

## **Inland Rail Narromine to Narrabri (SSI-18/9487) EPBC Bilateral Assessment – BCS Assessment (EPBC 2018/8259)**

All section, table, figure and appendix references in this document (below) refer to sections, tables, figures and appendices in the Biodiversity Development Assessment Report Revision G (BDAR) (dated 17 January 2023).

### **1. Background & Description of Action**

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#### **Does the EIS/BDAR<sup>1</sup>:**

- clearly show how operational and construction footprints, including clearing boundaries, structures to be built and elements of the action are situated with regard to MNES
- depict stages and timing of the action that may impact on MNES
- provide a map(s) of the subject land boundary showing the final proposal/disturbance footprint with respect to location of MNES, including GIS shape files

#### **Provide advice on the adequacy of the background and action description with respect to MNES and identify any recommended additional information requirements:**

The bilateral assessment for this project relates to the construction of approximately 306 kilometres of new single-track standard gauge railway with crossing loops between Narromine and Narrabri as part of the Inland Rail program. The proposal includes multi-function compounds, borrow pits, changes to some roads to facilitate construction and operation of the new section of railway, and ancillary infrastructure to support the proposal.

The Biodiversity Development Assessment Report (BDAR), dated 21 August 2021, initially formed Technical Report 1 of the Environmental Impact Statement (EIS) for the project. The BDAR was subsequently updated several times, the final version is labelled Revision G and dated 17 January 2023 (all references to the 'BDAR' in this assessment refers to the final version).

The proposed project is a staged/segmented project (Section 3.9.2 of the BDAR). ARTC are proposing a staged construction to mitigate the risk to delays to construction commencement and delaying cost of credit retirement. Under the BC Act, consent to a staged development application provides for a corresponding staged retirement of biodiversity credits before each stage of development is carried out. Credits relating to MNES entities are included in each stage. The project is divided into 11 stages/segments, comprised of:

Three major construction compounds – three segments:

- Segment 1 – Narromine South multi-function compound
- Segment 2 – Curban multi-function compound
- Segment 3 – Narrabri West multi-function compound

Four borrow pits – four segments

- Segment 4 – borrow pit A
- Segment 5 – borrow pit B
- Segment 6 – borrow pit C
- Segment 7 – borrow pit D

Alignment – four segments

- Segment 8 – Narromine to Curban

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<sup>1</sup> Bilateral agreement (BLA) made under section 45 of the EPBC Act, including Amending Agreement No. 1 (2020).

<sup>1</sup> Or revisions of the BDAR and associated documentation made as a result of previous reviews or project changes post-exhibition<sup>3</sup>

- Segment 9 – Curban to Pilliga
- Segment 10 – Pilliga
- Segment 11 – Pilliga to Narrabri

Figure 7.1 of the BDAR (Maps 1-9 on pages 216 - 224) shows the location of Matters of National Environmental Significance (MNES) in relation to the rail corridor. On 11 August 2022 the proponent provided BCD with GIS shape files for the maps in the BDAR. BCS can confirm that the spatial data and the areas of impact to MNES in the BDAR are consistent.

## 2. Landscape Context of the MNES

**Provide advice on the adequacy of the landscape context information and identify any additional information requirements:**

Section 4 ‘Landscape context’ of the BDAR (pages 89 to 122) describes the landscape context and features for the project. This section includes information which meets the requirements of the BAM. No additional information was required.

## 3. EPBC Act Listed Threatened Species & Communities

**Verify that the EIS/BDAR includes relevant information on the identification of all EPBC Act listed threatened species and communities on the site or in the vicinity<sup>2</sup> via:**

- field based survey effort
- published peer reviewed literature
- local data
- supporting databases (such as the NSW BioNet Vegetation Classification, NSW BioNet Threatened Biodiversity Data Collection, NSW BioNet Atlas, Commonwealth Species Profile and Threats Database search results)
- Verify that the EIS/BDAR includes appropriate mapping of all EPBC Act listed threatened species and communities in accordance with the relevant Commonwealth Listing Advice. The EIS/BDAR should include important populations and critical habitat as defined in Approved Listing Advice, Approved Conservation Advice and Recovery Action Plans.

**Provide advice on the adequacy of the identification methods and mapping information / any additional information requirements:**

*Field-based survey effort:*

Survey methodology for native vegetation (vegetation integrity plots) is described in sections 3.4 and 5 (particularly Sub-sections 3.4.3 and 5.2.1). Threatened flora survey effort is described in section 3.4.5, and threatened flora survey effort is described in section 3.5 of the BDAR.

Vegetation integrity plots were not completed in all vegetation zones due to access issues and changes to the development footprint over time. As described in Table 5.2 of the BDAR, 20 out of the total 78 vegetation zones did not have enough plots to meet the minimum number required by the BAM, with 13 zones having no plots completed. Benchmark data were used in the BAM calculator (BAM-C) where insufficient plots were completed. BCS is supportive of this approach in the absence of site-based data, with extensive discussions occurring between BCS and the accredited assessors on this matter to agree on the approach.

The vegetation survey identified Weeping Myall Woodlands (EEC), Brigalow (*Acacia harpophylla* dominant and co-dominant) (EEC), Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and derived native grasslands of South-eastern Australia (EEC), Poplar Box grassy woodland on alluvial plains

<sup>2</sup> On land to which impacts may extend.

(EEC) and White Box-Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland (CEEC) on site.

One EPBC Act-listed threatened flora species was found on the project site - *Tylophora linearis*.

Four EPBC Act-listed threatened fauna species were found on the project site: Koala (*Phascolarctos cinereus*), Corben's Long-eared Bat (*Nyctophilus corbeni*), Large-eared Pied Bat (*Chalinolobus dwyeri*) and Superb Parrot (*Polytelis swainsonii*).

Four EPBC Act-listed migratory species were recorded on the project site: White-throated Needletail (*Hirundapus caudacutus*), Fork-tailed Swift (*Apus pacificus*), Rufous Fantail (*Rhipidura rufifrons*) and Satin Flycatcher (*Miagra cyanoleuca*). Additional information provided by DCCEEW to BCS via email on 13 December 2022 states that 'during the referral assessment stage, the department considered that the proposed action is unlikely to result in significant impacts to any listed migratory species for the Inland Rail Section, Narromine to Narrabri, NSW (EPBC 2018/8259) (SSI 18\_9487). Therefore, Listed Migratory Species (s20 & s20A of the EPBC Act) was not deemed a controlling provision under the EPBC Act for this project and further assessment is not required'.

BCS is satisfied that flora and fauna survey requirements for the BAM have been met.

*Published peer reviewed literature:*

Section 15 'References' on pages 413 to 429 of the BDAR includes peer-reviewed papers that were used for the assessment of MNES entities. There are a number of references to NSW or Commonwealth Government websites, and these are considered to be current and contain reliable information about all MNES considered for this project. BCS is satisfied that an extensive and broad range of peer-reviewed literature has been used to underpin decision-making in the BDAR.

