

Submission to the Senate Environment and Communications References Committee

Inquiry into the continuation of construction of the Perth Freight Link in the face of significant environmental breaches (Public Hearing, Perth, Thursday, 23 February 2017)

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**Submission to the Senate Environment and Communications References Committee**

**Inquiry into the continuation of construction of the Perth Freight Link**

**in the face of significant environmental breaches**

Public Hearing, Perth, Western Australia, Thursday, 23 February 2017

Submission made by: Dr Hugh Finn, Curtin University

Date of submission: Thursday, 23 February 2017

**Introduction**

1. My contact details are provided in Appendix 1.
2. This written submission is to support any oral evidence that I may give at the public hearing held on Thursday, 23 February 2017 in Perth, Western Australia for the inquiry by the Senate Environment and Communications References Committee into the continuation of construction of the Perth Freight Link in the face of significant environmental breaches. It may be supplemented by further submissions after the hearing to respond to any questions or requests from the Committee.
3. I note the following terms of reference for the inquiry:
  - On 16 February 2017, the Senate referred the following matter to the Environment and Communications References Committee for inquiry and report by 6 March 2017:
    - a. the Senate notes the failure to comply with the Senate orders for the production of documents agreed to on 13 and 14 February 2017, relating to the Perth Freight Link;
    - b. in order to investigate the subject of the Senate orders, the following matter be referred to the Environment and Communications References Committee for hearing on or before 24 February 2017, and reporting on or before 6 March 2017 - The continuation of construction of the Perth Freight Link in the face of significant environmental breaches.
4. These submission relates to the proposed action known as the Roe Highway Extension, Kwinana Freeway to Stock Road, WA (EPBC 2009/5031) (ie the Perth Freight Link) and to the conditions attached to the approval for that action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (the EPBC Act) by the delegate

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of the then Minister for the Environment on 21 October 2015 (the federal approval conditions). I note also the statement of reasons for the decision to approve the action that was published on 4 December 2015 (the statement of reasons).

5. In general, the comments made in this submission relate to the issue of compliance with the federal approval conditions and in particular the approval conditions relating to Carnaby's Cockatoos (*Calyptorhynchus latirostris*) and to Forest Red-tailed Black Cockatoos (*Calyptorhynchus banksii naso*). I am not aware of any direct evidence that I might have to give in terms of any first-hand knowledge of works undertaken in relation to the action since December 2016.

### **Relevant expertise and experience**

6. I am a lecturer at the Curtin Law School at Curtin University and hold a PhD in Biological Sciences from Murdoch University. Since 2007 I have been involved with several research projects into black cockatoos and have conducted extensive field research into black cockatoos in Western Australia at the Newmont Boddington Gold Mine (c. 125 km southeast of Perth) and at the Gnangara pine plantation (and surrounds) to the north of Perth. I also coordinated campus-wide surveys of black cockatoo food plants and feeding residues at the main Murdoch University campus in 2010 and 2011. In 2014 I worked for BirdLife Australia to coordinate the 2014 Great Cocky Count, an annual citizen science survey for black cockatoos in the southwest of Western Australia. Appendix 2 contains a list of relevant publications.

### **Comments on condition 4 of the federal approval conditions**

7. Condition 4 of the federal approval conditions provides (terms in bold are defined in a definition section to the approval conditions):

To avoid and mitigate impacts to **black cockatoos**, during the breeding season (August - December), within 7 days prior to **clearing**, the **approval holder** must ensure all **potential nesting trees** are investigated to detect the presence of **black cockatoos** using hollows. The investigation must be undertaken by a **suitably qualified and experienced person**.

If any **black cockatoos** are detected using a hollow in a tree or trees, the **approval holder** must:

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1. clearly identify all such trees with fencing and signage that must be located within two (2) metres of the base of each such tree;
  2. not **clear** any such tree or any vegetation within 10 metres of any such tree; and
  3. undertake all reasonable measures to avoid any such tree from being cut down, felled, removed, killed, destroyed, poisoned, ring-barked, uprooted or burned until a **suitably qualified and experienced person** has verified in writing that the hollow(s) in each such tree are no longer being used by **black cockatoos**.
8. I have considered what approval condition 4 might mean – in its ordinary language and read in a context of all of approval condition 4, the other conditions in the federal approval conditions, the State conditions of approval for the action (as expressed in Statement 1008 made by the WA Environment Minister), and in the context of the EPBC Act – and what the terms of approval condition 4 might reasonably be said to be require of the approval holder in terms of compliance.

