Clearing Permit Application – Supporting Information

Applicant: Director of National Parks, Department of Environment.

Contact: Alasdair Grigg, Christmas Island Minesite to Forest Rehabilitation (CIMFR) Program, Christmas Island National Park

Date: 7/5/14

Land Description: Relinquished mine lease formerly known as ML107 (2 parcels) and ML 115 (2 parcels) now on UCL/VCL on Christmas Island, Indian Ocean Territories, WA.

Proposal: Four parcels of land totalling 4.476 Ha are sought for clearing approval. The purpose of the clearing is to access soil in stockpiles left over from mining to conduct rehabilitation of the surrounding area dominated by fernfield. Rehabilitation will involve replanting with native rainforest species including 26 tree species. All sites proposed here are required for rehabilitation in order to achieve habitat improvements for an EPBC listed threatened seabird- the Abbott's Booby (*Papasula abbotti*), and the Christmas Island Red crab (*Gecarcoidea natalis*), especially in relation to their annual migration through these areas.

Fernfields are recognised as areas not requiring clearing permits so have not been included in this application. Some fernfield areas are planned for rehabilitation separate to this clearing permit process.

Commitment: Because the reason for clearing is to access soil in stockpiles for the purposes of rehabilitation, it is a priority for us that any native trees will be conserved wherever possible. As a result, less vegetation will be cleared within the hashed areas than what is indicted by the maps. Conserved trees will provide shade and a favourable microhabitat to benefit both the new seedlings once they are planted and red crabs on their annual migration. With respect to fauna protection, any red crabs or robber crabs found in the area prior to and during the clearing process will be removed to avoid casualties. This will be achieved through manual relocation to safe areas nearby, and if necessary for robber crabs, food lure stations outside the clearing zone. All possible measures will be taken to minimise negative impacts and ensure positive environmental outcomes.

Nomenclature: As these sites are no longer mine lease, the ML prefix has been replaced with PR for "potential rehabilitation".

