



## 1. Application details

### 1.1. Permit application details

Permit application No.: 2380/1  
 Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Phosphate Resources Limited

### 1.3. Property details

Property: UNALLOCATED CROWN LAND ( CHRISTMAS ISLAND 6798)  
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Local Government Area: Shire Of Christmas Island

Colloquial name:

### 1.4. Application

|                    |           |                    |                     |
|--------------------|-----------|--------------------|---------------------|
| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
| 24.408             |           | Mechanical Removal | Mineral Exploration |

## 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                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <p>Christmas Island can be viewed as a series of terraces around an irregular plateau with the lower terrace cliffs steeper and higher than the upper terraces. The deepest soils occur on the central plateau and the upper terraces. The distribution of plants can be correlated to soil depth and moisture, exposure and distance from the sea (Environment Australia 2002).</p> <p>Mining fields are typically limestone pinnacles, boulders, chalk and very thin soils remain after mining. These thin soils support the ferns <i>Nephrolepis multiflora</i> and <i>Psilotum nudum</i> and the exotics <i>Mimosa invisa</i>, <i>M. pudica</i> and <i>Muntingia calabura</i>. Stockpiles of topsoil are colonised by <i>Claoxylon indicum</i>, <i>Macaranga tanarius</i>, <i>Melochia umbellata</i> and the exotics, <i>Leucaena leucocephala</i> and <i>Muntingia calabura</i>.</p> | <p>There are two main mining leases areas proposed to be cleared for the purpose of phosphate mining being ML 127 and ML 133A.</p> <p>The forest is comprised predominantly of regenerated trees in a structure described as emergent forest. <i>Macaranga tanarius</i> is the dominant species which is a primary colonising species found in disturbed areas.</p> <p>All of these areas are degraded sites that area surrounded by either existing mining areas or previously mined pinnacle fields.</p> <p>In general, the vegetation consists of regrowth of varying ages from 5 to 25 years where <i>Macaranga tanarius</i> is the predominant native species. The vegetation is degraded with a mixture of weeds and transitional native vegetation species such as:</p> <p><i>Macaranga tanarius</i>,<br/> <i>Pandana elatus</i> and<br/> <i>Arenga listeri</i>.</p> | <p>Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)</p> | <p>Information obtained from DEC site visit (2008) and photographs submitted by the applicant.</p> |

There is evidence of previous mining with old vehicle tracks throughout the area where weed invasion is occurring.

### 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 areas under application are for the purpose of mining. Much of the proposed clearing will be undertaken on previously cleared areas with regrowth, primarily dominated by weed species. Site visits (DEC 2008), photographs (submitted by applicant) and aerial photography indicate that the vegetation condition is degraded (Keighery 1994).

Given the disturbance to the sites under the application the areas are not considered to hold high biological diversity and are therefore not at variance to this principle. To minimise the potential impacts of weeds on surrounding areas conditions will be placed on the permit to minimise the spread of weeds to these areas.

**Methodology**    DEC site visit (2008)  
Keighery (1994)

GIS data:  
- Christmas Island 60cm Orthomosaic - Landgate06

#### (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**

From site visits (DEC 2008) and photographs (submitted by applicant) the areas under application contains degraded (Keighery 1994) vegetation with limited habitat for rainforest fauna. The application areas have been previously cleared and contain predominately non native regrowth vegetation which does not contain the vegetation types (evergreen tall closed forest, semi-deciduous closed forest, and deciduous scrub) that provides the predominant habitat for fauna.

There are a number of fauna species listed as endangered under the Environmental Protection and Biodiversity Act 1999 that are endemic to Christmas Island. Sixty three percent of Christmas Island is in the National Park which provides fauna habitat. From the information available from the Department of Environment and Water Resources Endangered Species lists and Recovery Plans it is likely that most fauna will not be impacted from the proposed clearing. The vegetation on the proposed clearing areas are highly degraded secondary regrowth, highly fragmented and not significant.

Advice from CI National Parks (2008) indicates that ML127 is located near Abbott's Booby (*Papsaula abbotti*) nesting sites as detected in the 2002 aerial survey. Abbott's Booby's are endemic to the island and protected under the Environment Protection and Biodiversity Conservation Act 1999. Although these sites do not adjoin the Park boundary, a 50m buffer will be retained (as recommended by CI National Parks 2008b), as a condition of the permit to adjoining non-mine lease land (to ML127) in order to minimise the impacts the proposed clearing is likely to have on this species.

