Range to Reef November 2015 Flora and Fauna Survey

Proposed Exploration Drilling (ECI 70/2)





February 2016

For internal use only

Name	Task	Version	Date
R2R Nov 16 CI Survey	Final	1	22/2/2016

© EnviroBiz Pty Ltd 2016

The use of this report is solely for the Client for the purpose in which it was prepared. Range to Reef Environmental accepts no responsibility for use beyond this purpose. All rights are reserved and no part of this report may be reproduced or copied in any form without the written permission of Range to Reef Environmental or the Client.

Range to Reef Environmental Unit 9, 18 Strang Street Beaconsfield, WA 6162

P: 08 9335 6223

F: 08 9335 6223

E: admin@rangetoreef.com

Prepared for Phosphate Resources Limited (trading as Christmas Island Phosphate)

Contents

Introd	uction	.1
Purpo	se	.1
Surve	y Methodology	.2
3.1	Personnel	.2
3.2	Field Maps	.2
3.3	Site Surveys	.2
Limita	itions	.3
Summ	nary of Results	.4
5.1	Flora	.4
5.2	Fauna	.4
	Introd Purpo Surve 3.1 3.2 3.3 Limita Summ 5.1 5.2	Introduction Purpose Survey Methodology 3.1 Personnel 3.2 Field Maps 3.3 Site Surveys Limitations Summary of Results 5.1 Flora 5.2 Fauna

Figures

Figure 1 Location of proposed exploration areas in relation to the Christmas Island Natural Area	зs
(RNE)	1

Appendices

Appendix A Survey Sites Appendix B Survey Data Sheets

1 Introduction

Phosphate Resources Limited (trading as Christmas Island Phosphates) is seeking to undertake exploration for possible phosphate surface mining on 17 individual parcels of unallocated crown land on Christmas Island which are within exploration licence ECI 70/2. Most of the areas have been cleared prior to 1976 for exploratory purposes with a track of 8 m in width for surveying purposes.



Figure 1 Location of proposed exploration areas in relation to the Christmas Island Natural Areas (RNE)

2 Purpose

PRL commissioned flora and fauna study to facilitate exploration drilling to inform a decision on a possible application for mining at the end of 2016. The purpose of the survey was to confirm the Geoscience Australia (2014) vegetation mapping, describe vegetation condition along the proposed drill lines and to determine whether any conservation significant flora identified by the desktop study occurred or were likely to occur along the proposed drill lines. The survey also included a fauna expert to undertake fauna observations and assess potential habitats to be affected. The survey would allow for a better understanding on ecological values and barriers for areas in VCL and which areas should be targeted for clearing permit approval. Legislative Framework.

3 Survey Methodology

A desktop assessment of the area was undertaken prior to the field survey. The desktop assessment consisted of a review of existing contextual data, reports or surveys undertaken in the vicinity.

3.1 Personnel

The field survey was undertaken from 3-14 November 2015 by:

- David G. Fell, a botanist with 25 years' experience in rainforest surveys throughout New South Wales, Queensland and Papua New Guinea. This experience includes three extended field surveys on Christmas Island between 2014 and 2015
- Brent Johnson, a zoologist with 27 years' experience in the survey and monitoring of both native and introduced fauna
- Dr Andrew Hill who has 5 years of experience on Christmas Island together with 30 years' experience in natural area management in Western Australia supported the survey.

3.2 Field Maps

Field maps of vegetation (Geoscience 2014) and aerial imagery with block area and survey lines were used to derive a preliminary understanding of the forest cover of each of the survey areas. The location of the proposed drill lines and mining block boundaries were also entered into a hand held GPS which was used as the primary method of navigating.

The surveys were undertaken via a walkthrough to:

- Familiarise with vegetation, structure and habitats
- Make opportunistic fauna observations (birds, reptiles, mammals)
- Assess potential fauna surveys methods for 2016
- Undertake several night walks to assess practicality of potential night time survey methods
- Make fauna observations as necessary to address the EP Act 10 Clearing Principles (crabs burrows count, Crazy Ants etc.)
- Undertake appropriate recording and photographs to assist with clearing permit application and planned 2016 surveys.

