



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 3785/1
Permit Holder:	Carbone Bros Pty Ltd
Duration of Permit:	17 August 2013 - 31 May 2021

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 expanding an extractive industry.

2. Land on which clearing is to be done

Lot 5 on Diagram 30278, Myalup

3. Area of Clearing

The Permit Holder must not clear more than 11.5 hectares of native vegetation within the area hatched yellow on attached Plan 3785/1a.

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.

5. Compliance with Assessment Sequence and Management Procedures

Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

6. Fauna management

- (a) Within one week prior to clearing any *habitat tree(s)* identified within the Targeted Threatened and Migratory Species Survey of Lot 5 Old Coast Road, Myalup (September 2012), the identified *habitat tree(s)* shall be inspected by a *fauna specialist* for the presence of fauna listed in the *Wildlife Conservation (Specially Protected Fauna) Notice*.
- (b) Where fauna are identified under condition 6(a) of this Permit, the Permit Holder shall ensure that:
 - (i) no clearing of the identified *habitat tree(s)* occurs, unless first approved by the CEO; and
 - (ii) no taking of identified fauna occurs unless first approved by the CEO.

7. Offset - Rehabilitation

In relation to the areas hatched red on attached Plan 3785/1b the Permit Holder must implement and adhere to the Pit Rehabilitation and Maintenance Management Plan, Lot 5 Old Coast Road, Myalup, June 2013, attached as Appendix A to this permit.

PART III - RECORD KEEPING AND REPORTING

9. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) 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 or decimal degrees;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).
- (b) In relation to fauna management pursuant to condition 6 of this Permit:
 - (i) the location of each identified fauna species recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees; and
 - (ii) the name of each species identified
- (b) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 7:
 - (i) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) a description of the *revegetation* and *rehabilitation* activities undertaken; and
 - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares).

10. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 9 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 on or before 30 June of each year.
- (c) Prior to 28 February 2021, the Permit Holder must provide to the CEO a written report of records required under condition 9 of this Permit where these records have not already been provided under condition 10(a) of this Permit.

DEFINITIONS

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

habitat tree(s) means trees that have a diameter, measured at 1.5 metres from the base of the tree, of 50 centimetres or greater, that contains or has the potential to develop hollows or roosts suitable for native fauna;

fauna specialist means a person with training and specific work experience in fauna identification or faunal assemblage surveys of Western Australian fauna;

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area; and

Wildlife Conservation (Specially Protected Fauna) Notice means those fauna taxa gazetted as rare fauna pursuant to section 14(4)(a) of the *Wildlife Conservation Act 1950* (as amended).

B. Walker

Belinda Walker
A/MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

18 July 2013

PIT REHABILITATION AND MAINTENANCE MANAGEMENT PLAN

**LOT 5 OLD COAST ROAD, MYALUP
SHIRE OF HARVEY**

PREPARED FOR

CARBONE PTY LTD

By

LUNDSTROM ENVIRONMENTAL

EARTH, WATER AND ENVIRONMENTAL CONSULTANTS

PERTH, WESTERN AUSTRALIA

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MOBILE: 0417934863

JUNE 2013

TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	PROPOSED EXTRACTION	1
3.	REHABILITATION.....	2
3.1	PROPOSED REHABILITATION MEASURES.....	2
3.1.1	Local, State and Federal Government Compliance	2
3.1.2	Rehabilitation of Stages 1, 2, and 3	2
3.1.3	Native Plant Species and Planting Rates	3
3.2	MONITORING AND MAINTENANCE	3
3.3	COMPLETION CRITERIA.....	3

TABLES

- Table 1: Stages of the Extraction Operation
- Table 2: Proposed Species and Planting Rates
- Table 3: Closure Criteria

FIGURES

- Figure 1: Final Landsurface and Rehabilitation Measures

APPENDICES

- Appendix 1: Visual Management Plan

1. INTRODUCTION

The purpose of this report is to describe the measures that will be taken to rehabilitate and screen the area of land impacted by limestone quarrying on Lot 5 Old Coast Road, Wellesley, Shire of Harvey. This document should be read in conjunction with other documents submitted to the Shire of Harvey in regard to the proposed limestone quarry on this property. These documents are listed as follows:

Lot 5 Old Coast Rd Application for Extractive Industries Licence (Lundstrom Environmental)
Weed Management Plan (Lundstrom Environmental)
Visual Management Plan Lot 5 Old Coast Road (Lundstrom Environmental)

2. PROPOSED EXTRACTION

A broad summary of the proposed extraction operation is contained in Table 1.

Table 1: Stages of the Mining Operation

Action	2013	2014	2015	2016	2017	2018	2019	2020	2021
Stage 1. Clear vegetation	Nov								
Stage 1. Strip topsoil and stockpile to west.	Nov								
Stage 1. Rip and blade limestone to crusher site.	Nov & Dec	6 wks	6 wks						
Stage 1. Crush and screen. Create stockpile to the west.		Jan & Feb	Jan & Feb						
Stages 1, 2 & 3. Load and truck limestone from stockpiles.									
Stage 1. Rehabilitation. Batters, smoothing, topsoiling, ripping and planting.									
Stage 2. Clear vegetation									
Stage 2. Strip topsoil and create stockpile to west.									
Stage 2. Rip and blade limestone to crusher site.				6 wks	6 wks				
Stage 2. Crush and screen. Create stockpile to the west.				6 wks	6 wks				
Stage 2. Rehabilitation. Batters, smoothing, topsoiling, ripping and planting.									
Stage 3. Clear vegetation									
Stage 3. Strip topsoil and create stockpile to west.									
Stage 3. Rip and blade limestone to crusher site.							6 wks	6 wks	
Stage 3. Crush and screen. Create stockpile to the west.							6 wks	6 wks	
Stage 3. Rehabilitation. Batters, smoothing, topsoiling, ripping and planting.									

3. REHABILITATION

3.1 PROPOSED REHABILITATION MEASURES

3.1.1 Local, State and Federal Government Compliance

In order to comply with local, state and federal government approvals for this project, the following rehabilitation commitments have been made by Carbone Bros (Figure 1):

- A staged approach to the project is to be undertaken. Within the overall area of 11.3ha, three stages of 3.7ha have been defined. A performance based approach to the release of Stages 2 and 3 has been adopted. Performance criteria and targets are identified in Table 3.
- Within the extraction area of 11.7ha, 10ha will be returned to pastures and 1.9ha (600 trees) will be planted to native vegetation.
- As a further offset to vegetation clearing and to perform the function of visual screening, 300 native trees are to be planted in a belt to the east of the proposed extraction area. The details of this planting are contained in Appendix 1.
- It should be noted that rehabilitation commitments from previous extraction phases which resulted in less than 5 trees being lost, have achieved the successful establishment of approximately 1,600 endemic trees on the property over the past 4 years.