*Expert Report:*

Following exhibition of the EIS and BDAR in August 2021, Dr Steve Phillips was contracted to undertake an expert report for the Koala. Appendix N of the BDAR contains the expert report for the Koala; an update to this report was provided in Table I30, Revision G of the BDAR, dated 17 January 2023.

The conclusions of the expert report rely on:

- data collected during field surveys (including scat searches, diurnal surveys, spotlighting, call playback and use of remote cameras) between 2018 and 2022
- data collected from thermal drone surveys conducted in the Pilliga in July 2021
- data collected during independent surveys undertaken by Dr Stephen Phillips in August 2021
- review of plant community type (PCT) associations and preferred Koala feed trees to identify potentially suitable habitat for the Koala in the study area
- A review of Koala records was used to identify areas of generational persistence along the N2N alignment

A final species polygon of 269.2 hectares was determined for the Koala.

*Local data:*

No local data was used for the assessment.

*Supporting databases:*

Five databases were cited as being used for the MNES assessment:

1. NSW BioNet Vegetation Classification – is cited in many parts of the BDAR, including in Section 3.2.1 'Database review'.

2. NSW BioNet Threatened Biodiversity Data Collection – cited in Section 3.2.1 ‘Database review’.
3. NSW BioNet Atlas – cited in Section 3.2.1 ‘Database review’.
4. Commonwealth Species Profile and Threats Database search results – cited in Section 3.2.1 ‘Database review’.
5. Commonwealth Protected Matters Online Search Tool for MNES – cited in Section 3.2.1 ‘Database review’.

*Appropriate mapping of all EPBC Act-listed species and communities in accordance with relevant Commonwealth Listing Advice:*

Mapping of MNES threatened species and threatened ecological communities is in accordance with the BAM and Commonwealth Listing Advice and is depicted in Maps 1 – 9 in Figure 7.1 of the BDAR. Table 5.3 of the BDAR provides a TEC equivalency assessment for each PCT in relation to Commonwealth Listing Advice.

Three fauna species - Superb Parrot, Regent Honeyeater and Swift Parrot were assessed as having foraging habitat impacted by the project (Appendix I of the BDAR). None of these species were considered to have breeding habitat (species credit habitat) present on site. Therefore, these species are treated as ecosystem credit species and therefore the foraging value of the project area to these species, and the likely impact to these species, is defined by the plant community types (PCTs) that the species are associated with in the Threatened Biodiversity Data Collection (TBDC). The associated PCTs are listed in Tables I48, I46 and I49 in Appendix I of the BDAR, and the relevant PCT mapping is included in Maps 1 – 20 in Appendix G of the BDAR. Therefore, habitat for these three MNES threatened fauna species which are considered to be impacted by the project have been appropriately mapped.

All PCTs that will be impacted by the project that are associated with EPBC Act-listed TECs have been assessed against the relevant Commonwealth Listing Advice. Identification of MNES TECs is described in Table 5.3 of the BDAR, Section 7 of the BDAR and Appendix M of the BDAR. Where PCTs were not listed as TECs in the BAM-C but were known to be associated with the TEC and met the criteria of the listing, a conservative approach was taken and the PCT was mapped as TEC. The mapped extent for the five MNES TECs that are considered to be impacted by the project have been appropriately mapped.

*Any important populations and critical habitat, as defined in Approved Listing Advice, Approved Conservation Advice and Recovery Action Plans:*

There are no ‘important populations’ or ‘critical habitat’ likely to be impacted by the project.

Table 10.6 (page 295) of the BDAR refers to an ‘important population’ for Pilliga Mouse as described by Paull et al (2014), however there is no listed important population for this species.

**Confirm that all EPBC Act listed threatened species and communities that occur on the subject land, or in the vicinity, have been identified in the BDAR/EIS including those that are ecosystem credit species.**

BCD confirms that all EPBC Act-listed threatened species and communities that occur on the subject land, or in the vicinity, have been identified in the BDAR (see further information below).

**If any species and communities identified in the referral documentation (provided by DAWE) have been ruled out because they don’t occur on or near the site, verify that there is robust analysis and justification for why these species can be ruled out.**

The referral decision brief (dated 5 November 2018) identified that the project was likely to have a significant impact on;

- Coolibah – Black Box Woodland of the Darling Riverine Plains and the Brigalow Belt South Bioregions - endangered
- Brigalow (*Acacia harpophylla* dominant and co-dominant) – endangered
- Natural grasslands on basalt and fine-textured alluvial plains of northern NSW and southern QLD – critically endangered
- Weeping Myall Woodlands - endangered
- White box – yellow box – Blakely’s red gum grassy woodland and derived native grassland (Box Gum Woodland) – critically endangered

Additional MNES entities (listed below) are identified in the BDAR as occurring, or having the potential to occur within the project site (Section 7.2, Table 7.2 of the BDAR);

- Grey Box (*Eucalyptus macrocarpa*) Grassy Woodlands and derived native grasslands of South-eastern Australia - Endangered
- Poplar Box grassy woodland - Endangered (was listed under the EPBC Act following referral of this proposal)
- *Commersonia procumbens*- Vulnerable
- Bluegrass (*Dichanthium setosum*) - Vulnerable
- Spiny Peppergrass (*Lepidium aschersonii*) - Vulnerable
- Winged Peppergrass (*Lepidium monoplacoides*) - Endangered
- Slender Darling Pea (*Swainsona murrayana*) - Vulnerable
- *Tylophora linearis* - Endangered
- Keith’s Zieria (*Zieria ingramii*) - Endangered
- Koala (*Phascolarctos cinereus*) - Endangered
- Corben’s Long-eared Bat (*Nyctophilus corbeni*) - Vulnerable
- Large-eared Pied Bat (*Chalinolobus dwyeri*) - Vulnerable
- Pilliga Mouse (*Pseudomys pilligaensis*) - Vulnerable
- Glossy Black-cockatoo (*Calyptorhynchus lathami lathami*) - Vulnerable (This species was listed under the EPBC Act in August 2020)
- Superb Parrot (*Polytelis swainsonii*) - Vulnerable
- Australasian Bittern (*Botaurus poiciloptilus*) - Endangered
- Australian Painted Snipe (*Rostratula australis*) - Endangered
- Painted Honeyeater (*Grantiella picta*) - Vulnerable
- Regent Honeyeater (*Anthochaera phrygia*) – Critically Endangered
- Swift Parrot (*Lathamus discolor*) – Critically Endangered
- White-throated Needletail (*Hirundapus caudacutus*) - Vulnerable
- Five-clawed Worm-skink (*Anomalopus mackayi*) - Vulnerable

MNES migratory species (listed below) are identified in the BDAR and were recorded in the project site (Section 7.3, Table 7.3 of the BDAR);

