



Report

GLNG LNG Facility Pre-clearance Survey for EPBC-Listed Fauna and Flora Species, Migratory Species and Ecological Communities

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Prepared for
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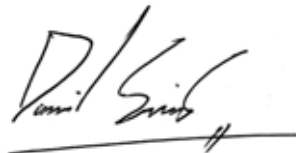
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Table of Contents

1	Introduction	1
1.1	Background	1
1.2	Approvals	1
1.2.1	Associated Approvals	2
1.3	Aims and Objectives.....	2
2	Literature Review	5
3	Pre-Clearance Survey Methodology	8
3.1	Ecological Communities	8
3.2	Threatened Fauna	8
3.2.1	<i>Egernia rugosa</i> (yakka skink)	10
3.2.2	<i>Paradelma orientalis</i> (brigalow scaly-foot)	10
3.3	Threatened Flora.....	10
3.4	Migratory Fauna.....	10
3.5	Habitat Tree Identification.....	11
4	Results	12
4.1	Ecological communities.....	12
4.2	Threatened Flora.....	12
4.3	Threatened Fauna	12
4.4	Migratory Species	13
4.4.1	Rainbow bee-eater	13
4.4.2	Eastern curlew and Whimbrel	13
4.4.3	White-bellied sea-eagle and Osprey	13
5	Conclusions.....	14
6	References.....	15
7	Limitations	16

Tables

Table 2-1	Ecological communities and threatened and migratory species potentially present at the GLNG LNG facility	5
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Figures

Figure 1	EPBC Pre-clearance survey area.....	4
Figure 2	Area Traversed During Pre-Clearing Survey.....	9

Abbreviations

Abbreviation	Description
CSG	Coal Seam Gas
DSEWPC	Department of Sustainability, Environment, Water, Population and Communities
EIS	Environmental Impact Statement
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
GLNG OPL	Gladstone LNG Operations Pty Ltd
GTP	Gas Transmission Pipeline
LNG	Liquefied Natural Gas
PLF	Product Loading Facility
SDPWO Act	State Development and Public Works Organisation Act
SEIS	Supplementary Environmental Impact Statement
Total E&P	Total Exploration and Production

Executive Summary

Pre-clearance surveys were undertaken between 21 and 23 January 2011 to fulfil Condition 20 of Commonwealth EPBC Approval No. 2008/4057 for the GLNG LNG facility.

The surveys utilised a range of best practice methods consistent with Commonwealth guidelines and the requirements of the EPBC Approval to attempt to detect the presence of EPBC-listed:

- Ecological communities;
- Threatened species;
- Migratory species;
- Habitat for threatened and migratory species; and
- Species contributing to the World Heritage and National Heritage values of the Great Barrier Reef World Heritage Area.

None of the values listed above were detected during the survey.

The findings are consistent with ecological studies undertaken for the GLNG EIS and SEIS at the GLNG LNG Facility site.

Due to the absence of any of the EPBC-listed values, specific management plans as stipulated under Condition 22 of EPBC Approval 2008/4057 are not required.

Introduction

1.1 Background

GLNG Operations Pty Ltd (GLNG OPL) on behalf of the joint venture partners Santos GLNG Pty Ltd (Santos), PETRONAS Australia Pty Limited (PETRONAS) and Total E&P Australia (Total) are proposing to develop coal seam gas (CSG) resources in the Bowen and Surat Basins in the area between Roma and Emerald, Queensland. These CSG resources are proposed to be used as feed gas for a liquefied natural gas (LNG) liquefaction and export facility on Curtis Island, near Gladstone, Queensland.

The GLNG Project comprises the following major components:

- Coal seam gas fields;
- Gas transmission pipeline (GTP); and
- LNG liquefaction and export facility (LNG facility).

The CSG fields will be developed over a period of approximately 25 years to provide CSG to the GLNG LNG facility. The GTP will transport the gas from the CSG fields to the GLNG LNG facility. The GLNG LNG facility site comprises on-shore gas liquefaction and storage facilities, haul road and worker accommodation. The infrastructure layout is depicted on Figure 1.

1.2 Approvals

On 16 July 2007, the Coordinator-General declared the Project to be a 'significant project' for which an Environmental Impact Statement (EIS) is required under the *State Development and Public Works Organisation Act 1971* (SDPWO Act). On 31 March 2008, the GLNG Project was declared a 'Controlled Action' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

During 2008 and 2009, an EIS and a supplementary EIS were prepared for the GLNG Project under the State-Federal bilateral agreement. On 28 May 2010, the Coordinator-General issued his report under the SDPWO Act. On 22 October 2010, the project was granted federal approval under the EPBC Act.

