



lightsource bp

BIODIVERSITY MANAGEMENT PLAN

Goulburn River Solar Farm

FINAL

December 2024



BIODIVERSITY MANAGEMENT PLAN – SSD33964533

Goulburn River Solar Farm

FINAL

Prepared by

Umwelt (Australia) Pty Limited

on behalf of

Lightsource bp Renewable Energy Investments
Limited (Lightsource bp)

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Report No. 23815/R02
Date: December 2024



QMS Certification Services

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Acknowledgement of Country

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Document Status

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	Name	Date	Name	Date
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1.0 Introduction

Lightsource Development Services Australia Pty Ltd, a wholly owned subsidiary of Lightsource bp Renewable Energy Investments Limited (Lightsource bp) received Development Consent for the Goulburn River Solar Farm (SSD 33964533) in August 2024. The Development Consent was granted by a delegate of the Minister for Planning and Public Spaces under section 4.38 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Project is located approximately 28 kilometres (km) southwest of Merriwa in New South Wales (NSW). It is wholly within the Upper Hunter Local Government Area (LGA).

The Project Area comprises two freehold properties that span across multiple lots, covering an area of approximately 2,000 hectares (ha). The Development Footprint for the solar farm occupies 792.19 ha and road upgrades will cover approximately 8.1 km.

The Project involves the construction, operation and decommissioning of approximately 550-megawatt peak (MWp) of solar photovoltaic (PV) generation as well as a Battery Energy Storage System (BESS) with a maximum 1,030 MWp/2,060-megawatt hour (MWh) capacity.

The Project will include a substation and connection to an existing 500 kilovolt (kV) transmission line which passes through the Project Area. The Project will include road repairs and upgrades to Ringwood Road, Wollara Road, and the Golden Highway intersection. The Project also includes a temporary workforce accommodation camp, temporary construction facilities, operation and maintenance buildings, internal access roads, civil works, electrical infrastructure to connect the Project to the existing transmission line and a 30 metre (m) telecommunications tower.

Lightsource bp is a global leader in the development and management of solar energy projects. Its purpose is to deliver affordable and sustainable solar power for businesses and communities around the world. Lightsource bp is active in 19 countries, across six continents, however, are continuing to rapidly expand globally. Lightsource bp provides a full service to its customers, from initial site selection, financing and permitting through to construction, long-term operation, and decommissioning.

1.1 Purpose of this Biodiversity Management Plan

This Biodiversity Management Plan (BMP) addresses the requirements of the Development Consent with a focus on ecological values relevant to the NSW *Biodiversity Conservation Act 2016* (BC Act). The BMP has been informed by the following assessment reports:

- Environmental Impact Statement (EIS) for Goulburn River Solar Farm, dated May 2023 (Umwelt 2023a)
- Goulburn River Solar Farm Aquatic Assessment (Coastal Ecology, 2023)
- Goulburn River Solar Farm Amendment Report (Umwelt 2023b)
- Goulburn River Solar Farm Biodiversity Development Assessment Report (BDAR) (Umwelt 2024a)
- Goulburn River Solar Farm Public Road and Culvert BDAR (Umwelt 2024b)

- Goulburn River Solar Farm Temporary Workers Accommodation Facility Amendment Report (Umwelt, 2024)
- Aquatic Assessment – Goulburn River Solar Farm Public Road and Culvert Upgrade (Umwelt, 2024c).

This BMP also considers relevant items from the Response to Requests for Further Information (Umwelt, 2024f and 2024g).

This BMP has been prepared to comply with the relevant conditions within the Development Consent, as well as to meet other applicable statutory requirements and obligations during the construction, operation and decommissioning of the Project.

The Development Consent includes administrative and environmental conditions, as well as environmental management and reporting requirements, that necessitate the preparation of several post-approval management plans and strategies. This BMP has been prepared to meet the requirements of Condition B16 of the Development Consent. It also satisfies Conditions 4 and 5 of the Commonwealth Decision Notice under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC).

A table showing where the relevant conditions of consent have been addressed in this document is included in **Table 1.1** below.

Table 1.1 Relevant BMP Development Consent Conditions

Part	Condition	Relevant Section														
B	<p>Vegetation Clearance – Condition B13</p> <p>The Applicant must not clear any native vegetation or fauna habitat located outside the approved disturbance areas described in the EIS.</p>	Section 6.3.1														
	<p>Biodiversity Offsets – Condition B14</p> <p>Prior to carrying out any development that could directly or indirectly impact the biodiversity values requiring offset, the Applicant must retire biodiversity credits of a number and class specified in Table 1 and Table 2 below. The retirement of these credits must be carried out in accordance with the NSW Biodiversity Offsets Scheme and can be achieved by:</p> <p>(a) acquiring or retiring ‘biodiversity credits’ within the meaning of the <i>Biodiversity Conservation Act 2016</i>;</p> <p>(b) making payments into an offset fund that has been developed by the NSW Government; and/or</p> <p>(c) funding a biodiversity conservation action that benefits the entity impacted and is listed in the ancillary rules of the biodiversity offset scheme.</p> <p>Table 1: Ecosystem Credit Requirements</p> <table border="1"> <thead> <tr> <th>Vegetation Community</th> <th>PCT ID</th> <th>Credits Required</th> <th>Timing</th> </tr> </thead> <tbody> <tr> <td colspan="4">Solar Farm Site</td> </tr> <tr> <td>Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley</td> <td>483</td> <td>4,618</td> <td rowspan="2">Prior to commencing construction</td> </tr> <tr> <td>Narrow-leaved Ironbark - Black Pine - Sifton Bush heathy open forest on sandstone ranges of the upper Hunter and Sydney Basin</td> <td>1661</td> <td>59</td> </tr> </tbody> </table>	Vegetation Community	PCT ID	Credits Required	Timing	Solar Farm Site				Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley	483	4,618	Prior to commencing construction	Narrow-leaved Ironbark - Black Pine - Sifton Bush heathy open forest on sandstone ranges of the upper Hunter and Sydney Basin	1661	59
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	<p>Condition B15 Prior to carrying out any development that could directly or indirectly impact the biodiversity values requiring offset, the Applicant must provide evidence to the Planning Secretary that biodiversity credits have been retired.</p>		Section 6.13.1																																				

Part	Condition	Relevant Section
	<p>Biodiversity Management Plan – Condition B16 Prior to carrying out any development that could directly or indirectly impact biodiversity values, the Applicant must prepare a Biodiversity Management Plan for the development in consultation with BCS, and to the satisfaction of the Planning Secretary.</p> <p>This plan must:</p> <p>(a) be prepared in accordance with the Biodiversity Development Assessment Reports dated 11 January 2024 and 18 January 2024;</p> <p>(b) include a description of the measures and timeframes that would be implemented for:</p> <ul style="list-style-type: none"> (i) protecting vegetation and fauna habitat outside the approved disturbance areas; (ii) managing and enhancing the remnant vegetation and fauna habitat on site; (iii) minimising clearing and avoiding unnecessary disturbance of vegetation that is associated with the construction and operation of the development; (iv) minimising the removal of hollow-bearing trees during spring to avoid the main breeding period for hollow-dependent fauna; (v) minimising the impacts to fauna on site and implementing fauna management protocols; (vi) rehabilitating and revegetating temporary disturbance areas with native species that are appropriate to the site’s ecology conditions; (vii) maximising the salvage of vegetative and soil resources within the approved disturbance area for beneficial reuse in the enhancement or the rehabilitation of the site; (viii) controlling weeds, feral pests and pathogens in consideration of the relevant Commonwealth threat abatement plans; and (ix) minimising impacts on the entities at risk of a serious and irreversible impact (SAIL), including: <ul style="list-style-type: none"> • securing an additional 23.5 hectares of Box Gum Woodland derived native grassland (DNG) within a Biodiversity Stewardship Agreement for the purposes of rehabilitating, enhancing and protecting, in perpetuity, this vegetation to a condition state commensurate with Box Gum Woodland; • undertaking a research program regarding the impacts of the development on the vegetation integrity of the Box Gum Woodland DNG retained onsite; and • providing \$25,000 per annum (over the first 5 years following commencement of construction) towards Regent Honeyeater conservation programs in consultation with BCS; <p>(c) include a program to monitor and report on the effectiveness of mitigation measures;</p>	<p>This BMP</p> <p>Section 1.1</p> <p>Section 6.3.2</p> <p>Section 6.8 and Section 6.9</p> <p>Section 6.3.1</p> <p>Section 6.3.6</p> <p>Section 6.4</p> <p>Section 6.9</p> <p>Section 6.9.2</p> <p>Section 6.6 and Section 6.7</p> <p>Section 6.3</p> <p>Section 6.13.2</p> <p>Section 6.12</p> <p>Section 6.10</p> <p>Section 8.0</p>

Part	Condition	Relevant Section
	(d) include an incidental threatened species finds protocol to identify the avoid and/or minimise and/or offset options to be implemented if additional threatened species are discovered on site;	Section 6.5
	(e) Include details of who would be responsible for monitoring, reviewing and implementing the plan.	Section 7.0
	Following the Planning Secretary's approval, the Applicant must implement the Biodiversity Management Plan.	

Agency and other stakeholder consultation has occurred as per the Development Consent for plans. Preparation of this BMP will be undertaken in consultation with the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW)– Biodiversity Conservation and Science Group of NSW (BCS). The BCS correspondence, and where this feedback has been addressed in this BMP, is documented in **Appendix 1**.

Note: Consultation has not yet been undertaken and this section and **Appendix 1** will be updated following consultation with BCS.

The Project is a controlled action under the EPBC Act and was assessed under the bilateral agreement between the NSW and Australian Governments (AG). Relevant conditions of the EPBC Approval 2021/9102 are provided in **Table 1.2**.

Table 1.2 Relevant EPBC Approval Conditions

Part	Condition	Relevant Section
A	Clearing Limits – Condition A1 The approval holder must not:	
	(a) Clear outside of the Action area	Section 6.3
	(b) Construct outside of the Action Area	Section 2.5.2
	Condition A2 To avoid and mitigate impacts to protected matters as a result of the Action, the approval holder must not clear more than:	
	(a) 494.43 hectares (ha) of Box Gum Woodland	Section 6.3.1
	(b) 42.46 ha of Regent Honeyeater Habitat	Section 6.3.1
	(c) 22.49 ha of Painted Honeyeater habitat	Section 6.3.1
	Condition A3 If the approval holder detects the presence, where likely to be affected by the Action, of any protected matter or the habitat of any protected matter not previously reported to the department as part of the referral of this Action or in accordance with this condition, the approval holder must notify the department in writing of the presence and likely extent of any protected matter or the habitat of any protected matter not previously reported to the department within 10 business days of detecting the presence of any protected matter or the habitat of any protected matter not previously reported to the department.	Section 6.5

Part	Condition	Relevant Section
	<p>Biodiversity Management Plan – Condition A4</p> <p>To avoid and mitigate impacts on protected matters as a result of the Action, the approval holder must comply with condition B16 of the NSW Approval, to the extent that it relates to protected matters.</p>	This BMP
	<p>Condition A5</p> <p>The approval holder must implement the Biodiversity Management Plan required by condition B16 of the NSW Approval, as approved by the NSW Planning Secretary, prior to the commencement of the Action and continue to implement the Biodiversity Management Plan required by condition B16 of the NSW Approval, as approved by the NSW Planning Secretary, until the completion of the Action.</p>	This BMP
	<p>Offsets – Condition A6</p> <p>To compensate for impacts to protected matters as a result of the Action, the approval holder must comply with conditions B14 and B15 of the NSW Approval, to the extent that they relate to protected matters.</p>	Section 6.13.1
	<p>Condition A7</p> <p>Within 20 business days of retiring the biodiversity credits as required by condition 6, the approval holder must submit evidence to the department demonstrating that the biodiversity credits have been retired in accordance with the NSW Approval.</p>	Section 6.13.1
B	<p>Revision of Action Management Plan – Condition B8</p> <p>The approval holder must notify the department within 2 days of submitting any request to have a revised version of a plan approved by the NSW Planning Secretary. In this notification, the approval holder must provide the revised version of the plan to the department and specify the proposed changes. If a revised version of a plan is approved by the NSW Planning Secretary, within 5 days of the revised plan being approved by the NSW Planning Secretary, the approval holder must provide the department with:</p> <ul style="list-style-type: none"> (a) the version of the revised plan approved by the NSW Planning Secretary, (b) details of the comparison between the previous and most recently approved versions of the plan, describing all changes, and (c) a detailed discussion describing any changes to the harm, including impacts, to protected matters which will, or will likely, occur as a result of implementing the version of the revised plan approved by the NSW Planning Secretary. 	Section 9.2
	<p>Submission and Publication of Plans – Condition B9</p> <p>The approval holder must submit all plans required by these conditions electronically to the department. This includes plans required under any conditions of the NSW Approval that are specified in these conditions.</p>	Noted
	<p>Condition B10</p> <p>Unless otherwise agreed to in writing by the Minister, the approval holder must publish each plan on the website within 15 business days of the date the plan is approved by the Minister or by the NSW Planning Secretary as required under NSW Approval conditions which must be complied with in accordance with these EPBC Act approval conditions.</p>	EMS
	<p>Condition B11</p> <p>The approval holder must keep all plans required by these conditions published on the website until the expiry date of this approval.</p>	EMS

Part	Condition	Relevant Section
	<p>Condition B12</p> <p>The approval holder is required to exclude or redact sensitive biodiversity data from plans published on the website or otherwise provided to a member of the public. If sensitive biodiversity data is excluded or redacted from a plan, the approval holder must notify the department in writing what exclusions and redactions have been made in the version published on the website.</p>	Section 9.2
	<p>Reporting Non- Compliance – Condition B29</p> <p>The approval holder must notify the department electronically, within 2 business days of becoming aware of any incident. The approval holder must specify in each notification:</p> <ul style="list-style-type: none"> (a) any condition or commitment made in a plan which has not been, or may have not been, complied with, (b) a short description of the incident, and (c) the location (if applicable, including co-ordinates), date and time of the incident. 	Section 10.2
	<p>Condition B30</p> <p>The approval holder must provide to the department in writing, within 12 business days of becoming aware of an incident, the details of that incident. The approval holder must specify:</p> <ul style="list-style-type: none"> (a) all corrective measures and investigations which the approval holder has already taken in respect of the incident, (b) the potential impacts of the incident, (c) the method and timing of any corrective measures that the approval holder proposes to undertake to address the incident, and (d) any variation of these conditions or revision of a plan that will be required to prevent recurrence of the incident and/or to address its consequences. 	Section 10.2

1.2 Application of the Biodiversity Management Plan

This BMP applies to all employees, contractors and visitors during the construction, operation and decommissioning of the Project, as described in the Development Consent.

The EMS identifies key personnel and the environmental management responsibilities for the Project. Management measures developed for this BMP that will be implemented for construction and operation of the Project are listed below, each of which are discussed in detail in **Section 6.0** of this BMP.

1.3 Aims and Objectives of the Biodiversity Management Plan

This BMP describes the biodiversity management measures that will be implemented to avoid, minimise, and mitigate impacts to biodiversity values, with specific focus on BC Act and EPBC Act listed entities, associated with the Project during construction, operational and decommissioning phases.

The avoidance, management, and mitigation measures to be implemented as part of the BMP have been prepared with an overarching objective to reduce the Project's impact on biodiversity values. It aims to provide the framework required to ensure the Project is constructed and operates in a manner to not compromise the impact thresholds as described in the Development Consent, as well as presenting opportunities whereby impacts may be avoided or minimised during construction.

Objectives relating to limiting the Project's impact on biodiversity values are focused on the minimisation of clearance of threatened ecological communities (TECs) and threatened species habitat. The measures detailed in **Section 6.0** will be employed to avoid, manage and mitigate impacts on native vegetation, ensuring that:

- No more than 789.15 ha of native vegetation is cleared within the Development Footprint of the solar farm.
- No more than 4.86 ha of native vegetation is cleared within the Development Footprint of the public roads and culverts.
- In accordance with Condition A2 of the EPBC Approval, no more than the following specific limits for matters of national environmental significance are to be cleared (Development Footprint of the solar farm and road combined):
 - 494.43 ha of Box Gum Woodland which is a critically endangered ecological community under the EPBC Act
 - 42.46 ha of Regent Honeyeater habitat
 - 22.49 ha of Painted Honeyeater habitat.

A further breakdown of Plant Community Types (PCT) is provided in **Table 4.1**.

2.0 Overview of the Project

2.1 Project Setting

The Project is comprised of predominantly managed agricultural land, approximately 28 km southwest of the township of Merriwa (refer to **Figure 2.1**). The Project consists of freehold land and Crown land within the development boundary and is surrounded by the Goulburn River National Park.

The Project Area is approximately 15 km from the Central West Orana Renewable Energy Zone (REZ) however it is not related to the REZ, nor is it dependent on the REZ. The REZ location was selected because of the benefits of relatively low transmission build costs due to its proximity to the existing transmission network structures. This Project benefits from utilising the existing 500 kV transmission line crossing the south-east portion of the site, allowing connection to the national electricity grid and eliminating the need for the development to construct a transmission line to connect to the grid.

The Project Area is zoned RU1 Primary Production and is generally flat, with some minor undulation in the landscape which has been disturbed by historical agricultural activity.

2.2 Development Area

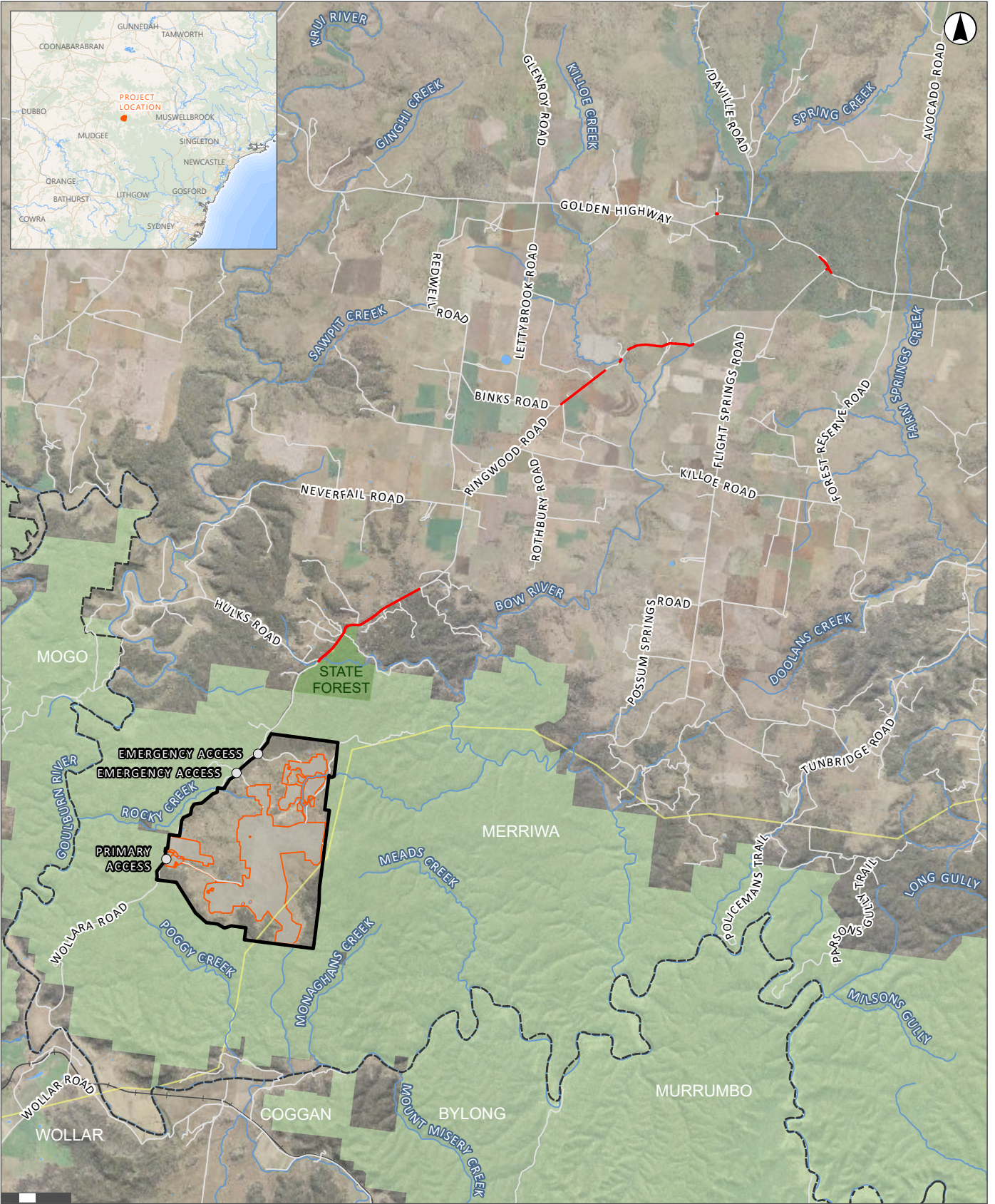
The Project Area is considered as the total area of the development, including the development boundary. It comprises approximately 792.19 ha of freehold land and Crown land contained within the development boundary.

The Project Area is comprised of five key components, including:

- Solar farm footprint.
- Public roads and culverts.
- Substation.
- BESS.
- Temporary Workers Accommodation Facility.

The Project Area is shown below in **Figure 2.2**.

C:\USERS\WILLIAMSON\UMWELT (AUSTRALIA) PTY.LTD\23815 - 03.S&V\02 PROJECTS\23815 - R02 BIODIVERSITYMANAGEMENT\PLAN V5.APRX 9/10/2024 2:50 PM



1:155,000
 Scale at A4
 0 1,000 2,000 Meters
 GDA 1994 MGA Zone 56

- Legend**
- Access Points
 - Electricity Transmission Line
 - Watercourse
 - Roads and Tracks
 - Railway
 - ⋮ Local Government Boundary
 - ▭ Road Upgrades Area
 - ▭ Project Area
 - ▭ Development Footprint (Amended Project)
 - ▭ NSW National Parks
 - ▭ NSW State Forests
 - ▭ Waterbodies

FIGURE 2.1
Regional Locality

2.3 Project Area and Development Footprint

The Project Area of the solar farm covers approximately 2,000 ha with a Development Footprint of approximately 792.19 ha, as shown in **Figure 2.2**.

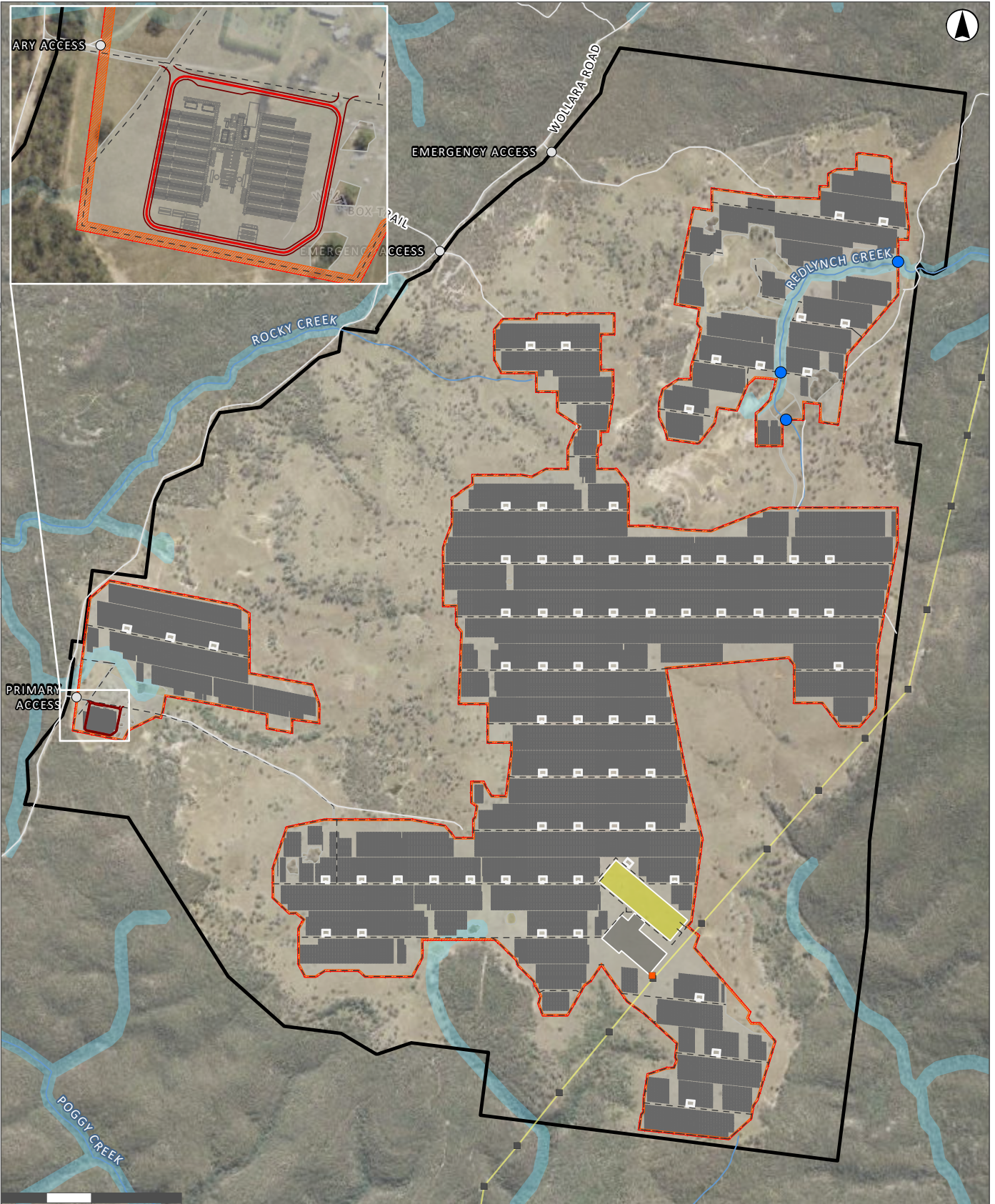
The remaining parts of the Project Area will be protected and managed as a Biodiversity Stewardship Site (BSS).

Access to the Development Footprint will be off Wollara Road via the existing driveway towards the southern end of the property's western boundary. Two secondary access points, also off Wollara Road, will be available towards the north of the property's western boundary for emergency use. Emergency services and National Parks and Wildlife Service (NPWS) access will be maintained through the Project Area, to be used for emergencies only or on request (refer to **Figure 2.2**).

The layout of the solar arrays associated infrastructure and temporary workers accommodation facility would be entirely contained within the Development Footprint. The Project also includes road repairs which are located outside of the Project Area (across approximately 8.1 km of existing road). These encompass parts of Ringwood Road (including culverts at two waterway crossings), Wollara Road, the intersection of Barnett Street and Golden Highway, and the intersection of Golden Highway and Ringwood Road. Works on the two culverts and the intersection are required to support Project construction traffic, whilst other road improvements are in response to feedback and represent part of a community benefit offered by the Project. All road upgrades will improve safety outcomes for both the Project and the broader community.

The works on Wollara Road, Ringwood Road and Barnett Street (see **Figure 2.6**) are contained to the road reserve and landowners' consent from Upper Hunter Shire Council has been obtained. The upgrades to the intersection of the Golden Highway and Ringwood Road require works which will be largely contained within the road reserve but will encroach into the cadastral boundary of Lot 1 DP34496 (outside of the existing fence-line). The formalisation of the bus stop on Ringwood Road at the intersection with Golden Highway will be contained within Lot 7303 DP 1146691.

The Project Area and Development Footprint is shown below in **Figure 2.2, Figure 2.3, Figure 2.4, Figure 2.5** and **Figure 2.6**.



1:30,000
Scale at A4

GDA 1994 MGA Zone 56

- Legend**
- Existing Tower
 - New Tower
 - Access Points
 - Indicative Location of Water Crossings
 - *up to a maximum of 3 waterway crossings for access tracks
 - Electricity Transmission Line
 - - - Indicative Access Tracks
 - TWA Facility Layout
 - Proposed Accommodation Camp Roads
 - Roads and Tracks
 - Watercourse
 - Project Area
 - Indicative TWA Facility
 - Solar Panels
 - Fire Break
 - Battery Energy Storage System
 - Inverter
 - Substation
 - Development Footprint (Amended Project)
 - Key Fish Habitat

FIGURE 2.2
Development Footprint - Solar Farm



Legend

- Watercourse
- Road
- Property Boundaries
- Development Footprint
- Waterbodies

GDA 1994 MGA Zone 56

FIGURE 2.3

**Development Footprint - Road Upgrades
(Golden Highway Intersection)**



1:15,000
Scale at A4
0 0.1 0.2 Kilometres

- Legend**
- Culvert Upgrade or Installation
 - Water Crossing
 - Watercourse
 - Road
 - Property Boundaries
 - Development Footprint
 - Key Fish Habitat
 - Waterbodies

GDA 1994 MGA Zone 56

FIGURE 2.4
Development Footprint - Road Upgrades
(Bow River to Binks Road)



1:22,500
Scale at A4
0 0.1 0.2 Kilometres

- Legend**
- Watercourse
 - Road
 - Property Boundaries
 - Development Footprint
 - Key Fish Habitat
 - Waterbodies

GDA 1994 MGA Zone 56

FIGURE 2.5
Development Footprint - Road Upgrades
(Wollara Road)



1:2,500
Scale at A4

- Legend**
- Road
 - Property Boundaries
 - Development Footprint

FIGURE 2.6
Development Footprint Intersection Barnett Street

2.4 Components and Features

The Project includes the construction, operation, maintenance, and decommissioning of a PV solar farm with a capacity of approximately 550 MWp, which will supply electricity to the national electricity grid.

The key components of the Project are shown in **Figure 2.2** and include:

- Approximately one million bifacial solar PV modules.
- A centralised BESS with an approximate 450 MWp and 900 MWh capacity with the option of a decentralised BESS with an approximate 580 MWp and 1160 MWh capacity.
- On-site 500 kV switchyard and substation, with underground electrical conduits and cabling.
- On-site power line connection via underground electrical conduits and cabling.
- Telecommunication tower.
- An additional transmission tower within the existing easement of the 500 kV transmission line adjacent to the BESS/substation.
- Road upgrades required on Ringwood Road, Wollara Road and the intersection of Ringwood Road and the Golden Highway.
- Perimeter security fencing, CCTV and security lighting.
- Office amenities, parking and storage facilities.
- Laydown areas suitable for storing plant and equipment, solar panels, cable drums and areas to support waste management activities.
- A temporary helipad for emergency response purposes during construction.
- On-site Temporary Workers Accommodation Facility within the Development Footprint.

The Project is expected to operate for 40 years or more. After the initial 40-year operating period, the solar farm would either be decommissioned, removing all above ground infrastructure, and returning the site to its existing land capability, or repurposed with new PV equipment subject to technical feasibility and planning consents.

2.5 Project Phase Activities

2.5.1 Early Works – Pre-construction

The early works phase of the Project includes preparatory works which must occur prior to the commencement of main construction activities.