- Fork-tailed Swift (*Apus pacificus*)
- Rufous Fantail (*Rhipidura rufifrons*)
- Satin Flycatcher (*Miagra cyanoleuca*)
- White-throated Needletail (*Hirundapus caudacutus*)

Two TECs listed in the referral decision brief as likely being significantly impacted were assessed as not occurring in the construction impact zone (CIZ). These TECs are detailed below:

Entity	BDAR
<b>Listed in referral decision brief (dated 5 November 2018)</b>	
Coolibah – Black Box Woodland of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Table 5.3 of the BDAR describes the assessment for Coolibah – Black Box Woodland of the Darling Riverine Plains and the Brigalow Belt South Bioregions. No Coolibah or Black Box trees were recorded anywhere in the construction impact zone (CIZ) or the wider investigation corridor during surveys. The occurrence of PCT 55 - <i>Belah woodland on alluvial plains and low rises in the central NSW wheatbelt to Pilliga and Liverpool Plains regions</i> was dominated by Belah, grading into PCT 88 - <i>Pilliga Box - White Cypress Pine - Buloke shrubby woodland in the Brigalow Belt South Bioregion</i> (dominated by Pilliga Box). In addition, the occurrence of PCT 55 did not occur on grey soils that are periodically waterlogged or similar water environments – a key requirement of the TEC. The soils in this section were very sandy and graded into a sand-based community (PCT 206) to the north of PCT 55. The occurrence of PCT 55 is therefore not likely to conform to the Coolibah-Black Box Woodland TEC.
Natural grasslands on basalt and fine-textured alluvial plains of northern NSW and southern QLD	No PCTs associated with the TEC were identified as occurring within the CIZ.

Four threatened fauna species that were identified by the proponent as having potential to be significantly impacted were considered to have foraging habitat only (not breeding habitat) impacted by the project. These species are summarised below;

Entity	BDAR
Large-eared Pied Bat ( <i>Chalinolobus dwyeri</i> )	Table I36 in Appendix I of the BDAR describes the assessment for Large-eared Pied Bat. Probable calls of this species were recorded via Anabat in the Pilliga Forest. Known roost habitat at Pilliga Nature Reserve is located over 35 kilometres from the proposal site. No caves, scarps, cliffs, mines or tunnels are present in or near the proposal site in the Pilliga forests. Rocky habitat in the Mt Tenandra area west of the Warrumbungles is not located near any fertile wooded valley habitat. Native vegetation in this area predominantly comprises grassland, or small scattered patches of highly fragmented open woodland. This habitat is not considered suitable for this species. The population that occurs in the Warrumbungles would forage in large tracts of native wooded vegetation located within the National Park. No caves, scarps, cliffs, mines or tunnels are present elsewhere in or near the proposal site.
Superb Parrot ( <i>Polytelis swainsonii</i> )	<u>Breeding</u> Table I48 in Appendix I of the BDAR describes the assessment for Superb Parrot. Given the proposal is located outside of the breeding range of the species as identified by <a href="#">DPIE</a> , breeding habitat for the species is not considered to be affected by the proposal and no species polygon has been created. Therefore,

	any individuals that occur in the study area are likely to be foraging only as a result of their migration north from known breeding habitat.
Regent Honeyeater ( <i>Anthochaera Phrygia</i> )	<b>Breeding</b> Table I46 in Appendix I of the BDAR describes the assessment for Regent Honeyeater. No species polygon is required as the study area does not fall within OEH's important habitat mapping for the species.
Swift Parrot ( <i>Lathamus discolor</i> )	<b>Breeding</b> Table I49 in Appendix I of the BDAR describes the assessment for Swift Parrot. No species polygon is required as the study area does not fall within OEH's important habitat mapping for the species.

**Provide advice on whether there are any other MNES species or communities that are missing from the assessment based on BCS knowledge and experience.**

No currently listed MNES species or communities are missing from the assessment for this project.

**Advise whether there is appropriate justification and supporting evidence for the addition and/or exclusion of any EPBC Act listed threatened species and/or communities from the list (if applicable):**

No species or TECs listed in the referral decision were excluded from the list.

Two TECs listed in the referral decision brief as likely being significantly impacted were assessed as not occurring in the construction impact zone (CIZ) as described above.

BCS is satisfied that it was justifiable to include the threatened species and communities listed below in the assessment of MNES. These entities have been appropriately assessed:

MNES Entity	EPBC Listing Status	Reason for inclusion
Grey Box ( <i>Eucalyptus macrocarpa</i> ) Grassy Woodlands and derived native grasslands of South-eastern Australia	Endangered	Recorded.
Poplar Box grassy woodland	Endangered (was listed under the EPBC Act following referral of this proposal)	Recorded.
<i>Commersonia procumbens</i>	Vulnerable	Assumed present. Not recorded during surveys. Known to occur within the Pilliga forests in study area. Assumed present where drought and lack of recent fire in suitable habitat impacted detectability.
Bluegrass ( <i>Dichanthium setosum</i> )	Vulnerable	Assumed present. Not recorded during surveys. Known to occur in the wider locality at the

		northern and southern end of the proposal. Assumed present where no access was possible.
Spiny Peppercress ( <i>Lepidium aschersonii</i> )	Vulnerable	Assumed present. Not recorded during surveys. Known to occur in study area between the northern end of the Pilliga and Narrabri. Assumed to occur from some areas not able to be accessed during targeted surveys near Narrabri.
Winged Peppercress ( <i>Lepidium monoplocoides</i> )	Endangered	Assumed present. Known to occur east of study area near Narrabri. Assumed to occur in areas not able to be accessed in this time and where suitable potential habitat occurs in the proposal site.
Slender Darling Pea ( <i>Swainsona murrayana</i> )	Vulnerable	Assumed present. Not recorded during surveys. Known to occur in the wider locality along length of proposal. Assumed to occur in remote areas of the Pilliga away from access tracks.
<i>Tylophora linearis</i>	Endangered	Recorded.
Keith's Zieria ( <i>Zieria ingramii</i> )	Endangered	Assumed present. Not recorded during surveys. Known to occur in the locality east of Gilgandra in Goonoo State Forest. Assumed to occur where no access was possible.
Koala ( <i>Phascolarctos cinereus</i> )	Endangered	Recorded.
Corben's Long-eared Bat ( <i>Nyctophilus corbeni</i> )	Vulnerable	Recorded.
Large-eared Pied Bat ( <i>Chalinolobus dwyeri</i> )	Vulnerable	Probable calls recorded.
Pilliga Mouse ( <i>Pseudomys pilligaensis</i> )	Vulnerable	Suitable habitat present.
Glossy Black-cockatoo ( <i>Calyptorhynchus lathami lathami</i> )	Vulnerable (This species was listed under the EPBC Act in August 2020)	Recorded.
Superb Parrot ( <i>Polytelis swainsonii</i> )	Vulnerable	Recorded.