The Commonwealth EPBC Approval for the GLNG LNG facility (No. 2008/4057) details a number of conditions relating to the implementation of pre-clearance surveys at the GLNG LNG facility site. The requirement for pre-clearance surveys is detailed in Condition 20. Survey specifications are provided in Condition 21. Condition 22 specifies the development of management plans if any of the values specified in Condition 20 are detected at the GLNG LNG facility site. The conditions are duplicated below.

20. At least one week before the commencement of clearance of native vegetation associated with the construction and operation of the LNG facility, the proponent must undertake pre-clearance surveys to verify the presence or absence of listed ecological communities, listed threatened species, listed migratory species, their habitat, and species identified as contributing to the World Heritage and National Heritage values of the Great Barrier Reef World Heritage Area.

21. Pre-clearance surveys must:

- (a) be undertaken consistent with the Department's survey guidelines in effect at the time of the survey. This information can be obtained from <http://www.environment.gov.au/epbc/guidelines-policies.html#threatened>;

1 Introduction

- (b) take account and reference previous ecological surveys undertaken by the proponent for the area and relevant new information on likely presence or absence of MNES;
- (c) be undertaken by a suitably qualified ecologist approved in writing by the Department;
- (d) document the survey methodology, targeted species and ecological communities, results and significant findings in relation to MNES; and
- (e) apply best practice site assessment and ecological survey methods appropriate for each listed threatened species, listed migratory species, their habitat, and listed ecological communities. Pre-clearance survey reports (which document the methods used and the results obtained) must be published by the proponent on the internet before commencement and provided to the Department on request.

22. If a listed ecological community or threatened species or migratory species or their habitat, is found during the verification surveys undertaken as required by condition 20, and is not specified in conditions 31-38 inclusive, the proponent must submit a separate management plan for each such species, ecological community or other MNES, to manage the impacts of construction and operation of the LNG facility. Each such plan must be submitted before the commencement of construction of the LNG facility. Each plan must include:

- (a) a map of the location of species or species or ecological communities habitat in relation to the LNG Facility and its associated infrastructure;
- (b) a description of the measures that will be employed to avoid impact on the species or species or ecological communities habitat; and
- (c) where impacts are unavoidable, and if an impacted species or ecological community is not specified in conditions 32-39 inclusive, propose offsets to compensate for the impact on the population or impact on the species or ecological communities habitat.

1.2.1 Associated Approvals

Commonwealth EPBC Approval No. 2008/4058 was issued on 22 October 2010 with conditions relevant to the construction of the proposed GLNG LNG facility Marine Facilities. The marine facilities include the Materials Offloading Facility (MOF) and the Product Loading Facility (PLF). In order to construct the MOF, a temporary Pioneer Barge Ramp Facility (PBRF), will be required to unload bulk aggregate material and equipment onto Curtis Island. The marine facilities are depicted on Figure 1.

