

Assessment of EPBC Act listed threatened species and communities using the NSW Framework for Biodiversity Assessment

Suggested information to be included in the submission

1. Identifying MNES

(a) **Confirm** whether all the EPBC Act-listed threatened species and communities that occur on the project site, or in the vicinity are identified in the EIS. Note which species and/or communities have not been identified.

The EPBC Act-listed threatened species and communities that occur on the project site for the Bowden's Silver project or in the vicinity as generated from the Environmental Reporting Tool (ERT) have been identified in Table 24 of the *Biodiversity Assessment Report - updated* (BAR) dated March 2022. An assessment of the likelihood of each entity occurring has been undertaken, and a decision as to whether an assessment of significance is required has been made.

The five entities listed in the referral documentation that are likely to be significantly impacted have been identified in the BAR include:

- White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland
- Koala (Qld, NSW and the ACT) (*Phascolarctus cinereus*)
- Regent Honeyeater (*Anthochaera phrygia*)
- Swift Parrot (*Lathamus discolor*)
- Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (SE mainland population) (*Dasyurus maculatus maculatus*)

Species considered by Department of Climate Change, Energy the Environment and Water (DCCEEW) that are possibly at risk of being impacted are:

- A leek-orchid (*Prasophyllum sp Wybong*)
- *Philothea ericifolia*
- Tarengo Leek Orchid (*Prasophyllum petilum*)
- Small Purple-pea (*Swainsona recta*)
- *Euphrasia arguta*
- Booroolong Frog (*Litoria booroolongensis*)
- Striped Legless Lizard (*Delma impar*)
- Superb Parrot (*Polytelis swainsonii*)
- Brush-tailed Rock Wallaby (*Petrogale pencicillata*)
- Grey-headed Flying-fox (*Pteropus poioccephalus*)
- Pink-tailed Worm-lizard (*Aprasia parapulchella*)
- Corben's Long-eared Bat (*Nyctophilis corben*)
- Painted Honeyeater (*Grantiella picta*)
- Large-eared Pied Bat (*Chalinobus dwyeri*)

One entity, Corben's Long-eared Bat, was not included in the assessment of likelihood of occurrence (Table 24 in the revised BAR). BCS considers that there is potential for the species to occur. Under the Framework for Biodiversity Assessment (FBA), this species is an ecosystem species. Corben's Long-eared Bat has been retained as an ecosystem species for biodiversity credit calculations in Table 21 of the updated BAR.

(b) **Comment** on whether the Framework for Biodiversity Assessment (FBA) has been applied to all EPBC Act-listed threatened species and communities that occur on the project site or in the vicinity.

All entities that were identified as requiring an assessment of significance have been assessed. Impacts on one ecological community and four species likely to be significantly impacted were assessed and credit liabilities were determined.

Ecosystem credit obligations have been identified for one ecological community that has been recorded in the project site: White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland.

Species credit obligations have been identified for Regent Honeyeater, Koala, Large-eared Pied Bat and Small Purple-pea.

Koala, Large-eared Pied Bat and Small Purple-pea have been recorded on the project site.

The BAR and Biodiversity Offset Strategy (BOS) were updated in March 2022 to reflect amendments to the project. BioBanking credits will need to be converted to BAM credits prior to retirement. Offsetting will be in accordance with the *Biodiversity Conservation Act 2016*. The proponent intends to offset using a combination of stewardship sites, purchasing credits from the market and paying into the Biodiversity Conservation Fund.

(c) In the circumstance where there are EPBC Act-listed species that are not addressed by the FBA (i.e. migratory species) comment on whether these species have been assessed in accordance with the SEARs and provide references to where the assessment information is detailed in the EIS.

The likelihood of migratory species occurring on the project site is assessed in Table 24 of the revised BAR. Four species have been considered likely to occur, and have been included in an assessment of significance (Annexure 6):

- Cattle Egret
- Latham’s Snipe
- White-throated Needletail
- Rainbow Bee-eater

White-throated Needletail and Rainbow Bee-eater were recorded on the project site during field surveys

(d) Verify that the proponent has expressed a statement about the potential impact i.e. likely significant, low risk of impact, not occurring, for each listed threatened species and community protected by the EPBC Act referred to in 1(a). Note which species and/or communities have not been addressed in this manner.

