

## **Application for referral to clear native vegetation - Infrastructure Areas Vegetation Assessment 2025**

Hazard reports have been raised relating to vegetation in close vicinity to Infrastructure. A review was completed and no clearing permit or referral exists over the Infrastructure areas. Of the 5.3244 hectare footprint, half of the area is cleared of native vegetation (Figure 1; Figure 2). The majority of remaining vegetation (<2 hectares) is primarily weed dominated or low environmental value.

The Infrastructure areas of MCI 70/1A and GCI 70/2 were assessed to support a Referral application under section 51DA of the *Environment Protection Act 1986* (Figure 1; Figure 2). This Referral will allow the areas with some native vegetation regrowth within the ESA to be cleared to manage offsets from infrastructure and other safety risks.

A field vegetation assessment was undertaken by Ms Khaliesha Mohamed Amin, assisted by Ms Kate Ryan, of Christmas Island Phosphates' Environment team on 12 February 2025. Ms Amin has extensive experience in botanical surveying, and having grown up on the island, has considerable local knowledge of the flora and fauna.

The vegetation assessments were conducted by ranking the vegetation condition of each site based on the Keighery Condition Scale (Keighery, B.J. 1994), with some allowances and modifications made to accommodate the unique tropical environment on Christmas Island (Table 1). All areas were scored as degraded to completely degraded/cleared of native vegetation. No conservation significant fauna was noted in the groundtruthing.

The following should be noted:

- The areas will not impact upon Abbott's Booby Nests.
  - The nearest Abbotts Booby nest is ~140m away from the Referral Boundary (ROM area) in Primary Rainforest/Closed canopy evergreen forest.
  - The nearest Abbotts Booby nest is ~105m away from the Referral Boundary (Downhill area) in Primary Rainforest/Closed canopy evergreen forest.
  - The nearest Abbotts Booby nest is ~72m away from the Referral Boundary and down the slope (Cross Country area) in undisturbed Semi-deciduous forest.
- Clearing will not occur during red crab migration.
- Robber crabs will be relocated out of the clearing areas (unlikely to be present).
- Where there is native vegetation a Mine Works Permit will be required which requires an assessment for the area to be cleared; conditions are required where by they mitigate specific risks i.e. spotter present.
- Clearing areas will be kept at a minimum, weed dominated areas will be preferenced for clearing and the current Environmental Management Plan will be followed to mitigate impact to the environment including fauna management.

Table 1: Modified Vegetation Condition Score (Keighery, B.J. 1994)

Condition Rating	Keighery Definition	Christmas Island Definition
Pristine (1)	Pristine or nearly so, no obvious signs of disturbance	Mature, undisturbed rainforest or very advanced secondary regrowth. Disturbance is limited to cyclone damage. Climax species dominate and full structural complexity is present with epiphytic orchids and ferns, terrestrial orchids and ferns, <i>Pandanus</i> , palms, buttressing and woody lianes
Excellent (2)	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species	Little to no weed species and a largely intact landform with few signs of disturbance. The vegetation structure is beginning to develop the full complexity and diversity expected in rainforest, with climax species present and a range of features included such as buttressing, palms, ferns, epiphytes and orchids, but the canopy is likely to be more open than in undisturbed rainforest
Very Good (3)	Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing	Low diversity vegetation with few signs of disturbance or moderately diverse vegetation on a disturbed landform, a canopy dominated by pioneer species through recruitment of climax species may be evident, an open canopy or poor structural complexity. Few weeds present or weeds are limited to less aggressive species.
Good (4)	Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing	Multiple signs of disturbance or with low diversity and no structural complexity. Typically displays little to no recruitment of climax tree species. Numerous weeds present or a dense understory dominated by one or two native fern species
Degraded (5)	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing	Vegetation at very early successional stages with a canopy of one to two species and an understory dominated by ferns or weeds, typically adjacent to completely degraded land. May have the potential to develop into better quality vegetation as the canopy develops if weeds are managed
Completely degraded (6)	The structure of the vegetation is no longer intact, and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs	The structures of primary rainforest are no longer present and native species are limited to only a few species, for example weed dominated shrubland with sparse emergent <i>Macaranga</i> or a near monoculture <i>Nephrolepis biserrata</i> fernland. The landscape may be highly disturbed, often with significantly reduced soil and pinnacles exposed. Predominantly lacking a native canopy and with little to no potential to develop one due to dense groundcover of shallow soil
Cleared of Vegetation (7)	-	Areas that are not vegetated either of bare ground or covered by infrastructure. Some weeds may be present.