1.3 Aims and Objectives

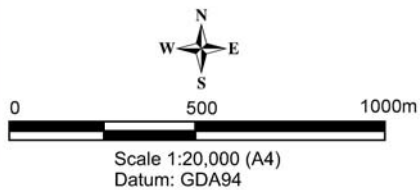
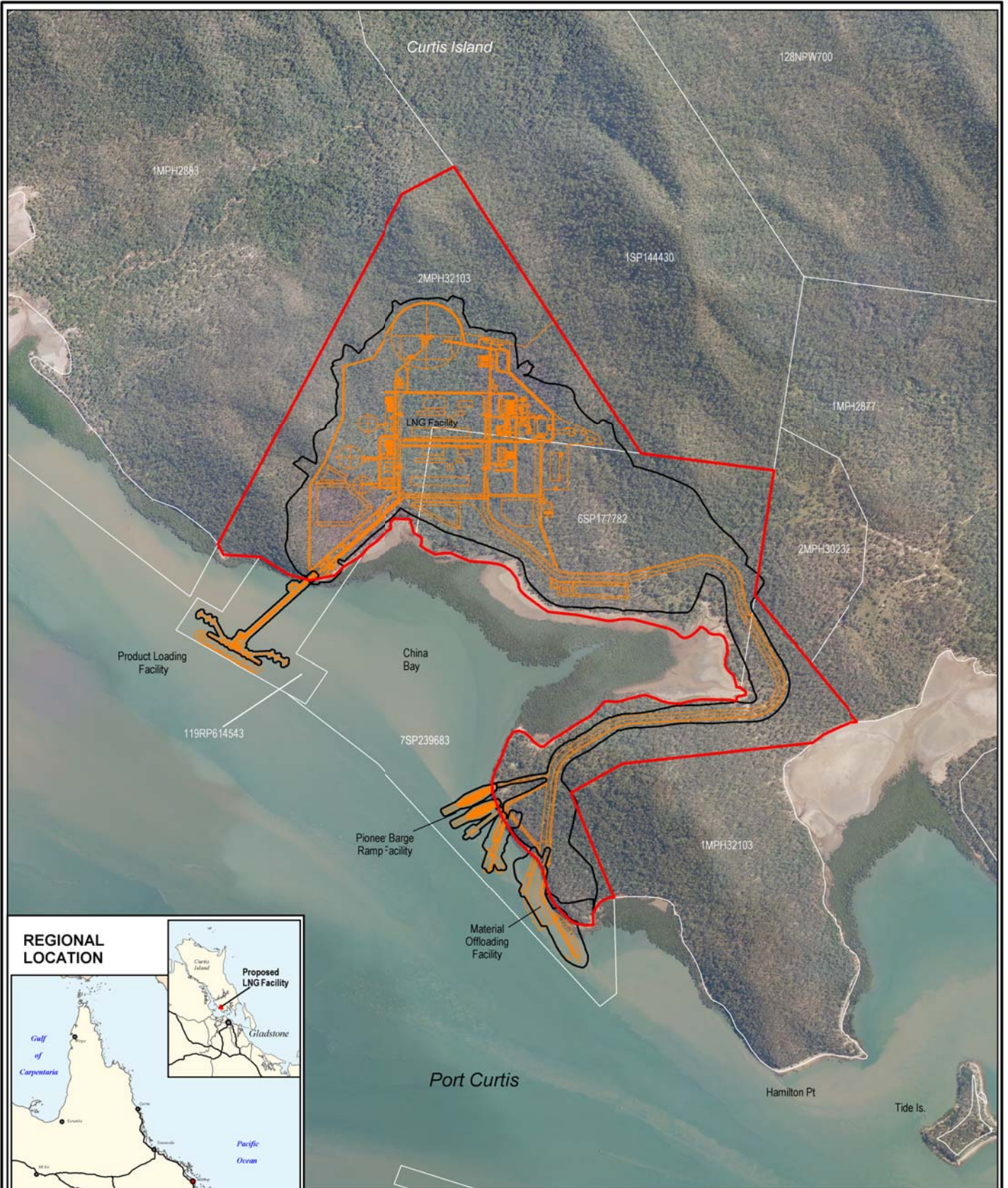
The aim of the survey is to verify the presence or absence of EPBC-listed ecological communities, EPBC-listed threatened species, EPBC-listed migratory species, their habitat, and species identified as contributing to the World Heritage and National Heritage values of the Great Barrier Reef World Heritage Area.

In meeting this aim, the objectives are to:

- Undertake a literature review of relevant reports and documents to establish the EPBC-listed ecological communities, species, habitats for threatened and migratory species; and species contributing to the World Heritage and National Heritage values of the Great Barrier Reef World Heritage Area potentially present; and

1 Introduction

- Undertake surveys for EPBC-listed ecological communities, species and habitats determined to be potentially present.



- LNG Facility Site Boundary
- LNG Facility Disturbed Area Footprint (November 2010)
- LNG Facility Proposed Infrastructure (August 2010)

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<p>Client</p> 	<p>Project</p> <p style="text-align: center;">GLNG LNG FACILITY PRE-CLEARANCE SURVEY FOR EPBC-LISTED FAUNA AND FLORA SPECIES, MIGRATORY SPECIES AND ECOLOGICAL COMMUNITIES</p>	<p>Title</p> <p style="text-align: center;">EPBC PRE-CLEARANCE SURVEY AREA</p>
<p>Drawn: CA</p> <p>Job No: 4262 6727</p>	<p>Approved: DS</p> <p>File No: 42626727-g-011.wor</p>	<p>Date: 17-02-2011</p> <p>Figure: 1</p>
		<p>Rev:A</p> <p>A4</p>

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Literature Review

A literature review of relevant reports was undertaken prior to the pre-clearance survey to ascertain the potential presence of EPBC-listed:

- Ecological communities;
- Threatened species;
- Migratory species;
- Habitat for threatened and migratory species; and
- Species contributing to the World Heritage and National Heritage values of the Great Barrier Reef World Heritage Area.

A range of ecological studies have been prepared for the GLNG project. The following reports were reviewed to determine the potential presence of the values listed above.

- GLNG EIS Appendix N3: LNG Facility Curtis Island Terrestrial Fauna Report (URS, 2008a);
- GLNG EIS Appendix N3: LNG Facility Curtis Island Terrestrial Flora Report (URS, 2008b);
- GLNG SEIS Attachment F2: GLNG LNG Facility Supplementary Ecological Assessment Report (URS, 2009);
- GLNG Plant and Pipeline Curtis Island: Curtis Island Water Mouse, Powerful Owl and Wading Bird Investigations (BAAM, 2009);
- Santos GLNG Curtis Island LNG Facility Water Mouse Survey and Habitat Assessment (BAAM, 2010);
- Draft Significant Species Management Plan (SSMP) for EPBC related matters: GLNG Project Liquefied Natural Gas Facility Component (Ecologica Consulting, 2010);
- Draft GLNG Project LNG Facility Species Management Program (URS 2011a); and
- Draft GLNG Marine Facilities Migratory Shorebirds Environmental Management Plan (URS 2011b).