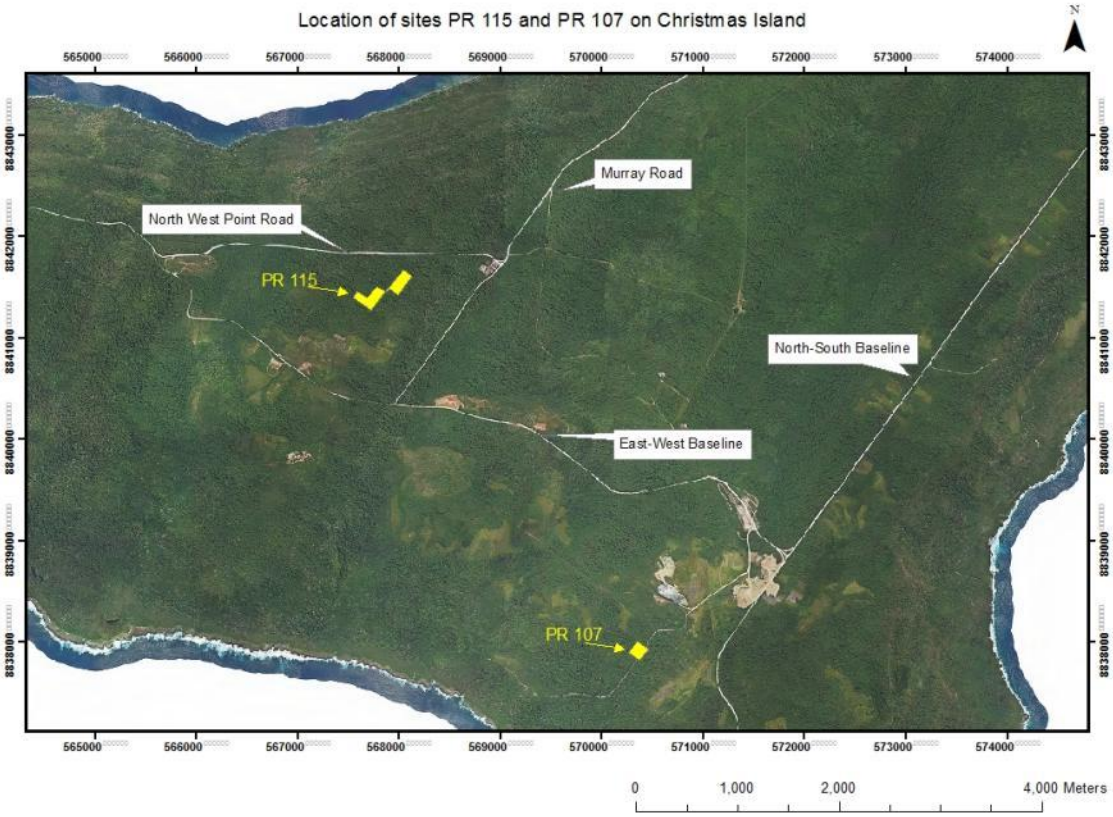

Figure 1: Map showing the location of potential rehabilitation sites PR 107 and PR115.

Areas sought for clearing permit- PR107

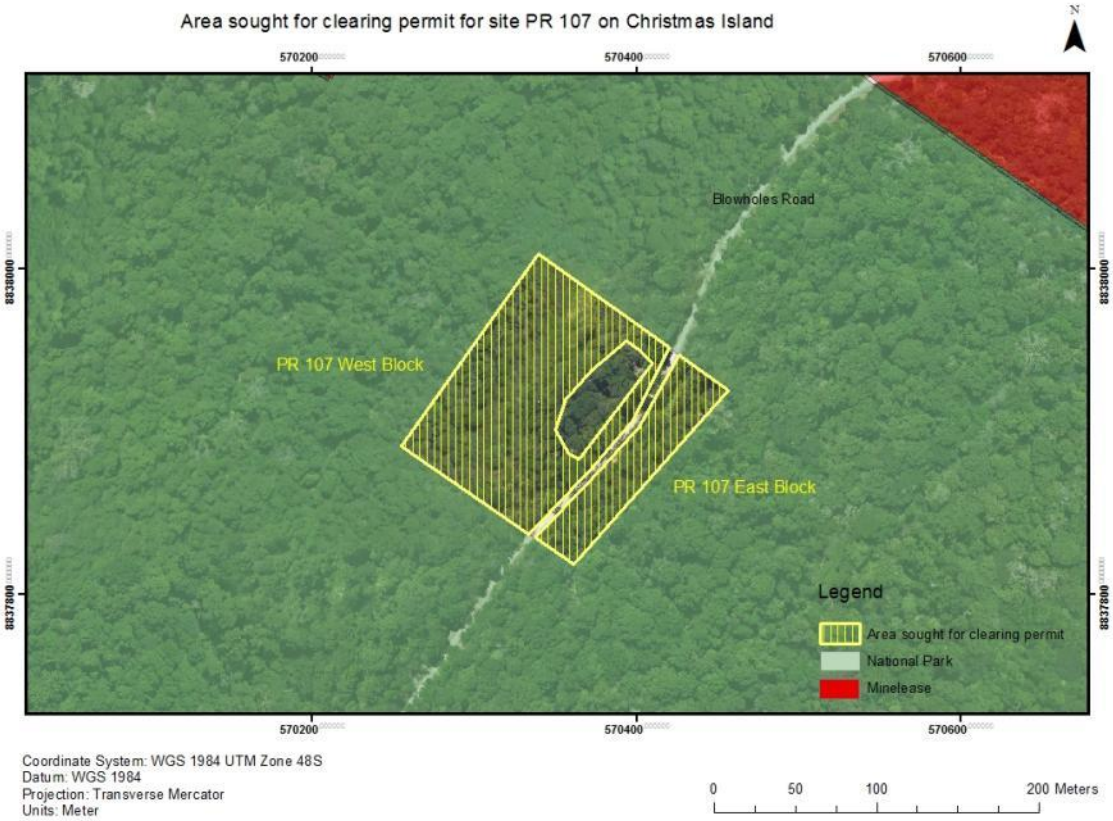

Figure 2: Map showing potential rehabilitation sites PR 107 East and West blocks.

Site proposed for clearing: PR107 East Block

Location: On the Blowholes track 1.9 km south from East-West Baseline Road. On the East side of the road.

Area: 0.42 Ha

Description: This area is characterised by a stockpile immediately adjacent to the road. Vegetation is predominantly weedy with some common native species such as *Macarnaga tanarius,* and opportunistic native species such as *Maclura cochiniensis, Nephrolepis biserrata and Schefflera elliptica.* Poor canopy cover has led to infestation by weeds such as *Leucaena leucocephala* and the invasive vine species *Mikania micrantha.* No listed threatened flora or fauna were found at this site (see Appendix 1).