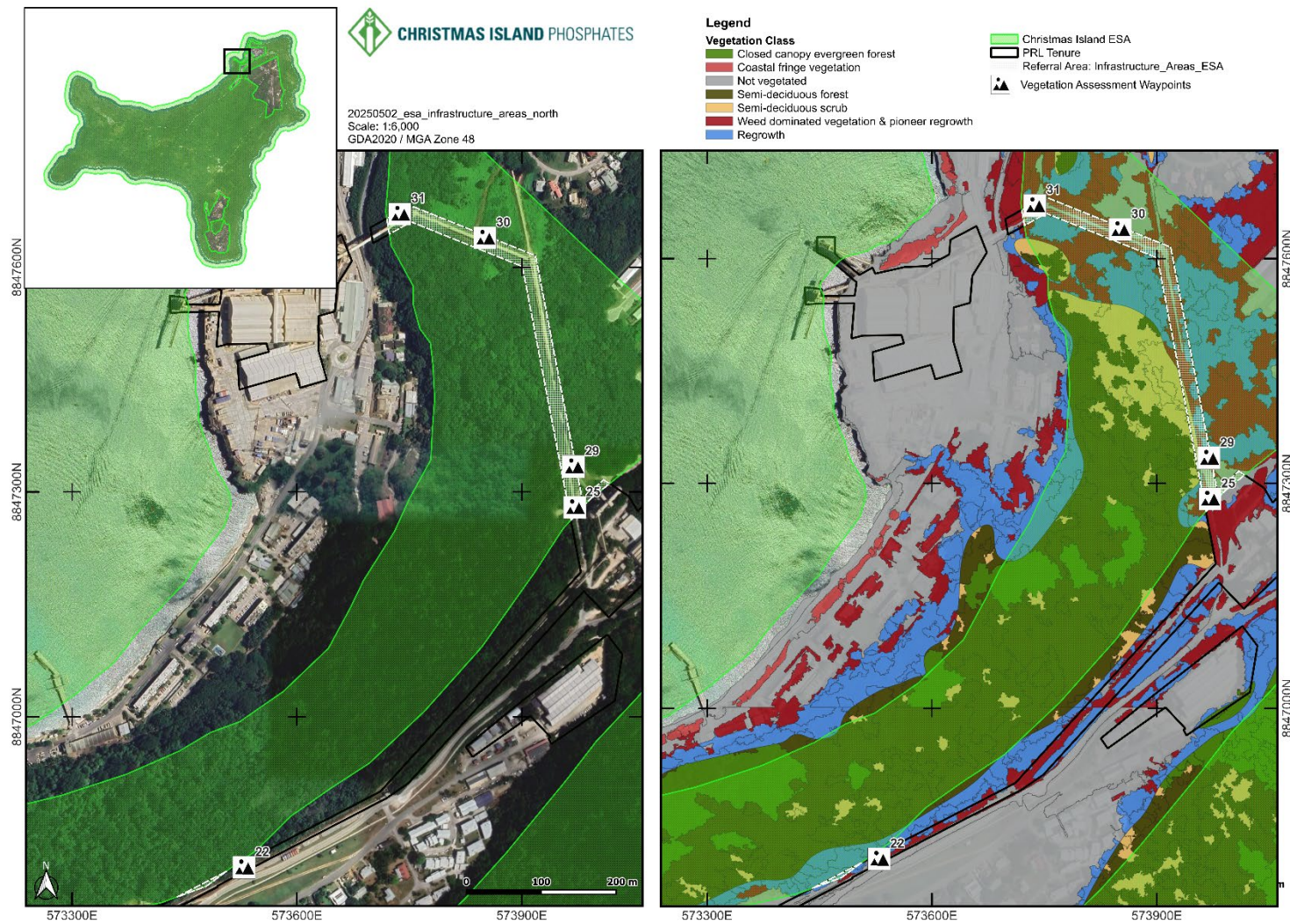


Figure 1: Referral Boundary with Vegetation Mapping (2011) showing Tenure, ESA, Groundtruthing (North)