**Methodology**    CI National Parks (2008a)  
CI National Parks (2008b)  
DEC site visit (2008)  
DEHWA (2008)  
Keighery (1994)

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

**Comments**      **Proposal may be at variance to this Principle**

The areas under application are for the purpose of mining. Much of the proposed clearing will be undertaken on previously cleared areas with regrowth, primarily dominated by weed species. Site visits (DEC 2008), photographs (submitted by applicant) and aerial photography indicate that the vegetation condition is degraded.

Advice from National Parks indicates that many of the rare species would be unlikely to exist on severely disturbed areas (CI National Parks 2007). However, some may be found in undisturbed forest near the margins with disturbed areas. Retention of a 50m buffer to undisturbed forest will be a condition of the permit to ensure no rare flora are cleared.

The rare plant *Cycas rumphii* occurs individually on the East coast and as a stand near North West Point at

about 300m above sea level. This species is usually distributed by sea, suggesting that the sparse population has persisted since the island was at sea level (Environment Australia 2002).

The majority of the proposed clearing does not meet this criteria with the exception of ML133A F5 MB2. This area is adjacent to undisturbed forest in the National Park (CI National Parks 2008). A condition will be placed on the permit to ensure that ML 133A F5 MB2 is surveyed for *Cycas rumphii* prior to clearing and if found, clearing cannot occur within 50m of the species.

**Methodology** DEC site visit (2008)  
Environment Australia (2002)  
Keighery (1994)  
CI National Parks (2008)  
CI National Parks (2007)

GIS data:  
- Christmas Island 60cm Orthomosaic - Landgate06

**(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**  
There are no listed Threatened Ecological Communities on Christmas Island.

**Methodology** DEWHA (2008)

**(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**  
Approximately 25 per cent of the island's rainforest has been cleared to mine phosphate and build the associated infrastructure (Environment Australia 2002).

The proposed clearing occurs on land that has previously been cleared for phosphate mining and consists of regrowth vegetation with some native species, primarily *Macaranga tanarius*, *Pandanus elatus* and *Arenga listeri* which are common on the island. The areas proposed to clear contain degraded (Keighery 1994) vegetation that are dominated by weed species such as *Leucaena leucosephala* and other non indigenous species (DEC site visit 2008).

Approximately 75% of Christmas Island is still covered with natural vegetation and 84% of this (63% of total island area) is protected within National Park (Environment Australia 2002).

The vegetation proposed to be cleared is not considered to be a significant remnant in an extensively cleared area and is therefore not at variance to this principle.

**Methodology** Environment Australia (2002)  
DEC site visit (2008)  
Keighery (1994)

**(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 adjacent to watercourses or wetlands.

There are several sites on the island in which perennial streams flow (Environment Australia 2002). The vegetation under application is situated on the plateau and not near these sites (DEC site visit 2008).

This proposal is not likely to be at variance to this principle.

**Methodology** Environment Australia (2002)  
DEC site visit (2008)

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

**Comments** **Proposal is not at variance to this Principle**  
The interior of the island is slightly undulating plateau, from about 160-360m above sea level (Environment Australia 2002).

The areas under application are situated on the plateau with relatively little relief, and above the terraces. Due to the nature of phosphate mining top soil will be removed in areas for insitu mining and all other areas will be mined to ground level.

All areas that are mined insitu will be left as limestone boulders and rehabilitated to a state suitable for revegetation as a condition of the permit. As no wind erosion, water erosion, salinity, eutrophication or waterlogging is expected as a result of the clearing, this proposal is not likely to be at variance to this principle.

**Methodology** Environment Australia (2002)

**(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 at variance to this Principle**

The proposed clearing sites are adjacent to National Park primary rainforest (Register of the National Estate which are Environmentally Sensitive Areas, ESA) (CI National Parks 2008).

The environmental values of these conservation areas are likely to be compromised by the proposed clearing through the potential introduction of weeds.

Specifically ML 127 lies adjacent to Abbott's Booby (*Papsaula abbotti*) nesting sites in undisturbed forest and a 50m buffer will be retained as a condition of the permit to ensure this species is not impacted by the proposed clearing (CI National Parks 2008a and b).

Advice from CI National Parks (2008) states that a 50m buffer should be retained between proposed clearing and undisturbed forest including national parks to ensure these conservation areas are not degraded by the proposed clearing. Weed management and buffer conditions will also be placed on the permit to mitigate this potential impact.

