



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 7925/1
Permit Holder:	Yandin Wind Farm Pty Ltd
Duration of Permit:	From 28 July 2018 to 28 July 2023

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 construction of a wind farm.

2. Land on which clearing is to be done

LOT M455 ON PLAN 3049, DANDARAGAN
LOT M454 ON PLAN 3049, DANDARAGAN
LOT M2080 ON PLAN 6269, DANDARAGAN
LOT M2068 ON DIAGRAM 15361, YATHROO
LOT M1948 ON DIAGRAM 13135, YATHROO
LOT M1131 ON DIAGRAM 4843, DANDARAGAN
LOT M1127 ON DIAGRAM 4945, DANDARAGAN
LOT 9 ON PLAN 23599, DANDARAGAN
LOT 875 ON PLAN 247940, DANDARAGAN
LOT 529 ON PLAN 246489, DANDARAGAN
LOT 4 ON PLAN 67003, CATABY
LOT 4258 ON PLAN 209671, MIMEGARRA (UN-NAMED ROAD RESERVE (PIN 1226157))
LOT 411 ON PLAN 245130, DANDARAGAN
LOT 3829 ON PLAN 209670, YATHROO
LOT 3827 ON PLAN 209670, YATHROO
LOT 3826 ON PLAN 209670, YATHROO
LOT 311 ON PLAN 245072, DANDARAGAN
LOT 302 ON PLAN 35381, DANDARAGAN
LOT 301 ON PLAN 35381, DANDARAGAN
LOT 111 ON PLAN 247871, DANDARAGAN
LOT 1002 ON PLAN 22459, DANDARAGAN
UN-NAMED ROAD RESERVE (PIN 1226214), YATHROO
UN-NAMED ROAD RESERVE (PIN 1226220), DANDARAGAN
UN-NAMED ROAD RESERVE (PIN 1226160), YATHROO
CLOSED ROAD RESERVE (PIN 580159), DANDARAGAN
CLOSED ROAD RESERVE (PIN 580127), DANDARAGAN
UN-NAMED ROAD RESERVE (PIN 1226159), DANDARAGAN
UN-NAMED ROAD RESERVE (PIN 1353716), YATHROO
UN-NAMED ROAD RESERVE (PIN 11674284), YATHROO
UN-NAMED ROAD RESERVE (PIN 11674285), DANDARAGAN
UN-NAMED ROAD RESERVE (PIN 11674286), DANDARAGAN

3. Area of Clearing

The Permit Holder shall not clear more than 3.5 hectares of native vegetation within the area cross-hatched yellow on attached Plan 7925/1a.

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. Avoid, minimise and reduce the impacts and extent of clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

PART II – MANAGEMENT CONDITIONS

6. Fauna management

- (a) Prior to undertaking any clearing of *habitat tree(s)* within the area cross-hatched yellow on attached Plan 7925/1a, a *fauna specialist* shall inspect *habitat tree(s)* for evidence of use by Carnaby's cockatoo (*Calyptorhynchus latirostris*).
- (b) Where evidence of use by Carnaby's cockatoo is identified under condition 6(a) of this Permit, the Permit Holder shall ensure that no clearing of, or within 10 metres of, identified *habitat tree(s)* occurs.

7. Flora management

- (a) Prior to undertaking any clearing within the areas cross-hatched red on attached Plan 7925/1b authorised under this Permit, the Permit Holder shall engage a *botanist* to inspect those areas for the presence of rare flora listed in the *Wildlife Conservation (Rare Flora) Notice* and *priority flora* in accordance with the Environmental Protection Authority's *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (December 2016).
- (b) Where rare flora or *priority flora* are identified in relation to condition 7(a) of this Permit, the Permit Holder shall ensure that:
 - (i) no clearing of, or within 50 metres of, identified rare flora occurs; and
 - (ii) no clearing of, or within 30 metres of, identified *priority flora* occurs.

8. Dieback and weed management

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) shall only move soils in *dry conditions*;
- (c) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (d) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

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 species composition, structure and density of the cleared area;
 - (ii) 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;
 - (iii) the date that the area was cleared; and
 - (iv) 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 *habitat tree(s)* identified, 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) a copy of the fauna specialist's report.
- (c) In relation to flora management pursuant to condition 7 of this Permit:
 - (i) the location of each rare flora or *priority flora* 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;
 - (ii) the species name of each rare flora or *priority flora* species identified; and
 - (iii) a copy of the botanists flora survey report.
- (d) Actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 8 of this Permit.

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, 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 July 2023, 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:

botanist means a person with specific training and/or experience in the ecology and taxonomy of Western Australian flora;

dieback means the effect of *Phytophthora* species on native vegetation;

dry conditions means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches;

fauna specialist: means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Wildlife Conservation Act 1950*;

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

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;

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

priority flora means those plant taxa described as priority flora classes 1, 2, 3 or 4 in the Department of Biodiversity, Conservation and Attractions *Declared Rare and Priority Flora List for Western Australia* (as amended);

weed/s means any plant -

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

Wildlife Conservation (Rare Flora) Notice means those plant taxa gazetted as rare flora pursuant to section 23F(2) of the *Wildlife Conservation Act 1950* (as amended).