To comply with the conditions of the Development Consent, these early works are limited to:

- Road upgrades required under Condition B7 of the Development Consent.
- Building/road dilapidation surveys.
- Installation of fencing.
- Artefact survey and/or salvage.
- Overhead line safety marking.
- Geotechnical drilling.
- Surveying.

Early works are currently scheduled to start Q4 in 2024, and the construction period for these early works will be approximately three months. As per Condition B17 of the Development Consent, construction hours will generally be limited to Monday to Friday 7:00 am to 6:00 pm and Saturday 8:00 am to 1:00 pm, with no works on Sundays or Public Holidays. Some works outside these hours may occur as permitted by Condition B18 of the Development Consent. Any variations to these hours will be in accordance with Condition B19.

A key activity within the early works will be the road upgrades required on Ringwood Road, Wollara Road, the intersection of Barnett Street and the Golden Highway, and the intersection of Ringwood Road and the Golden Highway. These works will consist of realignment, widening and sealing of sections of road and upgrades to culverts at existing road crossings of Bow River and Killoe Creek.

With early works focusing on the road upgrades to the Golden Highway and Barnett Street intersections, as required under Condition B7 of the Development Consent; some residual approved early work construction activities may occur during the main works period described below.

2.5.2 Main Works – Construction Activities

Main works are currently scheduled to start Q1 in 2025, and the main works construction period will last up to approximately 25 months, including a peak period of approximately 8 months. The main works construction hours will be consistent with the hours specified in **Section 2.5.1** above. Some works outside these hours may, consistent with early works, occur as permitted by Condition B18. The Project will have a construction workforce of approximately 350 workers during the peak period.

An indicative schedule of the main works and an overview of construction activities is included below:

- Site establishment and enabling works including fencing, ground preparation, construction of the internal access tracks, preliminary civil works and drainage works.
- Construction of the temporary workforce accommodation camp.
- Installation of steel posts and framing system to support the solar panels.
- Installation of PV panels.
- Installation of permanent fencing and security.

- Preparation of foundations for the permanent buildings, BESS and on-site substation.
- Installation of underground cabling (trenching and installation of power conversion stations).
- Construction of site operations and maintenance facility.
- Establishment of the BESS.
- Construction of the onsite substation and associated grid connection infrastructure.
- Removal of temporary construction facilities.
- Rehabilitation of disturbed areas.

During the peak period, the Project is expected to generate up to 130 two-way construction traffic daily movements, including 55 heavy vehicle movements, 15 shuttle bus movements (associated with worker transport) and 60 light vehicle movements.

In accordance with Condition A1 (b) of the EPBC Approval no construction will occur outside of the approved disturbance areas specified in **Table 1.2**.

2.5.3 Operation

The expected operational life of the Project is approximately 40 years, however infrastructure upgrades throughout the Project lifecycle may extend its operational life. The key activities that would be undertaken during operation include:

- Visual inspections, maintenance, and cleaning of solar panels and the substation.
- Vegetation management including:
 - mechanical vegetation maintenance
 - maintaining groundcover vegetation
 - maintenance of landscaping, including the vegetation buffer.
- Site security and operational response.
- Replacement of equipment and infrastructure.
- Pest plant and animal control.

Consistent with the EIS, if Agri-solar activities such as sheep grazing occur, the Operational Environmental Management Plan (OEMP) will incorporate a relevant Management Plan (such as a Sheep Grazing Vegetation Management Plan) that will outline management measures in line with the Agri-solar Guide 2021 and other animal and welfare standards and guidelines. The relevant Management Plan will also include controls to minimise impacts on biodiversity values (including the BSS) and ensure alignment with the BMP.

During the operational phase of the Project, it is anticipated that a workforce of up to 10 FTE personnel would be required, and traffic movements would be restricted to light vehicles for routine operations and maintenance.

2.5.4 Decommissioning

At the end of the Project's operational life, unless the Planning Secretary agrees otherwise, the solar farm infrastructure will be decommissioned and removed. This will include removal of solar panels and foundation posts, the substation, and associated connections and underground cabling, the operations and maintenance facility, carpark and fencing.

Disturbed areas will be rehabilitated to ensure the Development Footprint is safe, stable, and non-polluting. The Development Footprint will be rehabilitated in accordance with the rehabilitation objectives as defined in Condition B41 of the Development Consent, also refer to **Section 6.9.1**.

3.0 Statutory Context

3.1 Overview of Relevant Legislation

Legislation relevant to the implementation of this BMP and biodiversity management in general includes:

- Commonwealth EPBC Act
- NSW EP&A Act
- NSW BC Act
- NSW *National Parks and Wildlife Act 1974* (NPW Act)
- NSW *Protection of the Environment Operations Act 1997* (POEO Act)
- NSW *Fisheries Management Act 1994* (FM Act)
- NSW *Pesticides Act 1999*
- NSW *Biosecurity Act 2015*
- NSW *Water Management Act 2000*.

3.2 Additional Approvals, Licences, Permits and Requirements

The Development Consent for SSD 33964533 stipulates the conditions that the Project must comply with as part of its approval. The relevant conditions of the Development Consent pertaining to biodiversity are detailed within Conditions B13 – B16 of the Development Consent and are summarised in **Section 1.1**.

The Project was determined as an SSD, and as such, it must comply with the relevant guidelines for SSD under the EP&A Act. An Assessment of Significance for White Box – Yellow Box – Blakely’s Red Gum Woodland under the EPBC Act was carried out as part of the biodiversity assessment informing the EIS, found that the Project was likely to significantly impact the White Box - Yellow Box - Blakely’s Red Gum Grassy Woodlands and Derived Native Grasslands which is listed as a TEC. The assessment path for the Project is under the Bilateral agreement between the Commonwealth and NSW Government. DCCEEW determined the Project a controlled action on February 2022 requiring approval under the EPBC Act by the commonwealth minister for the Environment due to its potential impact on listed threatened species and ecological communities. Federal approval was received on 7 October 2024 (EPBC 2021/9102).

Ecologists undertaking work for the project should hold appropriate licences, including scientific licences as required under clause 22 of the National Parks and Wildlife Regulations 2002, and section 132C of the NPW Act as well as an animal research authority issued by the Department of Primary Industries.

3.3 Guidelines and Standards

The following guidelines and standards have been utilised to develop this BMP:

- NSW National Parks & Wildlife Service. 2001. Policy for the Translocation of Threatened Fauna in NSW: Policy and Procedure Statement No. 9, Threatened Species Unit, Hurstville NSW (NSW NPWS, 2001).
- Relevant recovery plans, priority action statements and best practice guidelines.
- New South Wales Weed Control Handbook (DPI 2018).
- Hygiene protocol for the control of disease in frogs (DSEWPC 2011).
- Australian Standard AS4373 Pruning of Amenity Trees (Standards Australia 2007).
- Australian Standard AS4970 Protection of Trees (Standards Australia 2009).
- Why do fish need to cross the road? Fish Passage Requirements for Waterway Crossings (Fairfull & Witheridge, 2003).
- Policy and Guidelines for Fish Friendly Waterway Crossings (NSW DPI, 2003).
- Guidelines for Watercourse Crossings on Waterfront Land (NSW DPI, 2012).

4.0 Existing Environment

4.1 Soils

A soil survey was initially undertaken for the Development Footprint on the 23, 24 and 25 August 2022 and further on the 11 and 12 of January 2023 (Umwelt, 2024a). Sampling and classification of in situ soils was carried out as per the Australian Soil and Land Survey Field Handbook (2009) and The Australian Soil Classification (Isbell, 1996). Three predominant soil types were identified for the Development Footprint which included:

- **Dermosols** – soils with structured B2 Horizon and lacking a strong texture contrast between the A and B Horizons, and other soils with B2 horizons that have grade of pedality greater than weak throughout the major part of the horizon. These soils in the Development Footprint were derived from weathered basalt and were predominately identified on the hill slopes surrounding the basaltic cap.
- **Ferrosols** – soils with B2 Horizons in which the major part has a free iron oxide content greater than 5% Fe in the fine earth fraction (<2 mm), and do not have a clear or abrupt textural B horizon or a B2 horizon in which at least 0.3 m has vertic properties. These soils are almost entirely formed on either mafic or ultramafic igneous rocks, their metamorphic equivalents, or alluvium derived therefrom.
- **Sodosols** – soils with strong texture contrast between A horizons and sodic B horizons which are not strongly acidic and in which the major part of the upper 0.2 m of the B2 horizon (or the major part of the entire B2 horizon if it is less than 0.2 m thick) is sodic, that being soils with an Exchangeable Sodium Percentage (ESP) >6%.

The assessment concluded site soils were generally high in fertility however some areas were low which may affect the establishment and growth of vegetation in exposed surfaces.

4.2 Rivers and Streams

The locations of the streams within the Development Footprint are shown on **Figure 2.2**. The Development Footprint is located within the Hunter River catchment, within the Goulburn River sub-catchment. Redlynch Creek passes through the centre of the Project Area, with several first, second and third order streams within the Development Footprint and one fourth and fifth order stream occurring within the road upgrade areas as shown in **Figure 2.2**, **Figure 2.4** and **Figure 2.5**.

4.3 Wetlands

There are no estuaries or wetlands located within or adjacent to the Development Footprint. The nearest nationally important wetland downstream from the Project Area is the Ramsar listed Hunter Estuary Wetlands – Kooragang Nature Reserve, located approximately 160 km downstream of the Development Footprint. No threatened aquatic species were found in the Project Area, and none are considered likely to occur. Surveys were limited to Redlynch Creek as it was the only watercourse with standing water at the time of survey. No aquatic fauna was recorded during survey, although the dams may provide habitat for eels, turtles and crustaceans (Coastal Ecology, 2023).

There are 22 small man-made farm dams present within the Project Area where water pooling occurs for extended periods however vegetation within these areas has generally been degraded and or cleared due to past agricultural activities. Currently these dams are being used for livestock water points however some may be required to be dewatered to facilitate construction. The number of dams to be dewatered would be confirmed by the Construction Manager (see **Section 6.4.5**).

4.4 Connectivity Features

The Development Footprint contains agricultural land, predominantly comprised of grazed grasslands with remnant trees. It is surrounded by the Goulburn River National Park. Patches of retained forest and woodland vegetation are present typically in areas surrounding watercourses and on steeper or less fertile rocky habitats.

Current opportunities for wildlife movement across the Development Footprint (and much of the Project Area) are limited to more mobile species such as medium to large sized birds and mammals. As the majority of the Development Footprint is expanses of land with limited vegetation cover for protection and camouflage, movement by prey species is expected to be minimal. Scattered trees would provide stepping stones for mobile fauna movement, however, are spaced too far apart to facilitate ready movement by gliding mammals or protection for other species sensitive to large gap crossings (such as small forest birds).

The Goulburn River National Park contains an expanse of native vegetation and connects regionally to several other large natural areas managed for conservation along the Great Dividing Range, including Wollemi and Yengo National Parks to the south, Goonoo State Conservation Area to the west and Coolah Tops National Park to the north.

4.5 Areas of Geological Significance

No karst, caves, crevices, cliffs, rocks or other geological features of significance occur within the Project Area.

4.6 Areas of Outstanding Biodiversity Value

No areas of outstanding biodiversity value occur within the Project Area.

4.7 Plant Community Types

Approximately 789.15 ha of native vegetation is present within the 792.19 ha Development Footprint of the solar farm and approximately 4.86 ha of native vegetation is present within the 13.17 ha Development Footprint of the road upgrades. Further information regarding the clearance limits for the Project is included in **Section 6.3.1**.

Two PCTs occur within the Development Footprint of the solar farm which include:

- PCT 483: Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley.
- PCT 1661: Narrow-leaved Ironbark – Black Pine – Sifton Bush heathy open forest on sandstone ranges of the upper Hunter and Sydney Basin.

Five PCTs occur within the Development Footprint of the road upgrades which include:

- 483 Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley.
- 1691 Narrow-leaved Ironbark – Grey Box grassy woodland of the Central and Upper Hunter.
- 3334 Western Hunter Flats Red Gum Sedge Forest.
- 3388 Central West Valleys White Box Forest.
- 3781 Ulan Sandstone Ironbark-Pine Woodland.
- PCT 483, PCT 1691, PCT 3388 and parts of the Scattered Trees Condition Zone for PCT 483 within the Development Footprint of the road upgrades (in part) consists of components of White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland which is listed as a TEC under both the BC Act and EPBC Act. Furthermore, PCT 483 found within the Development Footprint of the solar farm is present in various condition classes (i.e., vegetation zones). Accordingly, only portions of the native vegetation within the Development Footprint meet the final determination for White Box - Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC under both Acts.

Cleared areas within the Development Footprint of the solar farm are primarily used for grazing. Approximately 3.06 ha of cleared land occurs within the Development Footprint of the solar farm. These areas were limited to around the Pogy Station house, tracks and dams. In comparison to the Development Footprint of the road upgrades there is approximately 8.31 ha of cleared land which primarily relates to the areas of roads. Cleared areas provide very little in terms of native fauna habitat but could provide limited foraging habitat for raptors, parrots, cockatoos, and macropods.

Scattered paddock trees occurring across the highly degraded derived grassland within the Development Footprint of the solar farm are the main source of biodiversity value within the cleared lands, providing foraging, roosting, and sheltering habitat for generalist fauna species.

A summary of the PCTs and their extent in the Development Footprint is provided in **Table 4.1** below. The distributions of PCTs are shown in **Figure 4.2**. **Figure 4.1** shows example images from across the solar farm development footprint.

As a result of impacts to PCTs, the following ecosystem credits are required to be offset:

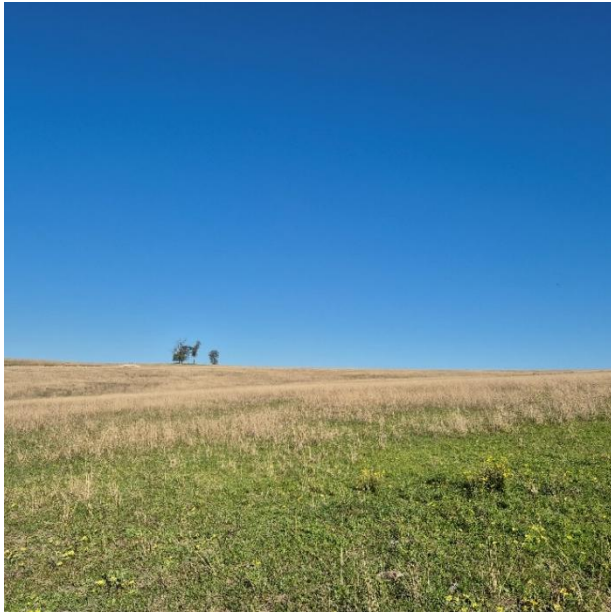
- 4,629 ecosystem credits for impacts to PCT 483: Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley.
- 59 ecosystem credits for impacts to PCT 1661 Narrow-leaved Ironbark – Black Pine – Sifton Bush heathy open forest on sandstone ranges of the Upper Hunter and Sydney Basin.
- 4 ecosystem credits for impacts to PCT 1691: Narrow-leaved Ironbark – Grey Box grassy woodland of the central and upper Hunter.
- 1 ecosystem credits for impacts to PCT 3334: Western Hunter Flats Red Gum Sedge Forest.
- 12 ecosystem credits for impacts to PCT 3388: Central West Valleys White Box Forest.
- 32 ecosystem credits for impacts to 3781: Ulan Sandstone Ironbark-Pine Woodland.

The retirement of these credits is being undertaken in accordance with the NSW Biodiversity Offset Scheme (refer to **Section 6.13**).

Table 4.1 PCTs within the Project Area

PCT Name	Condition	BC Act	EPBC Act	Area (ha) within the Development Footprint
Solar Farm Development Footprint				
PCT 483: Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, Upper Hunter Valley	Scattered Trees	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands	22.49
	Moderate			165.36
	Moderate to low			310.03
	Low			195.98
PCT 1661: Narrow-leaved Ironbark – Black Pine – Sifton Bush heathy open forest on sandstone ranges of the Upper Hunter and Sydney Basin	Scattered trees	-	-	2.66
	Moderate to low	-	-	37.65
	low	-	-	54.98
Waterbodies / Dams	N/A	N/A	N/A	0.14
Cleared Land	N/A	N/A	N/A	2.92
Road Upgrades Development Footprint				
PCT 483: Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley	Remnant Trees	White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland (0.20 ha)	White Box – Yellow Box – Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands (0.16 ha)	0.20
	Exotic Dominated Grassland	-	-	3.12
PCT 1691: Narrow-leaved Ironbark - Grey Box grassy woodland of the central and upper Hunter	Remnant Trees	White Box – Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland	White Box – Yellow Box – Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands	0.09

PCT Name	Condition	BC Act	EPBC Act	Area (ha) within the Development Footprint
PCT 3334: Western Hunter Flats Red Gum Sedge Forest	Roadside Remnant Forest	-	-	0.04
PCT 3388: Central West Valleys White Box Forest	Roadside Remnant Forest	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland	White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands	0.36
PCT 3781: Ulan Sandstone Ironbark-Pine Woodland	Roadside Remnant Forest	-	-	1.05
Cleared Land Existing Road Surface	N/A	N/A	N/A	8.31
Total				805.38



1. Moderate to low condition DNG PCT 1661 in the Development Footprint.

*Coordinates: -32.291, 150.092
Source: Lightsource bp, 2024.*



2. Looking north across low condition DNG PCT 483. The line of trees in centre of view form part of the BSS along Redlynch Creek.

*Coordinates: -32.296, 150.118
Source: Lightsource bp, 2024.*



3. Foreground is part of the BSS, looking north west across moderate condition DNG PCT 483 in the Development Footprint.

*Coordinates: -32.282, 150.084
Source: Lightsource bp, 2024.*



4. Example of a scattered tree which will be impacted by the Project (in moderate to low condition DNG PCT 483).

*Coordinates: -32.294, 150.100
Source: Lightsource bp, 2024.*

Figure 4.1 Representative Images of Vegetation within the Solar Farm Development Footprint

4.8 Threatened Ecological Communities

The White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland community is the only TEC that occurs across the Development Footprint as detailed in **Table 4.2**. This TEC is made up of PCT 483, PCT 1691, PCT 3388 and parts of the Scattered Trees Condition Zone for PCT 483 within the Development Footprint of the road upgrades (in part).

Table 4.2 TECs within the Development Footprint

BC Act	EPBC Act	Status BC Act	Status EPBC Act
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered (Comprises 693.86 ha of PCT 483)	Critically Endangered (Comprises 493.82 ha of PCT 483 which meets the EPBC Act condition criteria)

The White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland community occurs within the Project Area in varying condition. An assessment of the TEC against the EPBC Act found that within portions of the Development Footprint to be developed for the solar array and associated infrastructure, 493.82 ha of the total 693.86 ha of PCT 483 possesses:

- More than 50% native groundcover.
- Occurs in patch sizes of > 0.1 ha.
- More than 12 native understorey species.

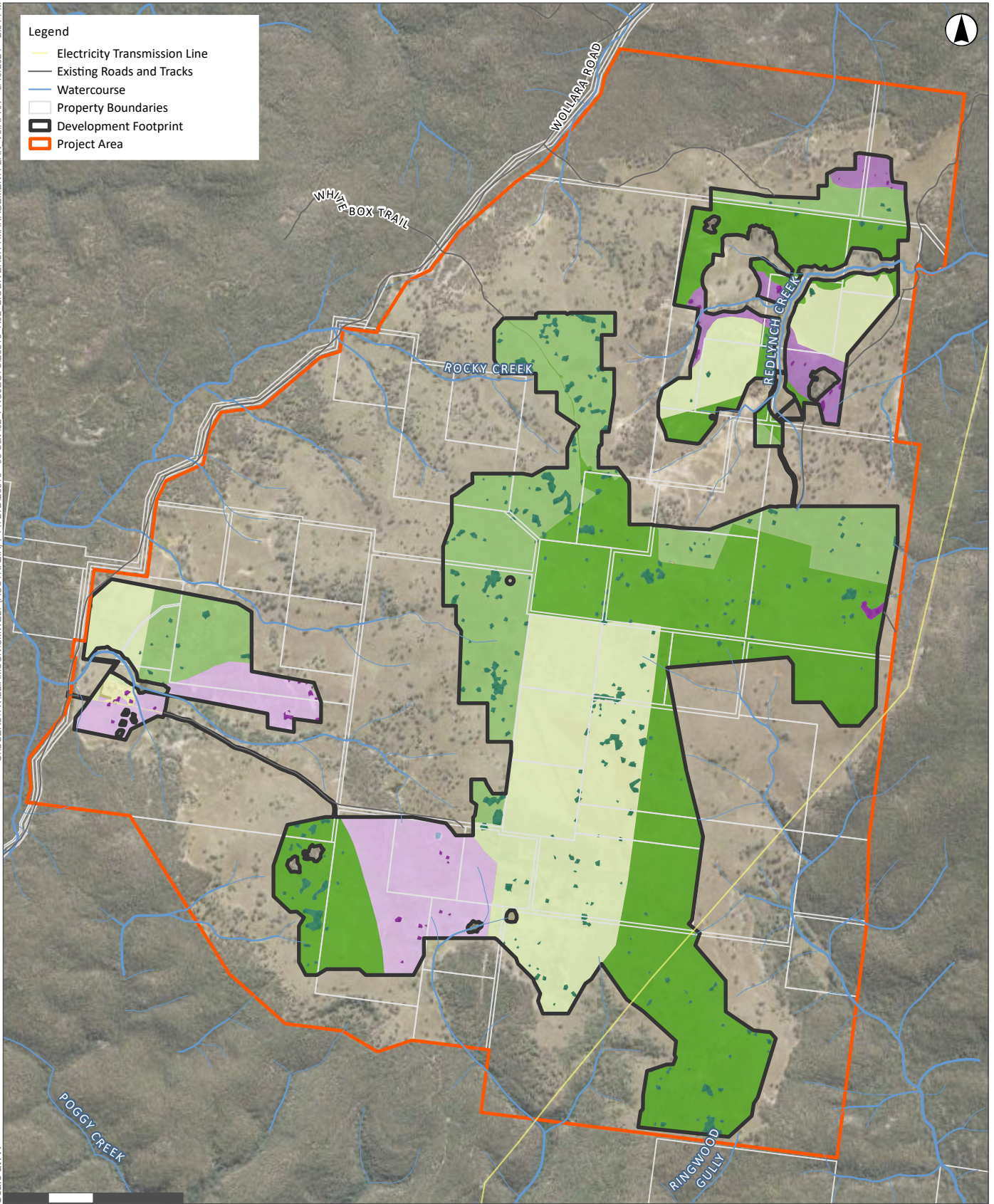
An additional 0.36 ha within the Kerrabee and 0.25 ha within the Liverpool IBRA Subregions are located within the roads Development Footprint which are considered to be TECs.

There is therefore 494.43 ha of vegetation which will be impacted and which forms part of the EPBC listed White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland Critically Endangered Ecological Community (CEEC).

The impacts of the Project will be offset in accordance with the requirements of the Biodiversity Assessment Method (BAM) (DPE 2020) and the Bilateral Assessment Agreement and the like-for-like biodiversity offsetting rules under the EPBC Act for all entities which are likely to be significantly impacted.

The distribution of the White Box – Yellow Box – Blakely's Red Gum Woodland and Derived Native Grassland TEC within the Development Footprints is shown in **Figure 4.3**.

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Legend

Plant Community Types and Condition Zones

PCT 483 - Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley

- Low Condition Derived Native Grassland
- Moderate Condition Derived Native Grassland

- Moderate to Low Condition Derived Native Grassland
- Scattered Trees

PCT 1661 - Narrow-leaved Ironbark – Black Pine – Sifton Bush heathy open forest on sandstone ranges of the upper Hunter and Sydney Basin

- Low Condition Derived Native Grassland

- Moderate to Low Condition Derived Native Grassland
- Scattered Trees

Non-PCT Areas

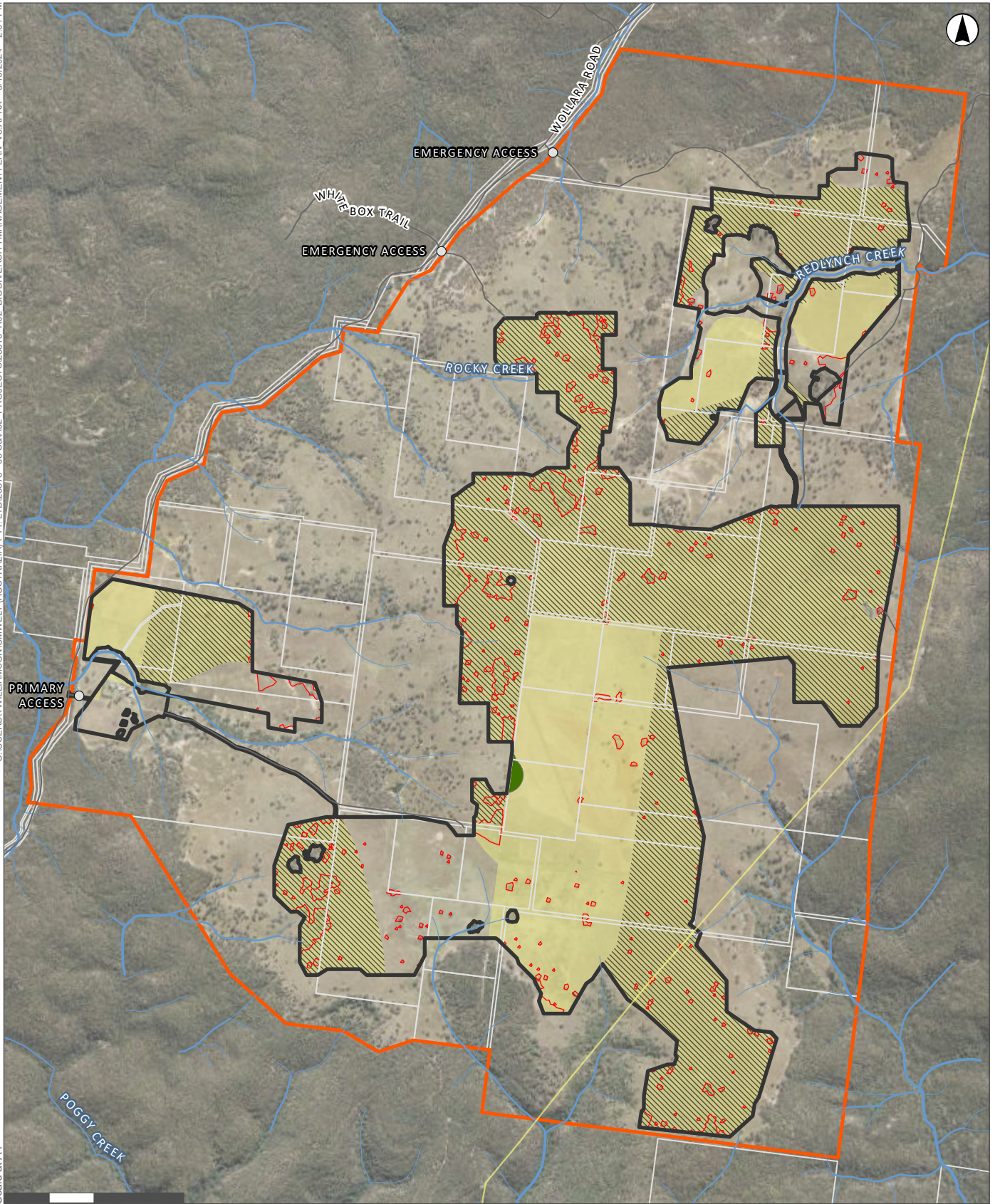
- Cleared Land
- Cleared Land / Non-native Vegetation
- Non-native Vegetation
- Water

FIGURE 4.2
PCTs within the Development Footprint – Solar Farm



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0 500 1,000 Meters

GDA 1994 MGA Zone 56

Legend

- Access Points
- Existing Roads and Tracks
- Watercourse
- Electricity Transmission Line
- Property Boundaries
- Development Footprint
- Project Area
- Regent Honeyeater Species Polygon
- Barking Owl Species Polygon

Threatened Ecological Communities Impacted within the Development Footprint

- White Box - Yellow Box - Blakely's Red Gum
Grassy Woodland and Derived Native Grassland VEC - EPBC Act
- White Box - Yellow Box - Blakely's Red Gum
Grassy Woodland and Derived Native Grassland CEEC - BC Act

FIGURE 4.3

TEC and Threatened Species within the Development Footprint – Solar Farm

4.9 Threatened Flora and Fauna

4.9.1 Threatened Species on the Solar Farm

4.9.1.1 Assumed Present

The following threatened fauna species are assumed to be present within the Development Footprint for the solar farm for the purpose of the BAM:

- Regent Honeyeater (*Anthochaera phrygia*).
- Large-eared Pied Bat (*Chalinolobus dwyeri*).
- Eastern Cave Bat (*Vespadelus troughtoni*).

Painted Honeyeater (*Grantiella picta*) and Regent Honeyeater are assumed to be present for the purpose of the EPBC Act assessment.

Portions of the Development Footprint are mapped as important habitat for the Regent Honeyeater. This species has therefore been assumed as present, despite no Regent Honeyeaters being observed during surveys and an expert report (Crates 2023) concluding that it is unlikely that they occur. Crates (2023) also concluded that the mapped important Regent Honeyeater habitat within the Development Footprint is likely of low importance in terms of potential foraging habitat. The extent of mapped important habitat within the Development Footprint of the solar farm is 42.30 ha. The Project avoids impact to 95.26% of the Regent Honeyeater important areas within the Project Area.

4.9.1.2 Known to Occur

Barking Owl (*Ninox connivens*) is the only species credit species which was detected in the solar farm Development Footprint (Umwelt 2024a). Barking Owl was observed in August and December in the vicinity of suitable hollow bearing trees for breeding. These trees are therefore assumed to be nest trees.

All trees in the area where the Barking Owl was observed are excluded from the Development Footprint, along with a 100 m buffer. The Project is however impacting on a maximum of 1.22 ha of highly disturbed grassland within the buffer to one tree in the central part of the Development Footprint.

There are a number of ecosystem credit species listed under the BC Act and/or the EBPC Act which were observed within the Project Area (Umwelt 2024a) but which are not expected to be significantly impacted by the Project. These species are listed in **Table 4.3**, along with a description of their suitable habitat within the Development Footprint and their breeding requirements.

