FLORA, VEGETATION AND FAUNA ASSESSMENT

OF THE FLAT ROCKS WIND FARM

SURVEY AREA

Prepared for

Moonies Hill Energy

Prepared by

Mattiske Consulting Pty Ltd

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MHE2101/09/22

Mattiske Consulting Pty Ltd

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Moonies Hill Energy Pty Ltd

Report	Version	Prepared By	Reviewed By	Submitted to Client	
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Internal Review	V1	CB/MB	CR	-	-
Draft Report released for Client Review	V2	CR	EMM	26/04/2016	Email
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1. SUMMARY

Mattiske Consulting Pty Ltd was commissioned by the Moonies Hill Energy to undertake a review of the flora, vegetation and fauna values on the proposed Flat Rocks Wind Farm location in 2016. This assessment was updated in relation to the proposed locations of the wind farm facilities in January 2022 following additional targeted work on 8th December 2021. The proposed development occurs primarily within cleared agricultural areas, Figure 1. Therefore, the effort concentrated on desktop reviews, the sampling of the remnant areas of vegetation and the roadside vegetation that may be disturbed by vehicle movement and installation of the wind farm facilities. Two experienced biologists completed the site assessments on the 29th of September to 1st October, 2010. In addition, a review of the fauna values were discussed with experienced zoologists. In April 2016 and December 2021, Mattiske Consulting Pty Ltd was again commissioned by the Moonies Hill Energy to undertake a review of the flora, vegetation and fauna values on the proposed Flat Rocks Wind Farm location.

A total of 76 vascular plant taxa from 57 plant genera and 22 plant families were recorded within the Flat Rocks Wind Farm survey area during the 2010 survey. The majority of taxa was recorded within the Poaceae (17 taxa), Myrtaceae (12 taxa), Fabaceae (9 taxa), and Asteraceae (9 taxa) families (Appendix E). This total included 53 native species and 23 introduced (weed) species.

No threatened and priority flora species pursuant to the *Biodiversity Conservation Act (2016)* and as listed by the Department of Biodiversity, Conservation and Attractions were recorded within the Flat Rocks Wind Farm survey area. No plant taxa listed as Threatened pursuant to Schedule 1 of the *Environment Protection and Biodiversity Conservation Act 1999* were recorded during the survey within the proposed Flat Rocks Wind Farm survey area.

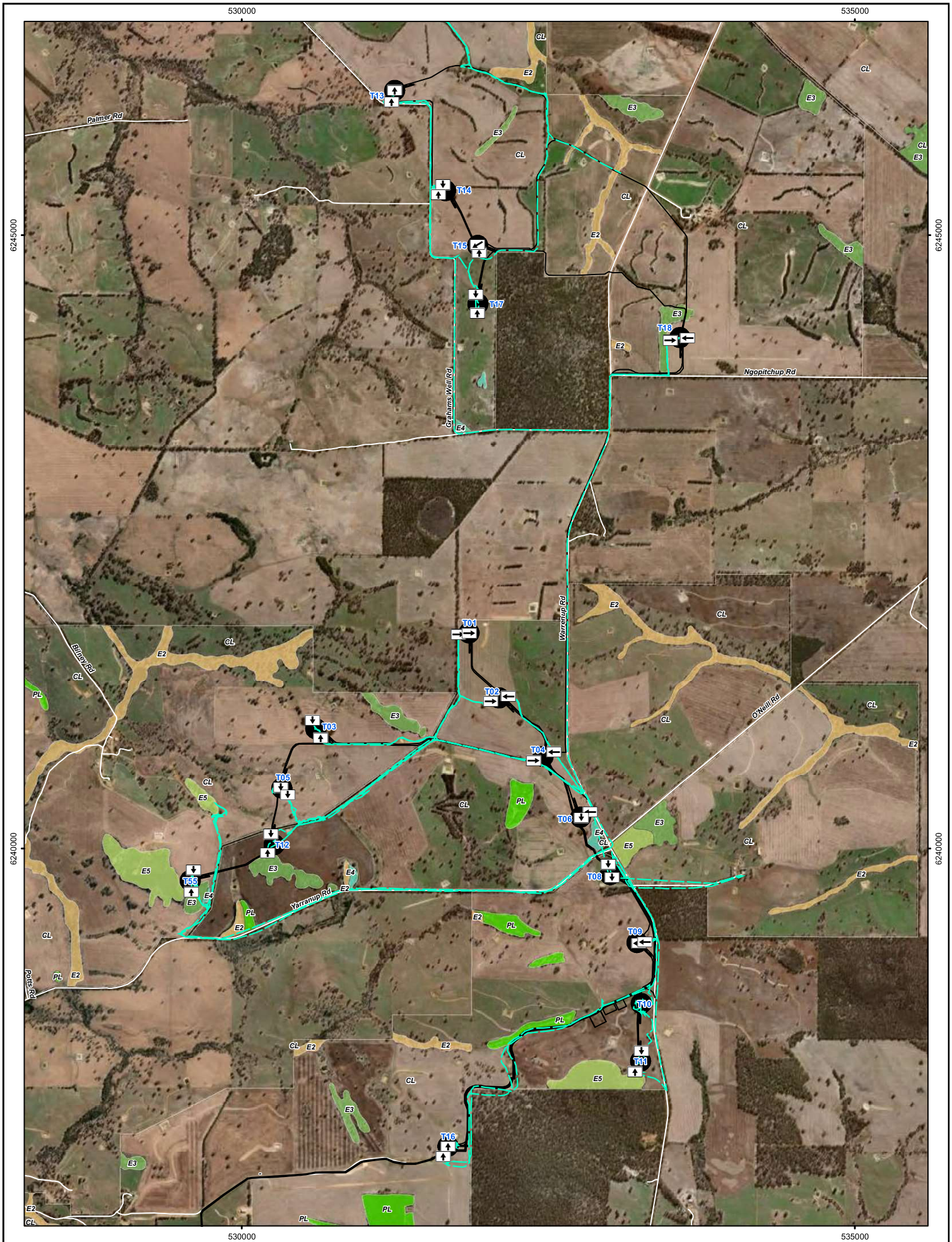
Several areas of the remnants have been delineated as threatened ecological communities (Eucalypt woodlands of the Western Australian Wheatbelt) as defined by the *Environment Protection and Biodiversity Conservation Act 1999* in the wider Moonies Hill Energy survey area; although there appear to be some inconsistencies in definition on the data supplied by the Department of Agriculture, Water and the Environment (2021b). The proposed facilities do not directly disturb the remnant areas that support the threatened ecological community.

Although a range of potential flora and fauna values were sourced from a desktop assessment in the vicinity of the Flat Rocks Wind Farm location; in view of the degree of degradation, unless remnant areas are likely to be disturbed, there should not be any significant issues in relation to the native flora or fauna species.

Should the development of the Flat Rocks Wind Farm go ahead the following recommendations are made as a means of minimizing the impacts of infrastructure activities on the flora, vegetation and fauna values in the area:

- Limit ground disturbance and clearing of vegetation to designated areas and access routes, avoiding habitat trees (larger trees and trees with hollows) wherever possible;
- Maintain existing drainage systems, ensuring tracks and other infrastructure areas do not disrupt or divert historic water flow patterns;
- Remove and stockpile topsoil, log debris and leaf litter where possible for use in future rehabilitation programs. If possible, stockpiled topsoil should be directly replaced on disturbed areas;
- Minimise soil disturbance during clearing and practice standard vehicle hygiene to ensure introduced (exotic) species do not become established within the Flat Rocks Wind Farm survey area;
- Implement a management plan to prevent the spread of **Asparagus asparagoides*, a declared pest species; and
- Minimize all threatening processes to native vegetation.

In summary, there should be no impediments to the development of the wind farm facilities providing the remnant vegetation areas (including less disturbed road verges) are not disturbed.



Legend

- Photo Location (Showing Direction)
- Turbine Layout - Stage 1
- MCPL Tracks
- Layout
- Vegetation: E2, E3, CL, E5, PL, E4

0 340 680m

Scale: 1:27,500
MGA94 (Zone 50)

CAD Ref: a1868_F001

Date: Dec 2021 | Rev: A | A3

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Moonies Hill Energy Pty Ltd
Overview
Figure 1

2. INTRODUCTION

Mattiske Consulting Pty Ltd was commissioned by the Moonies Hill Energy to undertake a review of the flora, vegetation and fauna values on the proposed Flat Rocks Wind Farm location in 2016. This assessment was updated in relation to the proposed locations of the wind farm facilities in January 2022 following additional targeted work on 8th December 2021. The proposed development occurs primarily within cleared agricultural areas, Figure 1. Therefore, the effort concentrated on desktop reviews, the sampling of the remnant areas of vegetation and the roadside vegetation that may be disturbed by vehicle movement and installation of the wind farm facilities. Two experienced biologists completed the site assessments on the 29th of September to 1st October, 2010. In addition, a review of the fauna values were discussed with experienced zoologists. In April 2016 and December 2021, Mattiske Consulting Pty Ltd was again commissioned by the Moonies Hill Energy to undertake a review of the flora, vegetation and fauna values on the proposed Flat Rocks Wind Farm location.

The proposed Flat Rocks Wind Farm survey area is located approximately 20km southeast of the town of Kojonup, 27km northwest of Tambellup, 16km west of Broomehill and 27km southwest of Katanning. The survey area is bounded by Broomehill-Kojonup Road in the north, Tambellup West Road in the south, and situated between Potts Road to the east and Palomar Road to the west.

2.1 Climate

The Flat Rocks Wind Farm survey area lies within the Southern Jarrah Forest Subregion on the border of the Avon Wheatbelt subregion. Beard (1990) described the climate of the Southern Jarrah Forest as warm mediterranean with winter precipitation between 600 and 1200mm and 5 - 6 dry months per year. The climate of the Avon Wheatbelt is described as dry, warm mediterranean, with winter precipitation of 300 – 650mm and 7 – 8 dry months per year (Beard 1990).

The distinct summer and winter trends rainfall and maximum temperatures is illustrated in Figure 2 (Bureau of Meteorology 2021).

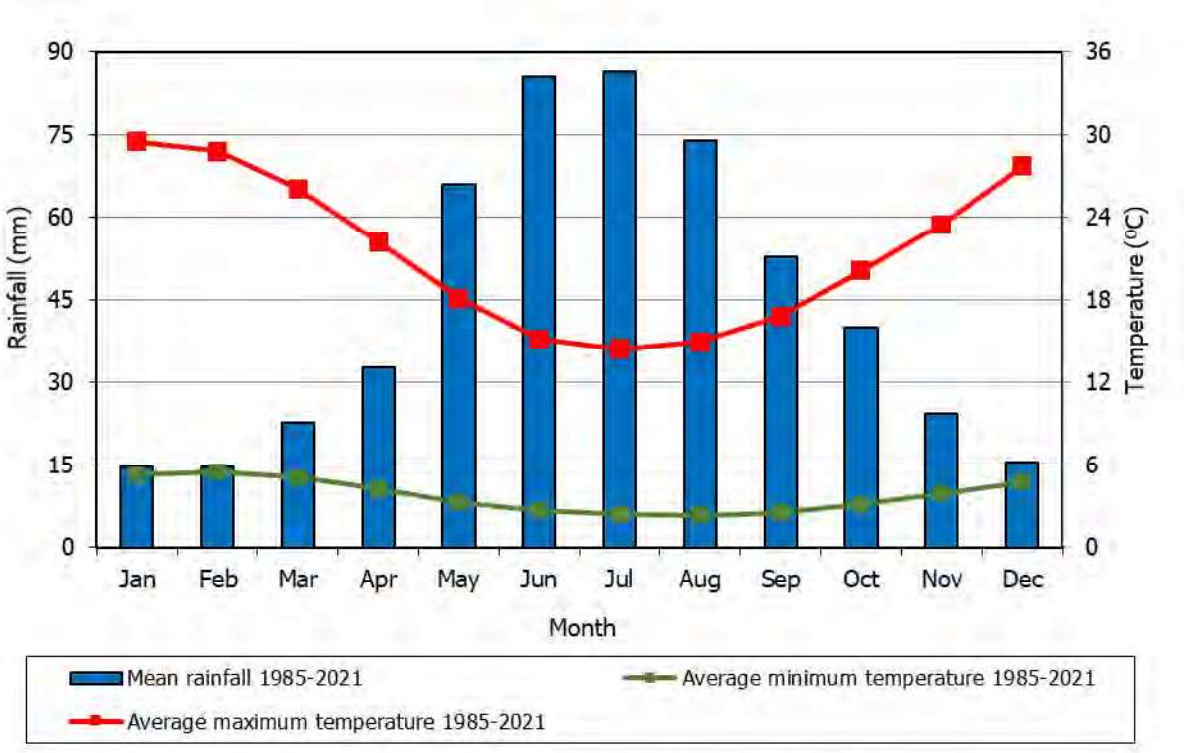


Figure 2: Rainfall and temperature data for Kojonup (Bureau of Meteorology 2021)
Long term average rainfall and temperature data for Kojonup

2.2 Regional Vegetation

The Flat Rocks Wind Farm survey area is located within the Southern Jarrah Forest subregion within 5km of the border of the Avon Wheatbelt region. The Southern Jarrah Forest subregion is characterised by jarrah forest on duricrusted plateaus and loam soils of valleys, with marri-wandoo woodlands on laterite-free soils (Beard 1990). Typical vegetation of the Avon Wheatbelt region includes scrub-heath on sandplains, *Acacia-Casuarina* thickets on ironstone gravels, woodlands of *Eucalyptus loxophleba*, *Eucalyptus salmonophloia* and *Eucalyptus wandoo* on varying soil types (Beard 1990). The proximity of Moonies Hill Energy Wind Farm to the border of the Avon Wheatbelt region indicates that characteristics of both regions are likely to be present in the survey area. Katanning and Kojonup are in the Avon Province, which has a range of soil types, which range from sandy duplex soils, ironstone gravelly soils, loamy earth and duplex soils, sandy earth soil, deep sands and wet soils (CSIRO).

2.3 Western Australia's Flora – A Legislative Perspective

Western Australia has a unique and diverse flora, and is recognised as one of the world's 25 biodiversity hotspots (Myers *et al*. 2000). In this context, Western Australia possesses a high degree of species richness and endemism. This is particularly pronounced in the south-west region of the state. There are currently over 12,000 plant species known to occur within Western Australia (Department of Biodiversity, Conservation and Attractions 2021g), and scientific knowledge of many of these species is limited.

The legislative protection of flora within Western Australia is principally governed by three Acts. These are:

- The *Biodiversity Conservation Act 2016* (replaced *Wildlife Conservation Act 1950)*;
- The *Environmental Protection Act 1986*; and
- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

The unique flora of Western Australia is potentially under threat due to historical clearing practices associated with agricultural, mining and human habitation activities. As a consequence of these historical clearing practices, a number of flora species have become threatened or have the potential to become threatened as their habitat is impacted by human activity. In addition, some areas of the State have been affected by past clearing practices such that entire ecological communities are under threat. The following sections describe these threatened and priority flora and ecological communities, and outline the legislative protection afforded to them.