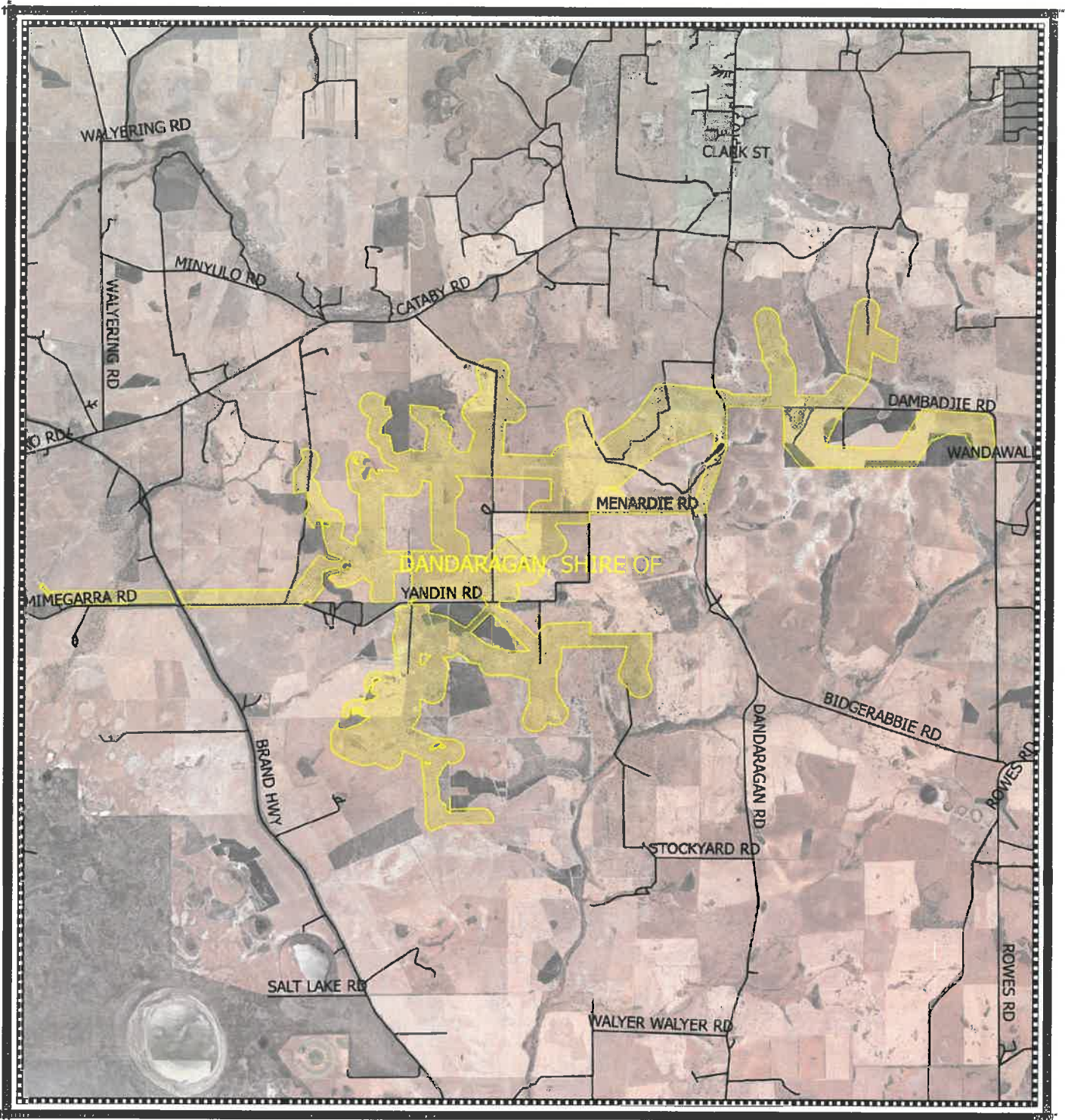

 Emma Bramwell

A/MANAGER CLEARING REGULATION

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

29 June 2018

Plan 7925/1a



Legend

- Areas approved to clear
- roads
- lga
- Virtual Mosaic - WA Now



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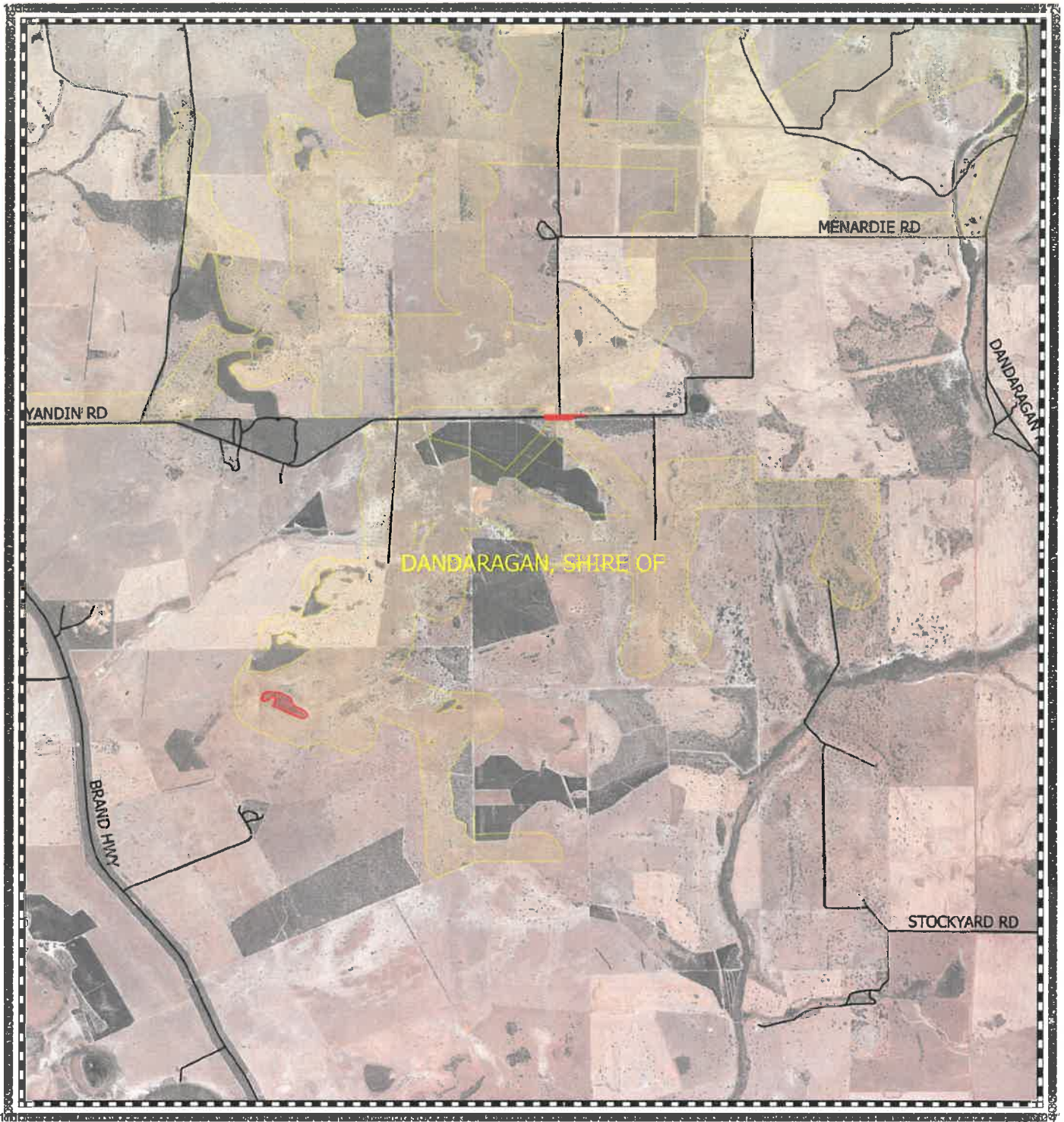
MGA94
Geocentric Datum of Australia 1994
E. Bramwell Date: *29/06/18*
E. BRAMWELL

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







**GOVERNMENT OF
WESTERN AUSTRALIA**

Plan 7925/1b



Legend

-  Subject to conditions
-  Areas approved to clear
-  roads
-  lga
- Virtual Mosaic - WA Now

2000 0 2000 m



MGA 94
Geocentric Datum of Australia 1994
E Bramwell Date 29/06/18
E BRAMWELL

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



GOVERNMENT OF
WESTERN AUSTRALIA



1. Application details

1.1. Permit application details

Permit application No.: CPS 7925/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Yandin Wind Farm Pty Ltd

1.3. Property details

Property:
 LOT M455 ON PLAN 3049, DANDARAGAN
 LOT M454 ON PLAN 3049, DANDARAGAN
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 DANDARAGAN, SHIRE OF
 MIMEGARRA and DANDARAGAN and CATABY and YATHROO

Local Government Authority:
Localities:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
3.5 hectares		Mechanical Removal	Water/gas/cable/pipeline/power installation

1.5. Decision on application

Decision on Permit Application: Granted
Decision Date: 29 June 2018

Reasons for Decision: The clearing permit application was received on 20 December 2017 and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. It has been concluded that the proposed clearing is at variance to principles (c) and (f), may be at variance to principles (a), (b), (d), (e) and (h), and is not likely to be at variance to the remaining principles.

The Delegated Officer noted took into account the applicant's actions to avoid and minimise impacts. The Delegated Officer determined that the application area includes known populations of rare flora and vegetation growing in association with watercourses, may comprise a high level of biological diversity and significant habitat for indigenous fauna, may be necessary for the maintenance of an adjacent TEC, and may be significant as a remnant of native vegetation in an extensively cleared landscape. The Delegated Officer determined that the proposed clearing may increase the risk of introduction or spread of weeds and dieback into adjacent vegetation, including adjacent conservation areas. In granting a clearing permit subject to conditions, the Delegated Officer determined that the proposed clearing is not likely to have any unacceptable environmental impacts.

2. Site Information

Clearing Description: The application is for the proposed clearing of 3.5 hectares of native vegetation within a 4,594.4 hectare project footprint for the purpose of construction of a wind farm.

As the specific location of the proposed clearing within the project footprint is not known, this assessment has been conducted on the basis of the project footprint (application area).

Vegetation Description: The vegetation within the application area is mapped as the following Beard vegetation associations:

- 4: Medium woodland; *Corymbia calophylla* (marri) and *Eucalyptus wandoo* (wandoo);
- 999: Shrublands; *Melaleuca* species heath;
- 1030: Medium woodland; *Eucalyptus camaldulensis* (river gum);
- 1031: Shrublands; scrub-heath *Banksia* (formerly *Dryandra*) species-*Calothamnus* species association with *Banksia prionotes* (acorn banksia) on limestone in the northern Swan Region; and
- 1035: Mosaic: Medium woodland; marri, wandoo, *Eucalyptus accedens* (powderbark wandoo)/shrublands; *Banksia* (formerly *Dryandra*) species heath (Shepherd et al., 2001).

In support of the application, the applicant provided the report of a flora, vegetation and avifauna assessment undertaken by Ecologia Environment Pty Ltd (Ecologia Environment) on 18 and 20 September 2017. The flora, vegetation and avifauna assessment was conducted across a 15,360 hectare study area, which included the application area (Ecologia Environment, 2017). The flora, vegetation and avifauna assessment identified the following vegetation units within the application area:

- R1: *Juncus acutus* (spiny rush; introduced) rushland with isolated *Acacia saligna* (orange wattle) shrubs, approximately 3.9 hectares within the far eastern portion of the application area in 'Completely Degraded' condition (refer vegetation condition below);
- S1: *Banksia hewardiana* (\pm *Banksia sessilis* (parrotbush), \pm *Allocasuarina humilis* (dwarf sheoak), \pm *Xanthorrhoea preissii* (grass tree)) mid shrubland over mixed low shrubland, approximately 1.8 hectares within the central portion of the application area in 'Very Good' condition;
- W3: marri and/or *Eucalyptus tottiana* (pricklybark/coastal blackbutt) open woodland/isolated trees over pasture weeds, the majority of the application area in 'Completely Degraded' condition;
- W4: marri mid open woodland over *Banksia hewardiana* and grass tree mid open shrubland, approximately 8.3 hectares in 'Good' condition within the south-western portion of the application area; and
- W6: marri and *Banksia attenuata* (slender banksia) open woodland over pasture weeds; approximately 5.2 hectares in 'Completely Degraded' condition within the western central portion of the application area (Ecologia Environment, 2017).