3.1.2 Rehabilitation of Stages 1, 2, and 3

It is proposed to rehabilitate the pit over the time period shown in Table 1 and this will involve the following actions:

- All batters behind the active working face will be contoured to achieve a slope of no more than 1:6.
- Final land surface will be no lower than 1 metre above the highest seasonal water table as determined from surrounding groundwater data as well as from a recently installed monitoring bore on the site.
- Within each Stage, once the planned extraction depth has been reached, the pit floor will be ripped to approximately 1 metre and then stockpiled topsoil/overburden will be replaced as quickly as possible in order to maintain its viability. The final surface will be smoothed and easily trafficable by agricultural machinery.
- Within each cell 200 trees will be planted in a continuous belt from north to south as illustrated in Figure 1. The tree species will be planted as described in 3.1.3

below.

- Rehabilitation work will only be carried out just prior to or at the commencement of the wet season.
- Weed Management will be undertaken regularly and this is described in a separate Weed Management Plan.

3.1.3 Native Plant Species and Planting Rates

Table 2 contains proposed species and planting rates for the 1.9ha area identified for in-pit rehabilitation (Figure 1).

Table 2: Proposed Species and Planting Rates

Storey	Species	Planting Rate
Upper	<i>Eucalyptus gomphocephala</i>	Treelings to be planted at a rate of 169 stems per ha, staggered.
Middle	<i>Agonis flexuosa</i>	As above

All planting will be undertaken at the start of the wet season.

3.2 MONITORING AND MAINTENANCE

Monitoring of rehabilitated areas will ensure that any areas requiring remedial work are identified. Monitoring will be carried out on an annual basis to assess:

- The physical stability of the landform in the rehabilitated areas.
- Success of germination of pasture grasses and native endemic species.
- The emergence of weeds.

Monitoring will continue until the completion criteria presented in Section 3.3 have been fulfilled. Maintenance procedures will be carried out where necessary and will include:

- Repair of any erosion damage.
- Replanting/seeding areas that may not have regenerated.
- Weed control.

3.3 COMPLETION CRITERIA

Completion criteria must be sufficiently stringent to ensure that the overall objectives of the rehabilitation have been met. These criteria must also be designed to allow effective reporting and auditing to define an endpoint for the rehabilitation activities.

The completion criteria proposed for extractive operations on Lot 7 are presented in Table 3.

Table 3: Closure Criteria, Objectives, Monitoring, Maintenance and Interim Targets

Criteria	Objective	Interim Targets
1. Safety	The site is safe to humans.	<ul style="list-style-type: none"> • Site is safe to humans during operations.
2. Sustainability	The site is sustainable in the long term without additional management inputs.	-
3. Suitability	The site is suitable for agricultural uses.	-
4. Visual amenity and heritage	The rehabilitated extraction area blends into the surrounding environment.	-
5. Off-site impacts	Significant adverse off-site impacts are prevented.	-
6. Hydrology	<ol style="list-style-type: none"> Site hydrology does not prevent the establishment of desired vegetation. Site hydrology does not reduce the stability of the landform. Stormwater is contained within the site. 	<ul style="list-style-type: none"> • Stormwater is contained within the site during operations. • Identification and mitigation of any hydrology related issues during operations.
7. Soils and stability	<ol style="list-style-type: none"> Soil profiles and structures are sufficient to ensure vegetation establishment. The landform is stable. 	<ul style="list-style-type: none"> • Topsoil is respread in all rehabilitation areas. • Identification and mitigation of potential erosion scars and scours during operations.
8. Vegetation	<ol style="list-style-type: none"> Pasture grasses cover the entire targeted area of 10ha. Pasture grass cover is sufficiently resilient to sustain grazing pressure. Native species planted as belts within the extraction areas include <i>E. gomphocephala</i>, and <i>Agonis flexuosa</i>. Survival rates to be 100%. Monitoring will be conducted on a weekly basis just after planting and any dead plants will be replaced immediately. Maintenance will include the replacement of plants in all areas that do not meet the interim targets 	<p>After 1 year pasture grasses cover 60% of target area, increasing by 20% per annum thereafter.</p> <p>For native plants:</p> <ul style="list-style-type: none"> • After the first season at least 70% survival rate after the following dry season. All dead plants to be replaced. • Successful establishment of 100% of all plant propagules after 5 years, thereafter plants allowed to achieve a more natural density • The existence of at least 1 tree per 31m² (on average) after a period of 8 years
9. Weeds	<ol style="list-style-type: none"> Declared pest weeds are absent. The level of weed species should not be detrimental to the planted seedlings or pasture grasses. 	<ul style="list-style-type: none"> • Weed species removed systematically during operations.

379731 m 379785 m 379839 m 379893 m 379947 m 380001 m 380055 m 380109 m 380163 m 380217 m 380271 m 380325 m 380379 m

Proposed tree belt 27m x 696m (4 rows x 9m) with approx 300 Tuart and 300 Peppermint trees planted at 4.5x9m spacing. Tuart density will be 169 per ha. Planting to be done progressively after extraction of each stage has been completed.



6337900 m
6337837 m
6337774 m
6337711 m
6337648 m
6337585 m
6337522 m
6337459 m
6337396 m
6337333 m
6337270 m
6337207 m
6337144 m
6337081 m

6337900 m
6337837 m
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Scale: 1:3500
Original Size: A4
Air Photo Date: Landgate 2012
Datum: Australian Geocentric 1994 (GDA94)

Carbone Bros Pty Ltd
Lot 5 Old Coast Rd Myalup
Limestone Extraction

Final Contours and Rehabilitation
Figure 1

APPENDIX 1
VISUAL MANAGEMENT PLAN

LOT 2 OLD COAST ROAD REVISSED VISUAL MANAGEMENT PLAN (REV 1)

1. INTRODUCTION AND BACKGROUND

The purpose of this document is to describe the visual impacts of the proposed development and to provide a visual management plan to mitigate these impacts. The plan is based on the findings of the visual impact assessment and the recommendations of the assessment report.

The background to the proposed development is as follows:

A detailed site plan for the proposed development is attached to this document. The plan shows the location of the proposed development and the surrounding area. The development is located on Lot 2 of Old Coast Road, which is a residential area.

APPENDIX 1

VISUAL MANAGEMENT PLAN

The purpose of this appendix is to provide a detailed description of the visual management plan. The plan is based on the findings of the visual impact assessment and the recommendations of the assessment report.

