Australian Government
Department of the Environment

Referral of proposed action

What is a referral?

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) provides for the protection of the environment, especially matters of national environmental significance (NES). Under the EPBC Act, a person must not take an action that has, will have, or is likely to have a significant impact on any of the matters of NES without approval from the Australian Government Environment Minister or the Minister's delegate. (Further references to 'the Minister' in this form include references to the Minister's delegate.) To obtain approval from the Environment Minister, a proposed action should be referred. The purpose of a referral is to obtain a decision on whether your proposed action will need formal assessment and approval under the EPBC Act.

Your referral will be the principal basis for the Minister's decision as to whether approval is necessary and, if so, the type of assessment that will be undertaken. These decisions are made within 20 business days, provided sufficient information is provided in the referral.

Who can make a referral?

Referrals may be made by or on behalf of a person proposing to take an action, the Commonwealth or a Commonwealth agency, a state or territory government, or agency, provided that the relevant government or agency has administrative responsibilities relating to the action.

When do I need to make a referral?

A referral must be made for actions that are likely to have a significant impact on the following matters protected by Part 3 of the EPBC Act:

- World Heritage properties (sections 12 and 15A)
- National Heritage places (sections 15B and 15C)
- Wetlands of international importance (sections 16 and 17B)
- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (sections 20 and 20A)
- Protection of the environment from nuclear actions (sections 21 and 22A)
- Commonwealth marine environment (sections 23 and 24A)
- Great Barrier Reef Marine Park (sections 24B and 24C)
- A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
- The environment, if the action involves Commonwealth land (sections 26 and 27A), including:
    - actions that are likely to have a significant impact on the environment of Commonwealth land (even if taken outside Commonwealth land);
    - actions taken on Commonwealth land that may have a significant impact on the environment generally;
- The environment, if the action is taken by the Commonwealth (section 28)
- Commonwealth Heritage places outside the Australian jurisdiction (sections 27B and 27C)

You may still make a referral if you believe your action is not going to have a significant impact, or if you are unsure. This will provide a greater level of certainty that Commonwealth assessment requirements have been met.

To help you decide whether or not your proposed action requires approval (and therefore, if you should make a referral), the following guidance is available from the Department's website:

- the Policy Statement titled Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Additional sectoral guidelines are also available.

- the Policy Statement titled Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies.
- the Policy Statement titled Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources.
- the interactive map tool (enter a location to obtain a report on what matters of NES may occur in that location).

Can I refer part of a larger action?

In certain circumstances, **the Minister may not accept a referral for an action that is a component of a larger action and may request the person proposing to take the action to refer the larger action for consideration under the EPBC Act (Section 74A, EPBC Act).** If you wish to make a referral for a staged or component referral, read 'Fact Sheet 6 Staged Developments/Split Referrals' and contact the Referrals Gateway (1800 803 772).

Do I need a permit?

Some activities may also require a permit under other sections of the EPBC Act or another law of the Commonwealth. Information is available on the Department's web site.

Is your action in the Great Barrier Reef Marine Park?

If your action is in the Great Barrier Reef Marine Park it may require permission under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). If a permission is required, referral of the action under the EPBC Act is deemed to be an application under the GBRMP Act (see section 37AB, GBRMP Act). This referral will be forwarded to the Great Barrier Reef Marine Park Authority (the Authority) for the Authority to commence its permit processes as required under the Great Barrier Reef Marine Park Regulations 1983. If a permission is not required under the GBRMP Act, no approval under the EPBC Act is required (see section 43, EPBC Act). The Authority can provide advice on relevant permission requirements applying to activities in the Marine Park.

The Authority is responsible for assessing applications for permissions under the GBRMP Act, GBRMP Regulations and Zoning Plan. Where assessment and approval is also required under the EPBC Act, a single integrated assessment for the purposes of both Acts will apply in most cases. Further information on environmental approval requirements applying to actions in the Great Barrier Reef Marine Park is available from http://www.gbrmpa.gov.au/ or by contacting GBRMPA's Environmental Assessment and Management Section on (07) 4750 0700.

The Authority may require a permit application assessment fee to be paid in relation to the assessment of applications for permissions required under the GBRMP Act, even if the permission is made as a referral under the EPBC Act. Further information on this is available from the Authority:

Great Barrier Reef Marine Park Authority

2-68 Flinders Street PO Box 1379
Townsville QLD 4810
AUSTRALIA

Phone: + 61 7 4750 0700
Fax: + 61 7 4772 6093

www.gbrmpa.gov.au

What information do I need to provide?

Completing all parts of this form will ensure that you submit the required information and will also assist the Department to process your referral efficiently. If a section of the referral document is not applicable to your proposal enter N/A.

You can complete your referral by entering your information into this Word file.

Instructions

Instructions are provided in blue text throughout the form.

Attachments/supporting information

The referral form should contain sufficient information to provide an adequate basis for a decision on the likely impacts of the proposed action. You should also provide supporting documentation, such as environmental reports or surveys, as attachments.

Coloured maps, figures or photographs to help explain the project and its location should also be submitted with your referral. Aerial photographs, in particular, can provide a useful perspective and context. Figures should be good quality as they may be scanned and viewed electronically as black and white documents. Maps should be of a scale that clearly shows the location of the proposed action and any environmental aspects of interest.

Please ensure any attachments are below three megabytes (3mb) as they will be published on the Department's website for public comment. To minimise file size, enclose maps and figures as separate files if necessary. If unsure, contact the Referrals Gateway (email address below) for advice. Attachments larger than three megabytes (3mb) may delay processing of your referral.

Note: the Minister may decide not to publish information that the Minister is satisfied is commercial-in-confidence.

How do I pay for my referral?

From 1 October 2014 the Australian Government commenced cost recovery arrangements for environmental assessments and some strategic assessments under the EPBC Act. If an action is referred on or after 1 October 2014, then cost recovery will apply to both the referral and any assessment activities undertaken. Further information regarding cost recovery can be found on the Department's website.

Payment of the referral fee can be made using one of the following methods:

- **EFT Payments can be made to:**

  BSB: 092-009
  Bank Account No. 115859
  Amount: $7352
  Account Name: Department of the Environment.
  Bank: Reserve Bank of Australia
  Bank Address: 20-22 London Circuit Canberra ACT 2601
  Description: The reference number provided (see note below)

- **Cheque** - Payable to "Department of the Environment". Include the reference number provided (see note below), and if posted, address:

  The Referrals Gateway
  Environment Assessment Branch
  Department of the Environment
  GPO Box 787
  Canberra ACT 2601

- **Credit Card**

  Please contact the Collector of Public Money (CPM) directly (call (02) 6274 2930 or 6274 20260 and provide the reference number (see note below).

Note: in order to receive a reference number, submit your referral and the Referrals Gateway will email you the reference number.

How do I submit a referral?

Referrals may be submitted by mail or email.

Mail to:

Referrals Gateway
Environment Assessment Branch
Department of Environment
GPO Box 787
CANBERRA ACT 2601

- If submitting via mail, electronic copies of documentation (on CD/DVD or by email) are required.

Email to: epbc.referrals@environment.gov.au

- Clearly mark the email as a 'Referral under the EPBC Act'.
- Attach the referral as a Microsoft Word file and, if possible, a PDF file.
- **Follow up with a mailed hardcopy including copies of any attachments or supporting reports.**

What happens next?

Following receipt of a valid referral (containing all required information) you will be advised of the next steps in the process, and the referral and attachments will be published on the Department's web site for public comment.

The Department will write to you within 20 business days to advise you of the outcome of your referral and whether or not formal assessment and approval under the EPBC Act is required. There are a number of possible decisions regarding your referral:

The proposed action is NOT LIKELY to have a significant impact and does NOT NEED approval

No further consideration is required under the environmental assessment provisions of the EPBC Act and the action can proceed (subject to any other Commonwealth, state or local government requirements).

The proposed action is NOT LIKELY to have a significant impact IF undertaken in a particular manner

The action can proceed if undertaken in a particular manner (subject to any other Commonwealth, state or local government requirements). The particular manner in which you must carry out the action will be identified as part of the final decision. You must report your compliance with the particular manner to the Department.

The proposed action is LIKELY to have a significant impact and does NEED approval

If the action is likely to have a significant impact a decision will be made that it is a *controlled action*. The particular matters upon which the action may have a significant impact (such as World Heritage values or threatened species) are known as the *controlling provisions*.

The controlled action is subject to a public assessment process before a final decision can be made about whether to approve it. The assessment approach will usually be decided at the same time as the controlled action decision. (Further information about the levels of assessment and basis for deciding the approach are available on the Department's web site.)

