Australian Government

Department of Infrastructure and Regional Development

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986 (WA)(CI)

Purpose Permit number:	C P S 6 3 2 3 / 1
Permit Holder:	Phosphate Resources Limited trading as Christmas Island Phosphates
Duration of Permit:	23 July 2015 - 31 December 2024

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. **Purpose for which clearing may be done**
   Clearing for the purpose of phosphate mining.

2. **Land on which clearing is to be done**
   Mining Tenement MCI 70/1A

3. **Area of Clearing**
   The Permit Holder must not clear more than 128.53 hectares of native vegetation within the combined areas hatched yellow on attached Plan 6323/1a, Plan 6323/1b, Plan 6323/1c, Plan 6323/1d and Plan 6323/1e.

4. **Application**
   This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

PART II – MANAGEMENT CONDITIONS

5. **Avoid, minimise etc clearing**
   In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:
   (a) avoid the clearing of native vegetation;
   (b) minimise the amount of native vegetation to be cleared; and
   (c) reduce the impact of clearing on any environmental value.

6. **Weed control**

(a) When undertaking any clearing, or other activity pursuant to this permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of weeds:

a. clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

b. ensure that no *weed*-affected *mulch*, *fill* or other material is brought into the area to be cleared; and

c. restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

(b) Weed management activities will be undertaken by the Permit Holder in accordance with a Weed Management Plan approved by the General Manager responsible for Territories Department of Infrastructure and Regional Development. This plan is to be developed by the Permit Holder within 12 months of this permit being granted.

(c) At least once in each 3 month period prior to the Weed Management Plan required in condition 6(b) being approved, the Permit Holder must remove or kill any weeds growing within areas cleared under this permit.

7. **Fauna management**

The Permit Holder must implement and adhere to the document 'A Management Plan for the Christmas Island Pipistrelle in relation to Vegetation Clearing on Mining Leases, May 2015'.

8. **Buffers to national park**

A minimum buffer distance of five metres to Christmas Island National Park must be maintained.

9. **Rehabilitation**

The Permit Holder shall notify the General Manager having responsibility for the Indian Ocean Territories, Department of Infrastructure and Regional Development, Australian Government within one month after the completion of phosphate mining activities within each lease area.

PART III - RECORD KEEPING AND REPORTING

10. **Records must be kept**

The Permit Holder must maintain the following records in relation to the clearing of native vegetation authorised under this Permit:

(a) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;

(b) the date that the area was cleared; and

(c) the size of the area cleared (in hectares).

11. **Reporting**

(a) The Permit Holder must provide to the CEO, of the Department of Environment Regulation, on or before 30 June of each year, a written report:

(i) of records required under condition 10 of this Permit; and

(ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.

(b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing

under this permit has been carried out, must be provided to the CEO, of the Department of Environment Regulation, on or before 30 June of each year.

(c) Prior to 13 March 2024, the Permit Holder must provide to the CEO, of the Department of Environment Regulation, a written report of records required under condition 10 of this Permit where these records have not already been provided under condition 11(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation; and

weed/s means any plant -

(a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
(b) published in a Department of Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
(c) not indigenous to the area concerned.

Karly Pidgeon
General Manager
Jervis Bay and Indian Ocean Territories Branch

Delegate under Section 51 of the *Environmental Protection Act 1986 (WA) (CI)*

23 June 2015

Plan 6323/1a

Legend

Areas approved to clear

Roads

Cadastre

Virtual Mosaic

N

1:14,433

MGA 94
Geocentric Datum of Australia 1994

Date 23/6/15

Officer with delegated authority under Section 20
of the Environmental Protection Act 1986