The visual management plan is based on the following principles:

- To minimize the visual impacts of the proposed development.
- To provide a clear and concise description of the visual management plan.
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- To provide a clear and concise description of the visual management plan.
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2. VISUAL MANAGEMENT PLAN

The visual management plan is based on the following principles:

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LOT 5 OLD COAST ROAD REVISED VISUAL MANAGEMENT PLAN (REV 1)

1. INTRODUCTION AND BACKGROUND

The purpose of this document is to describe the measures that are proposed by Carbone Bros Pty Ltd to deal with any potential negative visual impacts that might arise from the proposed 11.3ha extension of the limestone pit on Lot 5 Old Coast Road.

The background to this proposed pit extension is as follows:

- A clearing application was made to the Department of Environment and Conservation (DEC) in 2010 and after inspection by one of the field officers, a Decision Report was written that indicated that they would most likely approve the clearing should the pit extension be approved by the Shire.
- The application for an extractive industries licence (EIL) over the full 11.3ha was submitted to the Shire of Harvey in 2010 and Planning Consent (PC) only was given for a much reduced area of 2.2ha.
- Carbone Bros appealed the decision of the Shire of Harvey through the State Administrative Tribunal (SAT). Through the subsequent mediation process the Shire of Harvey agreed to approve the larger area of 11.3 ha if the referral, in terms of the EPBC Act to the Federal Department of Sustainability, Environment, Water, Population and Communities (SEWPaC), was determined not to be a controlled action.
- The SEWPaC referral process was initiated and has resulted in a decision being made that the project is "Not a Controlled Action if undertaken in a particular manner".
- At a SAT mediation session on 19th April, Lundstrom Environmental was requested to provide further detail on initial visual management proposals. This document details these proposals

2. VISUAL MANAGEMENT PLAN

Carbone Bros proposes to undertake the following measures to mitigate potential negative visual impacts that might be associated with the proposed 11.3ha pit:

- Clearing and extraction will be in 3 Stages of 3.7ha with performance based extensions controlled by Shire (Figure 1).
- Progress of extraction and clearing will be controlled to allow time for planted visual buffers to develop.
- Stockpiles will be kept below the top edge of the pit (Figure 2).

- To link up with the trees to be planted by Ivankovich Farms (for shed screening purposes), Carbone Bros will plant an additional tree buffer that extends to the southern boundary of the property (Figure 1). Carbone Bros will liaise with Ivankovich farms to ensure that all trees are planted during winter 2013.
- All trees to be planted will be endemic to the area and will comprise mainly tuarts and peppermints. The detailed layout of these trees is illustrated in Figure 3.

3. TREE SCREEN PLANTING AND MAINTENANCE

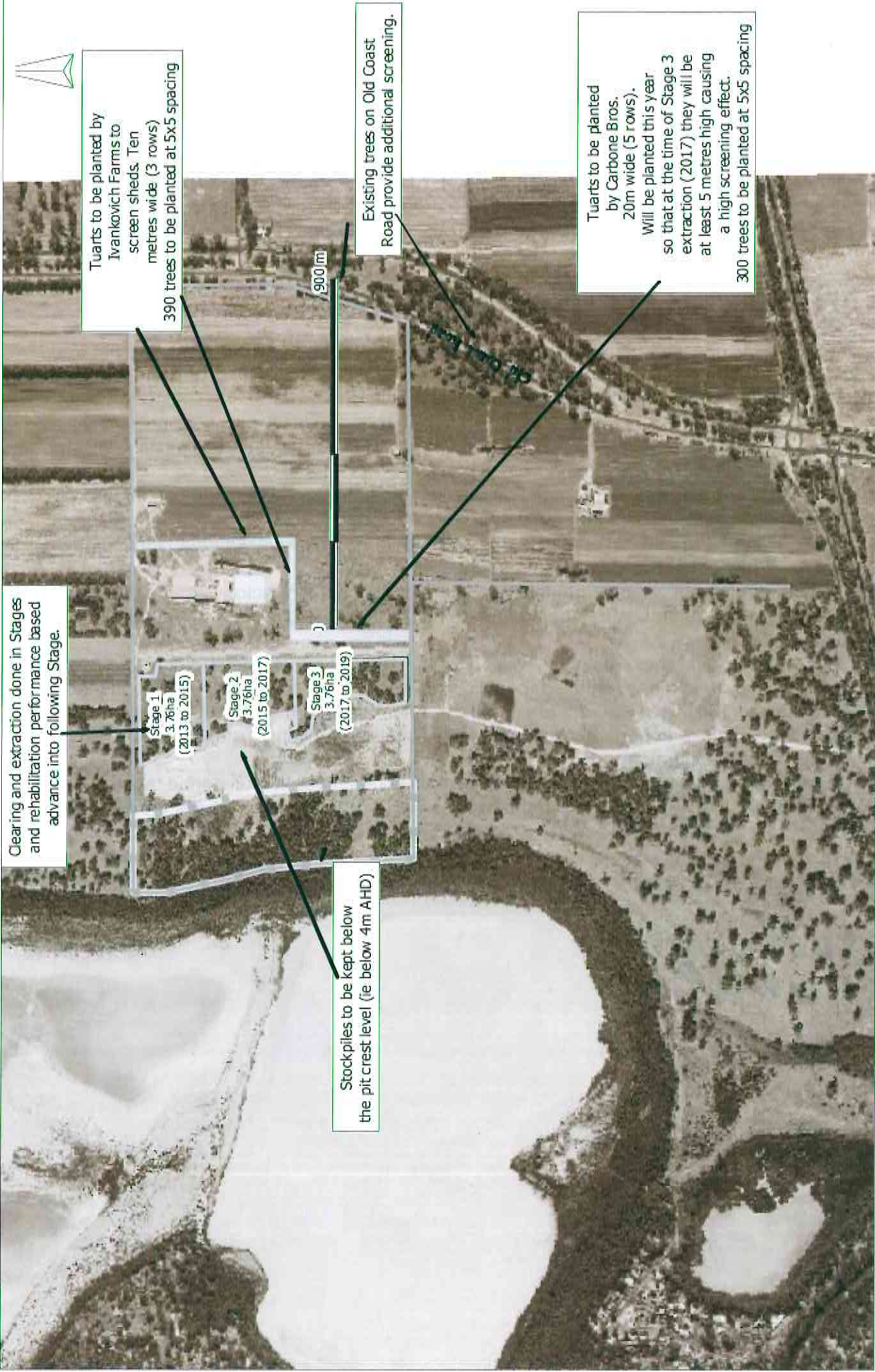
The following points describe the actions that will be taken by Carbone Bros to ensure that tree planting is in accordance with a program that will result in the survival of the trees and that a significant screening effect be achieved as quickly as possible.

