

Ecological Gaps Analysis and Assessment:

An assessment report to accompany the Electrification of Wells located in Fairview.

Document Number: 0007-650-PLA-0011

Prepared By:

Title	Department	Signature
Environmental Advisor	QBU Environment	

Endorsed By:

Title	Department	Signature
Senior Environmental Advisor	QBU Environment	

Approved By:

Title	Department	Signature
Team Leader	QBU Environment	

Table of Contents

1.0	Introduction.....	3
1.1	Well Electrification Project Description.....	3
1.2	Purpose	3
1.3	Scope	3
2.0	Methodology	4
2.1	Desktop Review and Gaps Identification	4
3.0	Results.....	5
3.1	Determination of Ecological impacts	5
	3.1.1 Vegetation Communities	5
	3.1.2 Threatened Species	6
4.0	Recommendations	7
5.0	References	8

Figures

Figure 1: Construction Disturbance Zone for the Fairview 76 Connection.....	5
---	---

Appendices

Appendix A: Habitat Mapping Assessment Tool (HMAT) outputs for the RWP2B Project	
--	--

List of Abbreviations

Abbreviation	Description
DEHP	Department of Environment and Heritage Protection (Queensland)
EA	Environmental Authority
EA	Environmental Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
ESA	Environmentally Sensitive Area
EVNT	Endangered Vulnerable and Near Threatened
GIS	Geographic Information System
GLNG	Gladstone Liquefied Natural Gas
ha	Hectare
HES	High Ecological Significance
HVR	High Value Regrowth
NC Act	Nature Conservation Act, 1992
RE	Regional Ecosystem
REDD	Regional Ecosystem Description Database
SEQ	South East Queensland
TEC	Threatened Ecological Community
VMA	Vegetation Management Act, 1999

Santos

GLNG Project

1.0 Introduction

1.1 Well Electrification Project Description

The well electrification project involves the electrification of approximately 20 wells located within the Fairview occurring across Petroleum Lease (PL) 99 and PL 100. The project occurs wholly within Hallett State Forest. The site lies within Province 24 (Carnarvon Ranges) of the Brigalow Belt South bioregion. It is located within a large tract of predominantly intact vegetation dominated by White Cypress Pine woodland on undulating terrain. The soils are almost exclusively derived from coarse-grained sedimentary rocks (Land Zone 10).

1.2 Purpose

The purpose of this assessment report is to assess ecological impacts of the proposed well electrification project. This includes quantification of threatened species habitat and ecological communities that are subject to statutory disturbance limits in the Santos GLNG environmental approvals.

1.3 Scope

A review of the existing ecological reports and data collected for the proposed well electrification project has been completed. This report documents this review process and the results of the assessment.

No remnant grasslands occur in Hallett State Forest. All areas identified on the aerial photography with little or no structured woodland / forest vegetation have previously been cleared. In these areas, the presence of this ecological value is assumed unlikely. All works located in areas previously disturbed have been excluded from this ecological assessment as any impact is considered minimal, short term and without any significant consequence.

2.0 Methodology

2.1 Desktop Review and Gaps Identification

A review of the existing ecological reports and data collected for the project was completed. A review of these reports was conducted to ascertain whether the existing information was adequate or whether additional assessments were required. A number of historic ecological assessments have occurred in Hallett State Forest. The results of four separate ecological field assessments were reviewed to determine and quantify the ecological values impacted. These reports are listed below and are available online:

- Ecological Assessment Report - Fairview Lot 55 FTY1153 Rev 2 – Aurecon 2011
- Report on Inspection of Pony Hills East Quarry Extension, Fairview Gas Field – Boobook 2011
- Report on a Fauna Survey of Pony Hills East Quarry Extension, Fairview Gas Field – Boobook 2013
- Ecological Assessment Report IDP-213 - M70 to M17 Loop Gathering Line – Santos 2016

Using the above mentioned reports, Santos GLNG's high resolution aerial photography, Santos' threatened fauna records and the Queensland Governments Regional Ecosystem mapping and description database the presence absence of the following ecological features was determined:

- Vegetation communities – including Regional Ecosystems identified as (Environmentally Sensitive Areas(ESA) and EPBC Act threatened Ecological Communities (TEC).
- The potential occurrence of EPBC Act listed threatened species and threatened species habitat

3.0 Results

3.1 Determination of Ecological impacts

The majority of the land disturbance activities associated with the proposed electrification connections are wholly located within an area of existing disturbance. For these disturbances, there will be no impact to any Regional Ecosystem vegetation community or EPBC Act listed species habitat or TEC. There is only one well connection likely to contain ecological values. The connection of Fairview 76 will involve the clearing of Regional Ecosystem (RE) vegetation that is likely to be habitat for EVNT fauna species. The extent of the proposed disturbance is shown Figure 1.



