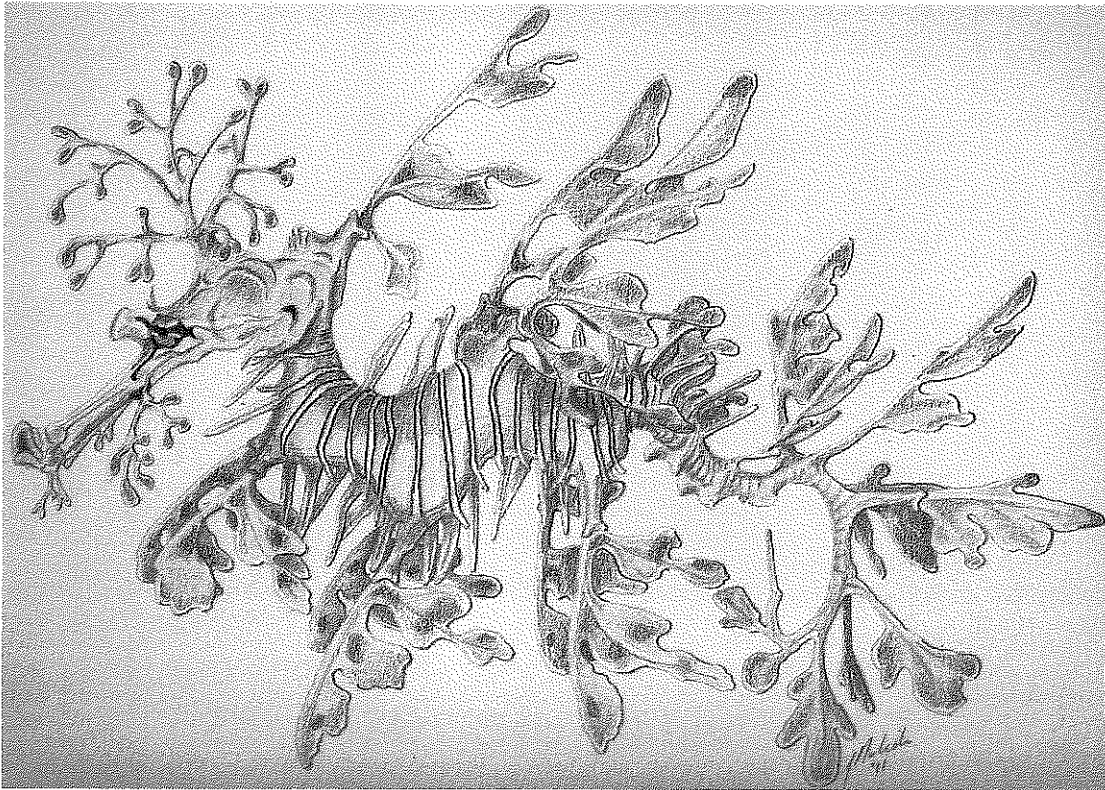




Wildlife Disease Association Australasian Section



Conference Proceedings
25th - 30th September 2011
The Coorong, South Australia

Proudly supported by:



Proudly supporting WDA Students:

ConservAction International

"Working with people
to conserve habitat and animals
and preserve health"

www.ConservAction.org Tel: +61-402121046



A HENRY SCHEIN® COMPANY

Health status and population demographics of free-living endangered black cockatoos (*Calyptorhynchus* spp.) in Western Australia

Kris Warren^a, A. Le Souef^{a,b}, S. Vitali^b, M. Calver^a, P. Mawson^c, R. Dawson^c, K. Morris^c, S. Raidal^d, H. Klandorf^e, C. Holyoake^a

^aConservation Medicine Program, School of Veterinary and Biomedical Sciences, Murdoch University, Western Australia

^bVeterinary Department, Perth Zoo, Western Australia

^cDepartment of Environment and Conservation, Western Australia

^dSchool of Animal and Veterinary Sciences, Charles Sturt University

^eDivision of Animal and Nutritional Sciences, University of West Virginia

The three species of black cockatoo endemic to the south-west of Western Australia (Carnaby's Black Cockatoo *Calyptorhynchus latirostris*, Baudin's Black Cockatoo *Calyptorhynchus baudinii* and Red-Tailed Black Cockatoo *Calyptorhynchus banksii naso*) face population declines as a result of several threatening factors including habitat loss and fragmentation, poaching for the pet trade, competition with other species for nesting hollows, vehicle strikes, shootings and extreme weather events.

A research project to determine the health status and population demographics of wild black cockatoos is currently being undertaken by Murdoch University as a collaborative project with the Department of Environment and Conservation, Perth Zoo and University of West Virginia, with support from Newmont Boddington Gold, BHP Billiton Worsley Alumina and the Department of Environment and Conservation (DEC). Whilst this initial research project has funding for a three year period, it is hoped that this project will be able to be conducted over the long-term.

One of the major concerns regarding wild populations of black cockatoos is that due to declining recruitment rates, the average age of wild flocks is increasing and many birds may be past breeding age. If this is true, then there may be a catastrophic population crash when the older birds die. The measurement of pentosidine, a compound formed during nonenzymatic glycation in bird skin, has already led to the creation of a number of 'wild bird curves' to determine ages of birds of unknown age. Skin samples have been taken by this research team from a range of known-aged captive black cockatoos to create an age curve for the genus *Calyptorhynchus*. Skin biopsy samples are currently collected from all injured wild black cockatoos that are examined at the Perth Zoo Veterinary Department and the levels of pentosidine in the skin biopsies from these wild birds will be read against the curve to determine the ages of the wild birds, with an accuracy of 1-2 years. These data will then be analysed to determine the range of ages of wild cockatoos admitted to the Perth Zoo Veterinary Department from the wild.

A second major component of this study focuses on the health investigation of free-living black cockatoo nestlings, primarily Carnaby's nestlings, in the south-west of Western Australia. DEC performs regular monitoring checks of black cockatoo nests,

but until this study there had been no disease and health research conducted on free-living black cockatoos. As a result there is very little known about the health status of wild black cockatoos. Conservation biologists are increasingly recognising the role of disease as a limiting factor in species survival, particularly as anthropogenic environmental changes increasingly influence the health of endangered wildlife populations. This study is investigating the prevalence of three diseases that can be of significance to captive and free-living psittacine birds: psittacine beak and feather disease virus (BFDV), avian polyomavirus (APV) and *Chlamydophila psittaci* infection. During the 2010 nesting season, samples were collected from 59 black cockatoo nestlings. Additionally, nest material from 11 nest hollows was collected for BFDV PCR testing. Blood samples were also collected from the nestlings and were analysed to establish reference range values for Carnaby's nestlings. BFDV was detected in five (8.5%) nestlings based on PCR of blood samples and in nest material from one nest (9%). Five (8.5%) nestlings also tested positive to APV based on PCR of cloacal swabs. Three chicks were concurrently infected with both viruses. No nestlings tested positive for *Chlamydophila psittaci* infection or exposure. The detection of BFDV and APV in the nestlings is of potential concern. The clinical significance of these viral infections in these black cockatoo populations remains unknown. It is hoped that long-term monitoring of wild black cockatoo nestlings and opportunistic sample collection from injured wild adult birds will provide insight into the epidemiology and clinical significance of these viral infections in these endangered cockatoo species.