Based on the findings of the reports listed above, the communities and species listed in Table 2-1 were identified as being potentially present within the GLNG LNG facility site. No species contributing to the World Heritage and National Heritage values of the Great Barrier Reef World Heritage Area were identified during the literature review as being potentially present.

Table 2-1 Ecological communities and threatened and migratory species potentially present at the GLNG LNG facility

Community/Species	EPBC Status
Ecological Communities	
Littoral rainforest and coastal vine thickets of eastern Australia	Critically Endangered
Threatened Flora	
<i>Bosistoa selwynii</i> heart-leaved bosistoa	Vulnerable
<i>Bosistoa transversa</i> three-leaved bosistoa	Vulnerable
<i>Bulbophyllum globuliforme</i> miniature moss-orchid	Vulnerable
<i>Cupaniopsis shirleyana</i> wedge-leaf tuckeroo	Vulnerable

2 Literature Review

Community/Species	EPBC Status
<i>Quassia bidwillii</i> quassia	Vulnerable
Threatened Fauna	
<i>Xeromys myoides</i> water mouse	Vulnerable
<i>Egernia rugosa</i> yakka skink	Vulnerable
<i>Paradelma orientalis</i> brigalow scaly-foot	Vulnerable
Migratory Fauna	
<i>Esacus neglectus</i> beach stone-curlew	Marine
<i>Sterna albifrons</i> little tern	Migratory Marine
<i>Actitis hypoleucos</i> common sandpiper	Migratory
<i>Apus pacificus</i> fork-tailed swift	Migratory Marine
<i>Ardea alba</i> great egret, white egret	Migratory Marine
<i>Ardea ibis</i> cattle egret	Migratory Marine
<i>Calidris acuminata</i> sharp-tailed sandpiper	Migratory
<i>Calidris ruficollis</i> red-necked stint	Migratory Marine
<i>Calidris tenuirostris</i> great knot	Migratory Marine
<i>Charadrius mongolus</i> lesser sand plover, Mongolian plover	Migratory Marine
<i>Egretta sacra</i> Eastern reef egret	Migratory
<i>Haliaeetus leucogaster</i> white-bellied sea-eagle	Migratory Marine
<i>Heteroscelus brevipes</i> grey-tailed tattler	Migratory Marine
<i>Hirundapus caudacutus</i> white-throated needletail	Migratory Marine
<i>Limosa lapponica</i> bar-tailed godwit	Migratory Marine
<i>Merops ornatus</i> rainbow bee-eater	Migratory Marine
<i>Numenius madagascariensis</i> eastern curlew	Migratory Marine
<i>Numenius phaeopus</i> whimbrel	Migratory Marine

2 Literature Review

Community/Species	EPBC Status
<i>Pandion haliaetus</i> osprey	Migratory Marine
<i>Pluvialis fulva</i> Pacific golden plover	Migratory Marine
<i>Sterna caspia</i> Caspian tern	Migratory Marine
<i>Sterna hirundo</i> * common tern	Migratory Marine
<i>Tringa nebularia</i> * common greenshank	Migratory Marine
<i>Xenus cinereus</i> Terek sandpiper	Migratory Marine

Pre-Clearance Survey Methodology

The following sections describe the methods utilised to survey for EPBC-listed ecological communities, flora and fauna and migratory species. Survey methodology was designed to be consistent with DSEWPC survey guidelines for nationally threatened species (DSEWPC, 2011). These can be found at <http://www.environment.gov.au/epbc/guidelines-policies.html#threatened>.

Vehicle and foot traverses of the GLNG LNG facility area were conducted between 21 and 23 January 2011 to determine the presence of any EPBC-listed fauna and flora species, migratory species and ecological communities. Angus McLeod and Vanessa Wood, experienced and suitably qualified (approved in writing by DSEWPC (dated 5 January 2011)) ecologists undertook the field studies. The Approval of Ecologists letter is included as Appendix A. Approximately 40 hours of field work were undertaken for the pre-clearance survey.

The traverses utilised data collated during field investigations for the GLNG Environmental Impact Statement (EIS) and Supplementary EIS (SEIS) conducted at the GLNG LNG facility site in April, May and September 2008. This prior experience on the site allowed for advance identification of potential areas in which suitable habitat for EPBC-listed species or communities may be present. These areas were targeted during the survey and the approximate extent of the pre-clearance surveys is depicted in Figure 2.