GOVERNMENT OF
WESTERN AUSTRALIA

Plan 6323/1b

Legend

Areas approved to clear

Roads

Cadastre

Virtual Mosaic

N

1:14,420

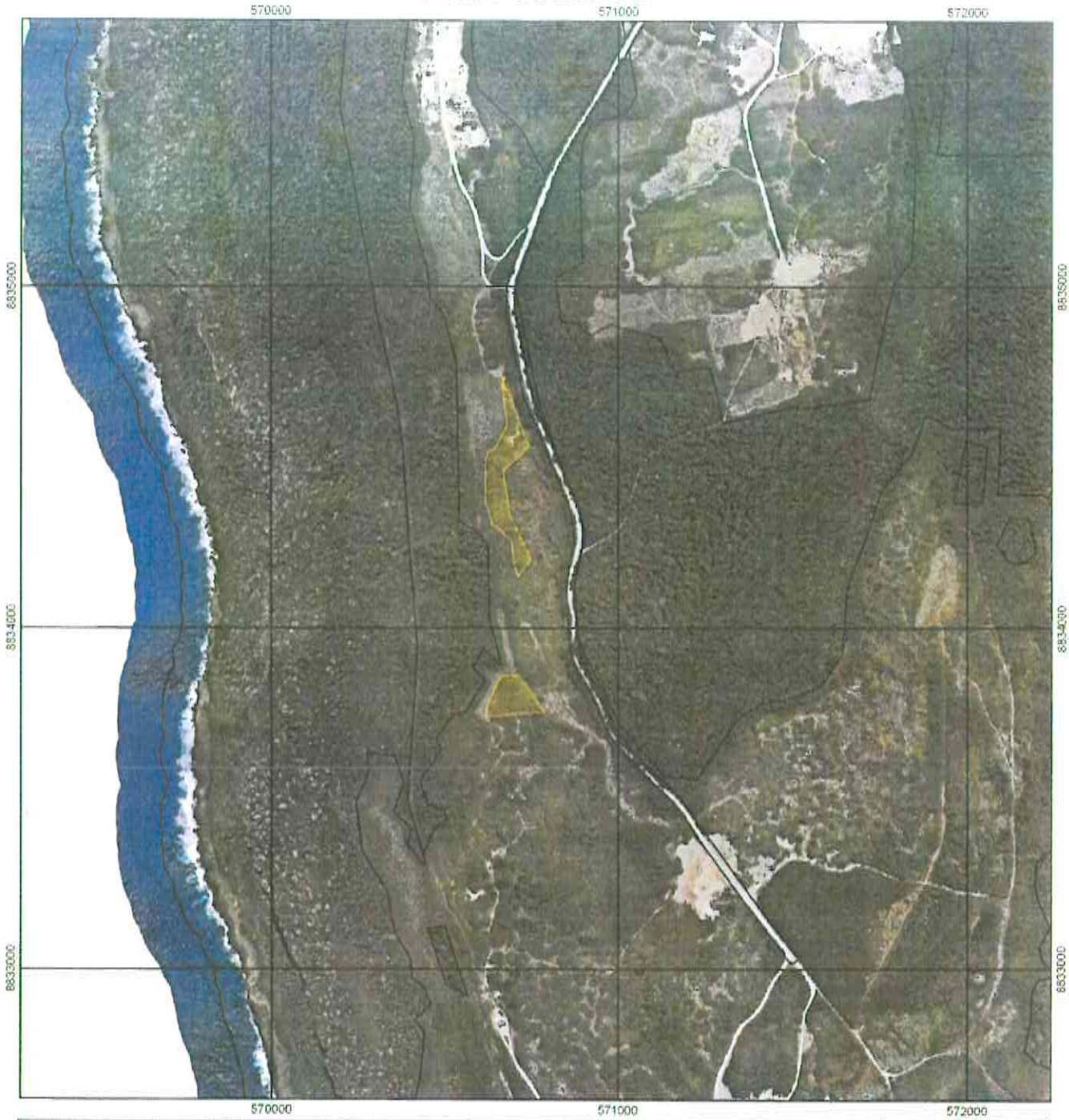
MGA 94
Geocentric Datum of Australia 1994

Date 23/6/15

Officer with delegated authority under Section 20
of the Environmental Protection Act 1986