Table 4.3 Threatened Species Known to Occur – Solar Farm

Species Name	Conservation Status	Suitable Habitat on Site	Breeding
Barking Owl <i>Ninox connivens</i>	BC Act – Vulnerable	Breeding habitat assessed as present during the Project assessment. All hollow bearing trees where Barking Owl was observed have been retained and are outside the Development Footprint. Resident pairs occupy traditional roosting trees which are used throughout the year (Debus, 2009).	Breed in hollows in large trees, mainly <i>Eucalyptus</i> , in woodland or open forest, usually near watercourses or wetlands. Mostly August to October. (BirdLife Australia, 2023), Hollow bearing trees with hollow >20 cm diameter and >4 m AGL.
Diamond Firetail <i>Stagonopleura guttata</i>	BC Act – Vulnerable EPBC Act – Vulnerable	The entire area of the Development Footprint, excluding water and cleared land and exotic vegetation is considered to provide suitable foraging habitat for this species.	Breeding season August to January. Nest is usually in fork, among foliage, of shrub, in crown of sapling or in mistletoe in tall tree; less often in foliage of tall tree, in creeper or dead shrub; often in eucalypts and prickly shrubs, such as acacias or hakeas. (BirdLife Australia, 2023)
Dusky Woodswallow <i>Artamus cyanopterus</i>	BC Act – Vulnerable	The entire area of the Development Footprint, excluding water and cleared land and exotic vegetation is considered to provide suitable foraging habitat for this species.	Clutches recorded August to January. Nest location can vary greatly. In shrub or low tree, living or dead, in horizontal or upright fork of branch, spout, hollow stump or log, behind piece of loose bark, or in hollow in top of fence post. Site can be exposed or well concealed by foliage. Has been observed nesting in mistletoe. (BirdLife Australia, 2023)
Glossy Black-Cockatoo <i>Calyptorhynchus lathami</i>	BC Act – Vulnerable EPBC Act – Vulnerable	Areas of suitable foraging habitat for this species is limited to scattered occurrences of <i>Allocasuarina</i> trees which are present within PCT 1661.	Breed in hollow stump or limb, living or dead, or hole in trunk of tall tree; usually in eucalypt, March to August (BirdLife Australia, 2023). Hollow bearing trees with hollows >15 cm >8 m AGL. No use of the site for breeding habitat was observed despite targeted survey in the breeding season.
Little Lorikeet <i>Glossopsitta pusilla</i>	BC Act – Vulnerable	Mainly forage in canopy of tall flowering trees, especially <i>Eucalyptus</i> . Has been observed feeding on flowering or fruiting mistletoe. Roosts on dead branches or amongst canopy at tops of trees. (BirdLife Australia, 2023)	Breeding season and behaviour not well known. Considered June to December. Nests in holes, including knot-holes; in bend, top or side of limb, usually living, or in main trunk of tree. (BirdLife Australia, 2023)
White-throated Needletail <i>Hirundapus caudacutus</i>	BC Act – Vulnerable EPBC Act – Vulnerable, Marine, Migratory	The entire area of the Development Footprint is considered to provide suitable aerial foraging habitat for this species.	Breeds in Asia. (BirdLife Australia, 2023)

4.9.2 Threatened Species on the Road Upgrades

4.9.2.1 Assumed Present

The following threatened flora and fauna species been assumed present within the road upgrades Development Footprint due to limitations in relation to survey timeframe and safety considerations, although none were confirmed:

- Commersonia rosea.
- Pine Donkey Orchid (*Diuris tricolor*).
- Regent Honeyeater (*Anthochaera phrygia*).
- Large-eared Pied Bat (*Chalinolobus dwyeri*).
- Giant Burrowing Frog (*Heleioporus australiacus*).
- Pale-headed Snake (*Hoplocephalus bitorquatus*).
- Broad-headed Snake (*Hoplocephalus bungaroides*).
- Barking Owl (*Ninox connivens*).
- Common Planigale (*Planigale maculata*).
- Eastern Cave Bat (*Vespadelus troughtoni*).
- Striped Legless Lizard (*Delma impar*).

4.9.2.2 Known to Occur

No threatened species credit species were observed in the road upgrades Development Footprint. There are a number of ecosystem credit species listed under the BC Act and/or the EBPC Act which were observed within the road upgrades Development Footprint (Umwelt 2024b) but which are not expected to be significantly impacted by the Project. These species are listed in **Table 4.4**, along with a description of their suitable habitat within the Development Footprint and their breeding requirements.

Table 4.4 Threatened Species Known to Occur – Road Upgrades

Species Name	Conservation Status	Suitable Habitat on Site	Breeding
Brown Treecreeper <i>Climacteris picumnus victoriae</i>	BC Act – Vulnerable EPBC Act – Vulnerable	Areas of woodland, including PCT 483, 1691, 3334, 3388 and 3781.	Breeding recorded from July to January. In hollows; usually in dead branches or spouts, but also in trunks of living or, often, dead trees; usually in eucalypts (including mallee eucalypts), but also in acacias. (BirdLife Australia, 2023)
Diamond Firetail <i>Stagonopleura guttata</i>	BC Act – Vulnerable EPBC Act – Vulnerable	Areas of woodland, including PCT 3388 and 3781.	Breeding season August to January. Nest is usually in fork, among foliage, of shrub, in crown of sapling or in mistletoe in tall tree; less often in foliage of tall tree, in creeper or dead shrub; often in eucalypts and prickly shrubs, such as acacias or hakeas. (BirdLife Australia, 2023)
Dusky Woodswallow <i>Artamus cyanopterus</i>	BC Act – Vulnerable	Areas of woodland, including PCT 483, 1691, 3334, 3388 and 3781.	Clutches recorded August to January. Nest location can vary greatly. In shrub or low tree, living or dead, in horizontal or upright fork of branch, spout, hollow stump or log, behind piece of loose bark, or in hollow in top of fence post. Site can be exposed or well concealed by foliage. Has been observed nesting in mistletoe. (BirdLife Australia, 2023)
Hooded Robin <i>Melanodryas cucullata</i>	BC Act – Vulnerable	Areas of woodland, including PCT 1691, 3334, 3388 and 3781.	Eggs recorded from August to December. Nests usually in horizontal fork or on horizontal branch of tree or shrub; often on dead branch of living, but sometimes dead, tree; occasionally on fallen tree or limb, in hollow of stump, among epicormic growth from stump, or in centre of dense shrubs. (BirdLife Australia, 2023)
Speckled Warbler <i>Chthonicola sagittata</i>	BC Act – Vulnerable	Areas of woodland, including PCT 1691, 3334, 3388 and 3781.	Peak breeding September to November. Nests are well concealed, built in small depression on ground, among grass or low shrubs, fallen branches or rocks and leaf-litter; often at base of saplings, tussocks or shrubs, and often sheltered by overhanging branches of trees or shrubs. (BirdLife Australia, 2023)

4.9.3 Offset Obligation for Threatened Species

As a result of assumed impacts to species credit species, the following species credits are required to be offset by the Project (both solar farm and public roads combined):

- 13 species credits for assumed impacts and six (6) species credits for impacts to the Barking Owl.
- 1,433 species credits for assumed impacts to the Regent Honeyeater.
- 14 species credits for assumed impacts to the *Commersonia rosea*.
- 2 species credits for assumed impacts to the Pine Donkey Orchid.
- 85 species credits for assumed impacts to the Large-eared Pied Bat.
- 25 species credits for assumed impacts to the Giant Burrowing Frog.
- 3 species credits for assumed impacts to the Pale-headed Snake.
- 64 species credits for assumed impacts to the Broad-headed Snake.
- 3 species credits for assumed impacts to the Common Planigale.
- 14 species credits for assumed impacts to the Eastern Cave Bat.

The retirement of species credits is being undertaken in accordance with the NSW Biodiversity Offset Scheme with a focus on offsetting impacts where possible through a BSS, established over the residual parts of the Solar Farm property (**Section 6.13**).

4.10 Weeds and Pests

4.10.1 Pest Species

A total of four exotic fauna species were recorded by Umwelt (2023) within the Project Area during field investigations as follows:

- *Sus scrofa* (Feral Pig);
- *Lepus capensis* (Brown Hare).
- *Oryctolagus cuniculus* (Rabbit).
- *Vulpes vulpes* (Fox).

4.10.2 Weed Species

Three exotic flora species listed as Priority Weeds under the Biosecurity Act for the Hunter Local Land Service Region were recorded within the Project Area (Umwelt, 2024a). One of these species is also listed as a Weed of National Significance (WONS). In addition, 15 High Threat Weeds (HTW) as defined within BAM were recorded within the Project Area. These weed species, their classification and control orders are detailed in **Table 4.5**.

Table 4.5 Priority Weeds and WONS Recorded in the Project Area

Weed Species	Classification	Control Order (as per Biosecurity Act)
Khaki Weed <i>Alternanthera pungens</i>	HTW	N/A
Cobbler's Pegs <i>Bidens pilosa</i>	HTW	N/A
Greater Beggar's Ticks <i>Bidens subalternans</i>	HTW	N/A
Saffron Thistle <i>Carthamus lanatus</i>	HTW	N/A
Fireweed <i>Senecio madagascariensis</i>	HTW, Priority Weed, WONS	Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.
Bathurst Burr <i>Xanthium spinosum</i>	HTW	N/A
St. Johns Wort <i>Hypericum perforatum</i>	HTW, Priority Weed	Regional Recommended Measure Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.
Umbrella Sedge <i>Cyperus eragrostis</i>	HTW	N/A
Onion Grass <i>Romulea rosea var. australis</i>	HTW	N/A
Great Brome <i>Bromus diandrus</i>	HTW	N/A
Kikuyu Grass <i>Cenchrus clandestinus</i>	HTW	N/A
Rhodes Grass <i>Chloris gayana</i>	HTW	N/A
Coolatai Grass <i>Hyparrhenia hirta</i>	HTW, Priority Weed	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.
Paspalum <i>Paspalum dilatatum</i>	HTW	N/A
Sheep Sorrel <i>Acetosella vulgaris</i>	HTW	N/A

5.0 Environmental Aspects and Impacts

The construction and operational phases of the Project have the potential to impact biodiversity values within the Development Footprint which cannot be avoided. This would occur through direct and indirect impacts. Direct impacts to biodiversity values include clearing of native vegetation, clearing of suitable habitat for threatened and protected flora and fauna species, and the installation of infrastructure. Indirect impacts to biodiversity values include soil and water contamination, creation of barriers to fauna movement or the generation of excessive dust, light or noise upon the surrounding environment i.e. off-site.

Table 5.1 details the type, frequency, intensity, duration, and consequence of the direct and indirect impacts to biodiversity values that may occur due to the Project.

Table 5.1 Direct and Indirect Impacts to Biodiversity Values Due to the Project

Nature of Impact	Extent	Frequency	Duration and Timing	Potential Consequence
Direct Impacts				
Habitat clearance for permanent and temporary construction facilities	792.19 ha – (Solar Farm Development Footprint) 13.17 ha – (Road Upgrades Development Footprint)	One-off	Construction Phase: Long-term.	<ul style="list-style-type: none"> • Direct loss of native flora and fauna habitat. • Potential over-clearing of habitat outside the Development Footprint. • Injury and mortality of fauna during clearing of fauna habitat and habitat trees. • Disturbance to stags, fallen timber, and bush rock.
Displacement of resident fauna	Unknown	One-off	Construction and Operational Phases: Long-term.	<ul style="list-style-type: none"> • Direct loss of native fauna. • Decline in local fauna populations.
Injury or death of fauna	Unknown	Irregular	Construction Phase: Short-term.	<ul style="list-style-type: none"> • Direct loss of native fauna. • Decline in local fauna populations.
Removal of habitat features e.g. hollow-bearing trees (HBTs)	Unknown	One-off	Construction Phase: Long-term.	<ul style="list-style-type: none"> • Direct loss of native fauna habitat. • Injury and mortality of fauna during clearing of habitat features.
Bush rock removal and disturbance	Surface rock within Development Footprint	One-off	Construction Phase: Long-term.	<ul style="list-style-type: none"> • Direct loss of native fauna habitat. • Injury and mortality of fauna during clearing of habitat features.
Shading by solar infrastructure	Refer to Figure 2.2	On-going	Operational Phase: Long-term.	<ul style="list-style-type: none"> • Modification of native fauna and flora habitat.
Existence of permanent solar infrastructure	Refer to Figure 2.2	On-going	Operational Phase: Long-term.	<ul style="list-style-type: none"> • Modification of native fauna and flora habitat. • Reduced opportunity for fauna movements across landscape.

Nature of Impact	Extent	Frequency	Duration and Timing	Potential Consequence
Indirect Impacts				
Inadvertent impacts on adjacent habitat or vegetation	Unknown	Rare	Construction Phase: Short-term.	<ul style="list-style-type: none"> • Direct loss of native flora and fauna habitat. • Injury and mortality of fauna during clearing of fauna habitat and habitat trees. • Disturbance to stags, fallen timber, and bush rock. • Increased edge effects.
Reduced viability of adjacent habitat due to edge effects	Unknown	Constant	Operational Phase: Long-term.	<ul style="list-style-type: none"> • Degradation of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC. • Loss of native flora and fauna habitat.
Reduced viability of adjacent habitat due to noise, dust or light spill	Unknown	Rare	Operational Phase: Short-term.	<ul style="list-style-type: none"> • Loss of foraging habitat.
Transport of weeds and pathogens from the Development Footprint to adjacent vegetation	Unknown	Irregular	Construction and Operational Phases: Long-term.	<ul style="list-style-type: none"> • Degradation of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC. • Loss of native flora and fauna habitat.
Increased risk of starvation, exposure and loss of shade or shelter	Unknown	Constant	Construction and Operational Phases: Long-term.	<ul style="list-style-type: none"> • Loss of foraging habitat.
Loss of breeding habitats	Unknown	Constant	Construction Phase: Long-term.	<ul style="list-style-type: none"> • Loss of breeding habitat.
Increased soil salinity	Unknown	Irregular	Operational Phase: Long-term.	<ul style="list-style-type: none"> • Degradation of White Box – Yellow Box – Blakley's Red Gum Woodland and Derived Native Grassland CEEC.

6.0 Mitigation and Management

6.1 Overview

Table 6.1 describes the biodiversity mitigation and management measures for the Project. From left to right, the columns of **Table 6.1** describe:

- The ‘Source’: where the biodiversity mitigation and/or management measure has been recommended for the Project.
- The ‘ID’: a unique identifier for each mitigation strategy identified in this BMP.
- The ‘Aspect’: a high-level summary of what biodiversity matter is being mitigated.
- The ‘Mitigation / Management Measure’: the actions that will be undertaken to reduce the biodiversity impacts of the Project, including a summary of any proposed techniques that will be used to implement the biodiversity mitigation and/or management measures.
- The ‘Project Phase’: identifies what part of the Project phase the biodiversity mitigation and/or management measure will apply. A biodiversity mitigation and/or management measure can apply to multiple Project phases.
- The ‘Responsible Party’: identifies which group is responsible for implementing the applicable biodiversity mitigation and/or management measure. The ‘Personnel Responsible’ column identifies the individual from the ‘Responsible Party’ who is to implement the biodiversity mitigation and/or management measure. Numbers 1–5 have been used to represent which individual is responsible, as follows:
 1. Lightsource bp Development Principal.
 2. Engineer, Procurement & Construction (EPC) Site Manager.
 3. EPC Health, Safety and Environment (HSE) Coordinator.
 4. Contractor Ecologist.
 5. All Employees and Contractors.

Note: for some mitigation measures, there is more than one ‘Responsible Party’ and ‘Personnel Responsible’.

- The ‘Timing/Frequency’: describes when a biodiversity mitigation and/or management measure is to be implemented.
- The ‘Implementation Action’: describes the procedures that show how the proposed techniques for the biodiversity mitigation and/or management measures are practically being done within the Development Footprint. These procedures are described in **Section 6.0**.
- The ‘Compliance Record’: identifies the record that will be used to maintain compliance with the applicable biodiversity mitigation and/or management measure.

Table 6.1 Biodiversity Mitigation and Management Measures for the Project

Source	ID	Aspect	Mitigation / Management Measure	Project Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Principal (lightsource bp)	Construction Manager	Operations and Maintenance Contractor	Personnel ^{1,2,3,4,5}			
SSD 33964533 Development Consent	BMP-01a	Biodiversity (general)	Prepare a BMP in accordance with Condition B16.	✓	✓	✓	✓	✓	—	—	1	Prior to any development which could have direct or indirect impacts on biodiversity values	This BMP	This BMP
SSD 33964533 Development Consent	BMP-01b	Biodiversity (general)	Implement this BMP in accordance with Condition B16.	✓	✓	✓	✓	✓	✓	✓	5	Prior to any development which could have direct or indirect impacts on biodiversity values	This BMP	This BMP
BDAR (Umwelt 2024a)	BMP-02	Biodiversity (general)	Inductions for the workforce will be undertaken to make them aware of the key ecological issues present in the development footprint to aid in their understanding of their role and responsibilities in the protection and/or minimisation of impacts to all native biodiversity.	✓	✓	✓	✓	—	✓	✓	2 & 3	As required	Training requirements (Section 8.1)	Induction Register Pre-start briefing This BMP
BDAR (Umwelt 2024a)	BMP-03	Biodiversity (general)	Inductions will identify the location of sensitive flora and fauna, including any defined no-go areas, and the policies being implemented to protect the biodiversity values of such areas.	✓	✓	✓	✓	—	✓	✓	2 & 3	As required	Training requirements (Section 8.1)	Induction Register Pre-start briefing This BMP
BDAR (Umwelt 2024a)	BMP-04	Biodiversity (flora)	BMP will include responsibilities with respect to weed management and biosecurity.	✓	✓	✓	✓	—	✓	✓	2, 3 & 4	Monthly	Weed and Pathogen Management Procedure (Section 6.6)	Weed Inspection Checklist
BDAR (Umwelt 2024a)	BMP-05	Biodiversity (general)	Appropriate temporary fencing (or other form of suitable marking measures) and signposting of no-go areas to prevent the uncontrolled entry of people, accidental disturbance and to minimise vehicular and human traffic. Security fencing will also be constructed around the perimeter of the Project for access control purposes.	✓	✓	✓	✓	—	✓	✓	2, 3 & 4	As required	Exclusion Fencing and 'No go Zone' Procedure (Section 6.3.2)	Induction Register Pre-start briefing Weekly Site Environmental Inspection Record
BDAR (Umwelt 2024a)	BMP-06	Biodiversity (general)	Clear and visible signage is to be appropriately located to inform the workforce and others of the restricted access or otherwise of no-go areas, including the BSS outside the Development Footprint.	✓	✓	✓	✓	—	✓	✓	2, 3 & 4	Once off	Exclusion Fencing and 'No go Zone' Procedure (Section 6.3.2)	Monthly Inspection Job Safety and Environment Observation Record
BDAR (Umwelt 2024a)	BMP-07	Biodiversity (general)	Worker education and awareness of exclusion areas, including as delivered through site induction information.	✓	✓	✓	✓	—	✓	✓	2, 3 & 4	Daily	Training requirements (Section 8.1)	Induction Register Pre-start briefing

Source	ID	Aspect	Mitigation / Management Measure	Project Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Principal (Lightsource bp)	Construction Manager	Operations and Maintenance Contractor	Personnel Responsible 1,2,3,4,5			
BDAR (Umwelt 2024a)	BMP-08	Biodiversity (general)	The use of GPS enabled machinery (where available) to help prevent accidental disturbance of exclusion areas.	✓	✓	✓	✓	—	✓	✓	2, 3 & 4	Daily	Exclusion Fencing and 'No go Zone' Procedure (Section 6.3.2)	Induction Register Pre-start briefing
BDAR (Umwelt 2024a)	BMP-09	Biodiversity (fauna)	Pre-clearance surveys and tree felling supervision will be undertaken by an appropriately qualified and experienced ecologist to minimise potential impacts to fauna species, particularly hollow-dependent fauna.	✓	✓	—	—	—	✓	—	2, 3 & 4	Daily	Monitoring the Total Clearing Footprint for the Development (Section 6.3.1) Tree Felling and Fauna Habitat Feature Removal Procedure (Section 6.3.6) Pre-Clearance Survey Procedure (Section 6.3.3) and Pruning, Mowing and Managing Regrowth Procedure (Section 6.3.5)	Induction Register Pre-start briefing Vegetation Clearance Procedures Fauna Finds Register
BDAR (Umwelt 2024a)	BMP-10	Biodiversity (flora)	A detailed tree-felling supervision protocol is to be developed and documented as part of the CEMP for the Project. <i>Note: The tree felling procedure is included in Section 6.3.6 of this document and will not be duplicated in a CEMP.</i>	✓	✓	—	—	—	✓	—	2, 3 & 4	Once off	Tree Felling and Fauna Habitat Feature Removal Procedure (Section 6.3.6) Pre-Clearance Survey Procedure (Section 6.3.3) and Pruning, Mowing and Managing Regrowth Procedure (Section 6.3.5)	Pre-start briefing Vegetation Clearance Procedures
BDAR (Umwelt 2024a)	BMP-11	Biodiversity (fauna)	Rock piles within the site should be retained (where possible) or otherwise relocated to Project exclusion areas and / or the BSS during pre-clearance surveys.	✓	✓	—	—	—	✓	—	2, 3 & 4	During pre-clearance surveys.	Re-use of Rocks (Section 6.9.2.3)	Induction register Pre-start briefing Vegetation Clearance Procedures
BDAR (Umwelt 2024a)	BMP-12	Biodiversity (general)	A Stormwater Management Plan including an Erosion Sediment Control Plan (ESCP) will be prepared to appropriately limit post Project flows and manage downstream water quality as part of the site establishment and clearing works.	✓	✓	—	—	—	✓	—	2 & 3	Once off preparation and ongoing implementation	Waterways Management (Section 6.11)	Soil and Water Management Plan Induction register

Source	ID	Aspect	Mitigation / Management Measure	Project Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Principal (Lightsource bp)	Construction Manager	Operations and Maintenance Contractor	Personnel Responsible ^{1,2,3,4,5}			
BDAR (Umwelt 2024a)	BMP-13	Biodiversity (flora)	Pre-clearance surveys will identify invasive weed species, which will be treated prior to the disturbance of topsoil within the Development Footprint to prevent an outbreak and / or the spread of species to previously unaffected areas within the Development Footprint.	✓	✓	—	—	—	✓	—	2, 3 & 4	As required	Weed and Pathogen Management Procedure (Section 6.6) Weed Inspection (Section 6.6.1) and Weed Treatment (Section 6.6.2)	Induction register Pre-clearance surveys Vegetation Clearance Procedures
BDAR (Umwelt 2024a)	BMP-14	Biodiversity (flora)	Ongoing environmental inspections and treatment of outbreaks of invasive weed species as required within the Development Footprint during construction and operation of the Project.	✓	✓	✓	✓	—	✓	✓	2, 3 & 4	Monthly	Weed and Pathogen Management Procedure (Section 6.6)	Monthly Management Job Safety and Environment Observation Record.
BDAR (Umwelt 2024a)	BMP-15	Biodiversity (flora)	All machinery and equipment will be cleaned thoroughly prior to entering the Development Footprint. Cleaning must include the removal of all mud and plant matter (inside and out), followed by washing with high pressure water.	✓	✓	✓	✓	—	✓	✓	2, 3 & 4	Daily	Vehicle Hygiene Procedure (Section 6.6.5).	Induction register Monthly Management Job Safety and Environment Observation Record. Weed Inspection Clearance Certificate
BDAR (Umwelt 2024a)	BMP-16	Biodiversity (fauna)	A security fence will be constructed to deter medium and large-sized terrestrial mammals from occupying and becoming entrapped within the site infrastructure.	✓	✓	—	—	—	✓	—	2, 3 & 4	Once off	Exclusion Fencing and 'No go Zone' Procedure (Section 6.3.2)	This BMP
BDAR (Umwelt 2024a)	BMP-17	Biodiversity (fauna)	Maintain a wildlife corridor cross the Project Area through retention of large areas of suitable habitat for the regent honey eater (<i>Anthochaera phrygia</i>) and White Box – Yellow Box – Blakely's Red Gum Grassy woodland and derived native grassland.	✓	✓	✓	✓	—	✓	✓	2, 3 & 4	Construction and Operation	Exclusion Fencing and 'No go Zone' Procedure (Section 6.3.2)	Monthly Management Job Safety and Environment Observation Record.
Aquatic Assessment (Coastal Ecology 2023)	BMP-18	Biodiversity (riparian Vegetation)	Detailed design and construction planning avoided direct impacts on native riparian vegetation.	✓	✓	—	—	—	✓	—	2, 3 & 4	Detailed design/ Pre-construction	Vegetation Clearance Procedures (Section 6.3) Exclusion Fencing and 'No go Zone' Procedure (Section 6.3.2)	Pre-start briefing Vegetation Clearance Procedures
Aquatic Assessment (Coastal Ecology 2023)	BMP-19	Biodiversity (aquatic habitat)	Detailed design and construction planning would seek to identify refinements that further avoid or minimise impacts on key fish habitat (KFH).	✓	✓	—	—	—	✓	—	2, 3 & 4	Detailed design/ Pre-construction	Waterways Management (Section 6.11)	This BMP Vegetation Clearance Procedures Soil and Water Management Plan

Source	ID	Aspect	Mitigation / Management Measure	Project Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Principal (Lightsource bp)	Construction Manager	Operations and Maintenance Contractor	Personnel Responsible ^{1,2,3,4,5}			
Aquatic Assessment (Coastal Ecology 2023)	BMP-20	Biodiversity (aquatic habitat)	Fish passage would be maintained at watercourses identified as KFH within the Development Footprint. It is proposed that culverts would be installed to prevent blocking of fish passage where access roads cross watercourses.	✓	✓	—	✓	—	✓	—	2, 3 & 4	Detailed design/ Pre-construction / Construction	Waterways Management (Section 6.11)	Monthly inspection Job Safety and Environment Observation Record.
Aquatic Assessment (Coastal Ecology 2023)	BMP-21	Biodiversity (fauna)	Pre-clearance surveys would be carried out prior to construction by a suitability qualified ecologist including native aquatic fauna salvage in accordance with the farm dam dewatering policy. Any salvaged aquatic fauna would be relocated to similar habitat nearby.	✓	✓	—	—	—	✓	—	2, 3 & 4	Pre-construction/ Construction	Aquatic Fauna Salvage Procedure (Section 6.4.5.1) Dam Dewatering Policy (Section 6.4.5)	Pre-start briefing Pre-clearance surveys
Aquatic Assessment (Coastal Ecology 2023)	BMP-22	Water (instream impacts)	Appropriate erosion and sediment control would be installed in accordance with the Erosion and Sediment Control Plan, around ground disturbance works conducted on waterfront land or within watercourses mapped as KFH.	✓	✓	✓	✓	—	✓	✓	2 & 3	Construction	Waterways Management (Section 6.11)	Weekly Site Environmental Inspection Record Pre-start briefing Soil and Water Management Plan
Aquatic Assessment (Coastal Ecology 2023)	BMP-23	Biodiversity (riparian vegetation)	Exclusion areas established and maintained around riparian vegetation to be retained on waterfront land (40 metres from top of bank for watercourses with defined bed and banks (parts of Redlynch Creek and Rocky Creek).	✓	✓	✓	✓	—	✓	✓	2 & 3	Construction	Exclusion Fencing and 'No go Zone' Procedure (Section 6.3.2)	Pre-start briefing Vegetation Clearance Procedures
Aquatic Assessment (Coastal Ecology 2023)	BMP-24	Biodiversity (riparian vegetation)	Activities within vegetated riparian zones would be managed to minimise impacts to aquatic environments as far as practicable. Riparian areas subject to disturbance would be progressively stabilised and rehabilitated. The spread of exotic species would be minimized through implementation of the Weed and Pest Management Plan. <i>Note: The Weed and Pest Management Plan has been incorporated as Section 6.6 of this document.</i>	✓	✓	✓	✓	—	✓	✓	2, 3 & 4	Construction	Vegetation Clearance Procedures (Section 6.3) Weed and Pathogen Management Procedure (Section 6.6) Waterways Management (Section 6.11)	Monthly Management Job Safety and Environment Observation Record Pre-start.
Aquatic Assessment (Coastal Ecology 2023)	BMP-25	Water (instream impacts)	Instream works in areas mapped as KFH (i.e. Redlynch Creek, unnamed tributary of Pogy Creek and unnamed tributary of Rocky Creek) would be undertaken in dry conditions as far as practicable and appropriate erosion and sediment control would be installed and maintained. Watercourses impacted by instream works would have the bed and bank morphology reinstated, and disturbed areas would be stabilized using vegetation to minimize erosion in accordance with the BMP.	✓	✓	—	—	—	✓	—	2, 3 & 4	Construction/ Decommissioning	Waterways Management (Section 6.11)	Pre-start briefing Weekly Site Environmental Inspection Record Vegetation Clearance Procedures

Source	ID	Aspect	Mitigation / Management Measure	Project Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Principal (Lightsource bp)	Construction Manager	Operations and Maintenance Contractor	Personnel Responsible ^{1,2,3,4,5}			
Aquatic Assessment (Coastal Ecology 2023)	BMP-26	Biodiversity (unexpected finds)	A species unexpected finds protocol would be implemented if threatened species, not assessed in the aquatic assessment, are identified in the Development Footprint. This would include stop work orders in the immediate area and notifying DPHI.	✓	✓	—	✓	—	✓	—	2, 3 & 4	Construction	Unexpected Threatened Species Finds Protocol (Section 6.5)	This BMP Unexpected Threatened Species Finds Protocol
Aquatic Assessment (Coastal Ecology 2023)	BMP-27	Water (instream impacts)	Refuelling would be conducted outside of waterfront land with appropriate measures in place to avoid impacts to waterways, aquatic habitats, and groundwater. This includes spill kits always kept with maintenance vehicles and or machinery within 100 metres of a watercourse.	✓	✓	✓	✓	—	✓	✓	2 & 3	Construction, Operation and Decommissioning	Waterways Management (Section 6.11)	Soil and Water Management Plan
Aquatic Assessment (Coastal Ecology 2023)	BMP-28	Biodiversity (flora)	Herbicides used to control exotic species within the Project Area would be applied in accordance with relevant application guidelines.	✓	✓	✓	✓	—	✓	✓	2, 3 & 4	Construction and Operation	Herbicide Application Record (Section 6.6.2.1).	Safety Datasheets (SDS)
Amendment Report (Umwelt 2023b)	BMP-29	Biodiversity (fauna)	The BMP will include implementation of measures to minimise fauna strike, as follows: <ul style="list-style-type: none"> Speed limits will be enforced on roads within the Project Area during construction and operation, to reduce the risk of fauna strikes. Native fauna encountered along access tracks during construction and operation would be avoided and given an opportunity to move on. 	✓	✓	✓	✓	✓	✓	✓	1, 2, 3, 4 & 5	Construction and Operation	Vehicle Strike (Section 6.4.2.1)	Traffic Management Plan
Amendment Report (Umwelt 2023b)	BMP-30	Biodiversity (riparian vegetation)	Sections of Redlynch Creek and the unnamed tributary of Rocky Creek containing bed and banks, are to be electronically mapped in order to identify Waterfront land. Waterfront land is measured as 40 m from the top of bank and any waterfront land disturbed is to be revegetated following completion of works.	✓	—	—	—	—	✓	—	2 & 3	Pre-Construction	Waterways Management (Section 6.11 and Figure 2.2)	Detailed designs
This BMP	BMP 31	Biodiversity (riparian vegetation)	The Development Footprint will be marked out, with retained vegetation, important environmental features and everything outside to be identified as a 'No-go Zone'.	✓	✓	✓	✓	—	✓	✓	2, 3 & 4	Construction, Operation and Decommissioning	Exclusion Fencing and 'No go Zone' Procedure (Section 6.3.2)	Weekly Site Environmental Inspection Record Monthly Management Job Safety and Environment Observation Record. Pre-start briefing

Source	ID	Aspect	Mitigation / Management Measure	Project Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Decommissioning	Principal (Lightsource bp)	Construction Manager	Operations and Maintenance Contractor	Personnel Responsible ^{1,2,3,4,5}			
This BMP	BMP 32	Biodiversity (threatened Species)	<ul style="list-style-type: none"> Identify if timing constraints for threatened species are applicable when undertaking this work, i.e., are the clearing activities occurring during the critical life cycle events (breeding or nursing times) for the threatened species that were identified or assumed as being present within the Development Footprint (see Section 4.9). If so, the procedures presented in Section 6.3.3, Section 6.3.6, Section 6.4 and Section 6.5 are to be known and implemented by those undertaking clearing activities. 	✓	✓	—	—	—	✓	—	2, 3 & 4	Construction	Vegetation Clearance Procedures (Section 6.3)	Implementation of: <ul style="list-style-type: none"> Pre Clearance-Survey Procedure. Tree Felling and Fauna Habitat Feature Removal Procedure. Fauna Handling Procedure. Unexpected Threatened Species Finds Protocol.
This BMP	BMP 33	Biodiversity (weeds)	<ul style="list-style-type: none"> Prior to the commencement of clearing, the location of weeds and pathogens within the Project Area will be surveyed and mapped prior to or as part of pre-clearance surveys. The ecologist will use the survey as a basis to provide / confirm applicable weed (primary and secondary) and pathogen control methods. 	✓	✓	—	—	—	✓	—	2, 3 & 4	Construction	Weed and Pathogen Management Procedure (Section 6.6)	Weed Baseline Surveys
This BMP	BMP 34	Biodiversity (operational vegetation management)	<ul style="list-style-type: none"> Mowing, weed control, and removal of revegetating woody vegetation will occur under and around the solar farm infrastructure through operation and manage access, safety and bushfire risk. The height of vegetation under and around the solar infrastructure should be maintained to an average height of 15 cm, or as advised to be suitable for site conditions by a bushfire specialist. 	—	—	✓	—	—	—	✓	3	Operation	Pruning, Mowing and Managing Regrowth Procedure (Section 6.3.5)	Unexpected Threatened Species Finds Protocol

6.2 Environmental Management Protocols and Procedures

The construction and operational phases of the Project have the potential to impact biodiversity values within the Development Footprint which cannot be avoided. This would occur through direct and indirect impacts.