**Methodology** CI National Parks (2008)

**(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 at variance to this Principle**

There are several sites on the island in which perennial streams flow (Environment Australia 2002). The vegetation under application is situated on the plateau and not near these sites (DEC site visit 2008).

The proposed clearing is not adjacent to watercourses and such is unlikely to impact the quality of surface water.

Groundwater flows along the limestone interface with basalt layer where the soils are transmissive. The depth to water and water quality in the proposed clearing area is unknown.

Due to the location of the areas proposed to be cleared, it is unlikely that the clearing of native vegetation for phosphate mining will cause any deterioration in the quality of surface water or groundwater within the local area.

Therefore, clearing of the vegetation under application is not at variance to this principle.

**Methodology** DEC site visit (2008)  
Environment Australia (2002)

**(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 interior of the island is slightly undulating plateau, from about 160-360m above sea level (Environment Australia 2002).

The area under application is situated on the plateau with relatively little relief, and above the terraces. Due to the nature of phosphate mining top soil will be removed in areas for insitu mining and all other areas will be mined to ground level.

There are several sites on the island in which perennial streams flow (Environment Australia 2002). The vegetation under application is situated on the plateau and not near these sites (DEC site visit 2008).

The proposed clearing is not adjacent to watercourses.

The clearing as proposed is not likely to cause or exacerbate waterlogging or flooding as the water features on

Christmas Island are not close to the applied area and the sites are elevated in the landscape.

Therefore the proposed clearing is not at variance to this principle.

Methodology DEC site visit (2008)  
Environment Australia (2002)

#### Planning instrument, Native Title, Previous EPA decision or other matter.

##### Comments

CIP have a Part V pollution licence issued to them under the EP Act (WA) (CI) for the control and abatement of pollution from the loading and unloading activities and processing activities (beneficiation of metallic or non-metallic ore).

There are no Aboriginal Sites of significance or Native Title Claim over the area.

EPA does not make decisions on Christmas Island (no SDA with DOTARS).

The Environmental Protection and Biodiversity Conservation Act 1999 applies to Christmas Island.

The EPA does not make decisions on Christmas Island (no SDA with DOTARS).

There is a verbal agreement between National Parks and Christmas Island Phosphates to undertake revegetation works on the island. No written agreement has been submitted to DEC and in the absence of this agreement, rehabilitation conditions will be placed on the permit to ensure the site is suitable for revegetation when required.

##### Methodology

#### 4. Assessor's comments

##### Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing is at variance to Principles (b) and (h), may be at variance to Principle (c), is not likely to be at variance to Principle (a) and is not at variance to the remaining Principles.

#### 5. References

- Christmas Island (CI) National Parks (2007) CI National Parks advice for CPS 2376/1, CPS 2380/1 and CPS 2373/1.  
Christmas Island (CI) National Parks (2008a) CI National Parks advice for CPS 2376/1, CPS 2380/1 and CPS 2373/1. TRIM ref DOC57349  
Christmas Island (CI) National Parks (2008b) CI National Parks advice for CPS 2376/1, CPS 2380/1 and CPS 2373/1. TRIM ref DOC58227  
Department of Environment and Conservation (2008) Site Visit Report. Native Vegetation Conservation CPS 2376/1. DEC TRIM Ref: DOC57330.  
Department of the Environment, Water, Heritage and the Arts (DEWHA) (2008) Species Profile and Threats Database. Accessed 10 July 2008.  
Environment Australia (2002) Christmas Island National Park Management Plan. Commonwealth of Australia. Canberra.  
Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

#### 6. Glossary

| Term  | Meaning                                                  |
|-------|----------------------------------------------------------|
| BCS   | Biodiversity Coordination Section of DEC                 |
| CALM  | Department of Conservation and Land Management (now BCS) |
| DAFWA | Department of Agriculture and Food                       |
| DEC   | Department of Environment and Conservation               |
| DEP   | Department of Environmental Protection (now DEC)         |
| DoE   | Department of Environment                                |
| DoIR  | Department of Industry and Resources                     |
| DRF   | Declared Rare Flora                                      |
| EPP   | Environmental Protection Policy                          |
| GIS   | Geographical Information System                          |
| ha    | Hectare (10,000 square metres)                           |

TEC Threatened Ecological Community  
WRC Water and Rivers Commission (now DEC)