GOVERNMENT OF
WESTERN AUSTRALIA

Plan 6323/1c



Legend

Areas approved to clear

Roads

Cadastre

Virtual Mosaic

N

1:14,415

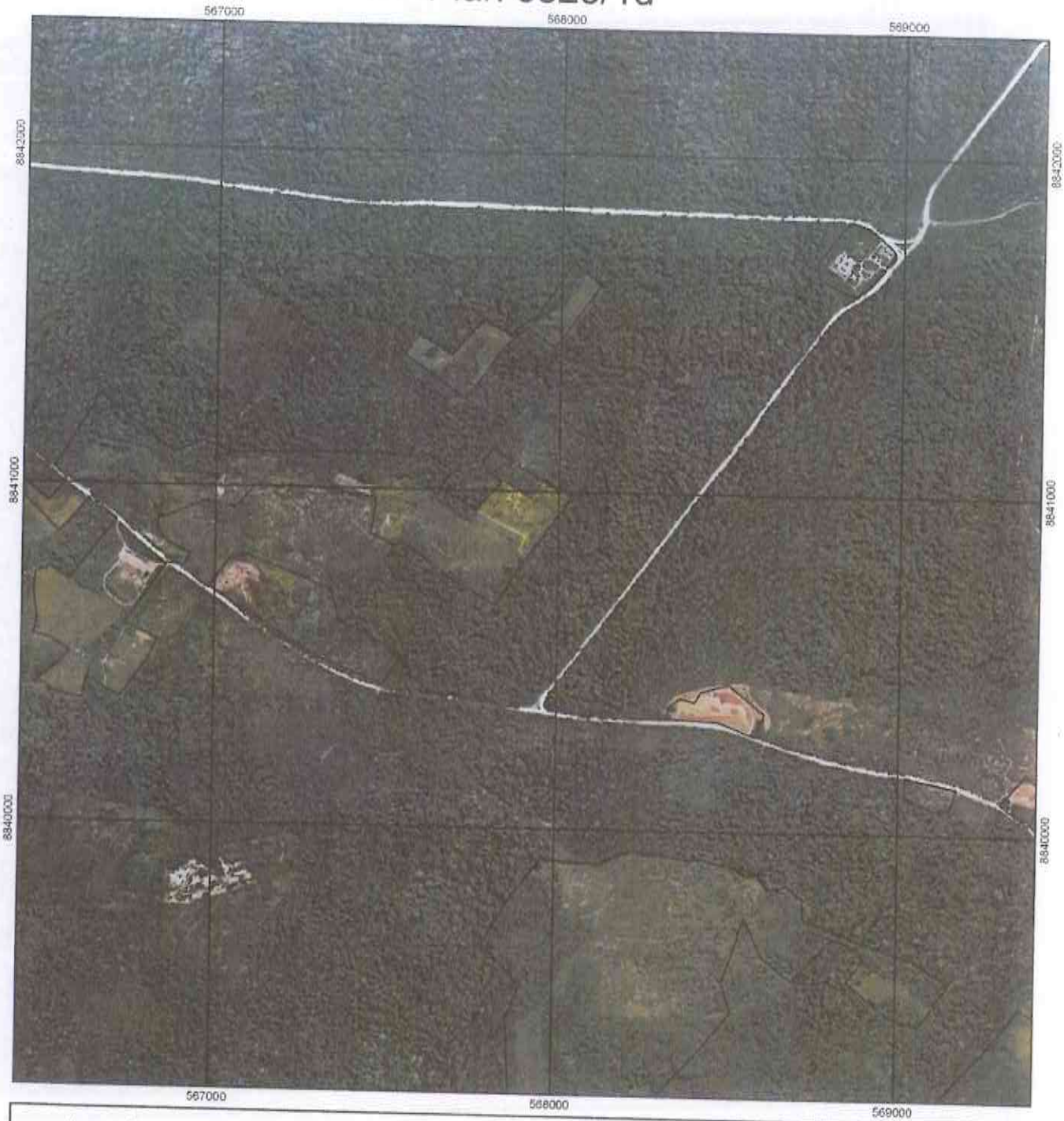
MGA 94
Geocentric Datum of Australia 1994

Date 23/6/15

Officer with delegated authority under Section 20
of the Environmental Protection Act 1986

GOVERNMENT OF
WESTERN AUSTRALIA

Plan 6323/1d



Legend

Areas approved to clear

Roads

Cadastre

Virtual Mosaic

N

1:14,426

MGA 94
Geocentric Datum of Australia 1994

Date 23/6/15

Officer with delegated authority under Section 20
of the Environmental Protection Act 1986

GOVERNMENT OF
WESTERN AUSTRALIA

Plan 6323/1e

Legend

Areas approved to clear

Roads

Cadastre

Virtual Mosaic

N

1:14,427

MGA 94
Geocentric Datum of Australia 1994

Date 23/6/15

Officer with delegated authority under Section 20
of the Environmental Protection Act 1986