\*All GPS coordinates are in GDA2020/MGA Zone48



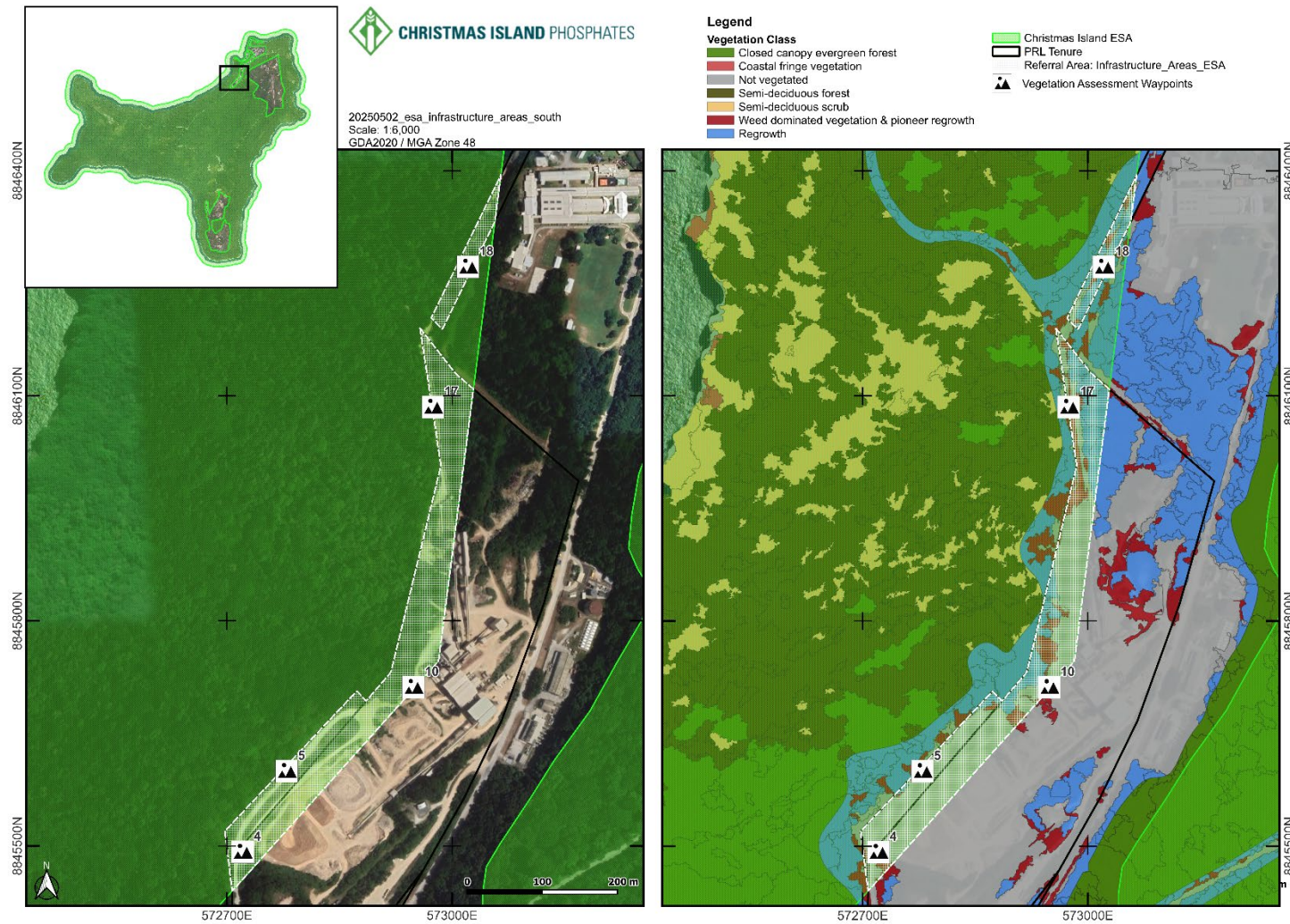
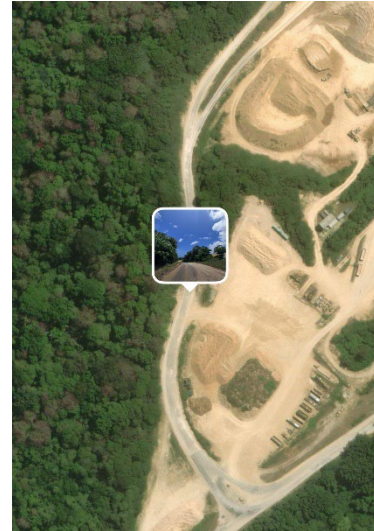