Australasian Bittern ( <i>Botaurus poiciloptilus</i> )	Endangered	Suitable habitat present.
Australian Painted Snipe ( <i>Rostratula australis</i> )	Endangered	Suitable habitat present.
Painted Honeyeater ( <i>Grantiella picta</i> )	Vulnerable	Suitable habitat present.
Regent Honeyeater ( <i>Anthochaera Phrygia</i> )	Critically Endangered	Suitable habitat present.
Swift Parrot ( <i>Lathamus discolor</i> )	Critically Endangered	Suitable habitat present.
White-throated Needletail ( <i>Hirundapus caudacutus</i> )	Vulnerable	Recorded.
Five-clawed Worm-skink ( <i>Anomalopus mackayi</i> )	Vulnerable	Suitable habitat present.

#### **4. Avoidance, Minimisation Mitigation & Management**

**Verify that the EIS/BDAR demonstrates all feasible alternatives and efforts to avoid and minimise impacts on EPBC Act listed threatened species and communities (including direct, indirect and prescribed impacts) including an analysis of alternative:**

- designs and engineering solutions
- modes or technologies
- routes and locations of facilities
- sites within the subject site
- Verify that the EIS/BDAR identifies any other site constraints in determining the location and design of the proposal (such as bushfire protection requirements, flood planning levels, servicing constraints, etc).

**Verify that the EIS/BDAR provides feasible measures to mitigate and/or manage impacts on EPBC Act listed threatened species and communities (including direct, indirect and prescribed impacts) including:**

- techniques, timing, frequency and responsibility
- identify measures for which there is risk of failure
- evaluate the risk and consequence of any residual impacts
- any adaptive management strategy proposed to monitor and respond to impacts.

**Provide advice on whether all feasible impact avoidance, minimisation, mitigation and management measures have been considered and are adequately justified:**

Section 9.1 'Avoid and minimise impacts' addresses the measures that have been taken to avoid and minimise impacts to biodiversity. Section 9.2 'Proposed measures to mitigate impacts' summarises the proposed mitigation measures relating to direct, indirect and prescribed impacts. Section 12 'Recommended mitigation measures' addresses measures proposed to mitigate the risk of biodiversity impacts. Section 14.5 of the BDAR summarises the proposed mitigation measures for the project. Specific comments on avoidance and minimisation of impacts to MNES are included below.

*Pilliga forest impacts, particularly fauna connectivity, are extensive*

Section 9.1.1 of the BDAR states *'During the phase 1 concept design process, about 50 route options were considered for the Narromine to Narrabri section of Inland Rail. This included routes via Dubbo and Coonamble and others that avoided the Pilliga. The routes through the Pilliga forests were identified as preferable due to a combination of lower construction cost, avoidance of prime farming land, and reduced transit time during operation. As such, impacts on biodiversity values in the Pilliga forests have not been able to be avoided.'* There is no detailed discussion in the BDAR describing why alternate routes outside of the Pilliga were not selected. Selection of an alternate route which did not traverse the Pilliga had potential to significantly reduce impacts to biodiversity values.

Section 10.2 of the BDAR describes prescribed biodiversity impacts for the project and identifies significant impacts to fauna connectivity, particularly through the Pilliga. Table 10.6 of the BDAR states *'Construction of the proposal would clear a gap ranging between 33 metres to 400 metres wide (with about 29 percent in the 50 to 60 metres category and averaging a width of 89 metres) along a 73 kilometre alignment in the Pilliga. This would be exacerbated where the alignment is parallel to Pilliga Forest Way. In some areas, a narrow band of vegetation would remain between the road and the rail corridor. The proposal will substantially compound fragmentation caused by Pilliga Forest Way and other cleared tracks.'*

Section 12.1.4 of the BDAR describes the proposed mitigation measures for fauna connectivity. A number of structures and mitigation devices such as bridges, pole barriers, fauna culverts, canopy bridges and fences are recommended for incorporation into the design of the proposal (see Table 12.4 of BDAR). Section 12.2 of the BDAR states *'Baseline and operational monitoring of fauna are likely to provide useful scientific research in this field. Monitoring of fauna connectivity structures and relevant threatened species for this proposal will enable assessment of the value of the structures for minimising the impacts of habitat fragmentation. There is also the opportunity for innovative research and mitigation measures to be developed and implemented. Baseline and operational monitoring are likely to provide substantial research outputs that will be beneficial to knowledge of the threatened species and impacts of linear infrastructure in Australia. Research outputs could also be used to refine management measures as local conditions become better understood'*.

Table 10.10 of BDAR states that following implementation of fauna connectivity mitigation measures the project has *'potential for significant residual impacts'* on connectivity. A substantial additional offset obligation has been applied for residual prescribed impacts. Section 10.3.6 summarises the additional credits that have been calculated for prescribed impacts (connectivity and vehicle strike). Table 10.22 of the BDAR identifies additional species credits required to offset prescribed impacts in the Pilliga segment, with the total additional species credits required being 83,596 credits. Table 10.23 identifies additional ecosystem credits required to offset prescribed impacts in Segment 10 (Pilliga), the total additional ecosystem credits required is 11,425 credits.

Three MNES entities (Koala, Pilliga Mouse and Corben's Long-eared Bat) require additional credits for prescribed impacts (see Table 2 below for details). This includes:

- Koala – additional 5,134 species credits
- Pilliga Mouse – additional 11,425 ecosystem credits
- Corben's Long-eared Bat – 11,074 ecosystem credits

The assessment of prescribed impacts identifies a significant residual impact to fauna connectivity. The BDAR does not provide adequate justification for the route selection through the Pilliga with regards to the resulting impact on fauna connectivity, or alternatively, why route options which avoided the Pilliga and subsequent impacts to fauna connectivity were not successful when compared to other impact considerations.

A fauna connectivity strategy will be required by the project approval conditions which will detail the location and type of fauna connectivity measures, and describe the relevant monitoring program for impacts to fauna connectivity. A preliminary fauna connectivity strategy is provided in Appendix J of the BDAR.

Roadside vegetation will be impacted instead of adjacent agricultural land in some instances

The selected route of the rail corridor traverses significant areas of roadside vegetation instead of utilising adjacent cleared paddocks. The BDAR provides no discussion around why adjacent cleared paddocks were not selected for the route to avoid areas of biodiversity value. Section 14.3.5 of the BDAR states that the MNES listed entity, White Box-Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland, that will be impacted is an already isolated patch of roadside vegetation, within a farming matrix.