An assessment of whether each threatened species is likely to occur in the project footprint and a subsequent assessment of significance has been undertaken, except for Corben’s Long-eared Bat (although this has been retained as an ecosystem credit species).

The results as reported in the revised BAR (Table 24 and Annexure 6) are presented below:

Entity	Assessment of potential impact as stated by the proponent
White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland	In the absence of any mitigation measures and biodiversity offsets, the Project is likely to have a significant impact on Box-Gum Woodland. The Applicant has made all reasonable attempts to avoid impacts to BGW where possible, through a substantial planning and design phase. A series of detailed mitigation measures are proposed within this BAR to minimise potential impacts to BGW (see Section 6). A suitable biodiversity offset strategy must be considered.
Koala	While two Koala have been recorded within the Study Area and the Project would result in the loss of 381.17 hectares of habitat that is suitable for Koala, the proposed action is unlikely to result in a significant impact due to the: <ul style="list-style-type: none"> • Relatively localised nature of the BAR footprint when compared to the wider local and regional distribution of Koala • Greater extent of habitat in the locality known to be used by Koala.
Regent Honeyeater	The Project has the potential to have a significant impact on Regent Honeyeater. The Applicant has made all reasonable attempts to avoid impacts to potential foraging and breeding habitat where possible, through a substantial planning and design phase. A series of detailed mitigation measures are proposed within this BAR to minimise potential impacts (see Section 6). A suitable biodiversity offset strategy must be considered for Regent Honeyeater.

Swift Parrot	<p>Swift Parrot are unlikely to be significantly impacted by the proposed action given the following.</p> <ul style="list-style-type: none"> • The species does not breed in NSW. • The relatively localised nature of the potential habitat in the BAR footprint in comparison to the distribution of Swift Parrot in NSW. • The species is highly mobile and migratory meaning that it would not rely solely on the habitats of the Study Area.
Spotted-tailed Quoll	<p>While Spotted-tailed Quoll has been detected within the generally vicinity of the Study Area, it has not been recorded within the BAR footprint despite comprehensive fauna surveys. Nonetheless, vegetation types within the BAR footprint contains only potential foraging habitat. Large expanses of woodland and forest remain within the Study Area and in the wider locality, which represent important features at the landscape level. For these reasons, the proposed action is unlikely to result in a significant impact to Spotted-tailed Quoll.</p>
<i>Prasophyllum</i> sp Wybong	<p>This species has not been recorded within the Study Area. While survey timing was not optimal for this species, the sensitivity of this species to grazing, confirms that it is unlikely to be present within the Study Area given the long grazing history of the site. It is highly unlikely to occur within the Study Area and therefore would not be impacted by the Project.</p>
<i>Philotheca ericifolia</i>	<p>The species has been recorded previously within the locality (Munghorn Gap NR). Despite comprehensive vegetation surveys the species was not recorded within the Study Area. As such, it would not be impacted by the Project.</p>
Tarengo Leek Orchid	<p>This species was not recorded within the Study Area despite comprehensive vegetation surveys. Field surveys were carried out in months where the species is known to flower elsewhere. The species has not been recorded previously within the locality and is not likely to occur in the Study Area. Therefore, it would not be impacted by the Project.</p>
Small Purple-pea	<p>The action would result in the removal of 4 Small Purple-pea located within a discrete area in the BAR footprint. The species is also known from the wider locality from several populations including the Mudgee Lookout and along the Mudgee-Lue Road. These records confirm the presence of a population in the general locality and the National Recovery Plan for the species identifies the Wellington-Mudgee population as the most significant in NSW.</p> <p>However, it would be generally accepted that these four plants alone do not comprise plants critical to the survival of the species, nor that the habitat to be removed is critical to the survival of the species. For these reasons, the proposed action is unlikely to result in a significant impact to Small Purple-pea.</p>
<i>Euphrasia arguta</i>	<p>Despite extensive vegetation survey, this species was not recorded within the Study Area. There is a single record southeast of Lue. However, this species is not likely to occur in the Study Area and therefore would not be impacted by the Project</p>
Booroolong Frog	<p>The Booroolong frog was not recorded within the Study Area despite adequate fauna surveys being carried out within the seasonal requirements of this species. Although some permanent creeks with fringing vegetation do occur, these areas are heavily degraded and modified by past agricultural and clearing activity. This species is not likely to occur within the Study Area and therefore, would not be impacted by the Project</p>
Striped Legless Lizard	<p>This species was not recorded within the Study Area despite comprehensive fauna surveys carried out in accordance with the seasonal requirements of this species. The species has not been recorded previously within the locality and is not likely to occur in the Study Area. Therefore, it would not be impacted by the Project.</p>
Superb Parrot	<p>This species was not recorded within the Study Area despite comprehensive fauna surveys carried out in accordance with the seasonal requirements of this species. The species has not been recorded previously within the locality and is not likely to occur in the Study Area based on an absence of records. Therefore, it would not be impacted by the Project.</p>
Brush-tailed Rock Wallaby	<p>The Study Area does not contain any cliff lines, or other suitable habitat, therefore, it is not likely to occur there. Given this, the species would not be impacted by the Project.</p>
Grey-headed Flying-fox	<p>This species was not recorded within the Study Area despite comprehensive fauna surveys carried out in accordance with the seasonal requirements of this species. The species has not been recorded previously within the locality and is not likely to occur in the Study Area. Therefore, it would not be impacted by the Project.</p>
Pink-tailed Worm-lizard	<p>This species was not recorded within the Study Area despite comprehensive fauna surveys carried out in accordance with the seasonal requirements of this species. The species has not</p>