Vegetation Condition: The vegetation within the application area is considered to comprise the following condition ratings:

- Very Good: vegetation structure altered; obvious signs of disturbance;
- Good: vegetation structure significantly altered by very obvious signs of multiple disturbance; retains basic structure or ability to regenerate; and
- Completely Degraded: the structure of the vegetation is no longer intact and the area is completely or almost completely without native species (Keighery, 1994).

The flora, vegetation and avifauna assessment identified that approximately 0.22 per cent (approximately 10.1 hectares) of the application area contains vegetation in 'Degraded' or better condition:

- Very Good: approximately 1.8 hectares comprising one remnant located within the central portion of the application area, corresponding with vegetation unit S1 (refer vegetation description above);
- Good: approximately 8.3 hectares comprising one remnant located within the south-western portion of the application area, corresponding with vegetation unit W4; and
- Completely Degraded: the majority of the application area, corresponding predominantly with vegetation unit W3, and approximately 3.9 hectares of vegetation unit R1 and 5.2 hectares of vegetation unit W6 (Ecologia Environment, 2017).

Soils/Landform Type: The landform and soil types within the application area are mapped as:

- Nylagarda System: alluvial plains and terraces of the Hill River and major creeks of the north coastal plain; brown deep sands and brown sandy earths predominate, with minor pale deep sand and saline wet soil;
- Bassendean System: Swan Coastal Plain from Busselton to Jurien; sand dunes and sandplains with pale deep sand, semi-wet and wet soil;
- Boothendarra System: subdued stripped lateritic plateau, undulating and gently undulating rises; sandy duplexes, pale deep sand, sandy and loamy gravels and minor clays;
- Dandaragan System: subdued dissected lateritic plateau, undulating low hills and rises with narrow alluvial plains; variable deep sands and sandy gravels plus minor earths, duplexes and clays;
- Rows System: subdued partly dissected lateritic plateau, gently undulating plains and gently undulating to undulating rises; yellow and pale sand, sandy earth and sandy gravel; weathered sandstone; and
- Capitella System: subdued stripped lateritic plateau, undulating to gently undulating low rises with gently undulating plain including dunes; pale and yellow deep sands, sandy gravels, some duplex; from sandstones plus alluvial and aeolian deposits (Schoknecht et al 2004).

The flora, vegetation and avifauna assessment identified the following mapped soil units within the application area (Ecologia Environment, 2017):

- Wd9: broad valleys and undulating interfluvial areas with some discontinuous breakaways and occasional mesas; lateritic materials mantle the area: chief soils are sandy acidic yellow mottled soils, containing much ironstone gravel in the A horizons, forming a complex pattern with each other and with lateritic sandy gravels (mapped across approximately 140 hectares of the application area);
- Wd10: broad valleys and undulating interfluvial areas; some evenly sloping pediments with exposures of sandstone and shale: chief soils are sandy acidic yellow mottled soils, containing much ironstone gravel in the A horizons, and forming a complex pattern with each other and with lateritic sandy gravels (mapped across approximately 245 hectares of the application area);
- AC2: gently undulating plateau underlain by sedimentary rocks: chief soils are yellow earthy sands with siliceous sands;
- AB3: coastal dune formations with limestone ridges, plains, and swamps: calcareous sands and red and brown shallow porous loamy soils on limestone; with siliceous sands on dunes; and small areas of shallow dark clays, dark shallow porous loamy soils, and various saline soils (unclassified) in the lower-lying situations; and
- AB4: high rolling coastal dunes of deep calcareous sands with cup-like hollows of deep calcareous sands, both drifting and non-drifting phases, also with sheet limestone exposed in places (mapped across approximately 192 hectares of the application area) (Northcote et al., 1960-68).

Comments: The local area is defined as 10 kilometre radius measured from the perimeter of the application area. According to available aerial imagery, the local area retains approximately 17 per cent pre-European native vegetation cover (refer to Figure 1).

Figure 1: Context Map

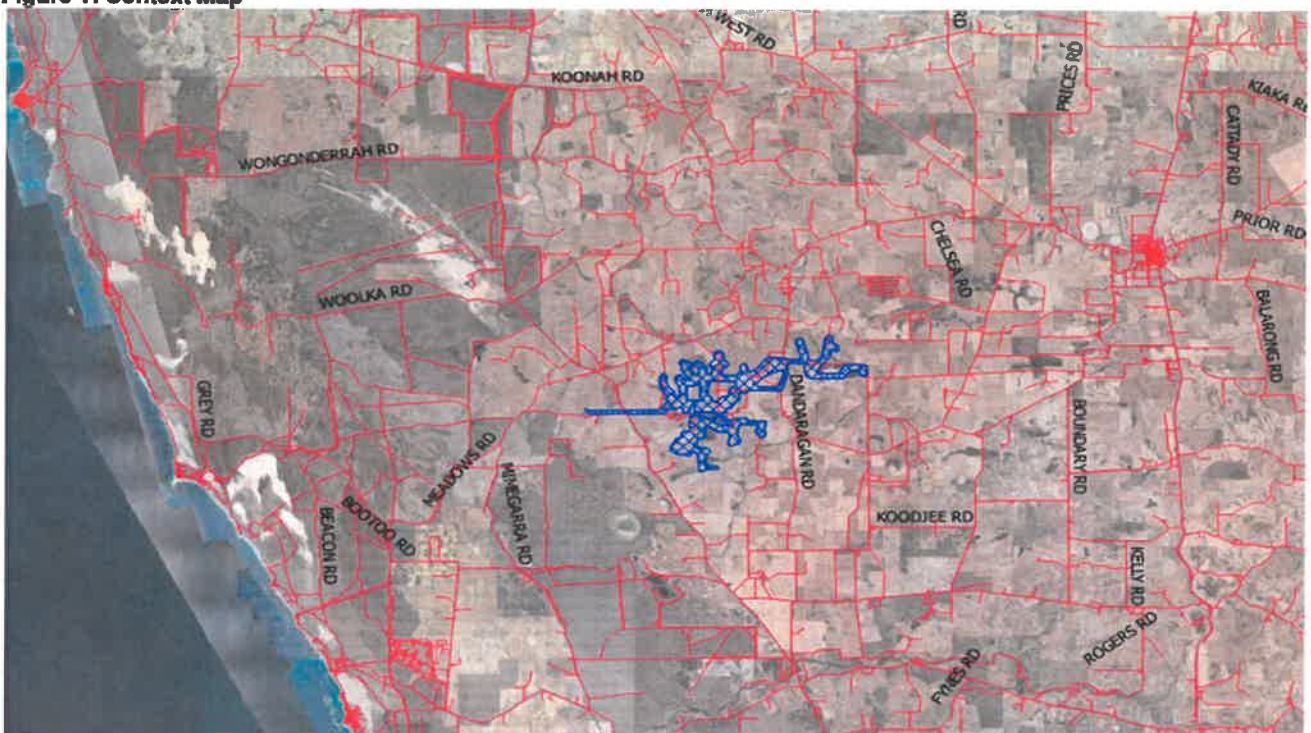
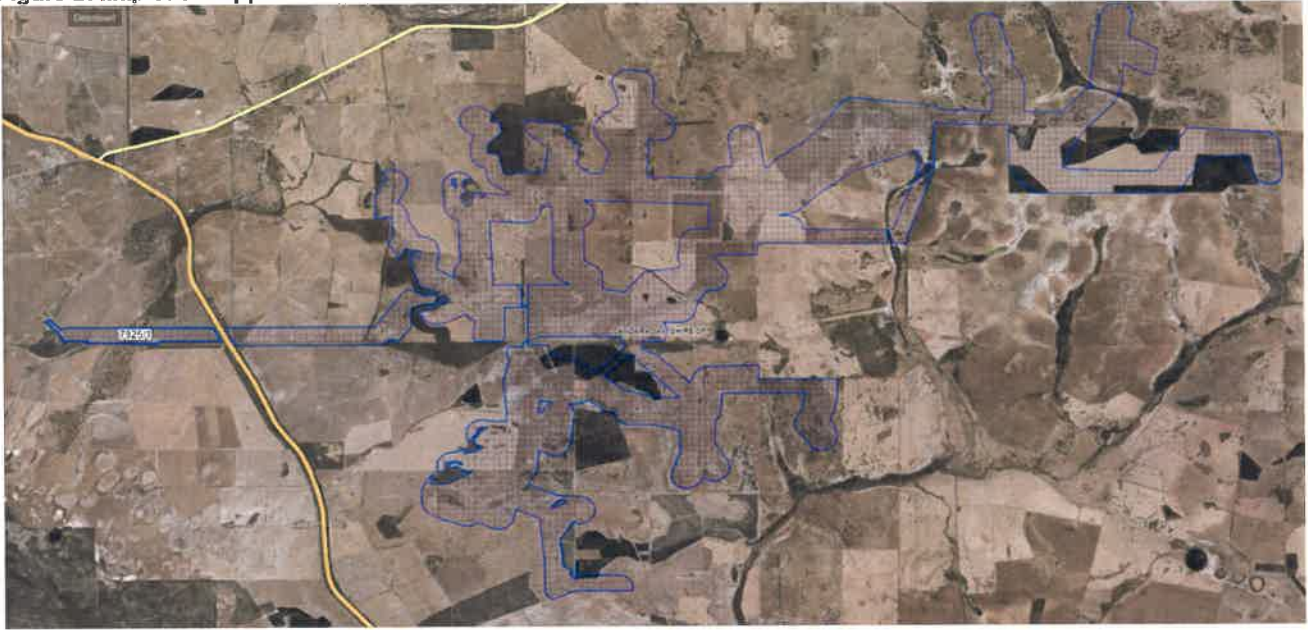