Figure 1: Construction Disturbance Zone for the Fairview 76 Connection

Given the quality of the existing knowledge, the minimal impacts expected (<0.2 ha of remnant vegetation and fauna habitats will be cleared) and the proximity of previous survey efforts (all four of the reports above involved field ecological assessment approximately 2km of the impacted areas) it was concluded that no additional field assessment was required.

3.1.1 Vegetation Communities

A review of the aerial photography, previous ecological assessment and current Regional Ecosystem data was conducted. Current regional ecosystem mapping describes the area as the no concern at present RE 11.10.11, however, nearby ground-truthing and aerial photograph interpretation indicates the whole impact area is dominated by White Cypress Pine (*Callitris glaucophylla*) and Silver-leaved Ironbark (*Eucalyptus melanophloia*) woodland. This vegetation community is analogous to the "no concern at present" remnant RE 11.10.9. This

vegetation community is not listed as an Environmentally Sensitive Area (ESA) under the EP Act or a Threatened Ecological Community listed under the EPBC Act.

3.1.2 Threatened Species

In December 2012, a detailed fauna survey and habitat assessment was conducted in the same patch of vegetation 2km to the east of the impact. Standard vertebrate fauna survey techniques were used within the survey that broadly followed the Queensland and Australian Government survey guidelines. These techniques were modified to suit the individual site characteristics and included:

- Pitfall and Funnel Traps
- Cage traps
- Camera traps
- Ultrasonic Bat call detection
- Harp Trapping
- Active searching
- Spotlighting
- Incidental Observations

This work predicted the potential occurrence of several EPBC Act listed threatened species. The area was identified as habitat for Yakka Skink (*Egernia rugosa*), Dunmall's Snake (*Furina dunmalli*), Collared Delma (*Delma torquata*) South-eastern Long-eared bat (*Nyctophilus corbeni*) and Northern Quoll (*Dasyurus hallucatus*). The impacts associated with Fairview 76 (0.2 ha) will be subtracted from the project disturbance limits for these species mentioned above.

No threatened flora species are expected to be impacted by the clearing required by the connection of Fairview 76. Previous flora survey conducted at the Pony Hills East quarry detected the Cliff Bluebell (*Wahlenbergia islensis*). At the time of assessment this species was scheduled as Near Threatened under the *Nature Conservation Act 1992*. However, changes were made to wildlife categories on 12 December 2014 and the Species Technical Committee (STC) has assessed the status of this species and reclassified this species as Least Concern. In addition, the Queensland Governments protected plants flora survey trigger map has not identified any high risk areas within the vicinity of the proposed disturbance.

No EPBC Act listed flora species have been reported to occur within Hallett State Forest and previous habitat assessments for EPBC Act listed species indicate that suitable habitat is not present.

4.0 Recommendations

The proposed impact (0.2 ha) will be subtracted from the project disturbance limits for these species mentioned in Section 3.1.2 above.

Given the presence of habitat and potential habitat features in the remnant vegetation a fauna spotter catcher will be used to clear the disturbance areas associated with the Construction Disturbance Zone for the Fairview 76 Connection.

5.0 References

- Aurecon (2011) *Ecological Assessment Report - Fairview Lot 55 FTY1153 Rev 2*. A report produced for Santos GLNG.
- Boobook (2011) *Report on Inspection of Pony Hills East Quarry Extension, Fairview Gas Field*. A report produced for Santos GLNG.
- Boobook (2013) *Report on a Fauna Survey of Pony Hills East Quarry Extension, Fairview Gas Field*. A report produced for Santos GLNG.
- EHP, (2014). www.ehp.qld.gov.au/ecosystems/biodiversity/re_introduction.html
- Eyre, T.J., Kelly, A.L, Neldner, V.J., Wilson, B.A., Ferguson, D.J., Laidlaw, M.J. and Franks, A.J. (2011). *BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland. Assessment Manual. Version 2.1*. Department of Environment and Resource Management (DERM), Biodiversity and Ecosystem Sciences, Brisbane.
- Neldner, V.J., Wilson, B.A., Thompson, E.J. and Dillewaard, H.A. (2012) *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland*. Version 3.2. Updated August 2012. Queensland Herbarium, Queensland Department of Science, Information Technology, Innovation and the Arts, Brisbane. 124 pp; Environmental Protection Agency (EPA) and
- Wilson, P.R. and Taylor, P.M. (2012) *Land Zones of Queensland*. Queensland Herbarium, Queensland Department of Science, Information Technology, Innovation and the Arts, Brisbane. 79 pp. Department of Environment and Resource Management (DERM);
- Santos (2016) *Ecological Assessment Report IDP-213 - M70 to M17 Loop Gathering Line*. An internal assessment report for the Santos GLNG project.