The proposed action would have UNACCEPTABLE impacts and CANNOT proceed

The Minister may decide, on the basis of the information in the referral, that a referred action would have clearly unacceptable impacts on a protected matter and cannot proceed.

Compliance audits

If a decision is made to approve a project, the Department may audit it at any time to ensure that it is completed in accordance with the approval decision or the information provided in the referral. If the project changes, such that the likelihood of significant impacts could vary, you should write to the Department to advise of the changes. If your project is in the Great Barrier Reef Marine Park and a decision is made to approve it, the Authority may also audit it. (See "*Is your action in the Great Barrier Reef Marine Park,"* p.2, for more details).

For more information

- call the Department of the Environment Community Information Unit on 1800 803 772 or
- visit the web site http://www.environment.gov.au/topics/about-us/legislation/environment-protection-and-biodiversity-conservation-act-1999

All the information you need to make a referral, including documents referenced in this form, can be accessed from the above web site.

Referral of proposed action

Project title: Proposed Residential Development on part of Lot 2 Fanstone Avenue, Beeliar, Western Australia ("project area").

1 Summary of proposed action

1.1 **Short description**

The proposal is to undertake low to high density residential development on part of Lot 2 Fanstone Avenue, Beeliar, Western Australia (Attachment 1).

The proposed action will result in the clearing of native vegetation and rehabilitated vegetation.

1.2 **Latitude and longitude**

The latitude and longitude points bounding the project area are displayed in the table, with the Location Points referenced in Attachment 2.

	Latitude			Longitude		
Location Point	**degrees**	**minutes**	**seconds**	**degrees**	**minutes**	**seconds**
1	32	7	53.898	115	48	9.145
2	32	7	53.879	115	48	20.624
3	32	8	6.630	115	48	20.656
4	32	8	2.021	115	48	9.141
5	32	8	2.534	115	48	8.466
6	32	8	4.398	115	48	13.151
7	32	8	5.083	115	48	12.868
8	32	8	5.055	115	48	12.012
9	32	8	5.705	115	48	10.243
10	32	8	5.618	115	48	9.009
11	32	8	5.163	115	48	8.085
12	32	8	3.532	115	48	7.856

1.3 **Locality and property description**

The project area is located at Lot 2 Fanstone Avenue, Beeliar, Western Australia. The project area is located south of Beeliar Drive, and is approximately 5 kilometres (km) west of the Kwinana Freeway within the City of Cockburn (Attachment 1).

Land to the north, east and west of the site has undergone significant residential development in the last 10 years. Land immediately to the south of the project area is vacant rural land. A quarry is located just over 500m south of the site. Land to the east of the site has been historically cleared and used as market gardens.

1.4 **Size of the development footprint or work area (hectares)**

The project area covers approximately 10.5 hectares (ha).

1.5 **Street address of the site**

The project area is bounded by Mclaren Avenue to the north, Fanstone Avenue to the south, Birchley Road to the west and old market gardens to the east.

1.6 **Lot description**

The project area is located at Lot 2 Fanstone Avenue, Beeliar, Western Australia

1.7 **Local Government Area and Council contact (if known)**

City of Cockburn

1.8	**Time frame** The aim is for construction to commence in once all relevant approvals are granted.		
1.9	**Alternatives to proposed action**	✓	No
			Yes, you must also complete Section 2.2
1.10	**Alternative time frames etc**	✓	No
			Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	**State assessment**		No
		✓	Yes, you must also complete Section 2.5
1.12	**Component of larger action**	✓	No
			Yes, you must also complete Section 2.7
1.13	**Related actions/proposals**	✓	No
			Yes, provide details:
1.14	**Australian Government funding**	✓	No
			Yes, provide details:
1.15	**Great Barrier Reef Marine Park**	✓	No
			Yes, you must also complete Section 3.1 (h), 3.2 (e)

2 Detailed description of proposed action

2.1 Description of proposed action

The proposed action will result in the clearing of native vegetation and rehabilitated vegetation for the purposes of low to high density residential development. The development will incorporate 10% public open space (POS) that will retain habitat trees (Attachment 3). A large portion of the clearing proposed consists of rehabilitated areas.

2.2 Alternatives to taking the proposed action
N/A

2.3 Alternative locations, time frames or activities that form part of the referred action
N/A

2.4 Context, planning framework and state/local government requirements

Lot 2 is split into two zonings under the Metropolitan Region Scheme (MRS). The northern portion is proposed to be developed for residential purposes and is zoned 'Urban'. The small drainage basin to the south-west is zoned 'Rural'. The whole of Lot 2 is zoned 'Special Use' under the *City of Cockburn Town Planning Scheme (TPS) No. 3*.

Its zoning classification under the TPS is due to its inclusion (as part of a larger lot) in Cockburn Cement's site to the south. The zoning has been defined as:
'Cement Works and Conservation Area, includes land and buildings used for the manufacture of cement lime and associated products for use in the construction industry and includes areas of excavation and earthworks associated with the manufacture of cement together with the surrounding areas of buffer land retained and conserved to separate works from the surrounding uses…'

The proponent plans to lodge the final Local Structure Plan (LSP) to the City of Cockburn in the near future. Following the LSP approval, an application for Subdivision will be lodged with the Western Australian Planning Commission (WAPC) consistent with the intent of the LSP.

A TPS Amendment (No. 110) has been lodged to rezone part of Lot 2 Fanstone Avenue, Beeliar from from 'Special Use' zone to 'Development' zone and to reserve part of Lot 2 Fanstone Avenue, Beeliar from 'Special Use' to 'Local Reserve Lakes and Drainage'.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

An Environmental Assessment and Management Strategy (EAMS) has been prepared for the project area to accompany the LSP to be submitted to the City of Cockburn. This EAMS outlines key environmental opportunities and constraints within the project area and proposed environmental management measures. The proposal was referred to the Environmental Protection Authority (EPA) as part of the TPS Amendment No.110. The EPA made a determination of 'Scheme Not Assessed: No advice given (no appeals)' on the 11th November 2015 (Attachment 3).

In order to address the proponents' responsibilities under the EPBC Act, this referral has been prepared to assess the potential impact of the proposal on MNES. A search of the EPBC 'Protected Matters Search Tool' database was undertaken on the 18th of May 2015 as a means of informing this referral (Attachment 4).

2.6 Public consultation (including with Indigenous stakeholders)

As part of the lodgement of the LSP outlined in Section 2.4 of this Referral, public advertising will take place. Public advertising will be undertaken shortly for TPS Amendment No. 110.

The Local Structure Plan and associated documentation will also be publicly advertised by the City of Cockburn.

2.7 A staged development or component of a larger project
N/A

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

3.1 (a) World Heritage Properties

Description

There are no known World Heritage Properties located within 1 km of the project area. The nearest World Heritage Property is the Australian Convict Sites (Fremantle Prison- former) which is located approximately10 km north-west of the project area.

Nature and extent of likely impact

NONE- No direct or indirect impacts on the Australian Convict Sites will occur as a result of this proposed action.

3.1 (b) National Heritage Places

Description

There are no known National Heritage Places located within 1 km of the project area. The nearest National Heritage Place is the Fremantle Prison (former) which is located approximately 10 km north-west of the project area.

Nature and extent of likely impact

NONE- No direct or indirect impacts on the Fremantle Prison (former) will occur as a result of this proposed action.

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

There are no known Wetlands of International Importance (declared Ramsar wetlands) located within 1 km of the project area. The closest declared Ramsar wetland is the Forrestdale and Thomsons Lakes which is located approximately 1.1 km south-east of the project area.

Nature and extent of likely impact

NONE- Surface water runoff and groundwater quality will be managed through the implementation of a Local Water Management Strategy and Urban Water Management Plan to ensure no adverse impacts result to surrounding wetlands. Therefore, no direct or indirect impacts on the Forrestdale and Thomsons Lakes will occur as a result of this proposed action.

3.1 (d) Listed threatened species and ecological communities

Description

A search of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool identified 14 Threatened flora and fauna species as potentially occurring within a 1 km radius of the project area (DotE 2015a) (Attachment 4). No Threatened Ecological Communities (TECs) are known to occur within 1 km of the project area.

Environmental surveys that have been undertaken within the project area that were used in determining the likelihood of Threatened species occurring within the project area include:

- Level 2 Flora and Vegetation Assessment (360 Environmental 2015a) (Attachment 5); and
- Black Cockatoo Habitat Survey (360 Environmental 2015b) (Attachment 6).