- Ground preparation and initial weed management will occur as soon as final approval for the project is achieved.
- Once the ground is sufficiently moist after initial rain this year, landscape contractors will be employed to undertake the tree planting as illustrated in Figure 3.
- Plantings will be monitored on a weekly basis within the first 6 weeks after planting and any dead plants will be replaced immediately.
- Weed management will be undertaken by an experienced contractor with appropriate weed management measures being undertaken at least twice a year in spring and autumn.
- Success criteria for these plantings will be a 90% survival rate at the end of winter 2013, with all dead trees being replaced the following wet season. In this manner it is planned to achieve a 100% survival rate after 4 years. After this period an attrition process will be allowed to achieve a more natural density whilst still maintaining a successful vegetation screen over the long term.
- Carbone Bros will maintain and manage the tree screen over the full period that they are active on the property, after which the trees will be large enough to be self maintaining.



Michael Lundstrom (MSc)
Principal Consultant
19th April 2013

Figures 1, 2 and 3 attached



Clearing and extraction done in Stages and rehabilitation performance based and advance into following Stage.

Tuarts to be planted by Ivankovich Farms to screen sheds. Ten metres wide (3 rows) 390 trees to be planted at 5x5 spacing

Stockpiles to be kept below the pit crest level (ie below 4m AHD)

Existing trees on Old Coast Road provide additional screening.

Tuarts to be planted by Carbone Bros. 20m wide (5 rows). Will be planted this year so that at the time of Stage 3 extraction (2017) they will be at least 5 metres high causing a high screening effect. 300 trees to be planted at 5x5 spacing

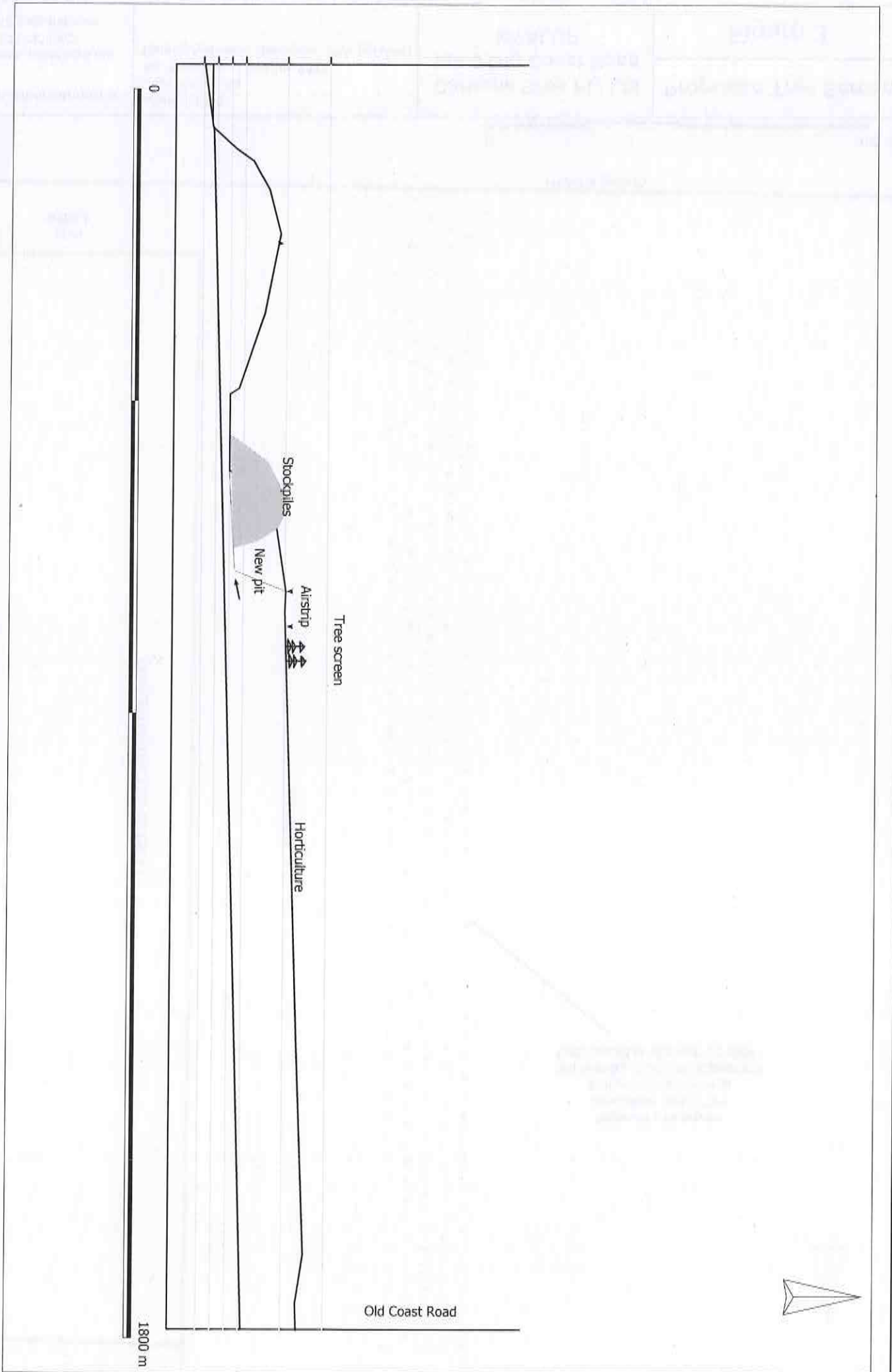
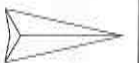
Lundstrom Environmental
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Scale: 1:12000
 Original Size: A4
 Air Photo Date: March 2012
 Datum: Australian Geocentric 1994 (GDA94)

CARBONE BROS PTY LTD
 Lot 5 Old Coast Rd, Myalup
 Limestone Extraction

Visual Impact Management Plan

Figure 1



Lundstrom Environmental

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Scale: 1:8900
Original Size: A4
Air Photo Date: March 2012
Datum: Australian Geocentric 1994 (GDA94)