3.3 Site Surveys

Each of the proposed drill lines was walked on the alignment as closely as possible to identify and record any conservation significant flora species that might be present. Potential conservation significant flora was photographed and geographic coordinates were noted. Fauna observations were recorded along the line.

Survey sites were selected along the drill lines to sample the on ground vegetation types from Geoscience Australia (2014). Data on vegetation structure and dominant floristics were recorded on field proformas at each site including canopy height, layers, structural features and dominant floristics. Points were entered into the GPS as waypoints using a reference system of Area/ Line/Site (e.g. 1/7/1). Observations of vegetation boundaries were consistently made in field notebooks to confirm the

transition between regrowth vegetation and Closed Canopy Evergreen Forest. Fauna sites searches were undertaken at each sample site and observation recorded.

A species list was compiled for each of the lines surveyed. Common species that were well known to the survey botanist were identified in the field, while specimens of all other species were photographed and identified on Christmas Island, using Flora of Australia Volume 50 Oceanic Islands 2 (Du Puy, 1993) and Native Plants of Christmas Island (Claussen, 2005).

Vegetation condition assessment was based on the condition rating scale developed by Keighery (1994) and described in Bush Forever (Government of Western Australia, 2000) but adapted by Range to Reef Environmental for use in the rainforest. The adapted scale examines regrowth development, retention of structural features present in undisturbed rainforest, weediness and landform disturbance. This scale was further revised by Range to Reef Environmental in 2016 to incorporate numerical rankings for vegetation condition consistent with the December 2015 Technical Guide - Flora and Vegetation Surveys for Environmental Impact Assessment (EPA and DPaW, 2015). The numbering system for the Eremaean and Northern Botanical Provinces was applied following the field survey, though the condition descriptions are compared to Keighery's description of vegetation conditions used in the Perth area.

Site location coordinates including numbered waypoints and position of track logs were downloaded from the field GPS units in the ArcGIS framework and overlain onto map figures. Site data recorded on field proformas was transferred into an excel spread sheet to produce a summary of the vegetation structure and dominant floristics at each site and along each of the survey lines. In addition, flora species lists for each line were entered into a site species format to produce a survey species list with annotation to Mine Areas and survey lines. Summary reports describe the survey results of each area surveyed include line and site descriptions with reference to site locations, vegetation mapping, vegetation structure and floristics, condition, presence of weeds, and the presence of any threatened flora and fauna.

4 Limitations

Possible survey limitations identified in the EPA Guidance for Assessment of Environmental Factors: *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia, No. 51* (EPA, 2004) have been addressed in Table 4.

The most notable constraint of the survey was walk unimpeded along the old drill lines. In many instances fallen logs, thick Pandanus sp. and thick understorey required walking marginally off the old drill lines before returning back to the alignment. The thick canopy at times impacted on the accuracy of GPS units and therefore some spatial margin of error was experienced.

Vegetation of the study areas has been previously mapped by Reddell and Zimmerman (2003) and more recently by Geoscience Australia (2014). For the purposes of this assessment, a threatened flora survey was completed applying walking traverses on all exploration lines proposed for clearing. The likelihood that threatened flora would be detected if they were present on proposed drill lines is considered as high although some of areas of very dense vegetation prevented access to parts of a limited number of survey lines.

Epiphytic orchids situated high in 30-40 canopy trees were difficult to assess due to visibility in the canopy. As such there is the possibility that the endemic epiphytic orchids *Flickingeria nativitatis* and *Phreatia listeri* were not recorded.

5 Summary of Results

5.1 Flora

The total survey effort recorded 84 flora species. Of these 68 are native and 16 (19%) are introduced. The 68 native species represents 28% of the flora species recorded on the island. Endemic species included:

- Grewia insularis recorded at one site in Area 6 Line 1 in primary evergreen forest
- Brachypeza archytas commonly recorded in the subcanopy of primary forests
- Arenga listeri abundant throughout primary, semi deciduous and regrowth forests
- Hoya aldrichii abundant throughout primary, semi deciduous forests
- Pandanus elatus abundant throughout primary, semi deciduous and regrowth forests.