The selection of borrow pits has been informed by the presence/absence of native vegetation

Section 9.1.1 of the BDAR describes the process for selecting borrow pit sites, and how avoidance of impacts to biodiversity factored into the decision-making process - *'Potential sites for borrow pits were initially identified through a public expression of interest released by ARTC in early 2019. Geotechnical and environmental investigations and analysis were undertaken for 26 shortlisted sites, which was refined to 16 sites and then to four sites. Biodiversity surveys were conducted at sixteen sites and results of these surveys fed into the selection of the final four borrow pits. A number of potential borrow pit and haul road sites were heavily vegetated and contained high habitat values, while others were in predominantly cleared or partially cleared locations. None of the heavily vegetated sites were included in the final four sites. Following extraction of required material from the borrow pits, all facilities would be removed and the pits would be stabilised and rehabilitated. Rehabilitation of the borrow pits would be undertaken in accordance with the borrow pit rehabilitation strategy.'*

## 5. Impact Assessment

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**Verify that the EIS/BDAR:**

- identifies the residual adverse impacts likely to occur to **each** EPBC Act listed threatened species and/or community after the proposed avoidance and mitigation measures are taken into account
- provides adequate justification and evidence for the predicted level of impact, with reference to the:
  - Commonwealth's Significant Impact Guideline: [https://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines\\_1.pdf](https://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf)
  - DPIE Guidance to Assist a Decision-Maker to Determine a Serious and Irreversible Impact (SAII): ([https://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines\\_1.pdf](https://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf))

**Complete the following information for each EPBC Act listed threatened species and/or community (add/remove rows as necessary):**

- EPBC Act listed threatened species and/or community
- nature and consequences of impacts (i.e., direct and indirect)
- duration of impact (e.g., construction, operation, life of project)
- quantum of impact
- consequences of impacts on the species, the population and / or extent of the community at local, state and national scales

Confirm the level of predicted impact (cross appropriate):

- high risk of impact (requiring offsets)<sup>#</sup> or SAII       Low risk of impact (not requiring offsets)

# For purposes of EPBC approval, as a minimum, significant adverse residual impacts **must** be offset (significant impact can be evaluated with reference to the significance impact guidelines)

BCS's assessment of the impact assessment is included in Table 1 (below).

**Table 1 Summary of Impact Assessment: Inland Rail Narromine to Narrabri**

EPBC Act entity	Nature & consequence of impact (direct & indirect)	Duration of impact (e.g., construction, operation, life of project)	Quantum of impact	Consequence of impact at local, state and national scale	Level of impact (is an offset required?)
Weeping Myall Woodland	6.5 hectares of direct impact	For all MNES entities listed in this table, the impact will occur for the life of the project.	205 ecosystem credits	<p><b>Local</b> - This community occurs approximately 20 kilometres south-east of Gulargambone and is part of a larger patch of about 25 hectares of which about three hectares would be removed. The removal of 6.5 hectares of this community represents about 11 percent of the extent of the community in the broader investigation corridor.</p> <p><b>State</b> – Current extent of between 190,000 and 330,000 hectares. The amount of this community to be impacted is small in the context of the NSW community occurrence (6.5 hectares; or &lt;0.001 percent of the estimated NSW extent).</p> <p><b>National</b> – Small impact - current national extent lies within the range of 220,000 to 361,000 hectares.</p>	All MNES entities listed in this table face a high risk of impact – therefore an offset is required.
Brigalow ( <i>Acacia harpophylla</i> dominant and co-dominant)	7.3 hectares of direct impact		155 ecosystem credits	<p><b>Local</b> - The proposal will remove about five percent of the occurrence of the community within the proposal site.</p> <p><b>State</b> - In NSW approximately 142,950 hectares of the Brigalow endangered community remain. The proposal will remove a total of 7.3 hectares. This represents a clearing of less than 0.005 percent of the current estimated remaining Brigalow ecological community in NSW.</p> <p><b>National</b> – About 730,000 hectares remain.</p>	
Grey Box ( <i>Eucalyptus microcarpa</i> ) Grassy Woodlands and derived native grasslands of	17.2 hectares of direct impact		518 ecosystem credits	<p><b>Local</b> - The removal of 17.2 hectares of this community represents about nine percent of the extent of the community in the study area.</p> <p><b>State</b> - The removal of 17.2 hectares represents about 0.005 percent of the remaining extent of the community in NSW.</p> <p><b>National</b> - Across its national range, only 10 to 15 percent of the original extent remains.</p>	

South-eastern Australia				
Poplar Box grassy woodland	76.4 hectares of direct impact		2,141 ecosystem credits	<p><b>Local</b> - The proposal will remove about 76.4 hectares of the 309 hectares (24 percent) mapped in the investigation corridor.</p> <p><b>State</b> - Using a conservative estimate of 650,000 hectares remaining, the removal of 76.4 hectares represents about 0.005 percent of the remaining extent of the community in NSW.</p> <p><b>National</b> - This ecological community has undergone a decline in extent throughout Australia of at least 75 percent.</p>
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	8.4 hectares of direct impact		265 ecosystem credits	<p><b>Local</b> – Removal of 8.4 hectares of this community will leave a single two hectare patch within the study area.</p> <p><b>State</b> - The proposal will impact one patch within the known range of the community through the removal of 8.4 hectares (about 0.001 percent of the community in NSW).</p> <p><b>National</b> – The estimated extent of occurrence is 263,778 square kilometres.</p>
<i>Commersonia procumbens</i>	575.9 hectares of direct impact		16,738 species credits	<p><b>Local</b> - The closest records to the proposal are within Pilliga East forest and are about 2.5 kilometres from the proposal site, and they were recorded in 2012 (about 50 plants). Most other records are from Goonoo Conservation Area (about 30 kilometres east of the proposal).</p> <p><b>State</b> - The proposal is likely to reduce the area of occupancy given the large amount of potential habitat removal.</p> <p><b>National</b> – Endemic to NSW.</p>
<i>Lepidium aschersonii</i>	338.8 hectares of direct impact		8,232 species credits	<p><b>Local</b> – In segment 11, records for the species occurs within 200 metres of the proposal site, however most known populations of this species are restricted to Brigalow Nature Reserve and the Brigalow State Conservation Area which are located about six kilometres west of the proposal site.</p> <p><b>State</b> – There are records for the species in the wider locality including in conservation reserves, and the proposal site will reduce a further 338.8 hectares of suitable potential habitat within the proposal site, and the area of occupancy for <i>Lepidium aschersonii</i> may be reduced.</p> <p><b>National</b> - Roadside populations in the Narrabri region are small; these populations have been included in the National Recovery Plan. These populations may contribute to the dispersal of the species within the north and</p>