CARBONE BROS PTY LTD

Lot 5 Old Coast Rd, Myalup
Limestone Extraction

Cross section Through Property

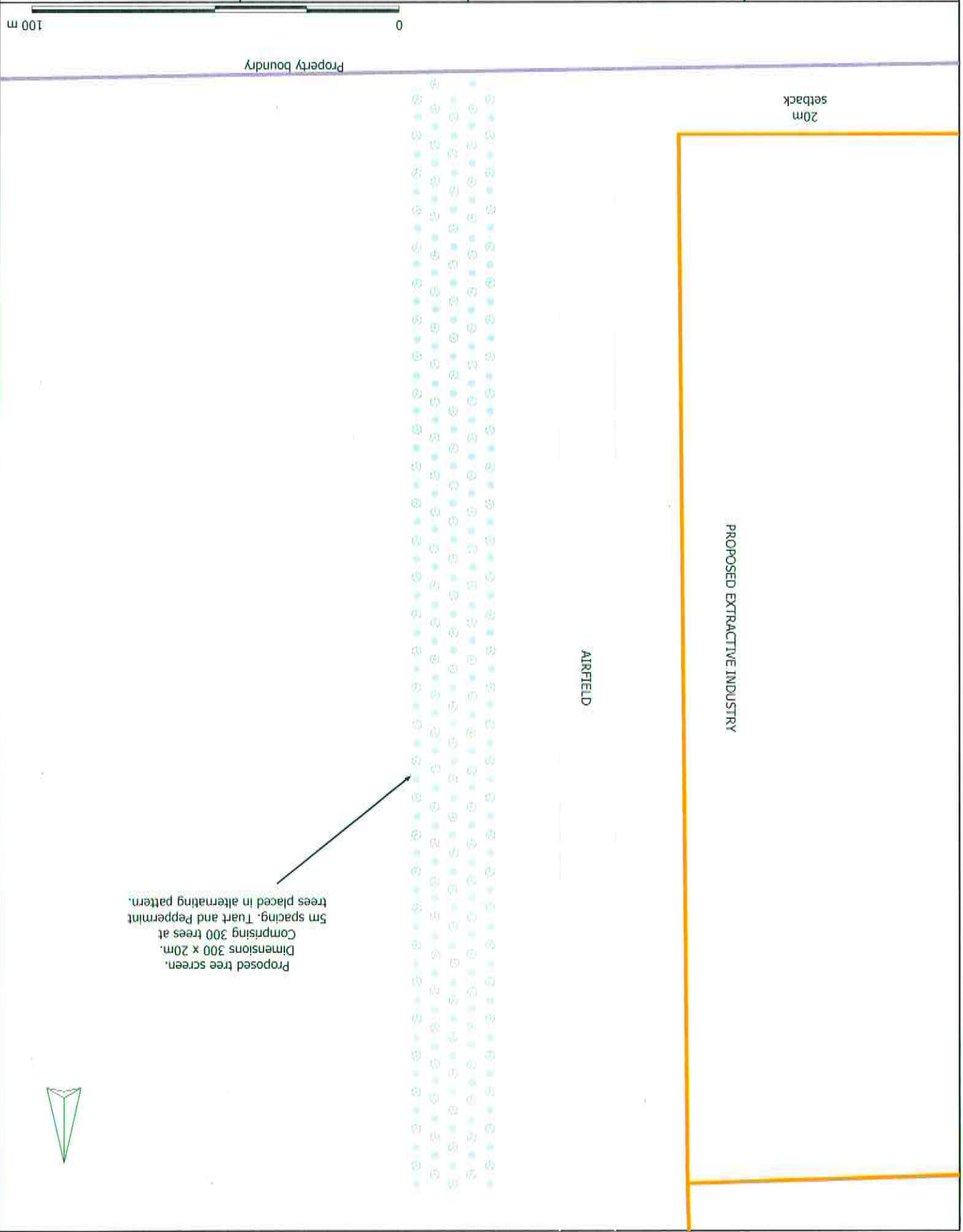
Figure 2

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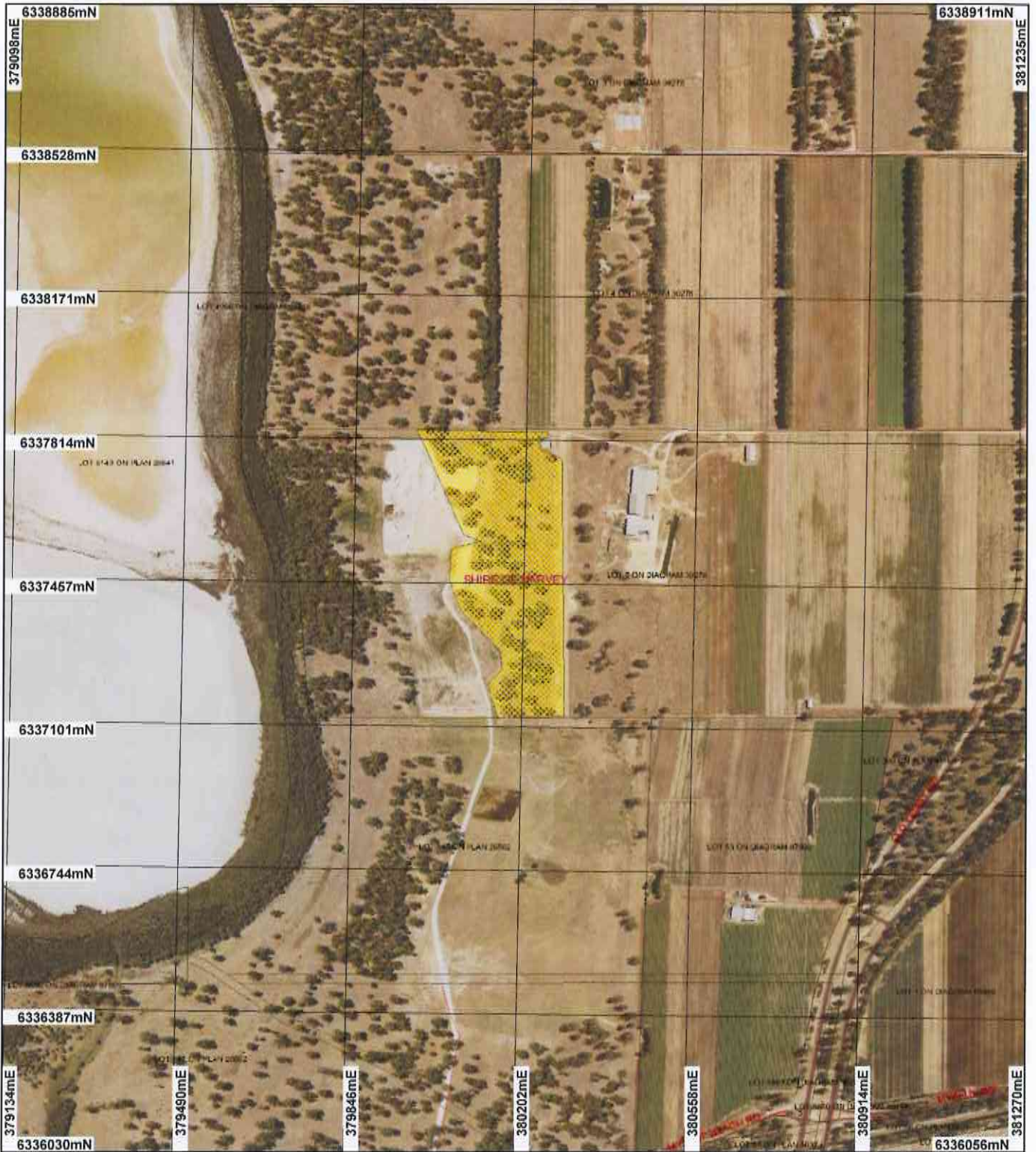
Scale: 1:1300
Original Size: A4
Air Photo Date: Landgate 2012
Datum: Australian Geocentric 1994 (GDA94)