At the State level, the *Biodiversityl Conservation Act 2016* provides for taxa of native flora (and fauna) to be specially protected because they are subject to identifiable threats. Protection of these taxa has been identified as being warranted because they may become extinct, are threatened, or are otherwise in need of special protection. Ecological communities that are deemed to be threatened are afforded protection under the *Environmental Protection Act 1986*. Listings of threatened species and communities are reviewed annually by the Western Australian Threatened Species Scientific Committee (TSSC), which is a body appointed by the Minister for the Environment and supported by the Department of Parks and Wildlife. The TSSC reviews threatened and specially protected flora (and fauna) listings on an annual basis. Recommendation for additions or deletions to the listings of specially protected flora (and fauna) is made to the Minister for the Environment by the TSSC, via the Director General of the Department of Parks and Wildlife, and the WA Conservation Commission. Under the *Biodiversity Conservation Act 2016*, the Minister for the Environment may declare a class or description of flora to be threatened flora throughout the State, by notice published in the *Government Gazette* (Department of Biodiversity, Conservation and Attractions 2021b).

At the Commonwealth level, under the *Environment Protection and Biodiversity Conservation Act 1999*, a nomination process exists, to list a threatened species or ecological community. Additions or deletions to the lists of Threatened species and communities are made by the Minister for the Environment, on advice from the Federal Threatened Species Scientific Committee. *Environment Protection and Biodiversity Conservation Act 1999* lists of Threatened flora and ecological communities are published on the Department of Agriculture, Water and the Environment website (2021a, 2021b).

2.3.1 Threatened and Priority Flora

Flora within Western Australia that is considered to be under threat may be classed as either threatened flora or priority flora. Where flora has been gazetted as threatened flora under the *Biodiversity Conservation Act 2016*, it is an offence "to take" such flora without the written consent of the Minister. The *Biodiversity Conservation Act 2016* states that "to take" flora includes to gather, pluck, cut, pull up, destroy, dig up, remove or injure the flora or to cause or permit the same to be done by any means.

Priority flora constitute species which are considered to be under threat, but for which there is insufficient information available concerning their distribution and/or populations to make a proper evaluation of their conservation status. Such species are considered to potentially be under threat, but do not have legislative protection afforded under the *Biodiversity Conservation Act 2016*. The Department of Biodiversity, Conservation and Attractions categorises priority flora according to their conservation priority, using five categories, P1 to P5, to denote the conservation priority status of such species, with P1 listed species being the most threatened, and P5 the least. Priority flora species are regularly reviewed, and may have their priority status changed when more information on the species becomes available. Appendix A1 sets out definitions of both threatened and priority flora (Department of Biodiversity, Conservation and Attractions 2021a).

At the Commonwealth level, under the *Environment Protection and Biodiversity Conservation Act 1999*, threatened species can be listed as extinct, extinct in the wild, critically endangered, endangered, vulnerable, or conservation dependent, by the Commonwealth Minister for the Environment. Refer to Appendix A2 for a description of each of these categories of threatened species. Under the *Environment Protection and Biodiversity Conservation Act 1999*, a person must not take an action that has or will have a significant impact on a listed threatened species without approval from the Commonwealth Minister for the Environment, unless those actions are not prohibited under the Act.

The current *Environment Protection and Biodiversity Conservation Act 1999* list of Threatened flora may be found on the Department of Agriculture, Water and the Environment (2021a) website.

2.3.2 Threatened and Priority Ecological Communities

An ecological community is defined as a naturally occurring biological assemblage that occurs in a particular type of habitat composed of specific abiotic and biotic factors. At the State level, ecological communities may be considered as threatened once they have been identified as such by the Western Australian Threatened Ecological Communities Scientific Advisory Committee. A threatened ecological community is defined, under the *Environmental Protection Act 1986*, as an ecological community listed, designated or declared under a written law or a law of the Commonwealth as threatened, endangered or vulnerable. There are four State categories of threatened ecological communities, or TECs: presumed totally destroyed (PD); critically endangered (CR); endangered (EN); and vulnerable (VU) (Department of Biodiversity, Conservation and Attractions 2021d). A description of each of these categories of TECs is presented in Appendix A3. Threatened ecological communities are gazetted as such (Department of Biodiversity, Conservation and Attractions 2021e).

At the Commonwealth level, some Western Australian TECs are listed as threatened, under the *Environment Protection and Biodiversity Conservation Act 1999*. Under the *Environment Protection and Biodiversity Conservation Act 1999*, a person must not take an action that has or will have a significant impact on a listed threatened ecological community without approval from the Commonwealth Minister for the Environment, unless those actions are not prohibited under the Act. A description of each of these categories of TECs is presented in Appendix A4. The current *Environment Protection and Biodiversity Conservation Act 1999* list of threatened ecological communities can be located on the Department of Agriculture, Water and the Environment (2021b) website.

Ecological communities identified as threatened, but not listed as threatened ecological communities, can be classified as priority ecological communities (PECs). These communities are under threat, but there is insufficient information available concerning their distribution to make a proper evaluation of their conservation status. The Department of Parks and Wildlife categorises priority ecological communities according to their conservation priority, using five categories, P1 to P5, to denote the conservation priority status of such ecological communities, with P1 communities being the most threatened and P5 the least. Appendix A5 sets out definitions of priority ecological communities (Department of Biodiversity, Conservation and Attractions 2021d). A list of current priority ecological

communities can be viewed at the Department of Biodiversity, Conservation and Attractions (2021f) website.

2.3.3 Clearing of Native Vegetation

Under the *Environmental Protection Act 1986*, the clearing of native vegetation requires a permit to do so, from the Department of Environment Regulation or the Department of Mines and Petroleum, unless that clearing is exempted under specific provisions listed in Schedule 6 of the Act, or are prescribed in the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*. Under the *Environmental Protection Act 1986*, "native vegetation" means indigenous aquatic or terrestrial vegetation, and includes dead vegetation unless that dead vegetation is of a class declared by regulation to be excluded from this definition but does not include vegetation in a plantation. Under the *Environmental Protection Act 1986*, Section 51A, "clearing" means the killing or destruction of, the removal of, the severing or ringbarking of trunks or stems of, or the doing of any other substantial damage to, some or all of the native vegetation in an area, and includes the draining or flooding of land, the burning of vegetation, the grazing of stock, or any other act or activity, that causes any of the aforementioned consequences or results.

Under the *Environmental Protection Act 1986*, ten principles for clearing native vegetation are set out in Schedule 5, under which native vegetation should not be cleared. These principles state that native vegetation should not be cleared, if:

a. it comprises a high level of biological diversity;
b. it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia;
c. it includes, or is necessary for the continued existence of, threatened flora;
d. it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community;
e. it is significant as a remnant of native vegetation in an area that has been extensively cleared;
f. it is growing in, or in association with, an environment associated with a watercourse or wetland;
g. the clearing of the vegetation is likely to cause appreciable land degradation;
h. the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area;
i. the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water; or
j. the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

The *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*, under Regulation 5, sets out prescribed clearing actions that do not require a clearing permit, as defined in Section 51C of the *Environmental Protection Act 1986*. However, exemptions under these Regulations do not apply in Environmentally Sensitive Areas (ESA's).

Under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*, under Regulation 6 –"environmentally sensitive areas" include "the area covered by vegetation within 50 m of threatened flora, to the extent to which the vegetation is continuous with the vegetation in which the threatened flora is located". Similarly, "the area covered by a threatened ecological community" is listed as an environmentally sensitive area under Regulation 6.

2.4 Declared (Plant) Pest Organisms

The *Biosecurity and Agriculture Management Act 2007* (BAM Act), Section 22, makes provision for a plant taxon to be listed as a declared pest organism in respect to parts of, or the entire State. According to the BAM Act, a declared pest is defined as a prohibited organism (Section 12), or an organism for which a declaration under section 22 (2) of the Act is in force.

Under section 26 (1) of the *Biosecurity and Agriculture Management Act 2007*, a person who finds a declared plant pest must report, in accordance with subsection (2), the presence or suspected presence of the declared pest to the Director General or an inspector of the Department of Primary Industries and Regional Development, Western Australia.

Under the *Biosecurity and Agriculture Management Regulations 2013*, declared plant pests are placed in one of three control categories, C1 (exclusion), C2 (eradication) or C3 (management), which determines the measures of control which apply to the declared pest (Appendix A6). According to section 30 (3) of the BAM Act, the owner or occupier of land, or a person who is conducting an activity on the land, must take the prescribed control measures to control the declared pest if it is present on the land.

The current listing of declared pest organisms and their control category is available on the Western Australian Organism List (WAOL), at the Biosecurity and Agriculture Management website of the Department of Primary Industries and Regional Development (2021).

2.5 Local and Regional Significance

Flora or vegetation may be locally or regionally significant in addition to statutory listings by the State or Federal Government.

In regards to flora; species, subspecies, varieties, hybrids and ecotypes may be significant other than as threatened flora or priority flora, for a variety of reasons, including:

- a keystone role in a particular habitat for threatened species, or supporting large populations representing a significant proportion of the local regional population of a species;
- relic status
- anomalous features that indicate a potential new discovery;
- being representative of the range of a species (particularly, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range);
- the presence of restricted subspecies, varieties, or naturally occurring hybrids;
- local endemism/a restricted distribution; and
- being poorly reserved (Environmental Protection Authority 2004).

Vegetation may be significant because the extent is below a threshold level and a range of other reasons, including:

- scarcity;
- unusual species;
- novel combinations of species;
- a role as a refuge;
- a role as a key habitat for threatened species or large populations representing a significant proportion of the local to regional total population of a species;
- being representative of the range of a unit (particularly, a good local and/or regional example of a unit in "prime" habitat, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range);
- a restricted distribution (Environmental Protection Authority 2004).

Vegetation communities are locally significant if they contain threatened or priority flora or contain a range extension of a particular taxon outside of the normal distribution. They may also be locally significant if they are very restricted to one or two locations or occur as small isolated communities. In addition, vegetation communities that exhibit unusually high structural and species diversity are also locally significant.

Vegetation communities are regionally significant where they are limited to specific landform types, are uncommon or restricted plant community types within the regional context, or support populations of threatened Flora.

Determining the significance of flora and vegetation may be applied at various scales, for example, a vegetation community may be nationally significant and governed by statutory protection as well as being locally and regionally significant.

2.6 Western Australia's Fauna – A Legislative Perspective

Australia's faunal biota is recognized as one of the 12 most diverse in the world (Common and Norton 1992). The faunal biota of Western Australia is diverse but incompletely documented (Hopper *et al.* 1996). Although vertebrates are generally considered the most well-known faunal group, their taxonomy is constantly evolving (Clayton *et al.* 2006). New species continue to be described and species and genus level revisions continue to add to our understanding of vertebrate diversity in Australia, especially that of reptiles and mammals (Clayton *et al.* 2006).

The legislative protection of fauna within Western Australia is principally governed by three Acts:

- The *Biodiversity Conservation Act 2016 (*replaces *Wildlife Conservation Act 1950)*;
- The *Environmental Protection Act 1986*; and
- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

There are also a number of international policies and agreements that are a part of the framework for the protection of biodiversity within Western Australia:

- *Convention on Wetlands of International Importance 1971* (RAMSAR Convention);
- *Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment 1974* (Japan-Australia Migratory Bird Agreement – JAMBA);
- *Convention on the Conservation of Migratory Species of Wild Animals 1979* (Bonn Convention, Germany);
- *Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment 1986* (China-Australia Migratory Bird Agreement – CAMBA); and
- *Agreement between the Government of Australia and the Government of the Republic of Korea on the Protection of Migratory Birds 2007* (Republic of Korea-Australia Migratory Bird Agreement – ROKAMBA).

The unique fauna of Western Australia is potentially under threat due to historical practices associated with European settlement. Activities including mining, agriculture, and establishment of human settlements, excessive exploitation and the introduction of feral animals have impacted Western Australia's fauna. As a consequence of these practices, a number of fauna species have become extinct or have the potential to become extinct as their habitat is impacted by human activity. The following section describes these threatened and priority fauna and outline the legislative protection afforded to them.

2.6.1 Threatened, Priority, and Specially Protected Fauna

Fauna within Western Australia which is considered to be under threat may be classed as threatened fauna, specially protected fauna or priority fauna (Appendix A). The Schedule of Threatened Fauna is reviewed at least every three years by the Threatened Fauna Scientific Advisory Committee established under Policy Statement No 33. Individual taxa may be added or deleted at any time if warranted, e.g. if a threatened species not previously known for the State is discovered. Animals (including fish and invertebrates) that are protected fauna under the *Biodiversity Conservation Act 2016* may be declared as threatened fauna by the Minister. Threatened fauna species can be listed as extinct, extinct in the wild, critically endangered, endangered or vulnerable by the Minister for the Environment, after being published in the Government Gazette (Appendix A). Taxa may also be declared by the Minister if they have been declared to be threatened by other Australian States or Territories or are classified as threatened in a treaty to which Australia is a party, e.g. JAMBA. Section 14(2) (ba) states "the Minister may, from time to time by notice published in the Government Gazette, declare that any fauna specified in the notice is for the purposes of this Act fauna which is likely to become extinct, or is rare, or otherwise in need of special protection and while such declaration is in operation –

i) such fauna is wholly protected throughout the whole of the State at all times; and

ii) a person who commits an offence under section 16 or 16A with respect to or in relation to such fauna is liable, notwithstanding any other provision of this Act, to a penalty of $10,000".

The Schedule of Specially Protected Fauna is dealt with in the same way as the Schedule of Threatened Fauna by the Minister for the Environment under section 14(2) (ba) of the *Biodiversity Conservation Act 2016*. Specially Protected fauna species can be listed as Schedule 1 to 7 by the Minister after being published in the Government Gazette (Appendix A).

The *Biodiversity Conservation Act 2016* prohibits the taking of threatened fauna by any person on any land throughout the State without the authority of a license issued by the Executive Director. The illegal destruction of protected fauna is covered in section 6(1) of the *Biodiversity Conservation Act 2016*, where the following definition is given - to take, in relation to any fauna, includes "to kill or capture any fauna by any means or to disturb or molest any fauna by any means or to use any method whatsoever to hunt or kill any fauna whether this results in killing or capturing any fauna or not; and also includes every attempt to take fauna and every act of assistance to another person to take fauna and derivatives and inflections have corresponding meaning".

The destruction or modification of habitat by clearing or other means may result in the demise of sedentary animal species, or the displacement and eventual death of more mobile species, but this is not covered specifically in the definition of "to take". Although it can be argued that to clear habitat would "disturb" the animals and is an indirect and unsatisfactory method of habitat protection.

At the Commonwealth level, under the *Environment Protection and Biodiversity Conservation Act 1999*, threatened species can be listed as extinct, extinct in the wild, critically endangered, endangered, vulnerable, or conservation dependent (Appendix A), by the Federal Minister, after being published in the Commonwealth Government Gazette. Under the *Environment Protection and Biodiversity Conservation Act 1999*, a person must not take an action that has or will have a significant impact on a listed threatened species without approval from the Commonwealth Minister for the Environment, unless those actions are not prohibited under the Act. The current *Environment Protection and Biodiversity Conservation Act 1999* list of threatened fauna may be found on the Australian Department of the Environment website (Department of Agriculture, Water and the Environment 2021c).