Direct impacts to biodiversity values include clearing of native vegetation, clearing of suitable habitat for threatened and protected flora and fauna species, and the installation of infrastructure. Indirect impacts to biodiversity values include soil and water contamination, creation of barriers to fauna movement or the generation of excessive dust, light or noise upon the surrounding environment i.e. off-site.

This section summarises the environmental management protocols and procedures that will be implemented to manage, and where possible further minimise, the biodiversity impacts of the Project during the construction, operation and decommissioning phases. The specific protocols and procedures associated with each phase are described below.



Procedures Applicable to Early Works

- Vegetation Clearance Procedure – **Section 6.3**
- Fauna Handling Procedure – **Section 6.4**
- Unexpected Threatened Species Finds Procedure – **Section 6.5**
- Weed and Pathogen Management Procedure – **Section 6.6**
- Pest Management Procedure – **Section 6.7**



Procedures Applicable to Main Works

- Vegetation Clearance Procedure – **Section 6.3**
- Fauna Handling Procedure – **Section 6.4**
- Unexpected Threatened Species Finds Procedure – **Section 6.5**
- Weed and Pathogen Management Procedure – **Section 6.6**
- Pest Management Procedure – **Section 6.7**
- Rehabilitation and Restoration Procedure – **Section 6.9**



Procedures Applicable to Operations

- Vegetation Clearance Procedure – **Section 6.3**
- Fauna Handling Procedure – **Section 6.4**
- Unexpected Threatened Species Finds Procedure – **Section 6.5**
- Weed and Pathogen Management Procedure – **Section 6.6**
- Pest Management Procedure – **Section 6.7**



Procedures Applicable to Decommissioning

- Vegetation Clearance Procedure – **Section 6.3**
- Fauna Handling Procedure – **Section 6.4**
- Unexpected Threatened Species Finds Procedure – **Section 6.5**
- Weed and Pathogen Management Procedure – **Section 6.6**
- Pest Management Procedure – **Section 6.7**
- Rehabilitation and Restoration Procedure – **Section 6.9**

6.3 Vegetation Clearance Procedures

All vegetation clearance procedures and activities will be managed and implemented by the Construction Manager and the EPC HSE Coordinator during the early works and main work construction phases of the Project.

In accordance with Condition B13 of the Development Consent and Condition A1 (a) of the EPBC Approval, no native vegetation or fauna habitat located outside the approved disturbance areas described in the EIS will be cleared. In addition, no vegetation stockpiling or storage would occur within dripline (the area directly located under the outer circumference of the tree branches) of any mature trees.

6.3.1 Monitoring the Total Clearing Footprint for the Project

Vegetation clearance is only permitted in the areas identified within the Development Footprint in the EIS (Umwelt 2024a, 2024b). **Table 6.2** specifies the total amount of clearance that is permitted by the Project.

Prior to any vegetation clearing, the Construction Contractor Manager will liaise with the Construction Contractor HSE Coordinator to identify and display clearance boundaries for the Development Footprint. Clearance boundaries will be clearly demarcated using appropriate materials, such as orange flagging tape, fencing, or a combination of both, to ensure that all areas are visibly marked and easily identifiable. Additionally, survey teams will be deployed to conduct thorough assessments of the Project Area, and GIS (Geographic Information System) databases will be utilised as a tool to both inform the clearing process and accurately record the boundaries.

The cumulative amount of vegetation cleared will be progressively monitored by the Construction Contractor HSE Coordinator. Prior to undertaking any clearing, the area to be cleared will be compared to the total approved area to be cleared to ensure that the Project does not exceed the clearing limits specified in **Table 6.2**.

Table 6.2 Total Amount of Clearance Permitted by the Development Consent

PCT	Condition	Clearance Limit (ha)
Solar Farm Development Footprint		
PCT 483: Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley	Scattered Trees	22.49
	Moderate Derived Native Grassland	165.36
	Moderate to Low Derived Native Grassland	310.03
	Low Derived Native Grassland	195.98
PCT 1661: Narrow-leaved Ironbark – Black Pine – Sifton Bush heathy open forest on sandstone ranges of the upper Hunter and Sydney Basin	Scattered Trees	2.66
	Moderate to Low Derived Native Grassland	37.65
	Low Derived Native Grassland	54.98
Road Upgrades Development Footprint		
PCT 483: Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley	Remnant Trees	0.20
	Exotic Dominated Grassland	3.12

PCT	Condition	Clearance Limit (ha)
PCT 1691: Narrow-leaved Ironbark - Grey Box grassy woodland of the central and upper Hunter	Remnant Trees	0.09
PCT 3334: Western Hunter Flats Red Gum Sedge Forest	Roadside Remnant Forest	0.04
PCT 3388: Central West Valleys White Box Forest	Roadside Remnant Forest	0.36

In accordance with Condition A2 of the EPBC Approval. Lightsource bp must not clear more than the following approval limits:

- 494.43 ha of Box Gum Woodland
- 42.46 ha of Regent Honeyeater habitat
- 22.49 ha of Painted Honeyeater habitat.

The reporting of vegetation clearing will be undertaken in accordance with the reporting requirements in **Section 8.0**.

6.3.2 Exclusion Fencing and ‘No-go Zone’ Procedure

To protect vegetation and fauna habitat that is outside of the approved disturbance areas, exclusion fencing, and signage will be used to safeguard areas designated for avoidance. These "No-go Zones" are regions primarily outside the established clearing boundaries however there are a number of small zones within the Development Footprint including two areas which form part of the Goulburn River BSS (refer to **Figure 6.1**).

No clearing or activities that could cause direct or indirect impacts will be permitted to be undertaken within these areas. The locations of these ‘No-go Zones’ will be communicated to construction and operational site staff (including equipment operators) through site inductions, toolbox talks and targeted training prior to any work in the area. To help prevent accidental disturbance of these zones, GPS enabled machinery (where available) would be used.

Additionally, three wildlife corridors within the Development Footprint, shown in **Figure 6.1** will be retained to enable terrestrial wildlife movement across the broader landscape. The access tracks linking the three areas of the Development Footprint will remain unfenced to avoid habitat fragmentation and ensure continued access for terrestrial wildlife across the Project Area. Furthermore the Project will retain all trees (inclusive of a 100 m buffer) where Barking Owls were observed during the BDAR with the exception of one tree where highly disturbed grazing land within the 100-m buffer would be impacted (refer to **Figure 6.1**). A compensatory buffer on the western side of this tree has been retained to ensure that the suitability of the tree as nesting habitat is retained.

The three areas which form the Development Footprint will be fenced for safety and security purposes, as well as to deter fauna from occupying and becoming entrapped within the site infrastructure. The Project is committing to an atypical solar farm fence design, in acknowledgement of the biodiversity values present in the Project Area and the surrounding national park. The fence specification will not include barbed wire. It will instead be wire mesh with galvanised bracing, to a height of 2,000 mm above ground.

Exclusion zones and signage will also be used to identify areas outside of the Development Footprint that are not to be disturbed. The No-go Zones will be marked out by the EPC HSE Coordinator. Typical measures to mark out the No-Go Zones will include:

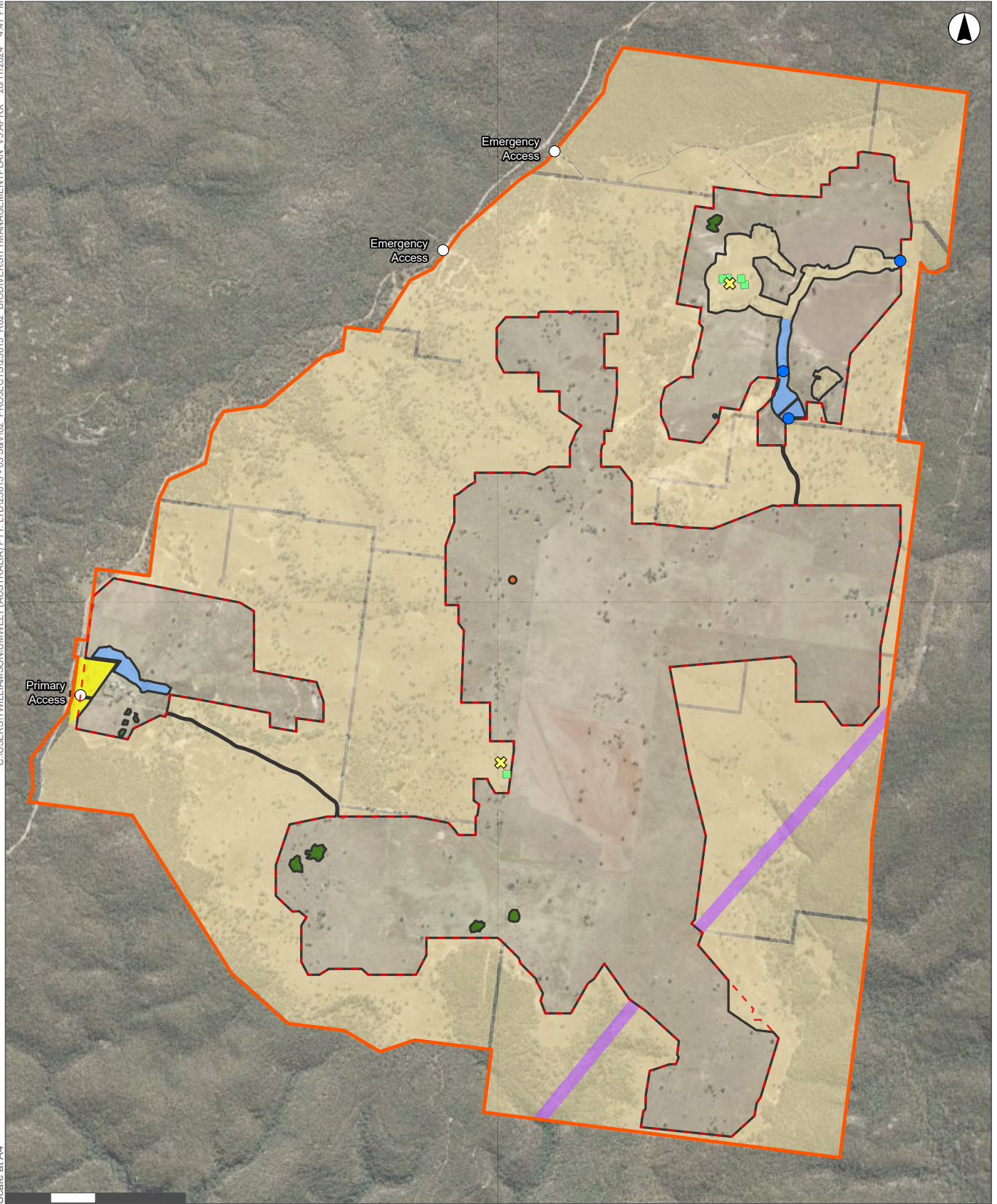
- Use of temporary fencing such as construction hoarding.
- Orange flag tape, para-webbing, or rope.
- Use of more permanent fencing, incorporating star pickets and two or more strands of plain wire. This approach would preferentially reuse fencing materials which will be removed from the wider Project Area as part of a management action in the BSS.

'No-go Zones' will display signage accordingly.



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Legend

- | | |
|--|--|
| ○ Access Point | Project Area |
| ● Indicative Location of Water Crossings
*up to a maximum of 3 waterway crossings for access tracks | No Go Zones |
| ⊗ Barking Owl Observation Locations | Biodiversity Stewardship Site – Avoidance Area |
| ■ Hollow Bearing Trees >20cm Opening
(where Barking Owl activity detected) | Biodiversity/Heritage Values – Avoidance Area |
| - - Security Fence | Historic Heritage – Avoidance Area |
| ▭ Development Footprint | Residual Land – Avoidance Area |
| | Travelling Stock Reserve – Avoidance Area |
| | Waterway and/or Flood Hazard – Avoidance Areas |

FIGURE 6.1
Location of No-go Zones Overview

6.3.3 Vegetation Disturbance Permit Procedure

Prior to vegetation clearing occurring a Vegetation Disturbance Permit (VDP) is to be acquired. The VDP and the associated clearance survey procedures are designed to:

- Provide a hold-point to ensure the Project is being undertaken in accordance with the approved clearance limits for the Development Footprint.
- Mitigate the impact of the Project on TECs, flora, fauna, and their habitat by reducing impacts to native vegetation from clearing activities.

The following process is to be completed to obtain a VDP:

- Identify the location that is planned for clearing.
- Confirm that the clearing activities are within the approved clearance boundaries for the Project.
- Confirm if the clearing activities will contribute to the approved clearance limits for the Project and that they will not be exceeded. In circumstances where clearing is trending towards its disturbance limit; it is the responsibility of the EPC HSE Coordinator to provide internal guidance to the Construction Manager to ensure that limits are not exceeded. If an exceedance does occur, the EPC HSE Coordinator will notify the Lightsource bp Development Principal who will then advise the relevant agencies to determine corrective procedures.
- Identify if timing constraints for threatened species are applicable when undertaking this work (see **Section 4.9**). If so, the procedures presented in **Section 6.3.3**, **Section 6.3.6**, **Section 6.4** and **Section 6.5** are to be known and implemented by those undertaking clearing activities.

Where vegetation is to be cleared, the EPC HSE Coordinator is responsible for ensuring the following measures are implemented:

- The VDP procedure described above has been implemented.
- The procedures presented in **Section 6.3.3**, **Section 6.3.6**, **Section 6.4** and **Section 6.5**. have been communicated to those undertaking clearing activities and are being implemented.
- Photos, as-built records, and inspection records which documents the above are held for the life of the Project.

6.3.4 Pre-Clearance Survey Procedure

Pre-clearance surveys will be carried out by an appropriately qualified and experienced ecologist (refer **Table 7.1** for responsibilities) on-site prior to any vegetation clearing.

Pre-clearance surveys will occur between one day and two weeks ahead of the clearing front, to ensure that information on fauna presence (particularly breeding fauna) is current.

The Pre-clearing Procedure is focused on the ecological impacts to biodiversity values as per Condition B13 of the Development Consent. Figure showing exclusion zones and hollow bearing trees where Barking Owls were observed in the Project Area are shown in **Figure 6.1** of this BMP. The ecologist should consider those threatened species known to occur in the Development Footprint (**Section 4.9**).

The following will be undertaken before any clearing activities have begun:

- Identify and mark all habitat trees (being those containing hollows, cracks, splits, spouts, large amounts of peeling bark sheets, active bird nests and possum dreys) using orange spray paint and/or orange flagging tape and record location using a GPS. It is expected that a habitat tree register would be prepared and updated following pre-clearance surveys, with details of the precise location, types of habitat and relevant management measures to be implemented prior to or during clearing activities.
- Inspect for and marking of animal dens/burrows, with attention paid to determining if they are currently used (e.g., signs of scratches, fresh soil, droppings/scats etc.).
- In cases where clearing is to be undertaken in spring or if inspections indicate potential habitat use, further investigation will be conducted using non-invasive tools such as spotlighting, inspection mirrors, endoscopes, or cameras to assess the interior of hollows where accessible.
- Identification and marking of habitat features with potential to be salvaged for later use. These may include fallen timber, hollow logs, and rocks/boulders. Location should be recorded with a GPS, mapped and where practical, marked with a star picket, temporary fencing, spray paint and/or flagging tape.
- Recording of observed vertebrate pests and prominent infestations of listed priority weeds for further management.
- An appropriately qualified and experienced ecologist will consider specific times of the year when species may be using habitat features for breeding or roosting and provide advice on further mitigative measures if occupation is observed or deemed likely.

The results of these surveys will be provided to the construction site staff involved in vegetation clearing, through site inductions, toolbox talks and targeted training as well as pre-start / daily meetings prior to the commencement of clearing.

The following process will be implemented by an appropriately qualified and experienced ecologist to minimise the area of disturbance and the amount of vegetation to be cleared for the Project.

The procedure is outlined below:

1. If the vegetation to be cleared is adjacent to vegetation that is not to be disturbed, an exclusion zone is to be delineated around the vegetation that is not to be disturbed prior to vegetation clearing. The exclusion zone will be delineated by using fencing, orange flagging tape, rope and 'No-go Zone' signage.
2. Check the vegetation that is to be cleared for hollows, rocky areas, or fauna habitat. If hollows, rocky areas, or fauna habitat are present refer to the hollow bearing tree/habitat removal procedure in **Section 6.3.6**.

3. If sufficient, prune the minimal amount of branches and foliage instead of clearing it. Proceed to the next step if pruning is not sufficient and the clearing of vegetation needs to occur.
4. Clear the vegetation and move it to an appropriate area e.g. remnant vegetation and or fauna habitat within the Project Area (this may include the BSS, where identified as appropriate by the BSSAR) (refer to **Section 6.9.2**).

Where possible, clearing of hollow-bearing trees with observed native fauna activity during spring will be avoided to minimise impacts on breeding. In cases where the clearing of hollow-bearing trees is necessary during Spring, additional pre-clearance measures will be implemented. These measures may include, but are not limited to, spotlighting and the inspection of tree hollows using a camera or endoscope.

Where avoiding felling of hollow-bearing trees with observed fauna activity is not possible, the following steps will be taken as a last resort, with guidance from the Contractor Ecologist. Noting that due to the avoidance measures in place, the likelihood of these steps being required is low (see also **Section 6.4**):

- Removing the nest/young and relocate to comparable habitat within a No-go Zone or the BSS.
- Removing the nest/young and relocating to a wildlife carer.
- If the nest/young cannot be reached the hollow bearing tree would be sectional dismantled by a climber or a suitable forest harvesting machine.

6.3.4.1 Removal of Farm Structures

Old structures (e.g. farm sheds) that are to be removed will be checked for resident fauna.

A pre-disturbance inspection undertaken by the Contractor Ecologist of these will focus on fauna that may be residing within cracks and crevices.

6.3.4.2 Threatened Fauna Species Assumed or Known Breeding

Barking Owl has the potential to nest in the vicinity of the Development Footprint (**Section 4.9**). If Barking Owl is observed during the breeding season (August to October), construction work within 100 m of the potential nest tree will be limited to low impact activities (as confirmed by the EPC HSE Coordinator in consultation with Lightsource bp, i.e., no piling) for the remaining duration of the breeding season.

If Regent Honeyeater is observed breeding, construction activity will stop in this area until a species expert is consulted. An exclusion zone would be established and maintained, as advised by the species expert. Note that the species expert has concluded that there is a low likelihood of occurrence of Regent Honeyeater in the Project Area (Crates, 2023), however this Critically Endangered species may have as few as 250 individuals remaining in the wild (Crates et al., 2021). An observation of this species breeding would be significant and warrant more stringent mitigation measures.

If another threatened species (i.e. **Section 4.9**) is observed displaying breeding behaviour (i.e., sitting on a nest, utilising tree hollows during that species breeding season), the Contractor Ecologist will advise on appropriate mitigation (see also **Section 6.5**).

In the unlikely event that a threatened species is orphaned or injured by clearing activities, it will be immediately transported to the nearest wildlife hospital for treatment. Any injuries or deaths of threatened fauna species must be reported immediately to the EPC HSE Coordinator and treated as an environmental incident (**Section 10.0**).

6.3.5 Pruning, Mowing, and Managing Regrowth Procedure

Pruning may be possible (as opposed to clearing) to retain native trees or maintaining amenity trees in the Development Footprint.

Appropriate tools to use for pruning are loppers, chainsaws and vehicle mounted saws. In the first instance, hollow bearing limbs will be retained. If this is not possible the hollow bearing limb will be inspected by an appropriately qualified and experienced ecologist and placed in adjacent undisturbed vegetation to provide fauna habitat (refer to **Section 6.9.2**).

During operation, vegetation management activities will include mowing, removal or slashing of regenerating woody vegetation in the vicinity of solar infrastructure and weed control (see also **Section 6.6**). Grass should be kept mown and leaves and vegetation debris should be removed to appropriately reduce fuel loads. The height of vegetation under and around the solar infrastructure should be maintained to an average height of 15 cm, or as advised to be suitable for site conditions by a bushfire specialist.

6.3.6 Tree Felling and Fauna Habitat Feature Removal Procedure

Hollow bearing trees are an important habitat feature for a variety of native fauna. Removal of hollow bearing tree during spring will be minimised to avoid the main breeding period.

Before clearing any hollow bearing or habitat trees, it is important to consider if fauna are present (see also **Section 6.3.3**).

The following process will be followed to minimise impacts to fauna species:

- Clear the vegetation that is surrounding the hollow bearing or habitat trees at least 24 hours prior to felling and leave the hollow bearing or habitat trees to stand for one night. Shake or knock the tree to encourage fauna to leave – this should occur the day before clearing hollow bearing or habitat trees.
- Immediately prior to clearing, a Contractor Ecologist will undertake pre-clearing surveys. Habitat/hollows identified above for removal are to be inspected by an ecologist immediately prior to clearing to determine if the features are being utilised by fauna. Where possible, fauna observed in accessible hollows (i.e. close to ground level) are to be captured and relocated to adjoining areas not subject to development impacts prior to the tree being felled/ habitat removed.
- Before felling, use an excavator or front-end loader to nudge the trunk of the tree as high as possible a few times. Wait 30 seconds and then repeat the process. If a chainsaw is being used to clear the vegetation or the tree is being removed in stages, then remove the non-hollow bearing branches first.
- Lower the habitat tree as gently as possible with heavy machinery, noting in some situations (i.e. steep slopes) manual felling by chainsaw may be appropriate.

- Any fauna that escape during the clearing process are to be recorded and records maintained in an internal fauna finds register. If any fauna are found and won't leave/are injured during the vegetation clearing process, then the 'Fauna Handling Procedure' in **Section 6.4** will be used.
- Felled trees are to be positioned so that the number of hollows blocked against the ground is minimised, where possible.
- Relocation of salvaged habitat material (such as rocks and coarse woody debris) should aim to reflect a density consistent with that of the surrounding moderate to good condition woodland zones. The supervising Contractor Ecologist should consider the benchmark density for placement of felled trees in the receiving PCT. Where permissible by the BSSAR, salvaged habitat material may be relocated into the BSS.
- Felled trees that may hold sheltering fauna are to remain in place at least overnight to allow any remaining fauna to escape. If such a tree is accidentally felled in the wrong direction to which it was planned and subsequently needs to be moved (i.e., blocks a track, road or similar), it can be moved on the day of felling to rectify the issue. In such circumstances, with consideration to safety or accessibility concerns, the tree must only be moved the minimum distance required to rectify the issue.
- All salvageable hollows will be relocated to Stewardship sites or areas of retained vegetation for habitat enhancement (refer to **Section 6.9.2**).
- No clearing is to occur at temperatures greater than 35°C to minimise impact to displaced fauna.

In addition to hollow bearing trees, other fauna habitat features, such as rocky habitat, have been recorded as being present within the Development Footprint. The following process will be followed to facilitate that impacts to fauna utilising these features will be minimised:

- Completion of actions recommended from the pre-clearing inspections where practicable, including (but not limited to) actions required to discourage fauna occupation and weed or feral fauna management requirements.
- Consider advice of the Contractor Ecologists from pre-clearance surveys for most appropriate and effective method of encouraging fauna to vacate the area prior to clearance date.
- If no active usage is identified, there is no further action required prior to clearing works.
- Complete a visual inspection of the area, and specific habitat, to be cleared for fauna species and nests that may have become active since pre-clearing inspections.
- Inspect fauna habitat feature (rocky area, termite mounds, and animal den/burrows) after being partially cleared for remaining or injured fauna.
- Any animals that escape during the clearing process are to be recorded and maintained in an internal fauna finds register. If any animals are found and won't leave / are injured during the vegetation clearing process, then the 'Fauna Handling Procedure' in **Section 6.4** will be used.
- Cleared rocks, that were identified as habitat, are to be placed in designated piles and retained for habitat enhancement as per benchmark for the PCT.

6.3.7 Removal of Vegetation Outside Approved Clearing Boundaries

Exclusion areas where no clearing, direct or indirect impacts are to occur is shown in **Figure 6.1**.

If construction activities require the removal of any vegetation that is outside of the approved clearing boundaries, or is in excess of the approved clearing limits, the following process will be implemented:

1. The person who is conducting the clearing activity will stop works and will review the VDP. If unsure regarding approval to clear the Construction Contractor HSE Coordinator will be notified of the location and the proposed need for the vegetation impact.
2. The Construction Contractor HSE Coordinator will confirm whether or not the vegetation is permitted to be impacted under the Development Consent through reviewing the VDP and if not resolved will consult with Lightsource bp. Alternatives to removing the vegetation will be investigated at this stage.
3. If the vegetation is not permitted to be impacted, Lightsource bp will consult with DPHI. A modification to the Development Consent may be required. Where a modification to the Development Consent is required, no works are to proceed until it is approved.
4. If a modification to the Development Consent is not required, the person who is conducting the clearing activity will await written confirmation from the Lightsource bp Principal prior to restarting works in this area.

6.4 Fauna Handling Procedure

6.4.1 General Protocols

If fauna is observed within the Development Footprint during vegetation clearing, construction activities, or operations, and there is a potential risk to the animal's safety or to site personnel, the following steps will be taken:

- Stop all work in the vicinity of the fauna and immediately notify the EPC HSE Coordinator or the Contractor Ecologist.
- If the animal is identified as a threatened species, then refer to the 'Unexpected Threatened Species Finds Protocol' in **Section 6.5**.
- If possible, allow fauna to leave the area without intervention.
- If fauna cannot or will not leave the area without intervention, the fauna are to be removed by a suitably qualified and experienced ecologist or wildlife carer with specific animal handling experience using the following method:
 - Cover larger animals with a towel or blanket and place it in a cardboard box and/or canvas bag.
 - Place smaller animals in a cotton bag, tied at the top.
 - Keep the animal in a quiet, cool, ventilated and dark location away from noisy construction activities until it can be relocated.

- Transport frogs in moistened plastic bags (1 frog/bag) with a small amount of leaf litter. The translocation of frogs shall be in accordance with the Hygiene Protocol for the Control of Disease in Australian Frogs (DSEWPC 2011).
- If the animal cannot be handled (i.e., venomous reptiles):
 - exclude all personnel from the vicinity with fencing and/or signage
 - record the exact location of the animal/s and provide to the qualified ecologist or appropriate rescue agency (i.e., WIRES).

6.4.2 Injured Fauna

Should fauna be injured as part of the construction activities, the following steps are to be carried out:

- Remove any threat to the animal that could cause or exacerbate an injury.
- Call the appropriate veterinary service or rescue agency (WIRES – 1300 094 737) immediately and follow any advice provided by the agency.
- Once the veterinary service or rescue agency arrives at the site, they are responsible for the animal. Any decisions regarding the care of the animal will be made by the rescue agency.
- In the event the rescue agency and/or local veterinary service cannot be contacted, the injured animal will be delivered to the relevant agency as soon as practicably possible.
- At the time this BMP was prepared, the closest veterinary surgery/vet hospital was Merriwa Veterinary Surgery, 86 Bettington St, Merriwa. Phone: (02) 6548 2452 and Website: [Merriwa Veterinary Surgery](#).
- Contain the injured fauna in order to minimise stress using towels to cover them. Gently place the animal in a holding box specifically designed for holding the species (i.e., cotton bag for microbats, mesh cage for large mammals e.g. possums, soft lined enclosure for birds or hard cage for parrots).
- Cotton pillowslips may be used to cover mammals, or mammals may be placed inside them. Pillowslips or boxes will be readily available onsite. It will be the Contractor Ecologist or Construction Contractor HSE Coordinator responsibility to place box in a quiet, safe, dark location (not in a vehicle unless temperature is constantly monitored). Do not give the animal food or water. If there are dependent young separated from their parents, make sure they are kept warm.
- Any injuries or deaths of threatened fauna species must be reported immediately to the Construction Contractor HSE Coordinator and treated as an environmental incident (**Section 10.0**).

6.4.2.1 Vehicle Strike

- Fauna can be struck by vehicles while crossing roads, resulting in injury and sometimes death. While fauna can often be unpredictable when on or near a road, the Project would undertake steps to significantly reduce the odds of colliding with fauna while driving within the Development Footprint and travelling to and from the Project. This is particularly relevant when driving on the vehicle route adjacent to State Forest and National Park. If wildlife is observed on or adjacent to the road, steps include:

- Reduce speed.
- Stay alert.
- Brake safely.
- Don't swerve.
- Vehicle strike risk will be managed through:
 - Education and awareness raising via site inductions and toolbox talks.
 - Enforceable speed limits within the Development Footprint (20 km/hr).
- Native fauna encountered along access tracks during construction and operation would be avoided and vehicles will not continue until the fauna has safely moved out of the path and is no longer within any potential line of danger.
- Reporting any fauna strikes from a vehicle (either within the Development Footprint or on public roads along the vehicle route) to the EPC HSE Coordinator.