The likelihood of the species occurring within the project area was determined through the assessment of:

- The habitat/vegetation typically associated with the conservation significant species;
- The typical soil type the species in known to grow/occur in;
- The landform (topography, hydrology) the species generally occurs on;
- The condition of the site;
- Current land use; and
- Whether nearby records of the species has been found in the Western Australian Department of Parks and Wildlife's (DPaW's) database search.

Table 1. EPBC Act Listed Threatened Species Likelihood of Occurrence Within Project Area

Scientific Name	Common Name	Conservation Status as Listed under the EPBC Act	Likelihood of Presence Within Project Area
Birds			
Botaurus poiciloptilus	Australiasian Bittern	Endangered	Unlikely
Calyptorhynchus banksia naso	Forest Red-tailed Black Cockatoo (FRBC)	Vulnerable	Likely
Calyptorhynchus latirostris	Carnaby's Black Cockatoo (Carnaby's Cockatoo)	Endangered	Likely
Leipoa ocellata	Malleefowl	Vulnerable	Unlikely
Rostrulata australis	Australian Painted Snipe	Endangered	Unlikely
Mammals			
Dasyurus geoffroii	Chuditch, Western Quoll	Vulnerable	Unlikely
Pseudocheirus occidentalis	Western Ringtail Possum	Vulnerable	Unlikely
Setonix brachyurus	Quokka	Vulnerable	Unlikely
Plants			
Caladenia huegelii	King Spider-orchid	Endangered	Unlikely
Centrolepis caespitosa	-	Endangered	Unlikely
Diuris micrantha	Dwarf Bee-orchid	Vulnerable	Unlikely
Diuris purdiei	Purdie's Donkey-orchid	Endangered	Unlikely
Drakaea elastica	Glossy-leafed Hammer-orchid	Endangered	Unlikely
Drakaea micrantha	Dwarf Hammer-orchid	Vulnerable	Unlikely

Nature and extent of likely impact

The likelihood of occurrence assessment determined that two threatened fauna species are likely to occur within the project area:

- *Calyptorhynchus banksia naso* (FRBC); and
- *Calyptorhynchus latirostris* (Carnaby's Cockatoo)

The likelihood of all Threatened fauna species occurring within the site is discussed below in Table 2:

Table 2. Threatened Fauna Species Likelihood of Occurrence Assessment Within the Project Area.

Scientific Name	Common Name	Habitat Description and Distribution	Likelihood of Occurrence	Likelihood Justification
Birds				
Botaurus poiciloptilus	Australiasian Bittern	Habitat This species favours permanent and seasonal freshwater habitats that typically contain tall dense vegetation such as sedges, rushes and/or reeds (ie. *Phragmites*, *Cyperus*, *Eleocharis*, *Juncus*, *Typha*, *Baumea*, *Bolboschoenus*) or cutting grass (*Gahnia*) (DotE 2015b). Distribution The species current distribution throughout Western Australia is on the western coastal plain between Lancelin and Busselton, in the southern coastal region from Augusta to east of Albany and inland to some wetlands in the jarrah forest belt, with small, isolated populations in swamps from west of Esperance eastwards to near Cape Arid (DotE 2015b).	Unlikely	There are no wetlands present within the project area. It is not considered that the project area has suitable habitat for this species.
Calyptorhynchus banksia naso	FRBC	Habitat The FRBC inhabits dense *Eucalyptus marginata* (Jarrah), *Eucalyptus diversicolor* (Karri) and *Corymbia calophylla* (Marri) forests that receive more than 600 mm of average annual rainfall. Breeding has been recorded in every month with peaks in autumn-winter (April-June) and spring (August-October) (Johnstone et al. 2013). The FRBC feeds primarily on Marri and Jarrah fruit. However, they are also known to feed on *Eucalyptus patens* (Blackbutt), *Eucalyptus staeri* (Albany Blackbutt), Karri, *Allocasuarina fraseriana* (Sheoak) and *Persoonia longifolia* (Snottygobble). The FRBC can obtain energy faster when feeding on Marri and Jarrah than other food sources. These two plant species make up 90% of the FRBC's diet (Johnstone & Kirkby 1999). Distribution The FRBC is distributed throughout the humid and subhumid regions of south-western Western Australia; from Gingin through the Darling Ranges to the	Likely	The site contains potential breeding and roosting habitat for this species.

		southwest from around Bunbury to Albany (Johnstone 1997). The FRBC generally occurs in pairs or small flocks, although occasionally can be found in large flocks of up to 200.		
Calyptorhynchus latirostris	Carnaby's Cockatoo	Habitat The Carnaby's Cockatoo inhabits woodlands and scrubs of semi-arid interior of Western Australia, in non-breeding season wandering in flocks to coastal areas, especially pine plantations. Carnaby's feed on seeds, nuts and flowers of a variety of native and exotic plants. Food sources include proteaceous plant species (such as *Banksia* spp., *Hakea* spp., *Dryandra* spp., and *Grevillea* spp.), Pine trees (*Pinus* sp.), Marri, and *Eucalyptus* such as Jarrah, and Sheoak (Shah 2006; DSEWPaC 2012). Seeds from seed pods of *Banksia* and the cones of pine trees provide the highest energetic yield for Carnaby's Cockatoo. Breeding has been recorded from early July to mid-December, and primarily occurs in the Wheatbelt (Johnstone & Storr 1998). However, this species is currently expanding its breeding range westward and south into the Jarrah-Marri forests of the Darling Scarp and into the Tuart forests of the Swan Coastal Plain (SCP) including Yanchep, Baldivis, Lake Clifton and near Bunbury (Johnstone & Kirkby 2011). Distribution Occurs in south-west to lower Murchison in the north and east to Nabawa, Wilroy, Waddi Forest, Manmanning, Durokoppin, Lake Cronin and just east of Condingup. Endemic to Western Australia. Occurs in subpopulations across the south-west. Residential in high-rainfall areas, but where it occurs in eastern areas, it migrates to coastal areas where rainfall is higher after the breeding season (winter to spring) (DSEWPaC 2012).	Likely	The site contains potential breeding habitat for this species.
Leipoa ocellata	Malleefowl	Habitat The Malleefowl inhabits shrublands and low woodlands that are dominated by mallee vegetation and/or low-growing multi-stemmed *Eucalyptus* species. Occasionally inhabiting *Acacia* shrublands (DotE 2015b). Distribution The Malleefowl is scattered in remnant Wheatbelt vegetation and south to the coast, including Roe Plain to the south of the Nullarbor Plain. Recorded from Cape Farquhar (north of Carnarvon) to the Eyre Bird Observatory (DotE 2015b).	Unlikely	This species has not been identified within a 5km buffer of the site (DPaW, 2015a).
Rostrulata australis	Australian Painted Snipe	Habitat	Unlikely	There are no wetlands present

		Occupies shallow wetlands (generally freshwater or brackish) and flooded plains, usually requiring areas of bare, wet mud and dense undergrowth and canopy cover. Also known to inhabit flooded grasslands, paddocks or crops as a secondary habitat (DotE 2015b). Distribution This species is dispersive / part-migratory, dependent on local conditions. It has a patchy distribution in the south-west of WA (DotE 2015b).		within the project area. It is not considered that the project area has suitable habitat for this species.
Mammals				
Dasyurus geoffroii	Chuditch, Western Quoll	Habitat Chuditch populations occur in both moist, densely vegetated, steeply sloping forest and drier, open, gently sloping forest (DotE 2015b). The Chuditch now has a patchy distribution through the *Eucalyptus marginata* (Jarrah) forest and mixed *Eucalyptus diversicolor* (Karri)/ *Corymbia calophylla* (Marri)/Jarrah forest of south-west Western Australia (DotE 2015b). Distribution The Chuditch is now known only from Western Australia where it predominantly occurs in Jarrah forest. Occasional records have been obtained from the Wheatbelt and Goldfields where it persists in very low numbers. The majority of Chuditch records are from the contiguous forest in south-west Western Australia (DotE 2015b).	Unlikely	The project area does not have suitable habitat for the Chuditch and there are no known records within 5km of the site (DPaW 2015a).
Pseudocheirus occidentalis	Western Ringtail Possum (WRP)	Habitat The subpopulation on the Swan Coastal Plain are associated with stands of myrtaceous trees (typically Peppermint Tree (*Agonis flexuosa*)) growing near swamps, water courses or floodplains, and at low elevation which provide cooler, often more fertile, conditions. The subpopulation in the southern forests, near Manjimup occur mainly in Jarrah or Marri dominated forests extending to Wandoo (*Eucalyptus wandoo*) forests to the north-east of Manjimup. On the South Coast, near Albany the WRP is found in coastal heath, Jarrah/Marri woodland and forest, Peppermint Tree woodland, myrtaceous heaths and shrublands, Bullich (*Eucalyptus megacarpa*) dominated riparian zones and Karri forest. Distribution The WRP has a patchy distribution in primarily two areas: near Bunbury to Leeuwin-Naturalisete National Park (with a small translocated subpopulation near Dawesville); and near Albany (DotE 2015b).	Unlikely	The project area does not have suitable habitat for the WRP and it has not within its known distribution.