				south of its range therefore populations in this region must be considered an 'important population'.
<i>Lepidium monoplocoides</i>	175.8 hectares of direct impact		3,710 species credits	The removal of 175.8 hectares will likely result in a reduced area of occupancy of potential habitat for the species.
<i>Tylophora linearis</i>	37.9 hectares of direct impact		1,236 species credits	The total population of <i>Tylophora linearis</i> in NSW is estimated to include at least 250-500 mature individuals. The total population of <i>Tylophora linearis</i> may be larger than current estimates suggest, there are unlikely to be more than 1000 mature individuals. Given the area of known and potential habitat to be cleared and that the species is known to occur in the proposal site and has a very limited population size, the proposal is likely to lead to a long-term decrease in the size of the population.
Bluegrass ( <i>Dichanthium setosum</i> )	3.5 hectares of direct impact		174 species credits	This species was not recorded during field surveys. However, there is one historical (1885) database record for this species within 500 metres of the proposal site near the Namoi River. The proposal will remove about 3.5 hectares of assumed presence potential habitat for Bluegrass from the proposal site.
Slender Darling Pea ( <i>Swainsona murrayana</i> )	50.1 hectares of direct impact		2,021 species credits	<b>Local</b> - Within the locality, a small number of records of <i>Swainsona murrayana</i> have been found, mostly associated with the towns of Baradine (eight kilometres from proposal site), Narrabri and Gulargambone (21 kilometres from proposal site) <b>State</b> - The population size of <i>Swainsona murrayana</i> is highly variable, and has been recorded from at least 60 geographically distinct sub populations in NSW, with up to 200 000 individuals estimated to occur within these sub populations (NSW SC 2008). <b>National</b> – Occurs in NSW, Victoria, South Australia and QLD. 50.1 hectares of assumed potential habitat occurs within the proposal site and will be removed.
Keith's Zieria ( <i>Zieria ingramii</i> )	48.6 hectares of direct impact		1,605 species credits	<i>Zieria ingramii</i> is endemic to NSW and has a very restricted distribution. In the proposal site, there is no known habitat for the species. However, there is 48.6 hectares of assumed presence potential habitat where remote access did not allow targeted surveys to exclude the species occurrence.

Koala	269.2 hectares of direct impact		7,627 species credits /12,761 including prescribed impacts	<b>State</b> - The Pilliga forests cover an area of about 535,000 hectares, and comprise the single largest remaining tract of native forest and woodland in NSW west of the Great Dividing Range. The Koala population within the Pilliga has declined dramatically since the 1990s. The proposal would remove 269.2 hectares of suitable habitat from within the Pilliga forests.
Corben's Long-eared Bat	1,107.4 hectares of direct impact		24,497 ecosystem credits /35,571 including prescribed impacts	<b>Local</b> - The Pilliga is considered a stronghold for the species, the loss of 1,107.4 hectares of eucalypt woodland and forest and 14,503 - 41,103 hollow-bearing trees are likely to lead to a long-term decrease in the size of an important population of this species. <b>State</b> - The Pilliga forests cover an area of about 535,000 hectares, and comprise the single largest remaining tract of native forest and woodland in NSW west of the Great Dividing Range. While the proposal would remove a large area of habitat for this species, this is only a small proportion of available habitat in the Pilliga area.
Painted Honeyeater	1,107.4 hectares of direct impact		24,497 ecosystem credits	<b>Local</b> - A high number of mistletoes would be removed along the alignment, and particularly from within the Pilliga, resulting in the loss of a large area of habitat. <b>National</b> - The species is sparsely distributed from south-eastern Australia to north-western Queensland and eastern Northern Territory. The removal of 1,107.4 hectares of eucalypt woodland and forest habitat along a 300 kilometres alignment is not likely to reduce the area of occupancy of the important population.
Pilliga Mouse	647.1 hectares of direct impact		13,969 ecosystem credits /25,394 with prescribed impacts	This species only occurs in the Pilliga. The proposal will remove a total of 647.1 hectares of woodland and shrubland from within the Pilliga forests. This would create a gap that may impact movement of individuals, and thus may impact gene flow between areas of important habitat.
Superb Parrot	1594.1 hectares of direct impact		35,953 ecosystem credits	The Superb Parrot is found in NSW and northern Victoria. The proposal would not impact any known breeding habitat for the species.
Australasian Bittern	5.8 hectares of direct impact		133 ecosystem credits	The Australasian Bittern occurs from south-east Queensland to south-east South Australia. The area of occupancy of the Australasian Bittern in Australia

				is thought to have declined by 70 percent between 1977 and 2008. The declines are primarily linked to the clearing or modification of wetlands. The proposal will have limited impacts on wetland habitat.
Australian Painted Snipe	366.5 hectares of direct impact		10,817 ecosystem credits	The Australian Painted Snipe has been recorded at wetlands in all states of Australia. The area of occupancy has undoubtedly declined as approximately 50 percent of wetlands in Australia have been removed since European settlement. No preferred breeding habitat (islands in freshwater wetlands) is present, however areas of tall emergent reeds are present at the Castlereagh River and Namoi River, which may provide marginal breeding habitat
Regent Honeyeater	286.8 hectares of direct impact		6,549 ecosystem credits	The proposal would remove 286.8 hectares containing preferred foraging species. While individuals may forage along the alignment on occasion, the habitat to be removed has not been identified as important foraging habitat for this species by Birdlife Australia. <b>National</b> - The distributional range of the Regent Honeyeater extends from parts of Victoria, through NSW to southeast Queensland. The area of occupancy is estimated at 300,000 square kilometres. The removal of linear patches of habitat along the 300 kilometres alignment would be unlikely to reduce the area of occupancy of the species.
Swift Parrot	732.9 hectares of direct impact		15,269 ecosystem credits	The Swift Parrot breeds only in Tasmania. The proposal would remove 732.9 hectares of potential foraging habitat for this species containing preferred feed trees. No clearing would occur in the eastern Pilliga which is identified as being important for the Swift Parrot. The study area is not considered a critical area of habitat for the Swift Parrot.
White Throated Needle-tail	1389.9 hectares of direct impact		28,592 ecosystem credits	The White-throated Needle-tail is widespread in eastern and south-eastern Australia. It is suspected that the decline of this species is primarily due to habitat loss in the breeding grounds. The species appears to have only limited reliance on roosting habitats in Australia. While the project would remove vegetation along the 300-kilometre alignment, it is likely to have little value for this almost exclusively aerial species and alternate roosting habitat is present in adjacent areas.
Five-clawed Worm-skink	336 hectares of direct impact		10,429 ecosystem credits	The Five-clawed Worm-skink has a patchy distribution on the North West Slopes and Plains of north east NSW and south-east Queensland. The species' known distribution in NSW is confined to the Namoi River and Gwydir River

				<p>floodplains and the lower north-western slopes of the Great Dividing Range. The proposal will impact up to 2.03 hectares of potential habitat for this species in the Narrabri area. Much of the land to be impacted at this location is cropped or highly modified, and the use of an almost four kilometres bridge will allow retention of habitat and connectivity south of Narrabri Creek. <i>(Note: a precautionary approach to impacts on the skink has been taken in the BAM Calculator. All associated PCTs have been retained, and therefore 336 hectares of suitable habitat has been recorded and therefore 10,429 ecosystem credits have been attributed to the species.</i></p>	
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**Provide advice on whether adequate justification and evidence is provided for species and communities that have been identified as being at low risk of impact.**

All threatened species and communities likely to be impacted have been assessed adequately under the BAM and an offset obligation has been calculated. No entities have been identified as being at low risk of impact.

