

Appendix 6-A

Review of Red Goshawk and Masked Owl





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Peer Review: Red Goshawk and Masked Owl

Rio Tinto Alcan EIS for South of Embley Project (Weipa, Qld)

Background: I was commissioned by URS Australia to conduct a peer review of the work completed by the ecologist for Rio Tinto Alcan (Ecotone Environmental Services), regarding the Red Goshawk and Masked Owl component of the EIS for the proposed RTA bauxite mine south of Embley (western Cape York Peninsula, near Weipa, Qld). Relevant parts of the EIS reviewed were Section 2 Project Description, Section 7 Terrestrial Flora and Fauna (S7.13 to 17.20), EPBC Assessment report (S3.2 Terrestrial fauna), and Appendices 7E and 7F (Fauna Methodology and Fauna Species List).

Brief: to undertake a review on the appropriateness of the:

- assessment of habitat preference and key habitat features identified on the Project site;
- identification of potential habitat in the Project area for Red Goshawk and Masked Owl and the assessment of the likelihood of the presence of the species;
- the assessed level of potential impact on the species as a result of the Project;
- mitigation measures proposed, including any species-specific measures and more general mitigation measures that may be relevant; and
- the significance of the impact on the species in the broader regional context;

and to:

- provide any additional mitigation or management measures for consideration that may be appropriate for the specific species.

1 Habitat preference and features on site

1.1 Red Goshawk

The EIS assessment is appropriate on this matter. I appreciate that published scientific literature, particularly if not readily Web-available, might be difficult for Ecotone to obtain in a remote location, and that some of this literature might have appeared since the EIS was prepared. The EIS case is supported by the additional information in Czechura *et al.* (2009, 2011) that applies directly to Cape York Peninsula.

1.2 Masked Owl

The EIS assessment is appropriate on this matter. Additional supporting information may be found in Garnett *et al.* (2011) and Curtis *et al.* (2012). The information in Garnett *et al.* (2011) on *Tyto novaehollandiae melvillensis* for the Tiwi Islands (Northern Territory) may be directly applicable to the owl on Cape York Peninsula, and in particular the Weipa Plateau province of the Cape York bioregion, as the habitats in each of these regions are similar.

2 Potential habitat and likelihood of occurrence on site

2.1 Red Goshawk

The EIS assessment is appropriate on these matters. Additional supporting information may be found in Czechura *et al.* (2009, 2011). Czechura *et al.* (2011) noted a recent Red Goshawk record for the Weipa Plateau province of the Cape York bioregion. Note: the Red Goshawk's prey includes not only large passerines (as per the EIS in several places), but also many (or even predominantly) non-passerines such as parrots, cockatoos and kookaburras (e.g. Czechura *et al.* 2009), some of which are flocking nectarivores and thus would occur in the plateau stringybark woodland when it is in flower. I also note that only one field survey for the EIS, in July, was conducted at a time of year when Red Goshawks are most detectable, i.e. during the breeding season, and particularly during the courtship/nest-building and nestling/early fledgling stages, although the December surveys might have detected fledglings if present.

2.2 Masked Owl

The EIS assessment is appropriate on these matters. Additional supporting information may be found in Garnett *et al.* (2011) and references therein, including for the Tiwi Islands subspecies *T. n. melvillensis*, as similar habitats are represented on Cape York Peninsula and in particular the Weipa Plateau province. Additional support for the scarcity of small ground mammals (Masked Owl prey) in the tropical woodlands may be found in Fitzsimons *et al.* (2010) and references therein.

3 Level of potential impact from the Project

3.1 Red Goshawk

The EIS assessment is appropriate on this matter. The amount of Darwin Stringybark plateau woodland to be cleared (29,150 ha, from Table 7-19) approximates one Red Goshawk home range in area (approximately 200 sq. km), but as the EIS notes, more productive areas for Red Goshawk prey and nest sites occur in the riparian gallery forest and alluvial woodland, vine forests, paperbark woodland and wetlands. The total area of habitat lost to Dam C (about 6 sq. km) approximates 3% of a Red Goshawk home range, but only 175 ha or 1% of a Red Goshawk home range consists of the more productive riparian/alluvial habitat types.