Priority fauna constitute species which are considered to be under threat, but for which there is insufficient information available concerning their distribution and/or populations to make a proper evaluation of their conservation status. Such species are considered to potentially be under threat, but do not have the legislative protection afforded under the *Biodiversity Conservation Act 2016*. The Department of Parks and Wildlife categorizes priority fauna according to their conservation priority, using four categories, P1 to P4, to denote the conservation priority status of such species, with P1 listed species being the most threatened, and P4 the least (Appendix A). Priority fauna species are regularly reviewed, and may have their priority status changed when more information on the species becomes available. The Department of Parks and Wildlife provide lists of currently threatened and specially protected fauna recognized under the *Biodiversity Conservation Act 2016* (Department of Biodiversity, Conservation and Attractions 2021h) and the threatened and priority fauna rankings (Department of Biodiversity, Conservation and Attractions 2021i).

2.6.2 International Agreements

Over the last three decades, Australia has played an important role in international efforts to conserve migratory birds of the East Asian-Australasian Flyway. The international agreements of JAMBA, CAMBA and ROKAMBA provide protection to a list or terrestrial, water and shorebirds species which migrate between Australia and the respective countries and their habitat. Australia has further international commitments to protect migratory birds under the Ramsar Convention and the Bonn Convention. A list of the range of birds under these Migratory Bird Agreements can be found on the Australian Department of the Environment website (Department of Agriculture, Water and the Environment 2021d). Most of the species listed on the agreements are shorebirds associated with coastal shores or inland saline wetlands.

2.6.3 Short-Range Endemics

Short-range endemism is the prevalence of species with naturally small ranges of less than 10,000 km^2 (Harvey 2002). Among Australian terrestrial fauna there are numerous regions that possess short-range endemics. Some better known short-range endemic species have been listed as threatened or endangered under State or Commonwealth legislation but the majority have not (Environmental Protection Authority 2004). Often the lack of knowledge about these species precludes their consideration for listing as threatened or endangered. Listing under legislation should therefore not be

the only conservation consideration in environmental impact assessment (Environmental Protection Authority 2004).

2.6.4 Significant Fauna Habitats

In addition to TECs and PECs, while not defined under any legislation, some fauna habitats within a proposed development site may be locally significant because they:

- support rare or vulnerable species;
- support specialised or habitat specific fauna;
- are regionally or locally uncommon; or
- are restricted in area.

Although not protected under State or Commonwealth legislation, in the interests of good project management, where possible, conservation of such locations within a project area will provide the basis for the fauna component of an environmental management plan to be put in place for the duration of a project.

3. OBJECTIVES

The general aim of this report was to map and undertake a flora, fauna and vegetation assessment of the Flat Rocks Wind Farm, including targeted work on the proposed infrastructure. Specifically, the objectives include:

- Search the literature and databases to assess the potential flora and fauna values that may occur within the survey area;
- Search the remnant vegetation and streamzone areas within the Flat Rocks Wind Farm survey area for threatened and priority flora and record any opportunistic fauna sightings during the field study;
- Collect and identify the vascular plant species present in the Flat Rocks Wind Farm survey area;
- Review the conservation status of the vascular plant species and fauna species by reference to current literature and current listings by the Department of Biodiversity, Conservation and Attractions (2021g, 2007-), plant collections held at the Western Australian State Herbarium (Department of Biodiversity, Conservation and Attractions 2021g), and listed by the Department of Agriculture, Water and the Environment (2021a) under the *Environment Protection and Biodiversity Conservation Act 1999*;
- Define and map the native vegetation communities and their condition;
- Define any management issues related to flora, vegetation and vertebrate fauna values;
- Provide recommendations on the local and regional significance of the vegetation communities; and
- Prepare a report summarising the findings.

4. METHODS

4.1 Desktop Assessment

A desktop assessment and review was conducted to establish the presence of any threatened or priority flora and fauna that may potentially occur within the survey area, using both NatureMap (Department of Parks and Wildlife 2007-) although this dataset has not been updated and is not currently available, *EPBC Act Protected Matters Search Tool* (Department of the Environment 2013) and the Western Australian Herbarium (Department of Biodiversity Conservation and Attractions 2021g) databases. The desktop search was confined to a 20km radius of the survey area as the footprint of the proposed clearing area is not expected to exceed this amount.

Further desktop reviews were then undertaken utilizing the national datasets as available from the Department of Agriculture, Water and the Environment (2021a, 2021b, 2021c).

4.2 Field Survey

The assessment of the flora, vegetation and fauna habitats of the Moonies Hill Energy Wind Farm was undertaken by two experienced biologists from Mattiske Consulting Pty Ltd on Wednesday the 29th September, 2010 and on 8th December 2021 after a cool spring season. All botanists held valid collection licences to collect flora for scientific purposes, issued under the *Biodiversity Conservation Act 2016*. Aerial photographs of the survey area were supplied by Dr Sarah Rankin from Moonies Hill Energy. A total of twenty-one sampling sites were selected in 2010 and a further 18 in December 2021 to sample the vegetation types within the remnants at the Flat Rocks Wind Farm survey area and the proposed infrastructure facilities. The field survey was conducted according to standards set out in Guidance Statement (Environmental Protection Authority 2016a, 2016b).

The flora and vegetation was described and sampled systematically at each survey site, and additional opportunistic collecting was undertaken wherever previously unrecorded plants were observed. At each site the following floristic and environmental parameters were noted: GPS location, topography, percentage litter cover, soil type and colour, percentage of bare ground, outcropping rocks and their type, gravel type and size, time since fire and the percentage cover and average height of each vegetation stratum. For each vascular plant species, the average height and percent cover (both live and dead material) were recorded.

All plant specimens collected during the field surveys were dried and fumigated in accordance with the requirements of the Western Australian Herbarium. The plant species were identified through comparisons with pressed specimens housed at the Western Australian Herbarium. Where appropriate, plant taxonomists with specialist skills were consulted. Nomenclature of the species recorded is in accordance with the Department of Biodiversity, Conservation and Attractions (2021g).

Observations were undertaken on the condition of the fauna habitats and remnants. Discussions were also held with Jen Wilcox from Western Wildlife who was involved with recent bird survey in December 2021 and also Tony Kirkby (Cockatoo specialist).

5. RESULTS

5.1 Desktop Review

5.1.1 Potential Threatened and Priority Flora

A total of 24 threatened and priority flora have been listed as occurring, or potentially occurring, in the vicinity of the Flat Rocks Wind Farm (Department of Parks and Wildlife 2007-). A summary of these species listings at state and federal levels can be found in Appendix B. *Amperea protensa* and *Banksia mucronulata* subsp. *retrorsa*, as described in the 2010 Mattiske report (Mattiske Consulting Pty Ltd 2010), are no longer listed as priority flora (Department of Biodiversity, Conservation and Attractions, 2021g).

5.1.2 Potential Threatened, Specially Protected and Priority Fauna

A total of 26 protected fauna species have been listed as occurring, or potentially occurring, in the vicinity of the Flat Rocks Wind Farm, including 14 birds and 12 mammals (Department of Agriculture, Water and the Environment 2021e). A summary of protected fauna listings pursuant to subsection (2) of section 23F of the *Biodiversity Conservation Act 2016*, the *Environment Protection and Biodiversity Conservation Act 1999* and the International Union for Conservation of Nature and Natural Resources' Red List, is presented in Appendix C. *Ardeotis australis* (Australian Bustard) and *Burhinus grallarius* (Bush Stone-Curlew), as described in the 2010 Mattiske report (Mattiske Consulting Pty Ltd 2010), are no longer listed fauna species.

The interpretation of the potential likelihood of the respective species on the proposed infrastructure facilities which as indicated on Figure 1 above and from a review of the photographs of the proposed sites and access routes in Appendix G.

As a consequence of the assessment of potential values, whilst a few of the species may forage or pass through the proposed infrastructure areas, it is expected that due to the heights of the wind towers and also the dominance of the completely degraded paddocks that have been grazed and cropped for many decades that the potential for impacts on any listed species will be insignificant.

5.2. Field Survey

A total of 21 survey sites, both pre-selected and opportunistic, were used to assess the flora and vegetation of the Flat Rocks Wind Farm survey area (Table 1) and a further 18 wind tower and access routes were used to assess the potential impacts on the biological values.

Table 1: GPS locations of 21 sites within the Moonies Hill survey area

Site Number	EASTING	NORTHING
	DATUM GDA94 ZONE 50H	
1	533137	6240034
2	529092	6251356
3	529518	6250544
4	532866	6252093
5	531686	6247741
6	531431	6248093
7	531307	6247294
8	531128	6246980
9	534589	6246243
10	536127	6245442
11	535790	6245790
12	536315	6247272
13	533222	6238117
14	531000	6236500
15	529297	6239799
16	529773	6240336
17	529952	6239475
18	530161	6239864
19	529820	6235244
20	528231	6237067
21	528612	6238877

5.2.1 Survey Limitations and Constraints

An assessment of the survey against a range of factors which may have had an impact on the outcomes of the present survey was made (Table 2). Based on this assessment, the present survey has not been subject to constraints which would affect the thoroughness of the survey, and the conclusions which have been formed for the development of the facilities on the highly degraded areas within the project area.

Table 2: Potential Survey Limitations for Survey Area

Potential Survey Limitation	Impact on Survey
Sources of information and availability of contextual information (i.e. pre-existing background versus new material).	**Not a constraint:** The study was undertaken in the Avon Botanical District which has been well studied and documented with ample literature available (e.g. Beard 1980, Beard 1990). In addition the databases held at the State and National level were used to assess the potential flora and fauna values.
Scope (i.e. what life forms, etc., were sampled).	**Not a constraint:** Rainfall in the months preceding the time of survey was lower than the average rainfall expected for the area (Bureau of Meteorology 2021). However the months prior to the surveys recorded higher average of rainfall therefore, it is plausible that life forms were sampled adequately during the time of the surveys, including annuals
Proportion of flora collected and identified (based on sampling, timing and intensity).	**Not a constraint:** 21 survey sites were spread throughout all areas of remnant vegetation and the 18 proposed wind tower sites were inspected. This reflects the difficulty in obtaining adequate replications of sites containing similar species composition, due to the fragmented nature of the vegetation within the survey area. However the survey was conducted in spring and sampling effort was sufficient to capture species present within the survey area.
Completeness and further work which might be needed (i.e. was the relevant survey area fully surveyed).	**Not a constraint:** The information collected during the survey was sufficient to assess the vegetation and potential fauna and flora issues that may be present during the time of the survey.
Mapping reliability.	**Not a constraint:** Aerial photography of a suitable scale was used to map the project area. Sites were chosen from these aerials on the basis of a 50-metre grid design starting at the designated boundary area proposed by the proponent. Sites were chosen in areas of remnant vegetation. Vegetation communities were assigned to each site based on topography, presence/absence and percent foliage cover of flora species.
Timing, weather, season, cycle.	**Not a constraint:** It is generally accepted that flora and vegetation surveys are conducted in spring following autumn rains in the Avon Wheatbelt (Environmental Protection Authority 2004). Kojonup experienced below average rainfall in the few months preceding the time of survey but the months prior to the surveys was above average (Figure 1) (Bureau of Meteorology 2021).
Disturbances (fire flood, accidental human intervention, etc.).	**Not a constraint:** Human-induced disturbances associated with pastoralism and agriculture occur within the survey area. However, apart from the encroachment of several weed species onto remnant bushland areas and very old rubbish, this should not be a constraint on the survey.
Intensity (in retrospect, was the intensity adequate).	**Not a constraint:** The survey intensity was considered to have been thorough throughout the survey area. 21 sites were chosen in remnant vegetation from a grid placed over the aerial maps for the entirety of the Lots and the 18 sites of the proposed infrastructure were assessed in 2021.
Resources (i.e. were their adequate resources to complete the survey to the required standard).	**Not a constraint:** The available resources were adequate to complete the survey.
Access problems (i.e. ability to access survey area).	**Not a constraint:** Existing roads and tracks enabled adequate access to survey representative vegetation and remnant areas within the survey area. Where access was not available by car, it was easily traversed by foot.
Experience levels.	**Not a constraint:** All survey personnel had the appropriate training in sampling and identifying the flora of the region. Experienced botanists were consulted where plants could not be identified in the field and discussions were held with experienced zoologists.

5.2.2 Flora

A total of 76 vascular plant taxa from 57 plant genera and 22 plant families were recorded within the Flat Rocks Wind Farm survey area during the 2010 survey. The majority of taxa was recorded within the Poaceae (17 taxa), Myrtaceae (12 taxa), Fabaceae (9 taxa), and Asteraceae (9 taxa) families (Appendix E). This total included 53 native species and 23 introduced (weed) species.

5.2.3 Threatened and Priority Flora

No threatened and priority flora species pursuant to subsection (2) of section 23F of the *Biodiversity Conservation Act 2016* and as listed by the Department of Biodiversity, Conservation and Attractions (2021g) were recorded within the Flat Rocks Wind Farm survey area. No plant taxa listed as Threatened pursuant to Schedule 1 of the *Environment Protection and Biodiversity Conservation Act 1999* (Department of Agriculture, Water and the Environment 2021a) were recorded during the survey within the proposed Flat Rocks Wind Farm survey area.

5.2.4 Introduced (Exotic) Plant Species

A total of 23 introduced (exotic) taxa were recorded within the Moonies Hill survey area (Appendix E). One species, **Asparagus asparagoides*, is listed as a Declared Pest - S22 (2), category 3 (management), for the whole state (Department of Primary Industries and Regional Development; Appendix A). **Asparagus asparagoides* was recorded at one site within the Flat Rocks Wind Farm survey area. All others are listed as Permitted - s11 for the whole of state and are not assigned to any control category for a local government area at this time (Western Australian Department of Primary Industries and Regional Development 2021).

5.3 Vegetation

Five vegetation communities were defined and mapped within the Flat Rocks Wind Farm survey area (Figure 3). The majority of the proposed infrastructure areas occur on completely degraded paddocks (Figure 5). The plant communities are summarised below:

E1: Mosaic of Open Woodland of *Eucalyptus rudis* subsp. *rudis – Acacia acuminata -, Melaleuca rhaphiophylla* with patches of *Melaleuca cuticularis* over introduced grasses and Chenopod Shrubland of *Tecticornia lepidosperma* over introduced grasses on saline clays and sandy-clays in creeklines.

E2: Open Woodland of *Eucalyptus rudis* subsp. *rudis – Melaleuca rhaphiophylla* over *Acacia saligna, Acacia acuminata, Jacksonia sternbergiana* over *Ficinia nodosa* and introduced grasses on sandy-loams and clay-loams on fringes of creeklines.

E3: Woodland of *Eucalyptus wandoo* with patches and mixtures of *Eucalyptus marginata* subsp. *marginata – Corymbia calophylla* abuting *Eucalyptus loxophleba* subsp. *loxophleba* on sandy gravels and *Allocasuarina huegeliana* on granites over low shrubs of *Acacia lasiocarpa* var. *sedifolia, Bossiaea eriocarpa, Gastrolobium praemorsum, Astroloma compactum, Acacia pulchella, Hibbertia commutata* over low sedges and annuals on sandy-loam gravels on mid and upper slopes.

E4: Woodland of *Eucalyptus wandoo* with patches of *Allocasuarina huegeliana* over low subshrubs and introduced grasses on sandy soils and near shallow granites on mid and upper slopes.

E5: Woodland of *Eucalyptus astringens* subsp. *astringens – Eucalyptus wandoo* on sandy-loam and some *Eucalyptus marginata* subsp. *marginata* over subshrubs and introduced grasses on sandy-loams on slopes.