Figure 2: Map of the application area



3. Minimisation and mitigation measures

The applicant proposes to implement the following management measures to minimise environmental impacts:

- wind turbines will only be erected in cleared areas; the proposed clearing is required for access tracks, power cabling and sub-station construction;
- where possible, existing access tracks will be utilised where possible and drainage lines will be avoided;
- where possible, the proposed clearing will be to ground level initially using hand tools to allow ground fauna time to move away from the cleared area before destructive ground works begin;
- *Eucalyptus* species trees with diameters at breast height greater than 500 millimetres will be inspected for hollows before the proposed clearing proceeds, and where suitable nesting hollows are identified those trees will be clearly labelled and conserved (avoided).
- where possible, access routes or cables traversing road reserves will be designed to pass through existing gaps and locations of previous records of flora of conservation significance will be avoided;
- vegetation and associated habitat loss will be kept to a minimum through careful planning of cable and access road alignments;
- where possible, seasonal preferences for removal of native vegetation will be investigated and implemented (where permission is provided) to avoid sensitive periods for nesting birds and hibernating reptiles;
- where possible, access tracks and cable trenches will be positioned along ridgelines and landform contours;
- exposed soil surfaces subject to an erosion risk will be appropriately covered and stabilised where earthworks are carried out; and
- silted runoff will be filtered before it leaves the site to prevent downslope siltation of habitats and watercourses.

During assessment of the application, the applicant revised the project footprint to avoid a number of environmental values associated with vegetation in 'Degraded' or better condition. This is discussed further in Section 5.

4. Assessment of application against clearing principles

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

Proposed clearing may be at variance to this Principle

As outlined in Section 2, a flora, vegetation and avifauna assessment was undertaken by Ecologia Environment in 2017 over a 15,360 hectare study area, which included the application area. A total of 117 sub-generic vascular plant taxa from 35 families were recorded from the study area (Ecologia Environment, 2017).

As outlined in Section 2, the flora, vegetation and avifauna assessment found that approximately 99.7 per cent of the application area comprised scattered marri and/or pricklybark/coastal blackbutt open woodland/isolated trees over pasture weeds, and that approximately 99.8 per cent of the vegetation within the application area is in 'Completely Degraded' condition.

As assessed under principle (b), the application area contains significant habitat for the threatened fauna Carnaby's cockatoo (*Calyptorhynchus latirostris*).

The flora, vegetation and avifauna assessment reported 61 conservation-significant flora taxa (comprising 10 rare and 51 priority taxa) within 10 kilometres of the study area, of which 18 taxa (including two rare and 16 priority taxa) have previously been recorded within the study area (Ecologia Environment, 2017). Of the priority flora species, 12 have previously been recorded within the application area (Ecologia Environment, 2017):

- *Banksia prionophylla* (Priority 1);
- *Anigozanthos humilis* subsp. *Badgingarra* (Priority 2);
- *Dampiera tephra* (Priority 2);
- *Eucalyptus abdita* (Priority 2);
- *Gastrolobium nudum* (Priority 2);
- *Hakea longiflora* (Priority 3);
- *Hypocalymma tetrapterum* (Priority 3) – this species was also recorded within application area during the flora, vegetation and avifauna assessment from wandoo woodland in a 'Degraded' condition and on an adjacent lateritic hill within a species-rich low shrubland Ecologia Environment, 2017);
- *Jacksonia carduacea* (Priority 3);
- *Podotheca pritzelii* (Priority 3);
- *Anigozanthos humilis* subsp. *chrysanthus* (Priority 4);
- *Asterolasia drummondii* (Priority 4);
- *Eucalyptus macrocarpa* subsp. *elachantha* (Priority 4);
- *Grevillea drummondii* (Priority 4);
- *Hypolaena robusta* (Priority 4);
- *Stylidium aeonioides* (Priority 4); and
- *Thelymitra apiculata* (Priority 4).

The Department of Biodiversity, Conservation and Attractions (DBCA) advised that despite the September 2017 timing of the flora, vegetation and avifauna assessment, some of the above conservation-significant flora taxa have not previously been recorded flowering at this time (DBCA, 2018). DBCA advised that generally known populations of conservation-significant flora within or in proximity to the application area would be visited to confirm whether the targeted taxa are in flower at the time of the survey and so that the botanists can familiarise themselves with the targeted taxa, and that it is unclear whether the flora, vegetation and avifauna assessment included a search for known populations within or adjacent to the study area (DBCA, 2018). DBCA noted that the flora, vegetation and avifauna assessment indicates that the diverse shrubland communities (vegetation units S1 and S2) are likely to support additional conservation-significant flora species that were not observed during the 2017 survey due to time constraints, and advised that given the large study area and limited period of the survey, it is unlikely that all potentially suitable habitat for conservation-significant flora was adequately searched (DBCA, 2018).

DBCA noted that in highly-cleared landscapes, remnants in a 'Degraded' condition may support conservation-significant flora taxa, in particular disturbance opportunists (DBCA, 2018). DBCA advised that the risk to the broader conservation of conservation-significant flora which may occur within the application area is likely to be low if remnants in 'Degraded' or better condition are avoided (DBCA, 2018). DBCA recommended appropriately-timed targeted surveys of any remnants in 'Degraded' or better condition that are likely to be impacted by the proposed clearing (DBCA, 2018).

Noting the proximity of the remaining 39 priority flora species to the application area and their habitat preferences, and taking into account DBCA's advice, all have the potential to occur within the application area. Rare flora are discussed under principle (c).

According to available databases, a number of occurrences of the ecological community 'Banksia woodlands of the Swan Coastal Plain IBRA Region' have been recorded in the local area. This ecological community is listed as Priority 3 by the DBCA, and as an 'Endangered' threatened ecological community (TEC) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The flora, vegetation and avifauna assessment did not record any TECs or priority ecological communities (PEC) within the application area (Ecologia Environment, 2017). TECs are discussed further under principle (d).

As outlined under Section 2, the application area includes approximately 10.1 hectares of vegetation in 'Degraded' or better condition. These portions of the application area may contribute to ecological linkages between areas of remnant vegetation within the local area (refer to Figures 1 and 2). The application area is adjacent to patches of remnant vegetation which are in similar or better condition than the vegetation within the application area (refer to Figure 2). The proposed clearing may impact on these patches through the increased risk of introduction or spread of weeds and dieback.

Given the above, noting the records of conservation-significant flora species within the application area, the presence of approximately 10.1 hectares of native vegetation in 'Degraded' or better condition in an extensively cleared local area, and the size of the application area, the application area may comprise a high level of biological diversity. The proposed clearing may be at variance to this principle.

Noting DBCA's advice, targeted surveys approximately 10.1 hectares of vegetation in 'Degraded' or better condition within the application area would determine the extent of impacts to rare and priority flora. Weed and dieback management practices will assist in managing the risk of introduction or spread of weeds and dieback into adjacent 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.