All potential species and ecological communities present were researched prior to the field studies to ensure positive identification in the field.

3.1 Ecological Communities

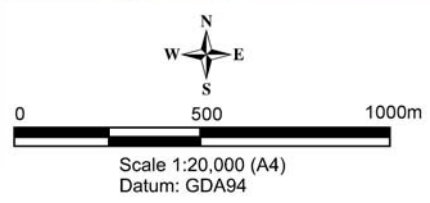
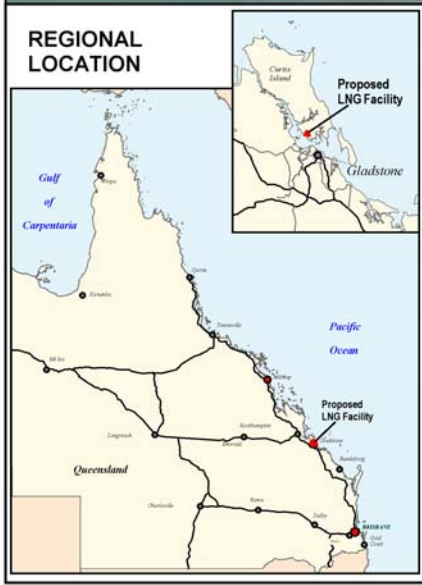
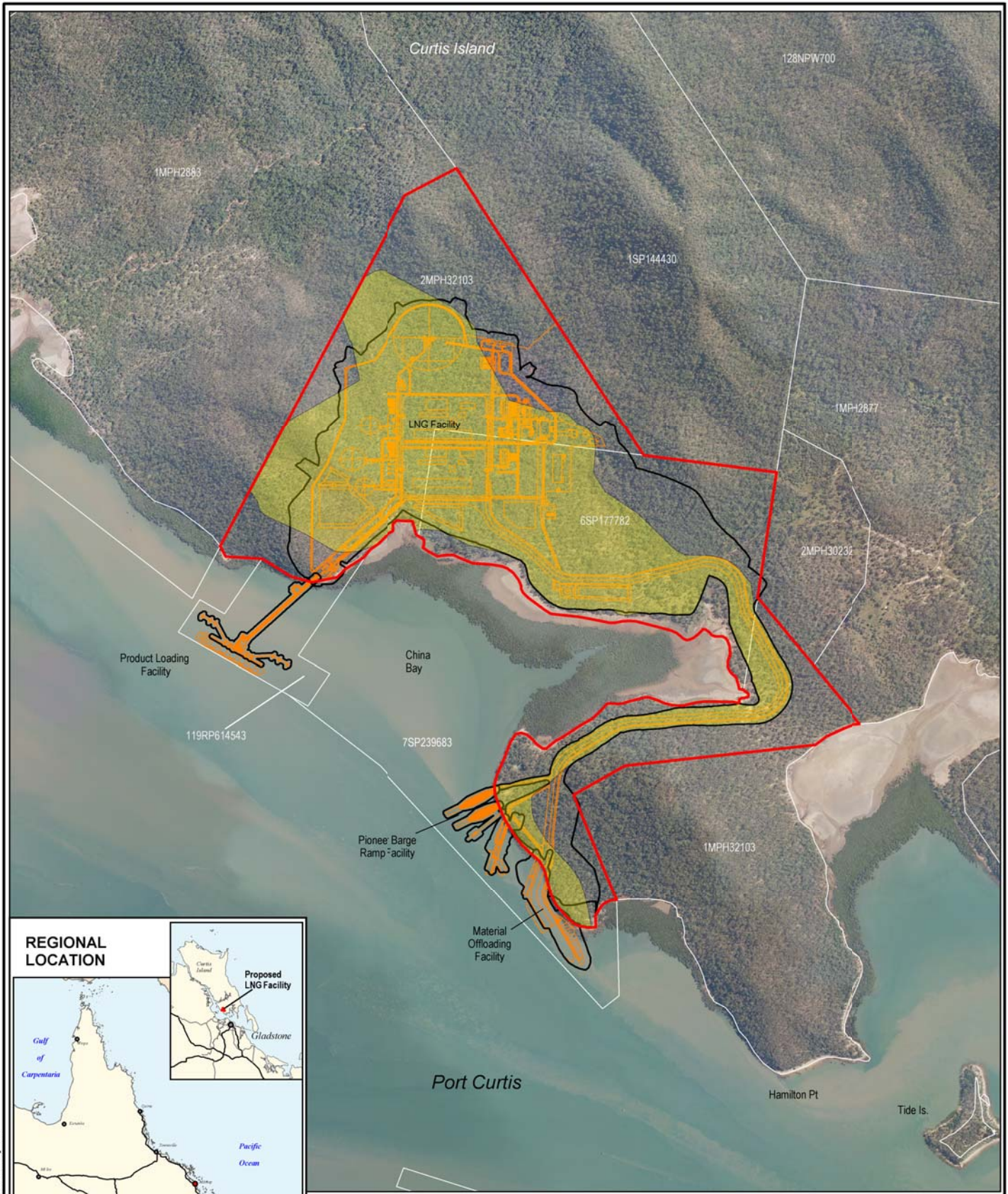
The ecological field studies for the GLNG EIS and SEIS determined that the only EPBC-listed ecological community present in the area is the Critically Endangered *Littoral Rainforest and Coastal Vine Thickets of Eastern Australia*. A small patch of this community is located at Hamilton Point at southern China Bay and lies outside the current disturbance footprint of the GLNG LNG facility and its associated infrastructure. This community is not expected to be directly impacted by the proposed works.