Epiphytic orchids situated high in 30-40 canopy trees were difficult to assess due to visibility in the canopy. As such there is the possibility that the endemic epiphytic orchids *Flickingeria nativitatis* and *Phreatia listeri* were not recorded.

5.2 Fauna

Eleven conservation significant fauna species were observed in, or overflying, the proposed clearing areas. These were:

- Christmas Island thrush
- Christmas Island white-eye
- Christmas Island imperial pigeon
- Christmas Island goshawk
- Emerald dove
- Christmas Island frigatebird
- White-tailed tropicbird
- Red-footed booby
- Christmas Island flying-fox
- Red crab
- Robber crab.

A short spot night survey in one area found the now EPBC listed endangered Giant Gecko. This highlighted the need for a night survey in 2016 to provide information on the distribution of this species, as well as important nocturnal birds that will be critical to any future assessments (i.e. Hawk Owl).

Appendix A Survey Sites

Site #	Easting	Northing
4/50/1	572135	8834291
4/51/1	572120	8834226
5/53/1	572018	8834532
5/54/1	572005	8834403
6/1/1	572047	8834857
6/1/2	572141	8835302
6/1/3	572270	8835311
6/55/1	571970	8834663
7/3/1	571458	8834814
7/3/2	571419	8834365
7/4/1	571112	8834248
7/4/2	571335	8834286
7/5/1	571431	8834571
7/6/1	571207	8834695
8/58/1	571728	8836167
8/59/1	571736	8836063
8/60/1	571774	8835982
9/11/1	571173	8836133
9/12/1	571159	8836140
9/13/1	570905	8836145
9/57/1	570986	8836087
11/18/1	571157	8838251
11/19/1	571138	8838142
14/25/1	572489	8839591
14/26/1	572443	8839497
22/65/1	574983	8844091
22/66/1	574983	8844091
23/33/1	575391	8843584
23/33/2	575559	8843842
23/34/1	5745479	8843603
24/36/1	575326	8844429
24/63/1	575324	8844302
24/64/1	575373	8844078
28/45/1	575115	8845553
28/46/1	575134	8845410
29/41/1	574220	8845423
29/42/1	574163	8845451
29/43/1	5741316	8845332

30/74/1	573874	8845912
30/75/1	573890	8845942
30/76/1	573850	8846067
31/44/1	5748094	8846362
31/72/1	574241	8846476
31/73/1	5734264	8846373
35/69/1	576139	8846303
35/70/1	576162	8846350
35/71/1	576165	88463438
37/49/1	577317	8845759

Appendix B Survey Data Sheets



LINE: 50	Line Length: 82 m	No of Sites: 1 (4/50/1)	Land Use History: Uncleared	Priority: Low		
Line	Landform: Limestone plateau					
Vegetation Structure and Floristics: Line 50 traverses well-developed evergreen fores. The area is surrounded by disturbed regrowth vegetation to the south, west and north. It with remnant vegetation to the east adjoining terrace semi deciduous forest.						
	Condition: The condit	ion of the forest is considered pristir	ne-excellent.			
	Flora Species: Alchornea rugosa, Arenga listeri, Asplenium nidus, Barringtonia racemosa, Combretum acuminatum, Dysoxylum gaudichaudianum, Pandanus elatus, Pisonia umbellifera, Planchonella nitida. Pachygone ovata. Terminalia catappa. Tristiropsis acutangula. Vittaria elon					
Fauna Habitat Description: Deeper plateau and terrace soils with evergreen rainfore emergent trees to 20 m. Dense leaf litter.						
	Threatened Flora: No	ne observed.				
	Conservation Significant Fauna: -					

Site	Site #: 4/50/1	E 572135	N 8834291	ALT: 250m	SLOPE: 0 ⁰		
Description	Dominant Floristics: gaudichaudianum, Pal Dysoxylum gaudichau acutangula. Dense und with 50% rock.	Canopy of Barringtor ndanus elatus. Subcar dianum, Pandanus ela derstorey of P. elatus,	ia racemosa, Planchonella lopy of Barringtonia racemo tus, Arenga listeri, Pisonia Alchornea rugosa, P. nitida	nitida, Dysoxylum osa, Planchonella n umbellata and Trist and A. listeri. Dens	<i>itida,</i> tiropsis se leaf litter		
	Geoscience Mapping Unit: Closed canopy evergreen forest (15-20m) moderate						
	Field Unit: Closed ev	ergreen forest (15-20r	n)				