Proposed clearing may be at variance to this Principle

According to available databases, 19 fauna species of conservation significance have been recorded within the local area (DBCA, 2007-):

- Carnaby's cockatoo (*Calyptorhynchus latirostris*; listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* (WC Act) and as endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act));
- chuditch (*Dasyurus geoffroii*; listed as rare or likely to become extinct under the WC Act and as endangered under the EPBC Act);
- south-western brush-tailed phascogale (*Phascogale tapoatafa* subsp. *wambenger*); listed as rare or likely to become extinct under the WC Act and as endangered under the EPBC Act);
- malleefowl (*Leipoa ocellata*; listed as rare or likely to become extinct under the WC Act and as vulnerable under the EPBC Act);
- black-striped snake (*Neelaps calonotos*; listed as Priority 3 under the WC Act);
- blue-billed duck (*Oxyura australis*; listed as Priority 4 under the WC Act);
- hooded dotterel *Thinornis rubricollis*; listed as Priority 4 under the WC Act);
- western rosella (*Platycercus icterotis* subsp. *xanthogenys*; listed as Priority 4 under the WC Act);
- peregrine falcon (*Falco peregrinus*; listed as other specially protected fauna under the WC Act);
- rainbow bee-eater (*Merops ornatus*; listed as migratory birds under international agreement under the EPBC Act);
- curlew sandpiper (*Calidris ferruginea*; listed as rare or likely to become extinct under the WC Act and under the EPBC Act);
- sharp-tailed sandpiper (*Calidris acuminata*; listed as migratory birds under international agreement under the EPBC Act);
- red-necked stint (*Calidris ferruginea*; listed as migratory birds under international agreement under the EPBC Act);
- great egret (*Ardea modesta*; listed as migratory birds under international agreement under the EPBC Act);
- glossy ibis (*Plegadis falcinellus*; listed as migratory birds under international agreement under the EPBC Act);
- Pacific golden plover (*Pluvialis fulva*; listed as migratory birds under international agreement under the EPBC Act);
- wood sandpiper (*Tringa glareola*; listed as migratory birds under international agreement under the EPBC Act); and
- common greenshank (*Tringa nebularia*; listed as migratory birds under international agreement under the EPBC Act).

The flora, vegetation and avifauna assessment did not record any suitable habitat for the malleefowl, blue-billed duck, hooded dotterel, curlew sandpiper, sharp-tailed sandpiper, red-necked stint, great egret, glossy ibis, Pacific golden plover, wood sandpiper or common greenshank within the study area (Ecologia Environment, 2017). Noting the habitat preferences of the remaining species, the application area may contain suitable and potentially significant habitat for Carnaby's cockatoo, chuditch, south-western brush-tailed phascogale, black-striped snake, western rosella, peregrine falcon and rainbow bee-eater (discussed below).

Carnaby's cockatoo breeds in large hollow-bearing trees, generally within woodlands or forests or in isolated trees (Commonwealth of Australia, 2012). This species nest in hollows in live or dead trees of marri, wandoo, powderbark wandoo, *Eucalyptus loxophleba* (York gum), *Eucalyptus diversicolor* (karri), *Eucalyptus gomphocephala* (tuart), *Eucalyptus salmonophloia* (salmon gum), *Eucalyptus marginata* (jarrah), *Eucalyptus rudis* (flooded gum), *Eucalyptus megacarpa* (bullich) and *Eucalyptus* sp. (blackbutt) (Commonwealth of Australia, 2012). According to available databases, the application area is within a confirmed Carnaby's cockatoo breeding area. As outlined in Section 2, the majority of the vegetation within the application area comprises marri and/or pricklybark/coastal blackbutt open woodland/isolated trees. Noting the size of the application area, habitat trees (being trees with a diameter at chest height of 500 millimetres or greater) are likely to be present, potentially including breeding trees for this species.

Carnaby's cockatoo has a preference for foraging habitat that includes jarrah and marri woodlands and forest heathland and woodland dominated by proteaceous plant species such as *Banksia* sp., *Hakea* sp. and *Grevillea* sp. (Commonwealth of Australia, 2012). Noting the presence of *Banksia* and *Eucalyptus* species, the application area contains suitable foraging habitat for Carnaby's cockatoo. Noting that the application area is within a confirmed breeding area of this species, the application area may comprise significant foraging habitat for this species.

The chuditch was once relatively abundant across most of the country are now largely restricted to the south-west of Western Australia, with small numbers in the Midwest, Wheatbelt and South Coast Regions (DBCA, 2017). Noting the extent of the proposed clearing and the condition of the vegetation, the application area is not likely to comprise significant habitat for this species.

The south-western brush-tailed phascogale inhabits dry sclerophyll forests and open woodlands that contain hollow-bearing trees (DEC 2012). It is known from one record in this vicinity and is unlikely to occur within the application area due to lack of suitable habitat.

The black-striped snake is restricted to deep sands of coastal heath and low shrubland of the swan coastal plain (DEC 2009). The application area may contain suitable habitat for this species.

The application area may contain suitable habitat for the western rosella, however there are no recent records of its occurrence in the local area (Ecologia Environment, 2017).

The peregrine falcon is not confined to a specific habitat and can be found in a wide variety of habitats from woodlands to grasslands to coastal cliffs (DotEE 2018a). Noting the extent of the proposed clearing and highly mobile nature of this species, the application area is not likely to comprise significant habitat for this species.

The rainbow bee-eater occurs in numerous habitats including open forests and woodlands, shrublands, in cleared or semi-cleared habitats such as areas of human habitation and farmland. It prefers open, cleared or lightly-timbered areas that are often, but not always in close proximity to permanent water (DotEE, 2018b). The application area may provide suitable habitat for the rainbow bee-eater, however, the proposed clearing is unlikely to significantly impact upon the conservation status of this species given the highly mobile nature of this species.

As indicated in Figure 2, the application area contains, and is adjacent to, patches of remnant vegetation, and may contribute to ecological linkages and act as stepping stones between areas of remnant vegetation in an extensively cleared local area to facilitate landscape connectivity and fauna dispersal.

Noting the above, the application area may comprise significant habitat for indigenous fauna, including conservation-significant species. The proposed clearing may be at variance to this principle.

Inspection of habitat trees within the application area by a fauna specialist would assist in determining the extent of impacts to Carnaby's cockatoo.

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

Proposed clearing is at variance to this Principle

As outlined under Section 2, the application area includes approximately 10.1 hectares of vegetation in 'Degraded' or better condition.

As discussed under Principle (a), the flora, vegetation and avifauna assessment recorded 10 rare flora taxa within 10 kilometres of the study area, of which two rare flora taxa were recorded within the study area (Ecologia Environment, 2017). Of the two rare flora species, one (*Chamelaucium* sp. Cataby) has previously been recorded within the application area (Ecologia Environment, 2017). Noting the habitat preferences of the 10 rare flora species, all have the potential to occur within the application area:

- *Acacia forrestiana* (Forrest's wattle; threatened) is known from 28 recorded populations in the Coorow and Dandaragan area, from lateritic gravelly soils and clay loam over sandstone associated with gullies, hills and breakaways (Western Australian Herbarium website).
- *Acacia splendens* (threatened) is known from 49 recorded populations in the Dandaragan area, from white sand over clay, pale brown loam, cracked brown soil, gravel, laterite and ironstone associated with slopes of breakaways, especially southern slopes and hills (Western Australian Herbarium website).
- *Chamelaucium* sp. Cataby (threatened) is known from eight recorded populations within the Dandaragan area, from yellow and grey sand, sandy clay and brown loam associated with slopes and lateritic breakaways (Western Australian Herbarium website). This species has previously been recorded within the application area.
- *Drakaea elastica* (glossy-leaved hammer orchid; threatened) is known from 18 recorded populations between Dandaragan and Busselton, from white or grey sands associated with low-lying situations adjoining winter-wet swamps (Western Australian Herbarium website).
- *Eleocharis keigheryi* (threatened) is known from 54 recorded populations from Carnamah to Boyup Brook between the coast and inland to Kojonup, from clay and sandy loam and is emergent in freshwater creeks and claypans (Western Australian Herbarium website).
- *Eucalyptus dolorosa* (threatened) is known from 13 recorded populations in the Dandaragan area, from laterite associated with hillsides (Western Australian Herbarium website).
- *Grevillea calliantha* (threatened) is known from 17 recorded populations in the Dandaragan area, from grey or yellow sand over laterite with gravel (Western Australian Herbarium website).
- *Macarthuria keigheryi* (threatened) is known from 27 recorded populations in the Shires of Dandaragan, Gingin and Kalamunda and the Cities of Belmont and Canning, from white or grey sand (Western Australian Herbarium website).
- *Ptychosema pusillum* (dwarf pea; threatened) is known from six recorded populations in the Shires of Dandaragan and Gingin, from sand associated with rises (Western Australian Herbarium website).
- *Thelymitra stellata* (star orchid; threatened) is known from 23 recorded populations from Carnamah to Armadale and inland to West Arthur and Dumbleyung, from sand, gravel and lateritic loam (Western Australian Herbarium website).