Additional patches of this community were sought throughout the GLNG LNG facility area during the foot and vehicular traverses of the site.

3.2 Threatened Fauna

Three threatened fauna species were identified as being potentially present (Table 2-1). These are: water mouse (*Xeromys myoides*); yakka skink (*Egernia rugosa*) and brigalow scaly-foot (*Paradelma orientalis*). Targeted surveys for the water mouse were undertaken in November 2010 (BAAM, 2010) to fulfil Condition 32 of EPBC Approval 2008/4057 and Condition 17 of EPBC Approval 2008/4058 for the GLNG LNG facility and LNG marine facilities respectively and thus surveys for the water mouse did not form part of the pre-clearance survey. The water mouse was not detected during the targeted surveys, and habitat assessments concluded there was a low likelihood of presence of the species.

The yakka skink and brigalow scaly-foot were not identified during the earlier studies on Curtis Island and were not expected to be recorded during the pre-clearance survey. Therefore, searches for these species were precautionary. Searches were centred on potentially suitable habitat for these species within the GLNG LNG facility site. Survey guidelines for these threatened species have not been published thus far by DSEWPC. The survey methods employed are considered suitable and best-practice for the conditions and habitat encountered.



- LNG Facility Site Boundary
- LNG Facility Disturbed Area Footprint (November 2010)
- LNG Facility Proposed Infrastructure (August 2010)
- Area Traversed During Preclearing Surveys

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<p>Drawn: RG</p> <p>Job No: 4262 6727</p>	<p>Approved: DS</p> <p>File No: 42626727-g-012.wor</p>	<p>Date: 17-02-2011</p> <p>Figure: 2</p>
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3 Pre-Clearance Survey Methodology

3.2.1 *Egernia rugosa* (yakka skink)

Searches for the yakka skink were primarily visual in nature, with scans of potentially suitable basking habitat such as tree trunks and fallen timber being undertaken. As the yakka skink inhabits eucalypt woodland, which forms the majority of the GLNG LNG facility site, all areas traversed were continually scanned for this species. In addition, the characteristic piles of scats deposited by this species near shelter sites were sought as evidence of their presence.

3.2.2 *Paradelma orientalis* (brigalow scaly-foot)

Two spotlighting events were conducted to search for nocturnal fauna including the brigalow scaly-foot. Spotlight scans of the ground and tree trunks were undertaken over two 3 hour periods. In addition, within potential habitat, diurnal microhabitat searches were conducted for approximately two hours throughout the survey period. Microhabitat searched included fallen timber, leaf litter and bark.

3.3 Threatened Flora

The following five EPBC-listed flora species were identified through the original EIS literature reviews as being potentially present at the GLNG LNG facility site:

- *Bosistoa selwynii* (heart-leaved bosistoa);
- *Bosistoa transversa* (three-leaved bosistoa);
- *Bulbophyllum globuliforme* (miniature moss-orchid);
- *Cupaniopsis shirleyana* (wedge-leaf tuckeroo); and
- *Quassia bidwillii* (quassia).

Fieldwork for the EIS and SEIS at the GLNG LNG facility site did not record any of these species and confirmed that vegetation communities present were unlikely to support them. However, searches for these species within potentially suitable habitat were conducted on a precautionary basis.

Traverses on foot across the study area included searches for the species listed above and their potential habitat. The survey took the form of a random-meander search which investigated a range of vegetation communities and topographies across the study area to maximise the discovery of listed species. This approach complemented the flora surveys conducted for the GLNG EIS and SEIS in terms of additional spatial and seasonal coverage of the site.

Survey guidelines for these threatened species have not been published thus far by DSEWPC. The survey methods employed are considered suitable and best-practice for the conditions and habitat encountered.

3.4 Migratory Fauna

A targeted migratory shorebird survey was undertaken between 18 and 20 January 2011, immediately prior to the pre-clearance survey. This was undertaken to fulfil Condition 19 of Commonwealth EPBC Approval No. 2008/4058 for the GLNG LNG facility Marine Facilities. The shorebird survey was conducted within China Bay at intertidal roost and foraging habitat immediately adjacent to the GLNG LNG facility site.