	been recorded previously within the locality and is not likely to occur in the Study Area. Therefore, it would not be impacted by the Project.
Corben's Long-eared Bat	No statement made about potential impact
Painted Honeyeater	This species was not recorded within the Study Area despite comprehensive fauna surveys carried out in accordance with the seasonal requirements of this species. The species has been recorded previously within the locality near Ulan however, it is not likely to occur in the Mine Site due to its geographic distribution ending well to the south of the Study Area. Therefore, it would not be impacted by the Project.
Large-eared Pied Bat	While Large-eared Pied Bat have been detected by echolocation call recording, the BAR footprint contains only potential foraging habitat. Potential roosting and maternity sites in rock outcrops, cliffs and crevices are outside of the Study Area and it is these sites, that are of the most importance to this species for long-term viability. For these reasons, the proposed action is unlikely to result in a significant impact to Large-eared Pied Bat.

(e) Identify where further information from the proponent is critical to the assessment of MNES particularly in relation to mapping Table 1 (A), analysis of impacts Table 1 (F) and Table 2 (F), avoidance, mitigation and offsetting, and 6.

No statement has been made about Corben's Long-eared Bat. This is an ecosystem species for offsetting and has been retained in the list of ecosystem species requiring offset (Table 21). Appropriate offsets will be provided for the species if offset credit liabilities are satisfied in accordance with the *Biodiversity Conservation Act 2016*.

2. Assessment of the relevant impacts

All EPBC Act-listed species and/or communities that the Commonwealth consider would be significantly impacted (as noted in the referral documentation) should be assessed and offset. These are referred to as relevant impacts

(a) Verify [by ticking the following boxes]:

- ✓ *the nature and extent of all the relevant impacts has been described*
- ✓ *measures to avoid and mitigate have been described*
- an appropriate offset for any residual adverse significant impact has been determined.*

The BAR adequately describes all impact avoidance and mitigation measures in Section 6. The nature and extent of relevant impacts has been described in Section 7.

Offset requirements have been calculated in accordance with the FBA. These credits will be converted to BAM credits and offset in accordance with the *Biodiversity Conservation Act 2016*.