Figure 3: PR107 East, southern end of stockpile. GPS Co-oridnates: 0570422; 8837898. Looking north east (~45^{o}). Tree in centre of photo is the weed tree *Leucaena leucocephala*; numerous tangled branches of the opportunistic scrambler *Maclura cochinchinensis* have also invaded the open area.

Figure 4: PR107 East, northern end of stockpile. GPS Co-ordinates: 057044; 8837912. Looking south east (~135^{o}). Tree in the centre of the photo is *Macarnaga tanarius* surrounded by numerous *Leucaena leucocephala.*

*Table 1: Species found at PR107 East Block**

Species	Classification	Abundance
Claoxylon indicum	Native	Occasional
Dysoxylum gaudichaudianum	Native	Occasional
Macarnaga tanarius	Native	Common
Maclura cochinchinensis	Native	Common
Pandanus elatus	Native	Occasional
Schefflera elliptica	Opportunistic/weedy native	Common
Nephrolepis bisserata (swordfern)	Opportunistic/weedy native	Very common
Asystasia gangetica	Weed	Common
Cordia curassavica (Black sage)	Weed	Common
Leucaena leucocephala (Leucaena)	Weed	Very common
Mikania micrantha	Weed	Very common
Stachytarpheta indica (Snake Weed)	Weed	Common
Turnera ulmifolia(buttercup bush)	Weed	Common

*****Flora survey was done in transit whilst walking the length of the site. The focus of the survey was primarily to look for any threatened species- all of which are ground dwelling or low level ferns.

PR107- East Block: Response to the 10 clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

This site does not comprise a high level of biological diversity- it is very low.

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

This site is not a significant habitat for indigenous fauna.

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

There are no rare flora on this site. See Appendix 1.

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

This site is not a threatened ecological community.

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

This site is not a significant remnant block of native vegetation in an area that has been extensively cleared.

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

This site is not growing in, or in association with a watercourse or wetland

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Clearing of this site will not cause appreciable land degradation. To the contrary, its rehabilitation will provide a positive effect and benefit to the ecological intactness of the area.

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Clearing of this site and its rehabilitation will not have a negative impact on the environmental values of the adjacent conservation area- it will have a positive impact. It is surrounded by National Park and the rehabilitation of the area will improve ecological continuity across the conservation area.

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Clearing of this site will not cause a deterioration in the quality of surface or underground water.

(j) Native vegetation should not be cleared the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Clearing of this site will not cause or exacerbate the incidence or intensity of flooding

Site proposed for clearing: PR 107 West Block

Location: On the Blowholes track 1.9 km south from East-West Baseline Road. On the West side of the road.

Area: 1.28 Ha

Description: Most of the area is proposed for clearing is dominated by fernfield (*Nephrolepis biserrata)* and woody weeds such as *Leucaena leucocephala* and *Psidium gujava* (guava). A reasonable assemblage of native and weed trees has developed on the stockpile on the western boundary. Any individuals or clusters of native trees that are determined to offer important seed production potential or favourable microhabitat conditions for the rehabilitation process will be kept. Not requested for clearing is a strip of native vegetation roughly 10 to 20 m in from the road. We believe the quality of it is high, and would like to see it kept (accordingly, this area has not been hashed in the map- Figure 1). No listed threatened flora were found at this site (see Appendix 1). One Christmas Island thrush (*Turdus poliocephalus erythropleurus*) was observed flying through the area, but not nesting.

Figure 5: Site PR107 West Block. GPS co-ordinates: 0570348; 8837876. Looking south west (~240^{o}). Note the presence of climbing vines such as *Mikania micrantha* smothering trees present.

Figure 6: Site PR107 West Block. Northern end. Mixture of common native trees such as *Dysoxylum* and *Macarnaga* along with weedy trees such as *Leucaena leucocephala* and *Muntingia calabura*.

