SEIS Position Paper Vertebrate Fauna Survey Strategy

Rail Site
Galilee Coal Project
(Northern Export Facility)

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BACKGROUND

Waratah Coal proposes to establish coal mining operations on exploration leases situated approximately 35 kilometers north-west of Alpha, Central Queensland. Waratah Coal proposes both open-cut and underground coal mining operations on the site, supported by the establishment of a new rail line to transport coal to future or existing coal terminal facilities on land within the Port of Abbot Point and the Abbot Point State Development Area (APSDA).

On 28 October 2008, the project was gazetted as a "significant project" under the *State Development and Public Works Organisation Act 1971* (SDPWO Act), and requiring an environmental impact statement (EIS). Terms of reference for the EIS were released in August 2009, and the subsequent EIS was submitted to the Coordinator General, Department of State Development, Infrastructure and Planning (DSDIP) in September 2011.

The field work program for the EIS was undertaken in July 2010 comprised a series of fauna habitat surveys at 57 sites, providing representative coverage of habitats along the entire length of the proposed rail corridor. Data collected at each survey site included general observations of the following fauna habitat values:

- Landform;
- Structural vegetation characteristics;
- Density and nature of groundcover (e.g. rocks, logs, vegetation and leaf litter);
- Presence / abundance of hollow-bearing trees;
- Level of disturbance (including vehicular, grazing or agricultural activities);
- Degree of environmental weed infestation;
- Evidence of, and estimated time since last bushfire;
- Presence / absence of permanent or ephemeral freshwater resources and distance to riparian areas and free standing water; and
- Weather conditions.

As part of the EIS review process, both the Commonwealth[1] and State[2] Governments provided comments on the draft EIS, and have requested that additional information be provided.

A report has been prepared to address fauna related issues for the mine site, see SEIS Fauna Report (Volume 2-Appendices of this SEIS).

To date, implementation of the planned SEIS fauna survey and habitat assessment program for the rail component of the Project has not been completed. This paper provides a set of briefing notes on the proposed assessment strategy and information of work to date.

SEIS SURVEY STRATEGY

During February 2012, a series of meetings were held with DERM ecologists from Threatened Species Partnerships (Brisbane), Biodiversity Planning (Emerald), and Environmental Performance and Coordination Branch (Brisbane). The purpose of the meetings was to identify the nature of further surveys that would address concerns raised in submissions, and to establish a survey approach acceptable to DERM.

[1] SEWPaC correspondence to Waratah Coal (dated 1 April 2011) and to the Queensland Coordinator general (dated 26 January 2012).
[2] DERM's submission on the extent to which the EIS was successful in addressing the Terms of Reference (TOR) – dated December 2011.

The initial stage of the process involved assessment of areas of mapped State biodiversity significance transected by the proposed rail corridor. This work was based on DERM's Biodiversity Planning Assessment mapping and reports (DERM 2012a). Six key areas were identified - rail sections KP 23 to 37; KP 49 to 70; KP 97 to 200; KP 226 to 250; KP 323 to 353; KP 398 to 420. Biodiversity values within these areas include:

- Special biodiversity values (Criteria I);
- Bioregional corridors;
- High quality ecosystems;
- High connectivity; and
- Buffers for Endangered Regional Ecosystems.

In parallel to this process, the following information sources were interrogated for data on the location of threatened vegetation communities and threatened fauna species. Key data sets and information sources included:

- Vegetation Management Act Regional Ecosystem and Remnant Vegetation mapping (Version 6.1 – DERM 2012b), Essential Habitat mapping (Version 3.1; DERM 2012c), and Regrowth Vegetation mapping (Version 2.1 – DERM 2011d); and
- A comprehensive series of searches of the WildNet Wildlife Online database (DERM 20121e). Extracts were based on a 25km buffer around the center line of the proposed rail;
- Searches of other public access databases including Birdlife Australia (Birds Australia Atlas (Birdata)), and SEWPAC (EPBC Act Protected Matters Report).

These two primary data sets were integrated and analysed. As a result of this process, seven survey areas were identified as areas suitable for additional survey treatment. Attachment A summarises values of each the seven proposed SEIS fauna survey areas.