The biodiversity offset strategy (BOS) has identified some land-based offset areas. However, these do not satisfy all offset requirements. The Biodiversity Offsets Strategy states that additional offsets will be satisfied through further land-based offsets, purchase of credits on the market and paying into the Biodiversity Conservation Trust Fund.

(b) Note if information in relation to any of these boxes has not been provided for any relevant EPBC Act-listed species and communities.

There is no assessment of the likelihood of occurrence or impacts on Corben's Long-eared Bat, although this species has been retained as an ecosystem species for biodiversity credit calculations in Table 27 of the revised BAR

The MNES assessment in Annexure 6 has not been updated since the EIS in 2020 to include and assess additional Koalas recorded on the site or the impacts of 2019 / 2020 bushfires on Koala populations. However, these aspects are addressed in section 5.4.3 of the BAR.

(c) There may be listed threatened species and communities for which the proponent will claim that the impact will be not significant in accordance with the EPBC Act Significant Impact Guidelines. Please provide advice for cases where OEH disagrees with this finding.

Koala

Annexure 6 of the BAR (EPBC significant impact criteria) has not been updated since the EIS in 2020 to include and assess additional Koalas recorded on the site or the impacts of 2019 / 2020 bushfires on Koala populations.

There have been additional sightings of six Koala since the EIS in the study area. Map 20 of the BAR shows nine Koala records within the study area.

BCS considers that the impact on Koalas will be greater than is indicated in Annexure 6 of the BAR. However, given the extent of remaining habitat in the area, and the offset and mitigation measures proposed the project is unlikely to have a significant impact on the species.

(d) Provide references to where specific lists or tables are detailed in the EIS i.e. List of EPBC Act-listed EECs Appendix J Table 4 pg 65

Bowdens Silver Water Supply Amendment Report (March 2022) Appendix 5 – Updated Biodiversity Assessment Report

Table 18	Box-Gum woodland extent that meets the EPBC Act identification criteria and BC Act listed BGW within the study area and BAR footprint
Table 19	Assessment of geographic / habitat features for particular species credit species
Table 20	Species credit species requiring survey and relevant survey timing
Table 21	Ecosystem credit species requiring offset as a result of the project
Table 22	Geographic and habitat features in the study area
Table 23	Predicted species – credit species
Section 5.7	Matters of National Environmental Significance – threatened species
Section 5.7.1	Predicted MNES species
Section 5.8	Matters of National Environmental Significance – Migratory species
Table 24	MNES species predicted to occur in the study area
Section 7.8	Matters of National Environmental Significance
Annexure 2	Matters of National Environmental Significance Protected Matters Search Tool
Annexure 6	EPBC Act Significant Impact Criteria

Table 1 Impact Summary Relevant EPBC Act –listed Ecological Communities (refer to section 3)

A	B	C	D	E		F	G
EPBC Act -listed EEC	Y/N	PCTs	Y/N/ comment	Ha	Credits	Comment	Relevant page numbers in the EIS
White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland	Y	CW 112 / PCT 277 Blakely’s Red Gum – Yellow Box Grassy Tall Woodland of the NSW South Western Slopes Bioregion (Moderate/Good_poor)	Y	22.97	1250	Credit quantum for box-gum PCTs includes non-EPBC community (ie Biodiversity Conservation Act listed only). The credits for the EPBC component have not been distinguished from non-EPBC. Area of non-EPBC box-gum is 33.45 hectares	Bowdens Silver Water Supply Amendment Report (March 2022) Appendix 5 – Updated Biodiversity Assessment Report Page 9a-43 Page 9a-59 table 18 Page 9a-108 table 26 Annexure 6: EPBC Act Significant Impact Criteria Annexure 7 Development Site Biodiversity Credit Reports
	Y	CW 111 / PCT 281 Rough-barked Apple – Red Gum – Yellow Box Woodland on Alluvial Clay to Loam Soils on Valley Flats in the Northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion (Moderate/Good_medium)	Y	90.8	6803		Page 9a-45 Page 9a-59 table 18 Page 9a-108 table 26 Page 9a-45 Page 9a-109 table 27 Annexure 6: EPBC Act Significant Impact Criteria Annexure 7 Development Site Biodiversity Credit Reports
	Y	CW 111 / PCT 281 Rough-barked Apple – Red Gum – Yellow Box Woodland on Alluvial Clay to Loam Soils on Valley Flats in the Northern NSW South Western Slopes Bioregion and Brigalow Belt	Y	66.4	3315		Page 9a-46 Page 9a-108 table 26 Annexure 7 Development Site Biodiversity Credit Reports