3.2 Masked Owl

The EIS assessment is appropriate on this matter. The area of non-plateau, productive habitats (as for the Red Goshawk) supporting small ground mammals, and lost to Dam C, is likely to be much less than one Masked Owl home range in area, from data on the southern and Tiwi Island subspecies and the likelihood that the northern subspecies occurs at lower density (from Garnett *et al.* 2011).

4 Mitigation

4.1 Red Goshawk

The EIS provides appropriate general and species-specific measures for this species. Given the relative areas of different habitat types to be cleared, focus on pre-clearing nest searches in the productive non-plateau habitats, and buffer zones around any nests for the duration of the breeding cycle, is highly appropriate.

4.2 Masked Owl

The EIS provides appropriate general and species-specific measures for this species. Given the relative areas of different habitat types to be cleared, focus on maximising protection for non-plateau, productive habitats, and maintaining connective corridors, is highly appropriate. Fire management, to protect hollow-bearing trees, is also appropriate.

5 Regional significance of impact

5.1 Red Goshawk

The EIS assessment is appropriate on this matter. As noted above, the area of habitat lost approximates one home range, but consists mostly of the less productive plateau stringybark forest that is least likely to be used for foraging and breeding by the goshawk. The Project affects 2.5% of relevant habitat in the Cape York bioregion (from Table 7-19: 2.3% of plateau stringybark + 0.1% of gallery forest/alluvial woodland + <0.1% of paperbark = 2.5%).

5.2 Masked Owl

The EIS assessment is appropriate on this matter. As noted above, the area of productive (mammal-rich) owl habitat lost is likely to be less than one home range.

The Project affects 2.5% of relevant habitat in the Cape York bioregion (from Table 7-19, as for Red Goshawk.)

6 Additional mitigation

6.1 Red Goshawk

No additional measures are considered necessary. However, pre-clearing nest searches should be conducted during the goshawk's breeding season (June to December: nest-building to fledging), to maximise the likelihood of detecting an active nest.

6.2 Masked Owl

I recommend additional dusk stag-watching and call-playback surveys for this species, coincident with the Red Goshawk pre-clearing nest surveys, and targeting areas supporting large hollow trees in the productive (non-plateau) habitats. If owl nest trees are found, buffer zones should be applied (as for the Red Goshawk) for the duration of the breeding cycle. Any resulting survey records of Masked Owls, along with pertinent ecological data, should be documented.

7 Concluding remarks

In general, with the small provisos and additional literature cited above, the EIS statement, assumptions and predictions on the two species are accurate and reflect current scientific knowledge on them. Also subject to those minor provisos, I generally agree with the EIS habitat and impact assessments and mitigation measures.

8 References

- Curtis, L.K., Dennis, A.J., McDonald, K.R., Kyne, P.M. & Debus, S.J.S. (Eds) (2012). *Queensland's Threatened Animals*. CSIRO Publishing, Melbourne.
- Czechura, G.V., Hobson, R.G. & Stewart, D.A. (2009). Observations on the biology of the Red Goshawk *Erythrorchis radiatus* in Queensland. *Australian Field Ornithology* 26: 148–156.
- Czechura, G.V., Hobson, R.G. & Stewart, D.A. (2011). Distribution, status and habitat of the Red Goshawk *Erythrorchis radiatus* in Queensland. *Corella* 35: 3–10.
- Fitzsimons, J, Legge, S., Traill, B. & Woinarski, J. (2010). *Into Oblivion? The Disappearing Native Mammals of Northern Australia*. The Nature Conservancy, Melbourne.
- Garnett, S., Szabo, J. & Dutson, G. (2011). *The Action Plan for Australian Birds 2010*. CSIRO Publishing, Melbourne.



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