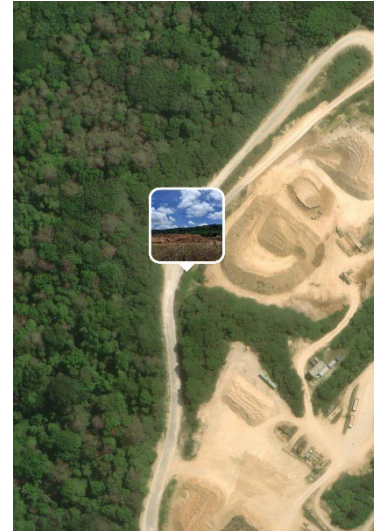
Figure 2: Referral Boundary with Vegetation Mapping (2011) showing Tenure, ESA, Groundtruthing (South)

\*All GPS coordinates are in GDA2020/MGA Zone48

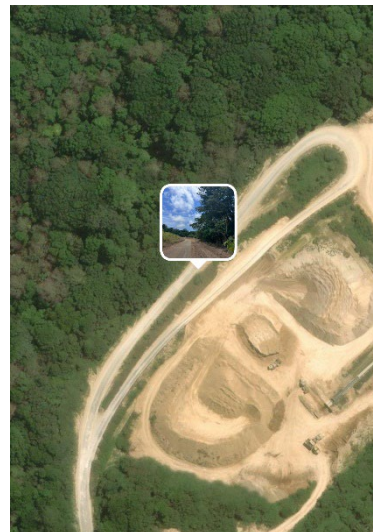


<b>Waypoint Reference</b>	3
<b>Site</b>	ROM
<b>Tenement</b>	MCI 70/1A
<b>GPS Coordinates</b>	N 8845353.6514, E 572712.3482
<b>Photo Direction</b>	344° N
<b>Native Vegetation</b>	<i>Macaranga tanarius</i> <i>Tristiropsis acutangula</i> <i>Arenga listeri</i>
<b>Weed Species</b>	<i>Leucaena leucocephala</i> <i>Musa acuminata</i> <i>Ricinus communis</i> <i>Carica papaya</i> <i>Colocasia esculenta</i> <i>Muntingia calabura</i> Other weed species
<b>Vegetation Rating (1=Pristine, 7=Cleared)</b>	5, 6, 7
<b>ESA</b>	Inside, exemptions do not apply
<b>Notes</b>	Vegetation along road. Road access to Tip-head.

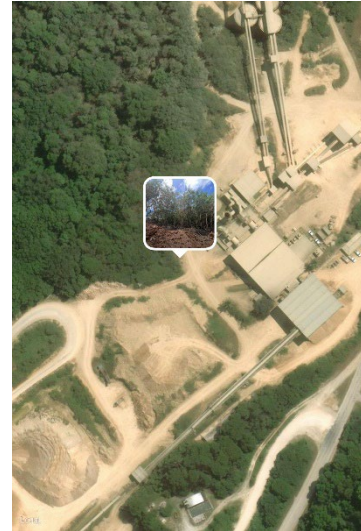




<b>Waypoint Reference</b>	4
<b>Site</b>	ROM
<b>Tenement</b>	MCI 70/1A
<b>GPS Coordinates</b>	N 8845492.0729, E 572720.7307
<b>Photo Direction</b>	68° E
<b>Native Vegetation</b>	-
<b>Weed Species</b>	<i>Muntingia calabura</i> Other weed species
<b>Vegetation Rating (1=Pristine, 7=Cleared)</b>	7
<b>ESA</b>	Inside, exemptions do not apply
<b>Notes</b>	Track / Laydown area. Stockpile of product hauled from mining field. Weed species on windrow.