GOVERNMENT OF
WESTERN AUSTRALIA

Government of Western Australia
Department of Environment Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6323/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Phosphate Resources Limited

1.3. Property details

Property:
LOT 598 ON PLAN 37939, CHRISTMAS ISLAND
LOT 551 ON PLAN 221135, CHRISTMAS ISLAND
LOT 523 ON PLAN 220459, CHRISTMAS ISLAND
LOT 522 ON PLAN 194415, CHRISTMAS ISLAND
LOT 3021 ON PLAN 43318, CHRISTMAS ISLAND
LOT 281 ON PLAN 243086, CHRISTMAS ISLAND
LOT 280 ON PLAN 243086, CHRISTMAS ISLAND
UNALLOCATED CROWN LAND, CHRISTMAS ISLAND
ROAD RESERVE - 11184452, CHRISTMAS ISLAND
ROAD RESERVE - 11485185, CHRISTMAS ISLAND
ROAD RESERVE - 11485184, CHRISTMAS ISLAND
ROAD RESERVE - 11485186, CHRISTMAS ISLAND
ROAD RESERVE - 1167302, CHRISTMAS ISLAND
ROAD RESERVE - 11831920, CHRISTMAS ISLAND

Colloquial name: Mining Tenement MCI 70/1A
Local Government Authority: Shire of Christmas Island

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
128.53		Mechanical Removal	Extractive industry

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 23 June 2015

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
All of the areas under application have previously cleared for mining and now consist of regrowth vegetation. The proposed clearing areas were surveyed by Range to Reef Environmental (2014) and a total of 75 flora species from 52 families were recorded, this included 53 native species (three endemic) and 22 introduced species. The native flora taxa recorded included the endemic species; Hoya aldrichii, Arenga listeria and Pandanus elatus (Range to Reef Environmental, 2014).	The application is to clear 128.53 hectares of native vegetation over 22 sites within Mining Lease MCI 70/1A, Christmas Island.	Pristine; No obvious signs of disturbance (Keighery, 1994).	The condition of the vegetation was determined via supporting information provided by Range to Reef Environmental (2014) and aerial imagery.

3. Assessment of application against clearing principles

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

Comments

Proposal is not likely to be at variance to this Principle

The application is to clear 128.53 hectares of native vegetation over 23 sites within Mining Lease MCI 70/1A. The sites range in size from 0.32 hectares up to 31.5 hectares.

All of the 23 sites under application have been previously cleared and contain regrowth vegetation. Some areas contain regrowth up to 30 years old. The condition of the vegetation ranges from completely degraded to pristine (Keighery, 1994). The majority of the sites are in a degraded condition. Only one of the sites (106-MB14) contains a small pocket of vegetation in pristine condition. This small pocket is possibly remnant primary rainforest and is very well developed, with buttressed trees to 45 metres, complex life forms and contains no significant weeds (Range to Reef Environmental, 2014).

Christmas Island is home to 237 native plant species, including 17 endemic species which are not found anywhere else in the world. Approximately half of the islands plants are not found anywhere else in Australia (DotE, 2015a).

The proposed clearing areas were surveyed by Range to Reef Environmental (2014) and a total of 75 flora species from 52 families were recorded, this included 53 native species (three endemic) and 23 introduced species. The native flora taxa recorded included the endemic species; Hoya aldrichii, Arenga listeria and Pandanus elatus (Range to Reef Environmental, 2014). Arenga listeria and Pandanus elatus were reported to be common throughout the surveyed areas (Range to Reef Environmental, 2014).

No priority flora species are listed for Christmas Island.

Christmas Island is home to three flora species listed as Threatened under the Environment Protection Biodiversity Conservation Act 1999. There three species are Asplenium listeri (Christmas Island Spleenwort), Tectaria devexa var. minor and Pneumatopteris truncate. The areas under application were surveyed by Range to Reef Environmental and no rare flora was identified (Range to Reef Environmental, 2014).

No state or federally listed priority or threatened ecological communities are located on Christmas Island.