Setonix brachyurus	Quokka	Habitat The Quokka prefers early seral (young) vegetation stages that have been burned within the previous ten years. The species is often present in riparian and swamp habitat as they have relatively high water requirements (DotE 2015b). The understorey structure of the habitats currently inhabited by the Quokka consists of dense, low vegetation that provides refuge from predators. Distribution The Quokka occurs on two offshore islands (Rottnest Island and Bald Island) and a number of mainland sites in the south-west of Western Australia, ranging from just south of Perth to the Hunter River (DotE 2015b).	Unlikely	The project area does not contain swampy or riparian habitat or dense low vegetation that is suitable habitat for the quokka.

Potential impacts to the Black Cockatoos that are considered likely to occur within the project area discussed in further detail below:

Black Cockatoos

According to the EPBC Act *Referral Guidelines for Three Threatened Black Cockatoo Species* the site falls within the modelled distribution area for the FRBC and Carnaby's Cockatoo (DSEWPaC, 2012). In accordance with the guidelines, a Black Cockatoo Habitat Assessment was undertaken by 360 Environmental on the 11th June 2014 (360 Environmental 2015b, Attachment 6). The habitat assessment was undertaken to determine the extent and significance of Black Cockatoo habitat within the project area. The assessment took into consideration the preferred roosting, breeding and foraging plant species outlined in the guidelines.

It should be noted that the proposed drainage basin, located in the south west of the site, was not included in the flora and fauna survey. Review of historical aerial photography clearly identifies the proposed basin was a part of the old quarry site that has been rehabilitated. However, a small portion of the proposed drainage basin represents one of the native vegetation associations (EgAc) mapped within the project area, whereas the remainder has been rehabilitated (Attachment 7). Review of historical aerial photography identified that a portion of the rehabilitated area consists of vegetation that is different to what was surveyed in the 'Rehabilitated Areas' (Attachment 7).

The Black Cockatoo habitat assessment found that limited suitable foraging habitat for the Black Cockatoos exists within the site due to the absence of Marri, Jarrah and proteaceous plant species such as *Banksia* spp. (360 Environmental 2015b). There are scattered rehabilitated trees of *Allocasuarina lehmanniana* in the centre of the project area. The FRBC are known to feed on *Allocasuarina* cones, but there is no specific mention of *A. lehmanniana* being used as a food source by Black Cockatoos. While the rehabilitated areas within the project area is known to contain plant species that may be utilised by Black Cockatoos for foraging, it is considered to be in a degraded condition, not properly established, and does not contain primary food sources for the species, therefore offering little foraging value.

The site contains 3.37 ha of vegetation associations that comprise Tuart trees which may be utilised as a food source for the Carnaby's Cockatoo on the SCP (Attachment 7). However, Tuart trees are not considered to be a key foraging resource for the Carnaby's Cockatoo as they get the highest energetic yield from *Banksia* spp. and Pine trees.

During the survey, three Carnaby's Cockatoos were recorded flying over the project area. No feeding evidence in the form of chewed nuts or cones was observed during the survey. The project area is

considered to contain suitable roosting habitat due to the presence of tall Tuart trees.

For most tree species known to support breeding for the Black Cockatoos, a suitable diameter at breast height (DBH) to support a nest hollow is 500 mm, however for Salmon Gum and Wandoo a suitable DBH is 300 mm (DSEWPaC 2012). During the Black Cockatoo Habitat Assessment, a total of 55 Tuart trees were identified as being potential future breeding trees for Black Cockatoos (Attachment 8). None of the trees contained hollows (based on a visual inspection from the ground) that would be of suitable dimensions for Black Cockatoo breeding. A small portion (0.12 ha) of the EgAc vegetation type has been extrapolated as occurring in the drainage basin area to the south west of the site. This portion of the site was not surveyed, however due to the small area of native vegetation proposed to be cleared it is unlikely to contribute to significant habitat for Black Cockatoos.

Mapping of Carnaby's Cockatoo breeding and roosting locations undertaken by the Department of Planning (DoP) (WA) shows that four roosting sites have previously been recorded approximately 3 km east of the project area (DoP 2011). No nearby breeding sites have been identified (DoP 2011). Black Cockatoos have been known to forage within six kilometres of a roost site. Vegetation within the site is therefore within the foraging radius of roost sites, however it does not contain favourable foraging species for the Carnaby's Cockatoo. Flocks of Carnaby's Cockatoos may use several different night roosts across the year.

Plants

The likelihood of occurrence assessment determined that no threatened flora species are considered 'possible' or 'likely' to occur within the project area. A description of why each of the identified threatened species is unlikely to occur within the project area is provided in Table 3 below.

Table 3. Threatened Flora Species Likelihood of Occurrence Assessment Within the Project Area.

Scientific Name	Common Name	Habitat Description and Distribution	Likelihood of Occurrence	Likelihood Justification
Caladenia huegelii	King Spider-orchid	*Caladenia huegelii* occurs in areas of mixed woodland of Jarrah, Candlestick Banksia (*Banksia attenuata*), Holly Banksia (*B. ilicifolia*) and Firewood Banksia (*B. menziesii*) with scattered Sheoak and Marri over dense shrubs of Blueboy (*Stirlingia latifolia*), Swan River Myrtle (*Hypocalymma robustum*), Yellow Buttercups (*Hibbertia hypericoides*), Buttercups (*H. subvaginata*), Balga (*Xanthorrhoea preissii*), Coastal Jugflower (*Adenanthos cuneatus*) and *Conostylis* species, from just north of Perth to the Busselton area, usually within 20 km of the coast. Throughout its range the species tends to favour areas of dense undergrowth. Soil is usually deep grey-white sand usually associated with the Bassendean sand-dune system. However, rare plants have been known to extend into the Spearwood system (in which calcareous yellow sands dominate) in some areas (DEC 2009).	Unlikely	The vegetation within the project area is in a highly altered state and lacks a dense understorey that is typically associated with *C. huegelii* (360 Environmental 2015a).

Centrolepis caespitosa	-	*Centrolepis caespitosa* occurs in winter-wet clay pans dominated by low shrubs and sedges (Brown et al. 1998).	Unlikely	No suitable habitat occurs in the project area, no records occur in the immediate area (360 Environmental 2015a).
Diuris micrantha	Dwarf Bee-orchid	Found in small populations on dark, grey to blackish, sandy clay-loam substrates in winter wet depressions or swamps (TSSC 2008a).	Unlikely	No suitable habitat occurs in the project area, no records occur in the immediate area (360 Environmental 2015a).
Diuris purdiei	Purdie's Donkey-orchid	*Diuris purdiei* grows on sand to clay soils, in areas subject to winter inundation, and amongst native sedges and dense heath with scattered emergent *Melaleuca preissiana*, Marri, Jarrah and *Nuytsia floribunda* (TSSC 2008b).	Unlikely	No suitable habitat occurs in the project area, no records occur in the immediate area (360 Environmental 2015a).
Drakaea elastica	Glossy-leafed Hammer-orchid	Grows on bare patches of white sand over a dark sandy loam on low-lying damp areas near ephemeral lakes, or on the slopes adjacent to winter wet depressions, swamps and water courses (DotE 2015b).	Unlikely	No suitable habitat occurs in the project area, no records occur in the immediate area (360 Environmental 2015a).
Drakaea micrantha	Dwarf Hammer-orchid	Usually found on cleared firebreaks or open sandy patches that have been disturbed, where competition from other plants has been removed (DotE 2015b).	Unlikely	No suitable habitat occurs in the project area, no records occur in the immediate area.

3.1 (e) Listed migratory species

Description

The likelihood of the species occurring within the project area was determined through the assessment of:

- The habitat/vegetation typically associated with the conservation significant species;
- The typical soil type the species in known to grow/occur in;
- The landform (topography, hydrology) the species generally occurs on;
- The condition of the site;
- Current land use; and
- Whether nearby records of the species has been found in the DPaW's NatureMap database search.