*Condition 4 as a control on the clearing of vegetation*

9. Approval condition 4 operates as a control on the manner in which vegetation is to be cleared. It might broadly be described as a ‘clearing control’ whose intended purpose is to ‘avoid or mitigate’ impacts that clearing activities might have on black cockatoos that happen to be nesting within the area to be cleared at the time that the clearing of vegetation (or other related works) is undertaken.
10. That approval condition 4 functions as a clearing control is also clear from the requirements that investigations be undertaken for all 38 potential nesting trees and that those investigations be undertaken within 7 days prior to the commencement of clearing.
11. It is reasonable to infer that a purpose of approval condition 4 is to minimise the risk of a tree being felled in which black cockatoos were nesting at the time and the consequent risk of death, injury or disturbance to a female, a chick and or an egg during or after tree fall. As I discuss below, that latter risk may represent a ‘take’ of a species declared to be ‘fauna which is likely to become extinct, or is rare, or otherwise in need of special protection’ pursuant to s 14(4) of the *Wildlife Conservation Act 1950* (WA).<sup>1</sup>

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<sup>1</sup> It is my understanding that provisions of the *Biodiversity Conservation Act 2016* (WA) that relate to the ‘taking’ of fauna had not come into operation at the time that the clearing commenced in late December 2016.

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*The breeding season and Forest Red-tailed Black Cockatoos*

12. The time period for the application of the control is said to be the ‘breeding season (August – December)’. The breeding season for Carnaby’s Cockatoos is generally accepted to be from July to December. Forest Red-tailed Black Cockatoos have been reported to breed in every month with peaks from April to June and from August to September.<sup>2</sup> The breeding of Forest Red-tailed Black Cockatoos is also said to vary from year to year and to respond to the prevailing environmental conditions (eg the availability of Marri (*Corymbia calophylla*) fruit).
13. Since the black cockatoo surveys conducted in the second half of 2010<sup>3</sup>, Forest Red-tailed Black Cockatoos have been observed to nest in artificial nest hollows installed at the main (South Street) campus of Murdoch University.<sup>4</sup> Since those 2010 surveys, Forest Red-tailed Black Cockatoos have also continued to extend their distribution across the Swan Coastal Plain in the Perth metropolitan area and to increase in abundance at monitored roost sites in that same area.<sup>5</sup>
14. It is reasonable to infer that, since December 2010, there has been a relevant change in the distribution and abundance of Forest Red-tailed Black Cockatoos in the broader landscape around the area to be cleared, such that it is now objectively more likely that breeding of Forest Red-tailed Black Cockatoos may occur in the landscape around and including the Roe 8 development area. It is also possible that Forest Red-tailed Black Cockatoos could breed in that area in any month of the year – though noting the clear terms of approval condition 4 as to the period of the breeding season.

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<sup>2</sup> See the information given in the Species Profile and Threats Database (SPRAT) at [http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon\\_id=67034](http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=67034).

<sup>3</sup> See the statement of reasons at paragraphs 45-52.

<sup>4</sup> See: <http://media.murdoch.edu.au/red-tailed-black-cockatoo-breeds-in-metro-area-for-first-time>; <http://media.murdoch.edu.au/researchers-to-track-threatened-black-cockatoos-at-murdoch-university>; [http://birdlife.org.au/documents/CockyNotes\\_Summer\\_2016-2017\\_final.pdf](http://birdlife.org.au/documents/CockyNotes_Summer_2016-2017_final.pdf)

<sup>5</sup> See the results for the 2014, 2015 and 2016 Great Cocky Counts available at: <http://direct.birdlife.org.au/projects/southwest-black-cockatoo-recovery/publications-and-forms>