The shorebird survey focussed on the identification of international migrants that travel between the northern hemisphere and Australia each year. However, all other resident shorebirds, wading birds or

3 Pre-Clearance Survey Methodology

seabirds encountered (including EPBC-listed migratory species), as well as terrestrial species utilising the ecotone between terrestrial and intertidal habitat were recorded.

During the traverses of the GLNG LNG facility study area (terrestrial habitat), all avian fauna observed was recorded. Both the shorebird survey and the pre-clearance survey utilised standard accepted methods for detecting and identifying migratory species as outlined in Significant Impact Guidelines for 36 Migratory Shorebird Species (DEWHA, 2009),

3.5 Habitat Tree Identification

The identification of arboreal habitat features was undertaken incidentally during the site traverses for EPBC-listed species and ecological communities. This task was not required as a condition of EPBC approval and was undertaken to assist in mitigating impacts to fauna during clearing activities.

Potential habitat trees incidentally encountered were marked with high-visibility pink marking paint and their position recorded on a GPS. Habitat features identified included living trees bearing arboreal hollows or potential hollows, stag (dead) trees bearing hollows or potential hollows, and fallen logs acting as potential habitat for ground-dwelling species. As the habitat tree assessment was incidental to the pre-clearance survey, and only the trees encountered during the pre-clearing traverses were recorded, a comprehensive inventory of habitat trees on the site was not completed.

The habitat tree GIS data will be supplied to GLNG Operations Pty Ltd (GLNG OPL) prior to site clearing and will be provided to spotter-catcher personnel as a guide to habitat values present that may be impacted during clearing operations. A qualified and registered spotter-catcher will be present on-site at least two days prior to, and during, clearing operations. The spotter-catcher role involves the detection, capture, removal and disposal of wildlife from the LNG facility disturbance footprint. It is anticipated that spotter catcher personnel will undertake separate habitat tree assessments under the scope of their survey methodology, and the data provided within this report will be ancillary.

Results

The pre-clearance surveys did not detect any EPBC-listed ecological communities, threatened species, migratory species or species contributing to the World Heritage and National Heritage values of the Great Barrier Reef World Heritage Area within the GLNG LNG facility site and determined that their presence is unlikely. This result supports the findings of previous studies of the site for the GLNG EIS and SEIS that similarly determined that these values were unlikely to be present.

4.1 Ecological communities

As mentioned previously, the Critically Endangered ecological community *Littoral Rainforest and Coastal Vine Thickets of Eastern Australia* was confirmed at Hamilton Point. This community is located outside the area of potential impact from construction of the GLNG LNG facility and associated infrastructure. No other examples of this community were encountered during the field survey within the GLNG LNG facility site.

4.2 Threatened Flora

None of the EPBC-listed flora species identified as potentially occurring at the GLNG LNG facility site were encountered during the targeted searches. The dry sclerophyll vegetation communities prevalent throughout the site were not characteristic of the wet sclerophyll or rainforest communities in which these species are typically represented. Apart from the requisite climatic and geological factors being absent for these species, historic impacts from weeds, grazing, cropping, clearing, timber harvesting and inappropriate fire regimes may have resulted in the local extinction of any of the listed flora species if they were present in the past. These findings replicate the results of the flora studies for the GLNG EIS and SEIS undertaken at the GLNG LNG facility site.

4.3 Threatened Fauna

Targeted searches for the EPBC-listed fauna species identified as being potentially present at the GLNG LNG facility site were unsuccessful in locating the yakka skink and brigalow scaly-foot.

The habitats usually occupied by the yakka skink (poplar box, ironbark, brigalow, white cypress pine, mulga, bendee and lancewood woodlands and open forests) are largely absent at the GLNG LNG facility site. Curtis Island is also remote from the core area of habitation of the yakka skink which is found within the Mulga Lands and Brigalow Belt South bioregions. The field survey verified the earlier results of the GLNG EIS and EIS studies which did not record the presence of this species and concluded a low likelihood of it being present on Curtis Island.

Whilst the brigalow scaly-foot is known to utilise *Corymbia citriodora* (spotted gum) / *Eucalyptus crebra* (narrow-leaved ironbark) woodlands (present on much of the undulating terrain within the GLNG LNG facility site) this species was not detected. Although this species has been recorded from Boyne Island (approximately 30 km to the south east on the mainland), it has not been recorded on Curtis Island. It also utilises a variety of other vegetation communities including cypress pine, brigalow and bull oak which are not represented on south-west Curtis Island.

Feral predators, prevalent on Curtis Island may have had an impact on populations of both of these species if they were ever present.