Cl: Cleared

PL: Plantation

5.4 Threatened and Priority Ecological Communities

Several remnants and areas near the proposed infrastructure areas are delineated by the Department of Agriculture, Water and the Environment (2021) as threatened ecological communities (Eucalypt woodlands of the Western Australian Wheatbelt) as defined by the *Environment Protection and Biodiversity Conservation Act 1999,* Figure 4. These communities are also listed as Priority 3(iii) under the Biodiversity Conservation Act 2016 (Department of Biodiversity, Conservation and Attractions (2021f).

The proposed infrastructure wind towers avoid these areas and as such may only overlap with buffers of these areas at several points (Figure 3). There remain inconsistencies on the delineation of the areas by the Department of Agriculture, Water and the Environment. Figure 3 reflects some areas that are obvious highly modified and cleared areas and some planted fencelines and also areas of Eucalypt woodlands that have not been highlighted on the federal database. The latter reflects the lack of ground truthing of the polygons and as such there should be greater reliance on the detailed vegetation mapping by Mattiske Consulting botanists in 2010. The obvious outcomes relate to the apparent need to rely on the larger areas of remnants supporting Eucalypt woodlands and less on the narrow strips of the planted trees. As such the proposed infrastructure facilities are primarily being established in completely degraded paddocks that have been operated for agriculture for many decades.

5.5 Vegetation Condition

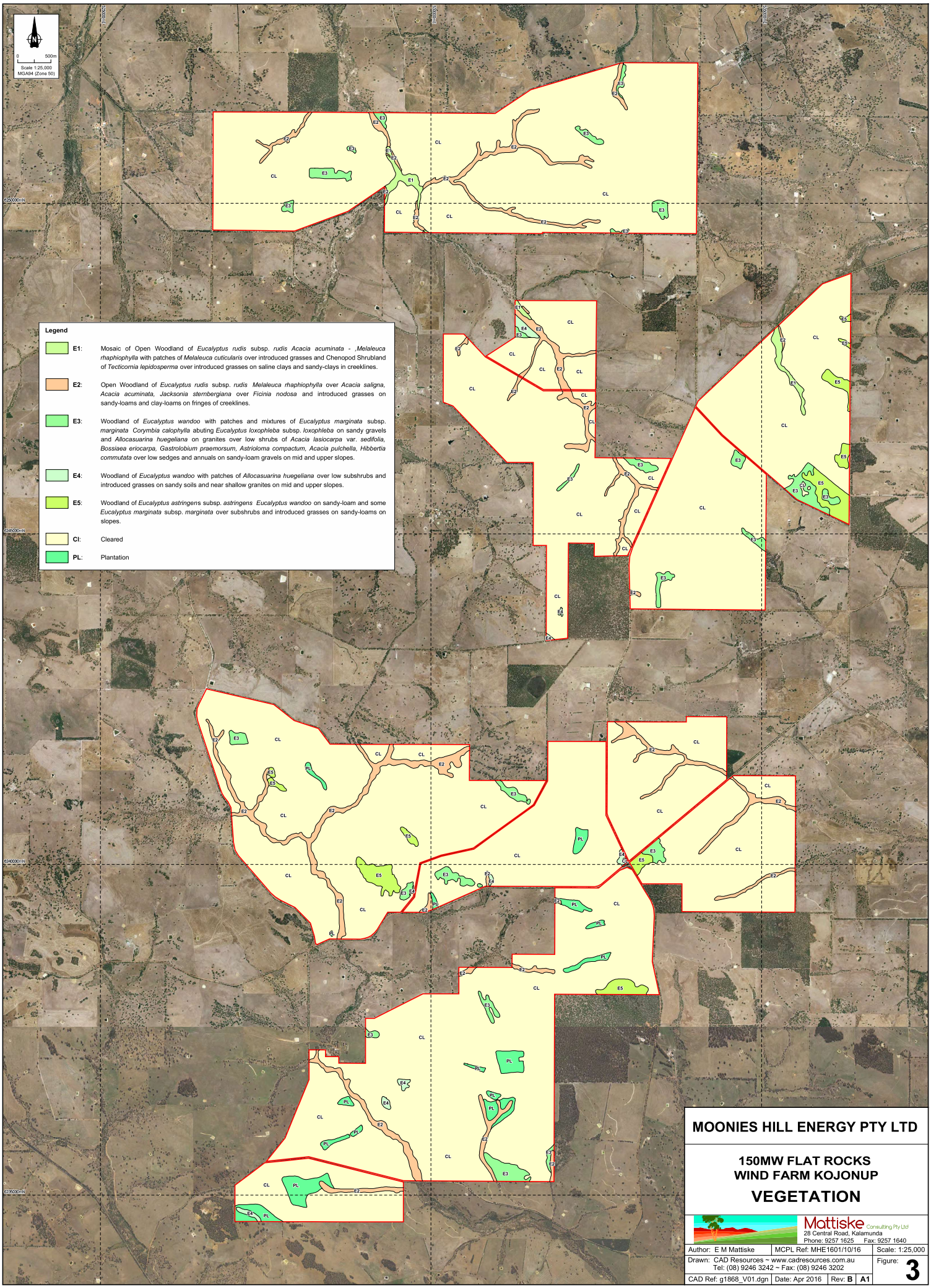
The plant communities were very disturbed and had been largely grazed or cleared for agriculture (Figure 5). Consequently the majority of the survey area and in particular the proposed infrastructure areas is completely degraded or degraded.

5.6 Fauna

Discussions were held with Ron Johnstone from the W.A. Museum in regard to the cockatoo species that may occur in the area. As a result it appears that the most likely of the cockatoos in the project area is the Carnaby's cockatoo and as in his opinion the risk of these cockatoos flying into the wind turbine is very low (personal communication between Dr Libby Mattiske, Tony Kirkby 2021). The wind farm occurs on the fringes of the other two Cockatoos (Red-Tailed and Baudin) and in recent assessments the Red-Tailed Cockatoos were recorded passing through the area. On the basis of previous studies it appears that the Cockatoos have reasonable night vision and therefore will avoid obstacles. Current studies in areas supporting Cockatoos both north of Perth and near Albany have indicated that these species tend to avoid these facilities and therefore the risk remains very low.

Although a range of potential fauna values were sourced from a desktop assessment; in view of the degree of degradation, unless remnant areas are likely to be disturbed, there should not be any significant issues in relation to the native fauna species. The degree of degradation is evident from the series of photographs in Appendix F, G and H. If the other fauna occur in the proposed infrastructure areas (e.g. mammal species) the animals are more likely to be impacted by large harvesting machines than the occasional light vehicle or for the short period of the establishment of the wind towers. Discussions were held with Jen Wilcox (Western Wildlife) on the latter matter and although she concentrated on the birds in later 2021 assessment, a discussion was held on the likelihood of the mammal species.

Consequently, the main issues for the fauna appear to relate to the potential movement of animals through the competed degraded paddocks from one remnant to another and also localized and occasional foraging activities by some bird species. The potential of the fauna species using the isolated trees within the paddocks is minimized by the low numbers of isolated trees and the degree of disturbance of these areas.



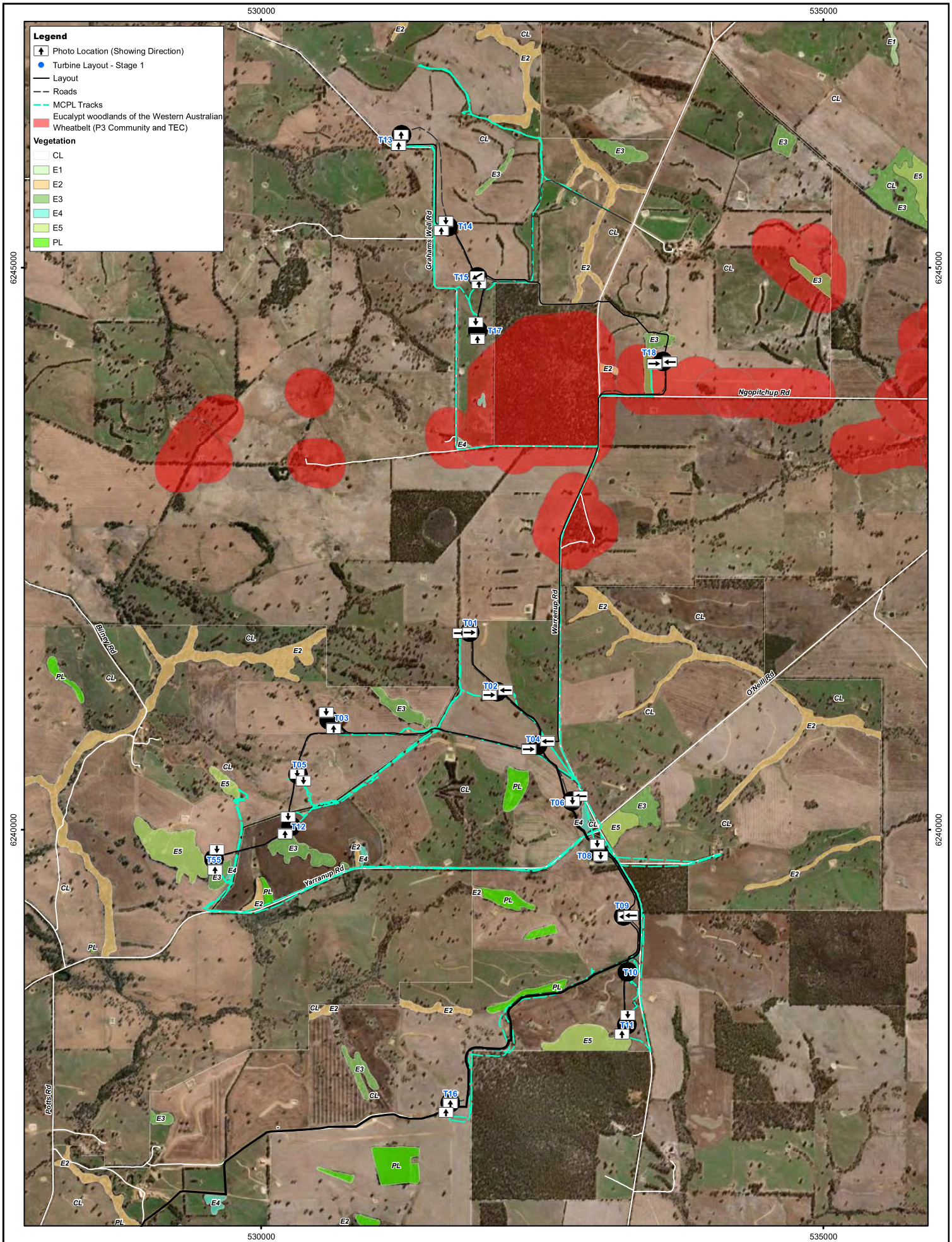
MOONIES HILL ENERGY PTY LTD

150MW FLAT ROCKS WIND FARM KOJONUP

VEGETATION

Mattiske Consulting Pty Ltd
28 Central Road, Kalamunda
Phone: 9257 1625 Fax: 9257 1640

Author: E M Mattiske	MCPL Ref: MHE1601/10/16	Scale: 1:25,000
Drawn: CAD Resources ~ www.cadresources.com.au Tel: (08) 9246 3242 ~ Fax: (08) 9246 3202		Figure: 3
CAD Ref: g1868_V01.dgn	Date: Apr 2016	Rev: B A1



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Scale: 1:30,000
MGA94 (Zone 50)

CAD Ref: a1868_F001

Date: Dec 2021 | Rev: A | A3

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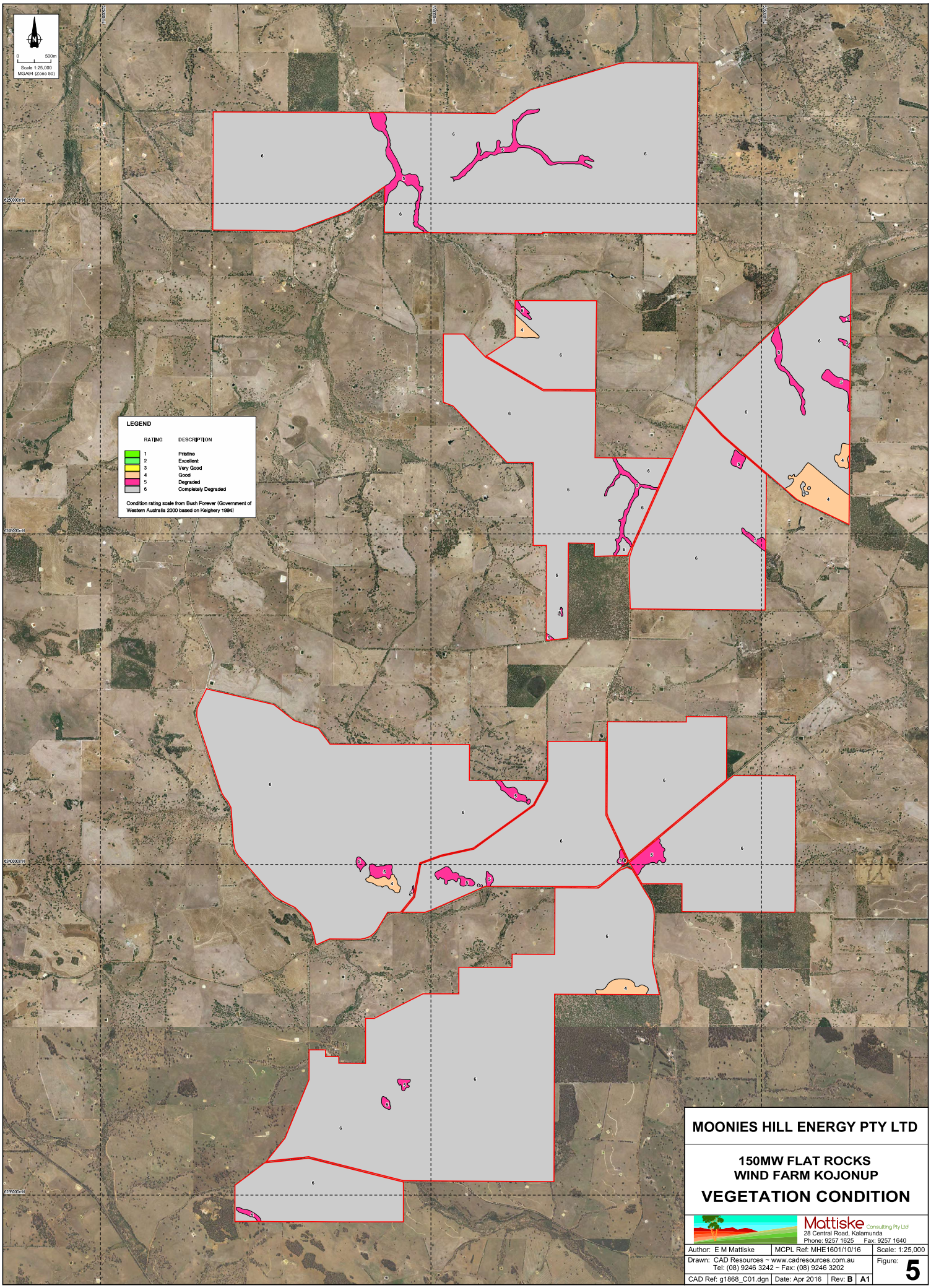
Moonies Hill Energy Pty Ltd - Threatened Ecological and Priority Ecological Community - Figure 4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500m
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MGA94 (Zone 50)
LEGEND
RATING
DESCRIPTION
1 Pristine
2 Excellent
3 Very Good
4 Good
5 Degraded
6 Completely Degraded
Condition rating scale from Bush Forever (Government of Western Australia 2000 based on Keighery 1994)
MOONIES HILL ENERGY PTY LTD
150MW FLAT ROCKS
WIND FARM KOJONUP
VEGETATION CONDITION
Mattiske Consulting Pty Ltd
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MCPL Ref: MHE1601/10/16
Scale: 1:25,000
Drawn: CAD Resources ~ www.cadresources.com.au
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Date: Apr 2016
Rev: B
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6. DISCUSSION

6.1 EPA Key Environmental Factors

Mattiske Consulting Pty Ltd was commissioned by the Moonies Hill Energy to undertake a review of the flora, vegetation and fauna values on the proposed Flat Rocks Wind Farm location. The proposed development occurs primarily within cleared agricultural areas. Therefore, the effort concentrated on desktop reviews and an assessment of the main remnants and roadside vegetation that may be disturbed by vehicle movement and installation of the wind farm facilities.