	Condition: Pristine. No weeds observed. Threatened Flora: Nil		
Images	no image available		

LINE: 51	Line Length: 110 m	No of Sites: 1 (4/51/1)	Land Use History: Uncleared	Priority: Low		
Line						
	Vegetation Structure and Floristics : Line 51 traverses well-developed evergreen forest 15-20m. The area is surrounded by disturbed regrowth vegetation to the south, west and north. It is continuous with remnant vegetation to the east adjoining terrace semi deciduous forest. The understorey is typically dense with groves of <i>Pandanus elatus</i> . The presence of <i>Ochrosia ackeringae</i> in the subcanopy and understorey appears to be indicative of shallower soils and increased limestone outcrop on the surface.					
	Condition: The condit	ion of the forest is considered pristir	ne-excellent.			
	Flora Species: Alchornea rugosa, Arenga listeri, Asplenium nidus, Barringtonia racemosa, Combretum acuminatum, Dysoxylum gaudichaudianum, Pandanus elatus, Pisonia umbellifera, Planchonella nitida, Pachygone ovata, Terminalia catappa, Tristiropsis acutangula, Vittaria elonga					
	nforest with					
	Conservation Significant Fauna : Christmas Island Imperial Pigeon (<i>Ducula whartoni</i>) and Red Crab (Gecaroidea natalis).					

Site	Site #: 4/51/1	E 572120	N 8834226	ALT: 250m	SLOPE: 0 ⁰		
Description	Dominant Floristics: Canopy of Barringtonia racemosa, Planchonella nitida, Dysoxylum gaudichaudianum and Pandanus elatus. Subcanopy of Barringtonia racemosa, Planchonella nitida, Dysoxylum gaudichaudianum, Pandanus elatus, Arenga listeri, Pisonia umbellata and Tristiropsis acutangula. Dense understorey of P. elatus, Alchornea rugosa, P. nitida and A. listeri. Dense leaf litter with 40% rock.						
	Geoscience Mapping Unit: Regrowth (10-15m)						
	Field Unit: Closed evergreen forest (15-20m)						
	Condition: Pristine. No weeds observed. Threatened Flora: Nil						
Images	no image available						



LINE: 52	Line Length: 71 m	No of Sites: 0 (traverse only)	Land Use History: Previously cleared	Priority: Low		
Line						
Description	Vegetation Structure and Floristics: Line 52 traverses well-developed evergreen forest 1 The area is surrounded by disturbed regrowth vegetation to the south, west and north. The Barringtonia racemosa, Planchonella nitida, Dysoxylum gaudichaudianum, Pandanus elatu understorey is dense of P. elatus, Alchornea rugosa, P. nitida and A. listeri. Dense leaf litte					
	Condition: The condition of the forest is considered pristine-excellent.					
	Flora Species: Alchornea rugosa, Arenga listeri, Asplenium nidus, Barringtonia racemosa, Brachypeza archytas, Claoxylon indicum, Cordia curassavica*, Cryptocarya nitens, Dysoxylum gaudichaudianum, Macaranga tanarius, Pandanus elatus, Pisonia umbellifera, Planchonella nitida, Pyrrosia Janceolata, Vittaria elongata					
Fauna Habitat Description: Deeper plateau and terrace soils with evergreen rainforest wi emergent trees to 20 m. Dense leaf litter.						
Conservation Significant Fauna: -						