The areas under application were surveyed by Range to Reef Environmental (2014) and seven fauna species were identified, being; Robber Crabs (Birgus latro), Red Crabs (Gecarcoidea natalis), Abbott's Booby (Papasula abbotti), Christmas Island White Eye (Zosterops natalis), Christmas Island Thrush (Turdus poliocephalus erythropleurus), Christmas Island Imperial Pigeon (Ducula whartoni) and Christmas Island Emerald Dove (Chalcophaps indica natalis). The majority of these species are wide spread and highly mobile. Abbott's Booby nests have been recorded in close proximity to a couple of the clearing sites, however it is not expected that the proposed clearing will negatively impact any of these nest site through increase wind turbulence.

All of the areas under application have been previously cleared for mining and the majority of the sites are in a degraded condition. Approximately 75 per cent of Christmas Island is covered with native vegetation and 54 per cent of this (63 per cent of the island) is National park. Considering this, the areas under application are not considered to contain a high level of biodiversity when viewed in a local context.

The proposed clearing is not likely to be at variance to this principle.

Methodology

DotE (2015a)
Keighery (1994)
Range to Reef Environmental (2014)

(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.

Comments

Proposal is at variance to this Principle

The areas under application were surveyed by Range to Reef Environmental (2014) and seven fauna species were identified, being; Robber Crabs (Birgus latro), Red Crabs (Gecarcoidea natalis), Abbott's Booby (Papasula abbotti), Christmas Island White Eye (Zosterops natalis), Christmas Island Thrush (Turdus poliocephalus erythropleurus), Christmas Island Imperial Pigeon (Ducula whartoni) and Christmas Island Emerald Dove (Chalcophaps indica natalis).

Robber Crabs (Birgus latro) are found on most parts of Christmas Island, from the shore terrace to the highest plateau areas (Parks Australia, 2015). In 1981 this species was listed as vulnerable under the International Union for Conservation of Nature (IUCN) Red List. In 1996 their status was changed to 'data deficient'. Populations continue to decline as a result of harvesting for food, habitat loss, interaction with humans and the impact of introduced predators (Orchard, 2015).

The Robber Crabs are habitat generalists and all areas of previously uncleared rainforest are considered critical to this species. Although it is likely that this species will be present in the areas under application it is unlikely that the areas under application provide significant habitat given that they have been previously

cleared.

Red Crabs (Gecarcoidea natalis) are most common in the moist environment of the rainforest, however also inhibit a variety of other habitats including limestone pinnacle areas on the coastal shore terraces and domestic gardens. The only habitat they are not found in are the areas cleared of rainforest and stripped of soil for phosphate mining. Current estimates of population size are about 50-60 million (Orchard, 2015). The majority of sites proposed to be cleared are not located in areas where high densities of red crabs have been identified. Proposed clearing area 140-MB3 is located in close proximity of an area of crab density however this site is dominated by weeds and is not thought to be significant habitat for this species.

Christmas Island White Eye (Zosterops natalis) is endemic to Christmas Island and occupies all forested habitats on the island. This species used to be confined to Christmas Island, however has now been introduced to Cocos Keeling Islands (DotE, 2015c). The Christmas Island White Eye is not listed as threatened under State legislation, nor is it listed under the Environment Protection Biodiversity Conservation Act 1999.

Christmas Island Thrush (Turdus poliocephalus erythropleurus) is listed as Endangered under the EPBC Act. This species is confined to Christmas Island, where it is considered to be widespread. The extent of occurrence is estimated to be 137 kilometres squared (DotE, 2015d).

Christmas Island Imperial Pigeon (Ducula whartoni) is mainly found on the inland plateau of Christmas Island in rainforest and to some extent, in secondary regrowth dominated by the introduced Japanese Cherry (Muntingia calabura). It nests in the top of rainforest trees and other dense vegetation, and feeds in the canopy on fruits, as well as buds and leaves (DotE, 2015e). This species is not listed as threatened under State legislation, nor is it listed under the EPBC Act.

Christmas Island Emerald Dove (Chalcophaps indica natalis) is confined to Christmas Island, where it is widespread and common in areas of rainforests. The extent of occurrence is estimated to be 137 kilometres squared (DotE, 2015f). This species is endemic to Christmas Island and is listed as Endangered under the EPBC Act.

The Christmas Island White Eye, Christmas Island Thrush, Christmas Island Imperial Pigeon and Christmas Island Emerald Dove are widespread and highly mobile and therefore the proposed clearing is not likely to significantly impact upon these species. In addition, approximately 63 per cent of the island is National Park which provides better quality habitat for these species.