*Table 2: Species found at PR107 West Block**

Species	Classification	Abundance
Barringtonia racemosa	Native	Few
Claoxylon indicum	Native	Occasional
Dysoxylum gaudichaudianum	Native	Occasional
Macarnaga tanarius	Native	Common
Maclura cochinchinensis	Native	Common

Melochia umbelifera	Native	Occasional
Ochrosia ackeringae	Native	Occasional
Pandanus elatus	Native	Occasional
Planchonella nitida	Native	Few
Tristiropsis acutangula	Native	Occasional
Nephrolepis bisserata (swordfern)	Opportunistic/weedy native	Common
Schefflera elliptica	Opportunistic/weedy native	Occasional
Leucaena leucocephala (Leucaena)	Weed	Common
Mikania micrantha	Weed	Very common
Psidium gujava(guava)	Weed	Common
Stachytarpheta indica (Snake Weed)	Weed	Occasional

Site PR 107- West Block: Response to the 10 clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

This site does not comprise a high level of biological diversity- it is relatively low.

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

This site is not a significant habitat for indigenous fauna.

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

There are no rare flora on this site. See Appendix 1.

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

This site is not a threatened ecological community.

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

This site is not a significant remnant block of native vegetation in an area that has been extensively cleared.

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

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Areas sought for clearing permit- PR107

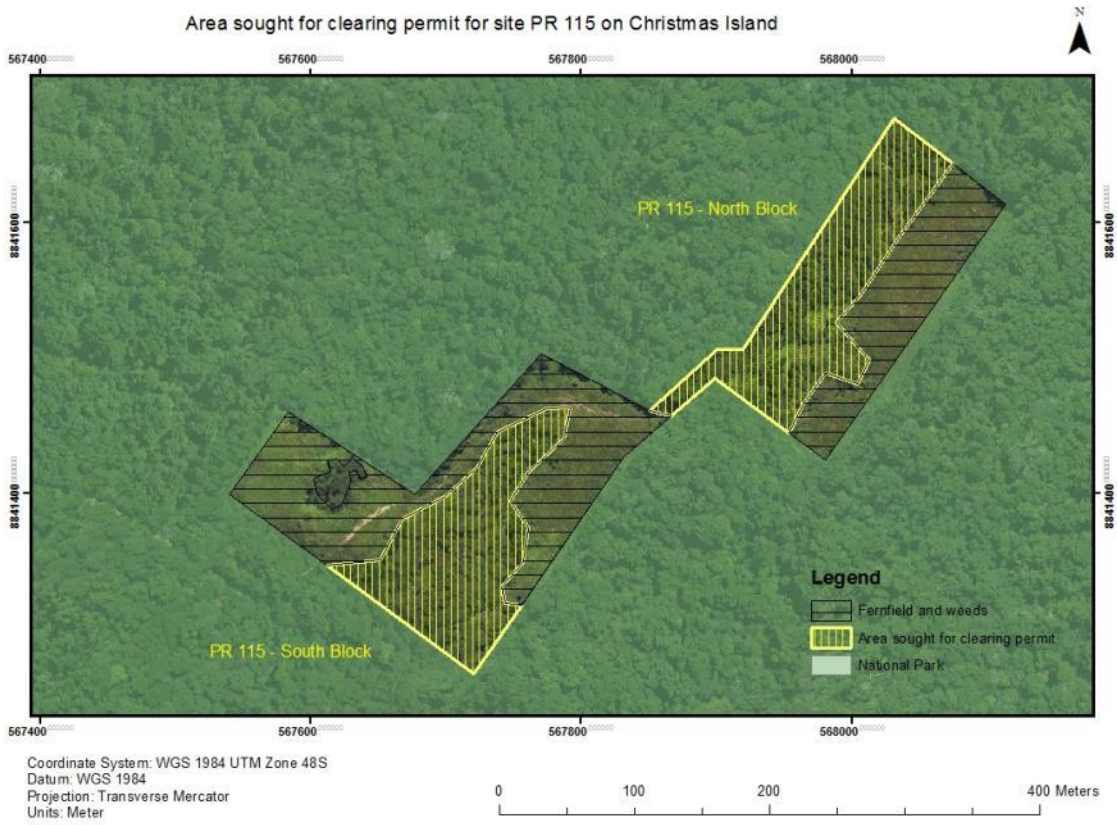

Figure 7: Map showing potential rehabilitation sites PR 115 North and South blocks.

Site proposed for clearing: PR115 North Block

Location: On the 23 North track 840 m from Murray Road, turning off 1.2 km south of Central Area Workshop. The field is on the northern side of the track about 200 m in.