If an animal has been injured by the vehicle strike, the appropriate rescue agency (WIRES – 1300 094 737) will be contacted. If the animal hasn't survived, it will be moved to the side of the road. If fauna is identified as a kangaroo, koala, wombat or possum, their pouches would be checked for young.

6.4.3 Relocation of Fauna

Relocation of particular fauna (e.g., venomous reptiles, raptors) from within the Development Footprint is to be carried out by the Contractor Ecologist or wildlife rescuer and is to be recorded as part of the pre-clearance reporting obligations. If the animal is not injured or stressed, it may be released nearby in an area that is not to be disturbed by the works and in accordance with the following procedures:

- Site identified as a suitable release point by an appropriately qualified and experienced ecologist or wildlife rescuer.
- Release site is to contain similar habitat (the same vegetation formation if possible) and occur as close to the original capture location as possible without placing the animal in danger from the continuing constructing works.
- If the species is nocturnal, release is to be carried out at dusk.
- Release would generally not be carried out during periods of heavy rainfall.
- Details of fauna captured and relocated will be recorded in the internal fauna find register.

6.4.3.1 Exclusion of large fauna species

Where practical, large fauna species (such as macropods, wombats, and emus) may need to be excluded from the Development Footprint during the construction of the permanent site perimeter fencing. Any fauna that enter the fenced area after construction will be managed according to the general fauna handling and relocation procedure, where it is not sustainable and safe for them to remain. These activities will be carried out by a Contractor Ecologist or wildlife rescuer.

The following procedure will be implemented prior to and during construction to deter the presence of large fauna species:

- Gates on the security fence leading into the Development Footprint will be kept closed.
- Before the security fence is completed, large fauna should be gently flushed out of the Development Footprint. This could involve a combination of people on foot and multiple vehicles being driven at slow speed, moving in a line towards the fence opening. The final fence section will then be installed.

6.4.4 Fauna Handling Information

It is important to consider the following when handling fauna:

- Some animals require particular handling (e.g., venomous reptiles, raptors) and would only be handled by appropriately qualified personnel i.e., an appropriately qualified and experienced ecologist or WIRES representative(s). Any female marsupials that are identified as deceased will have pouches checked for young.
- If handling bats, the handler must be vaccinated against the Australian Bat Lyssavirus (a form of rabies).
- Any frog handling will be carried out in accordance with the Hygiene Protocols for the Control of Diseases in Australian Frogs (DSEWPC 2011). This protocol recommends onsite hygiene precautions be carried out to minimise the transfer of disease between and within wild frog populations. Measures recommended include:
 - Thoroughly cleaning/disinfecting footwear and equipment when moving from one site to another.
 - Where necessary in high-risk areas (including waterway and/or flood hazard –avoidance areas) spraying/flushing vehicle tyres with a disinfecting solution.
 - Cleaning/disinfecting hands between collecting samples/frogs (preference would be given to using bags, rather than bare hands to handle frogs). Limiting one frog or tadpole to a bag. Bags should not be reused.

6.4.5 Dam Dewatering Policy

Farm dams have largely been excluded from the development footprint and waterways are ephemeral on site. Of the 22 farm dams in the Project Area, there are two smaller dams which may require dewatering and filling, one within a tributary of Redlynch Creek and one within a tributary of Pogy Creek. Neither are mapped as key fish habitat (Umwelt 2024c).

Dam dewatering should be undertaken in a manner that prevents erosion, and where practical directed to areas of low condition grassland.

A VDP will be prepared prior to dewatering and will help ensure contractors are aware of the specific areas required to be dewatered. Contractors will also be informed about the likely fauna to be encountered by the Contractor Ecologist. The day before engineering and construction teams are expected onsite, dam dewatering will commence.

To avoid injury to tadpoles, dam dewatering will be initially conducted by siphon, and not pumped or mechanical driven water removal. Fauna that is siphoned out will be caught in a holding area, that is, an adjacent low area (not within the downstream water channel). The siphon holding area will be fitted with a fine micron mesh to allow filtered water to pass through but not allow fish or juvenile fish pest species or eggs to pass through. The rate of water flow through the holding area will not permit over-land flow to reach remaining waterbodies. The Contractor Ecologist will capture and relocate fauna to neighbouring watercourses / dams as the dam water level drops.

Once satisfied all reasonable efforts have been made to capture fauna prior to the use of a suction pump or by mechanical water removal, the Contractor Ecologist will advise the Construction Contractor HSE Coordinator or Construction Manager to remove any remaining water and silt as they see fit. If a significant amount of water remains when this decision is made (e.g., if the dam refills with spring water overnight), the suction hose used to dewater the dam is to have a sponge or another suitable filter cage on the end within the water column to prevent fauna inadvertently being sucked into the pump. The pump operator is to assist the ecologist in the capture of fauna by managing the uptake of water (pump impeller speed) as the ecologist undertakes fauna capture measures. If available, a 20-tonne excavator with a wide bucket would be useful in concentrating the remaining water into the low point of the dam.

Site water removal is recommended to be by overland flow irrigation or in alignment with relevant erosion and sediment control plans preferred for the Project. Excessive pooling of removed site water must be avoided, and site water runoff must be managed appropriately. Site water runoff must not be permitted to enter adjacent watercourses or stormwater drainage systems. If required, a shallow absorption trench is recommended for disposal of site water.

6.4.5.1 Aquatic Fauna Handling Procedure

For any requirement to dewater, it is important to consider the following when handling aquatic fauna:

- Handle fish with wet hands or a wet towel. Gloves that are wet, open weaved and knotless are good for handling purposes.
- Handle large fish carefully. Fish of 2 kg or more need to be fully supported in a horizontal position with two hands or in a knotless net.
- Fish should be placed into suitably sized receptacles as soon as possible to minimise the handling time. The fish holding containers should have good quality, well oxygenated water.
- Remove, store and release the fish as quickly as possible into a nearby adjacent waterways.
- Use appropriately sized containers with a sufficient water depth to allow for comfortable swimming positions. The container should have soft, rounded surfaces and a lid.
- Size the container depending on the size and number of the fish that will be held. As a guide, 0.2 kg of fish per litre of water is acceptable for oxygen and stress levels.
- Observe fish for signs of stress such as increased gill movements or swimming at the surface.

- Monitor water conditions continuously. Regularly change water, to ensure oxygen levels are maintained, or release fish downstream if suitable conditions exist. As a guide, change 25% to 50% of water hourly, more frequently if conditions are hot. Alternatively, an aerating device that bubbles oxygen at a rate of 2 to 4 litres per second. If possible, keep the containers in the shade while working (Department of Agriculture and Fisheries 2018).
- Release fish carefully by placing the container in the water and allowing the fish to swim away. Drops from height should be avoided. If water temperatures are equal, then a release by scoop net may be possible. Where there is a notable temperature difference water should be exchanged to equalise the temperature before release. These actions will minimise stress.
- Aquatic fauna captured in farm dams will be released into retained dams. If any dewatering is required along the waterways, aquatic fauna will be released in the closest suitable location downstream.
- Do not return any noxious or invasive fish species removed as part of salvage works back into the water. If a pest or noxious fish species is found, the fish is to be immediately and humanely euthanised and disposed of far from any waterway or coast, in a bin or buried.

6.5 Unexpected Threatened Species Finds Protocol

During the Project's construction, operation, and decommissioning phases, the 'Unexpected Threatened Species Finds Protocol' will be implemented whenever a threatened species (as defined under the EPBC Act or BC Act, including but not limited to those listed in **Section 4.9**) is unexpectedly found within the Development Footprint.

Should threatened fauna, or suspected threatened fauna, be encountered, the procedure outlined below will be followed. If capture is required, the 'Fauna Handling Procedure' in **Section 6.4** will be used.

- If native flora or fauna is found, stop work.
- If the native flora or fauna that has been found is a threatened species, or it cannot be identified, notify the EPC HSE Coordinator who will then notify Contractor Ecologist and Lightsource bp of the find.
- The Construction Contractor HSE Coordinator will arrange for the Contractor Ecologist to assess the occupied habitat within the Development Footprint, assess the likely impact and develop management options.
- If the Contractor Ecologist identifies that an impact is not likely to occur to the threatened species, then recommence works and maintain regular inspections of the area where the threatened species was found. EPC site staff are to be notified of the threatened species find via toolbox talks.
- Where the Contractor Ecologist identifies that an impact is likely to occur to the threatened species, Lightsource bp, BCS, AG DCCEEW (for an MNES) and DPFI will be notified and consulted, as required.
- In accordance with Condition A3 of the EPBC Approval, Lightsource bp must notify the AG DCCEEW in writing of the presence and likely extent of any protected matter, or the habitat of any protected matter not previously reported to the department within 10 business days of detecting the presence of any protected matter or the habitat of any protected matter not previously reported to the department.

- Recommence works once advice has been sought and implemented and the necessary approvals (if required) have been obtained.

6.6 Weed and Pathogen Management Procedure

Preventing the spread of weeds onto or across the Project Area will significantly reduce ongoing treatment costs. However, completely avoiding weed spread is challenging, and active management, including removal, is likely to be necessary – especially during the construction phase when disturbance activities are at their peak, increasing the risk of spread.

Disturbance activities can also exacerbate the spread of pathogens if not properly managed. While the Project is not expected to contribute significantly to the spread of pathogens, active management remains a priority, particularly near the Goulburn River National Park, to minimise any potential risk.

Prior to the commencement of clearing, the location of weeds and pathogens within the Project Area will be surveyed and mapped prior to or as part of pre-clearance surveys. The ecologist will use the survey as a basis to provide / confirm applicable weed (primary and secondary) and pathogen control methods. Weeds targeted as part of this BMP include Priority Weeds (**Appendix 2**).

The Project has the potential to spread weeds and pathogens through the movements of heavy machinery and light vehicles during the construction, operation, and decommissioning phases of the Project.

Weeds and pathogens will be controlled through:

- Hygiene controls such as vehicle and plant washdown as detailed within **Section 6.6.5**.
- Primary, secondary, and maintenance weed control via appropriate weed removal techniques, including direct removal of individual plants, and herbicide application.

A detailed weed management procedure is provided in **Section 6.6.1** to **Section 6.6.5**.

6.6.1 Weeds and Pathogens Inspection

Measures to control the introduction or spread of weeds and pathogens will include:

- Prior to vegetation clearing, significant infestations of Priority Weeds and/or Pathogens will be identified by the Contractor Ecologist as part of pre-clearance surveys (**Section 6.3.4**).
- Established and new infestations of invasive weeds will be mapped with GPS, including noting the species and degree of infestation, and capturing an image for monitoring purposes. Data collected from inspections will be used as a basis for implementing seasonal targeted weed control measures. Advice would be sought from the Contractor Ecologist, Hunter Local Land Services (LLS) or from the WeedWise website (<http://weeds.dpi.nsw.gov.au/>) in relation to treating new weed infestations.
- Any occurrences of pathogens such as Myrtle Rust and unexplained dieback would be monitored and reported.

6.6.2 Weed Treatment

During all phases of the Project, weed control will be based on data collected from survey and inspections of the Development Footprint. Targeted weed control measures will be applied for any significant infestations of Priority Weeds with the objective of no overall increase in the presence of weeds which were occurring prior to the Project. Treatments will be conducted in accordance with the NSW Weedwise website for the Hunter Local Land Services Region which may include mechanical removal, slashing, application of approved herbicides and biological control, by accredited personnel, according to product labels as applicable to the weed being treated.

The introduction and spread of weeds via vehicles and plant will be controlled by the Vehicle Hygiene Procedure provided in **Section 6.6.5**.

6.6.2.1 Herbicide Application Record

Herbicide application will only be carried out by personnel that hold an herbicide application credential in accordance with SafeWork requirements. Herbicides will only be applied in accordance with the Safety Data Sheet (SDS) for that product. A Herbicide Application Record prepared by the Construction Manager will be completed, and public notifications made in accordance with relevant legislation, where herbicides are to be used in areas that could be accessed by members of the public. Only herbicides registered for use near water may be used near any waterways. This includes all waterways within the Development Footprint as shown in **Figure 2.2**, including ephemeral creek lines.

The Construction Contractor HSE Coordinator will ensure that a follow-up inspection is undertaken for identified weed infestation sites to ensure treatment was successful.

6.6.3 Weed Disposal

Where priority weeds cannot be effectively destroyed prior to topsoil stripping, weed contaminated topsoil will be isolated and either encapsulated by deep burying, or composted appropriately.

6.6.4 Ongoing Weed Management and Monitoring

Monitoring of weed infestations will occur as part of the routine environmental inspections throughout construction and operation phase to determine effectiveness of management controls. The presence of any Priority Weed species and the necessary management actions will be noted on a weed inspection checklist. Weed management will also take into consideration the relevant Commonwealth threat abatement plans and be undertaken in consultation with relevant stakeholders where appropriate. Refer to **Appendix 2** for the list of Priority Weeds for the Hunter LLS region.

6.6.5 Vehicle Hygiene Procedure

Vehicle plant and equipment movement vehicle hygiene procedures will be implemented for any vehicle that enters the Development Footprint during construction. A vehicle inspection checklist would be completed for vehicles upon arrival which are likely to come into contact with the natural ground or weeds.

The procedures include:

- Inspection upon arrival at site access laydown area.
- Removal of dirt and/or plant matter from newly arrived vehicles at a designated rumble grid.
- Where the rumble grid is ineffective:
 - washing and inspection prior to vehicles being given approval to enter the Development Footprint
 - inspection and washing prior to entering and leaving the Development Footprint
 - ensure appropriate weed hygiene practices are implemented to prevent any spread of protected invasions
 - any water from the washdown area will be managed in accordance with the Soil and Water Management Plan (Umwelt, 2024e).

6.7 Pest Management Procedure

Pests in this BMP are defined as non-native fauna species. Four vertebrate pest species (**Section 4.10.1**) which may require specific control measures were recorded during site surveys informing the BDAR (Umwelt, 2024a). Additional pest species may also be present within the Development Footprint. Monitoring of animal pests and signs of their activity will occur as part of routine inspections conducted by either the Contractor Ecologist, Construction Contractor HSE Coordinator, O&M Site Manager (or delegate) during construction (fortnightly) and operation (6 monthly).

The following data would be recorded in a Pest Management Register and used to determine the need for and required intensity of pest animal control measures:

- Number seen and location.
- Sighting type (track / scat / rake).
- Age (young / adult).
- Whether the level of pest activity is:
 - Minimal: rarely seen, less than 5 sightings recorded over two consecutive monitoring rounds).
 - Moderate: occasional to regular occurrence. Sightings are between 5 and 10 over two consecutive monitoring rounds.
 - High: Constant occurrence. Sightings are greater than 10 over two consecutive monitoring rounds.
- If any are identified that are required to be controlled, the appropriate management actions listed by the Department of Primary Industries (DPI) at <https://www.dpi.nsw.gov.au/biosecurity/vertebrate-pests/pest-animals-in-nsw> will be implemented and records of works undertaken will be retained by Lightsource bp.
- Pest management may also consider the actions outlined in relevant Commonwealth threat abatement plans to determine the best approach.

6.7.1 Pesticide Application Record

As with herbicide applications, pesticides will only be administered in accordance with the label instructions and by personnel that hold a pesticide application credential in accordance with SafeWork requirements. A Pesticide Application Record will be completed, and public notifications made in accordance with relevant legislation, where pesticides are to be used in areas that could be accessed by members of the public. Only pesticides registered for use near water may be used near any waterways. This includes all waterways within the Development Footprint as shown in **Figure 2.2**, including ephemeral creek lines.

6.8 Vegetation Management Zones

Vegetation Management Zones (VMZs) within the Project Area have been identified with the goal of maintaining and enhancing the remnant vegetation and providing habitat for local fauna (refer to **Figure 6.1** for zone locations). VMZs include residual areas of Redlynch Creek and the waterway near the site entrance.

Strategies to assist maintaining these zones include habitat enhancement (refer to **Section 6.9.2**), selective weed management (refer to **Section 6.6**) and pest control (refer to **Section 6.7**). The management objective for each VMZ, location and management actions are detailed in **Table 6.3**.

Table 6.3 Overview of VMZs

Zone	Location	Issues	Management Objective	Performance Targets	Management Actions	Monitoring
1	Biodiversity/ Heritage Value Avoidance Area	<ul style="list-style-type: none"> Weed Infestation. Pests. 	To retain and enhance habitat, and overall biodiversity within the area.	<ul style="list-style-type: none"> Priority weed species (listed in Appendix 2) maintained at <10% cover. Nil impacts to heritage sites and cultural values. Vegetation Integrity (VI) score to increase from baseline (pre-construction) (refer to Section 6.12 for further details). 	<ul style="list-style-type: none"> Avoid soil disturbance and root damage during construction and operations. Limit access to sensitive areas to authorised personnel only. Stock removal. Removal of pests (refer to Section 6.7). Weed management (refer to Section 6.6). Habitat Enhancement (Refer to Section 6.9.2). 	Annual inspections ¹ will be conducted to evaluate the effectiveness of management measures and determine whether the performance targets are being achieved. Minimum of 1x BAM plot established as part of the VI study.
2	Waterway and/or Flood Hazard Avoidance Area	<ul style="list-style-type: none"> Soil Erosion. Invasive Aquatic and Riparian Species. Sediment Runoff. 	To maintain the hydrological balance of the area by protecting native vegetation.	<ul style="list-style-type: none"> Prevent soil erosion in the buffer zone, with less than 5% of the area affected by erosion. Priority weed species (listed in Appendix 2) maintained at <10% cover in the buffer zone. VI score to increase from baseline (pre-construction) (refer to Section 6.12 for further details). 	<ul style="list-style-type: none"> Weed Management (refer to Section 6.6). Maintain a buffer of at least 40 m from waterways. Avoid vegetation removal within the buffer zone unless for flood management or safety. Habitat Enhancement (Refer to Section 6.9.2). Implement erosion control measures, such as silt fences, native grass planting/seeding and coir logs (refer to Section 6.9.5). 	Annual inspections ¹ will be conducted to evaluate the effectiveness of management measures and determine whether the performance targets are being achieved. Minimum of 1x BAM plot established as part of the VI study.

Zone	Location	Issues	Management Objective	Performance Targets	Management Actions	Monitoring
3	Development Footprint	<ul style="list-style-type: none"> Weed Infestation. Erosion and Sediment Control. Pests. 	To retain biodiversity values within an operational solar farm.	<ul style="list-style-type: none"> Priority weed species (listed in Appendix 2) maintained at <10% cover. Restore 80% of temporarily disturbed areas to native grassland commensurate with surrounding PCTs within 3 years of construction. VI score greater than 0 (refer to Section 6.12 for further details).. 	<ul style="list-style-type: none"> Clear vegetation only as necessary for infrastructure (solar panel installation, access roads). Assisted natural regeneration (refer to Section 6.9.3 and Section 6.9.4). Stock removal. Removal of pests (refer to Section 6.7). Weed management (refer to Section 6.6). 	Annual inspections ¹ will be conducted to evaluate the effectiveness of management measures and determine whether the performance targets are being achieved. Minimum 6x BAM plots established as part of the VI study.

Note: ¹Annual inspections and monitoring of VMZ will be undertaken by the EPC HSE Coordinator (or delegate) in construction and the O&M Site Manager (or delegate) during operation.

6.9 Rehabilitation and Restoration Procedure

This procedure aims to:

- Manage and enhance remnant vegetation and fauna habitat on site.
- Rehabilitate temporary disturbance areas with native species appropriate to the site's ecology and conditions.
- Maximise the salvage and reuse of vegetative and soil resources to enhance and rehabilitate the site and adjacent BSS.

6.9.1 Rehabilitation of Temporarily Disturbed Areas

Areas that are temporarily disturbed for the Project will be rehabilitated as soon as practicable using native species that are endemic to the area.

Temporarily disturbed areas for the Development Footprint may include:

- Grassland mowed for construction activities.
- Temporary access tracks that are utilised before permanent site access tracks have been completed.
- Construction laydown areas including, but not limited to, construction vehicle parking areas, wheel washing facilities and demountable amenity buildings.
- Cable trenches.
- Disturbed watercourse crossings.

The aim of the rehabilitation of temporarily disturbed areas is to minimise the extent of disturbed areas onsite and return them to a condition which represents the completion criteria in **Table 6.4**.

Table 6.4 Rehabilitation Objectives

Rehabilitation Aspect	Completion Criteria
Site	<ul style="list-style-type: none"> • Safe, stable and non-polluting. • Minimise the visual impact of any above ground ancillary infrastructure agreed to be retained for an alternative use.
Solar farm and ancillary infrastructure	<ul style="list-style-type: none"> • All infrastructure including above and below ground to be decommissioned and removed to a depth of 500 mm unless the Planning Secretary agrees otherwise.
Land use	<ul style="list-style-type: none"> • Restore land capability to pre-existing use (Land Capability Class 4 to 6).
Community	<ul style="list-style-type: none"> • Ensure public safety at all times. • Ensure long-term access through the site for NPWS.

The Contractor Ecologist (refer **Table 7.1** for responsibilities) will be consulted before rehabilitation takes place. The EPC HSE Coordinator will be responsible for identifying areas that are available for rehabilitation at intervals not exceeding six months and coordinating the program of rehabilitation works.

The rehabilitation of areas of temporary disturbance not required for operation will require the following management actions to ensure native vegetation is re-established across the site:

- Weed control (refer to **Section 6.6**).
- Salvage of habitat features and vegetative materials.
- Land preparation.
- Seed management.
- Creek morphology works (in channel works subject to monitoring identifying the need for bank stabilisation works).
- Ongoing weed control (maintenance).

6.9.2 Salvage of Habitat Features and Vegetative Materials

6.9.2.1 Re-use of Soil Resources

Suitable topsoil material and vegetative debris, when available, will be stockpiled or directly reused and incorporated into the rehabilitation for the Project. This will assist in providing a stable post work ground surface and/or suitable growing medium for native seed base vegetation establishment. Topsoil will be stockpiled and reapplied as close as possible to the point of disturbance to promote successful natural regeneration of temporary disturbed areas. No topsoil would be relocated from areas displaying unexplained dieback unless tested for *Phytophthora cinnamomi*. No topsoil will be transported between landowner boundaries.

Topsoil stockpiles will be clearly labelled to ensure proper identification and management throughout the rehabilitation process. Where possible, the topsoil will be reapplied to areas with the same target PCT as the original vegetation community which the topsoil supported prior to disturbance. These locations will be recorded in a stockpile register to ensure soil is reapplied in the corresponding target PCT. The Contractor Ecologist will assist in identifying target PCTs and/or topsoil placement as required.

Where topsoil is available, the following measures will be adopted to protect its quality and enhance rehabilitation outcomes:

- Where practical, topsoil will be directly placed on temporarily disturbed areas which are available for rehabilitation.
- When direct placement of topsoil is not practicable, stockpiles will be formed, located away from traffic areas and watercourses.
- Level or gently sloping areas will be selected as stockpile sites to minimise erosion and potential soil loss.
- Appropriate sediment controls will be installed at the base of stockpiles to prevent soil loss.
- Weed growth for stockpiles will be monitored and subsequently controlled as necessary.

It is generally considered that topsoil stockpiles will be no greater than 3 m in height to preserve soil structure, maximise surface exposure and biological activity. Topsoil will be salvaged within the approved Development Footprint and stockpiled for beneficial reuse in the rehabilitation of the Development Footprint.

No stockpiling or storage will occur within the dripline (the area directly located under the outer circumference of the tree branches) of any mature trees.

6.9.2.2 Re-use of Coarse Woody Debris

Coarse Woody Debris (CWD) can be used to enhance habitat values to areas on the advice of the Contractor Ecologist or to existing VMZs and rehabilitated areas including derived native grassland (either within the BSS or rehabilitation areas within the solar farm security fence as shown in **Figure 6.1**). CWD can provide:

- Habitat for micro-invertebrates.
- Habitat for macro-invertebrates.
- Habitat for vertebrates using fallen timber for shelter, for example, skinks, geckoes.
- Habitat for vertebrates using fallen timber for foraging, for example, treecreepers, robins.
- A source of nutrients and microorganisms for native vegetation.

Where feasible, the salvage and relocation of hollow logs and fallen timber will be undertaken to augment habitat complexity within areas to be rehabilitated as well as the adjacent BSS. Habitat features suitable for salvage will be identified and marked in the field as part of pre-clearance surveys (refer to **Section 6.3.4** for further detail).

The material would be either scattered or randomly placed in 'habitat stacks'. This is particularly beneficial for areas with a paucity of similar habitat structures, such as derived native grassland. Larger pieces of timber should be prioritised as these take longer to decay and therefore would provide longer lasting habitat and source of nutrients. Within the BSS, Vegetation Zones 1 and 8 – (PCT 483 – DNG and PCT 1661 DNG respectively) should be the priority to receive salvaged habitat material. Relocation of habitat material should aim to reflect a density consistent with that of the surrounding moderate to good condition woodland zones. The Contractor Ecologist should consider the benchmark density for logs in the receiving PCT. Excessive material could have a detrimental impact on biodiversity values (i.e. suppression of natural regeneration, harbouring of pest species etc).

While it is difficult to quantify the ideal density of placement of salvaged habitat material, as an approximate guide approximately 20–40 t of CWD can be placed per ha (more than this may not be advantageous), with each habitat stack having approximately 8 t of material. This is based on work and research on habitat stacks being undertaken by Sunshine Coast Council (Sunshine Coast Council, 2024). Logs should be placed in stacks where spaces are of a suitable size for small to medium sized native reptiles and mammals and preferably not large enough for predatory species such as foxes, feral cats, wild dogs etc. Ideally a large surface area of the timber should be placed on the ground directly in contact with soil as this encourages detritivores and fungi, which in turn encourages insects and consequently a range of species up the food chain.

The procedure for salvaging and reinstating habitat features is as follows:

- Hollow bearing trees will be considered for salvage based on structural integrity, number, and size of hollows. Hollows to be salvaged will include a range of diameter sizes. Ideally, hollows should be in trunks or solid living branches to maximise the chance that they would survive the felling process.
- CWD will be selected based on size, structural integrity and presence of good hollows. Larger logs (in both length and girth) will be typically selected with large hollows (i.e., large diameter hollows through the length of the stem or at least a significant portion).
- Relocation of CWD and rocks would be from the impact site in a light vehicle ute or small truck and with small machinery, and as such impacts on the receiving stewardship site are negligible.
- Salvaged habitat features will be reused progressively as portions of the Development Footprint become available for rehabilitation; this would maximise the availability of refuge sites for native fauna for the duration of the Project.
- Where key fauna habitat (e.g. hollow bearing trees, hollow logs) occurs in the Development Footprint, but is not impacted through construction work, it will be left as is.
- Where practicable, avoid the mulching of fallen vegetation to prevent smothering of ground-layer flora species. Utilise mulch or fallen vegetation for sediment and erosion control methods as appropriate.

6.9.2.3 Re-Use of Rocks

Rocks greater than 300 mm diameter at their widest point, which are within the Development Footprint will be retained and relocated to areas on the advice of the Contractor Ecologist or to existing VMZs and rehabilitated areas. Removal, transportation, and placement of rocks will be carried out in a manner to minimise disturbance to vegetation, including the canopy, trees, shrubs, standing dead timber, fallen timber, and groundcover, as well as topsoil. Rocks will be relocated into rehabilitated areas in a sensitive manner, to minimise potential impacts to retained vegetation.

6.9.3 Land Preparation

Surface preparation for rehabilitation and restoration will begin within 60 days following the completion of construction activities. For areas located outside of a watercourse, rehabilitation works would aim to commence during March to November whereas for areas within watercourses rehabilitation works would aim to be undertaken between December to February (refer to the Soil and Water Management Plan for further details).

Areas that remain cleared for ongoing operations and maintenance (such as access tracks) or that will be exposed for extended periods will be equipped with cut-off drains or swales as needed to manage erosion. Temporary site stabilisation procedures will commence at least 30 days prior to any nominated site shutdown dates. To stabilise the soil, a sterile ground cover of grass, matting, polymer binder, and/or coarse gravel will be applied.

Additionally, retained logs may be placed along the contour to aid in erosion control and provide habitat. Where resources permit, stripped or stockpiled topsoil, along with the existing seedbank, will be spread over subsoil to a minimum depth of 100 mm. Ameliorants, such as gypsum, lime, and fertilizers, will be incorporated under the guidance of a soil specialist to improve soil health by balancing pH, preventing surface crusting, enhancing moisture retention, increasing organic content, and moderating surface temperatures to promote successful germination.

6.9.4 Seed Management

Where earthworks are required, the topsoil containing the seed bank would be separated, stockpiled, and re-spread within rehabilitation areas. The seed bank of the DNG is therefore anticipated to be retained within the Development Footprint, as it would be rehabilitated shortly following ground disturbance activities. The seed bank and regeneration capacity are considered to be robust, given the present extent of this vegetation community across paddocks which have been consistently grazed and cropped for decades.

The majority of seed required for the Project will be collected from wild harvest as close as possible to the Project or sourced from specialised seed collectors. The seed collection targets (quantities) would vary based on the amount of seed currently in stock or available for purchase, the size of the rehabilitation areas and seeding rates. The rehabilitation seed mixes developed for the Project will be informed by the following:

- Baseline vegetation assessment surrounding natural environment and landscape position.
- The availability of seed in the natural environment or via purchase.
- The shelf life of the seed.

As part of the seed mix development, priority for use in the seed mix, purpose of the seed and dispersal method will also be determined.

6.9.5 Creek Morphology Works

While extensive bank stabilisation works are not deemed necessary at this time due to the current stability of the banks, periodic stabilisation may be required to address areas of active erosion. Bank stability monitoring will be conducted by Construction Contractor HSE Coordinator (or delegate) to ensure that the integrity of creek banks are maintained throughout construction. Monitoring areas focusing on bank stability will be incorporated into the Weekly Site Environmental Inspection Record, with areas being monitored as required throughout construction and operation. Any signs of instability or degradation will be promptly addressed through corrective actions and will be reported through the Rehabilitation Monitoring Program (refer to **Section 6.9.6**).

Measures for the reinstatement of creek morphology and the restoration of riparian vegetation will include the following:

- Rip Rap Scour Protection – Where high-velocity water is causing significant erosion, rip rap scour protection will be implemented to reinforce creek banks.

- Erosion Control Using Cut Timber and Branches – Minor erosion slumps or areas at risk of soil loss will be stabilized with cut timber and branches sourced from woody weed biomass, ensuring that these materials are seed-free at the time of installation.
- Soil Stabilisation with Jute Mesh – For highly erodible areas, jute mesh will be used to enhance soil stability and prevent further erosion.