4 Results

4.4 Migratory Species

No migratory species were detected during the pre-clearance survey at the GLNG LNG facility site.

Migratory shorebird surveys, undertaken to fulfil Condition 19 of EPBC Approval No. 2008/4058 for the GLNG LNG Marine Facilities, recorded a number of migratory species immediately adjacent to the GLNG LNG facility site. These were:

- Rainbow bee-eater (*Merops ornatus*);
- Eastern curlew (*Numenius madagascariensis*); and
- Whimbrel (*Numenius phaeopus*).

In addition, the white-bellied sea-eagle (*Haliaeetus leucogaster*) and the osprey (*Pandion haliaetus*) were observed within Port Curtis within 5 km of the subject site.

4.4.1 Rainbow bee-eater

Small flocks of the rainbow bee-eater were observed feeding at the ecotone between terrestrial and intertidal habitats at Hamilton Point during the shorebirds survey. They were not observed within the GLNG LNG facility site itself, but would potentially utilise all areas of Curtis Island at times whilst seeking prey. No evidence of the species breeding within the GLNG LNG facility was observed, and inspections of exposed soil profiles (e.g. creek banks) showed that the stony soils present were unlikely to be preferred by this species for burrows. As this species is widespread, large areas of alternative suitable habitat exist and no evidence of breeding was recorded, potential impacts to this species from construction are considered to be negligible. A specific management plan for this species is therefore considered unwarranted.

4.4.2 Eastern curlew and Whimbrel

Small numbers of these international migrants were recorded at China Bay roost and foraging habitat during surveys for the fulfil Condition 19 of EPBC Approval No. 2008/4058. A Draft Migratory Shorebirds Environmental Management Plan has been prepared to mitigate impacts to shorebirds for the Marine Facilities.

4.4.3 White-bellied sea-eagle and Osprey

No evidence of nesting, roosting or exclusive use of the China Bay area by these species was observed. As there will be negligible impact on these species from construction of the GLNG LNG facility, it is considered that a specific management plan for marine raptors is unwarranted.

Conclusions

The pre-clearance survey of the LNG facility site undertaken to fulfil Condition 20 of Commonwealth EPBC Approval No. 2008/4057 did not detect the presence of any EPBC-listed:

- Ecological communities;
- Threatened species;
- Migratory species;
- Habitat for threatened and migratory species; and
- Species contributing to the World Heritage and National Heritage values of the Great Barrier Reef World Heritage Area.

The findings are consistent with ecological studies undertaken for the GLNG EIS and SEIS at the GLNG LNG facility site.

Given that EPBC-listed values were not detected from the LNG facility site and that their presence is considered unlikely, additional specific management plans as stipulated under Condition 22 of EPBC Approval 2008/4057 are not required.

References

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Limitations

Subject to any agreement between URS Australia Pty Ltd (URS) and Santos Limited, to the contrary, the following limitations apply to this report.

URS Australia Pty Ltd (URS) has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of GLNG and only those third parties who have been authorised in writing by URS to rely on the report. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report. It is prepared in accordance with the scope of work and for the purpose outlined in the Proposal dated 18 November 2010.

The methodology adopted and sources of information used by URS are outlined in this report. URS has made no independent verification of this information beyond the agreed scope of works and URS assumes no responsibility for any inaccuracies or omissions. No indications were found during our investigations that information contained in this report as provided to URS was false.

This report was prepared between January 2011 and February 2011 and is based on the conditions encountered and information reviewed at the time of preparation. URS disclaims responsibility for any changes that may have occurred after this time.

This report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

Appendix A Suitably Qualified Ecologists



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

2010/18412
EPBC 2008/4057

Mr Alan Feely
Manager, Environment
Public Affairs and Sustainability
GLNG Project and Eastern Australia CSG Fields
GPO Box 1010
Brisbane Queensland 4000

Dear Mr Feely

I refer to your letter of 15 December 2010 to Mr James Barker seeking approval of the ecologists proposed for undertaking the GLNG Project Curtis Island LNG Facility site preclearance surveys.

I have noted the information including the qualifications and experience you have provided in relation to the nominated ecologists. Under condition 21 c) of EPBC Act approval 2008/4057 I approve the nominated ecologists below as suitable for undertaking the LNG Facility preclearance surveys:

- Adrian Caneris, Director and Principal Wildlife Expert, Biodiversity Assessment and Management (BAAM)
- Adam Abbott, Ecologist and GIS Technician, Biodiversity Assessment and Management (BAAM)
- Dan Simmons, Senior Associate Environmental Scientist, URS
- Angus McLeod, Senior Ecologist, URS
- Vanessa Wood, Environmental Scientist, URS.

Yours sincerely

Chris Murphy
A/g Assistant Secretary
Environment Assessment Branch 2

5 January 2011



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