Based on the environmental context and the scale of the proposed project, the following are considered environment factors that are relevant (see sections 5.1.1 to 5.6 and Appendices B to H).

Flora

The relatively low range of native species is a reflection of the degree of disturbance and clearing in the Flat Rocks Wind Farm survey area.

No threatened and priority flora species pursuant to the *Biodiversity Conservation Act 2016* and as listed by the Department of Biodiversity, Conservation and Attractions (2021g) were recorded within the Flat Rocks Wind Farm survey area. No plant taxa listed as Threatened pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* (Department of Agriculture, Water and the Environment 2021a) were recorded during the survey within the proposed Flat Rocks Wind Farm survey area.

Vegetation

Several remnants and areas near the proposed infrastructure areas are delineated by the Department of Agriculture, Water and the Environment (2021b) as threatened ecological communities (Eucalypt woodlands of the Western Australian Wheatbelt) as defined by the *Environment Protection and Biodiversity Conservation Act 1999*. These communities are also listed as Priority 3(iii) under the *Biodiversity Conservation Act 2016* (Department of Biodiversity, Conservation and Attractions (2021f). The proposed infrastructure wind towers avoid these areas and as such may only overlap with buffers of these areas at several points. As indicated above there remain inconsistencies in the delineation of the areas by the Department of Agriculture, Water and the Environment as some areas that are planted fencelines, highly modified and cleared areas and also areas of Eucalypt woodlands that have not been highlighted on the federal database. The latter reflects the lack of ground truthing of the polygons and as such there should be greater reliance on the detailed vegetation mapping by Mattiske Consulting botanists in 2010 and 2021. The obvious outcomes relate to the apparent need to rely on the larger areas of remnants supporting Eucalypt woodlands and less on the narrow strips of the planted trees. As such the proposed infrastructure facilities are primarily being established in completely degraded paddocks that have been operated for agriculture for many decades.

Fauna

Although a range of potential fauna values were sourced from a desktop assessment; in view of the degree of degradation, unless remnant areas are likely to be disturbed, there should not be any significant issues in relation to the native fauna species; although it is acknowledge that some species may pass through the areas from one remnant to another and also that some foraging activities in the paddocks may occur occasionally. The areas proposed for the wind farms are all within largely cleared agricultural lands and as such are unlikely to provide any substantial nesting sites due to the absence of native vegetation and the presence of localised stressed trees (see Appendix H) in the agricultural areas. The remnant vegetation that does occur is restricted to the degraded valley floors and as such is influenced by local salinity and degraded soils. Several smaller remnants occur on the edges of the proposal area, but will not be influenced by the proposed development.

Overview

In the highly modified Wheatbelt all areas of remnant native vegetation are significant from a conservation perspective. The proposed areas for the wind turbines of the Flat Rocks Wind Farm project

are located within cleared farmland and therefore will have a very low impact on native vegetation or native fauna habitats or native species. In the case that clearing of remnant vegetation is unavoidable (e.g. for access points from public roads), it is recommended that effort be made to minimise clearing by routing access points through existing gaps in vegetation such as farm gates or within remnants that do not support significant patches of native species.

To minimize impacts on the environment at all times vehicle hygiene measures should be maintained such as vehicle inspections and under vehicle clearing to minimize the spread of weeds and introduced species in the project area. This survey identified twenty-three exotic species; however the total number of exotic species is expected to be higher over the entire proposed wind farm area because the current survey focused only on patches of remnant vegetation, not the highly disturbed cleared agricultural land. One species, **Asparagus asparagoides*, is listed as a Declared Pest - S22 (2), category 3 (management), for the whole state (Department of Primary Industries and Regional Development 2021; Appendix A), and thus special care should be taken to contain and avoid the spread of this species.

In summary, there should be insignificant impediments to the development of the wind farm facilities providing the remnant vegetation areas (including less disturbed road verges) are not disturbed. Other windfarms referred to the EPA in Western Australia have included the Kondidin Wind Farm which was considered as not warranted a formal assessment in 2018. The MHE Energy Flat Rocks proposal was previously submitted to the Western Australian EPA and as such was considered not to require a formal assessment (see letter as attached from WA EPA, 18th April 2011).

The other factors considered in relation to noise, heritage and visual impacts have been covered previously by Moonies Hill Energy (2011) and area attached separately (Herring Storer Acoustics (2021), O'Connor (2010) And William James Landscape Architects (2021). None of these are considered to be significant in the local context due to the degree of disturbance and historical activities in the area.

6.2 Review of MNES Potential Values

The matters of National Environmental Significance (MNES values) were assessed by undertaking a Protected Matters Search (Department of Agriculture, Water and the Environment, DAWE, 2021e). The nine MNES are addressed in Table 3.

Table 3: Matters of National Environmental Significance assessment

MNES	DESCIPTION	Findings and Potential Impacts
World Heritage Properties	A declared World Heritage property is an area that has been included in the World Heritage List or declared by the Minister to be a World Heritage Property. World Heritage Properties are also considered to be Environmentally Sensitive Areas under the *Environment Protection Act 1986*.	There are no World Heritage Properties within the Project site. The nearest World Heritage Property to the Project site is the Australian Convict Sites (Fremantle Prison) in Fremantle, located 260 km to the north-west.
National Heritage Places	The National Heritage List includes natural, historic and Indigenous places of outstanding heritage value.	There are no National Heritage Properties within the Project The nearest National Heritage Property to the Project site is the Stirling Ranges National Park, located 45 km to the southeast of the Project site by direct line.
Wetlands of International Importance (declared Ramsar Wetlands)	A declared Ramsar Wetland is an area that has been designated under Article 2 of the Ramsar Convention or declared by the Minister to be a declared Ramsar Wetland under the EPBC Act. Wetlands of International Importance are also considered to be Environmentally Sensitive Areas under the *Environment Protection Act 1986*.	There are no Wetlands of International Importance (declared Ramsar Wetlands) within the Project site. The nearest Wetland of International Importance (declared Ramsar Wetland) is Lake Muir, located 73 km to the southwest of the Project site by direct line.
Listed Threatened Species - Flora	Threatened flora species that are listed under the EPBC Act are protected and considered MNES.	Although a range of potential flora values were sourced from a desktop assessment (Appendix B). In view of the degree of degradation, unless remnant areas are likely to be disturbed, there should not be any significant issues in relation to the nationally listed native flora species. The degree of degradation is evident from the series of photographs in Appendices F, G and H.
Listed Threatened Species - Fauna	Threatened fauna species that are listed under the EPBC Act are protected and considered MNES.	Although a range of potential fauna values were sourced from a desktop assessment (Appendix C). In view of the degree of degradation, unless remnant areas are likely to be disturbed, there should not be any significant issues in relation to the nationally listed native fauna species. The degree of degradation is evident from the series of photographs in Appendices F, G and H.

Table 3: Matters of National Environmental Significance assessment (continued)

MNES	DESCIPTION	Findings and Potential Impacts
Listed Threatened Ecological Communities (TECs)	Threatened ecological communities that are listed under the EPBC Act are protected and considered MNES.	The proposed infrastructure wind towers avoid these areas and as such may only overlap with buffers of these areas at several points (Figure 3). There remain inconsistencies on the delineation of the areas by the Department of Agriculture, Water and the Environment. Figure 3 reflects some areas that are obvious highly modified and cleared areas and some planted fence-lines and also areas of Eucalypt woodlands that have not been highlighted on the federal database. The latter reflects the lack of ground truthing of the polygons and as such there should be greater reliance on the detailed vegetation mapping by Mattiske Consulting botanists in 2010. The obvious outcomes relate to the apparent need to rely on the larger areas of remnants supporting Eucalypt woodlands and less on the narrow strips of the planted trees. As such the proposed infrastructure facilities are primarily being established in completely degraded paddocks that have been operated for agriculture for many decades.
Listed Migratory Species	Migratory species that are listed under the EPBC Act are protected and considered MNES.	Although a range of potential migratory species were sourced from a desktop assessment (Appendix C). In view of the degree of degradation, unless remnant areas are likely to be disturbed, there should not be any significant issues in relation to the nationally listed native fauna species. The degree of degradation is evident from the series of photographs in Appendices F, G and H.
Commonwealth Marine Area	Commonwealth Marine Areas are located from 3 to 200 nautical miles from the coast. Marine protected areas are marine areas which are recognised to have high conservation value.	The Project area is not located within or anywhere Commonwealth Marine Areas. Closest marine area is some 155km to the south.
Great Barrier Reef Marine Park	The Great Barrier Reef Marine Park is considered an MNES under the EPBC Act.	The Project area is located in the Western Australian Wheatbelt and on the other side of Australia from the Great Barrier Reef Marine Park.
Other Matters Protected by the EPBC Act	Other matters protected by the EPBC Act include Nuclear actions, a water reso7urce in relation to coal seam gas development and large coal mining development, Commonwealth Land, Commonwealth Heritage Places, Listed Marine Species, Commonwealth Reserves, and Critical Habitats.	The Project area is located in the Western Australian Wheatbelt and these other matters are not applicable to this project.

6.3 Review of 10 Clearing Principles for Native Vegetation

The observations were reviewed against the 10 clearing principles as defined under the EPA Regulations (2004) on the Native Vegetation Clearing.

Principle (a): Native vegetation should not be cleared if it comprises a high level of biodiversity.

This proposed Wind Farm facilities are in areas that do not support high biodiversity values. The majority of the values that do exist persist in the larger areas of remnant vegetation that are not impacted directly by the proposed activities. Further ongoing activities will be concentrated on already established tracks, roads and cleared paddocks.

Clearing of the vegetation is not at variance with this Principle.

Principle (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.

Whilst there is potential for some threatened species to occasionally forage or cross the wind farm areas, in view of the historical degree of agricultural activities within the impact areas the proposed activities are not considered to pose a significant impact on the fauna conservation species.

Clearing of the vegetation is unlikely and any impact would be unlikely to be significant for conservation species under this Principle.

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

No naturally occurring rare or priority flora species were present in the proposed infrastructure areas that are located on established tracks, roads and completely degraded agricultural areas.

Clearing of the vegetation is not at variance with this Principle.

Principle (d): Native vegetation should not be cleared if it compromises the whole or part of, or is necessary for the maintenance of a threatened ecological community.

Whilst several larger remnant areas have been delineated as threatened ecological communities (Wheatbelt Eucalypt woodlands) the proposed activities are on established tracks, roads and completely degraded agricultural areas. Note - comments above re potential errors in the delineation of the respective areas.

Clearing of the vegetation is unlikely to be at variance with this Principle.

Principle (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.

The proposed activities are on established tracks, roads and completely degraded agricultural areas.

Clearing of the vegetation is not at variance with this Principle.

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

The proposed activities are not associated with a watercourse or wetland.

Clearing of the vegetation is not at variance with this Principle.

Principle (g): 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.

The proposed activities are not associated with adjacent conservation areas; although some occur in the wider district away from the proposed activities.

Clearing of the vegetation may be at variance with this Principle.

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

The proposed activities are on established tracks, roads and completely degraded agricultural areas and no appreciable land degradation activities are expected.

Clearing of the vegetation is not at variance with this Principle.

Principle (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

The proposed activities are on established tracks, roads and completely degraded agricultural areas and the minimal clearing of agricultural areas is unlikely to cause would not influence current surface water flows.

Clearing of the vegetation is not at variance with this Principle.

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

The proposed activities are on established tracks, roads and completely degraded agricultural areas and the minimal clearing of agricultural areas is unlikely to cause would not influence the likely to cause, or exacerbate, the incidence of flooding.

Clearing of the vegetation is not at variance with this Principle.

7. RECOMMENDATIONS

In response to the proposed clearing of vegetation in the Flat Rocks Wind Farm survey area, it is recommended to:

- Limit ground disturbance and clearing of vegetation to designated areas and access routes, avoiding habitat trees (larger trees and trees with hollows) wherever possible;
- Maintain existing drainage systems, ensuring tracks and other infrastructure areas do not disrupt or divert historic water flow patterns;
- Remove and stockpile topsoil, log debris and leaf litter where possible for use in future rehabilitation programs. If possible, stockpiled topsoil should be directly replaced on disturbed areas;
- Minimise soil disturbance during clearing and practice standard vehicle hygiene to ensure introduced (exotic) species do not become established within the Flat Rocks Wind Farm survey area;
- Implement a management plan to prevent the spread of **Asparagus asparagoides*, a declared pest species; and
- Minimize all threatening processes to native vegetation and potential fauna habitats (creekline vegetation, isolated larger trees with hollows).

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APPENDIX A1: STATE DEFINITION OF THREATENED AND PRIORITY FLORA SPECIES

Note: Adapted from Department of Biodiversity, Conservation and Attractions (2021c).