6.9.6 Rehabilitation Monitoring Program

The Vegetation Integrity Study will monitor the retention and enhancement of biodiversity values in representative sites across the Project Area. Parameters involving soil erosion and weed management for temporarily disturbed areas will be covered by the rehabilitation monitoring program. Following the application to rehabilitation and restoration surfaces, initial monitoring will be conducted to assess the effectiveness of soil conservation measures. This monitoring will ensure that the implemented soil protection techniques are functioning as intended and that the appropriate vegetation compositions are beginning to establish. The results of this monitoring will help inform ongoing management actions, ensuring that the rehabilitation process is progressing as planned and any necessary adjustments can be made promptly. The monitoring program for ongoing rehabilitation/restoration monitoring have been included in **Table 6.5**.

Table 6.5 Rehabilitation Monitoring Overview

Monitoring	Details	Timing	Responsibility	Records
Surface Erosion	Visible evidence of erosion.	Annual for at least 3 years ²	Contractor Ecologist or a Suitable Qualified Person ¹	Annual Review
Weed Presence	Presence of weeds and % cover, number of new weed species.	Annual for at least 3 years ²	Contractor Ecologist or a Suitable Qualified Person ¹	Annual Review

Note: ¹ Rehabilitation monitoring would be overseen by a Contractor Ecologist or a suitably qualified and experienced individual, with the equivalent of a Certificate III in Conservation and Land Management (or a higher relevant qualification) or equivalent experience supervising rehabilitation works (> 5 years).

²Areas subject to rehabilitation monitoring will be undertaken on a progressive basis, with the commencement of monitoring starting with completion of land preparation works.

Monitoring of VMZ and rehabilitated areas would continue for a period of a minimum 3 years. Inspections would be undertaken on annual basis.

6.9.7 Response to Decline in Condition

If there is an observed deterioration in the condition of retained vegetation (VMZs), additional management response, actions may include, but are not limited to:

- Erect permanent fencing to exclude pest and human/vehicle access.
- Additional targeted weed or pest control.
- Active management or restoration measures including groundcover rehabilitation and planting/seeding as required.

6.10 Regent Honeyeater Conservation

The Development Footprint is mapped as containing important habitat for the Regent Honeyeater which is listed as a critically endangered species. The Project is committed to the future conservation of this species and will provide \$25,000 per annum (over the first 5 years of the development following commencement of construction) towards Regent Honeyeater conservation programs in consultation with the BCS.

The recognised species expert, Dr Ross Crates, concluded that offsite measures would offer the greatest benefit to the species (Appendix H, Amended Solar Farm BDAR). Subsequent to the Development Consent, Lightsource bp have consulted with Dr Crates, National Parks and Wildlife Service, and the Regent Honeyeater Recovery Team (Ecosystems and Threatened Species, Biodiversity and Conservation).

Through consultation with BCS, Lightsource bp have determined to support Regent Honeyeater conservation actions through the Australian National University (ANU) Difficult Birds Research Group.

ANU Difficult Birds Research Group propose to implement the following measures with the available funds:

- Noisy miner management on the Goulburn River. Extension of noisy miner management upstream and downstream of Morrison's Flat and Drummer's Flat. Five days of pest management consulting to remove noisy miners from at least 100 ha of potential regent honeyeater breeding habitat on the Goulburn River each year. We propose to follow the management model implemented by Yancoal Australia on their Goulburn River Biodiversity Area.
- Regent honeyeater nest protection. Implementation of targeted nest predator management at regent honeyeater nests located in the Upper Hunter Valley.
- Regent honeyeater feed tree restoration. Targeted planting of at least 150 yellow box *E.melliodora* in known regent honeyeater breeding areas along the Goulburn River in areas where noisy miner management is to occur (i.e. Morrison's and Drummer's Flats, Goulburn River National Park). Following the model that has been implemented in Capertee National Park.

ANU Difficult Birds Research Group will provide Lightsource bp with a brief (email/letter style) annual report, confirming the tasks completed in the previous 12 months along with the program outcomes.

In addition, during the life of the Project, Regent Honeyeater surveys will also be undertaken within the BSS, adjacent to the Development Footprint. These surveys will occur every five years to determine presence/absence of the species, with the intent being to contribute important data on the distribution of the species. If breeding is detected, the nest trees will be protected with tree collars to minimise the potential for nest predation by native arboreal mammals. Any observations of the species will be communicated to the species expert and both NSW and AG DCCEEW. Results of the survey as outlined in the BSS Management Plan will be reported in the BSS Annual Report and provided to the Biodiversity Conservation Trust. Additional detail is provided in the BSS Management Plan.

6.11 Waterways Management

During construction, the installation and operation of instream structures and other mechanisms may alter natural flow regimes of rivers and streams. In these cases, installation of culverts would be designed in accordance with the following guidelines:

- Why do fish need to cross the road? Fish Passage Requirements for Waterway Crossings (Fairfull & Witheridge, 2003).
- Policy and Guidelines for Fish Friendly Waterway Crossings (NSW DPI, 2003).
- Guidelines for Watercourse Crossings on Waterfront Land (NSW DPI, 2012).

Construction works are to avoid waterfront land where possible. Additionally, sections of Redlynch Creek and the unnamed tributary of Rocky Creek containing bed and banks, are to be electronically mapped in order to identify Waterfront land. Waterfront land is measured as 40 m from the top of bank and any waterfront land disturbed is to be revegetated following completion of works. If waterfront land has been impacted (i.e. for access roads), the bed and banks morphology would be reinstated and disturbed areas would be progressively stabilised with vegetation.

In addition, instream works in areas mapped as Key Fish Habitats (i.e., Redlynch Creek, unnamed tributary of Pogy Creek and unnamed tributary of Rocky Creek) would be undertaken in dry conditions as far as practicable and appropriate erosion and sediment control would be installed and maintained.

Fencing would also be installed around waterways as detailed in **Section 6.3.2**. A detailed planting schedule will be prepared and approved by a Contractor Ecologist prior to any revegetation work being undertaken, with rehabilitation of any disturbance using locally endemic species.

Three access tracks up to 10 m wide are proposed to cross Redlynch Creek (stream order 3, ephemeral). Two of these will be at the perimeter, adjacent to the security fence. The third will be outside of the BSS, with the final location to be determined at detailed design. Redlynch Creek will also be crossed once by underground cabling, outside of the BSS and with the final location to be determined.

A spill and contamination response plan will be developed as part of the overall Emergency Plan for the Project to prevent contaminants affecting the surrounding waterways.

6.12 Vegetation Integrity Study

Lightsource bp have committed to research to determine whether Box Gum Woodland DNG can be maintained with a VI score greater than zero on Goulburn River Solar Farm during operation.

The study will examine VI pre- and post- construction, to test the hypothesis of whether the installation and operation of solar panels results in a substantial change to the VI score for low / low to moderate / moderate condition derived native grasslands (specifically, PCT 483).

The proposed VI Study would incorporate baseline plots prior to construction, but following detailed design, so that survey sites can be established where panel array locations are confirmed.

The study will be comparable to research conducted at Lightsource bp's Wellington Solar Farm during 2022-24. Lightsource bp and EMM developed a research method with consultation and input from BCS, with the null hypothesis of: *installation of solar panels in very low to moderate condition DNG will result in a change in the VI for DNG, however this change will not reduce the VI score to zero.*

The use of VI scores to measure and monitor change under the BAM is an accepted standard to calculate loss at impact sites, as well as to measure gain at BSS.

The research question at Goulburn River Solar Farm will be similar to: Does the installation and operation of solar panels result in a substantial change to the VI score for very low to moderate condition derived native grasslands?

Details on the research project include:

- The Project-specific research method will be developed within three months of construction commencing (noting that construction in these early months will be in limited areas only, and will not impact on any new BAM plots which may be proposed as part of the study and may require baseline monitoring).
- Baseline plots will be identified prior to construction, but following detailed design, so that survey sites can be established where panel array locations are confirmed.
- The study will continue for a minimum of three years of solar farm operation.
- A brief summary report will be prepared annually and kept on file by Lightsource bp.
- At the conclusion of the research project, the findings will be written up in a final report, including statistical analysis.
- The results of the study at Goulburn River Solar Farm would be shared with NSW DCCEEW, AG DCCEEW and more broadly across the industry, with the intention to publish a peer reviewed article.

6.13 Biodiversity Offsetting

6.13.1 Biodiversity Offset Credits

Prior to carrying out any construction that could directly or indirectly impact the biodiversity values requiring offset, Lightsource bp will retire the biodiversity credits and provide evidence to the Planning Secretary as required by Condition B14 and B15 of the Development Consent. In accordance with EPBC Approval Condition A7, Lightsource Bp must notify the Planning Secretary within 20 business days of retiring the biodiversity credits.

The majority (51%) of credits will be retired through the proposed Goulburn River Solar Farm BSS (**Table 6.6**).

Table 6.6 Biodiversity Credit Retirement Plan

Condition B15 (Development Consent)				Plan to Retire		
BDAR	Vegetation Community	PCT ID	Credits Required	Goulburn River BSS ¹	Credit Transfer ²	BCF
Solar Farm Site						
Solar Farm	Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley	483	4,618	1,672	2946	
Solar Farm	Narrow-leaved Ironbark – Black Pine – Sifton Bush heathy open forest on sandstone ranges of the upper Hunter and Sydney Basin	1661	59	59		
Road Upgrades						
Road	Grey Box x White Box grassy open woodland on basalt hills in the Merriwa region, upper Hunter Valley	483	11		11	
Road	Narrow-leaved Ironbark – Grey Box grassy woodland of the central and upper Hunter	1691	4		4	
Road	Western Hunter Flats Red Gum Sedge Forest	3334	1			1
Road	Central West Valleys White Box Forest	3388	12		12	
Road	Ulan Sandstone Ironbark-Pine Woodland	3781	32	32		
Solar Farm Site						
Solar Farm	Regent Honeyeater (<i>Anthochaera phrygia</i>)		1,424	1,424		
Solar Farm	Barking Owl (<i>Ninox connivens</i>)		6	6		

¹ The Goulburn River BSSAR is under assessment by the AG DCCEEW Nature Markets and Offsets team at the time of BMP preparation. There may be some minor changes to the final credit numbers across the three options for retirement.

² Lightsource bp have an executed sales agreement with a private entity to retire credits against their established BSS.

Condition B15 (Development Consent)				Plan to Retire		
Road Upgrades						
Road	Commersonia rosea		14			14
Road	Pine Donkey Orchid (<i>Diuris tricolor</i>)		2			2
Road	Regent Honeyeater (<i>Anthochaera phrygia</i>)		9	9		
Road	Large-eared Pied Bat (<i>Chalinolobus dwyeri</i>)		85	85		
Road	Giant Burrowing Frog (<i>Heleioporus australiacus</i>)		25			25
Road	Pale-headed Snake (<i>Hoplocephalus bitorquatus</i>)		3			3
Road	Broad-headed Snake (<i>Hoplocephalus bungaroides</i>)		64			64
Road	Barking Owl (<i>Ninox connivens</i>)		13	13		
Road	Common Planigale (<i>Planigale maculata</i>)		3			3
Road	Eastern Cave Bat (<i>Vespadelus troughtoni</i>)		14			14
Road	Delmar impar		27			27
Total credits			6,426	3,300	2,973	153
% of Total credits				51%	46%	2%

6.13.2 Box Gum Woodland Restoration

The Project has committed to restore 23.5 ha of Box Gum Woodland DNG (PCT 483) within the proposed Goulburn River BSS to a woodland state and to protect this area in perpetuity.

- The quantity of restoration is based upon a ratio of 1:1 to the area of impact.
- The location of restoration is proposed within the BSS, in order to be local to the impact and to ensure protection in perpetuity.
- Additional biodiversity offset credits would not be generated on the rehabilitation activities – i.e., this activity will be surplus to the requirements of the BAM and no credits are being generated for the active revegetation management actions (ARMA).

The required 23.5 ha of Box Gum Woodland DNG will be incorporated into the Goulburn River BSS. ARMA to achieve this commitment are described in detail within the BSSAR and will involve planting of native tree and shrub species. The areas for revegetation have been selected as they provide benefits in terms of improving connectivity between existing woodland habitats and stabilisation of erosion, and will consider factors such as:

- Resilience for natural regeneration (preference given to those areas with lower resilience and therefore would benefit from active revegetation measures).
- Current condition of native ground cover.
- Competition with weeds.
- Topsoil condition (for example, in erosion areas, there may not be sufficient topsoil for successful plantings).
- Ease of access for preparation and maintenance of revegetation areas.
- Local native tree and shrub species characteristic of the target PCTs will be grown from seed collected from within the Goulburn River Stewardship Site or from nearby locations where possible.
- Purchase of additional seed or tubestock may be required where supply is not available, however local provenance seed will be sought for this purpose.
- Planting will occur in years 2 and 3 of the BSS, allowing for collection of seed and propagation in year 1. Ongoing maintenance of restoration areas will be undertaken following planting and up until year 5. Ecological Response targets have been determined using the same process required for a typical Stewardship Site where ARMA is being proposed.
- Contingency funds have been allocated to allow for additional planting (or other management measures) should targets not be met from the initial plantings.

Performance measures for the Box Gum Woodland Restoration are:

- Target of 100–200 tree stems/ha (average) to replicate a woodland structure of approximately 20% cover (plants counted in accordance with EMM plot-based methods).

- Target of <5% shrub/mid-stratum cover (average) in revegetation areas.
- Tree and shrub species planted are consistent with species lists for the target PCT and Box-Gum Woodland CEEC. At least 80% of species planted should be from either the characteristic list of PCT 483 or the Box-Gum Woodland CEEC.
- The revegetation areas meet the ecological response targets for tree and shrub richness and cover, as set out in the Goulburn River Stewardship Site BSSAR.
- Density of High Threat Weeds is reduced to and maintained at <1% cover or lower by Year 10 and ongoing.

For all weeds that are not high threat, overall density in revegetation areas is reduced to and maintained at <5% cover by Year 10 and ongoing. Measuring the success of the Box Gum Woodland restoration areas against the above performance measures will be undertaken through the comprehensive standard BSS process overseen by the Biodiversity Conservation Trust (BCT), as outlined in the BSSAR. Components relevant to monitoring the success of the restoration activities include:

- Compilation of an annual report to be submitted to the BCT which includes all documentation of management actions implemented for the reporting period (weed control, revegetation works completed etc) and any observed management concerns (such as weed outbreaks, low planting survival rates etc). This report incorporates standard diary templates and management reports as requested by the BCT.
- Annual walkover inspections of the Site with a BCT representative.
- As an extension to the standard plot monitoring program, additional plots will be sampled in the restoration areas (a minimum of two plots and up to four plots). These plots will be sampled every two years up until Year 10 and will incorporate additional relevant measures including stem counts and a soil surface assessment. Plot monitoring in the restoration areas will collect a range of data including tree and shrub stem counts, cover and diversity of native and introduced species. The data collected is designed to allow for direct assessment against the performance targets.
- All data compiled from the monitoring program is submitted to the BCT on completion.

6.13.3 Interactions Between the Solar Farm and the Goulburn River BSS

Residual impacts from the Project are being largely compensated for by a direct, land-based offset located immediately adjacent to the solar farm Development Footprint. Approximately sixty per cent (60%) of the total Project Area will be protected as a BSS and managed for conservation in perpetuity. The location of the proposed BSS enhances the connectivity and viability of the vegetation and habitats protected under the adjacent Goulburn River National Park by bolstering the area of land conserved. The BSS site contains significantly more habitat diversity and areas of higher ecological value than the Development Footprint. For example, there is 828.2 ha of Regent Honeyeater mapped Important Habitat within the BSS, compared to 42.30 ha in the Development Footprint.

Benefits of the BSS include:

- Like for like, with impacts to PCT 1661 and the majority of PCT 483 offset with the same PCTs.
- Locally relevant. The bulk of the credit obligation will be met by conserving values close to the impact site, maintaining the same species and genetic diversity, and providing habitat for any wildlife displaced by construction.

Not only is the solar farm surrounded by the Goulburn River BSS, but there are also two areas within the solar farm security fence which form part of the BSS (**Figure 6.1**). This proximity creates unique opportunities for interactions between a solar farm and a biodiversity conservation area.

6.13.3.1 Receiving Site for Relocated Fauna

Wildlife displaced during vegetation clearing will be able to move into the secure, protected BSS, or be translocated by an ecologist or wildlife rescuer (see also **Section 6.4.3**).

6.13.3.2 Reuse of Habitat Features

As described in **Section 6.9.2**, habitat in the BSS will be enhanced by the translocation of habitat features from the Development Footprint.

Salvageable hollows from felled trees will be relocated to areas of retained vegetation in order to provide additional habitat. Rock piles and fallen timber will be translocated into adjacent areas of the BSS where appropriate (i.e., in areas with a paucity of similar habitat structures).

6.13.3.3 Reuse of Fencing Materials

The BSS currently contains extensive lengths of fencing (estimated to be more than 22 km), in various condition. A management action for the BSS is to remove this redundant fencing in the first year of the BSS.

Salvaged fencing material from the BSS will be preferentially reused to demarcate No-go Zones (i.e. **Section 6.3.2**). This sustainability measure will reduce the need for new fencing material.

6.13.3.4 Opportunities for Wildlife Connectivity

There will be opportunities for a variety of fauna species to move unencumbered between the solar farm and the BSS. This is particularly the case for reptiles, amphibians, insects and small mammals, as well as aerial species (birds and bats). Many of these species are expected to utilise the broader solar farm, including in and around solar panels, during the Project's operation phase. The gauge of the security fence will however create a barrier for medium to large mammals and for non-aerial birds (i.e. Emu).

The BSSAR describes how wildlife movement opportunities will be improved between the two small remnant areas in the north-east corner of the solar farm which form part of the BSS and the remainder of the BSS outside of the security fence. Simple fauna bridges will be installed at strategic locations along the Solar Farm security fence (approximately 4 proposed locations as per the Management Plan) to allow for fauna movement between these remnants and the main BSS. These will facilitate movement by arboreal mammals (possum and glider species, as well as Koala if they are present on the site in the future).

The fauna bridges will be installed following construction, to reduce the risk of vehicle strike.

The fauna bridges would use simple construction techniques, incorporating long-lasting structural elements such as timber and galvanised bolts/screws as required. An example of the likely design is in **Figure 6.2**, however, the final design may change with further input from fauna connectivity specialists. **Figure 6.2** is sourced from Queensland’s Department of Environment and Science (2022), note that the security fence specifications at Goulburn River Solar Farm will differ, and will not include any barbed wire. The design also draws from ‘escape poles’ (i.e., Queensland’s Department of Transport and Main Roads, 2024), typically used to enable trapped Koalas and other arboreal fauna to climb over a fence on the side of the road. In this instance, movement will be possible in both directions.

Hardwood posts are proposed to be salvaged from felled trees stockpiled during vegetation clearing of the solar Development Footprint.



Figure 6.2 An example of the fauna bridge proposed to allow for movement of arboreal fauna over the solar farm security fence

Source: Queensland’s Department of Environment and Science (2022).

7.0 Roles and Responsibilities

In accordance with Condition B16 of the Development Consent, following the Planning Secretary's approval, this BMP must be implemented for the Project. The roles and responsibilities for the personnel who are implementing this BMP are provided in **Table 7.1**.

Table 7.1 Roles and Responsibilities

Role	Responsibility
Lightsource bp Development Principal – (Construction and Operation)	<ul style="list-style-type: none"> Oversee the implementation of this BMP and other management plans which interface with the BMP. Have working knowledge of the BMP. Implementing mitigation measures as detailed in Table 6.1.
Construction Manager – (Construction)	<ul style="list-style-type: none"> Ensure resources are made available to enable works to comply with this BMP. Ensure appropriate approvals and licences are held. Responsible for the implementation of this BMP. Responsible for the induction of staff and contractors. Responsible for all aspects of the worksite including the coordination and management of all staff and contractors. Responsible for appointing an appropriately qualified and experienced ecologist, in liaison with Lightsource bp. Receiving plant, materials and chemicals and ensuring all items are appropriately stored. Responsible for addressing corrective actions arising from environmental inspections. Responsible for notifying Lightsource bp of any incidence or non-compliances with this BMP. Implementing mitigation measures as detailed in Table 6.1.
Construction Contractor Health, Safety and Environment (HSE) Coordinator (Construction) O&M Site Manager (Operation)	<ul style="list-style-type: none"> Maintaining all environmental management documents. Identifying where environmental measures are not meeting the targets and where improvements can be achieved. Monitoring and reporting environmental compliance. Reviewing Project environmental documents. Responsible for reporting to relevant agencies non-compliance and incidents related to biodiversity (refer to Section 10.0). Carry out routine environmental site inspections. Implementing mitigation measures as detailed in Table 6.1.
Contractor Ecologist (Construction and Operation)	<ul style="list-style-type: none"> Supervise works being undertaken in environmentally sensitive areas. Undertake pre-clearing surveys. Oversee vegetation removal. Ongoing monitoring of retained vegetation and threatened species. Provide advice where necessary. Implementing mitigation measures as detailed in Table 6.1.

Role	Responsibility
All Employees and Contractors (Construction and Operation)	<ul style="list-style-type: none"> • Follow any instructions provided by Lightsource bp, the Construction Manager, O&M Site Manager, EPC HSE Coordinator, or an appropriately qualified and experienced ecologist. • Work in accordance with the requirements of this BMP. • Report and raise any issues that arise that may have an environmental impact to the EPC HSE Coordinator or Site Manager. • Implementing mitigation measures as detailed in Table 6.1.

8.0 Monitoring and Reporting

Monitoring of the biodiversity mitigation and management measures for the Project (see **Table 8.1**) will be undertaken to ensure that each measure is being implemented. below shows the program to monitor and report on the effectiveness of the biodiversity mitigation and management measures for the Project.

Table 8.1 Biodiversity Mitigation and Management Measures Monitoring Program

Biodiversity Mitigation and Management Measure to be Addressed	Relevant procedure	Parameter(s) to be Monitored	Monitoring Method	Where	Reporting and Frequency	Responsibility
Time works to avoid critical life cycle events such as breeding or nursing.	Section 6.3 – Vegetation Clearance Procedures	Timing of vegetation clearing. Pre-clearance vegetation surveys.	Observation of pre-clearance surveys being undertaken.	Areas where vegetation clearing will be undertaken during critical life cycle events for fauna.	Pre-clearance Reports (Before and during vegetation clearing activities)	Contractor Ecologist Construction Contractor HSE Coordinator
Implement clearing protocols including pre-clearing surveys, daily surveys and staged clearing in the presence of an appropriately qualified and experienced ecologist during clearing events.	Section 6.3 – Vegetation Clearance Procedures	Pre-clearing checklist. Tree Felling and Fauna Habitat Removal Feature Procedure.	Observation of pre-clearing checklist and tree clearing procedure.	Areas where vegetation clearing will be undertaken.	Pre-clearing Checklist (Before and during vegetation clearing activities)	Contractor Ecologist Construction Contractor HSE Coordinator
Relocate habitat features (fallen timber, hollow logs, rocks) from within the Development Footprint.	Section 6.3 – Vegetation Clearance Procedures Section 6.9 – Rehabilitation and Restoration Procedure	Tree-clearing procedure including relocation of habitat features to adjacent area for habitat enhancement.	Records of where habitat features that have been relocated within the Development Footprint.	Throughout the Development Footprint.	Salvage register	Construction Contractor HSE Coordinator
Clearing protocols that identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance; for example, removal of native vegetation by chainsaw, rather than heavy machinery, is preferable in situations where partial clearing is proposed.	Section 6.3 – Vegetation Clearance Procedures	Approved clearing limits to be clearly delineated with temporary fencing or similar prior to construction commencing. No stockpiling or storage within dripline (the area directly located under the outer circumference of the tree branches) of any mature trees. In areas to clear adjacent to areas to be retained, chainsaws would be used rather than heavy machinery to minimise risk of unauthorised disturbance.	Observation of the following: <ul style="list-style-type: none"> Clearing limits are upright, clearly visible and in the correct place. If stockpiling or storage of materials is occurring within the dripline of any mature trees. 	Throughout the Development Footprint.	Weekly Site Environmental Inspection Records (Weekly during Construction) Vegetation Disturbance Permits (As required) Stockpile Register (As required during earthworks)	Construction Contractor HSE Coordinator
Temporary fencing to protect significant environmental features such as riparian zones.	Section 6.3 – Vegetation Clearance Procedures	Prior to construction commencing, exclusion fencing and signage would be installed around habitat to be retained.	Observe that exclusion fencing and signage that surrounds the sites significant environmental features is upright, clearly visible and in the right place.	Protected areas within the Development Footprint have exclusion fencing and signage.	Weekly Site Environmental Inspection Records (Before construction commences).	Construction Contractor HSE Coordinator
Hygiene protocols to prevent the spread of pests, weeds or pathogens between infected areas and uninfected areas.	Section 6.6 – Weed and Pathogen Management Procedure	A Weed Management procedure aims to prevent and minimise the spread of weeds. This procedure outlines: <ul style="list-style-type: none"> Management protocol for declared priority weeds under the Biosecurity Act during and after construction. Weed hygiene protocol in relation to plant, machinery, and fill. Any occurrences of pathogens such as Myrtle Rust and Phytophthora would be monitored, treated, and reported. 	Observe the following: <ul style="list-style-type: none"> Presence of weeds. Degree of, or presence/absence of damage to rehabilitation areas caused by foraging or trampling. 	Throughout the Development Footprint and in areas undergoing rehabilitation.	Weekly Site Environmental Inspection Records (Weekly during Construction) Vehicle Hygiene Checklists (Upon arrival during construction) Pest Management Register (Updated fortnightly during construction and 6 monthly during operations)	Contractor Ecologist Construction Contractor HSE Coordinator
Management of retained vegetation	Section 6.9 – Rehabilitation and Restoration Procedure	A Restoration and Rehabilitation procedure aims to maintain creek morphology and prevent the decline in condition of the vegetation retained within the Development Footprint. The procedure outlines: <ul style="list-style-type: none"> Establishment of permanent exclusion fencing. Management protocol for weed and exotic species during and after construction. 	Monitoring methods include but not limited to fortnightly environmental inspections and weed density mapping.	Within appropriate zones e.g. creek banks, remnant vegetation and or fauna habitat within the Project Area (excluding the Biodiversity Stewardship Area).	Weekly Site Environmental Inspection Records (Fortnightly inspections during construction and yearly during operation until no longer required).	Construction Contractor HSE Coordinator

Biodiversity Mitigation and Management Measure to be Addressed	Relevant procedure	Parameter(s) to be Monitored	Monitoring Method	Where	Reporting and Frequency	Responsibility
		<ul style="list-style-type: none"> • Establishment of habitat features such course woody debris and rocks. • Requirements for monitoring. • Adaptive management including trigger thresholds for active management or remediation. 			Annual Review (Progress of rehabilitation reported annually during operations until works are complete).	

8.1 Training Requirements

Employees, contractors, and staff working within the Development Footprint will undergo site induction training relating to biodiversity issues. Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in biodiversity management.

Further details regarding staff induction and training are outlined in the EMS. It will be emphasised to staff during toolbox talks and training that appropriate fauna and flora management onsite is critical to the Project. This includes:

- Vegetation clearance procedures, pre-clearance and hollow bearing tree clearing protocols.
- Driving carefully onsite and adhering to site speed limits.
- Appropriate handling of fauna if required.
- Threatened species finds reporting.
- Sensitivity and significance of biodiversity values in the surrounding area, including the BSS and Goulburn River National Park.

8.2 Auditing

Auditing of this BMP will be carried out in accordance with the requirements outlined in the EMS.

9.0 Review and Improvement

Review of this BMP will be undertaken in accordance with Condition C2 of the Development Consent.

Review and improvement of this BMP will also be achieved through the ongoing evaluation of the Project's performance against the rehabilitation criteria and monitoring program outlined in this BMP.

The improvement process will be designed to:

- Identify areas of opportunity for improvement when implementing the Project's biodiversity mitigation/management measures outlined in **Section 6.0**.
- Determine the cause or causes of non-conformances with the Project's rehabilitation criteria and the biodiversity mitigation/management measures outlined in **Section 6.0**.
- Develop and implement a plan of corrective and preventative actions to address any non-conformances and/or deficiencies with the Project's rehabilitation criteria and the biodiversity mitigation/management measures outlined in **Section 6.0**.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from the improvement process and communicate these changes with all the responsible parties that are implementing this BMP.

9.1 Revision Procedures under Development Consent

This BMP may need to be revised if the Project's scope of works, or work methods change, if the work methods are found to be ineffective, or if directed by the Lightsource bp Principal. This will occur as needed and in accordance with the process outlined in Section 9.0 of the EMS.

Consistent with Condition C2 of the Development Consent, Lightsource bp will:

- Update the BMP to the satisfaction of the Planning Secretary prior to carrying out any upgrading or decommissioning activities on site.
- Review and revise (if necessary) the BMP to the satisfaction of the Planning Secretary within one month of:
 - the submission of an incident report under Condition C11 of Schedule 2 (see Section 10.1)
 - the submission of an audit report under Condition C15 of Schedule 2 or
 - any modification to the conditions of the Development Consent.

A copy of the updated BMP and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure identified in the EMS.

9.2 Revision Procedures under EPBC Approval

If the BMP is revised, Lightsource bp will notify AG DCCEEW within 2 days of submitting any request to have a revised version approved by the NSW Planning Secretary. In this notification, Lightsource bp will provide the revised version of the BMP to AG DCCEEW and specify the proposed changes.

Within 5 days of the revised BMP being approved by the NSW Planning Secretary, the approval holder must provide AG DCCEEW with:

- a. the version of the revised BMP approved by the NSW Planning Secretary,
- b. details of the comparison between the previous and most recently approved versions of the BMP, describing all changes, and
- c. a detailed discussion describing any changes to the harm, including impacts, to protected matters which will, or will likely, occur as a result of implementing the version of the revised plan approved by the NSW Planning Secretary.

It should be noted if Lightsource bp is required to exclude or redact sensitive biodiversity data from plans published on the website or otherwise provided to a member of the public. Lightsource bp will notify AG DCCEEW in writing what exclusions and redactions have been made in the version published on the website.

10.0 Incident Reporting

This section describes the incident reporting procedures for the Project, having regard to the requirements of the Development Consent and EPBC Approval.

10.1 Notification Procedures under Development Consent

10.1.1 Incident Notification

The Planning Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident.

In accordance with the Development Consent an incident is defined as “A set of circumstances that causes or threatens to cause material harm to the environment”.

Furthermore a written notification addressing the requirements set out below must be submitted to the Planning Secretary via the Major Projects website within seven days after the Applicant becomes aware of the incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under Condition C11 of the Development Consent or, having given such notification, subsequently forms the view that an incident has not occurred.

Written notification of an incident must:

- a. identify the development and application number (Goulburn River Solar Farm, SSD- 33964533)
- d. provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident)
- e. identify how the incident was detected
- f. identify when the applicant became aware of the incident
- g. identify any actual or potential non-compliance with conditions of consent
- h. describe what immediate steps were taken in relation to the incident
- i. identify further action(s) that will be taken in relation to the incident
- j. identify a project contact for further communication regarding the incident.