As discussed under Principle (a), DBCA advised that despite the September 2017 timing of the flora, vegetation and avifauna assessment, some of the above conservation-significant flora taxa have not previously been recorded flowering at this time and that given the large survey area and limited period of the survey, it is unlikely that all potentially suitable habitat for conservation-significant flora was adequately searched (DBCA, 2018). DBCA noted that in highly-cleared landscapes, remnants in a 'Degraded' condition may support conservation-significant flora taxa, in particular disturbance opportunists (DBCA, 2018). DBCA advised that on the basis of the extent of the proposed clearing and the size of the application area, it appears likely that the risk to the broader conservation of conservation-significant flora which may occur within the application area is likely to be low if all remnants in 'Degraded' or better condition are avoided (DBCA, 2018). DBCA recommended appropriately timed targeted surveys of any remnants in 'Degraded' or better condition that are likely to be impacted by the proposed clearing (DBCA 2018).

Noting that the application area includes known populations of *Chamelaucium* sp. Cataby and DBCA's advice that vegetation in 'Degraded' or better condition may support conservation-significant flora taxa, the application area includes, and may be necessary for the continued existence of, rare flora. The proposed clearing is at variance to this principle.

Noting DBCA's advice, targeted surveys approximately 10.1 hectares of vegetation in 'Degraded' or better condition within the application area would assist in determining the extent of impacts to rare flora.

(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.

Proposed clearing may be at variance to this Principle

According to available databases, several occurrences of the Commonwealth listed TEC 'Banksia woodlands of the Swan Coastal Plain IBRA Region' have been recorded within the local area, the nearest of which is located approximately 150 metres from the southernmost portion of the application area.

The Approved Conservation Advice for this TEC specifies a number of criteria for vegetation to be considered representative of this TECs (TSSC, 2016). These criteria include location on sandplain landforms, a structure of low woodland or forest, the presence of a dominant *Banksia* component which includes at least one of slender banksia, *Banksia menziesii* (firewood banksia), acorn banksia and/or *Banksia illicifolia* (holly-leaved banksia), with/without the presence of emergent medium-height trees comprised of species including *Eucalyptus* spp. or *Allocasuarina* spp., with a species-rich sclerophyllous understorey and herbaceous ground layer (TSSC, 2016). These criteria also specify minimum patch sizes and condition ratings, which include minimum patch size of two hectares for vegetation in 'Good' condition and a minimum patch size of one hectare for vegetation in 'Very Good' condition (TSSC, 2016).

The flora, vegetation and avifauna survey identified seven patches of remnant vegetation within the study area that are considered to be representative of the TEC (Ecologia Environment, 2017). The application area is directly adjacent to four of these patches. The proposed clearing may impact on these patches through the increased risk of introduction or spread of weeds and dieback.

Given the above, the application area is not likely to comprise the whole or a part of a TEC, however may be necessary for the maintenance of an adjacent TEC. The proposed clearing may be at variance to this principle.

Weed and dieback management practices will assist in managing the risk of introduction or spread of weeds and dieback into adjacent 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.

Proposed clearing may be at variance to this Principle

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). As indicated in Table 1, two of the mapped Beard vegetation associations within the bioregions retain less than 10 per cent of their pre-European extents, being substantially less than the 30 per cent recommended threshold for biodiversity conservation:

- Beard vegetation association 1035 within the Geraldton Sandplains bioregion: according to the flora, vegetation and avifauna survey, the vegetation within this portion of the application area is mapped as vegetation unit W3 and is in 'Completely Degraded' condition (Ecologia Environment, 2017).
- Beard vegetation association 999 within the Swan Coastal Plain bioregion: according to the flora, vegetation and avifauna survey, the majority of the vegetation within this portion of the application area is mapped as vegetation unit W3 and is in 'Completely Degraded' condition, and approximately 1.8 hectares is mapped as vegetation unit S1 and is in 'Very Good' condition (Ecologia Environment, 2017).

As discussed under principles (a), (b), (c) and (d), the application area includes known populations of rare flora, includes vegetation in 'Degraded' or better condition, may comprise a high level of biological diversity, may comprise significant habitat for indigenous fauna, and may be necessary for the maintenance of an adjacent TEC. As outlined in Section 2, the local area retains approximately 17 per cent native vegetation cover.

Given the above, the application area may be significant as a remnant of native vegetation in an area that has been extensively cleared. The proposed clearing may be at variance to this principle.

Table 1: Vegetation Statistics (Government of Western Australia, 2018)

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Current Extent in DBCA Managed Lands	
				(ha)	(%)
IBRA Bioregion					
Geraldton Sandplains	3,136,037.83	1,404,431.01	44.78	568,223.49	40.46
Swan Coastal Plain	1,501,221.93	578,997.37	38.57	222,766.51	38.47
Local Government Authority*					
Shire of Dandaragan	671,022.05	296,649.87	44.21	129,128.89	43.53
Beard Vegetation Association in Bioregion					
Geraldton Sandplains					
• 4	5336.70	2130.04	39.91	1,277.85	59.99
• 1031	241,349.97	83,221.38	34.48	37,049.79	44.52
• 1035	1582.96	133.16	8.41	9.79	7.35
Swan Coastal Plain					
• 999	102,939.79	9,603.90	9.33	1,209.96	12.60
• 1030	134,788.56	86,013.90	63.81	14,981.00	17.42

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

Proposed clearing is at variance to this Principle

According to available databases, the application area traverses numerous drainage lines and watercourses (including Minyulo Brook, Cataby Brook, Caren Caren Brook and Yatheroo Brook), and mapped wetlands. According to the flora, vegetation and avifauna survey, the vegetation associated with these watercourses and wetlands is in 'Completely Degraded' condition (Ecologia Environmental, 2017). Vegetation within the application area is also linked to remnant vegetation in the local area by riparian vegetation associated with these watercourses.

As outlined in Section 2, the flora, vegetation and avifauna survey identified that the application area includes the vegetation unit R1, which includes species typically associated with watercourses (Ecologia Environmental, 2017). According to the flora, vegetation and avifauna survey, approximately one hectare of vegetation within the north-eastern portion of the application area is mapped as vegetation unit R1 and is in 'Completely Degraded' condition (Ecologia Environmental, 2017).

There is also potential for the proposed clearing to have indirect impacts to riparian vegetation if creek crossings impede the flow of water through drainage lines. However, noting the extent of the proposed clearing within the application area, the impact on vegetation associated with watercourses and wetlands is not likely to be significant.

A review of the available information on depth to groundwater and the vegetation present indicates there is low risk of the proposed clearing impacting upon groundwater-dependent vegetation, and existing mapped Potential Groundwater Dependent Ecosystems and wetlands (seasonally water logged palusplains, paluslopes) are outside of the proposed clearing zones.

Noting the above, the proposed clearing will impact on vegetation growing in association with watercourses and wetlands. The proposed clearing is at variance to this principle.

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

Proposed clearing is not likely to be at variance to this Principle

As outlined in Section 2, the soils within the application area are mapped as the Nylagarda System, Bassendean System, Boothendarra System, Dandaragan System, Rows System and Capitella System, comprising primarily of sandy soils including deep sands, sandy duplexes, sandy gravels and sandy earths, with some loamy gravels and clays, on undulating terrain (DPIRD, 2018). The majority of the application area is mapped as yellow earthy sands with siliceous sands (soil unit AC2), and calcareous sands and red and brown shallow porous loamy soils (soil unit AC3) (Northcote et al., 1960-68).

The majority of the application area is within five soil sub-systems:

- Dandaragan 1: hillcrests and very gently to gently inclined hillslopes; red to pale sandy gravels, shallow red to pale sands over duricrust, some red to yellow deep sands;
- Dandaragan 2: very gently to gently inclined hillslopes, some hillcrests and plateau remnants; yellow and brown deep sands, some sandy earths;
- Dandaragan 3: colluvial slopes, very gently to gently inclined hillslopes; red to brown and yellow deep sands, some sandy gravels and sandy earths;
- Rows 2: plateau residuals, hillcrests and very gently to gently inclined hillslopes; sandy gravels, gravelly pale deep sand, some duricrust; and
- Boothendarra 4 Subsystem: gently to very gently inclined hillslopes and footslopes; sandy duplexes, deep sands and sandy gravels (Schoknecht et al 2004).

According to available databases, the application area has an average annual rainfall of 600-700 millimetres, and groundwater salinity (total dissolved solids) mapped as 1,000-3,000 milligrams per litre.

As indicated in Table 2, land degradation risk mapping indicates that the proposed clearing generally has a low likelihood of causing appreciable land degradation in the forms of water erosion, water logging, phosphorus export and salinity. The soils within the application area generally have a high risk of wind erosion and sub-surface acidification, however noting the extent of the proposed clearing and the size of the application area, and the condition of the vegetation across the majority of the application area, the proposed clearing is not likely to cause appreciable wind erosion or sub-surface acidification.