Category	Definition
T – Threatened	Taxa that have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such (Schedules 1 to 4 of the *Wildlife Conservation (Rare Flora) Notice* under the WC Act). Threatened flora are further ranked by the DPaW to align with IUCN Red List categories and criteria: • **CR:** Critically Endangered – considered to be facing an extremely high risk of extinction in the wild (Schedule 1); • **EN:** Endangered – considered to be facing a very high risk of extinction in the wild (Schedule 2); or • **VU:** Vulnerable – considered to be facing a high risk of extinction in the wild (Schedule 3). • **EX:** Presumed Extinct – taxa that have been adequately searched for and there is no reasonable doubt that the last individual has died (Schedule 4)
P1 – Priority 1 (Poorly known taxa)	Taxa that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, Westrail and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Taxa may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.
P2 – Priority 2 (Poorly known taxa)	Taxa that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. Taxa may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.
P3 – Priority 3 (Poorly known taxa)	Taxa that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Taxa may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.
P4 – Priority 4 (Rare, Near Threatened and other taxa in need of monitoring)	**1. Rare** - Taxa that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands. **2. Near Threatened** - Taxa that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. **3.** Taxa that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

APPENDIX A2: DEFINITION OF THREATENED FLORA SPECIES (*Environment Protection and Biodiversity Conservation Act 1999*)

Category Code	Category
Ex	**Extinct** Taxa which at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.
ExW	**Extinct in the Wild** Taxa which is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
CE	**Critically Endangered** Taxa which at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
E	**Endangered** Taxa which is not critically endangered and it is facing a very high risk of extinction in the wild in the immediate or near future, as determined in accordance with the prescribed criteria.
V	**Vulnerable** Taxa which is not critically endangered or endangered and is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
CD	**Conservation Dependent** Taxa which at a particular time if, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

APPENDIX A3: DEFINITION OF THREATENED ECOLOGICAL COMMUNITIES (Department of Biodiversity, Conservation and Attractions 2021d)

Category Code	Category
PTD	**Presumed Totally Destroyed** An ecological community will be listed as Presumed Totally Destroyed if there are no recent records of the community being extant and either of the following applies: (i) records within the last 50 years have not been confirmed despite thorough searches or known likely habitats or; (ii) all occurrences recorded within the last 50 years have since been destroyed.
CE	**Critically Endangered** An ecological community will be listed as Critically Endangered when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future, meeting any one of the following criteria: (i) The estimated geographic range and distribution has been reduced by at least 90% and is either continuing to decline with total destruction imminent, or is unlikely to be substantially rehabilitated in the immediate future due to modification; (ii) The current distribution is limited ie. highly restricted, having very few small or isolated occurrences, or covering a small area; (iii) The ecological community is highly modified with potential of being rehabilitated in the immediate future.
E	**Endangered** An ecological community will be listed as Endangered when it has been adequately surveyed and is not Critically Endangered but is facing a very high risk of total destruction in the near future. The ecological community must meet any one of the following criteria: (i) The estimated geographic range and distribution has been reduced by at least 70% and is either continuing to decline with total destruction imminent in the short term future, or is unlikely to be substantially rehabilitated in the short term future due to modification; (ii) The current distribution is limited ie. highly restricted, having very few small or isolated occurrences, or covering a small area; (iii) The ecological community is highly modified with potential of being rehabilitated in the short term future.
V	**Vulnerable** An ecological community will be listed as Vulnerable when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing high risk of total destruction in the medium to long term future. The ecological community must meet any one of the following criteria: (i) The ecological community exists largely as modified occurrences that are likely to be able to be substantially restored or rehabilitated; (ii) The ecological community may already be modified and would be vulnerable to threatening process, and restricted in range or distribution; (iii) The ecological community may be widespread but has potential to move to a higher threat category due to existing or impending threatening processes.

APPENDIX A4: DEFINITION OF THREATENED ECOLOGICAL COMMUNITIES (Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*)

Three categories exist for listing threatened ecological communities under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999.*

Listing Category	Explanation of Category
Critically endangered	If, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future.
Endangered	If, at that time, it is not critically endangered and is facing a very high risk of extinction in the wild in the near future.
Vulnerable	If, at that time, it is not critically endangered or endangered, and is facing a high risk of extinction in the wild in the medium-term future.

APPENDIX A5: DEFINITION OF PRIORITY ECOLOGICAL COMMUNITIES (Department of Biodiversity, Conservation and Attractions 2021d)

Category Code	Category
P1	**Poorly-known ecological communities** Ecological communities with apparently few, small occurrences, all or most not actively managed for conservation (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) and for which current threats exist.
P2	**Poorly-known ecological communities** Communities that are known from few small occurrences, all or most of which are actively managed for conservation (e.g. within national parks, conservation parks, nature reserves, State forest, un-allocated Crown land, water reserves, etc.) and not under imminent threat of destruction or degradation.
P3	**Poorly known ecological communities** (i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or: (ii) Communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or; (iii) Communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing and inappropriate fire regimes.
P4	Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring.
P5	**Conservation Dependent ecological communities** Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

APPENDIX A6: CATEGORIES AND CONTROL OF DECLARED (PLANT) PESTS IN WESTERN AUSTRALIA *(Department of Primary Industries and Regional Development 2021)* (*Biosecurity and Agriculture Management Regulations 2013*)

Control Category	Control Measures
C1 (Exclusion) '(a) Category 1 (C1) — Exclusion: if in the opinion of the Minister introduction of the declared pest into an area or part of an area for which it is declared should be prevented' Pests will be assigned to this category if they are not established in Western Australia and control measures are to be taken, including border checks, in order to prevent them entering and establishing in the State.	In relation to a category 1 declared pest, the owner or occupier of land in an area for which an organism is a declared pest or a person who is conducting an activity on the land must take such of the control measures specified in subregulation (1) as are reasonable and necessary to destroy, prevent or eradicate the declared pest.
C2 (Eradication) '(b) Category 2 (C2) — Eradication: if in the opinion of the Minister eradication of the declared pest from an area or part of an area for which it is declared is feasible' Pests will be assigned to this category if they are present in Western Australia in low enough numbers or in sufficiently limited areas that their eradication is still a possibility.	In relation to a category 2 declared pest, the owner or occupier of land in an area for which an organism is a declared pest or a person who is conducting an activity on the land must take such of the control measures specified in subregulation (1) as are reasonable and necessary to destroy, prevent or eradicate the declared pest.
C3 (Management) '(c) Category 3 (C3) — Management: if in the opinion of the Minister eradication of the declared pest from an area or part of an area for which it is declared is not feasible but that it is necessary to — (i) alleviate the harmful impact of the declared pest in the area; or (ii) reduce the number or distribution of the declared pest in the area; or (iii) prevent or contain the spread of the declared pest in the area.' Pests will be assigned to this category if they are established in Western Australia but it is feasible, or desirable, to manage them in order to limit their damage. Control measures can prevent a C3 pest from increasing in population size or density or moving from an area in which it is established into an area which currently is free of that pest.	In relation to a category 3 declared pest, the owner or occupier of land in an area for which an organism is a declared pest or a person who is conducting an activity on the land must take such of the control measures specified in subregulation (1) as are reasonable and necessary to — (a) alleviate the harmful impact of the declared pest in the area for which it is declared; or (b) reduce the number or distribution of the declared pest in the area for which it is declared; or (c) prevent or contain the spread of the declared pest in the area for which it is declared.

APPENDIX A7: DEFINITION OF STRUCTURAL FORMS OF AUSTRALIAN VEGETATION (Beard 1990)

Structural Forms of Australian Vegetation			
Growth Form of Tallest Stratum	**Foliage Cover of Tallest Stratum**		
	30 – 70%	**10 – 30%**	**less than 10%**
Tall Trees [greater than 30 m]	Tall Forest	Tall Woodland	Open Tall Forest
Medium Trees [10 – 30 m]	Forest	Woodland	Open Woodland
Low Trees [less than 10 m]	Low Forest	Low Woodland	Open Low Woodland
Tall Shrubs [greater than 2 m]	Thicket	Scrub	Open Scrub
Low Shrubs [less than 2 m]	Heath	Low Shrubland	Open Low Shrubland
Grassland [less than 1 m]	Closed Bunch Grassland	Open Bunch Grassland	Hummock Grassland

APPENDIX A8: DEFINITION OF VEGETATION CONDITION SCALE (Trudgen 1988)

Condition Rating	Description
Pristine (1)	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Excellent (2)	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Very Good (3)	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Good (4)	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Degraded (5)	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded (6)	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

APPENDIX A9: STATE DEFINITION OF THREATENED FAUNA SPECIES

Note: Categories listed under the *Wildlife Conservation Act 1950;* adapted from Department of Biodiversity, Conservation and Attractions (2021c).

CATEGORY	DEFINITION
T – Threatened fauna	Taxa that have been adequately searched for and are deemed to be, in the wild, either rare, at risk of extinction, or otherwise in need of special protection, and have been gazetted as such. Threatened fauna are published as "Specially Protected Fauna", declared to be 'likely to become extinct' pursuant to section 14(4) of the *Wildlife Conservation Act 1950* and are listed under Schedules 1 to 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna*. Assessments of the conservation status of threatened fauna are based on national extent of the taxa and ranked according to their level of threat using the IUCN Red List criteria: • **CR:** Critically Endangered – considered to be facing an extremely high risk of extinction in the wild (Schedule 1); • **EN:** Endangered – considered to be facing a very high risk of extinction in the wild (Schedule 2); • **VU:** Vulnerable – considered to be facing a high risk of extinction in the wild (Schedule 3);
EX – Presumed extinct fauna	Taxa that have been adequately searched for and there is no reasonable doubt that the last individual has died (Schedule 4).
IA – Migratory birds protected under an international agreement	Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA), The Republic of Korea (ROKAMBA) and the Bonn Convention, relating to the protection of migratory birds (Schedule 5).
CD – Conservation dependent fauna	Fauna of special conservation need, being dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened (Schedule 6).
OS – Other specially protected fauna	Fauna otherwise in need of special protection to ensure conservation (Schedule 7)

APPENDIX A10: FEDERAL DEFINITION OF THREATENED FAUNA SPECIES

Note: Threatened fauna may be listed in six categories as defined in section 179 of the *Environment Protection and Biodiversity Conservation Act 1999*.

CATEGORY	DEFINITION
Ex - Extinct	Taxa which at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.
ExW - Extinct in the Wild	Taxa which is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
CE - Critically Endangered	Taxa which at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
E - Endangered	Taxa which is not critically endangered and it is facing a very high risk of extinction in the wild in the immediate or near future, as determined in accordance with the prescribed criteria.
V - Vulnerable	Taxa which is not critically endangered or endangered and is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
CD – Conservation Dependent	Taxa which at a particular time if, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

APPENDIX A11: STATE DEFINITION OF PRIORITY FAUNA SPECIES

Note: Adapted from Department of Biodiversity, Conservation and Attractions (2021c); note that categories are not listed under any state or federal legislation. Priority species are defined as 'possibly threatened taxa that do not meet the survey criteria, or are otherwise data deficient; or are adequately known, are rare but not threatened, meet criteria for near threatened or have recently been removed from the threatened species list or other specially protected fauna lists for other than taxonomic reasons.'

CATEGORY	DEFINITION
P1 – Priority 1 (Poorly known taxa)	Taxa that are known from one or a few locations (generally five or less) which are potentially at risk. Occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves, and active mineral leases; or under threat of habitat destruction or degradation Taxa may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. These taxa are in urgent need of further survey.
P2 – Priority 2 (Poorly known taxa)	Taxa that are known from one or a few locations (generally five or less), some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. Taxa may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. These taxa are in urgent need of further survey.
P3 – Priority 3 (Poorly known taxa)	Taxa that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Taxa may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.
P4 – Priority 4 (Rare, Near Threatened and other taxa in need of monitoring)	**1. Rare** - Taxa that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands. **2. Near Threatened** - Taxa that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. **3.** Taxa that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

APPENDIX B: DESCRIPTION OF THREATENED AND PRIORITY FLORA SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE FLAT ROCKS WIND FARM SURVEY AREA (Department of Biodiversity, Conservation and Attractions 2021a)

Species	Common Name	State Conservation	Family	Description	Flowers	Habitat	Likelihood of occurrence
Acacia ataxiphylla subsp. *ataxiphylla*		Priority 3	Fabaceae	prostrate, sprawling shrub to 50 cm	yellow, Nov to Dec or Jan	gravelly clay loam, white/grey sand on flats, roadsides	unlikely
Adenanthos filifolius		Priority 4	Proteaceae	erect shrub, to 2(-5) m	cream-white, May or Sep to Dec	white, grey or black peaty sand, sandy clay on rocky hillsides (usually granite, sandstone or quartzite)	unlikely
Adenanthos pungens subsp. *effusus*	Sprawling Spiky Adenanthos	Threatened (Critically Endangered)	Proteaceae	prostrate shrub to 50 cm, forming large mats to 3 m wide	pink, Aug to Nov	white siliceous sand	unlikely
Adenanthos pungens subsp. *pungens*	Spiky Adenanthos	Threatened (Endangered)	Proteaceae	erect shrub to 3 m	pink/red, Aug to Nov	white/grey or pink sand, rocky soils, gypsum on sand dunes, hillsides	unlikely
Banksia acuminata		Priority 4	Proteaceae	prostrate, lignotuberous shrub to 20cm	yellow-orange, Oct	gravelly soils	possible
Banksia oligantha	Wagin Banksia	Threatened (Endangered)	Proteaceae	non-lignotuberous shrub to 3 m	red & cream/orange-brown, Oct to Nov	yellow or yellow-brown sand	unlikely
Banksia subpinnatifida var. *imberbis*		Priority 2	Proteaceae	erect or straggling, non-lignotuberous shrub to 1.5m	yellow, Sep to Oct	lateritic soils	possible
Caladenia integra	Mantis Orchid, Smooth-lipped Spider Orchid	Priority 4	Orchidaceae	tuberous, perennial, herb to 50 cm	green, red	clayey loam on granite outcrops, rocky slopes	possible
Caladenia x *triangularis*		Priority 4	Orchidaceae	tuberous, perennial herb	yellow	loam, low lying areas	possible
Calectasia obtusa		Priority 3	Dasypogonaceae	erect, low herb to 40 cm	blue, Aug to Sep	sand, clay loam, gravel and laterite soils	possible
Commersonia erythrogyna	Trigwell's Rulingia	Threatened (Critically Endangered)	Fabaceae	erect, domed shrub to 1.5m	orange, yellow, red & purple, Sep to Oct	red clay and laterite, on low hilltops and breakaways	unlikely
Darwinia oxylepis	Gillam's Bell	Threatened (Endangered)	Myrtaceae	upright, dense shrub to 1.5 m	red, Aug to Nov	stony, peaty sand in rocky gullies.	unlikely
Diuris micrantha	Dwarf Bee-orchid	Threatened (Vulnerable)	Orchidaceae	tuberous, perennial, herb to 60 cm	yellow & brown, Sep to Oct	brown loamy clay in winter-wet swamps, in shallow water	possible
Diuris recurva		Priority 4	Orchidaceae	tuberous, perennial, herb to 30 cm	yellow & brown, Jul to Aug	loam in winter-wet areas	possible

APPENDIX B: DESCRIPTION OF THREATENED AND PRIORITY FLORA SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE FLAT ROCKS WIND FARM SURVEY AREA (Department of Biodiversity, Conservation and Attractions 2021a)

Species	Common Name	State Conservation	Family	Description	Flowers	Habitat	Likelihood of occurrence
Gastrolobium lehmannii	Cranbrook Pea	Threatened (Vulnerable)	Fabaceae	erect, domed shrub to 1.5 m	orange-yellow-red-purple, Sep to Oct	red clay, laterite on low hilltop of breakaway	possible
Grevillea bipinnatifida subsp. *pagna*		Priority 1	Proteaceae	prostrate, lignotuberous shrub to 70 cm	red & orange & yellow, Aug or Oct to Nov	grey sandy clay and loam, ironstone in seasonal wetlands, swamps, roadsides	possible
Hemigenia ramosissima	Branched Hemigenia	Threatened (Critically Endangered)	Lamiaceae	slender shrub to 50 cm	blue-purple, Nov to Dec or Jan	lateritic soils, clay on granite outcrops	possible
Hibbertia montana		Priority 4	Dilleniaceae	erect, straggling or sprawling shrub to 70 cm	yellow, Jul to Oct	loam over granite, lateritic soils, gravel on granite rocks, lateritic ridges & boulders, hills	possible
Melaleuca micromera		Priority 3	Myrtaceae	shrub to 4 m	yellow, Sep & Oct	gravelly sandy loam or clay	possible
Melaleuca ordinifolia		Priority 2	Myrtaceae	compact, spreading shrub to 1.5 m	white-cream, Aug to Oct.	sandy loam or clay	possible
Roycea pycnophylloides	Saltmat	Threatened (Vulnerable)	Chenopodiaceae	perennial, herb, forming densely branched, silvery mats to 1 m wide	Sep.	sandy soils, clay on saline flats	possible
Schoenus natans	Floating Bog-rush	Priority 4	Cyperaceae	aquatic annual herb (sedge) to 30 cm	brown, Oct	winter-wet depressions often associated with clayey soils	possible
Verticordia fimbrilepis subsp. *fimbrilepis*	Shy Featherflower	Threatened (Vulnerable)	Myrtaceae	shrub to 70 cm	pink-white, Oct to Dec or Jan	gravelly sandy or clayey soils on flats, road verges	possible
Verticordia lindleyi subsp. *lindleyi*		Priority 4	Myrtaceae	erect shrub to 75 cm	pink, May or Nov to Dec or Jan.	sand, sandy clay in winter-wet depressions	possible