A variety of biodiversity values were identified for the suite of proposed SEIS fauna survey areas. These include:

- Over 70 Regional Ecosystems: 10.3.3; 10.3.5; 10.3.12; 10.3.13; 10.3.14; 10.3.27; 10.3.28; 10.5.1; 10.5.5; 10.5.12; 10.7.3; 10.7.5; 10.7.7; 10.7.11; 11.3.1; 11.3.2; 11.3.3; 11.3.4; 11.3.5; 11.3.7; 11.3.9; 11.3.10; 11.3.11; 11.3.25; 11.3.30; 11.3.32; 11.3.33; 11.3.35; 11.3.37; 11.4.4; 11.4.6; 11.4.8; 11.4.9; 11.5.2; 11.5.3; 11.5.9; 11.5.10; 11.5.12; 11.7.2; 11.7.3; 11.8.4; 11.8.11; 11.9.1 (E); 11.9.3; 11.9.9; 11.9.10; 11.10.3; 11.10.4; 11.10.8; 11.10.12; 11.11.1; 11.11.6; 11.11.9; 11.11.10; 11.11.12; 11.11.13; 11.11.15; 11.9.12; 11.12.1; 11.12.2; 11.12.4; 11.12.7; 11.12.9; 11.12.14; 11.12.15; 11.12.16; 11.12.18; 11.12.18.
- Potentially suitable habitat for the following threatened fauna: Little Pied bat *Chalinolobus picatus* (QNT); Yakka Skink *Egernia rugosa* (CV; QV); *Ctenotus capricorni* (QNT); Common Death Adder *Acanthophis antarciticus* (QNT); Ornamental Snake *Denisonia maculata* (CV; QV); Red Goshawk *Erythriorchis radiatus* (CE; QV); Square-tailed Kite *Lophoictinia isura* (QNT); Cotton Pygmy-goose *Nettapus coromandelianus* (QNT); Freckled Duck *Strictonetta naevosa* (QNT); Black-necked Stork *Ephippiorhynchus asiaticus* (QNT); Squatter Pigeon *Geophaps scripta scripta* (CV; QV); and Black-chinned Honeyeater *Melithreptus gularis* (QNT).

Following the above mentioned analysis, a further stage of the review process considered the relevance and value of existing survey effort and data associated with other projects within the area. In regard to this exercise, the work undertaken for the proposed Hancock rail corridor was considered to be particularly relevant (GHD 2010). It is clear from the mapping of aspects of that work that data from a variety of the Hancock fauna survey sites would be of direct relevance to several of the seven proposed SEIS fauna survey areas.

The results of the analysis process and summaries of the seven proposed SEIS fauna survey areas were presented to DERM officers. It was agreed that:

- There was useful contemporary fauna survey data which could be used to support development of baseline descriptions of fauna assemblages which could be expected within habitats associated the proposed Waratah rail corridor, and of particular relevance for the proposed SEIS survey areas 3 and 7.
- There was a comparatively lower potential for the existing fauna survey data to assist in a description of local fauna values within the proposed SEIS survey areas 1, 2, 4, 5, and 6.
- Whilst a future survey program should aim to provide coverage of the widest extent of fauna habitats associated with the extent of the proposed Waratah rail corridor, the proposed SEIS survey areas 1, 2, 4, 5, and 6 should be regarded as a 1st order priority in regards to a survey focus.
- For the assessment of fauna values associated with the proposed Waratah rail corridor, the primary objective would be to implement surveys which maximised the potential for detection of State and Commonwealth listed threatened fauna species within the proposed SEIS survey areas 1, 2, 4, 5, and 6, though also within other suitable areas of habitat associated with the proposed rail corridor.
- It was also considered that the target species survey program should be supported by survey effort and methodologies which could provide data to meet a broader assessment objective, being the description of fauna species richness and diversity throughout the extent of habitat associated with the proposed rail corridor. Again, the proposed SEIS survey areas 1, 2, 4, 5, and 6, should be given priority, though additional work should be applied to other suitable areas of habitat associated with the proposed rail corridor.
- Under the circumstances where a survey program could be implemented successfully to address the abovementioned primary and general survey objectives, a site-based trapping program was not considered necessary.

PROGRESS TO DATE

All desktop reviews and data analysis have been completed, including the finalisation of an integrated fauna survey database from extracts of the following databases: DERM Wildlife online, Birdlife Australia, Eremaea, and Hancock rail surveys. All data, including that resulting from the SEIS survey program, will be ultimately presented for each of the SEIS survey areas.