Abbott's Booby (Papasula abbotti) is a large, long lived seabird, with the only known extant nesting colony on Christmas Island. Abbott's Booby is listed as Endangered under the Environment Protection and Biodiversity Conservation Act 1999 and is listed as Critically Endangered under the IUCN Red List. Most recent surveys have estimated the population to be 2500 pairs. On Christmas Island most nests are situated on the central and western areas, in tall plateau forest. Abbott's Booby prefers nest sites on the lee side of slopes and gullies, with a clear area below and immediately downwind to facilitate take-off and landing.

Southeast trade winds prevail between April and November. Wind tunnel experiments have demonstrated that clearing forest increases turbulence in the canopy (Brett, 1989 in Boland et al. 2012), lowering fidelity, and increasing adult mortality of Abbott's Booby nesting in surrounding areas (Reville et al. 1990 in Boland et al. 2012). Studies have shown that birds nesting within 300 metres of the areas cleared for mining activities suffered lower breeding success and increased mortality because of greater wind turbulence (Reville et al. 1990 and Brett, 1989 in Boland et al. 2012).

No Abbott's Booby nest sites were located within any of the sites proposed to be cleared. The closest recorded Abbott's Booby nests were located 24 and 63 metres east of site 106-MB11. The clearing of this site is unlikely to significantly impact these nests given that they are located downwind of the proposed clearing. There is also a road separating the area under application (106-MB11) and these two nests.

Abbott's Booby nests have also been recorded within 300 metres of clearing site 140-MB3, with the closest being approximately 135 metres west. The vegetation at this site is dominated by mixed weeds and pioneer species less than five metres in height (Range to Reef Environmental, 2014). The area has been heavily disturbed by previous mining activities which has left a pit (approximately 10 metres) in the area proposed to be cleared. Due to the condition of the vegetation and the topography of the site this area is unlikely to negatively impact upon Abbott's Booby if it was to be cleared.

The Christmas Island Pipistrelle (Pipistrellus murrayi) is an endemic bat species that is listed as Endangered under the Environment Protection and Biodiversity Conservation Act 1999. This species is however thought to be extinct. The pipistrelle roosts in primary rainforest in a variety of situations, including under exfoliating bark on trunks, under dead fronds, beneath a Strangler Fig against the trunk of a canopy tree and in a tree hollow (DotE, 2015e). The last observations of this species were on the western portion of the island. The applicant has provided a management plan (Richards, 2015) for this species to ensure the proposed clearing does not impact on any remaining individuals.

Given the above, the proposed clearing is not likely to be at variance to this clearing principle.

Methodology Boland et al. (2012)
DotE (2015c)
DotE (2015d)
DotE (2015e)

DotE (2015f)
DotE (2015g)
Orchard (2015)
Parks Australia (2015)
Range to Reef Environmental (2014)
Richards (2015)

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

Comments

Proposal is not likely to be at variance to this Principle

Christmas Island is home to three species listed as Threatened under the Environment Protection Biodiversity Conservation Act 1999. These three species are Asplenium listeri (Christmas Island Spleenwort), Tectaria devexa var. minor and Pneumatopteris truncata.

Asplenium listeri (Christmas Island Spleenwort) is a fern endemic to Christmas Island, where it is known from a very small number of localities growing among rocks and on cliffs of exposed limestone outcrops (Butz M, 2004a).

Tectaria devexa var. minor is described as growing in shaded positions in the primary rainforest on the plateau, usually in areas of deep soil, where it may be the only forest floor species (Butz M, 2004b).

Pneumatopteris truncata grows colonially on permanently moist sites, in marginal rainforest and in shaded areas, between 50 and 140 metres above sea-level (DotE, 2015b).

Two Tectaria devexa var. minor populations were identified within approximately 300 metres of two of the proposed clearing sites (100-SPWMB2 and 100-SPWMB3). However, suitable habitat for this species was not identified within the areas proposed to be cleared (Range to Reef Environmental, 2014).

All areas under application were surveyed by Range to Reef Environmental and no rare flora was identified (Range to Reef Environmental, 2014).

The proposed clearing is not likely to be at variance to this principle.

Methodology

Butz (2004a)
Butz (2004b)
DotE (2015b)
Range to Reef Environmental (2014)

(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.