Carbone Bros Pty Ltd
Lot 5 Old Coast Road
MYALUP

Proposed Tree Screen
Figure 3



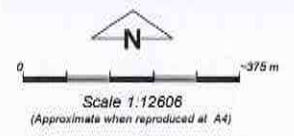
Plan 3785/1a



LEGEND

- ⬜ Road Centrelines
- ⬜ Cadastre
- ⬜ Local Government Authorities
- ⬜ Clearing Instruments
- ▨ Areas Approved to Clear

Perth Metropolitan Area
South 15cm Orthomosaic -
Landgate 2012



Geocentric Datum Australia 1994
Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

B. Walker Date *18/7/12*
B Walker

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986
Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



* Project Data is denoted by asterisk. This data has not been quality assured. Please contact map author for details.

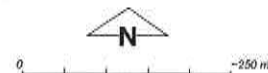
Plan 3785/1b



LEGEND

- Road Centrelines
- Cadastre
- Local Government Authorities
- Clearing Instruments
- Areas Subject to Conditions

Bunbury 50cm Orthomosaic - Landgate 2008



Scale 1:8667

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

B. Walker Date 18/7/13

B Walker

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

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Government of Western Australia
Department of Environment Regulation

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* Project Data Is denoted by asterisk. This data has not been quality assured. Please contact map author for details.



Clearing Permit Decision Report

Government of Western Australia
Department of Environment Regulation

1. Application details

1.1. Permit application details

Permit application No.: 3785/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Carbone Bros Pty Ltd

1.3. Property details

Property: LOT 5 ON DIAGRAM 30278 (House No. 6684 OLD COAST MYALUP 6220)
Local Government Area: Shire of Harvey
Colloquial name:

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 18 July 2013

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
The vegetation under application is mapped as: - Beard Vegetation Association 998: Medium woodland; tuart. - Heddele Yoongarillup Complex: Woodland to tall woodland of Eucalyptus gomphocephala (Tuart) with Agonis flexuosa in the second storey. Less consistently an open forest of Eucalyptus gomphocephala (Tuart) - Eucalyptus marginata (Jarrah) - Corymbia calophylla (Marri). (Shepherd et al, 2001 and Heddele et al, 1980).	The vegetation under application is in a degraded (Keighery, 1994) condition. There is limited understorey species present and multiple disturbances exist in the near vicinity, such as existing limestone mine and agricultural areas. The application area is dominated by very large, mature and healthy tuart trees (Eucalyptus gomphocephala), with several peppermint trees (Agonis flexuosa) also present in the northern end of the application area. The understorey is comprised of non-native pasture species, therefore the vegetation could be described as 'parkland cleared' (DEC, 2010).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The condition and description of the vegetation under application was determined via the use of aerial imagery and a site inspection (DEC, 2010).

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 applicant proposes to clear up to 11.5 hectares of native vegetation within Lot 5 on Diagram 30278, Myalup, for the purpose of limestone extraction.

The vegetation under application is in a degraded (Keighery, 1994) condition. There is limited understorey species present and multiple disturbances exist in the near vicinity, such as an existing limestone mine and agricultural areas.

The application area is dominated by very large, mature and healthy tuart trees (Eucalyptus gomphocephala), with several peppermint trees (Agonis flexuosa) also present in the northern end of the application area (DEC, 2010). The understorey is comprised of non-native pasture species and the vegetation could be described as 'parkland cleared' (DEC, 2010).

Tuart vegetation communities have been reduced by more than 65 per cent due to urban, industrial and agricultural development (DEC, 2012). Remaining tuart woodlands have been disturbed by grazing, altered fire regimes and past timber harvesting. The values of tuart woodlands include conserving biodiversity, protecting ecosystem function and providing connectivity between remnant vegetation of the Swan Coastal Plain. Processes that threaten the integrity of tuart values include habitat loss, fragmentation and alteration caused by changes in natural and human induced vegetation disturbance regimes (DEC, 2012).

As well as providing essential habitat, tuart woodlands and scattered individual trees have an important role in providing connectivity across the landscape. Adequate landscape connectivity results in reduced species dependence on small isolated pockets, and allows mobile species to access essential but dispersed resources.

The vegetation under application is in close proximity to two major ecological linkages identified in the South West Regional Ecological Linkage Technical Report (Molloy et al., 2009) and endorsed by the Environmental Protection Authority (EPA, 2009). The axis lines of the linkages are approximately two kilometres to the east and three kilometres west of the application area. Whilst the vegetation under application is parkland cleared and in completely degraded (Keighery, 1994) condition, the canopy cover of the vegetation under application provides connectivity across the landscape and this is considered to contribute to the function and value of the linkage for arboreal and avian fauna.

The application area is not likely to contain rare or priority flora due to the degraded (Keighery, 1994) condition and the habitat preferences of the conservation significant flora recorded in the local area.

Approximately 115 potential black cockatoo habitat trees were observed within the application area, with 23 of these trees containing visible hollows. Foraging evidence, in the form of chewed Tuart fruits were observed within the application area. A flock of forest red tailed black cockatoos were also observed within the application area (DEC, 2010).

Whilst the application area contains a significant population of Tuart trees, contributes to connectivity across a fragmented landscape and provides foraging and potential breeding habitat for black cockatoo species the application area does not support high biodiversity. Therefore, this application is not likely to be at variance to this principle.