## 6. Offsets

### Verify that the EIS/BDAR:

- identifies any MNES that haven't been offset using the BAM
  - identifies how impacts requiring offsets correlate to MNES impacts
  - identifies the plant community types (PCTs) requiring offset and the number and type of ecosystem credits required for impacts to MNES
  - identifies threatened species requiring offset and the number of species credits required for impacts to MNES
  - correctly uses the BAM (and BAM calculator) to identify the number and class of biodiversity credits that need to be offset to achieve a standard of 'no net loss' of biodiversity
  - identifies if ecological rehabilitation and/or biodiversity conservation actions are proposed for offsetting
- 
- if known, identifies any other offsetting approach proposed, such as land-based offsets, retiring credits by payment into the Biodiversity Conservation Fund and/or through supplementary measures<sup>#</sup>
- <sup>#</sup> In accordance the BAM there is no longer a requirement to define the offsetting approach at EIS stage.

**Complete the Impacts and Offsets Summary table below (Table 2) (below)**

**TABLE 2: MNES IMPACT AND OFFSET SUMMARY: Inland Rail Narromine to Narrabri**

Threatened Species / Community listed under EPBC Act	PCTs associated with the ecosystem credit species / ecological community (if applicable)	Area of Impact (ha)	Credits Required	Offsetting Approach	Reference (EIS, revised BDAR)
<b>Ecological Communities</b>					
Weeping Myall Woodland	PCT 27	6.5	205	ARTC is managing the offset strategy for the entire Inland Rail program, and have invited landowners within 100 kilometres of the route in NSW to contact them regarding establishing a Biodiversity Stewardship Site so that ARTC can purchase the appropriate credits. ARTC is also considering other	BDAR Table 13.3
Brigalow ( <i>Acacia harpophylla</i> dominant and co-dominant)	PCT 35	7.3	155		BDAR Table 13.3
Grey Box ( <i>Eucalyptus microcarpa</i> ) Grassy Woodlands and derived native grasslands of South-eastern Australia	PCT 81 PCT 248	17.2	518		BDAR Table 13.3

Poplar Box grassy woodland	PCT 56 PCT 244	76.4	2,141	potential possibilities including identifying and purchasing their own properties and retiring credits. Where credits are not available for purchase, ARTC would make a payment into the Biodiversity Conservation Fund. ARTC has also been liaising with the newly-established Credit Supply Taskforce in an attempt to secure in-demand credits.	BDAR Table 13.3
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	PCT 435 PCT 599	8.4	265		BDAR Table 13.3
<b>TOTAL</b>		<b>115.8</b>	<b>3,284</b>		
<b>Species Credit Species</b>					
<i>Commersonia procumbens</i>	Species Credit	575.9	16,738	See commentary above relating to ARTC's proposed offset strategy.	BDAR Table 13.4 and 13.5
<i>Lepidium aschersonii</i>	Species Credit	338.8	8,232		BDAR Table 13.4 and 13.5
<i>Lepidium monoplacoides</i>	Species Credit	175.8	3,710		BDAR Table 13.4 and 13.5
<i>Tylophora linearis</i>	Species Credit	37.9 (16 of known, 21.9 of potential)	1,236		BDAR Table 13.4 and 13.5
Bluegrass ( <i>Dichanthium setosum</i> )	Species Credit	3.5	174		BDAR Table 13.4 and 13.5
Slender Darling Pea ( <i>Swainsona murrayana</i> )	Species Credit	50.1	2,021		BDAR Table 13.4 and 13.5
Keith's Zieria ( <i>Zieria ingramii</i> )	Species Credit	48.6	1,605		BDAR Table 13.4 and 13.5
Koala	Species Credit	269.2	7,627 (12,761 with prescribed impacts)		BDAR Table 13.4 and 13.5
<b>TOTAL</b>		<b>1,499.8</b>	<b>41,343 (46,477 with prescribed impacts)</b>		
<b>Ecosystem Credit Species</b>					
Corben's Long-eared Bat	PCT 27, 35, 36, 55, 56, 78, 81, 88, 148, 185, 202, 206, 244, 248, 255, 256, 394, 397, 398	1,107.4	24,497 (35,571 with prescribed impacts)	See commentary above relating to ARTC's proposed offset strategy.	BDAR Table 13.8 and 13.9
Painted Honeyeater	PCT 27, 35, 36, 55, 56, 78, 81, 88, 148, 185, 202,	1,107.4	24,497		BDAR Table 13.8 and 13.9

	206, 244, 248, 255, 256, 394, 397, 398				
Pilliga Mouse	PCT 88, 141, 256, 394, 397, 398, 399, 404, 406, 409, 414, 589, 1384	647.1	13,969 (25,394 with prescribed impacts)		BDAR Table 13.8 and 13.9
Superb Parrot	PCT 27, 36, 49, 55, 56, 78, 81, 88, 145, 202, 206, 244, 248, 255, 397, 398, 399, 444, 469, 473	1594.1	35,953		Credit Summary Reports
Australasian Bittern	PCT 36	5.8	133		Credit Summary Reports
Australian Painted Snipe	PCT 36, 49, 78	366.5	10,817		Credit Summary Reports
Regent Honeyeater	PCT 27, 244, 394, 397, 398	286.8	6,549		BDAR Table 13.8 and 13.9
Swift Parrot	PCT 88, 397, 398, 399	732.9	15,269		BDAR Table 13.8 and 13.9
White Throated Needle-tail	PCT 27, 35, 36, 55, 56, 78, 88, 141, 168, 202, 206, 244, 255, 256, 394, 397, 398, 399, 404, 406, 409, 414, 469, 746, 1384	1389.9	28,592		Credit Summary Reports
Five-clawed Worm-skink	PCT 27, 35, 49, 55, 56, 78, 145, 168, 244, 444, 289	336	10,429		Credit Summary Reports
<b>TOTAL</b>		<b>7,573.90</b>	<b>170,705</b> <b>(193,204 with prescribed impacts)</b>		

#### Discrepancies in areas of impact in the BDAR

**Pilliga Mouse** – BCS notes that there are a number of discrepancies for the total area and total credit obligations for this species between Tables 10.23, 13.8 and 13.9. BCS confirms that this species has been retained in all associated PCTs predicted by the BAM-C and that the total area of associated vegetation for this species is 647.1 hectares. This species has been adequately assessed and offset in accordance with the BAM. The total ecosystem credits associated with this species is 13,969 (25,394 with prescribed impacts).