		South Bioregion (Moderate/Good_poor)					
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- (A) **List** the relevant EPBC Act listed ecological communities that will be significantly impacted in accordance with the referral documentation.
- (B) **Verify** that there is evidence in the EIS that listed EEC and species habitat has been mapped in accordance with relevant listing guidelines (Yes/No).
Proponents are required by the SEARs to ensure that EPBC-listed communities are mapped in accordance with EPBC Act listing criteria. It is important that any derived native grassland components of an EPBC listed EEC are included in the mapping of native vegetation extent.
- (C) **List** the Plant Community Types (PCTs) associated with the ecological communities in accordance with Chapter 5 of the FBA.
- (D) **Confirm** that the identification of PCTs has been correct (Yes/No) and comment if not correct.
- (E) **Record** the area of impact (ha) and credits required.
- (F) **Comment** on the analysis of the impacts in relation to the nature and extent of the impact and whether or not the EIS includes an analysis of the direct and indirect impacts to the EEC. Note whether further information might be required.
- (G) **Cite** relevant page numbers for details provided the EIS and Appendices for each EEC.

Table 2 Impact Summary Relevant EPBC Act –listed Species (refer to section 4)

A	B	C	D	E		F	G
Threatened species (listed under the EPBC Act)	Credit Type (SC/EC)	Record PCTs associated with ecosystem credits	Y/N/ Comment	Ha (total species habitat)	Credits (total species habitat)	Comment	Relevant page numbers in the EIS and Appendices
Koala	SC		Y	381.17	9910	Species polygons have included all woodland PCTs associated with Koalas as identified in the NSW BioNet Threatened Species Data Collection.	<p>Amendment submissions report February 2022 pages 33-34</p> <p>Biodiversity Assessment Report - updated March 2022:</p> <p>Table 28 Species credit species requiring offsets and the species credits required</p> <p>Table 23 Predicted species credit species</p> <p>Page 9a- 75 to 77: survey results</p> <p>Page 9a - 84: 5.7.1 Predicted MNES Species</p> <p>Table 24: MNES species predicted to occur in study area</p> <p>Table 28: species credit species requiring offsets and the species credits required</p> <p>Page 9a-110 State Environmental Planning Policy Koala Habitat Protection 2019</p>

							<p>Page 9a-110: Matters of National Environmental Significance</p> <p>Annexure 5: Fauna species recorded</p> <p>Annexure 6: EPBC Act Significant Impact Criteria</p> <p>Annexure 7: Development site biodiversity credit reports</p> <p>Map 22 Species polygon for Koala</p>
Regent Honeyeater	SC		Y	381.17	29350	<p>Species polygons have included all woodland PCTs associated with Regent Honeyeaters as identified in the NSW BioNet Threatened Species Data Collection</p>	<p>Table 23 Predicted species credit species</p> <p>Table 28 Species credit species requiring offsets and the species credits required</p> <p>Page 9a-74: Survey results</p> <p>Page 9a-84: Predicted MNES Species</p> <p>Table 24: MNES species predicted to occur in study area</p> <p>Table 28: species credit species requiring offsets and the species credits required</p> <p>Annexure 6: EPBC Act Significant Impact Criteria</p> <p>Annexure 7: Development site biodiversity credit reports</p>