Given the above, the proposed clearing is not likely to cause appreciable land degradation. The proposed clearing is not likely to be at variance to this principle.

Table 2: Land degradation risk categories (DPIRD, 2018)

Risk categories	Boothendarra 4 subsystem	Dandaragan 1 subsystem	Dandaragan 2 subsystem	Dandaragan 3 subsystem	Rows 2 subsystem
Wind erosion	51 per cent of map unit has a nil to moderate wind erosion risk	76 per cent of map unit has a high risk of wind erosion	76 per cent of map unit has a high risk of wind erosion	86 per cent of map unit has a high risk of wind erosion	72 per cent of map unit has high risk of wind erosion
Water erosion	97 per cent of map unit has a nil to moderate water erosion risk	95 per cent of map unit has a nil to moderate water erosion risk	100 per cent of map unit has a nil to low risk of water erosion	99 per cent of map unit has a nil to low risk of water erosion	97 per cent of map unit has a nil to moderate water erosion risk

Salinity	100 per cent of map unit has a nil or partial salinity risk	100 per cent of map unit has a nil or partial salinity risk	100 per cent of map unit has a nil or partial salinity risk	100 per cent of map unit has a nil or partial salinity risk	100 per cent of map unit has a nil or partial salinity risk
Subsurface Acidification	100 per cent of map unit has a high acidification risk or is presently acid	100 per cent of map unit has a high acidification risk or is presently acid	100 per cent of map unit has a high acidification risk or is presently acid	100 per cent of map unit has a high acidification risk or is presently acid	100 per cent of map unit has a high acidification risk or is presently acid
Flood risk	97 per cent of the map unit has a low flood risk	100 per cent of the map unit has low flood risk	100 per cent of the map unit has low flood risk	100 per cent of the map unit has low flood risk	100 per cent of the map unit has low flood risk
Water logging	97 per cent of map unit has a nil to low waterlogging risk	100 per cent of map unit has a nil to low waterlogging risk	100 per cent of map unit has a nil to low waterlogging risk	98 per cent of map unit has a nil to low waterlogging risk	100 per cent of map unit has a nil to low waterlogging risk
Phosphorus export risk	92 per cent of map unit has a nil to moderate phosphorus loss risk	95 per cent of map unit has a nil to moderate phosphorus loss risk	100 per cent of map unit has a nil to moderate phosphorus loss risk	94 per cent of map unit has a nil to moderate phosphorus loss risk	97 per cent of map unit has a nil to moderate phosphorus loss risk

(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.

Proposed clearing may be at variance to this Principle

According to available databases, the nearest conservation areas are two unnamed Nature Reserves adjacent to the application area (along Mimegarra Road). The proposed clearing may directly impact on these conservation areas through the increased risk of introduction or spread of weeds and dieback.

Other conservation areas in the local area include a privately-managed conservation area located approximately 1.8 kilometres from the application area, Eneminga Nature Reserve located approximately 3.1 kilometres from the application area, and Jam Hill Nature Reserve located approximately 6.1 kilometres from the application area. Noting the separation distances between these conservation areas and the application area, the extent of the proposed clearing, and that the local area has been extensively cleared for agricultural landuse (Figures 1 and 2), the proposed clearing is not likely to have a direct impact on the environmental values of these conservation areas. As assessed under principle (f), vegetation within the application area is linked to remnant vegetation in the local area by riparian vegetation associated with watercourses. As assessed under principle (b), the application area contains, and is adjacent to, patches of remnant vegetation, and may contribute to ecological linkage and act as stepping stones between areas of remnant vegetation, including the above conservation areas. The proposed clearing may partly or wholly sever or otherwise impact on these connections, and may therefore indirectly impact on these conservation areas.

Given the above, the proposed clearing may impact on the environmental values of adjacent and nearby conservation areas. The proposed clearing may be at variance to this principle.

Weed and dieback management practices will assist in managing the risk of introduction or spread of weeds and dieback into adjacent vegetation.

(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.

Proposed clearing is not likely to be at variance to this Principle

As assessed under principle (f), there are several watercourses and mapped wetlands within the application area. As assessed under principle (g), groundwater salinity (total dissolved solids) mapped as 1,000-3,000 milligrams per litre.

There is a low risk that the proposed clearing will impact on the quality of surface or groundwater resources through turbidity within these drainage lines, as there are drainage lines leading to surface water pathways within the application area for which turbidity may be an issue. However, noting the extent of the proposed clearing within the application area, any impacts to the quality of surface or underground water are not likely to be significant.

Noting the above, the extent of the proposed clearing and the size of the application area, the proposed clearing is not likely to cause deterioration in the quality of surface or underground water. The proposed clearing is not likely to be at variance to this principle.

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

Proposed clearing is not likely to be at variance to this Principle

As assessed under principle (f), there are several watercourses and mapped wetlands within the application area. As assessed under principle (g), the application area has an average rainfall is 600-700 millimetres per year, and the proposed clearing has a low likelihood of causing flooding. The sandy soils, elevation and drainage pathways indicate that major rainfall will result in drainage direct infiltration to groundwater and flow to local creeks.

Noting the above, the extent of the proposed clearing and the size of the project footprint, the proposed clearing is not likely to cause, or exacerbate, the incidence or intensity of flooding. The proposed clearing is not likely to be at variance to this principle.

Planning instruments and other relevant matters.

Clearing Permit CPS 4541/1 and /2 was previously granted for a project overlapping the current application area, authorising Yandin Wind Farm Pty Ltd to clear 0.095 hectares within a project footprint of approximately 4,600 hectares. Assessment of application CPS 4608/1 found that the proposed clearing is at variance to Principle (f), may be at variance to Principles (c) and (i), and is not likely to be at variance to the remaining Principles. Clearing Permit CPS 4541/2 expired on 13 February 2017.

Clearing Permit CPS 4608/1 and /2 was previously granted for a project adjacent to the current application area, authorising Waddi Wind Farm Pty Ltd to clear 1.07 hectares of native vegetation within a 3,156 hectare project footprint. Assessment of application CPS 4608/1 found that the proposed clearing is at variance to Principle (f), may be at variance to Principles (c), (d) and (i), and is not likely to be at variance to the remaining Principles. Clearing Permit CPS 4608/2 expired on 13 February 2017.

The original application was accepted on the 17 January 2018 and advertised for a period of 21 days. No public submissions were received. On 7 February 2018, the application was revised to include lot 411 on Plan 245130 which was excluded from the list of land parcels, and minor amendment to the application area at the applicant's request. The first revision of the application, being to clear 3.5 hectares within a 4,789.5 hectare project footprint, was re-advertised on the Department of Water and Environmental Regulation (DWER) website on 23 February 2018 with a seven day submission period. No public submissions were received in relation to this application. As discussed under Section 5, the application was revised a second time, to reduce the project footprint to 4,594.4 hectares to avoid environmental impacts identified during the assessment of the first revision of the application.

The application area is within an agricultural area zoned 'Rural' under the Shire of Dandaragan Local Planning Scheme No.7. The Shire of Dandaragan advised that it has no objection to the proposed clearing, and that planning approval has been granted for the proposed wind farm development (Shire of Dandaragan, 2018).

The applicant has not provided information identifying the proposed requirements or source of water for the operation. The application area is located within the Gingin Groundwater Area proclaimed under the *Rights in Water and Irrigation Act 1914* (RiWI Act), and any abstraction of groundwater for the project will require a licence under the RiWI Act. The application area is within an unproclaimed surface water area, and as such permits under the RiWI Act are not required for project works within the bed and/or banks of any watercourse or drainage line. If groundwater is to be accessed for project activities, the applicant is encouraged to liaise with DWER's Midwest Licensing Section (telephone 9965 7400, email midwest@dwer.wa.gov.au).

The applicant has not provided detail regarding stormwater or chemical/hydrocarbon/waste management during clearing and construction of the project. The identified potential risks to water resources from project activities are through transport of sediment, hydrocarbons and effluent via drainage lines into wetlands, creeks and groundwater systems. Project activities should be conducted to ensure that stormwater runoff is adequately managed to minimise risks to water resources from contamination (sedimentation, hydrocarbons and effluent disposal). The applicant is encouraged to prepare and implement Stormwater Management Plan and Chemical /Hydrocarbon Management and Spill Contingency Plans developed in consultation with DWER.