LINE: 53	Line Length: 80 m	No of Sites: 1 (5/53/1)	Land Use History: Previously cleared	Priority: Low		
Line	Landform: Limestone plateau					
Description	Vegetation Structure and Floristics: Line 53 traverses well-developed primary evergreen forest 25 35m. The canopy features buttressed trees of <i>Syzygium nervosum</i> , <i>Planchonella nitida</i> and <i>Barringtonia racemosa</i> with a subcanopy of <i>Pandanus elatus</i> and <i>Arenga listeri</i> .					
	Condition: The condition of the forest is considered pristine.					
	Flora Species: Alchornea rugosa, Arenga listeri, Asplenium nidus, Barringtonia racemosa, Brachypeza archytas, Claoxylon indicum, Cordia curassavica*, Cryptocarya nitens, Dysoxylum gaudichaudianum, Macaranga tanarius, Pandanus elatus, Pisonia umbellifera, Planchonella nit Pyrrosia lanceolata, Vittaria elongata					
Fauna Habitat Description: Deeper plateau and terrace soils with evergreen rainforest we emergent trees to 20 m. Dense leaf litter.						
	Threatened Flora: None observed.					
Conservation Significant Fauna: Christmas Island White-eye (Zosterops natalis)						

Site	Site #: 5/53/1	E 572018	N 8834532	ALT: 265m	SLOPE: 0 ⁰		
Description	 Dominant Floristics: Canopy of Syzygium nervosum, Planchonella nitida, Barringtonia racemosa. Subcanopy of Pandanus elatus and Arenga listeri. Understorey dominated by dense thickets of P. elatus with Alchornea rugosa, Pisonia umbellifera and Claoxylon indicum. Groundcover of dense leaf litter. Geoscience Mapping Unit: Closed canopy evergreen forest (15-20m) - moderate 						
(
	Field Unit: Closed ev	vergreen forest (25-30n	n)				
(Condition: Pristine. No weeds observed. Threatened Flora: Nil						
Images	<image/>						
:	Stilt roots of Pandanu	s elatus	Evergreen forest	with abundant Pano	danus		

LINE: 54	Line Length: 80 m	No of Sites: 1 (5/54/1)	Land Use History: Previously cleared	Priority: Low		
Line	Landform: Limestone	plateau				
Description	Vegetation Structure dominated by Macara	/egetation Structure and Floristics : Line 54 is located in advanced secondary regrowth dominated by <i>Macaranga tanarius</i> with <i>Ehretia javanica</i> and <i>Dysoxylum gaudichaudianum</i> ,				
	Condition: The condition of the forest is considered good.					
	Flora Species: Aidia sp. aff. racemosa, Arenga listeri, Barringtonia racemosa, Ehretia javanica, Inocarpus fagifer, Macaranga tanarius, Pandanus elatus, Syzygium nervosum, Tristiropsis acutangula					
	Fauna Habitat Description: Deeper plateau and terrace soils with evergreen rainforest with emergent trees to 20 m. Dense leaf litter.					
	Threatened Flora: None observed.					
	Conservation Signific	cant Fauna: Red Crab (Gecaroidea	natalis).			





LINE: 1	Line Length: 953 m	No of Sites: 3 (6/1 6/1/3)	/1, 6/1/2,	Land Use History: Previously cleared	Priority: High	
Line	Landform: Gently sloping limestone plateau					
Description	Vegetation Structure canopy of 35-40m.	and Floristics: Line	e 1 traverses we	II-developed evergreen	forest with a tall	
	Condition: The condi	tion of the forest is co	onsidered pristir	ne.		
	Flora Species: Aidia sp. aff. racemosa, Alchornea rugosa, Allophylus cobbe, Ardisia colorata, Arenga listeri, Asplenium nidus, Barringtonia racemosa, Callicarpa longifolia, Cayratia pedata, Celastrus paniculatus, Celtis timorensis, Ceraia saaronica, Claoxylon indicum, Cryptocarya nitens, Davallia denticulata, Davallia solida, Dendrocnide peltata var. peltata, Dendrocnide sinuate, Dysoxylum gaudichaudianum, Ficus microcarpa, Grewia insularis, Guettarda speciosa, Hernandia ovigera, Hoya aldrichii, Inocarpus fagifer, Leea angulata, Macaranga tanarius, Maclura cochichinesis var. cochichinesis, Nephrolepis bisserata, Pandanus elatus, Pisonia umbellifera, Pittosporum ferrugineum, Planchonella nitida, Pyrrosia lanceolata, Schefflera elliptica, Syzygium nervosum, Tristiropsis acutangula, Turnera ulmifolia*					
	Fauna Habitat Description : Deeper plateau and terrace soils with evergreen rainforest with emergent trees to 40 m. Scattered limestone outcrops.					
	Threatened Flora: No	one observed.				
	Conservation Significant Fauna : Emerald Dove (<i>Chalcophaps indica natalis</i>) EN , Christmas Island Thrush (<i>Turdus poliocephalus</i>) EN , Christmas Island Imperial Pigeon (<i>Ducula whartoni</i>), Christmas Island White-eye (<i>Zosterops natalis</i>), Red Crab (<i>Gecaroidea natalis</i>) and Robber Crab (<i>Birgus latro</i>).					
Cito	Sito #. 6/1/1	E72047	N 0024057	AL T. 259m		
Description	Dominant Floristics: C nervosum, Hernandia ov	anopy of <i>Planchonel</i> vigera, Tristiropsis ac	la nitida, Barring tutangula and C	gtonia racemosa, Inocar ryptocarya nitens. Abur	pus fagifer, Syzygium	
	anopy crowns. Occasional emergents of Ficus microcarpa. Dense sapling understorey of Claoxylon					