Comments

Proposal is not at variance to this Principle

No threatened ecological communities have been recorded on Christmas Island.

Therefore, the propose clearing is not at variance to this principle.

Methodology

(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.

Comments

Proposal is not at variance to this Principle

Christmas Island retains approximately 75 per cent native vegetation, of which 84 per cent (63 per cent of total island area) is protected as National Park.

The areas under application have previously been cleared for mining activities and are therefore not considered to be significant remnants.

Given the above, the area under application is not considered to be a significant remnant in an area that has been extensively cleared.

The proposed clearing is not at variance to this principle

Methodology

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

Comments

Proposal is not at variance to this Principle

The proposed clearing is not growing in or associated with a watercourse or wetland.

Perennial surface water features on Christmas Island are limited to spring fed streams on coastal or sloping areas of the island. All of the proposed clearing areas are situated on the plateau and not within wetland areas (Range to Reef Environmental, 2014).

The closest mapped wetland area isThe Dales Ramsar Site. The Dales Ramsar site is located entirely within the Christmas Island National Park, in the west of the island. The Dales Ramsar site comprises a system of seven watercourses collectively known as "The Dales. The Dales contain a high level of biodiversity, supporting a variety of wetland species, communities and habitats including marine, terrestrial and freshwater dependent species.

A buffer of 20 metres will be retained around this Ramsar Site to protect the site from negative impacts associated with the proposed clearing.

The proposed clearing is not at variance to this principle.

Methodology Range to Reef Environmental (2014)

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

Comments

Proposal is not likely to be at variance to this Principle

Christmas Island has a high annual rainfall of approximately 2000 millimetres per year. Despite this, the island has very little in the way of natural running water (GHD, 2007). Approximately 70 per cent of the rainfall is taken up by the island's plants and the remaining infiltrates through the soil to recharge the groundwater. The soil and underlying limestone rock is very porous and there is very little runoff except during torrential wet season downpours (GHD, 2007). Therefore the proposed clearing is not likely to cause appreciable land degradation in the form of water erosion.

The majority of the sites will be buffered by vegetated areas which will decrease the risk of wind erosion.

Due to the porus nature of the soils on Christmas Island waterlogging is unlikely to result from the proposed clearing.

Christmas Island retains approximately 75 per cent native vegetation and therefore the clearing of 128.53 hectares of vegetation over 23 sites will not result in an increase in groundwater salinity.

The proposed clearing is not likely to be at variance to this principle.

Methodology GHD (2007)

(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.

Comments

Proposal is not likely to be at variance to this Principle

Christmas Island retains approximately 75 per cent native vegetation, of which 84 per cent (63 per cent of total island area) is protected as National Park. The majority of the National Park is uncleared primary rainforest.

The environmental values of the National Park will be protected by a minimum buffer of five metre. The applicant has advised that it is standard practice to retain at least a five metre buffer to National Park to allow for human and GPS error.

In the majority of cases mining lease boundaries have been established approximately 10-15 metres in from areas that have been previously cleared for historical mining operations, resulting in mining lease being surrounded by regrowth vegetation. Therefore, when a five metre buffer from the mine lease is established there is generally a 20 metre buffer to areas of closed canopy evergreen forest.

One of the areas proposed to be cleared is surrounded by The Dales Ramsar Site. The Dales were listed as a Ramsar site in 2002. This site is located entirely within Christmas Island National Park. One of the main threats to The Dales is groundwater extraction which will result in a decrease in flow and loss of permanent surface water. Phosphate mining on Christmas Island does not intercept groundwater (Range to Reef Environmental, 2014) and therefore this threat is negligible.

The proposed clearing site which is surrounded by The Dales was previously cleared and mined between 1982 and 1987. The site is currently covered by weedy regrowth to a maximum height of 15 metres (Range to Reef Environmental, 2014). The applicant has proposed a 20 metre buffer to this site around the majority of the site.

This buffer will be sufficient to minimise impacts to the environmental values of the adjacent national park. An access road is proposed along the south eastern edge of the site and a five metre buffer will be retained here. The area adjacent to the south eastern edge has been previously cleared for mining and contains weed dominated vegetation and pinnacle field. Therefore a five metre buffer in this location is sufficient.