**White-throated Needle-tail** – BCS notes that the BDAR does not provide a total credit obligation for this species in the BDAR. Additionally, Table 11.2 of the BDAR states that the total area of vegetation that will be impacted along the alignment that may be used for foraging by this species is 1,173 hectares. In comparison, the Assessment of Significance in Appendix M of the BDAR states that the total area of vegetation that will be impacted is 1,791 hectares. BCS confirms that this species has been retained in all associated PCTs predicted by the BAM-C and that the total area of associated vegetation for this species as per the BAM-C is 1,389.9 hectares. This species has been adequately assessed and offset in accordance with the BAM. The total ecosystem credits associated with this species is 28,592.

**Five-clawed Worm-skink** - BCS notes that there is a discrepancy for the total area for this species between the BAM-C and the figures provided in the EPBC Act Assessment of Significance (Appendix M) for this species. BCS confirms that this species has been retained in all associated PCTs predicted by the BAM-C and that the total area of associated vegetation for this species is 336 hectares. This species has been adequately assessed and offset in accordance with the BAM. The total ecosystem credits associated with this species is 10,429.

*Ecosystem credit species have been adequately assessed*

BCS is satisfied that all ecosystem credit species have been adequately assessed. BCS confirms that all ecosystem credit species have been retained in all associated PCTs predicted by the BAM-C and that the maximum credit obligation for these species has been calculated.

The likely impacts on MNES flora, fauna, communities and migratory species for the project have been assessed in accordance with the BAM, described in the BDAR and are summarised in Table 1 (above) in this assessment report.

#### *Migratory species will not be significantly impacted*

Three MNES migratory species, Fork-tailed Swift (*Apus pacificus*), Rufous Fantail (*Rhipidura rufifrons*) and Satin Flycatcher (*Miagra cyanoleuca*), that are likely to be impacted by the project are not listed under the BC Act and therefore have not been assessed under the BAM. Additional information provided by DCCEE to BCS via email on 13 December 2022 states that *'during the referral assessment stage, the department considered that the proposed action is unlikely to result in significant impacts to any listed migratory species for the Inland Rail Section, Narromine to Narrabri, NSW (EPBC 2018/8259) (SSI 18\_9487). Therefore, Listed Migratory Species (s20 & s20A of the EPBC Act) was not deemed a controlling provision under the EPBC Act for this project and further assessment is not required'*.

#### **Provide advice on the adequacy of the proposed offsets in meeting the requirements of the BAM:**

ARTC is managing the offset strategy for the entire Inland Rail program and have invited landowners within 100 kilometres of the route in NSW to contact them regarding establishing a Biodiversity Stewardship Site so that ARTC can purchase the appropriate credits. ARTC would also consider other potential possibilities including identifying and purchasing their own properties and retiring credits. Where credits are not available for purchase, ARTC would make a payment into the Biodiversity Conservation Fund. ARTC has also been liaising with the newly established Credit Supply Taskforce in an attempt to secure in-demand credits.

The commitment to offset impacts to MNES by either purchasing appropriate credits, establishing Biodiversity Stewardship Sites and retiring the appropriate type and number of credits from those sites, or to pay the required amount of money into the Biodiversity Conservation Fund meets the requirements of the BAM. No details have been provided on the location of Stewardship Sites, or the biodiversity values that they contain, but all credits must conform to the like-for-like offset rules established under the BC Act.

## **7. Other considerations**

**Verify if any relevant Commonwealth guidelines and policy statements are applicable to the action and listed threatened species and/or community, including but not limited to:**

- International environmental obligations
- Recovery Plans
- Approved Conservation Advice
- Threat Abatement Plans

*The relevant Commonwealth guidelines and policy statements for each species and community are available at: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>*

**For each EPBC Act listed threatened species and/or community, provide advice on whether the assessment has been adequately informed by applicable Commonwealth guidelines and/or policy statements. For example, the interaction between the proposed action and important populations or critical habitat identified in policy documents and/or the interaction between the proposed action and threatening processes or recommended conservation actions outlined in Commonwealth policies and plans.**

### International environmental obligations

The proponent does not discuss impacts to MNES in relation to Australia's international obligations. There are likely impacts of the project to migratory species, thus one or more of the bilateral migratory bird agreements may be triggered.

The proposal site does not impact on any Ramsar wetlands. Four wetlands of international importance are identified by DAWE, as occurring downstream of the proposal site. Of these, the Macquarie Marshes are closest, located about 80 kilometres downstream from the proposal site. The proposal is unlikely to impact the Macquarie Marshes.

### Recovery Plans

Section 3.2.2 of the BDAR states "*Research regarding threatened species habitat requirements and local populations included review of recovery plans*". Recovery plans for Superb Parrot, Brigalow (*Acacia harpophylla* dominant and co-dominant) TEC, *Lepidium aschersonii*, Painted Honeyeater, Koala, White Box-Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC, Regent Honeyeater, *Lepidium monoplacoides* and Swift Parrot are referenced in Appendix M. Recovery Plans have generally been referenced to inform the identification of areas of important habitat for the above species. Examples of these references are:

Superb Parrot – the EPBC Act Assessment of Significance for this species (found in Appendix M) references the distribution maps in the national recovery plan to identify if the study area contains any area where 'breeding is likely to occur'.

Regent Honeyeater - the EPBC Act Assessment of Significance for this species (found in Appendix M) references the recovery plan to identify areas of habitat that are important to the species.

### Conservation Advices

Conservation Advices for Weeping Myall Woodland, Brigalow, Grey Box Woodland and Poplar Box Grassy Woodland are referenced in Appendix M in relation to the relevant recovery and threat abatement actions for each TEC relevant to the proposal.

Conservation Advices for *Swainsona murrayana*, Painted Honeyeater, Australasian Bittern, *Tylophora linearis* are referenced in Appendix M to inform habitat requirements for each species.

### Threat Abatement Plans

Appendix M discusses threat abatement plans in relation to MNES. It identified the threat abatement plans for rabbits, feral pigs and goats as relevant to *Swainsona murrayana* and *Lepidium monoplacoides*.

### Key Threatening Processes

Key Threatening Processes (KTPs) listed under the BC Act, FM Act and EPBC Act relevant to the proposal are listed in Table 10.24 of the BDAR. Mitigation measures are proposed in Section 12 of the BDAR to minimise the impact of the proposal on EPBC Act-listed KTP's such as *Clearing of Native Vegetation*, *Infection of frogs by amphibian chytrid causing the disease chytridiomycosis*, *Infection of native plants by Phytophthora cinnamomic*, *Predation by feral cats*, *Predation by the European Red Fox* and *Novel biota and their impact on biodiversity*.

## **8. Recommendations**

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**Provide advice on any recommended conditions and reasons for imposing the conditions:**

BCS are not recommending any conditions additional to the standard biodiversity conditions usually issued by the consent authority.

**Reviewed By**

**Principal Project Manager Inland Rail  
North West Branch  
Biodiversity, Conservation and Science Directorate**

**31 January 2023**