Table 4. EPBC Act Listed Migratory Species Likelihood of Occurrence Within Project Area

Scientific Name	Common Name	Conservation Status as Listed under the EPBC Act	Likelihood of Presence Within Project Area
Migratory Marine Species			
Apus pacificus	Fork-tailed Swift	-	Unlikely
Migratory Terrestrial Species			
Haliaeetus leucogaster	White-bellied Sea-Eagle	-	Unlikely
Merops ornatus	Rainbow Bee-eater	-	Possible
Migratory Wetland Species			
Ardea alba	Great Egret, White Egret	-	Unlikely
Ardea ibis	Cattle Egret	-	Unlikely
Pandion cristatus	Eastern Osprey	-	Unlikely
Rostratula benghalensis (sensu lato)	Painted Snipe	Endangered	Unlikely

Nature and extent of likely impact

The likelihood of occurrence assessment determined that no migratory species (apart from the Rainbow Bee-eater) are considered 'possible' or 'likely' to occur within the project area. A DPaW NatureMap database search using a 2km buffer of the project area did not identify any of the migratory species identified in the PMST (DPaW 2015b). Majority of the listed migratory species identified in the PMST are found nearby or within wetlands which is not present within the project area. A description of the likelihood of each of the identified migratory species occurring within the project area is provided in Table 5 below.

Table 5. EPBC Act Listed Migratory Species Likelihood of Occurrence Justification

Scientific Name	Common Name	Habitat Description and Distribution	Likelihood of Occurrence	Likelihood Justification
Migratory Marine Species				
Apus pacificus	Fork-tailed Swift	The Fork-tailed Swift is almost exclusively aerial (DotE 2015b). They mostly occur over inland plains but sometimes above foothills or in coastal areas (DotE 2015b). This species is known to forage high above the tree canopy but is rarely recorded lower, so it is independent of terrestrial habitats (Johnstone & Storr 1998).	Unlikely	This species is almost exclusively aerial.
Migratory Terrestrial Species				
Haliaeetus	White-bellied Sea-	This species is normally seen	Unlikely	The site does

leucogaster	Eagle	perched high in a tree, or soaring over waterways and adjacent land. Birds form permanent pairs that inhabit territories throughout the year (Australian Museum 2007). The White-bellied Sea-Eagle feeds mainly off aquatic animals, such as fish, turtles and sea snakes, but it takes birds and mammals as well (Australian Museum 2007).		not contain open water and therefore would not contain suitable prey (marine species).
Merops ornatus	Rainbow Bee-eater	The Rainbow Bee-eater is most often found in open forests, woodlands and shrublands, and cleared areas, usually near water (Australian Museum 2007). It can be found on farmland with remnant vegetation and in orchards and vineyards (Australian Museum 2007). It will use disturbed sites such as quarries, cuttings and mines to build its nesting tunnels (Australian Museum 2007).	Possible	The site does not contain any waterbodies which makes it unlikely to be preferable habitat. May reside in the cleared slopes of the old quarry area.
Migratory Wetland Species				
Ardea alba	Great Egret, White Egret	Prefer shallow water, particularly when foraging, but may be seen on any watered area, including damp grasslands (Australian Museum 2007). The Great Egret usually feeds on molluscs, amphibians, aquatic insects, small reptiles, crustaceans and occasionally other small animals, but fish make up the bulk of its diet (DotE 2015b).	Unlikely	The site does not contain wetland habitat or suitable prey for the species.
Ardea ibis	Cattle Egret	Found in grasslands, woodlands and wetlands, and is not common in arid areas (Australian Museum 2007). It also uses pastures and croplands, especially where drainage is poor (Australian Museum 2007). The Cattle Egret prefers grasshoppers, especially during breeding season, but eats many other invertebrates (DotE 2015b). Cattle Egret pairs are monogamous for the breeding season, and they breed in colonies, usually with other water birds. Their shallow platform nests are made in wetland areas in trees and bushes, usually as high as possible (DotE 2015b).	Unlikely	The site does not contain wetland habitat and would be well drained due to sandy soils that is not suited to the species.
Pandion cristatus	Eastern Osprey	Occurs in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. They are mostly found in coastal areas but occasionally travel	Unlikely	There are no wetlands present within the project area. It is not considered that

		inland along major rivers, mainly in northern Australia (DotE 2015b). They require extensive areas of open fresh, brackish or saline water for foraging (DotE 2015b).		the project area has suitable habitat for this species.
Rostratula benghalensis (sensu lato)	Painted Snipe	Occupies shallow wetlands (generally freshwater or brackish) and flooded plains, usually requiring areas of bare, wet mud and dense undergrowth and canopy cover. Also known to inhabit flooded grasslands, paddocks or crops as a secondary habitat (DotE 2015b). This species is dispersive/part-migratory, dependent on local conditions. It has a patchy distribution in the south-west of Western Australia (DotE 2015b).	Unlikely	The site does not contain wetland habitat and would be well drained due to sandy soils that is not suited to the species.

Potential impacts to the Rainbow Bee-eater that are considered likely to occur within the project area discussed in further detail below:

Rainbow Bee-eater:

The Rainbow Bee-eater is widely distributed throughout Australia and eastern Indonesia, including Bali, the Lesser Sundas and Sulawesi, and east to Papua New Guinea, the Bismarck Archipelago and, rarely, the Solomon Islands (SEWPaC, 2012e).

The Rainbow Bee-eater is not considered globally threatened. There are no published estimates of the global population size, but it is assumed to be quite large as the Rainbow Bee-eater is widely distributed (i.e. the global extent of occurrence is estimated at 1 000 000 to 10 000 000 km^2) and is said to be seasonally common and locally abundant throughout much of its range. Trends in global population size have not been quantified, but they are unlikely to approach the rate of decline that is required for the bee-eater to be listed as a threatened species (DSWEPC, 2012e; BirdLife International 2005).

Rainbow Bee-eaters may utilise the site in a transitory capacity or for foraging and/or nesting.

Based on the high population estimated for this species development of the site is appears unlikely to impact this species.

3.1 (f) Commonwealth marine area

(If the action is in the Commonwealth marine area, complete 3.2(c) instead. This section is for actions taken outside the Commonwealth marine area that may have impacts on that area.)

Description
The closest Commonwealth marine area is the EEZ and Territorial Sea that is approximately 19 km to the west of the project area.

Nature and extent of likely impact

NONE- No direct or indirect impacts on the Commonwealth Marine Area will occur as a result of this proposed action.

3.1 (g) Commonwealth land

(If the action is on Commonwealth land, complete 3.2(d) instead. This section is for actions taken outside Commonwealth land that may have impacts on that land.)

Description
N/A

Nature and extent of likely impact

N/A

3.1 (h) The Great Barrier Reef Marine Park

Description
The Great Barrier Reef Marine Park exists in Northern Queensland, on the opposite side of Australia that is more than 3000 km from the project area.

Nature and extent of likely impact

NONE- Given the distance between the site and the Great Barrier Reef Marine Park, there will be no impact to Great Barrier Reef Marine Park.

3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development

Description

N/A

Nature and extent of likely impact

N/A

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

3.2 (a)	**Is the proposed action a nuclear action?**	✓	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment		

3.2 (b)	**Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?**	✓	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment		

3.2 (c)	**Is the proposed action to be taken in a Commonwealth marine area?**	✓	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))		

3.2 (d)	**Is the proposed action to be taken on Commonwealth land?**	✓	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g))		

3.2 (e)	**Is the proposed action to be taken in the Great Barrier Reef Marine Park?**	✓	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))		

3.3 Other important features of the environment

3.3 (a) Flora and fauna

A total of 63 taxa (including species, subspecies, varieties and forms) from 51 genera and 27 families were recorded in the Project area (360 Environmental 2015a). The most frequently recorded genera were *Eucalyptus* (four taxa) and *Acacia* (three taxa).

The Flora and Vegetation Assessment undertaken for the site found that the *C. huegelii* has been recorded within 4km of the project area. The assessment found that this species is the only EPBC Act listed species that would have the potential to occur within the site. Although the survey was undertaken outside the known flowering period for *C. huegelii,* it is considered unlikely to occur within the project area due to the highly altered state of vegetation and lack of dense understorey typically associated with *C. huegelii.* No Threatened species listed under the EPBC Act were recorded during the spring survey.

As the project area has been historically quarried and rehabilitated (apart from a thin boundary on the edges of the landholding), the majority of it is not deemed to provide quality fauna habitat due to its degraded nature. The vegetation association EgAc contains 55 large Tuart trees that are deemed to be potential breeding trees for the Black Cockatoos (Attachment 8). The area of rehabilitation may offer some minimal foraging habitat to transient species, however this area is in a mostly degraded condition and has not yet had the opportunity to properly establish.

3.3 (b) Hydrology, including water flows

The Department of Water (DoW) Perth Groundwater Atlas identified an east to west groundwater flow across the project area (DoW, 2012). The depth to groundwater is approximately 3m Australian Height Datum (AHD) on the eastern site boundary and approximately 2m AHD on the western site boundary (DoW, 2012).