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*The meaning of 'to detect the presence of black cockatoos using hollows'*

15. The essential aim of the field investigations required under approval condition 4 is encapsulated in the phrase 'to detect the presence of black cockatoos using hollows'. Notably that phrase is not modified at all as regards the probability of the desired outcome – eg qualifying words such as 'likely' or 'probably' or verb phrases such 'assess' or 'investigate' the presence of are not used.
16. The Macquarie Dictionary Online defines 'detect' in these terms:
1. to discover or notice a fact, a process, or an action: to detect someone in a dishonest act.
  2. to find out the action or character of: to detect a hypocrite.
  3. to discover the presence, existence, or fact of: \*I could detect the presence of a man in a room in darkness by this proclivity – Miles Franklin, 1963.
17. It is notable, in that context, that the thing to be discovered is the actual presence of birds using the hollows – not, for example, some indication of potential presence or recent use of the hollow (eg chew marks around the entrance to the hollow or feeding residues around the tree) or even the presence of birds in or near to the tree but not using a hollow. Nor is anything said in approval condition 4 about the 'absence' of nesting birds.
18. Approval condition 4 also requires that the investigation of the trees be undertaken by a 'suitably qualified and experienced person' which is defined in the federal approval conditions as a person with relevant tertiary qualifications and experience surveying cockatoos. The responsibility of such a person is to undertake such investigation as is required to detect the presence of black cockatoos using a hollow. An inference may be drawn that only such a person would have the requisite expertise and experience to properly undertake an investigation to detect the presence of black cockatoos using a hollow.
19. A detection of the presence of black cockatoos using a hollow then requires the approval holder to implement the subsequent requirements 1-3 indicated in approval condition 4, including a requirement that a suitably qualified and experienced person verify in writing that the hollows in each such tree are no longer being used.

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20. It is also notable that approval condition 4 does not prescribe any particular method in relation to the detection of the presence of black cockatoos using a hollow. Further, an element of reasonableness could be inferred such that approval condition 4 ought not to be seen to require the use of a methodology that would not be reasonably practical in the circumstances (eg the physical environment in which the trees occur).
21. The terms of approval condition 4 – read as a whole and understood as a clearing control directed at minimising the risk of a tree being cleared while birds were actively using that hollow for nesting and the consequent risk of death, injury or disturbance to a female, a chick and or an egg during or after tree fall – suggest that the methodology applied to detect the presence of black cockatoos using a hollow must provide a high probability of detection.
22. Factors that support a high detection probability for a methodology include: (a) the detection of hollow use is intrinsic to the methodology itself (eg use of elevated work platforms/cherry-pickers, arborists or technologies such as pole cameras to visually inspect hollows); (b) the methodology is appropriate for hollow detection and is adequately replicated; and (c) multiple appropriate methodologies are used and they are adequately replicated.
23. As regards detection of hollow use, there are four potential outcomes:
- (a) true presence (successful detection of birds nesting in the hollow at the time of clearing);
  - (b) false presence (birds detected but not actually nesting in the hollow at the time of clearing, eg birds are only roosting or prospecting for a hollow);
  - (c) true absence (no detection and birds not nesting in the hollow at the time of clearing); and
  - (d) false absence (no detection but birds nesting in the hollow at the time of clearing).
24. A clear objective of a clearing control (harm avoidance) measure such as approval condition 4 is to minimise the probability of a false absence occurring. A false absence may occur if, using a particular methodology, observers are unable to detect the presence of birds nesting in a hollow for some reason (eg the birds do not respond to a stimuli used

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to flush them out of a hollow, the vegetation does not allow for visual observation of a hollow). It is sometimes possible to increase the detection probabilities for a methodology that is prone to false absences through replication (eg multiple checks of a hollow at appropriate times) or by using multiple methodologies that are appropriately replicated and applied at suitable times.