Within 30 days of the date on which the incident occurred, or as otherwise agreed by the Planning Secretary, Lightsource bp will provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all the requirements below, and such further reports as may be requested.

The Incident Report must include:

- a. a summary of the incident
- b. outcomes of an incident investigation, including identification of the cause of the incident
- c. details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence
- d. details of any communication with other stakeholders regarding the incident.

10.1.2 Non-Compliance Notification

Non-compliance notification requirements are set out in Condition C12, C13 and C14 of the Development Consent. Under the Development Consent, a non-compliance is defined as an ‘occurrence, set of circumstances or development that is a breach of this consent but is not an incident.’

Lightsource bp will notify the DPHI in writing via the Major Projects website within seven days after becoming aware of any non-compliance. Any non-compliance notification will identify the Project and the application number (Goulburn River Solar Farm, SSD 33964533), set out the condition of consent that the Project is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known). The notification will also identify what actions have been taken, or will be undertaken, to address the non-compliance.

Consistent with Condition C14 of Development Consent, a non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

10.2 Notification Procedures under EPBC

The approval holder must notify AG DCCEEW electronically, within 2 business days of becoming aware of any incident. In accordance with the EPBC Approval an incident is defined as

- An event which has the potential to, or does, harm any protected matter,
- Potential non-compliance with EPBC conditions, including the administrative requirements,
- Actual non-compliance with EPBC conditions, including the administrative requirements,
- Potential non-compliance with one or more commitment made in the BMP, and/or
- Actual non-compliance with one or more commitment made in the BMP.

Written notification of an incident must include:

- a. any condition or commitment made in the BMP which has not been, or may have not been, complied with
- b. a short description of the incident
- c. the location (if applicable, including co-ordinates), date and time of the incident.

Within 12 business days of the date on which the incident occurred Lightsource bp will provide AG DCCEEW with a detailed report on the incident addressing all the requirements below, and such further reports as may be requested. The Incident Report must include:

- a. all corrective measures and investigations which Lightsource bp has already taken in respect of the incident
- b. the potential impacts of the incident
- c. the method and timing of any corrective measures that Lightsource bp proposes to undertake to address the incident
- d. any variation of these conditions or revision of the BMP that will be required to prevent recurrence of the incident and/or to address its consequences.

11.0 References

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Umwelt (2024a). Biodiversity Development Assessment Report – Goulburn River Solar Farm.

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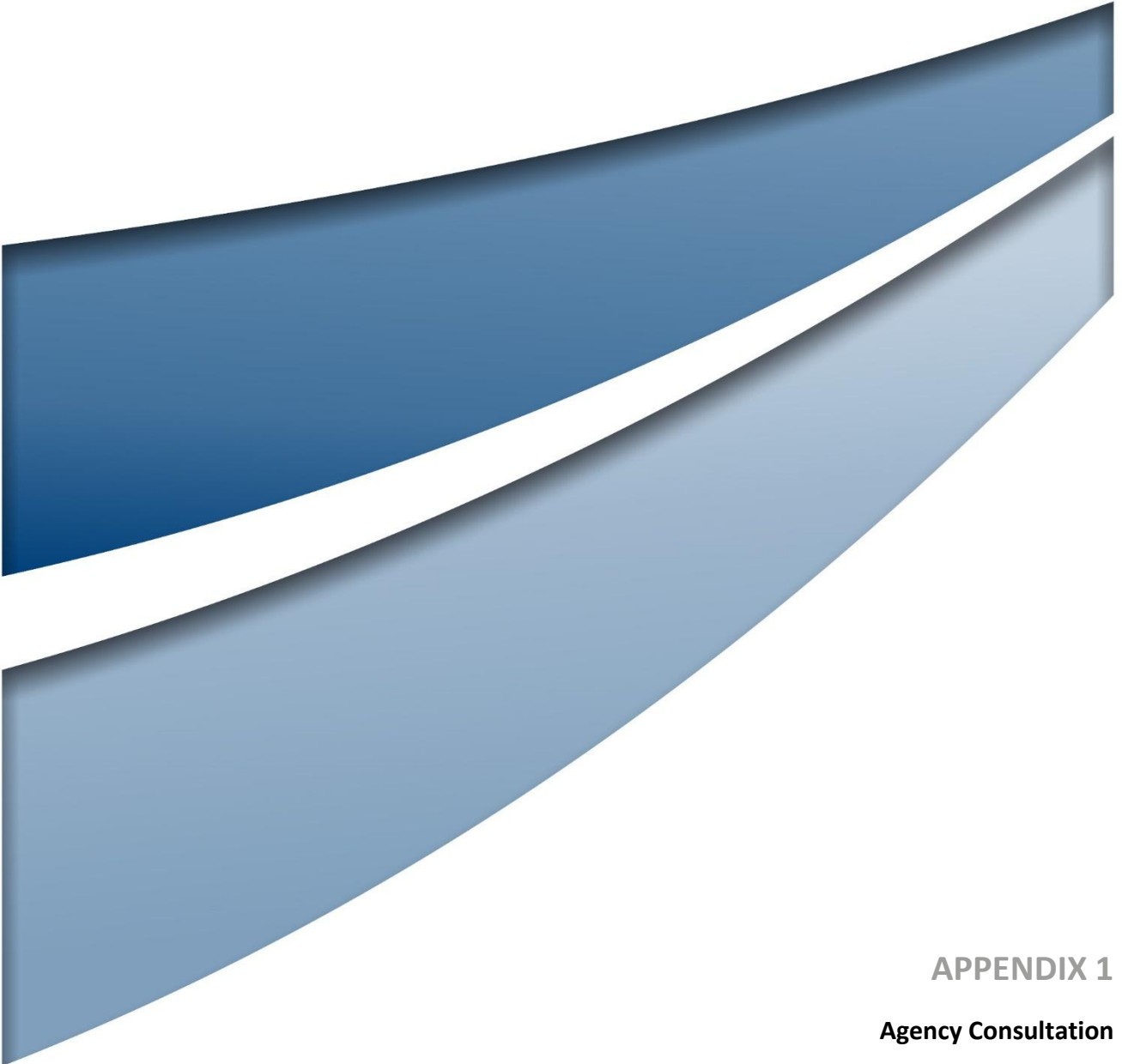
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APPENDIX 1
Agency Consultation

Response to BCS – Approach to BCS Comments

Comments were received from the NSW Department of Biodiversity, Conservation and Science (ref: DOC24/837337) on 5 November 2024 following review of the Goulburn River Solar Farm – Biodiversity Management Plan. Lightsource bp have addressed each comment with responses provided in Table 1.

Table 1 BCS Response

Consent Reference	BCS Comment	Lightsource bp Response
B16. Prior to carrying out any development that could directly or indirectly impact biodiversity values, the Applicant must prepare a Biodiversity Management Plan for the development in consultation with BCS, and to the satisfaction of the Planning Secretary. This plan must:		
a) be prepared in accordance with the Biodiversity Development Assessment Reports dated 11 January 2024 and 18 January 2024 provided in the Amendment Report.	Condition satisfactorily met.	
(b) include a description of the measures and timeframes that would be implemented for:	See details below.	Comments addressed in below sections.
(i) protecting vegetation and fauna habitat outside the approved disturbance areas.	The BMP should outline specific measures to protect Barking Owls and the potential breeding habitat within the BSS. Specific reference should be made to trees and locations where the species was recorded along with measures to mitigate impacts to the species and suitable habitat.	<p>Lightsource bp would like to emphasise that areas containing the most valuable vegetation and fauna habitats, which lie outside the approved disturbance zones, will be safeguarded within the BSS and carefully managed in accordance with the BSS Management Plan</p> <p>Lightsource bp has revised Section 6.3.2 (Exclusion Fencing and ‘No-go Zone’ Procedure) of the BMP to provide further details on protection measures specifically for the Barking Owl. These measures are aligned with those outlined in the BDAR. Measures include details of established exclusion areas around all trees (inclusive of a 100m buffer) where Barking Owls were observed during the BDAR, except for one tree where highly disturbed grazing land within the 100m buffer will be impacted.</p> <p>Figure 6.1 in the BMP has been updated to include the locations of the hollow bearing trees where Barking Owl activity was observed. All of these are protected as part of the BSS.</p>
(ii) managing and enhancing the remnant vegetation and fauna habitat onsite.	The BMP should clearly indicate the extent of environmental rehabilitation work to occur as part of each stage of works, the proposed management regime and provide performance measures for each rehabilitation area. The BMP should include detail on how the management actions can be achieved and enable biodiversity values of the site be improved, restored, maintained.	<p>Relevant procedures and mitigation measures for each stage of the Project are outlined in Section 6.2. A graphic is provided showcasing relevant procedures for each phase of the Project. The construction of the Project will be undertaken in a staged process. As a result, rehabilitation works will be ongoing.</p> <p>In response to BCS comments, Lightsource bp has revised the Rehabilitation and Restoration Procedure in Section 6.9 to include additional management measures and detail how the Project will manage and monitor the progress of rehabilitation efforts. The Rehabilitation and Restoration Procedure has also been revised to align with measures outlined in the SWMP for the Project. The revised Rehabilitation and Restoration Procedure follows the following structure:</p> <ul style="list-style-type: none"> • Section 6.9.1 Rehabilitation of Temporarily Disturbed Areas • Section 6.9.2 Salvage of Habitat Features and Vegetative Materials • Section 6.9.3 Land Preparation • Section 6.9.4 Seed Management • Section 6.9.5 Creek Morphology Works • Section 6.9.6 Rehabilitation Monitoring Program • Section 6.9.7 Response to Decline in Condition <p>Section 8 of the BMP has been updated to clarify that the Rehabilitation and Restoration Procedure is as per Section 6.9.</p>
	Vegetation Management Zones (VMZs) – VMZs should be established to reflect the proposed management activities and objectives across management areas. A description of these zones, objectives and management actions should be provided and should include a map showing the location and extent of the zones. The BMP should fully address all	<p>Lightsource bp has revised the BMP to specify Vegetation Management Zones (VMZ) for the Project, which are included in Section 6.8. Section 6.8 of the BMP includes a new table outlining locations, objectives, management actions and monitoring for each VMZ. A map of VMZ has been included in Figure 6.1. However, timeframes have not been added due to the staged nature of the Project it is difficult to predict an indicative work schedule.</p> <p>As mentioned above, works undertaken on the 792.19 ha site would be progressed in a staged approach, therefore it is difficult to specify precise timeframes for rehabilitation activities because rehabilitation would be ongoing.</p> <p>During construction, minor disturbance is expected in waterways which would require minor vegetation clearing (of grasses/ground cover) for the purpose of waterway crossings for access tracks/underground cabling.</p>

Consent Reference	BCS Comment	Lightsource bp Response
	<p>identified issues relating to the restoration and maintenance of the area within each management zone and include:</p> <ul style="list-style-type: none"> • A description of the area and the objective for the zone. • Descriptions of the issue e.g., erosion, weed species and cover. • Management strategies and methodology of the works to be implemented. • Measurable performance targets. • Define who is responsible for monitoring the rehabilitation. • Waterbodies will require their own management zone and specific actions. • Revegetation of waterfront land needs details, such as density and Plant Community Type (PCT). • Define management zones on a map, which is linked to an associated works schedule identifying tasks prescribing the most appropriate restoration methodology and actions for each zone. • Timeframes for work tasks identifying who is responsible for each task and the outcome expected for each zone. 	<p>Vegetation clearing would be detailed in Vegetation Disturbance Permits (internal procedure; new addition to the BMP in s6.3.3) and species utilised in rehabilitation would be consistent with pre-clearance PCTs.</p> <p>Lightsource bp would also like to outline that no revegetation works would be proposed to be undertaken on waterfront land and all references to these works have been removed from the BMP.</p>
	<p>Regeneration technique – The BMP should include detailed methodology to inform the management of vegetation, weeds, fauna habitat and threatened species on site, including timing and schedule. Planting lists should reflect the appropriate PCT for each zone. Seed/ seedlings obtained for revegetation works should be sourced from areas of local provenance.</p>	<p>Lightsource bp acknowledges that opportunities for rehabilitation (or regeneration) during construction are limited. Aside from the avoidance areas and the BSS, the available land for rehabilitation is minimal. However, as noted in Section 6.9.1, there are opportunities to rehabilitate areas that are temporarily disturbed. Details of methodology are included in the Rehabilitation and Restoration Procedure (refer to Section 6.9). Measures include Salvage of Habitat Features and Vegetative Materials (refer to Section 6.9.2) and the retention of the seedbank (refer to Section 6.9.4) have been included in the BMP for reference.</p> <p>No revegetation is proposed within the Development Footprint or the avoidance areas. Revegetation will however be part of the management actions in the BSS (see Section 6.13.2 of the BMP), including within areas of the BSS located inside the solar farm security fence.</p>
	<p>Weeds - The objective of the weed management is to treat priority weed species currently present onsite and to prevent future infestations and encroachment, whilst ensuring that the integrity of the native vegetation is not compromised. Provide details of primary, secondary and maintenance weeding. Works to reflect findings of baseline monitoring.</p> <p>Primary weeding – Weeds of National Significance (WoNS)/ Priority Weeds complete removal tending towards eradication. Weed management to state removal of weeds, particularly WoNS/ Priority Weeds from all VMZs and specify timeframe.</p> <p>Secondary weeding – Details regarding specific actions dependant on species present.</p>	<p>Lightsource bp has updated the Weed and Pathogen Management Procedure in Section 6.6 to include additional details on baseline surveys and to highlight that monitoring will continue throughout the operational phase of the Project. Updated measures include undertaking surveys prior to the commencement of clearing. Lightsource bp commits to determining the location of weeds and pathogens within the Project Area, and as such the Project Area will be progressively surveyed and mapped prior to or as part of pre-clearance surveys.</p> <p>The monitoring duration will align with the routine inspections conducted during both the construction and operational phases of the Project (refer to Section 6.6).</p> <p>In reference to Priority Weeds, Lightsource bp commits to maintaining weeds in accordance with the requirements identified on the NSW Weedwise website for the Hunter Local Land Services Region as outlined in Section 6.6.2 of the BMP.</p>

Consent Reference	BCS Comment	Lightsource bp Response
	<p>Duration – Timeframe should be specified for each stage of rehabilitation works. The rehabilitation timeframes should be defined as follows:</p> <ul style="list-style-type: none"> Establishment - Planting/ rehabilitation of native vegetation is to occur as soon as practical but no longer than 3 months upon completion of benches and any other disturbed areas no longer required for operations. Year 1 - An initial maintenance period for 12 months from the time the last plants are planted. Years 2 to 5 - A maintenance period that will continue after the initial maintenance period is satisfactorily completed. <p>Rehabilitation, maintenance, and monitoring is recommended to be undertaken for a minimum period of 5 years or each stage in all VMZs. Ongoing maintenance including weed management, watering, re-planting of dead plants with outcomes maintained in perpetuity. Emergency maintenance (such as following major storm events) are required as soon as practical.</p>	<p>In response to BCS’s comment Lightsource bp would like to outline that the Vegetation Integration Study committed to as part of the Project addresses this requirement. The study includes BAM plots within the operating area (i.e., Vegetation Zone 3) and in retained/avoidance areas. Further details have been included in Section 6.13.2 of the BMP.</p> <p>Additionally, monitoring on an annual basis for 3 years post construction (consistent with the commitment to the VI study) will include monitoring surface erosion and weed presence. Details are included in the Rehabilitation and Restoration Procedure in Section 6.9.6.</p>
	<p>Schedule of works – Prepare an appropriate work schedule indicating timeframes required for the completion of each task presenting the tasks in a logical sequence for implementation.</p>	<p>Relevant procedures and mitigation measures for each stage of the Project are outlined in Section 6.2. A graphic is provided showcasing relevant procedures for each phase of the Project. The construction of the Project will be undertaken in a staged process and as a result rehabilitation works will be ongoing.</p>
	<p>Sheep Grazing - The BMP suggests that there is potential to allow the grazing of sheep within the site as a form of vegetation management. Details of regenerative farming techniques are to be included to ensure the condition of consent can be met and that techniques are in alignment with the BMP.</p>	<p>At this stage of the Project sheep grazing is not suggested to be undertaken. However, the possibility of incorporating sheep grazing or other Agri-solar pursuits may be revisited in later stages.</p> <p>Detailed relating to grazing has been included in Section 2.5.3 of the BMP.</p>
<p>(iii) minimising clearing and avoiding unnecessary disturbance of vegetation that is associated with the construction and operation of the development.</p>	<p>Insufficient detail has been provided to determine how this requirement will be met. Details should be provided outlining measures to minimise clearing and disturbance of vegetation. Corresponding maps should be provided showing specific areas where avoidance of vegetation may be achieved and details of measures to reduce impacts to vegetation during construction.</p>	<p>The Project has been designed through the planning and assessment phase to minimise clearing and avoid unnecessary disturbance of vegetation. Areas of biodiversity value, including Regent Honeyeater Mapped Important Habitat, higher quality DNG, and woodland form of PCTs, have been included in the BSS.</p> <p>As the Project continues through detailed design, the location of solar farm infrastructure will be refined. Final layout plans, once developed, will be available on the Project website (https://lightsourcebp.com/au/project/goulburn-river-solar/) in accordance with Development Consent condition C19(ii). Figure 6.1 in the BMP shows areas which can be avoided. The BMP has been updated to include additional controls to further minimise the risk of vegetation being inadvertently cleared or disturbed. The Project is now committing to Vegetation Disturbance Permit Procedure which will aim to control the level of clearing ensuring that it is undertaken in a staged and controlled manner. This information has been included in Section 6.3.3.</p>
<p>(iv) minimising the removal of hollow bearing trees during spring to avoid the main breeding period for hollow-dependent fauna.</p>	<p>Section 6.3.3 states “Where possible, clearing of hollow-bearing trees with observed native fauna activity during spring will be avoided to minimise impacts on breeding.” Remove “where possible” and state that removal of hollow-bearing trees during spring is to be avoided. Section 6.3.3 also states the following: Where possible, clearing of hollow-bearing trees with observed native fauna activity during spring will be avoided to minimise impacts on breeding. Where this is not possible, the following steps will be taken (see also Section 6.4):</p>	<p>Lightsource bp notes the Development Consent condition does not specify that clearing of hollow bearing trees will be avoided during spring. Lightsource bp is committed to minimising this action in accordance with the condition. Clearing will be conducted progressively across the site in a phased manner.</p> <p>In response to BCS’s comment, the following statements have not been removed from Section 6.3 however clarification has been included to specify that this would be a last resort action and all attempts would be made to avoid felling of hollow-bearing trees with observed fauna.</p> <p>In cases where the clearing of hollow-bearing trees is necessary during Spring, additional pre-clearance measures will be implemented. These measures may include, but are not limited to, spotlighting and the inspection of tree hollows using a camera or endoscope.</p> <p>If a threatened species is observed or deemed likely to be present, the provisions outlined in Section 6.3.3.2 will be followed, as advised by the Contractor Ecologist.</p>

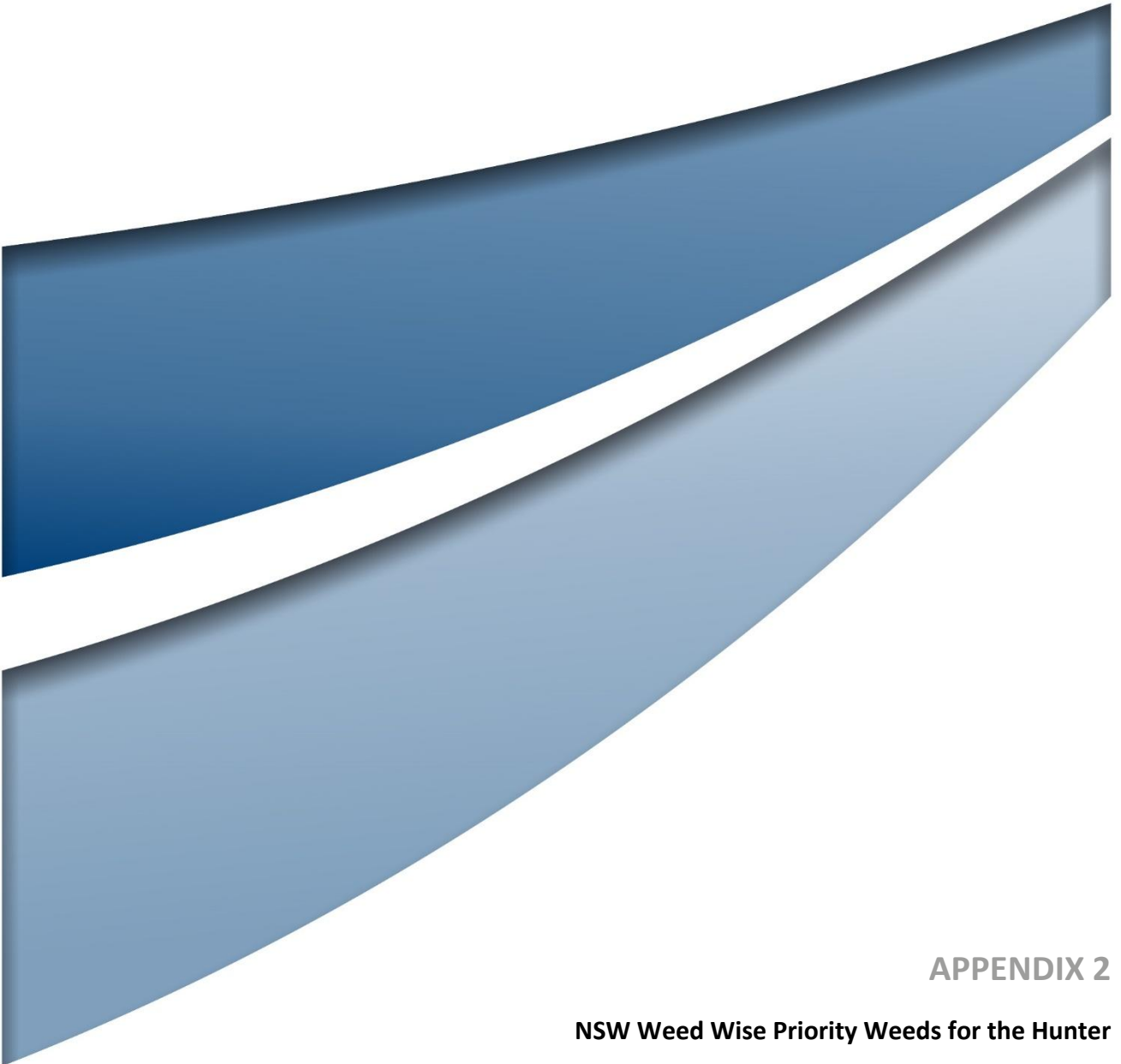
Consent Reference	BCS Comment	Lightsource bp Response
	<ul style="list-style-type: none"> Removing the nest/young and relocate to comparable habitat within a No-go Zone or the BSA. Removing the nest/young and relocating to a wildlife carer. <p>This measure is not supported as it is not in accordance with the condition. Hollow bearing trees should not be removed in spring and if young are found they are to be left in place until they are able to disperse as per the objective of the condition.</p>	<p>In instances where a non-threatened species is observed, the Contractor Ecologist will assess the situation and determine whether any additional measures are required, such as tapping the tree and allowing a 24-hour observation period before proceeding.</p>
<p>(v) minimising the impacts to fauna on site and implementing fauna management protocols.</p>	<p>The pre-clearance survey procedure (6.3.3) should include spotlighting and/ or inspection of inside hollows.</p>	<p>Section 6.3.4 (formally 6.3.3) has been updated to include additional mitigation measures during the pre-clearing procedure. Additional Measures include:</p> <p>“In cases where inspections indicate potential habitat use, and where clearing of hollow bearing trees is necessary during Spring, further investigation will be conducted using non-invasive tools such as spotlighting, inspection mirrors, endoscopes, or cameras to assess the interior of hollows.”</p>
	<p>The fauna habitat clearing protocol (6.3.5) should be expanded to include the following:</p> <ul style="list-style-type: none"> Immediately prior to clearing, a suitably qualified ecologist will undertake preclearing surveys. Habitat/ hollows identified above for removal is to be inspected by an ecologist immediately prior to clearing to determine if the features are being utilised by fauna. Any fauna located are to be trapped and relocated to adjoining areas not subject to development pressure prior to the tree being felled/ habitat removed. Any hollow-bearing trees unable to be thoroughly inspected shall be felled in one to two metre sections, beginning at the top of the crown. Lengths cut from the trees shall be in a manner that shall preserve the hollows with each section inspected and appropriately treated to minimise impact to fauna. No clearing is to occur at temperatures greater than 35°C to minimise impact to displaced fauna. Works are to be scheduled outside breeding and torpor season for species likely to occur on site details of which are to be provided. Temporary frog proof / exclusion fencing will be installed where near waterbodies to exclude amphibians. All felled habitat trees are to remain in situ on the ground for at least one night before being stockpiled for processing. 	<p>Lightsource bp has revised the Fauna Habitat Clearing Protocol (refer to Section 6.3.6 of the BMP). The procedure has been expanded to include</p> <ul style="list-style-type: none"> Immediately prior to clearing, a suitably qualified ecologist will undertake preclearing surveys. Habitat/ hollows identified above for removal is to be inspected by an ecologist immediately prior to clearing to determine if the features are being utilised by fauna. Any fauna located are to be trapped and relocated to adjoining areas not subject to development pressure prior to the tree being felled/ habitat removed. No clearing is to occur at temperatures greater than 35°C to minimise impact to displaced fauna. All felled habitat trees are to remain in situ on the ground for at least one night before being stockpiled for processing. <p>However, Lightsource bp will undertake soft felling of trees rather than cutting them into smaller sections. The process for felling a hollow-bearing tree would involve tapping the trunk with an excavator to encourage any animals present to vacate. If there is no movement, the excavator would then proceed with slowly felling the tree. This would also maximise the preservation of hollows, especially those deep within the trunk or located in branches are kept intact.</p> <p>As noted in the BDAR, the only confirmed threatened species on site utilising hollows is the Barking Owl. All hollow trees identified as being associated with the owl have been avoided in the Project's detailed design. If fauna species are found during clearing, the relevant protocols will be followed. Lightsource bp would also like to comment that torpor does not apply to all fauna species and is varied based on a range of factors such as seasonal climate and resource availability. Due to the range of variables, nominating a reasonable window of time to avoid clearing to account for torpor periods is not practical. There are no threatened fauna species recorded on the site that are known to have a particular tendency for torpor. The pre-clearing procedure proposed provides a range of measures in line with best practice procedures that avoid and minimise impacts on native fauna species as much as practical. At this site, there is not sufficient justification to have a particular hold period for clearing due to torpor.</p> <p>Based on the results of the BDAR, no threatened frog species were identified during the survey period. Additionally, there will be limited earthworks in the vicinity of potential frog habitat (i.e., dams). Consequently, Lightsource bp has determined that frog-proof fencing is not required for the Project.</p>
	<p>Section 6.4.1 should state that protocols are to include the operational stage of the project.</p>	<p>Lightsource bp have updated Section 6.4.1 to include the operational stage of the Project.</p>
	<p>Section 6.4.3 should be amended to remove the words 'where possible'. Fauna should only be handled by an appropriately qualified and experienced ecologist or wildlife rescuer.</p>	<p>Lightsource bp has updated Section 6.4.3 to reflect the relocation of particular fauna would only be undertaken by an appropriately qualified and experienced ecologist or wildlife rescuer.</p>

Consent Reference	BCS Comment	Lightsource bp Response
	Section 6.4.3.1 should specify that these activities are to be undertaken by an appropriately qualified and experienced ecologist.	Lightsource bp has updated Section 6.4.3.1 to include that these activities would be undertaken by an appropriately qualified and experienced ecologist or wildlife rescuer.
(vi) rehabilitating and revegetating temporary disturbance areas with native species that are appropriate to the site's ecology and conditions.	As described above, specific detail regarding rehabilitation measures is required to meet this condition and achieve a good outcome onsite. The BMP should outline exactly how the requirement of the consent will be achieved.	This comment has been addressed above.
(vii) maximising the salvage of vegetative and soil resources within the approved disturbance area for beneficial reuse in the enhancement or the rehabilitation of the site.	Details should be provided of the number, type, location and plan for salvaged resources.	The quantum of material able to be salvaged is difficult to predict however as noted in the BMP, the types of salvage resources to be collected are detailed in Sections 6.9.2. Additionally, Lightsource bp has updated the BMP to identify potential locations for habitat enhancement. Further additional locations may be identified during the period of construction, in consultation with the Project ecologist.
(viii) controlling weeds, feral pests and pathogens in consideration of the relevant Commonwealth threat abatement plans.	As detailed above.	This comment has been addressed above.
(ix) minimising impacts on entities at risk of a serious and irreversible impact (SAII), including: <ul style="list-style-type: none"> • securing an additional 23.5 hectares of Box Gum Woodland derived native grassland (DNG) within a Biodiversity Stewardship Agreement for the purposes of rehabilitating, enhancing and protecting, in perpetuity, this vegetation to a condition state commensurate with Box Gum Woodland. • undertaking a research program regarding the impacts of the development on the vegetation integrity of the Box Gum Woodland DNG retained onsite. • providing \$25,000 per annum (over the first 5 years following commencement of construction) towards Regent Honeyeater conservation programs in consultation with the BCS. 	<p>Include a description of the measures and timeframes that would be implemented for:</p> <p><u>Regent Honeyeater</u></p> <p>BCS has reviewed the proposal from ANU and information included in the email from Lightsource to BCS on 30 October 2024 and supports the proposed approach. BCS provides the following recommendations:</p> <ul style="list-style-type: none"> • provide a description of the measures and timeframes for implementation, for example stating that conservation actions will commence within one year of the start of construction • report on the outcomes of Regent Honeyeater conservation programs in monitoring report • undertake Regent Honeyeater surveys annually. 	<p>The Project is committed to the future conservation of the Regent honeyeater and will provide \$25,000 per annum (over the first 5 years of the development following commencement of construction) towards Regent Honeyeater conservation programs in consultation with the BCS.</p> <p>The recognised species expert, Dr Ross Crates, concluded that offsite measures would offer the greatest benefit to the species (Appendix H, Amended Solar Farm BDAR).</p> <p>Through consultation with BCS, Lightsource bp have determined to support Regent Honeyeater conservation actions through the Australian National University (ANU).</p> <p>ANU propose to implement the following measures with the available funds:</p> <ul style="list-style-type: none"> • Noisy miner management on the Goulburn River. Extension of noisy miner management upstream and downstream of Morrison's Flat and Drummer's Flat. Five days of pest management consulting to remove noisy miners from at least 100 ha of potential regent honeyeater breeding habitat on the Goulburn River each year. We propose to follow the management model implemented by Yancoal Australia on their Goulburn River Biodiversity Area. • Regent honeyeater nest protection. Implementation of targeted nest predator management at regent honeyeater nests located in the Upper Hunter Valley. • Regent honeyeater feed tree restoration. Targeted planting of at least 150 yellow box <i>E.melliodora</i> in known regent honeyeater breeding areas along the Goulburn River in areas where noisy miner management is to occur (i.e. Morrison's and Drummer's Flats, Goulburn River National Park). Following the model that has been implemented in Capertee National Park. <p>The BMP has been updated with the details of the conservation program, as proposed by ANU.</p> <p>ANU will provide Lightsource bp with a brief (email/letter style) annual report, confirming the tasks completed in the previous 12 months along with the program outcomes.</p> <p>In addition, during the life of the Project, Regent Honeyeater surveys will also be undertaken within the BSS, adjacent to the Development Footprint. These surveys will occur every five years to determine presence/absence of the species, with the intent being to contribute important data on the distribution of the species. If breeding is detected, the nest trees will be protected with tree collars to minimise the potential for nest predation by native arboreal mammals. Any observations of the species will be communicated to the species expert and both State and Commonwealth DCCEEW.</p>
	<u>Vegetation Integrity Study</u>	Greater detail regarding the design of the study should be provided in the BMP. It is to be noted that if this work is to provide an evidence-base for scoring partial loss at future sites, the BAM (and guide) state that partial loss refers to the ability to retain vegetation through construction and operation – it is not intended to cover full temporary loss and regrowth. BAM s.8.1.1(2) requires full loss to be applied if