No natural surface water features exist within the site. The closest Conservation Category Wetland is identified as Thompson's lake, located approximately 1.5km south east of the lot boundary.

3.3 (c) Soil and Vegetation characteristics

The project area is mapped as occurring within the Spearwood System S1b Phase of the Department of Agriculture and Food WA (DAFWA) Soil Subsystems.The Spearwood System S1b Phase contains deep siliceous yellow brown sands or pale sands with yellow-brown subsoil (DAFWA 2002).

The Flora and Vegetation Assessment undertaken by 360 Environmental identified two vegetation associations within the site as well as a rehabilitated area.

It must be noted that the proposed drainage basin in the south west of the site was not included in the flora and vegetation survey. Review of historical aerial photography clearly identifies the proposed basin was part of the old quarry site that has been rehabilitated. However, a small portion of the proposed drainage basin represents one of the native vegetation associations (EgAc) mapped within the project area, whereas the remainder has been rehabilitated. Review of historical aerial photography identified that a portion of the rehabilitated area consists of vegetation that is different to what was surveyed in the 'Rehabilitated Areas'.

The vegetation associations found within the site are described in Table 6 below:

Table 6. Vegetation Association Descriptions and Extent within the Project Area

Vegetation Association Code	Description	Area (ha)
EgAc	*Eucalyptus gomphocephala* woodland over *Acacia cyclops* tall open shrubland over *Olearia axillaris* open shrubland over **Ehrharta calycina*, **Briza maxima* and **Lagurus ovatus* grassland over **Euphorbia terracina*, **Pelargonium capitatum* and *Hardenbergia comptoniana* open herbland	2.97
EgAcMhSg	*Eucalyptus gomphocephala* scattered trees over *Acacia cyclops*, *Melaleuca huegelii* and *Spyridium globulosum* tall open scrub over weedy grasses and herbs	0.4
Rehabilitated Areas	*Callitris preissii*, *Eucalyptus decipiens* and *Agonis flexuosa* low woodland over *Acacia saligna* scattered shrubs over **Briza maxima* scattered grasses	4.94
CD	Completely Degraded	1.88
Not surveyed (rehabilitation- vegetation composition different to the vegetation association surveyed)		0.31

3.3 (d) Outstanding natural features

There is nothing within the project area that is considered to be an outstanding natural feature.

3.3 (e) Remnant native vegetation

The only remnant native vegetation that exists within the project area is a thin boundary on the edges of the landholding, the remainder of the project area is cleared (Completely Degraded) or previously quarried and rehabilitated (Attachment 7).

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

The site is gently sloped with the lowest point in the south west corner at 23m AHD rising to 50m AHD in the north east (Landgate 2015). The natural topography of the site has been altered due to historical quarrying activities.

3.3 (g) Current state of the environment

Vegetation condition within the project area ranged from Completely Degraded to Good with a large portion of rehabilitated area being in Degraded condition (Table 7 and Attachment 9). Historical clearing, limestone mining and invasive weed species were the governing disturbance influences in the Project area. The average fire age of the vegetation was considered old (8-12 years since last

fire). Based on review of aerial photography and knowledge of the project area's vegetation condition mapping, part of the drainage basin's vegetation condition has been extrapolated (Attachment 9).

Table 7. Vegetation Condition and Extent within the Project Area

Vegetation Condition	Area (ha)
Good to Degraded	0.98
Degraded	2.40
Completely Degraded	1.88
Rehabilitation (Degraded)	4.95
Not surveyed (rehabilitation – vegetation composition different to the vegetation association surveyed)	0.3

A total of 23 introduced species were recorded during the survey. One of these species, **Asparagus asparagoides* is registered as WONS and listed as Declared under the *Biosecurity and Agriculture Management Act 2007.*

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

There are no Commonwealth Heritage Places or other places recognised as having heritage values within the project area.

3.3 (i) Indigenous heritage values

A search of the Department of Aboriginal Affairs (DAA), Aboriginal Heritage Inquiry System (AHIS) did not identify any aboriginal sites of significance within the site (DAA 2015).

3.3 (j) Other important or unique values of the environment

There are no other important or unique values of the environment within the project area.

3.3 (k) Tenure of the action area (eg freehold, leasehold)

Freehold

3.3 (l) Existing land/marine uses of area

The majority of the site (apart from a thin boundary on the edges of the landholding) was quarried for limestone extraction between approximately 1974 and 2005. This portion has since been filled, levelled and rehabilitated and is currently sitting unused.

3.3 (m) Any proposed land/marine uses of area

The proposed land use is for future residential development.

4 Measures to avoid or reduce impacts

Based on desktop analysis and field surveys the proposal is considered to potentially impact two species listed as MNES under the EPBC Act, the FRBC and Carnaby's Cockatoo. This has been determined based on the assessment of the remnant vegetation and fauna habitats remaining within the project area and in consideration of the *Referral Guidelines for Three Threatened Black Cockatoo Species* (DSEWPaC 2012).

Likely Impact to the Black Cockatoos

Based on the design for the project area, the proposed development within the project area is anticipated to have the following impact on FRBC and Carnaby's Cockatoo habitat (refer to Table 8 below). A comparison of the area of potential habitat being cleared versus retained post-development has been undertaken (Attachment 10).

Table 8. Potential Habitat Being Cleared Versus Retained Post-development

	Potential Black Cockatoo Breeding Trees (#)
Cleared	35
Retained	20
Total	55

The project area offers limited suitable foraging habitat for the Black Cockatoos due to the absence of Marri, Jarrah and proteaceous plant species such as *Banksia* spp. While the rehab area within the project area is known to contain a couple of plant species that may be utilised by Black Cockatoos for foraging, it is considered to be in a degraded condition, not properly established, and does not contain primary food sources for the species, therefore offering little foraging value. No primary foraging plant species for the Black Cockatoos exist within the site. It is therefore not anticipated that the proposed action will impact on Black Cockatoo foraging habitat.

The design of the site to provide POS on the fringes of the development site has been prepared primarily to retain as many potential breeding trees as possible. The distribution of the potential breeding trees around the east, north and west edges of the development area (where quarrying was not undertaken) means it is difficult to retain more than what is proposed as part of the design.

Management Strategies to Avoid or Reduce Impacts

Retention of existing habitat will be integrated within the proposal wherever possible to mitigate and reduce the impacts associated with loss of Black Cockatoo habitat. The subdivision design of the project will retain at minimum 20 potential breeding trees within POS (Attachment 10).

The boundaries of areas to be disturbed within the project area will be clearly demarcated to prevent any erroneous damage or unintended clearing of the potential habitat. Potential Black Cockatoo habitat trees to be retained as a part of the development will be clearly marked with flagging tape.

Where possible the clearing will not take place during the typical breeding season for FRBC and Carnaby's Cockatoo (which usually occurs April-June and August to October for the FRBC and July to mid-December for the Carnaby's Cockatoo) to avoid disturbance of species during peak breeding season. Traditionally, Carnaby's Cockatoo breed in the Wheatbelt region of WA (Saunders 1980) and it is therefore less likely for Carnaby's Cockatoo to breed in large numbers within the project area.

Native plant species known to be utilised by the FRBC and Carnaby's Black Cockatoo will be used in the landscaping and street tree plantings across the development, within the POS and within road verges to enable the protection, enhancement and possible creation of fauna habitat opportunities.

Community education will be undertaken post-development to raise awareness of the surrounding environment and the importance of protecting and enhancing native vegetation that provides habitat for Black Cockatoos. This will be done through signage of the POS and providing fact sheets/brochures/education packs to future residents. This education material will also discuss the ecological value of residents planting native vegetation within their gardens, particularly those which can be utilised by black cockatoos.

5 Conclusion on the likelihood of significant impacts

5.1 Do you THINK your proposed action is a controlled action?

✓	No, complete section 5.2
	Yes, complete section 5.3

5.2 Proposed action IS NOT a controlled action.

Lead to long term decrease in the size of a population

Approximately half of the project area is rehabilitated and in a degraded condition. The project area offers limited suitable foraging habitat for the Black Cockatoos due to the absence of Marri, Jarrah and proteaceous plant species such as *Banksia* spp. While the rehabilitated area within the project area is known to contain plant species that may be utilised by Black Cockatoos for foraging, it is considered to be in a degraded condition, not properly established, and does not contain primary food sources for the species, therefore offering little foraging value.

The project area contains 3.37 ha of vegetation associations that comprise Tuart trees which may be a food source for the Carnaby's Cockatoo on the SCP (360 Environmental 2015b) (Attachment 7). However, Tuart trees are not considered to be a key foraging resource for the Carnaby's Cockatoo as they get the highest energetic yield from *Banksia* spp. and Pine trees.