Area: 1.43 Ha

Description: This area is characterised by mixed stand of common native trees and weeds- see table 3. Some trees have reached heights greater than 10 m. Any individuals or clusters of native trees that are determined to offer important seed production potential or favourable microhabitat conditions for the rehabilitation process will be kept. No listed threatened flora were found at this site (see Appendix 1). Two Christmas Island thrush (*Turdus poliocephalus erythropleurus*) were observed flying through the area, but not nesting. The fernfield to the east of this site is proposed for rehabilitation.

Figure 8: PR115 North block, looking onto edge of fern field.

Figure 9. PR115 North block looking onto stockpile. Some common native trees including *Macaranga tanarius, Dysoxylum gaudichadiunam* and *Planchonella nitida* exceed

*Table 3: Species found at PR115 North Block**

Species	Classification	Abundance
Arenga listeria	Native	Few
Barringtonia racemosa	Native	Few
Claoxylon indicum	Native	Occasional
Dysoxylum gaudichaudianum	Native	Occasional
Macarnaga tanarius	Native	Common

Maclura cochinchinensis	Native	Common
Melochia umbelifera	Native	Occasional
Ochrosia ackeringae	Native	Occasional
Pandanus elatus	Native	Occasional
Planchonella nitida	Native	Few
Syzigium nervosum	Native	Few
Tristiropsis acutangula	Native	Occasional
Nephrolepis bisserata (swordfern)	Opportunistic/weedy native	Common
Schefflera elliptica	Opportunistic/weedy native	Occasional
Leucaena leucocephala (Leucaena)	Weed	Common
Mikania micrantha	Weed	Very common
Psidium gujava(guava)	Weed	Occasional

Site PR 115 North Block: Response to the 10 clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

This site does not comprise a high level of biological diversity- it is relatively low.

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

This site is not a significant habitat for indigenous fauna.

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

There are no rare flora on this site. See Appendix 1.

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Site proposed for clearing: PR115 South Block

Location: On the 23 North track 840 m from Murray Road, turning off 1.2 km south of Central Area Workshop. The field is on the northern side of the track about 50 m in.

Area: 1.34 Ha

Description: This area is characterised by a lot of invasive vines in patches with reasonable stands of native trees on the slopes. All species found are common. Any individuals or clusters of native trees that are determined to offer important seed production potential or favourable microhabitat conditions for the rehabilitation process will be kept. No listed threatened flora or fauna were found at this site (see Appendix 1).

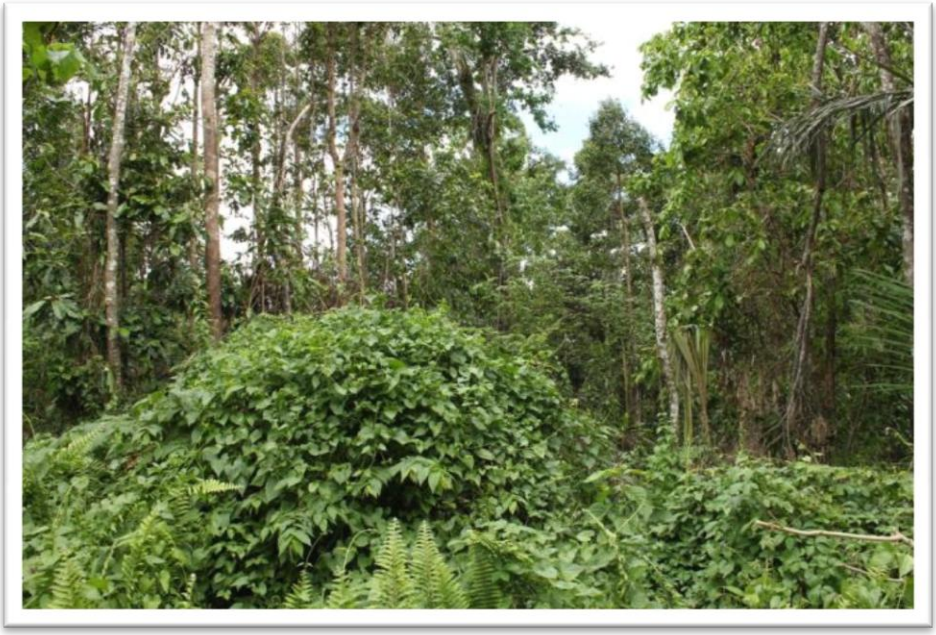

Figure 10: PR115 South block on top of the stockpile. GPS Co-ordinates 0567682; 8841332. Note the open canopy and dense cover of the invasive vine *Mikania micrantha*.