APPENDIX C: DISTRIBUTION AND HABITAT OF PROTECTED FAUNA SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE FLAT ROCKS WIND FARM SURVEY AREA (Department of Agriculture, Water and the Environment 2021; Department of Biodiversity, Conservation and Attractions 2021) Conservation Status - EPBC Act (in brackets), State listing -no brackets; Migratory International Agreement

Species	Common Name	Conservation Status	Distribution	Habitat	Likelihood of occurrence
Apus pacificus	Fork-tailed Swift	Migratory International Agreement (MI)	Non-breeding visitor to Australia. In the forefront of storms in northern Australia, and very occasionally south in locations such as Dryandra NP and the Darling Range. Primarily on marine areas.	Almost exclusively aerial over wide range of vegetation types.	Very unlikely
Bettongia penicillata subsp. *ogilbyi*	Woylie, Brush-tailed Bettong	Critically Endangered (Endangered)	Scattered populations throughout the jarrah forest in the south-west corner of WA. Isolated populations at Francois Peron NP, Kalbarri NP, Nambung NP, Julimar Forest, Avon Valley NP, Dryandra Woodland, Boyagin NR, Tutanning NR and North Karlgarin NR.	Forest to grasslands, coastal and inland. *Gastrolobium* thickets provide refuges for Woylies against introduced predators.	Very unlikely
Botaurus poiciloptilus	Australian Bittern	Endangered (Endangered)	Found in coastal and sub-coastal areas of south-eastern and south-western mainland Australia and the eastern marshes of Tasmania.	Found in reed beds associated with shallow and vegetated fresh to brackish swamps.	Very unlikely
Cacatua pastinator subsp. *pastinator*	Muir's Corella, Western Corella (southern)	Conservation Dependent	Confined to the extreme south-west of Western Australia. Its distribution extends from McAlinden and Qualeup, south to the lower Perup River and Lake Muir, and east to Rocky Gully and Frankland.	Eucalyptus woodlands dominated by *E. wandoo*, *Corymbia calophylla,* or *E. marginata*. Remnant patches in or adjacent to farmland, or along roadsides, paddock boundaries or watercourses, and sometimes as a few, isolated shade trees in otherwise cleared paddocks. Breeds in hollows in large old eucalypts in woodland and remnant woodland, often nest in lone trees in paddocks and along roadsides, especially *C. calophylla*, *E. marginata*, *E. rudis*, *E. cornuta* and *Melaleuca preissiana*.	Possible, but unlikely in project impact areas located in cleared areas
Calidris ferruginea	Curlew Sandpiper	Critically Endangered (Critically Endangered and Migratory International)	Curlew sandpipers occur around the coasts and also widespread inland. In Western Australia, they are widespread around coastal and sub-coastal plains from Cape Arid to south-west Kimberley.	Curlew sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms.	Very unlikely
Calyptorhynchus banksii subsp. *naso*	Forest Red-tailed Black-Cockatoo	Vulnerable (Vulnerable)	Endemic to south-west WA in an area bounded by Gingin, Mt Helena, Christmas Tree Well, West Dale (rarely to Brookton), North Bannister (rarely to Wandering), Mt Saddleback, Kojonup, Rocky Gully, upper King River and Green Range (east of Albany). most common in the northern Darling Range from about Collie north to Mundaring and is very local throughout the lower south-west.	Inhabits the dense *E. marginata*, *E. diversicolor* and *C. calophylla* forests receiving more than 600 mm average rainfall annually, mainly in the hilly interior. Has been observed in a range of other forest and woodland types, including *E. patens*, *E. wandoo*, *E. gomphocephala*, *E. staeri*, *E. cornuta* and *E. rudis*.	Possible, but only likely to be opportunistic foraging project impact areas located in cleared areas

APPENDIX C: DISTRIBUTION AND HABITAT OF PROTECTED FAUNA SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE FLAT ROCKS WIND FARM SURVEY AREA (Department of Agriculture, Water and the Environment 2021; Department of Biodiversity, Conservation and Attractions 2021) Conservation Status - EPBC Act (in brackets), State listing -no brackets; Migratory International Agreement

Species	Common Name	Conservation Status	Distribution	Habitat	Likelihood of occurrence
Calyptorhynchus baudinii	Baudin's Black-Cockatoo, Long-billed Black-Cockatoo	Endangered (Endangered)	South west of WA, extending from Albany northward to Gidgegannup and Mundaring, and inland to the Stirling Ranges and near Kojonup.	Mainly occurs in eucalypt forests, especially *E. marginata*, *C. calophylla*, also *E. diversicolor* forest, less frequently in woodlands of *E. wandoo*, *E. patens*, *E. rudis*, *E. cornuta*, partly cleared farmlands and urban areas including roadside trees and house garden.	Possible, but only likely to be opportunistic foraging project impact areas located in cleared areas
Calyptorhynchus latirostris	Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo	Endangered (Endangered)	Endemic to south-western Australia, occurring mostly in the Wheatbelt.	Nests in tall living or dead eucalypts, particularly *E. wandoo* and *E. salmonophloia*.	Possible, but only likely to be opportunistic foraging project impact areas located in cleared areas
Dasyurus geoffroii	Chuditch, Western Quoll	Vulnerable (Vulnerable)	Restricted to the south-west of WA. Present in varying densities throughout Jarrah forest, Kalbarri NP and is sparsely populated in the wheatbelt and goldfields areas.	Eucalypt forest (especially *E. marginata*), dry woodland and mallee shrublands. Moist, densely vegetated, steeply sloping forest and drier, open, gently sloping forest. Densest populations in riparian forest.	Possible, but unlikely in project impact areas located in cleared areas
Falco peregrinus	Peregrine Falcon	Specially protected	An Australia-wide species including some offshore islands, but could be absent from most deserts and the Nullabor Plain.	Near cliffs along the coast and ranges of the interior; also along wooded watercourses and lakes.	Possible, as may forage in farmlands
Haliaeetus leucogaster	White-bellied Sea-Eagle	International Agreement	Mainly coastal and on offshore islands in all States of Australia although it may also be observed along major river systems inland.	Not often seen far from the coast and may be observed hunting over water or patrolling beaches where it may take carrion.	Very unlikely
Isoodon obesulus subsp. *fusciventer, Isoodon fusciventer*	Quenda, Southern Brown Bandicoot	Priority 4	Widely distributed near the south west coast from Guilderton to east of Esperance. Patchy distribution through Jarrah and Karri forest, Swan Coastal Plain, and inland as far as Hyden. Translocated to Julimar State Forest, Hills Forest near Mundaring, Tutanning NR, Boyagin NR, Dongolocking NR, Leschenault Conservation Park, Karakamia Sanctuary, Paruna Sanctuary, Yalgorup NP, Creery Wetlands, Avon	Scrubby, often swampy, vegetation with dense cover up to 1 m high, often feeds in adjacent forest and woodland that is burnt on a regular basis and in areas of pasture and cropland lying close to dense cover. Populations inhabiting *E. marginata* and *E. wandoo* forests are usually associated with watercourses.	Possible, unlikely in project impact areas located in cleared areas

APPENDIX C: DISTRIBUTION AND HABITAT OF PROTECTED FAUNA SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE FLAT ROCKS WIND FARM SURVEY AREA (Department of Agriculture, Water and the Environment 2021; Department of Biodiversity, Conservation and Attractions 2021) Conservation Status - EPBC Act (in brackets), State listing -no brackets; Migratory International Agreement

Species	Common Name	Conservation Status	Distribution	Habitat	Likelihood of occurrence
			Valley NP, Nambung NP, Francois Peron NP and Thomson's Lake NR.		
Leipoa ocellata	Malleefowl	Vulnerable (Vulnerable)	Semi-arid regions of southern Australia. Located to the south and west of a line extending from Cape Farquhar, which lies north of Carnarvon, to the Eyre Bird Observatory in the south-east of WA.	Shrublands and low woodlands dominated by mallee vegetation. Eucalypt or *Callitris* woodlands, acacia shrublands, *Melaleuca uncinata* vegetation or coastal heathlands.	Very unlikely
Notamacropus eugenii derbianus	Tammar Wallaby	Priority 4	Three islands in the Houtman Abrolhos group (East and West Wallabi Island, and an introduced population on North Island), Garden Island, Middle and North Twin Peak Islands in the Archipelago of the Recherche, and several sites on the mainland (Dryandra, Boyagin, Tutanning, Batalling , Perup, private property near Pingelly, Jaloran Road timber reserve near Wagin, Hopetoun, Stirling Range NP, and Fitzgerald River NP).	Dense, low vegetation for daytime shelter and open grassy areas for feeding. This species inhabits coastal scrub, heath, dry sclerophyll forest and thickets in mallee and woodland.	Very unlikely
Notamacropus irma	Western Brush Wallaby	Priority 4	South-west of WA, from Cape Arid to Kalbarri.	Preferred habitat of opens forest and woodland of mallee, heathland, open low grasses and scrubby thickets.	Very unlikely, may occur in larger reserves, but not likely in highly modified areas
Macrotis lagotis	Bilby, Dalgyte	Vulnerable (Vulnerable)	Disjunct populations in the Gibson Desert, south-western Kimberley, inland areas of the Pilbara and northern Great Sandy Desert.	Eucalypt open forest and woodland in south-west WA tall shrublands and open woodlands in semi-arid regions, and hummock grasslands in arid Australia.	Very unlikely, probably only historical records if any, locally extinct
Motacilla cinerea	Grey Wagtail	Migratory International Agreement (Migratory International Agreement)	shmore Reef, Christmas Island, Adele Island, south coast of WA.	Wetlands, water courses, banks of lakes and marshes, artificial wetlands such as sewage farms, reservoirs and fishponds.	Very unlikely
Myrmecobius fasciatus	Numbat, Walpurti	Endangered (Endangered)	Two remnant native populations at Dryandra and Perup, WA and several reintroduced populations including Boyagin Nature Reserve, Tutanning NR, Batalling block and Karroun Hill NR.	Eucalypt forests and woodlands dominated by *E. marginata*, *C. calophylla* and *E. wandoo*.	Unlikely due to extent of clearing, except for the few remnant areas which are not in

APPENDIX C: DISTRIBUTION AND HABITAT OF PROTECTED FAUNA SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE FLAT ROCKS WIND FARM SURVEY AREA (Department of Agriculture, Water and the Environment 2021; Department of Biodiversity, Conservation and Attractions 2021) Conservation Status - EPBC Act (in brackets), State listing -no brackets; Migratory International Agreement

Species	Common Name	Conservation Status	Distribution	Habitat	Likelihood of occurrence
					project impact areas
Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew	Critically Endangered (Migratory International Agreement & Critically Endangered)	Occurs in coastal areas as a wading bird and intertidal areas. Rarely seen inland, mainly on the north-east and south part of Australia, including Tasmania.	Found in intertidal mudflats and sandflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons.	Very unlikely
Onychogalea lunata	Crescent Nailtail Wallaby, Wurrung	Extinct (Presumed Extinct)	Extinct	Extinct	Very unlikely
Pandion haliaetus	Osprey	Migratory International Agreement (Migratory International Agreement)	Mainly coastal and on offshore islands in all States of Australia although it may also be observed along major river systems inland.	Not often seen far from the coast and may be observed hunting over water or patrolling beaches where it may take carrion.	Very unlikely
Pezoporus occidentalis	Night Parrot	Critically Endangered (Critically Endangered)	Endemic to the continent of Australia.	Highly cryptic in nature, nocturnal, ground feeding that inhabit remote and semi-arid areas of Australia.	Very unlikely as not considered to occur in South West of Wheatbelt
Phascogale calura	Red-tailed Phascogale	Conservation Dependent (Vulnerable)	Restricted to remnants of native vegetation throughout the wheat belt of south-western WA. Recorded from as far north as Beverly (south-east of Perth). Recent surveys have extended the eastern range of the species slightly to include Fitzgerald River NP.	*Allocasuarina* woodlands with hollow-containing eucalypts (e.g. *E. wandoo*) and *Gastrolobium* species, woodland of *Casuarina obesa* over samphires, Mallee-Scrub and low forest of *E. platypus*. Prefers long unburnt vegetation, which provides continuous canopy cover to assist their arboreal habits.	possible in remnant areas, unlikely in proposed impact areas in the cleared areas
Phascogale tapoatafa subsp. (WAM M434)	Brush-tailed Phascogale	Conservation Dependent	South west between Perth and Albany. It occurs at low densities in the northern Jarrah forest. Highest densities occur in the Perup/Kingston area, Collie River valley, and near Margaret River and Busselton.	Dry sclerophyll forests and open woodlands that contain hollow-bearing trees.	Unlikely
Pseudocheirus occidentalis	Western Ringtail Possum	Critically Endangered	South-west of WA. Patchy distribution in predominantly two areas: near Bunbury to Leeuwin-	Stands of myrtaceous trees (usually *Agonis flexuosa*)) growing near swamps, water courses	Very unlikely

APPENDIX C: DISTRIBUTION AND HABITAT OF PROTECTED FAUNA SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE FLAT ROCKS WIND FARM SURVEY AREA (Department of Agriculture, Water and the Environment 2021; Department of Biodiversity, Conservation and Attractions 2021) Conservation Status - EPBC Act (in brackets), State listing -no brackets; Migratory International Agreement

Species	Common Name	Conservation Status	Distribution	Habitat	Likelihood of occurrence
		(Critically Endangered)	Naturalisete NP (with a small translocated subpopulation near Dawesville); and near Albany.	or floodplains, and at topographic low points which provide cooler, often more fertile, conditions. Forests and woodlands dominated by *E. marginata*, *C. calophylla*,*E. wandoo*, *E. diversicolor* or *Agonis flexuosa* forest, coastal heath, myrtaceous heaths and shrublands, and *E. megacarpa* dominated riparian zones.	
Thinornis rubricollis	Hooded Plover	Priority 4	Breeds on south-west Western Australian coast, from Cape Naturaliste to Eyre, and on inland lakes as far northeast as L. Cowan and L. Moore and north-west to Yalgorup Lakes, south of Perth. Single birds or non-breeding pairs recorded on L. Arrow, L. Barlee and L. Ballard. After breeding, inland birds appear to move to lakes near the west coast or shores of southern lakes.	Ocean beaches and inland lakes.	Very unlikely

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 23-Dec-2021

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	19
Listed Migratory Species:	8

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	12
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	5
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	6
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Eucalypt Woodlands of the Western Australian Wheatbelt	Critically Endangered	Community likely to occur within area	In feature area
Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia	Endangered	Community may occur within area	In buffer area only