The project area contains a total of 55 Tuart trees that are considered potential future breeding trees for Black Cockatoos as they have a DBH of over 500mm. None of the trees contained observable hollows that would be of suitable dimensions for Black Cockatoo breeding. A small portion (0.12 ha) of the EgAc vegetation type has been extrapolated as occurring in the drainage basin area to the south west of the site. This portion of the site was not surveyed, however due to the small area of native vegetation proposed to be cleared it is unlikely to contribute to significant habitat for Black Cockatoos.

The proposal will result in clearing 35 potential breeding trees and limited plant species known to be utilised by the FRBC and Carnaby's Cockatoo for foraging. No primary foraging plant species for the Black Cockatoos exist within the site. It is thought that minimal population impacts are likely to be experienced by the Black Cockatoos from the proposed clearing, particularly due to no foraging evidence being observed and no potential breeding trees containing observable hollows. Any residual impacts are anticipated to be mitigated by the retention and revegetation of native trees within POS and road verges.

Reduce the area of occupancy of the species

Given the limited suitable foraging habitat within the project area and the lack of currently suitable breeding trees, the proposed action is unlikely to reduce the area of occupancy for Black Cockatoos. It is highly likely that the surrounding bushland in Bush Forever sites within Beeliar Regional Park to the east of the project area would contain a large area of occupancy for the Black Cockatoos. There are four known roosting sites within Beeliar Regional Park to the east of the project area that shows the connected strip of habitat is utilised by the Black Cockatoos (DoP 2011).

Fragment an existing population into two or more populations

The project area is not considered to be a good quality patch of remnant vegetation. It contains tracks, rehabilitated vegetation and is in a predominantly degraded condition. As the project area exists within an already highly fragmented landscape it is not believed that the clearing of degraded potential habitat within the project area will fragment an existing population into two or more populations. Clearing of the project area will not create a gap of more than 4km between patches of

Black Cockatoo habitat, as there are numerous areas of native vegetation within a 4 km radius of the project area, particularly within the Beeliar Regional Park that is partly protected as an A Class Nature Reserve.

Adversely affect habitat critical to the survival of the species

The seasonal movements of Black Cockatoos means they require large areas of habitat for breeding, roosting and foraging, as well as connectivity between habitats to assist their movement through the landscape (DSEWPaC 2012). Based on the '*EPBC Act referral guidelines for three threatened black cockatoo species*', critical habitat for the Black Cockatoos is defined as providing breeding, roosting and foraging habitat which also provides connectivity between habitats. Habitat that accommodates for all three Black Cockatoo species would be defined as most critical.

It is not deemed that the proposed clearing will adversely affect habitat critical to the survival of the Black Cockatoos due to no foraging evidence being observed and no potential breeding trees containing observable hollows. The project area has limited suitable foraging habitat for the Black Cockatoos due to the absence of Marri, Jarrah and proteaceous plant species such as *Banksia* spp. The project area is also not a known roosting site for the Black Cockatoos.

Disrupt the breeding cycle of a population

Traditionally, Carnaby's Cockatoo breed in the Wheatbelt region of WA (Saunders 1980) and it is therefore less likely for Carnaby's Cockatoo to breed in large numbers in the project area. The project area does not have any trees that are considered currently suitable breeding trees for the Black Cockatoos due to the absence of observable hollows. The proposal will retain 20 potential breeding trees, and will plant trees that will offer future breeding habitat for Black Cockatoos in POS and road verges. It is therefore unlikely that the proposed action will disrupt the breeding cycles of a Black Cockatoo population.

Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline

Within a 4km radius of the project area there are other patches of remnant vegetation within Beeliar Regional Park and other Bush Forever sites that would provide better quality habitat for the Black Cockatoos, particularly foraging species. The clearing of 35 potential breeding trees that do not have observable hollows with suitable dimensions for Black Cockatoo breeding and limited suitable foraging habitat is not deemed that it will modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.

Result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat

The proposed action alone is unlikely to introduce or spread invasive species that are harmful to Black Cockatoos. The decline of FRBC resulted from habitat loss, nest hollow shortage/competition (including with European Honeybees), illegal shooting and fire (Chapman 2005). The 50% reduction in Carnaby's Cockatoo abundance is a result of clearing of core breeding habitat in the Wheatbelt, the deterioration of nesting hollows, and clearing of food resources on the SCP (Cale, 2003).

Weeds and feral animals, which commonly result from modified, cleared sites, are not seen as likely to result from the proposed development. If invasive species do result from the development they are not seen to be key threats to the Black Cockatoos.

Introduce disease that may cause the species to decline

The proposed action to build residential housing is unlikely to introduce disease that may cause the Black Cockatoos to decline. The only possible disease and parasite vector associated with developing the project area would be the attraction of cats and foxes which are known to favour 'edge effects' created from fragmented habitats. The proposed development is however, unlikely to be an ideal

habitat for foxes due to the presence of humans and traffic within the area.

Interfere with the recovery of the species
The proposed action is unlikely to interfere with the recovery of the species as it is not deemed to contain foraging species commonly used by the FRBC or the Carnaby's Cockatoo and does not contain any currently suitable hollows for breeding. The proposal will retain 20 potential future breeding trees and will involve planting native species utilised by the Black Cockatoos in POS and road verges that will provide habitat for the Black Cockatoos in the future.

5.3 Proposed action IS a controlled action

	Matters likely to be impacted
	World Heritage values (sections 12 and 15A)
	National Heritage places (sections 15B and 15C)
	Wetlands of international importance (sections 16 and 17B)
	Listed threatened species and communities (sections 18 and 18A)
	Listed migratory species (sections 20 and 20A)
	Protection of the environment from nuclear actions (sections 21 and 22A)
	Commonwealth marine environment (sections 23 and 24A)
	Great Barrier Reef Marine Park (sections 24B and 24C)
	A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
	Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
	Protection of the environment from Commonwealth actions (section 28)
	Commonwealth Heritage places overseas (sections 27B and 27C)

6 Environmental record of the responsible party

		Yes	No
6.1	**Does the party taking the action have a satisfactory record of responsible environmental management?** **Provide details** Refer to the annual Directors' Reports of Cockburn Cement Ltd's parent company Adelaide Brighton Ltd in its Annual Reports.	x	
6.2	**Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?** **If yes, provide details** In 2011, the WA Department of Environment Regulation commenced a prosecution against Cockburn Cement Ltd ("Cockburn") alleging non-compliance with Cockburn's environmental licence and alleging breaches of the Environment Protection Act 1986 (WA), arising from the conduct of a contractor at Munster in 2010. The prosecution discontinued one of the two charges in December 2013. During May 2014 a trial was held at the Magistrates Court in Perth, and all the charges brought were dismissed and Cockburn was fully acquitted.	x	
6.3	**If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?** **If yes, provide details of environmental policy and planning framework** Refer to the annual Sustainability Reports of Cockburn Cement Ltd's parent company Adelaide Brighton Ltd in its Annual Reports and http://www.cockburncementcommunity.com.au/environment	x	
6.4	**Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?** **Provide name of proposal and EPBC reference number (if known)**		X

7 Information sources and attachments

(For the information provided above)

7.1 References

360 Environmental. (2015a). *Level 2 Flora and Vegetation Assessment*. Prepared for Rowe Group.

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Johnstone, R. E., & Kirkby, T. (2011). Carnaby's Cockatoo (*Calyptorhynchus latirostris*), Baudin's Cockatoo (*Calyptorhynchus baudinii*) and the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) on the Swan Coastal Plain (Lancelin–Dunsborough), WA. Studies on distribution, status, breeding, food, movements and historical changes. Perth: Department of Planning.

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Johnstone, R. E., Kirkby, T., & Sarti, K. (2013). The breeding biology of the Forest Red-tailed Black Cockatoo Calyptorhynchus banksii naso Gould in south-western Australia. II. Breeding behaviour and diet. *Pacific Conservation Biology.* 19: 143-155.

Saunders, D.A. (1980). Food and movements of the short-billed form of the White-tailed Black Cockatoo. *Australian Wildlife Research*. 7: 257-269.

Shah, B. (2006). *Conservation of Carnaby's Black Cockatoo on the Swan Coastal Plain, WA.* Perth: Birds Australia.