Consent Reference	BCS Comment	Lightsource bp Response
	<p>retained vegetation will continue to degrade over the long-term.</p> <p><u>Box Gum Woodland Restoration</u></p> <p>The BMP should describe how the implementation of the BMP and BSSAR would be integrated with the overall rehabilitation of the site. The BMP should align and cross reference the BSSAR. The performance criteria should be amended to include:</p> <ul style="list-style-type: none"> • Establishment of a weed-free self-maintaining ecosystem matching the PCT assemblage and include the percentage of native species diversity and density. • Planting density targets should be increased to align with the PCT densities and also include a density target for mid stratum species. • Target survival rate of at least 90% for native tubestock. • WoNS/ Priority Weeds complete removal tending towards eradication. Other weed cover to be reduced to <5% cover for all strata. 	<p>River Solar Farm would be shared with NSW DCCEEW, AG DCCEEW and more broadly across the industry, with the intention to publish a peer reviewed article.</p> <p>This BMP has been updated to include the following additional detail in response to BCS's comment:</p> <ul style="list-style-type: none"> • The Project-specific research method will be developed within three months of construction commencing (noting that construction in these early months will be in limited areas only, and will not impact on any new BAM plots which may be proposed as part of the study and may require baseline monitoring) • A brief summary report will be prepared annually and kept on file by Lightsource bp • At the conclusion of the research project, the findings will be written up in a final report, including statistical analysis. <p>Mitigation measures and rehabilitation measures from the BSSAR have been integrated within the BMP to provide consistency across both plans. Interactions between the Project and the BSS have been included in Section 6.13.3.</p> <p>Could also note that the BSS is currently being reviewed and specific objectives will be incorporated into the BMP under the Section 6.12.2 Box Gum Woodland Restoration Section when finalized.</p> <p>The Woodland restoration targets have been amended. Justifications in response to the feedback are provided below.</p> <ol style="list-style-type: none"> 1. Establishment of a weed-free self-maintaining ecosystem matching the PCT assemblage and include the percentage of native species diversity and density. <ul style="list-style-type: none"> ○ Weed-free is not practically achievable in an agricultural landscape. Note that there is already a performance measure to ensure that weed density is <5% by Year 10 and this is appropriate for the landscape. A new measure has been suggested to specify a lower target for High Threat Weeds. ○ We acknowledge the benefit of adding in some metrics around the compatibility with PCT assemblage so have slightly tweaked the relevant performance measure (see (c) below). Note that in the BSSAR, the performance targets for species richness (diversity) and cover (density) for trees and shrubs are included in table form. 2. Planting density targets should be increased to align with the PCT densities and also include a density target for mid-stratum species. <ul style="list-style-type: none"> ○ Noted that current planting density targets are on the low side at 100 trees per hectare however this is set as the minimum and is intended to be appropriate to achieve the benchmark tree cover of 21% for PCT 483 (grassy woodland). A slightly higher stem count could still be appropriate for a grassy woodland community, and as such the target stem density could be increased to 200 stems per hectare. Note that the detailed revegetation and funding allows for planting of up to 300 stems per hectare to achieve a woodland condition representative of PCT 483 and the Box Gum Woodland CEEC. ○ The benchmark shrub cover value for PCT 483 is 5% and similarly, Box Gum Woodland CEEC typically has a low cover for shrubs. The performance measures stipulate that shrub cover should be <5% cover. 3. Target survival rate of at least 90% for tubestock. <ul style="list-style-type: none"> ○ As with all revegetation projects, it is expected that there will be some mortality of plants, and therefore planting above and beyond the target stem density is proposed. As noted above, there is scope and budget for planting of 300 stems/hectare. There are also additional contingency funds. Each planting event will have different survival rates, particularly dependent on weather conditions, and this is not something that can be controlled necessarily (and which is why there are contingencies). The revegetation plan includes a staged planting approach which will allow for infill planting where there has been any mortality. Provided that the stem density targets are being met, the survival rate is not considered a suitable metric for the success of the revegetation project. 4. WoNS/Priority Weeds complete removal tending towards eradication. Other weed cover to be reduced to <5% cover for all strata. <ul style="list-style-type: none"> ○ An additional performance measure has been added to specify a lower target for High Threat Weed cover. WoNS/Priority Weeds is not terminology used in the BSSAR and therefore adding this in here may cause confusion so it is preferred to just stick with High Threat Weeds. ○ For the other weed cover, if it is specified that the target be <5% cover for each strata, this could translate to at least 15% overall cover (assuming three strata each with 5% weed cover). It is considered this is too high for weed cover for a grassy woodland. For this purpose, it does not seem beneficial to specify a weed density cover for each strata, and as such has been retained as just <5% overall.
<p>(c) include a program to monitor and report on the effectiveness of mitigation measures.</p>	<p>To meet this target outcomes must be detailed, measurable and linked to performance criteria or identify definitive outcomes for specific works that will be reported on. Greater detail should be provided regarding monitoring and include</p>	<p>Measuring the success of the Box Gum Woodland restoration areas against the performance measures will be undertaken through the comprehensive standard BSS process overseen by the Biodiversity Conservation Trust (BCT), as outlined in the BSSAR. Components relevant to monitoring the success of the restoration activities are summarised in Section 6.13.2 of the BMP.</p>

Consent Reference	BCS Comment	Lightsource bp Response
	<p>specific methodologies and sampling units. Monitoring practices should include the following. Establishment of native revegetation areas including:</p> <ul style="list-style-type: none"> • Percentage survival rate of plantings. • Overall floristic diversity including percentage cover and abundance. • Weed regrowth and outbreaks including: • Percentage cover of target species. • Identification of any new significant weed species present. <p>The monitoring reports should include:</p> <ul style="list-style-type: none"> • Summary of revegetation/weed control works undertaken. • Results of monitoring inspections, including comparison to previous inspections and site assessments, where applicable, and the performance criteria. • Progress of revegetation works. • Locations and extent of new weed infestations. • Recommendations and management actions required to address any management issues identified within the conservation area; including planting of additional seedlings if plantings have failed, and target areas, and species, for weed control. • Photographs taken at each photo monitoring point. 	<p>Further detail has been included on monitoring to be undertaken for rehabilitation works within the Development Footprint.</p> <p>Monitoring for rehabilitation in temporarily disturbed areas is addressed in Section 6.9.6 of the BMP and includes a rehabilitation monitoring program detailing monitoring parameters, timings and responsibilities. Parameters include:</p> <ul style="list-style-type: none"> • Visible evidence of erosion. • Presence of weeds and % cover, number of new weed species. <p>All results will be reported in the Annual Review for the Project.</p>
(d) include an incidental threatened species finds protocol to identify the avoid and/or minimise and/or offset options to be implemented if additional threatened species are discovered on site.	Condition satisfactorily met.	
(e) include details of who would be responsible for monitoring, reviewing and implementing the plan.	<p>The BMP should detail specific the qualifications required. Suitably qualified personnel The BMP should provide a clear definition of a suitably qualified person. Personnel undertaking works should be Australian Association of Bush Regenerators (AABR) accredited bush regenerators and companies. This accreditation provides assurance of high-level quality MP works. Bush regeneration contractors not accredited under AABR but have relevant on ground experience of 10 years or more in bush regeneration and rehabilitation may be considered.</p> <p><u>Site Supervisor</u> - Demonstrated minimum of two years' experience as a supervisor in the bush regeneration or related field, including experience at a supervisory level in providing training, supervision and technical advice to staff. Site Supervisor qualifications should include the following:</p> <ul style="list-style-type: none"> • completed the Bush Regeneration Level IV Certificate or equivalent, or 	<p>Lightsource bp recognises the need for suitably qualified personnel but suggests that qualifications should be based on accreditation within New South Wales (NSW). While Lightsource bp notes that BCS has recommended AABR accreditation for personnel, it is noted that this association is no longer accepting new enrolments from NSW and is currently restricted to VIC. Additionally, restricting personnel to this accreditation does not allow ecologists who have a higher qualification to carry out the required work.</p> <p>As mentioned above no major revegetation works are proposed for the Project. Therefore, the requirement for bush regenerators is not required. However, Lightsource bp would ensure rehabilitation work and monitoring would be overseen by a suitably qualified and experienced individual, with the equivalent of a Certificate III in Conservation and Land Management or a higher relevant qualification.</p>

Consent Reference	BCS Comment	Lightsource bp Response
	<ul style="list-style-type: none"> the equivalent of a certificate diploma or degree in a field relating to natural resource management or have at least three years' experience relevant to the position. It is preferred that the Site Supervisor holds a current AQF3 or higher qualification. Experienced Bush Regenerator – Demonstrated minimum of 1000 hours experience in bush regeneration over a period of at least six months or two years under supervision. <p><u>Experienced Bush Regenerators</u> should also have completed a Bush Regeneration Level II Certificate or equivalent and will preferably hold a current AQF3 qualification.</p>	
Additional recommendations	The BMP should detail how rehabilitation of the site will be integrated with the BSSAR strategy.	The BMP has been revised to bring across additional detail which is contained in the BSSAR. Specifically, this includes for translocated habitat features, as well as information about Regent Honeyeater monitoring, which is a commitment of the BSSAR.
Additional recommendations	The BMP should include a detailed works schedule indicating timeframes required for the completion of each task presenting the tasks in a logical sequence for implementation. This will allow for the practical implementation of actions outlined in the BMP.	This comment has been addressed above.



APPENDIX 2

NSW Weed Wise Priority Weeds for the Hunter

Table A2.1 NSW Weed Wise Priority Weeds for the Hunter

Weed	Duty
All plants	<p>General Biosecurity Duty <i>All pest plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.</i></p>
Aaron's beard prickly pear <i>Opuntia leucotricha</i>	<p>Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>
African boxthorn <i>Lycium ferocissimum</i>	<p>Regional Recommended Measure An exclusion zone is established for all land in the region, except the core infestation which includes parts of: Muswellbrook Local Government Area, Upper Hunter Local Government Area. <i>Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>
African lovegrass <i>Eragrostis curvula</i>	<p>Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>
African olive <i>Olea europaea</i> subsp. <i>cuspidata</i>	<p>Regional Recommended Measure An exclusion zone is established for all land in the region, except the core infestation which includes parts of: Dungog Local Government Area, Lake Macquarie Local Government Area Maitland Local Government Area, MidCoast Local Government Area, Port Stephens Local Government Area, Singleton Local Government Area. <i>Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>

Weed	Duty
Alligator weed <i>Alternanthera philoxeroides</i>	<p>Biosecurity Zone</p> <p>The Alligator Weed Biosecurity Zone is established for all land within the state except land in the following regions: Greater Sydney; Hunter (but only in the local government areas of City of Lake Macquarie, City of Maitland, City of Newcastle or Port Stephens).</p> <p><i>Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone</i></p>
Alligator weed <i>Alternanthera philoxeroides</i>	<p>Regional Recommended Measure</p> <p>An Alligator Weed Biosecurity Zone is established for all land within the Hunter Local Land Services region except land in the following local government areas: Lake Macquarie Local Government Area, Maitland Local Government Area, Newcastle Local Government Area, Port Stephens Local Government Area.</p> <p><i>Entire Hunter Local Land Services region: A person must not, import into the State or sell. Within the biosecurity zone: If the weed is part of a new infestation of the weed on the land, notify the local control authority for the land as soon as practicable. Eradicate the weed or, if that is not practicable, destroy as much of the weed as is practicable and suppress the spread of any remaining weed. Outside the biosecurity zone: Land managers should mitigate spread of the plant from their land. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>
Anchored water hyacinth <i>Eichhornia azurea</i>	<p>Prohibited Matter</p> <p><i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i></p>
Arrowhead <i>Sagittaria calycina</i> var. <i>calycina</i>	<p>Regional Recommended Measure</p> <p><i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.</i></p>
Asparagus fern <i>Asparagus virgatus</i>	<p>Regional Recommended Measure</p> <p>An exclusion zone is established for all land in the region, except the core infestation which includes parts of: MidCoast Local Government Area.</p> <p><i>Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>

Weed	Duty
Bitou bush <i>Chrysanthemoides monilifera</i> sub <i>sp. rotundata</i>	<p>Biosecurity Zone</p> <p>The Bitou Bush Biosecurity Zone is established for all land within the State except land within 10 kilometres of the mean high-water mark of the Pacific Ocean between Cape Byron in the north and Point Perpendicular in the south.</p> <p><i>Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone</i></p>
Bitou bush <i>Chrysanthemoides monilifera</i> sub <i>sp. rotundata</i>	<p>Regional Recommended Measure</p> <p>A Bitou Bush Biosecurity Zone is established for all land within the Hunter Local Land Services Region except land within 10 kilometres of the mean high water mark of the Pacific Ocean, which includes parts of: Lake Macquarie Local Government Area, MidCoast Local Government Area, Newcastle Local Government Area, Port Stephens Local Government Area.</p> <p><i>Entire Hunter Local Land Services region: A person must not, import into the State or sell. Within the biosecurity zone: If the weed is part of a new infestation of the weed on the land, notify the local control authority for the land as soon as practicable. Eradicate the weed or, if that is not practicable, destroy as much of the weed as is practicable and suppress the spread of any remaining weed. Outside the biosecurity zone: Land managers should mitigate spread of the plant from their land. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>
Black knapweed <i>Centaurea x moncktonii</i>	<p>Prohibited Matter</p> <p><i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i></p>
Black locust <i>Robinia pseudoacacia</i>	<p>Regional Recommended Measure</p> <p>An exclusion zone is established for all land in the region, except the core infestation which includes all urban centres of the Hunter region.</p> <p><i>Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>
Blackberry <i>Rubus fruticosus</i> species aggregate	<p>Regional Recommended Measure</p> <p><i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>
Blind cactus <i>Opuntia rufida</i>	<p>Regional Recommended Measure</p> <p><i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>

Weed	Duty
Blue heliotrope <i>Heliotropium amplexicaule</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Blue periwinkle <i>Vinca major</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Boneseed <i>Chrysanthemoides monilifera</i> sub <i>sp. monilifera</i>	Control Order Boneseed Control Zone: Whole of NSW <i>Boneseed Control Zone (Whole of NSW): Owners and occupiers of land on which there is boneseed must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of boneseed must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.</i>
Boxing glove cactus <i>Cylindropuntia fulgida</i> var. <i>mamil</i> <i>lata</i>	Regional Recommended Measure <i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i>
Bridal creeper <i>Asparagus asparagoides</i>	Regional Recommended Measure An exclusion zone is established for all land in the region, except the core infestation which includes Dungog Local Government Area, Lake Macquarie Local Government Area, Cessnock Local Government Area, MidCoast Local Government Area. <i>Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Bridal veil creeper <i>Asparagus declinatus</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i>
Broad-leaf pepper tree <i>Schinus terebinthifolia</i>	Regional Recommended Measure <i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i>

Weed	Duty
Broomrapes <i>Orobanche</i> species	<p>Prohibited Matter</p> <p><i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i></p> <p>All species of <i>Orobanche</i> are Prohibited Matter in NSW, except Clover broomrape, <i>Orobanche</i> minor and Australian broomrape, <i>Orobanche cernua</i> var. <i>australiana</i>.</p>
Brown-spined Hudson pear <i>Cylindropuntia tunicata</i>	<p>Regional Recommended Measure</p> <p><i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i></p>
Bunny ears cactus <i>Opuntia microdasys</i>	<p>Regional Recommended Measure</p> <p><i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>
Cabomba <i>Cabomba caroliniana</i>	<p>Regional Recommended Measure</p> <p><i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i></p>
Camphor laurel <i>Cinnamomum camphora</i>	<p>Regional Recommended Measure</p> <p><i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>
Cane cactus <i>Austrocylindropuntia cylindrica</i>	<p>Regional Recommended Measure</p> <p><i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.</i></p>
Cape broom <i>Genista monspessulana</i>	<p>Regional Recommended Measure</p> <p><i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i></p>
Cat's claw creeper <i>Dolichandra unguis-cati</i>	<p>Regional Recommended Measure</p> <p><i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>

Weed	Duty
Chicken dance cactus <i>Opuntia schickendantzii</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Chilean needle grass <i>Nassella neesiana</i>	Regional Recommended Measure <i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i>
Chinese celtis <i>Celtis sinensis</i>	Regional Recommended Measure <i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i>
Chinese knotweed <i>Persicaria chinensis</i>	Regional Recommended Measure <i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i>
Chinese tallow tree <i>Triadica sebifera</i>	Regional Recommended Measure <i>An exclusion zone is established for all land in the region, except the core infestation which includes all urban centres of the Hunter region. Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Chinese violet <i>Asystasia gangetica</i>	Control Order <i>Owners and occupiers of land on which there is Chinese violet must notify the local control authority for the area if the Chinese violet is part of a new infestation on the land, destroy all Chinese violet on the land ensuring that subsequent generations of Chinese violet are destroyed; and keep the land free of Chinese violet. A person who deals with a carrier of Chinese violet must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.</i>
Climbing asparagus <i>Asparagus africanus</i>	Regional Recommended Measure <i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i>

Weed	Duty
Cockspur coral tree <i>Erythrina crista-galli</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Common pear <i>Opuntia stricta</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Coolatai grass <i>Hyparrhenia hirta</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Coral creeper <i>Barleria repens</i>	Regional Recommended Measure <i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i>
Cotoneaster <i>Cotoneaster glaucophyllus</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Creeping pear <i>Opuntia humifusa</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Crofton weed <i>Ageratina adenophora</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
East Indian hygrophila <i>Hygrophila polysperma</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.</i>

Weed	Duty
Espartillo - broad kernel <i>Amelichloa caudata</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.</i>
Espartillo - narrow kernel <i>Amelichloa brachychaeta</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.</i>
Eurasian water milfoil <i>Myriophyllum spicatum</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i>
Eve's needle cactus <i>Austrocylindropuntia subulata</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.</i>
Frogbit <i>Limnobium laevigatum</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i> All species of Limnobium are Prohibited Matter
Galenia <i>Galenia pubescens</i>	Regional Recommended Measure An exclusion zone is established for all land in the region, except the core infestation which includes parts of: Lake Macquarie Local Government Area, Maitland Local Government Area, Muswellbrook Local Government Area, Newcastle Local Government Area, Singleton Local Government Area, Upper Hunter Local Government Area. <i>Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Gamba grass <i>Andropogon gayanus</i>	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i>

Weed	Duty
Giant devil's fig <i>Solanum chrysotrichum</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.</i>
Giant Parramatta grass <i>Sporobolus fertilis</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Giant rat's tail grass <i>Sporobolus pyramidalis</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Giant reed <i>Arundo donax</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Glory lily <i>Gloriosa superba</i>	Regional Recommended Measure <i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i>
Gorse <i>Ulex europaeus</i>	Regional Recommended Measure <i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i>
Green cestrum <i>Cestrum parqui</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Ground asparagus <i>Asparagus aethiopicus</i>	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>

Weed	Duty
Groundsel bush <i>Baccharis halimifolia</i>	Regional Recommended Measure <i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i>
Harrisia cactus <i>Harrisia</i> species	Regional Recommended Measure <i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i>
Hawkweeds - Hieraciums <i>Hieracium</i> species	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i> All species in the genus <i>Hieracium</i> are Prohibited Matter except for <i>Hieracium murorum</i> (wall hawkweed).
Hawkweeds - Pilosellas <i>Pilosella</i> species	Prohibited Matter <i>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</i> All species in the genus <i>Pilosella</i> are Prohibited Matter
Honey locust <i>Gleditsia triacanthos</i>	Regional Recommended Measure An exclusion zone is established for all land in the region, except the core infestation which includes Lake Macquarie Local Government Area, Newcastle Local Government Area. <i>Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Horsetails <i>Equisetum</i> species	Regional Recommended Measure <i>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.</i> This Regional Recommended Measure applies to <i>Equisetum arvense</i>
Hudson pear <i>Cylindropuntia pallida</i>	Regional Recommended Measure <i>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</i>

Weed	Duty
Hydrocotyl <i>Hydrocotyle ranunculoides</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Hygrophila <i>Hygrophila costata</i>	Regional Recommended Measure Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.
Hymenachne <i>Hymenachne amplexicaulis</i> and hybrids	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.
Karoo acacia <i>Vachellia karroo</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Kidney-leaf mud plantain <i>Heteranthera reniformis</i>	Regional Recommended Measure Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.
King devil hawkweed <i>Pilosella piloselloides</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species in the genus <i>Pilosella</i> are Prohibited Matter
Kochia <i>Bassia scoparia</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries Excluding the subspecies <i>trichophylla</i>
Koster's curse <i>Clidemia hirta</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Weed	Duty
Kudzu <i>Pueraria lobata</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.
Lagarosiphon <i>Lagarosiphon major</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Lantana <i>Lantana camara</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.
Leaf cactus <i>Pereskia aculeata</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.
Long-leaf willow primrose <i>Ludwigia longifolia</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.
Ludwigia <i>Ludwigia peruviana</i>	Regional Recommended Measure Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.
Mahonia <i>Berberis lomariifolia</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.
Mexican feather grass <i>Nassella tenuissima</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Weed	Duty
Miconia <i>Miconia</i> species	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species of Miconia are Prohibited Matter in NSW
Mikania vine <i>Mikania micrantha</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries *all species in the genus Mikania are Prohibited Matter in NSW
Mimosa <i>Mimosa pigra</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries
Ming asparagus fern <i>Asparagus macowanii</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.
Mistflower <i>Ageratina riparia</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.
Mother-of-millions <i>Bryophyllum</i> species	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.
Mouse-ear hawkweed <i>Pilosella officinarum</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species in the genus Pilosella are Prohibited Matter
Mysore thorn <i>Caesalpinia decapetala</i>	Regional Recommended Measure Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.

Weed	Duty
Nodding thistle <i>Carduus nutans</i> subsp. <i>nutans</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.
Orange hawkweed <i>Pilosella aurantiaca</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species in the genus <i>Pilosella</i> are Prohibited Matter
Ox-eye daisy <i>Leucanthemum vulgare</i>	Regional Recommended Measure Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.
Pampas grass <i>Cortaderia</i> species	Regional Recommended Measure An exclusion zone is established for all land in the region, except the core infestation which includes parts of: Lake Macquarie Local Government Area. <i>Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i>
Parkinsonia <i>Parkinsonia aculeata</i>	Control Order Parkinsonia Control Zone: Whole of NSW Parkinsonia Control Zone (Whole of NSW): Owners and occupiers of land on which there is parkinsonia must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of parkinsonia must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.
Parthenium weed <i>Parthenium hysterophorus</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Weed	Duty
Paterson's curse <i>Echium plantagineum</i>	<p>Regional Recommended Measure</p> <p>An exclusion zone is established for all land in the region, except the core infestation which includes parts of: Dungog Local Government Area, Maitland Local Government Area, Muswellbrook Local Government Area, Singleton Local Government Area, Upper Hunter Local Government Area.</p> <p><i>Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>
Plume poppy <i>Bocconia frutescens</i>	<p>Regional Recommended Measure</p> <p>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.</p>
Pond apple <i>Annona glabra</i>	<p>Prohibited Matter</p> <p>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</p>
Prickly acacia <i>Vachellia nilotica</i>	<p>Prohibited Matter</p> <p>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</p>
Prickly pears - Austrocyllindropuntias <i>Austrocyllindropuntia</i> species	<p>Regional Recommended Measure</p> <p>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.</p>
Prickly pears - Cyllindropuntias <i>Cyllindropuntia</i> species	<p>Regional Recommended Measure</p> <p>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</p>

Weed	Duty
Prickly pears - Opuntias <i>Opuntia</i> species	<p>Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value. This Regional Recommended Measure applies to all species of Opuntia except for Opuntia ficus-indica. (Indian fig).</p>
Rattlepod <i>Crotalaria beddomeana</i>	<p>Regional Recommended Measure Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</p>
Rhus tree <i>Toxicodendron succedaneum</i>	<p>Regional Recommended Measure Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</p>
Riverina pear <i>Opuntia elata</i>	<p>Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</p>
Rope pear <i>Cylindropuntia imbricata</i>	<p>Regional Recommended Measure Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</p>
Rubber vine <i>Cryptostegia grandiflora</i>	<p>Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</p>
Sagittaria <i>Sagittaria platyphylla</i>	<p>Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</p>

Weed	Duty
Salvinia <i>Salvinia molesta</i>	<p>Regional Recommended Measure</p> <p>An exclusion zone is established for all land in the region, except the core infestation which includes parts of: Lake Macquarie Local Government Area, MidCoast Local Government Area, Port Stephens Local Government Area.</p> <p><i>Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p> <p>This Regional Recommended Measure applies to <i>Salvinia molesta</i> and <i>Salvinia minima</i></p>
Scotch broom <i>Cytisus scoparius</i> subsp. <i>scoparius</i>	<p>Regional Recommended Measure</p> <p>An exclusion zone is established for all land in the region, except the core infestation which includes parts of: MidCoast Local Government Area, Upper Hunter Local Government Area.</p> <p><i>Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>
Sea spurge <i>Euphorbia paralias</i>	<p>Regional Recommended Measure</p> <p>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</p>
Senegal tea plant <i>Gymnocoronis spilanthoides</i>	<p>Regional Recommended Measure</p> <p>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</p>
Serrated tussock <i>Nassella trichotoma</i>	<p>Regional Recommended Measure</p> <p>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.</p>
Siam weed <i>Chromolaena odorata</i>	<p>Prohibited Matter</p> <p>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</p>

Weed	Duty
Sicilian sea lavender <i>Limonium hyblaenum</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.
Sickletorn <i>Asparagus falcatus</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.
Silverleaf nightshade <i>Solanum elaeagnifolium</i>	Regional Recommended Measure Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.
Smooth tree pear <i>Opuntia monacantha</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.
Snakefeather <i>Asparagus scandens</i>	Regional Recommended Measure Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.
Spiny rush <i>Juncus acutus</i>	Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.
Spongeplant <i>Limnobia spongia</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species of Limnobia are Prohibited Matter
Spotted knapweed <i>Centaurea stoebe</i> subsp. <i>micranthos</i>	Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Weed	Duty
St. John's wort <i>Hypericum perforatum</i>	<p>Regional Recommended Measure</p> <p>An exclusion zone is established for all land in the region, except parts of: MidCoast Local Government Area, Muswellbrook Local Government Area, Upper Hunter Local Government Area.</p> <p><i>Entire Hunter Local Land Services region: Land managers should mitigate the risk of the plant being introduced to their land. Exclusion zone: Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Core infestation: Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>
Sticky nightshade <i>Solanum sisymbriifolium</i> Regional recommended measure for Central Tablelands from February 2020	<p>Regional Recommended Measure</p> <p>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</p>
Telegraph weed <i>Heterotheca grandiflora</i>	<p>Regional Recommended Measure</p> <p>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</p>
Thatch grass <i>Hyparrhenia rufa</i>	<p>Regional Recommended Measure</p> <p>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</p>
Tiger pear <i>Opuntia aurantiaca</i>	<p>Regional Recommended Measure</p> <p>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</p>
Tree-of-heaven <i>Ailanthus altissima</i>	<p>Regional Recommended Measure</p> <p>Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</p>

Weed	Duty
Tropical soda apple <i>Solanum viarum</i>	<p>Control Order</p> <p>Tropical Soda Apple Control Zone: Whole of NSW</p> <p>Tropical Soda Apple Control Zone (Whole of NSW): Owners and occupiers of land on which there is tropical soda apple must notify the local control authority of new infestations; destroy the plants including the fruit; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of tropical soda apple must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.</p>
Velvety tree pear <i>Opuntia tomentosa</i>	<p>Regional Recommended Measure</p> <p>Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</p>
Water caltrop <i>Trapa species</i>	<p>Prohibited Matter</p> <p>A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</p> <p>All species in the <i>Trapa</i> genus are Prohibited Matter in NSW</p>
Water hyacinth <i>Eichhornia crassipes</i>	<p>Biosecurity Zone</p> <p>The Water Hyacinth Biosecurity Zone applies to all land within the State, except for the following regions: Greater Sydney or North Coast, North West (but only the local government area of Moree Plains), Hunter (but only in the local government areas of City of Cessnock, City of Lake Macquarie, MidCoast, City of Maitland, City of Newcastle or Port Stephens), South East (but only in the local government areas of Eurobodalla, Kiama, City of Shellharbour, City of Shoalhaven or City of Wollongong).</p> <p><i>Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone</i></p>
Water hyacinth <i>Eichhornia crassipes</i>	<p>Regional Recommended Measure</p> <p>A Water Hyacinth Biosecurity Zone, is established for all land within the Hunter Local Land Services region except land in the following local government areas: Cessnock Local Government Area, Lake Macquarie Local Government Area, MidCoast Local Government Area, Maitland Local Government Area, Newcastle Local Government Area, Port Stephens Local Government Area.</p> <p><i>Entire Hunter Local Land Services region: A person must not, import into the State or sell. Within the biosecurity zone: If the weed is part of a new infestation of the weed on the land, notify the local control authority for the land as soon as practicable. Eradicate the weed or, if that is not practicable, destroy as much of the weed as is practicable and suppress the spread of any remaining weed. Outside the biosecurity zone: Land managers should mitigate spread of the plant from their land. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</i></p>

Weed	Duty
Water lettuce <i>Pistia stratiotes</i>	<p>Regional Recommended Measure Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</p>
Water soldier <i>Stratiotes aloides</i>	<p>Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</p>
Water star grass <i>Heteranthera zosterifolia</i>	<p>Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.</p>
Wheel cactus <i>Opuntia robusta</i>	<p>Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</p>
White blackberry <i>Rubus niveus</i>	<p>Regional Recommended Measure Notify local control authority if found. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant.</p>
Witchweeds <i>Striga species</i>	<p>Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries All species in the <i>Striga</i> genus are Prohibited Matter in NSW, except the native <i>Striga parviflora</i></p>
Yellow bells <i>Tecoma stans</i>	<p>Regional Recommended Measure Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.</p>
Yellow burrhead <i>Limnocharis flava</i>	<p>Prohibited Matter A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries</p>