	indicum, Arenga listeri, P. nitida, Alchornea rugosa. G nidus, Hoya aldrichii, Turnera ulmifolia*, Davallia dent limestone surface rock (20-30%) with 70-80% dense l	roundcover with <i>Corymborkis veratrifolia, Asplenium</i> <i>ticulata</i> and <i>Nephrolepis bisserata</i> . Scattered eaf litter.				
	Geoscience Mapping Unit: Closed canopy evergree	n forest (25-30m) - tall				
	Field Unit: Closed evergreen forest (30-35m)					
	Condition: Pristine. Weeds limited to a few scattered	d <i>Turnera ulmifolia*</i> in the groundcover.				
	Threatened Flora: Nil					
Images						
	Dense understorey with abundant limestone outcrop on surface.	Canopy of evergreen forest with <i>Arenga listeri</i> in foreground.				

Site	Site #: 6/1/2	E 572141	N 8835302	ALT: 275m	SLOPE: 0 ⁰			
Description	The second se							
	Condition: Pristine. Canopy gaps from cyclone damage are evident. Weeds limited to a few scattered <i>Turnera ulmifolia</i> * in the groundcover.							
	Threatened Flora: Nil							

Images		
	<i>Arenga listeri</i> in canopy gap	Dense sapling dominated understorey.



LINE: 2	Line Length: 163 m	No of Sites: 0 (traverse only)	Land Use History: Previously cleared	Priority: High	
Line Description	Landform: Limestone	plateau			
Description	orest with a tall				
	Condition: The condition of the forest is considered pristine.				
	Fauna Habitat Descri	ption: Deeper plateau and terrace	soils with evergreen rain	forest with	

emergent trees to 40 m. Scattered limestone outcrops.
Threatened Flora: None observed.
Conservation Significant Fauna : Christmas Island Thrush (<i>Turdus poliocephalus</i>) EN , Red Crab (<i>Gecaroidea natalis</i>) and Robber Crab (<i>Birgus latro</i>).

LINE: 55	Line Length: 190 m	No of Sites: 1 (6/55/1)	Land Use History: Previously cleared	Priority: Medium	
Line	Landform: Limestone	plateau			
Description	Vegetation Structure and Floristics : Line 55 traverses well-developed evergreen forest with a tall canopy of 30-40m. The canopy is typically dominated by <i>Barringtonia racemosa</i> and <i>Planchonella nitida</i> with <i>Syzygium nervosum, Dysoxylum gaudichaudianum</i> and <i>Hernandia ovigera</i> . The understorey is open.				
	Condition: The condit	ion of the forest is considered pristir	ne. No weeds observed.		
	Fauna Habitat Description: Deeper plateau and terrace soils with evergreen rainforest with emergent trees to 40 m. Scattered limestone outcrops.				
	Threatened Flora: None observed.				
	Conservation Signifi Island White-eye (<i>Zos</i>)	cant Fauna: : Christmas Island Impe terops natalis) and Robber Crab (<i>Bi</i>	erial Pigeon (<i>Ducula wha</i> rgus latro).	artoni), Christmas	