Threatened Species Scientific Committee (TSSC). (2008a). *Approved Conservation Advice for Diuris micrantha (Dwarf Bee-orchid)*, viewed on 20 May 2015, http://www.environment.gov.au/biodiversity/threatened/species/pubs/55082-conservation-advice.pdf

Threatened Species Scientific Committee (TSSC). (2008a). *Approved Conservation Advice for Diuris purdiei (Purdies Donkey-orchid)*, viewed on 20 May 2015, http://www.environment.gov.au/biodiversity/threatened/species/pubs/12950-conservation-advice.pdf

7.2 Reliability and date of information

The information provided within this referral document has been prepared by an accredited Environmental Scientist from 360 Environmental. The findings within this referral are based on site specific surveys undertaken by qualified 360 Environmental Botanists and Zoologists. The site specific surveys have been undertaken within the last two years and are therefore considered reliable and recent for use in this referral.

7.3 Attachments

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)	✓	Attachment 1- Site Location Attachment 2- Project Area
	GIS file delineating the boundary of the referral area (section 1)		
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)	✓	Attachment 7- Vegetation Association Mapping Attachment 8- Potential Black Cockatoo Breeding Habitat
If relevant, attach	copies of any state or local government approvals and consent conditions (section 2.5)		
	copies of any completed assessments to		

meet state or local government approvals and outcomes of public consultations, if available (section 2.6)		
copies of any flora and fauna investigations and surveys (section 3)	✓	Attachment 5- Level 2 Flora and Vegetation Assessment Attachment 6- Black Cockatoo Habitat Survey
technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)	✓	Attachment 5- Level 2 Flora and Vegetation Assessment Attachment 6- Black Cockatoo Habitat Survey
report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)		

List of Attachments

Attachment 1- Site Location
Attachment 2- Project Area
Attachment 3- Local Structure Plan/Proposed MRS Amendment and EPA determination
Attachment 4- EPBC Protected Matters Report
Attachment 5- Level 2 Flora and Vegetation Assessment
Attachment 6- Black Cockatoo Habitat Survey
Attachment 7- Vegetation Association Mapping
Attachment 8- Potential Black Cockatoo Breeding Habitat
Attachment 9- Vegetation Condition
Attachment 10- Proposed Potential Black Cockatoo Breeding Habitat Retention

8 Contacts, signatures and declarations

NOTE: Providing false or misleading information is an offence punishable on conviction by imprisonment and fine (s 489, EPBC Act).

Under the EPBC Act a referral can only be made by:

- the person proposing to take the action (which can include a person acting on their behalf); or
- a Commonwealth, state or territory government, or agency that is aware of a proposal by a person to take an action, and that has administrative responsibilities relating to the action[1].

Project title:

8.1 Person proposing to take action

This is the individual, government agency or company that will be principally responsible for, or who will carry out, the proposed action.

If the proposed action will be taken under a contract or other arrangement, this is:

- the person for whose benefit the action will be taken; or
- the person who procured the contract or other arrangement and who will have principal control and responsibility for the taking of the proposed action.

If the proposed action requires a permit under the Great Barrier Reef Marine Park Act[2], this is the person requiring the grant of a GBRMP permission.

The Minister may also request relevant additional information from this person.

If further assessment and approval for the action is required, any approval which may be granted will be issued to the person proposing to take the action. This person will be responsible for complying with any conditions attached to the approval.

If the Minister decides that further assessment and approval is required, the Minister must designate a person as a proponent of the action. The proponent is responsible for meeting the requirements of the EPBC Act during the assessment process. The proponent will generally be the person proposing to take the action[3].

1. Name and Title:	Mr Brad Lemmon Executive General Manager, Cement & Lime
2. Organisation (if applicable):	Cockburn Cement Limited
3. EPBC Referral Number (if known):	
4: ACN / ABN (if applicable):	ACN 008 673 470
5. Postal address	PO Box 38 HAMILTON HILL, WA 6163
6. Telephone:	+61 8 9411 1136 Office +61 418916197 Mobile
7. Email:	brad.lemmon@adbri.com.au

[1] *If the proposed action is to be taken by a Commonwealth, state or territory government or agency, section 8.1 of this form should be completed. However, if the government or agency is aware of, and has administrative responsibilities relating to, a proposed action that is to be taken by another person which has not otherwise been referred, please contact the Referrals Gateway (1800 803 772) to obtain an alternative contacts, signatures and declarations page.*

[2] *If your referred action, or a component of it, is to be taken in the Great Barrier Reef Marine Park the Minister is required to provide a copy of your referral to the Great Barrier Reef Marine Park Authority (GBRMPA) (see section 73A,* EPBC Act*). For information about how the GBRMPA may use your information, see http://www.gbrmpa.gov.au/privacy/privacy_notice_for_permits.*

[3] *If a person other than the person proposing to take action is to be nominated as the proponent, please contact the Referrals Gateway(1800 803 772) to obtain an alternative contacts, signatures and declarations page.*

8. Name of designated proponent (if not the same person at item 1 above and if applicable):

9. ACN/ABN of designated proponent (if not the same person named at item 1 above):

COMPLETE THIS SECTION ONLY IF YOU QUALIFY FOR EXEMPTION FROM THE FEE(S) THAT WOULD OTHERWISE BE PAYABLE

I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

☐ an individual; OR

☐ a small business entity (within the meaning given by section 328-110 (other than subsection 328-119(4)) of the *Income Tax Assessment Act 1997*); OR

☑ not applicable.

If you are small business entity you must provide the Date/Income Year that you became a small business entity:

Note: You must advise the Department within 10 business days if you cease to be a small business entity. Failure to notify the Secretary of this is an offence punishable on conviction by a fine (regulation 5.23B(3) *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth)).

COMPLETE THIS SECTION ONLY IF YOU WOULD LIKE TO APPLY FOR A WAIVER

I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations. Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made:

☑ not applicable.

Declaration

I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct.
I understand that giving false or misleading information is a serious offence.
I agree to be the proponent for this action.
I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature 

Date 8 JUNE 2016

8.2 Person preparing the referral information (if different from 8.1)

Name	Rachel Halton
Title	Environmental Scientist
Organisation	360 Environmental Pty Ltd
ACN / ABN (if applicable)	ACN# 109 499 041/ ABN# 50 109 499 041
Postal address	10 Bermondsey Street, West Leederville, WA, 6007
Telephone	(08) 9388 8360
Email	rachelhalton@360environmental.com.au
Declaration	I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence.
Signature	RHalton Date 20/06/2016

REFERRAL CHECKLIST

NOTE: This checklist is to help ensure that all the relevant referral information has been provided. It is not a part of the referral form and does not need to be sent to the Department.

HAVE YOU:

- ☑ Completed all required sections of the referral form?
- ☑ Included accurate coordinates (to allow the location of the proposed action to be mapped)?
- ☑ Provided a map showing the location and approximate boundaries of the project area?
- ☑ Provided a map/plan showing the location of the action in relation to any matters of NES?
- ☑ Provided a digital file (preferably ArcGIS shapefile, refer to guidelines at Attachment A) delineating the boundaries of the referral area?
- ☑ Provided complete contact details and signed the form?
- ☑ Provided copies of any documents referenced in the referral form?
- ☑ Ensured that all attachments are less than three megabytes (3mb)?
- ☑ Sent the referral to the Department (electronic and hard copy preferred)?

Attachment A

Geographic Information System (GIS) data supply guidelines

If the area is less than 5 hectares, provide the location as a point layer. If the area greater than 5 hectares, please provide as a polygon layer. If the proposed action is linear (eg. a road or pipline) please provide a polyline layer.

GIS data needs to be provided to the Department in the following manner:

- Point, Line or Polygon data types: ESRI file geodatabase feature class (preferred) or as an ESRI shapefile (.shp) zipped and attached with appropriate title
- Raster data types: Raw satellite imagery should be supplied in the vendor specific format.
- Projection as GDA94 coordinate system.

Processed products should be provided as follows:

- For data, uncompressed or lossless compressed formats is required - GeoTIFF or Imagine IMG is the first preference, then JPEG2000 lossless and other simple binary+header formats (ERS, ENVI or BIL).
- For natural/false/pseudo colour RGB imagery:
    - If the imagery is already mosaiced and is ready for display then lossy compression is suitable (JPEG2000 lossy/ECW/MrSID). Prefer 10% compression, up to 20% is acceptable.
    - If the imagery requires any sort of processing prior to display (i.e. mosaicing/colour balancing/etc) then an uncompressed or lossless compressed format is required.

Metadata or 'information about data' will be produced for all spatial data and will be compliant with ANZLIC Metadata Profile. (http://www.anzlic.org.au/policies_guidelines#guidelines).

The Department's preferred method is using ANZMet Lite, however the Department's Service Provider may use any compliant system to generate metadata.

All data will be provide under a Creative Commons license (http://creativecommons.org/licenses/by/3.0/au/)