In April 2012, the first survey event was implemented. This work provided a systematic survey throughout SEIS Survey Area 5. The results of that work included records of 132 fauna, including two records for the Ornamental Snake *Denisonia maculata* (*Vulnerable* EPBCA and NCA) and a variety of records for the Squatter Pigeon (southern) *Geophaps scripta scripta* (*Vulnerable* EPBCA and NCA), including the detection of an active nest. The remainder of the program provided preliminary surveys and habitat assessments for SEIS Survey Areas 1, 2, 3, 4 and 6.

WORKS TO BE COMPLETED

For a variety of reasons, implementation of the full survey program was not possible in April 2012. The remainder of the planned field work schedule will be implemented under suitable conditions from October 2012 onwards. It is expected that the field program, including habitat assessments, will be completed by the end of 2012.

REFERENCES

DERM (2012a). Biodiversity Planning Assessments and mapping for the Desert Uplands Bioregion Brigalow Belt Bioregion. Department of Environment and Resource Management, Brisbane.

DERM (2012b). Regional Ecosystem and Remnant Map - Version 6. Department of Environment and Resource Management, Brisbane.

DERM (2012c). Vegetation Management Act Essential Habitat Map - Version 3.1. Department of Environment and Resource Management, Brisbane.

DERM (2012d). Vegetation Management Act Regrowth Vegetation Map - Version 2.0. Department of Environment and Resource Management, Brisbane.

DERM (2012e). Wildlife Online Extracts. Department of Environment and Resource Management, Brisbane.

GHD (2010). Appendix F2 Terrestrial Ecology Report for Proposed Alpha Rail EIS. A report prepared by GHD for Hancock Prospecting Pty Ltd.

ATTACHMENT A PROPOSED SEIS SURVEY AREAS

SEIS Survey Area	Biodiversity Significance & Bioregional Corridor	Summary of VMA Regional Ecosystems, Essential Habitat, & Threatened Fauna Records	Other relevant Values
1 Area centroid 20.119439° 147.838816° Rail Corridor Section KP 23 to 37	• State biodiversity significance • Mapped bioregional corridor • Brigalow Belt bioregion	• 11.3.10; 11.3.11; 11.3.25; 11.3.30; 11.3.32; 11.3.33; 11.12.1; 11.12.4; 11.12.9; 11.12.14; 11.12.15; 11.12.16; 11.12.18; 11.12.18. • EH mapped, no sp. ID# • Black-necked Stork (QNT); & Black-chinned Honeyeater (QNT)	• Potential habitat suitability for the following threatened fauna: Northern Quoll; Little Pied bat; Striped-tailed Delma; Cotton Pygmy Goose; Black-necked Stork; Squatter Pigeon; Square-tailed Kite; Red Goshawk; Glossy-black Cockatoo; & Black-throated Finch. • Elliott River & Bogie River (to south) • Mt. Aberdeen NP (6 klms to south-east of alignment)
2 Area centroid 20.340266° 147.762948° Rail Corridor Section KP 49 to 60	• State biodiversity significance • Mapped bioregional corridor • Brigalow Belt bioregion	• 11.12.1; 11.3.4; 11.12.2; 11.12.3; 11.12.7; 11.12.9 • No EH mapped • Black-chinned Honeyeater (QNT)	• Potential habitat suitability for the following threatened fauna: Northern Quoll; Little Pied bat; Cotton Pygmy Goose; Black-necked Stork; Squatter Pigeon; Square-tailed Kite; Red Goshawk; Glossy-black Cockatoo; & Black-throated Finch. • Bogie River (to north) • Conway NP (11 klms to to south-east of alignment)
3 Area centroid 20.712073° 147.710307° Rail Corridor Section KP 100 to 115	• State biodiversity significance (though also Regional & Local significance) • Mapped bioregional corridor • Western Brigalow Belt bioregion, adjacent to edge of Einasleigh Uplands bioregion.	• **11.3.1 (E)**; 11.3.4; 11.3.7; 11.3.9; 11.3.10; 11.3.30; 11.3.35; 11.4.4; 11.9.3; 11.9.9; 11.10.12; 11.11.1; 11.11.9; **11.9.12 (E)**; 11.12.1. • No EH mapped • Cotton Pygmy-goose (QNT); & Black-chinned Honeyeater (QNT)	• Potential habitat suitability for the following threatened fauna: Little Pied bat; Black-necked Stork; Squatter Pigeon; Square-tailed Kite; & Ornamental Snake. • Bowen River
4 Area centroid 21.018055° 147.726805° Rail Corridor Section KP 25 to 140	• State biodiversity significance (though also Regional significance) • Mapped bioregional corridor • Western Brigalow Belt bioregion, adjacent to edge of Einasleigh Uplands bioregion.	• **11.3.1 (E)**; 11.3.2; 11.3.4; 11.3.25; 11.5.2; 11.5.3; 11.5.9; 11.5.10; 11.7.2; 11.7.3; 11.9.1 (E); 11.9.9; 11.10.3; 11.10.4; 11.10.8; 11.10.12; 11.11.6. • No EH mapped • Common Death Adder (QNT); Ornamental Snake (CV; QV); Squatter Pigeon (CV; QV); & Black-chinned Honeyeater (QNT).	• Potential habitat suitability for the following threatened fauna: Little Pied bat; Cotton Pygmy Goose; Black-necked Stork; & Square-tailed Kite. • Suttor River (upper sections)