Methodology

References:

- DEC (2010)
- DEC (2012)
- EPA (2009)
- Keighery (1994)
- Molloy et al (2009)

GIS datasets:

- DEC Tenure
- SAC Biodatasets (accessed July 2013)
- Pre European Vegetation
- Current Extent of Native Vegetation

(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

Eight fauna species of conservation significance have been recorded within the local area (10 kilometre radius). Of these the most likely to utilise the vegetation under application are Carnaby's cockatoo, forest red-tailed black cockatoo and western ring-tail possum. All three of these species are listed 'rare or likely to become extinct' under the Wildlife Conservation Act 1950.

The application area is dominated by very large, mature and healthy tuart trees (*Eucalyptus gomphocephala*), with several peppermint trees (*Agonis flexuosa*) also present in the northern end of the application area (DEC, 2010).

Ecoedge Environmental Pty Ltd (2012) was commissioned by the applicant to undertake a targeted threatened and migratory species survey of Lot 5 Old Coast Road, Myalup. Using criteria defined by the Department of Sustainability, Environment, Water, Population and Communities, the results of this survey indicated that most of the trees present within the application area represent potential black cockatoo breeding habitat (Ecoedge Environmental, 2012). Approximately 115 tuart trees were identified as being 'potential breeding trees'. Twenty three of the 115 trees were observed to contain visible hollows of some type. Of these, three were recorded to contain one or more hollows possibly large enough for black cockatoos to use for nesting (Ecoedge Environmental, 2012). None of the identified hollows showed signs of current cockatoo usage (Ecoedge Environmental, 2012).

The application area is within the known foraging and breeding range for the Carnaby's cockatoo. There are also known roosting sites for Carnaby's cockatoo within approximately 10 kilometres of the application area.

The application area is within approximately 2.5 kilometres of the pine plantation areas within the Myalup State Forest. Pine plantations are recognised as an important food source for Carnaby's cockatoo. Considering the proximity to known roost sites and food sources, the presence of water (Preston River) and hollow bearing trees on the property, the vegetation under application may represent significant habitat to local populations of Carnaby's cockatoo. A small amount of foraging evidence of black cockatoos was observed during the site survey in the form of chewed tuart fruits at two locations (Ecoedge Environmental, 2012).

During a DEC conducted site inspection (DEC, 2010), a flock of approximately 10 forest red-tailed cockatoo's were observed foraging in the Tuarts.

The results of Ecoedge Environmental's survey (2012) suggest that impacts to the Western Ringtail Possum and migratory birds will be negligible as these species do not appear to be utilising the application area (Ecoedge Environmental, 2012).

The vegetation under application is in close proximity to two major ecological linkages identified in the South West Regional Ecological Linkage Technical Report (Molloy et al., 2009) and endorsed by the Environmental Protection Authority (EPA, 2009). The axis lines of the linkages are approximately two kilometres to the east and three kilometres west of the application area. Whilst the vegetation under application is parkland cleared and in completely degraded (Keighery, 1994) condition, the canopy cover of the vegetation under application provides connectivity across the landscape and this is considered to contribute to the function and value of the linkage for arboreal and avian fauna.

Given the above, the proposed clearing is at variance to this principle.

To offset the proposed clearing of approximately 115 mature tuart trees the applicant has provided a Pit Rehabilitation and Maintenance Management Plan (Lundstrom Environmental, 2013). This Plan outlines the applicant's commitment to plant approximately 300 tuart and 300 peppermint seedlings within a belt through the centre of the clearing and extraction area providing connectivity to the properties to the north and south. The proposed revegetation and rehabilitation will take place in three stages post extraction. The applicant also proposes to plant an additional 300 native tree seedlings as a visual buffer east of the extraction area.

Methodology References:
- DEC (2010)
- Ecoedge Environmental Pty Ltd (2012)
- EPA (2009)
-Lundstrom Environmental (2013)
- Molloy et al. (2009)

GIS Datasets:
- SAC Biodatasets (accessed July 2013)
- Pre European Vegetation

(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**

Three rare flora species have been recorded within the local area (10 kilometre radius). None of these species have habitat preferences suited to the applied area.

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

Methodology GIS Datasets:
- SAC Biodatasets (accessed June 2013)
- Pre European Vegetation

(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 likely to be at variance to this Principle**

The closest recorded threatened ecological community (TEC) is located approximately 3.75 kilometres from the application area. This TEC (SCP09) is described as 'Dense shrublands on clay flats'. The vegetation under application is not consistent with this TEC.

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

Methodology GIS Datasets:
- SAC Biodatasets (accessed June 2013)
- Pre European Vegetation

(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 likely to be at variance to this Principle

The area under application is located within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. This IBRA bioregion has approximately 39 per cent of its Pre European vegetation extent remaining (Government of Western Australia, 2011).

The application area is mapped as Beard Vegetation Association 998. Data from 2011 shows that this vegetation association has approximately 38 per cent of its pre-European extent remaining in the Swan Coastal Plain bioregion respectively (Government of Western Australia, 2011). The area under application is also mapped as Hedde Vegetation Spearwood Complex which has approximately 45 per cent of its pre-European extent remaining.

Digital imagery (Perth Metropolitan South 15cm Orthomosaic - Landgate 2011) indicates that the local area (10 kilometre radius) retains approximately 30 per cent vegetation.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The area under is a significant remnant as it provides potential habitat for conservation significant fauna, however it is not located within an extensively cleared area. Therefore, the proposed clearing is not likely to be at variance to this principle.

	Pre-European (ha)	Current Extent Remaining (ha)	Extent in DEC Managed Lands (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion*				
Swan Coastal Plain	1 501 209	587 889	39	33
Shire*				
Shire of Harvey	170 787	90 549	53	73
Beard Vegetation Associations in Bioregion*				
Bassendean 998	50 868	19 372	38	41
Hedde Vegetation Complexes **				
Yoongarillup	24 767	11 140	45	14

* Government of Western Australia (2011)

** Hedde et al (1980)

Methodology References:

- Commonwealth of Australia (2001)
- Government of Western Australia (2011)
- Hedde et al (1980)

GIS Database:

- Perth Metropolitan South 15cm Orthomosaic - Landgate 2011
- Pre European Vegetation

(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 likely to be at variance to this Principle

A conservation category wetland (Lake Preston) is situated 300 metres west of the application area and a multiple use wetland (dampland) is situated 1.3 kilometres east. There is also a diversion drain (Harvey diversion drain) situated 1.1km south.

Lake Preston is mapped as a RAMSAR wetland of International Importance (Peel-Yalgorup System) and is listed in the Directory of Important Wetlands In Australia (Environment Australia, 2001).