To manage the risk of impacts to water resources within the vicinity of the application area, the following should be adhered to if undertaking the proposed clearing:

- There should be no significant alternation of the natural hydrological regime and geomorphology of the wetlands and its catchment
- The activity should not result in the loss of wetland fringing vegetation to ensure maintenance of foreshore stability and protection of important riparian habitats. In particular construction of vehicular access tracks should be minimised and utilisation of existing tracks to occur where possible.
- Should any watercourse crossings be constructed they must not impound water or alter the hydraulic regime of the watercourse. These works should include scour and erosion controls and utilisation of revegetation of a riparian corridor to support bank stability.
- No activity shall be undertaken that will unduly disrupt natural drainage or adversely affect the quality or quantity of water in any watercourse, dam, waterhole, spring or subterranean source of supply.
- No activity shall be undertaken which prevents or restricts the access of authorised users to any existing production bore, well or surface water structures such as wetlands.
- No activity shall be undertaken which may affect leaseholders, landowners or managers rights in respect to water quality, quantity and access.
- Authorised officers of DWER have right of access for the purpose of water resource inspection and investigation.
- DWER requests written notification of any activities that may go beyond those outlined in the conditions stipulated before initiation of activities.

No registered Aboriginal sites of significance have been mapped within the application area.

5. Applicant's submission

Through the assessment of the first revision of the application, it was determined that approximately 3.55 per cent (approximately 170.1 hectares) of the 4,789.5 hectare project footprint contains vegetation in 'Degraded' or better condition:

- Excellent: approximately 121.5 hectares of the application area, comprising the whole or part of seven remnants;
- Very Good: approximately 18.9 hectares of the application area, comprising the whole or part of three remnants;
- Good: approximately 13.9 hectares of the application area, comprising the whole or part of three remnants;
- Degraded: approximately 15.8 hectares of the application area, comprising the whole or part of two remnants; and
- Completely Degraded: the remainder of the application area, largely corresponding with vegetation unit W3 (Ecologia Environment, 2017).

In summary, the environmental impacts associated with the first revision of the application were determined to be:

- A number of conservation-significant flora species have been recorded within the application area. DBCA advised that in highly-cleared landscapes, remnants in a 'Degraded' condition may support conservation-significant flora taxa, in particular disturbance opportunists. DBCA recommended appropriately-timed targeted surveys of any remnants in 'Degraded' or better condition that are likely to be impacted by the proposed clearing.
- The application area contains suitable foraging habitat for Carnaby's cockatoo and is within a confirmed breeding area of this species. The proposed clearing may impact on an ecological linkage which is likely to facilitate fauna movement through the local area. On this basis the application area comprises significant habitat for indigenous fauna.
- Two of the mapped vegetation associations within the application area (being Beard 1035 in the Geraldton Sandplains bioregion and Beard 999 in the Swan Coastal Plain bioregion) retain less than 10 per cent of their pre-European extents. These mapped vegetation associations appear to correspond with some of the portions of the application area containing vegetation in 'Degraded' or better condition.
- Portions of the application area are directly adjacent to four of the seven patches of remnant vegetation identified in the flora, vegetation and avifauna survey as being representative of the 'Banksia woodlands of the Swan Coastal Plain IBRA Region' TEC. The application area may be necessary for the maintenance of a TEC.
- Noting the above, noting that the local area retains approximately 17 per cent native vegetation cover, and noting the extent of 'Completely Degraded' and agricultural land in the local area, the vegetation in 'Degraded' or better condition within the application area may comprise a high level of biological diversity.

On 1 June 2018, a DWER Delegated Officer wrote to the applicant, outlining the environmental impacts identified through the assessment, and inviting the applicant to provide advice in relation to these matters (DER ref. A1685308). On 7 June 2018, the applicant advised that the project footprint would be reviewed to determine whether and to what extent impacts to 170.1 hectares of native vegetation in 'Degraded' or better condition could be avoided (DWER ref. A1697200). On 15 June 2018, the applicant provided a revised shapefile of the revised project footprint, which avoids approximately 160 hectares of native vegetation in total (DWER ref. A1692689).

According to the flora, vegetation and avifauna assessment, the revised project footprint avoids approximately 121.5 hectares of vegetation in 'Excellent' condition, approximately 17.1 hectares in 'Very Good' condition, approximately 5.6 hectares in 'Good' condition, and approximately 15.8 hectares in 'Degraded' condition (Ecologia Environment, 2017).

On review of the second revision of the application, it was determined that approximately 0.22 per cent (approximately 10.1 hectares) of the 4,594.4 hectare revised project footprint contains vegetation in 'Degraded' or better condition:

- Very Good: approximately 1.8 hectares comprising one remnant located within the central portion of the application area
- Good: approximately 8.3 hectares comprising one remnant located within the south-western portion of the application area; and
- Completely Degraded: the remainder of the application area, largely corresponding with vegetation unit W3 (Ecologia Environment, 2017).

In summary, the environmental impacts associated with the revised application are determined to be:

- A number of conservation-significant flora species have been recorded within the application area, and vegetation in 'Degraded' or better condition within the application area may support conservation-significant flora taxa. This impact has not changed from the original application.
- The application area contains, and is adjacent to, patches of remnant vegetation, and may contribute to ecological linkages and act as stepping stones between areas of remnant vegetation in an extensively cleared local area to facilitate landscape connectivity and fauna dispersal. This impact has been reduced through revision of the project footprint.
- Two of the mapped vegetation associations within the application area retain less than 10 per cent of their pre-European extents. According to the flora, vegetation and avifauna assessment, these associations correspond with vegetation predominantly in 'Completely Degraded' condition. This impact has been reduced through revision of the project footprint.
- Portions of the application area are directly adjacent to four patches of remnant vegetation representative of the 'Banksia woodlands of the Swan Coastal Plain IBRA Region' TEC, and the application area may be necessary for the maintenance of these. This impact has not changed from the original application.
- The vegetation in 'Degraded' or better condition within the application area may comprise a high level of biological diversity. This impact has not changed from the original application.

The following measures are necessary to inform the assessment and/or address these impacts:

- targeted surveys of approximately 10.1 hectares of vegetation in 'Degraded' or better condition to determine impacts to rare and priority flora;
- inspection of habitat trees by a fauna specialist to determine impacts to Carnaby's cockatoo; and
- weed and dieback management practices will assist in managing the risk of introduction or spread of weeds and dieback into adjacent vegetation, including conservation areas and potential TEC occurrences.

6. References

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GIS Databases:

- Aboriginal Sites of Significance
- DAFWA Heritage
- DBCA Estate
- DEC Covenant
- Groundwater salinity
- Hydrography, linear
- National Trust WA Covenant
- Remnant vegetation
- SAC bio datasets (accessed April 2018)
- Soils, Statewide
- Topographic contours
- Wetlands

Clearing permit application CPS 7925/1

The Yandin Wind Farm Pty Ltd has applied for a Purpose Permit to clear 3.5 hectares of native vegetation (within a 4594.4 hectare footprint) on various land parcels and road reserves in Cataby, Dandaragan, Mimegarra and Yathroo, for the purpose of constructing the Yandin Wind Farm.

The application area traverses the following land parcels:

- Lot 4 on Deposited Plan 67003, Cataby;
- Lot 1002 on Plan 22459, Dandaragan;
- Lot M 2080 on Plan 6269, Dandaragan;
- Lot 301 on Deposited Plan 35381, Dandaragan;
- Lot 3826 on Deposited Plan 209670, Yathroo;
- Lot 3829 on Deposited Plan 209670, Yathroo;
- Lot 3827 on Deposited Plan 209670, Yathroo;
- Lot 302 on Deposited Plan 35381, Dandaragan;
- Lot M 1127 on Diagram 4945, Dandaragan;
- Lot M 1948 on Diagram 13135, Yathroo;
- Lot 9 on Plan 23599, Dandaragan;
- Lot 311 on Deposited Plan 245072, Dandaragan;
- Lot 529 on Deposited Plan 246489, Dandaragan;
- Lot 875 on Deposited Plan 247940, Dandaragan;
- Lot 111 on Deposited Plan 247871, Dandaragan;
- Lot M 454 on Plan 3049, Dandaragan;
- Lot M 1131 on Diagram 4843, Dandaragan;
- Lot M 2068 on Diagram 15361, Yathroo;
- Lot M 455 on Plan 3049, Dandaragan;
- Lot 4258 on Deposited Plan 209671, Mimegarra (Un-named road reserve (PIN 1226157))
- Lot 411 on Plan 245130, Dandaragan;
- Closed road reserve (PIN 580159), Dandaragan;
- Closed road reserve (PIN 580127), Dandaragan;
- Un-named road reserve (PIN 11674286), Dandaragan;
- Un-named road reserve (PIN 11674284), Yathroo;
- Un-named road reserve (PIN 1226160), Yathroo;
- Un-named road reserve (PIN 1226220), Dandaragan;
- Un-named road reserve (PIN 1226214), Yathroo;
- Un-named road reserve (PIN 1226159), Dandaragan;
- Un-named road reserve (PIN 1353716), Yathroo; and
- Un-named road reserve (PIN 11674285), Dandaragan.