Figure 11: PR115 South block down the slope of the stockpile. GPS Co-ordinates: 0567680; 8841369.

*Table 4: Species found at PR115 South Block**

Species	Classification	Abundance
Arenga listeri	Native	Few
Asplenium nidus	Native	Few
Barringtonia racemosa	Native	Few
Claoxylon indicum	Native	Occasional
Dysoxylum gaudichaudianum	Native	Occasional
Macarnaga tanarius	Native	Common
Maclura cochinchinensis	Native	Common
Melochia umbelifera	Native	Occasional
Ochrosia ackeringae	Native	Occasional
Pandanus elatus	Native	Occasional
Planchonella nitida	Native	Few
Tristiropsis acutangula	Native	Occasional
Nephrolepis bisserata (swordfern)	Opportunistic/weedy native	Common
Schefflera elliptica	Opportunistic/weedy native	Occasional
Leucaena leucocephala (Leucaena)	Weed	Common
Mikania micrantha	Weed	Very common
Psidium gujava(guava)	Weed	Occasional

Site PR 115: South Block: Response to the 10 clearing principles

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Appendix 1: EPBC Act listed threatened species occurring on Christmas Island, and their presence/absence at the sites proposed in this application

Classification	Common Name	*Scientific Name*	Status	PR 107 East	PR 107 West	PR 115 North	PR 115 South
Mammal	Christmas Island Shrew	*Crocidura attenuata trichura*	EN	Not detected, nor likely	Not detected, nor likely	Not detected, nor likely	Not detected, nor likely
Mammal	Christmas Island Pipistrelle	*Pipstrellus murrayi*	CR	Not detected, nor likely	Not detected, nor likely	Not detected, nor likely	Not detected, nor likely
Mammal	Christmas Island Flying Fox	*Pteropus melanotus natalis*	CR	Not detected, visitation unlikely	Not detected, visitation unlikely	Not detected, visitation unlikely	Not detected, visitation unlikely
Bird	Abbott's Booby	*Papasula abbotti*	EN	In local area, but not the site	In local area, but not the site	In local area, but not the site	In local area, but not the site
Bird	Christmas Island frigatebird	*Fregata andrewsi*	EN	Not detected, not suitable habitat	Not detected, not suitable habitat	Not detected, not suitable habitat	Not detected, not suitable habitat
Bird	Christmas Island goshawk	*Accipiter hiogaster natalis*	EN	Not detected, but may fly through	Not detected, but may fly through	Not detected, but may fly through	Not detected, but may fly through
Bird	Christmas Island hawk-owl	*Ninox natalis*	VU	Not detected, but may fly through	Not detected, but may fly through	Not detected, but may fly through	Not detected, but may fly through
Bird	Christmas Island thrush	*Turdus poliocephalus erythropleurus*	EN	Not detected, but may fly through	Seen flying through, but not nesting	Seen flying through, but not nesting	Not detected, but may fly through
Bird	Christmas Island emerald dove	*Chalcophaps indica natalis*	EN	Not detected, but may fly through	Not detected, but may fly through	Not detected, but may fly through	Not detected, but may fly through
Reptile	Christmas Island blind snake	*Ramphotyphlops exocoeti*	VU	Not detected, nor likely	Not detected, nor likely	Not detected, nor likely	Not detected, nor likely
Reptile	Lister's gecko	*Lepidodactylus listeri*	CR	Not detected, nor likely	Not detected, nor likely	Not detected, nor likely	Not detected, nor likely
Reptile	Blue-tailed skink	*Cryptoblepharus egeriae*	CR	Not detected, nor likely	Not detected, nor likely	Not detected, nor likely	Not detected, nor likely
Reptile	Forest skink	*Emoia nativitatis*	CR	Not detected, nor likely	Not detected, nor likely	Not detected, nor likely	Not detected, nor likely
Reptile	Giant Gecko	*Cyrtodactylus sadleiri*	EN	Not detected	Not detected	Not detected	Not detected
Plant	Christmas Island spleenwort	*Asplenium listeri*	CR	Not present	Not present	Not present	Not present
Plant	Fern	*Pneumatopteris truncata*	CR	Not present	Not present	Not present	Not present
Plant	Fern	*Tectaria devexa var minor*	EN	Not present	Not present	Not present	Not present