25. The methodologies that may be used to techniques to detect the presence of black cockatoos using a hollow include:

- (a) targeted aural survey: observers listen for males calling and then trace them back to a hollow where a female is locate;<sup>6</sup>
- (b) hollow watch: observers watch a hollow at suitable times to check for birds leaving/entering hollow;<sup>7</sup>
- (c) ‘sign’: check for signs of chewing around hollow or feeding residues around tree (allows only weak inference as to the possible presence of nesting birds at the time);
- (d) tree-knocking: knocking or scratching at the base of a tree to draw a nesting female out of the hollow; and
- (e) inspection of the hollow: eg use of elevated work platforms/cherry-pickers, arborists or technologies such as pole cameras to visually inspect hollows.

26. There are two key limitations with the ‘tree knocking’ approach that limit its reliability a methodology to determine whether a hollow is occupied. First, it is not known what proportion of birds will respond to the stimulus. Second, a non-detection may occur if a female happens to be away from nest at the time (as occurs more frequently during the nestling stage).

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<sup>6</sup> Johnstone, R.E., T. Kirkby and K. Sarti (2013). The breeding biology of the Forest Red-tailed Black Cockatoo *Calyptorhynchus banksii naso* Gould in south-western Australia. 1. Characteristics of nest trees and nest hollows. *Pacific Conservation Biology* 19(3): 121-142.

<sup>7</sup> Johnstone, R.E., T. Kirkby and K. Sarti (2013). The breeding biology of the Forest Red-tailed Black Cockatoo *Calyptorhynchus banksii naso* Gould in south-western Australia. 1. Characteristics of nest trees and nest hollows. *Pacific Conservation Biology* 19(3): 121-142; see also the information given in the Species Profile and Threats Database (SPRAT) for Carnaby’s Cockatoos at [http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon\\_id=59523](http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=59523).

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*What might be assumed about suitably qualified and experienced person?*

27. The terms of approval condition 4 suggest some assumptions that might be made about the knowledge of the suitably qualified and experienced person who undertakes the field investigation (or the person who develops the detection methodology), namely that they are to be familiar with:

- (a) the relevant methodologies for hollow use detection and their limitations and the factors affecting the probability of detection;
- (b) the biology of the species (eg that a female might be away from the hollow for a period); and
- (c) the need to apply for any relevant authorisations under state law and the potential offences that might apply in relation to the 'taking' of an individual animal under the relevant state legislation.

*The potential for a 'taking' of a black cockatoo if a tree is felled and birds are present*

28. The following scenario might arise in the context of clearing activity in which trees may be felled where black cockatoos are nesting:

- (a) Both Carnaby's Cockatoos and Forest Red-tailed Black Cockatoos have been declared, pursuant to s 14(4) of the *Wildlife Conservation Act*, to be fauna which is (for the purposes of that Act) 'likely to become extinct, or is rare, or otherwise in need of special protection'. Section 14(4)(a) provides that fauna subject to such a declaration is wholly protected throughout the State at all times.
- (b) Section 16(1) of the *Wildlife Conservation Act* provides that a person who infringes the protection declared pursuant to s 14(4), by taking fauna while protected, otherwise than by the authority of either a licence issued pursuant to the provisions of s 15 or of the provisions of s 17(2)(c) or of s 23, commits an offence against that Act. Neither s 17(2)(c) or s 23 would appear relevant to the scenario considered here. It is not clear whether relevant persons for the Roe 8 clearing activity held any licence issued under s 15.
- (c) Section 16(2) would appear to provide that a person who held a relevant licence or other authorisation and failed to observe any applicable restrictions on the taking of fauna might commit an offence against the Act.



