitor recruitment in the wild. Monitoring survivorship of rehabilitated birds once released back into the wild is also a focus of the project.

This project has seen the successful release of 542 rehabilitated cockatoos from three species (290 Carnaby's cockatoo, 60 Baudin's cockatoo and 192 forest red-tailed black cockatoo. The total number of cockatoos leg banded (all species and all ages) is now 1,458 from 15 years of work. There is high confidence that the rehabilitation techniques and release protocols currently in use provide very high survival rates. This confidence is supported by satellite telemetry from PhD studies of rehabilitated birds that have been released along with the continued sighting of banded rehabilitated birds in the field.

Aims

- Monitor the recruitment of Carnaby's cockatoo at a number of sites across the species' range.
- Measure the health of nestlings of Carnaby's cockatoos at a number of sites across the species' range.
- Determine the availability of suitable nest hollows for Carnaby's cockatoo and investigate the value of artificial nest hollows to increase recruitment in the wild.
- Following veterinary treatment and rehabilitation, monitor the survival and dispersal of rehabilitated cockatoos (all three species) at release sites across their respective ranges.

Progress

- During 2017-18, 134 (116 as pullus, three adults and 15 rehabilitated) Carnaby's cockatoos were banded, along with 44 forest red-tailed black cockatoos (one as pullus and 43 rehabilitated).
- One hundred and three Carnaby's cockatoos, one Baudin's cockatoo and seven forest red-tailed black cockatoo were either retrapped/recovered, had their bands/colour bands photographed in the field and their band number read or inferred, or the satellite transmitters were recovered when tail feathers were moulted in autumn 2018.
- A significant record was obtained this year with an adult male Carnaby's cockatoo having its band read in the field for the first time in just under 28 years.
- Publications arising from the two PhD studies at Murdoch University are now being prepared. A research paper on nest site fidelity and mate infidelity in Carnaby's cockatoo was published in *Ibis*.

Management implications

- The discovery that 25% of nestlings are sired by males other than the nominal 'father' has important implications for the maintenance of gene pools within local breeding populations, particularly those that are now reduced to only a few pairs. The wider implications of this mating strategy remain to be determined, and will depend on the degree of movement of birds from natal areas into other breeding populations.
- The release of more than 500 rehabilitated black cockatoos provides a significant augmentation of adult numbers for all three species, and given the high survival rates indicates that this conservation action has an important role to play in the management of all three species.

Future directions

- Refine the method used to determine the health of nestlings, and analyse data on the use of artificial nest hollows by Carnaby's cockatoos, and the costs-benefits associated with the rehabilitation of all three species of black cockatoos.