Site	Site #: 6/55/1	E 571970	N 8834663	ALT: 270m	SLOPE: 0 ⁰	
Description	Dominant Floristics: Canopy of <i>Barringtonia racemosa</i> and <i>Planchonella nitida</i> with Syzygium nervosum, Dysoxylum gaudichaudianum, Hernandia ovigera. Subcanopy of Pisonia umbellifera and Arenga listeri. Sparse understorey od Ardisia colorata, Claoxylon indicum and Arenga listeri. Very sparse groundcover with scattered Corymborkis verratrifoliaveratrifolia. Dense leaf litter.					
	Geoscience Mapping Unit: Closed canopy evergreen forest (25-30m) - tall					
	Field Unit: Closed evergreen forest (30-40m)					
	Condition: Pristine. No weeds observed.					
	Threatened Flora: Nil					
Images						
	Well developed primar understorey and spars	y forest with open e groundcover.				

LINE: 56	Line Length: 104 m	No of Sites: 0 (traverse only)	Land Use History: Previously cleared	Priority: Medium			
Line	Landform: Limestone	plateau					
Description	Vegetation Structure canopy of 30-35m. It is the closed canopy eve	Vegetation Structure and Floristics : Line 56 traverses well-developed evergreen forest with a tall canopy of 30-35m. It is represented by previous sites within Line 2 with typical canopy associates of the closed canopy evergreen forest type.					
	Condition: The condition of the forest is considered pristine.						
	Fauna Habitat Description: Deeper plateau and terrace soils with evergreen rainforest with emergent trees to 40 m. Scattered limestone outcrops.						
	Threatened Flora: None observed.						
	Conservation Significant Fauna : Christmas Island Thrush (<i>Turdus poliocephalus</i>) EN , Christmas Island White-eye (<i>Zosterops natalis</i>) and Red Crab (<i>Gecaroidea natalis</i>).						

AREA 7	Location: South Point	Line: 3, 4, 5, 6	No. of Sites: 7 Cl 7/3/1, 7/3/2, 7/4/1, 7/4/2, 7/5/1, 7/5/2, 7/6/1	Recorder: D G Fell + A. Hill + B. Johnson	Date: 4/11/15
0 25 190 0 25 190 0 26 100	100 40 00 m CITORI CIT				

LINE: 3	Line Length: 538 m	No of Sites: 2 (7/3/1, 7/3/2)	Land Use History: Previously cleared	Priority: High		
Line	Landform: Limestone plateau					
Description	Vegetation Structure and Floristics : Line 3 traverses well-developed evergreen forest with a tall canopy of 20-30m. The canopy is well developed with typical species of Ficus <i>microcarpa, Syzygium nervosum, Planchonella nitida, Dysoxylum gaudichaudianum, Inocarpus fagifer, Tristiropsis acutangula, Barringtonia racemosa and Hernandia ovigera.</i> Dense understorey dominated by <i>Pandanus elatus</i> and <i>Arenga listeri, Ardisia colorata</i> and <i>Inocarpus fagifer.</i> Scattered ferns of <i>Bolbitis heteroclita, Tectaria dissecta, Davallia solida</i> and <i>Nephrolepis bisserata.</i> Abundant epiphytes in crowns.					
	Condition: The condition of the forest is pristine. One or two stems of <i>Cordia curassavica</i> * along old exploration line.					
	forest with ody debris.					
	ere recorded.					
	Conservation Significant Fauna : Christmas island Goshawk (Accipiter hiogaster natalis) EN , Christmas Island Imperial Pigeon (<i>Ducula whartoni</i>), Christmas Island White-eye (<i>Zosterops natalis</i>), and Robber Crab (<i>Birgus latro</i>).					

Site	Site #: 7/3/1	E 571458	N 88348140	ALT: 315m	SLOPE: 0 ⁰				
Description	Dominant Floristics: Canopy of Ficus microcarpa, Syzygium nervosum, Planchonella nitida, Dysoxylum								
	gaudichaudianum, Inocarpus fagifer, Barringtonia racemosa and Hernandia ovigera. Dense understorey								
	of Bolbitis heteroclita, Tectaria dissecta, Davallia solida and Nephrolepis bisserata. Abundant epiphytes in								