The majority of weeds on Christmas Island cannot survive in primary rainforest mainly due to low light and consumption by crabs. Potential plant invaders of intact rainforest must process two key traits: the ability to establish and grow under heavy shade, and the ability of both seeds and seedlings to tolerate, evade, or resist consumption by red crabs (Green et al, 2003). The majority of weeds on Christmas Island do not have these key traits are therefore unable to penetrate primary rainforest.

Weed management practices, including the requirement to develop a weed management plan, and adequate buffers should be sufficient to ensure that the environmental values of the above-mentioned conservation areas are not compromised.

The proposed clearing is not likely to be at variance to this principle.

Methodology Green et al. (2003)
Range to Reef Environmental (2014)

(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.

Comments

Proposal is not likely to be at variance to this Principle
The proposed clearing is not growing in or associated with a watercourse or wetland.

Due to high infiltration rates on Christmas Island, erosion and sedimentation is generally localised to compacted areas such as roads and stockpiles (Range to Reef Environmental, 2014). Therefore, the proposed clearing is not likely to cause deterioration in the quality of surface water.

Christmas Island retains approximately 75 per cent native vegetation and therefore the clearing of 128.53 hectares of vegetation over 23 sites will not result in an increase in groundwater salinity.

The proposed clearing is not likely to be at variance to this principle.

Methodology Range to Reef Environmental (2014)

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

Comments

Proposal is not at variance to this Principle
The proposed clearing will not increase the incidence or intensity of flooding due to the porous nature of the soils and the underlying rock structures on Christmas Island.

The proposed clearing is not at variance to this principle.

Methodology

Planning instruments and other relevant matters.

Comments All of the areas under application are contained within Mining Tenement MCI 70/1A. On June 2013, the tenure of MCI 70/1A was renewed until 2034.

The initial application was for 132.52 hectares of native vegetation and included an area of vegetation that was located within 300 metres, downwind of Abbott's Booby nests. The applicant was advised that this clearing was inconsistent with the recovery plan for Abbott's Booby and was therefore not supported. The applicant consequently amended the application to remove this area from the application.

The rehabilitation of former mining area is undertaken as part of the Christmas Island Minesite to Forest Rehabilitation Program. The program is funded by a conservation levy ($2.40 per tonne exported) paid to the Territory Administration by Phosphate Resources Limited as a provision on MCI 70/1.

Methodology

4. References

Boland C.R.J., Smith M.J, Maple D, Tiernan B and Napier F. (2012) An island-wide survey of Abbott's Booby Papasula Abbotti occupancy on Christmas Island, Indian Ocean.

Butz M. 2004a. National Recovery Plan for the Christmas Island Spleenwort *Asplenium listeri*. Commonwealth of Australia, Canberra, ACT.

Butz M. 2004b. National Recovery Plan for *Tectaria devexa*. Department of the Environment and Heritage, Canberra.

DotE (2015a). **Error! Hyperlink reference not valid.**(Accessed 4 March 2015)

DotE (2015b) *Pneumatopteris truncata*http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=68812 (Accessed 4 March 2015)

DotE (2015c) Advice to the Minister for the Environment and Heritage from the Threatened Species

Scientific Committee (TSSC) on Amendments to the list of Threatened Species under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) http://www.environment.gov.au/system/files/pages/5c9ac91c-ecee-443c-9cbf-646efcd4054a/files/zosterops-natalis.pdf (Accessed 6 March 2015)

DotE (2015d) Turdus poliocephalus erythropleurus – Island Thrush (Christmas Island) http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=67122 (Accessed 6 March 2015)

DotE (2015e) Advice to the Minister for the Environment and Heritage from the Threatened Species Scientific Committee (TSSC) on Amendments to the list of Threatened Species under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). http://www.environment.gov.au/system/files/pages/a6dd37a5-080c-4751-ae71-8109ff9adaba/files/ducula-whartoni.pdf(Accessed 6 March 2015)

DotE (2015f) Chalcophaps indica natalis – Emerald Dove (Christmas Island), **Error! Hyperlink reference not valid.** (Accessed 6 March 2015)

DotE (2015g) National Recovery Plan for the *Pipistrellus murrayi* http://www.environment.gov.au/system/files/resources/f9485789-8819-4c96-8f29-a4727c1d8897/files/pipistrelle-murrayi.pdf (Accessed 20 March 2015).

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