SEIS Survey Area	Biodiversity Significance & Bioregional Corridor	Summary of VMA Regional Ecosystems, Essential Habitat, & Threatened Fauna Records	Other relevant Values
5 Area centroid 21.684590° 147.151678° Rail Corridor Section KP 225 to 250	• State biodiversity significance (though also Regional & Local significance) • No mapped bioregional corridor • Brigalow Belt bioregion	• 11.3.2; 11.3.3; 11.3.4; 11.3.5; 11.3.37; 11.4.8; 11.4.9; 11.5.3; 11.5.12; 11.7.2; 11.7.3; 11.9.10. • No EH mapped • Little Pied bat (QNT); Square-tailed Kite (QNT); Cotton Pygmy-goose (QNT); Freckled Duck (QNT); Black-necked Stork (QNT); & Squatter Pigeon (CV; QV).	• Potential habitat suitability for the following threatened fauna: Brigalow Scaly-foot; Yakka Skink; Ornamental Snake; Common Death Adder; Yellow-naped Snake; Rough Frog; & Square-tailed Kite. • Suttor River (32 klms upstream of confluence with Belyando River) • Blackwood NP (48klms west/north-west of alignment). • Wilandspey CP (52 klms due west of alignment). • Mazeppa NP (50 klms to south of survey area).
6 Area centroid 22.516234° 146.794143° Rail Corridor Section KP 330 to 350	• State biodiversity significance • No mapped bioregional corridor • Brigalow Belt bioregion	• 11.3.1; 11.3.2; 11.3.3; 11.3.7; 11.3.25; 11.4.6; 11.4.8; 11.5.3; 11.5.10; 11.7.2; 11.11.6; 11.11.9; 11.11.10; 11.11.12; 11.11.13; 11.11.15. • EH mapped, no sp. ID# • Northern Hairy-nosed Wombat (CE; QE); Little Pied bat (QNT); Yakka Skink (CV; QV); Ornamental Snake (CV; QV); Square-tailed Kite (QNT); Black-necked Stork (QNT); & Squatter Pigeon (CV; QV).	• Potential habitat suitability for the following threatened fauna: Brigalow Scaly-foot; Common Death Adder; Rough Frog; Cotton Pygmy Goose; Freckled Duck; & Black-throated Finch. • Belyando River and Mistake Creek (to east app. 23 and 12 klms respectively) • Epping Forest NP (16 klms to north of alignment). • Narrien Range NP (37 klms to south of alignment)
7 Area centroid 23.011361° 146.568012° Rail Corridor Section KP 395 to 410	• Straddles boundary of Brigalow Belt and Desert Uplands bioregions.	• 10.3.3; 10.3.5; 10.3.12; 10.3.13; 10.3.14; 10.3.27; 10.3.28; 10.5.1; 10.5.5; 10.5.12; 10.7.3; 10.7.5; 10.7.7; 10.7.11; 11.3.2; 11.3.3; 11.3.5; 11.5.3; 11.8.4; 11.8.11. • No EH mapped. • *Ctenotus capricorni* (QNT); Red Goshawk (CE; QV); Squatter Pigeon (CV; QV); & Black-chinned Honeyeater (QNT).	• Potential habitat suitability for the following threatened fauna: Northern Quoll; Little Pied bat; Brigalow Scaly-foot; Yakka Skink; Ornamental Snake; Common Death Adder; Yellow-naped Snake; Rough Frog; Cotton Pygmy Goose; Freckled Duck; Black-necked Stork; Square-tailed Kite; & Black-throated Finch. • Belyando River & Native Companion Creek to near north and east. • Cudmore NP (18 klms to west of alignment). • Narrien Range NP (37 klms to east of alignment)

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