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- (d) Section 16(1a) provides that '(i)n the case of fauna other than fauna in respect of which a declaration under section 14(4) is in operation, [s 16(1)] does not apply to the taking of fauna incidental to clearing referred to in section 51C(a), (b) or (c) of the *Environmental Protection Act 1986*'.
- (e) Section 51C of the *Environmental Protection Act 1986* (WA) provides that a person who causes or allows clearing commits an offence unless the clearing:
- (a) is done in accordance with a clearing permit; or
  - (b) is of a kind set out in Schedule 6; or
  - (c) is of a kind prescribed for the purposes of this section and is not done in an environmentally sensitive area.
- (f) Among the kinds of clearing set out in schedule 6 of the *Environmental Protection Act* is clearing that is undertaken in the implementation of a proposal in accordance with an implementation agreement or decision.
- (g) Section 6 of the *Wildlife Conservation Act* define the term 'to take' in relation to any fauna such that the term 'includes to kill or capture any fauna by any means or to disturb or molest any fauna by any means or to use any method whatsoever to hunt or kill any fauna whether this results in killing or capturing any fauna or not; and also includes every attempt to take fauna and every act of assistance to another person to take fauna and derivatives and inflections have corresponding meanings'.
- (h) On the basis of that definition, it is possible that if a tree is felled and a black cockatoo nesting in a hollow in that tree is killed (or even only disturbed) as a result, that act may constitute a taking offence under s 16(1) of the *Wildlife Conservation Act*, noting that the intention to cause that result would appear to be immaterial to a 16(1) offence, given the apparent application of s 23(1) of the WA Criminal Code. That said, it would be at the discretion of the CEO of the Department of Parks and Wildlife as to whether to commence any proceedings in respect of such an offence and statutory defences could be available under the Criminal Code.

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## **Appendix 1 – Contact Details**

Dr Hugh Finn

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Curtin University

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## Appendix 2 – Relevant Publications

- Finn, H., Stock, W., and Valentine, L. 2009. Pine and the ecology of Carnaby's Black-Cockatoos (*Calyptorhynchus latirostris*) in the Gngangara Sustainability Strategy study area. Technical report for the Forest Products Commission in support of the Gngangara Sustainability Strategy.
- Lee, J., Finn, H., and Calver, M. 2010. Mine-site revegetation monitoring detects feeding by threatened black-cockatoos within 8 years. *Ecological Management and Restoration* 11: 141-3.
- Biggs, E.K., Finn, H., Taplin, R.H., and Calver, M.C. 2011. Landscape position predicts distribution of eucalypt feed trees for threatened black-cockatoos in the northern jarrah forest, Western Australia. *Journal of Royal Society of Western Australia* 94: 541-548.
- Lee, J.G.H., Finn, H.C., and M.C. Calver. 2013. Ecology of black cockatoos at a mine-site in the eastern Jarrah-Marri forest, Western Australia. *Pacific Conservation Biology* 19: 76-90.
- Lee, J., Finn, H., and M. Calver. 2013. Feeding activity of threatened black cockatoos in mine-site rehabilitation in the jarrah forest of southwestern Australia. *Australian Journal of Zoology* 61: 119-131. <http://dx.doi.org/10.1071/ZO12101>
- Stock, W., Finn, H., Parker, J. and Dods, K. 2013. Pine as fast food: Foraging ecology of an endangered cockatoo in a forestry landscape. *PLoS ONE* 8(4): e61145. <http://dx.doi.org/10.1371/journal.pone.0061145>
- Finn, H., Barrett, G., Groom, C., Blythman, M., Williams, M. 2014. The 2014 Great Cocky Count: a community-based survey for Carnaby's Black-Cockatoos (*Calyptorhynchus latirostris*) and Forest Red-tailed Black-Cockatoos (*Calyptorhynchus banksii naso*). Report prepared by BirdLife Australia. BirdLife Australia, Floreat, Western Australia. Available at: <http://www.birdlife.org.au/projects/carnabys-black-cockatoo-recovery/great-cocky-count>
- Doherty, T.S., Wingfield, B.N., Stokes, V.L., Craig, M.D., Lee, J.G.H., Finn, H.C., Calver, M.C. 2016. Successional changes in feeding activity by threatened cockatoos in revegetated mine sites. *Wildlife Research* <http://dx.doi.org/10.1071/WR15053>
- Williams, M.R., Yates, C.J., Stock, W.D., Barrett, G.W., and Finn, H.C. 2016. Citizen science monitoring reveals a significant, ongoing decline of the Endangered Carnaby's black-cockatoo *Calyptorhynchus latirostris*. *Oryx* 50(4): 626-635 <http://dx.doi.org/10.1017/S0030605315000320>