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area	In buffer area only
Zanda baudinii listed as Calyptorhynchus baudinii Baudin's Black-Cockatoo, Long-billed Black-cockatoo [87736]	Endangered	Breeding known to occur within area	In feature area
Zanda latirostris listed as Calyptorhynchus latirostris Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding known to occur within area	In feature area
MAMMAL			
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phascogale calura Red-tailed Phascogale, Red-tailed Wambenger, Kenngoor [316]	Vulnerable	Species or species habitat likely to occur within area	In feature area
PLANT			
Adenanthos pungens subsp. effusus Sprawling Spiky Adenanthos [10742]	Endangered	Species or species habitat may occur within area	In feature area
Adenanthos pungens subsp. pungens Spiky Adenanthos [19429]	Vulnerable	Species or species habitat may occur within area	In feature area
Conostylis drummondii Drummond's Conostylis [5885]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Gastrolobium lehmannii Cranbrook Pea [22282]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hemigenia ramosissima Branched Hemigenia [18568]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
Roycea pycnophylloides Saltmat [21161]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Verticordia fimbrilepis subsp. fimbrilepis Shy Featherflower [24631]	Endangered	Species or species habitat likely to occur within area	In buffer area only

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pandion haliaetus			
Osprey [952]		Species or species habitat likely to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [52138]	WA	In buffer area only
Commonwealth Land - [51001]	WA	In buffer area only

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis			
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Ngopitchup	Nature Reserve	WA	In buffer area only
Unnamed WA01703	5(1)(h) Reserve	WA	In buffer area only
Unnamed WA02184	Nature Reserve	WA	In feature area
Unnamed WA24707	Nature Reserve	WA	In buffer area only
Unnamed WA39399	Nature Reserve	WA	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Road Widening Kojonup South SLK 254.9 to SLK 259.8	2017/7934	Controlled Action	Post-Approval	In buffer area only
Transmission Line Project	2011/6066	Controlled Action	Post-Approval	In buffer area only
Tunney Passing Lanes, 30km S of Kojonup, WA	2014/7309	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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APPENDIX E: SUMMARY OF VASCULAR PLANT SPECIES RECORDED AT THE PROPOSED MOONIES HILL WINDFARM AREA, KOJONUP, SEPTEMBER/OCTOBER 2010

Note: * denotes introduced species; P1-P4 denote Priority Flora Species (Department of Parks and Wildlife 2016c)

FAMILY		SPECIES
POACEAE		*Austrostipa flavescens*
		Austrostipa juncifolia
		Austrostipa trichophylla
		Austrostipa sp.
	*	*Avena barbata*
	*	*Briza maxima*
	*	*Bromus diandrus*
	*	*Ehrharta longiflora*
		Enneapogon sp.
	*	*Hordeum hystrix*
	*	*Hordeum leporinum*
	*	*Lolium perenne*
		Neurachne alopecuroidea
		Neurachne sp.
	*	*Vulpia* ?*bromoides*
	*	*Vulpia* sp.
		Poaceae sp.
CYPERACEAE		*Chorizandra enodis*
		Ficinia nodosa
		Lepidosperma leptostachyum
		Tetraria octandra
RESTIONACEAE		*Desmocladus asper*
JUNCACEAE	*	*Juncus acutus*
		Juncus pauciflorus
ASPARAGACEAE	*	*Asparagus asparagoides*
		Chamaescilla corymbosa
		Lomandra micrantha subsp. *micrantha*
		Thysanotus patersonii
ASPHODELACEAE	*	*Asphodelus fistulosus*
HEMEROCALLIDACEAE		*Dianella revoluta*
		Stypandra glauca
		Tricoryne tenella
HAEMODORACEAE		*Conostylis setigera*
IRIDACEAE	*	*Moraea setifolia*
ORCHIDACEAE		*Caladenia sp.*
	*	*Disa bracteata*
CASUARINACEAE		*Allocasuarina huegeliana*
CARYOPHYLLACEAE	*	*Spergularia marina*
CHENOPODIACEAE		*Tecticornia lepidosperma*
CRASSULACEAE		*Crassula decumbens* var. *decumbens*

APPENDIX E: SUMMARY OF VASCULAR PLANT SPECIES RECORDED AT THE PROPOSED MOONIES HILL WINDFARM AREA, KOJONUP, SEPTEMBER/OCTOBER 2010

Note: * denotes introduced species; P1-P4 denote Priority Flora Species (Department of Parks and Wildlife 2016c)

FAMILY		SPECIES
FABACEAE		*Acacia acuminata*
		Acacia lasiocarpa var. *sedifolia*
		Acacia pulchella
		Acacia saligna subsp. *saligna*
		Bossiaea eriocarpa
		Gastrolobium praemorsum
		Jacksonia sternbergiana
		Kennedia prostrata
	*	*Trifolium arvense*
DILLENIACEAE		*Hibbertia commutata*
MYRTACEAE		*Corymbia calophylla*
		Eucalyptus astringens subsp. *astringens*
	*	*Eucalyptus globulus*
	*	*Eucalyptus leucoxylon*
		Eucalyptus loxophleba subsp. *lissophloia*
		Eucalyptus ?*macrandra*
		Eucalyptus marginata subsp. *marginata*
		Eucalyptus rudis subsp. *rudis*
		Eucalyptus spathulata subsp. *spathulata*
		Eucalyptus wandoo subsp. *wandoo*
		Melaleuca cuticularis
		Melaleuca rhaphiophylla
ERICACEAE		*Astroloma compactum*
		Leucopogon propinquus
CAMPANULACEAE		*Lobelia anceps*
GOODENIACEAE		*Dampiera sacculata*
STYLIDIACEAE		*Stylidium piliferum*
ASTERACEAE	*	*Arctotheca calendula*
	*	*Cotula coronopifolia*
		Helichrysum leucopsideum
	*	*Hypochaeris glabra*
		Lagenophora huegelii
		Podolepis gracilis
		Rhodanthe manglesii
	*	*Sonchus asper*
	*	*Ursinia anthemoides*

APPENDIX F: PHOTOGRAPHIC RECORD OF SITES AT PROPOSED MOONIES HILL ENERGY FARM, KOJONUP, SEPTEMBER 2010

Photograph F1: Vegetation at survey Site 01 – Community E3

Photograph F2: Vegetation at survey Site 02 – Community E2

APPENDIX F: PHOTOGRAPHIC RECORD OF SITES AT PROPOSED MOONIES HILL ENERGY FARM, KOJONUP, SEPTEMBER 2010

Photograph F3: Vegetation at survey Site 03 – Community E1

Photograph F4: Vegetation at survey Site 04 – Community E1

APPENDIX F: PHOTOGRAPHIC RECORD OF SITES AT PROPOSED MOONIES HILL ENERGY FARM, KOJONUP, SEPTEMBER 2010

Photograph F5: Vegetation at survey Site 05 – Community E2

Photograph F6: Vegetation at survey Site 06 – Community E4

APPENDIX F: PHOTOGRAPHIC RECORD OF SITES AT PROPOSED MOONIES HILL ENERGY FARM, KOJONUP, SEPTEMBER 2010

Photograph F7: Vegetation at survey Site 07 – Community E2

Photograph F8: Vegetation at survey Site 08 – Community E1

APPENDIX F: PHOTOGRAPHIC RECORD OF SITES AT PROPOSED MOONIES HILL ENERGY FARM, KOJONUP, SEPTEMBER 2010

Photograph F9: Vegetation at survey Site 09 – Community E3

Photograph F10: Vegetation at survey Site 10 – Community E5

APPENDIX F: PHOTOGRAPHIC RECORD OF SITES AT PROPOSED MOONIES HILL ENERGY FARM, KOJONUP, SEPTEMBER 2010

Photograph F11: Vegetation at survey Site 11 – Community E3

Photograph F12: Vegetation at survey Site 12 – Community E5

APPENDIX F: PHOTOGRAPHIC RECORD OF SITES AT PROPOSED MOONIES HILL ENERGY FARM, KOJONUP, SEPTEMBER 2010

Photograph F13: Vegetation at survey Site 13 – Community E5

Photograph F14: Vegetation at survey Site 14 – Community E2 (foreground) and Community E3 (background)

APPENDIX F: PHOTOGRAPHIC RECORD OF SITES AT PROPOSED MOONIES HILL ENERGY FARM, KOJONUP, SEPTEMBER 2010

Photograph F15: Vegetation at survey Site 15 – Community E5

Photograph F16: Vegetation at survey Site 16 – Community E5

APPENDIX F: PHOTOGRAPHIC RECORD OF SITES AT PROPOSED MOONIES HILL ENERGY FARM, KOJONUP, SEPTEMBER 2010

Photograph F17: Vegetation at survey Site 17 – Planted Eucalypts

Photograph F18: Vegetation at survey Site 18 – Community E3

APPENDIX F: PHOTOGRAPHIC RECORD OF SITES AT PROPOSED MOONIES HILL ENERGY FARM, KOJONUP, SEPTEMBER 2010

Photograph F19: Vegetation at survey Site 19 – Community E2

Photograph F20: Vegetation at survey Site 20 – Community E2

APPENDIX F: PHOTOGRAPHIC RECORD OF SITES AT PROPOSED MOONIES HILL ENERGY FARM, KOJONUP, SEPTEMBER 2010

Photograph F21: Vegetation at survey Site 21 – Community E2

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 1: T01 Footprint boundary west facing east

Photograph 2: T01 Footprint centre facing east

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 3: T02 Footprint boundary west facing east

Photograph 4: T02 Footprint boundary east facing west

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 5: T03 Footprint boundary south facing north

Photograph 6: T03 Footprint boundary north facing south

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 7: T04 Footprint boundary west facing east

Photograph 8: T04 Footprint boundary east facing west

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 9: T05 Footprint boundary centre facing north

Photograph 10: T05 Footprint boundary south facing north

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 11: T06 Footprint boundary centre facing south

Photograph 12: T06 Footprint boundary east facing west

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 13: T08 Footprint boundary centre facing south

Photograph 14: T08 Footprint boundary north facing south

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 15: T09 Footprint boundary centre facing west

Photograph 16: T09 Footprint boundary east facing west

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE MPACT FOOTPRINTS, DECEMBER 2021

Photograph 17: T10 Footprint boundary centre facing north

Photograph 18: T10 Footprint boundary south facing north

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 19: T11 Footprint boundary south facing north

Photograph 20: T11 Footprint boundary north facing south

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 21: T12 Footprint boundary south facing north

Photograph 22: T12 Footprint boundary north facing south

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 23: T13 Footprint boundary centre facing north

Photograph 24: T13 Footprint boundary south facing north

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 25: T14 Footprint boundary south facing north

Photograph 26: T14 Footprint boundary north facing south

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 27: T15 Footprint boundary south facing north

Photograph 28: T15 Footprint boundary north facing south-west

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 29: T16 Footprint boundary centre facing north

Photograph 30: T16 Footprint boundary south facing north

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 31: T17 Footprint boundary south facing north

Photograph 32: T17 Footprint boundary north facing south

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 33: T18 Footprint boundary west facing east

Photograph 34: T18 Footprint boundary east facing west

APPENDIX G: PHOTOGRAPHIC RECORD OF PROPOSED FLAT ROCKS WIND FARM TURBINE IMPACT FOOTPRINTS, DECEMBER 2021

Photograph 35: T55 Footprint boundary south facing north

Photograph 36: T55 Footprint boundary north facing south

APPENDIX H: PHOTOGRAPHIC RECORD OF TREES NEAR PROPOSED FLAT ROCKS WIND FARM TURBINE FOOTPRINTS, DECEMBER 2021

Photograph 1: T03 south-east tree group

Photograph 2: T03 south tree group

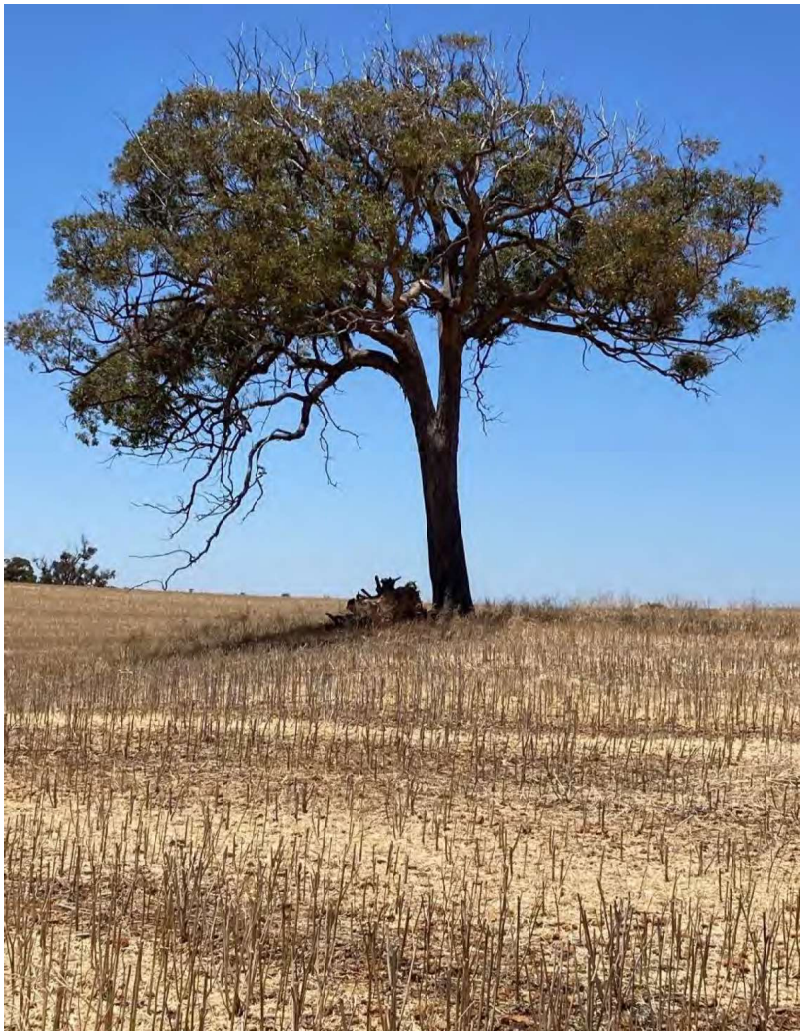
APPENDIX H: PHOTOGRAPHIC RECORD OF TREES NEAR PROPOSED FLAT ROCKS WIND FARM TURBINE FOOTPRINTS, DECEMBER 2021

Photograph 3: T03 south-west tree

Photograph 4: T05 paddock tree

APPENDIX H: PHOTOGRAPHIC RECORD OF TREES NEAR PROPOSED FLAT ROCKS WIND FARM TURBINE FOOTPRINTS, DECEMBER 2021

Photograph 5: T10 paddock tree



Photograph 6: T12 paddock tree

APPENDIX H: PHOTOGRAPHIC RECORD OF TREES NEAR PROPOSED FLAT ROCKS WIND FARM TURBINE FOOTPRINTS, DECEMBER 2021

Photograph 7: T13 paddock tree

Photograph 8: T16 paddock tree

APPENDIX H: PHOTOGRAPHIC RECORD OF TREES NEAR PROPOSED FLAT ROCKS WIND FARM TURBINE FOOTPRINTS, DECEMBER 2021

Photograph 9: T14 Windbreak trees, outside

Photograph 10: T14 Windbreak trees, inside

APPENDIX H: PHOTOGRAPHIC RECORD OF TREES NEAR PROPOSED FLAT ROCKS WIND FARM TURBINE FOOTPRINTS, DECEMBER 2021

Photograph 11: T12 footprint boundary south facing south to Community E3

Photograph 12: T55 footprint boundary facing Community E3