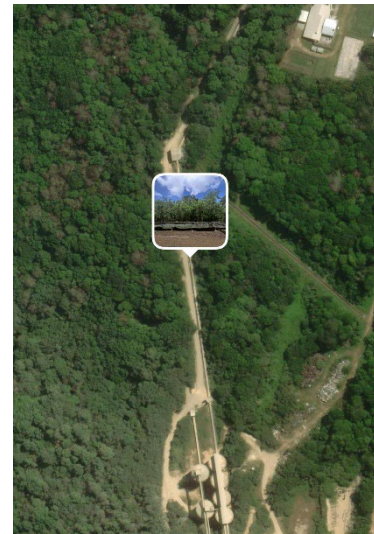


<b>Waypoint Reference</b>	5
<b>Site</b>	ROM
<b>Tenement</b>	GCI 70/2
<b>GPS Coordinates</b>	N 8845599.7664, E 572779.5155
<b>Photo Direction</b>	220° SW
<b>Native Vegetation</b>	<i>Macaranga tanarius</i> <i>Ficus macrocarpa</i>
<b>Weed Species</b>	<i>Leucaena leucocephala</i> <i>Ricinus communis</i> Other weed species
<b>Vegetation Rating (1=Pristine, 7=Cleared)</b>	6, 7
<b>ESA</b>	Inside, exemptions do not apply
<b>Notes</b>	Road exiting Tip-head. Vegetation along track, overhanging Ficus limbs.



<b>Waypoint Reference</b>	10
<b>Site</b>	Dryers
<b>Tenement</b>	MCI 70/1A
<b>GPS Coordinates</b>	N 8845711.7506, E 572948.4177
<b>Photo Direction</b>	292° NW
<b>Native Vegetation</b>	<i>Maclura cochinchinensis</i>
<b>Weed Species</b>	<i>Leucaena leucocephala</i> <i>Muntingia calabura</i> Other weed species
<b>Vegetation Rating (1=Pristine, 7=Cleared)</b>	6, 7
<b>ESA</b>	Inside, exemptions do not apply
<b>Notes</b>	Disturbed - weed dominated. Between reject stockpile and Baghouse.





<b>Waypoint Reference</b>	17
<b>Site</b>	Cross Country Conveyors
<b>Tenement</b>	MCI 70/1A
<b>GPS Coordinates</b>	N 8846085.2137, E 572974.4892
<b>Photo Direction</b>	37° NE
<b>Native Vegetation</b>	<i>Macaranga tanarius</i> <i>Dysoxylum gaudichaudianum</i> <i>Leea angulata</i> <i>Arenga listeri</i> <i>Melochia umbellata</i> <i>Maclura cochinchinensis</i>
<b>Weed Species</b>	<i>Leucaena leucocephala</i> <i>Musa acuminata</i> <i>Muntingia calabura</i> Other weed species
<b>Vegetation Rating (1=Pristine, 7=Cleared)</b>	6, 7
<b>ESA</b>	Inside, exemptions do not apply
<b>Notes</b>	Along PS10 Conveyor. Operational area – Vegetation along track and overhanging limbs.



<b>Waypoint Reference</b>	18
<b>Site</b>	Cross Country Conveyors
<b>Tenement</b>	MCI 70/1A
<b>GPS Coordinates</b>	N 8846271.9901, E 573021.1856
<b>Photo Direction</b>	21° N
<b>Native Vegetation</b>	<i>Inocarpus fagifer</i> <i>Terminalia catappa</i> <i>Maclura cochinchinensis</i> <i>Macaranga tanarius</i> <i>Tristiropsis acutangula</i> <i>Gyrocarpus americanus</i> <i>Ficus microcarpa</i> <i>Barringtonia racemosa</i>
<b>Weed Species</b>	<i>Leucaena leucocephala</i> Other weed species
<b>Vegetation Rating (1=Pristine, 7=Cleared)</b>	5, 7
<b>ESA</b>	Inside, exemptions do not apply
<b>Notes</b>	Along C1 Conveyor (bottom of hill). Operational area – Vegetation along track and overhanging limbs.



<b>Waypoint Reference</b>	25
<b>Site</b>	Downhill
<b>Tenement</b>	MCI 70/1A
<b>GPS Coordinates</b>	N 8847279.3830, E 573970.7220
<b>Photo Direction</b>	20° NE
<b>Native Vegetation</b>	<i>Macaranga tanarius</i>
<b>Weed Species</b>	<i>Muntingia calabura</i> <i>Leucaena leucocephala</i> <i>Delonix regia</i> Other weed species
<b>Vegetation Rating (1=Pristine, 7=Cleared)</b>	6, 7
<b>ESA</b>	Inside, exemptions do not apply
<b>Notes</b>	Incline. Operational area – vegetation along incline and overhanging limbs.