Given the location of the nearest wetland and watercourse, the vegetation under application is not considered to be growing in association with a watercourse or wetland and therefore, the proposed clearing is not likely to be at variance to this principle.

Methodology Reference:

Environment Australia (2001)

GIS Datasets:

- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Ramsar
- ANCA
- Hydrography linear

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

Comments Proposal may be at variance to this Principle

The application area is mapped as an undulating dune landscape underlain by aeolianite which is frequently exposed; small swales of estuarine deposits are included: chief soils are siliceous sands with smaller areas of brown sands and leached sands in the wetter sites (Northcote et al. 1960-68).

The applied area is at a low relief of between 0 - 5 metres and the annual rainfall for the region is approximately 800 millimetres.

The clearing of 11.5 hectares of degraded vegetation is not likely to further increase the risk of land degradation in an area which has already been extensively cropped, grazed and mined for limestone. However, given the sandy nature of the soils wind erosion may occur.

The proposed clearing may be at variance to this principle.

The applicant has committed to a staged approach, clearing no more than 3.76 hectares at a time and progressively revegetating and rehabilitating the areas no longer used for extractive purposes. This approach will minimise the risk of appreciable land degradation in the form of wind erosion.

Methodology References:

- Environment Australia (2001)
- Keighery (1994)

GIS Datasets:

- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Ramsar
- ANCA
- Groundwater Salinity Statewide
- Hydrography linear

(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

The vegetation under application is located approximately 1.5 kilometres west of the Myalup State Forest, however this area supports pine plantations rather than native vegetation.

The application area is approximately 320 metres east of the Yalgorup National Park, which is listed on the Register of National Estate.

Whilst the vegetation under application contributes to connectivity across the landscape, considering the distance to conservation reserves, the proposed clearing is not likely to have an appreciable impact upon the environmental values of these areas and is not likely to be at variance to this principle.

Methodology GIS Datasets:

- DEC Tenure
- Perth Metropolitan South 15cm Orthomosaic - Landgate 2011

(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

A conservation category wetland (Lake Preston) is situated 300 metres west of the application area and a multiple use wetland (dampland) is situated 1.3 kilometres east. There is also a diversion drain (Harvey diversion drain) situated 1.1 kilometres south.

Lake Preston is mapped as a RAMSAR wetland of International Importance (Peel-Yalgorup System) and is listed in the Directory of Important Wetlands In Australia (Environment Australia 2001).

The groundwater salinity within the application area is 500 - 1000 milligrams per litre of Total Dissolved Solids. This level of groundwater salinity is not considered to be saline. There is an inherent risk of impacts to groundwater quality following the removal of deep-rooted native vegetation, especially in areas close to

wetlands, as ground water levels are subject to rises in these areas. However, given the degraded (Keighery, 1994) condition and historic agricultural and mining activities within the vicinity of the applied area, the proposed clearing of 11.5 hectares of native trees is unlikely to significantly affect ground water quality.

There are no surface water expressions within the application area and therefore the proposed clearing is not likely to impact upon surface water.

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

Methodology

References:

- Environment Australia (2001)
- Keighery (1994)

GIS Datasets:

- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Ramsar
- ANCA
- Groundwater Salinity Statewide
- Hydrography linear

(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 likely to be at variance to this Principle

The application area consists of an undulating dune landscape underlain by aeolianite which is frequently exposed; small swales of estuarine deposits are included: chief soils are siliceous sands with smaller areas of brown sands and leached sands in the wetter sites (Northcote et al. 1960-68).

The applied area is at a low relief of between 0 - 5 metres and the annual rainfall for the region is approximately 800 millimetres. The removal of 11.5 hectares of native vegetation which is predominately mature trees in a degraded (Keighery, 1994) condition, in an area historically altered by agriculture and mining disturbances, is not likely to result in an incremental increase in peak flood height or duration of flood peak.

Methodology

References:

- Keighery (1994)
- Northcote (1960 -68)

GIS Datasets:

- Hydrography, linear
- Mean Annual Rainfall
- Topographic Contours, Statewide

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

Comments

This application was referred to the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC). The referral decision made by DSEWPC was 'not a controlled action if undertaken in a particular manner'. The particular manner referred to in DSEWPC's decision relates to staged clearing and revegetation (DSEWPC 2012).

An application for an Extractive Industry Licence was made to the Shire of Harvey in 2011. At the Councils meeting on 6 December 2011, Council resolved to approve a reduced area (6 trees) for extraction. The Shire only approved a reduced area because they determined that the original area of 11.6 hectares was unacceptable due to the need to clear significant vegetation (tuarts) (Shire of Harvey, 2011).

The applicant subsequently appealed the Shire of Harvey's decision.

In response to the State Administrative Tribunal mediation, Council resolved to amend its original decision and grant approval for the 11.6 hectare area (Shire of Harvey, 2013).

The area under application is mapped as the South West Coastal Groundwater Area. This area is a proclaimed area under the Rights in Water and Irrigation Act 1914. A condition on DSEWPC's approval is that a 500mm buffer must be maintained at all times between the groundwater level and the lowest level of any active extraction surface and extraction should only occur between 1 November and 31 May each year when the groundwater is at the deepest level (DSEWPC, 2012). Given this condition a licence to take groundwater will not be required as dewatering will not occur.

In April 2012 this application was referred to the Environmental Protection Authority (EPA). The EPA's decision was 'Not Assessed - Public Advice Given'. The advice given relates to fauna, surface and ground water, and community concerns (EPA, 2012).

To offset the proposed clearing of approximately 115 mature tuart trees the applicant has provided a Pit Rehabilitation and Maintenance Management Plan. This Plan outlines the applicant's commitment to plant and maintain approximately 300 tuart and 300 peppermint trees within a belt through the centre of the extraction area. The proposed revegetation and rehabilitation will take place in three stages post extraction. The applicant also proposes to plant an additional 300 native trees as a visual buffer east of the extraction area.

Lot 5 is freehold land that is zoned rural under the Greater Bunbury Regional Scheme.

Methodology

References:

- DSEWPC (2012)
- EPA (2012)
- Shire of Harvey (2011)
- Shire of Harvey (2013)

GIS Datasets:

- RIWI
- Greater Bunbury Regional Area

4. References

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- Shire of Harvey (2011) Email advising that Council resolved to approve a reduced area (6 trees) for extraction (DEC Ref: A460952).
- Shire of Harvey (2013) Reconsideration of Extractive Industry Approval - Notice of Planning Permission (DEC Ref: A636105).

5. Glossary

Term	Meaning
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
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