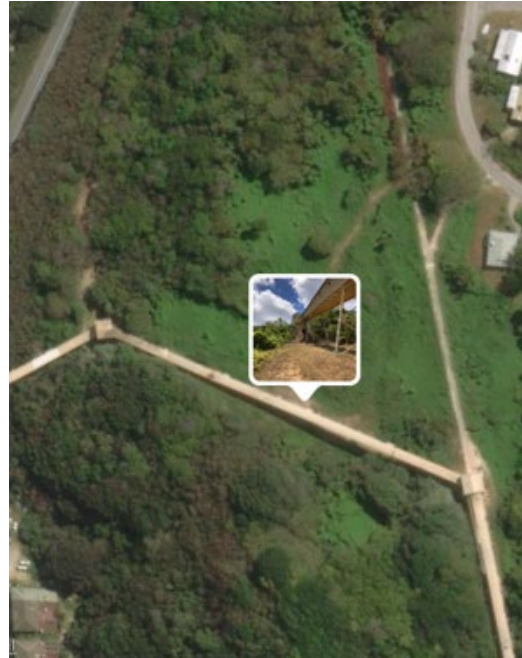




<b>Waypoint Reference</b>	25
<b>Site</b>	Downhill
<b>Tenement</b>	MCI 70/1A
<b>GPS Coordinates</b>	N 8847279.3830, E 573970.7220
<b>Photo Direction</b>	274° W
<b>Native Vegetation</b>	<i>Macaranga tanarius</i> <i>Dysoxylum gaudichaudianum</i>
<b>Weed Species</b>	<i>Delonix regia</i> <i>Muntingia calabura</i> <i>Leucaena leucocephala</i> Other weed species
<b>Vegetation Rating (1=Pristine, 7=Cleared)</b>	7
<b>ESA</b>	Inside, exemptions do not apply
<b>Notes</b>	Parking area outside of lease. Operational area - Parking Area, overhanging limbs.



<b>Waypoint Reference</b>	29
<b>Site</b>	Downhill
<b>Tenement</b>	MCI 70/1A
<b>GPS Coordinates</b>	N 8847333.9822, E 573969.4663
<b>Photo Direction</b>	20° N
<b>Native Vegetation</b>	<i>Gyrocarpus americanus</i> <i>Maclura cochinchinensis</i> <i>Schefflera elliptica</i> <i>Dysoxylum gaudichaudianum</i> <i>Tristiropsis acutangula</i> <i>Tectaria dissecta</i>
<b>Weed Species</b>	<i>Leucaena leucocephala</i> Other weed species
<b>Vegetation Rating (1=Pristine, 7=Cleared)</b>	6, 7
<b>ESA</b>	Inside, exemptions do not apply
<b>Notes</b>	Outside of D10 conveyor. Operational area - vegetation along conveyor.



<b>Waypoint Reference</b>	30
<b>Site</b>	Downhill - D11
<b>Tenement</b>	MCI 70/1A
<b>GPS Coordinates</b>	N 8847639.0677, E 573850.9666
<b>Photo Direction</b>	110° E
<b>Native Vegetation</b>	<i>Maclura cochinchinensis</i> <i>Schefflera elliptica</i> <i>Ficus microcarpa</i>
<b>Weed Species</b>	<i>Leucaena leucocephala</i> <i>Antigonon leptopus</i> <i>Manihot esculenta</i> <i>Carica papaya</i> Other weed species
<b>Vegetation Rating (1=Pristine, 7=Cleared)</b>	6, 7
<b>ESA</b>	Inside, exemptions do not apply
<b>Notes</b>	Operational area - largely cleared or weeds with overhanging native limbs.





<b>Waypoint Reference</b>	31
<b>Site</b>	Downhill-D12
<b>Tenement</b>	MCI 70/1A
<b>GPS Coordinates</b>	N 8847671.0644, E 573737.4897
<b>Photo Direction</b>	230° SW
<b>Native Vegetation</b>	<i>Macaranga tanarius</i> <i>Maclura cochinchinensis</i> <i>Schefflera elliptica</i>
<b>Weed Species</b>	<i>Leucaena leucocephala</i> <i>Muntingia calabura</i> <i>Delonix regia</i> <i>Musa acuminata</i> <i>Manihot esculenta</i> Other weed species
<b>Vegetation Rating (1=Pristine, 7=Cleared)</b>	5, 6
<b>ESA</b>	Inside, exemptions do not apply
<b>Notes</b>	Operational area – weed dominated.