							Map 21: Species polygons for Regent Honeyeater and Squirrel Glider
Swift Parrot	SC/EC	CW 217 / PCT 273 CW 112 / PCT 277 CW 111 / PCT 281 CW 263 / PCT 324 CW 270 / PCT 358 CW 291 / PCT 323	N/A	381.17	23,880	Only a species credit species if within a mapped important area. The site is not within a mapped important area for Swift Parrot.	Table 21: Ecosystem credit species requiring offset as result of the project Page 9a-84: Predicted MNES Species Table 24: MNES species predicted to occur in study area Page 9a-97: Matters of National Environmental Significance Annexure 6: EPBC Act Significant Impact Criteria Annexure 7: Development site biodiversity credit reports
Spotted-tailed Quoll	EC	CW 217 / PCT 273 CW 112 / PCT 277 CW 111 / PCT 281 CW 263 / PCT 324 CW 270 / PCT 358 CW 291 / PCT 323	N/A	381.17	23,880		Table 21: Ecosystem credit species requiring offset as result of the project Page 9a-84: Predicted MNES Species Table 24: MNES species predicted to occur in study area Page 9a-97: Matters of National Environmental Significance Annexure 6: EPBC Act Significant Impact Criteria

							Annexure 7: Development site biodiversity credit reports
Small Purple-pea	SC		Y	Four individual plants (0.46 hectares)	104		<p>Table 23 Predicted species credit species</p> <p>Table 28 Species credit species requiring offsets and the species credits required</p> <p>Table 20: Species credit species requiring survey and relevant survey timing</p> <p>Table 22: Geographic and habitat features in the study area</p> <p>Table 23: Predicted species credit species</p> <p>Page 9a-78: Survey results Small Purple Pea</p> <p>Map 23: Species polygons for Silky Swainson-pea and Small Purple-pea</p> <p>Table 24: MNES species predicted to occur in the study area</p> <p>Table 28: Species credit species requiring offsets and the species credits required (mine site)</p>

							<p>Page 9a-97: Matters of National Environmental Significance</p> <p>Annexure 6: EPBC Act Significant Impact Criteria</p> <p>Annexure 7: Development site biodiversity credit reports</p>
Large-eared Pied Bat	SC		Y	337.8	4391		<p>Table 23 Predicted species credit species</p> <p>Table 28 Species credit species requiring offsets and the species credits required</p> <p>Table 19: Assessment of geographic / habitat features for particular species credit species</p> <p>Table 20: Species credit species requiring survey and relevant survey timing</p> <p>Page 9a-97: Matters of National Environmental Significance</p> <p>Tale 22 – Geographic and habitat features in the study area</p> <p>Table 23: Predicted species credit species</p> <p>9a-74: Survey results</p>

							<p>Map 24: Species polygon for Large-eared Pied Bat within the BAR footprint</p> <p>9a-84: Predicted MNES species</p> <p>Table 24: MNES species predicted to occur in the study area</p> <p>9a-84: Matters of National Environmental Significance</p> <p>Annexure 5: Fauna species recorded</p> <p>Annexure 6: EPBC Act Significant Impact Criteria</p> <p>Annexure 7: Development site biodiversity credit reports</p>
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- (A) **List** the relevant threatened species that will be significantly impacted in accordance with the referral documentation.
- (B) **Record** whether the relevant threatened species is classified as “species credit species” of ecosystem credit species for the purposes of the FBA.
- (C) **List** the PCTs associated with the ecosystem credit species.
- (D) **Verify** that the habitat polygons for MNES have been mapped appropriately representing the foraging and/or breeding habitat for the species that will be impacted by the development.
- (E) **Record** the area of impact (ha) and credits required. For impacts associated with ecosystem credit species identify the total credit requirements associated with the cleared PCTs identified as habitat for the species.
- (F) **Comment** on the adequacy of the analysis of the impacts in relation to the nature and extent of the impact and whether or not the EIS includes an analysis of the direct and indirect impacts to the species. Note if further information is required.
- (G) **Cite** relevant page numbers for details provided in the EIS and Appendices for each threatened species.

3. Avoid, mitigate and offset

Comment on whether or not the EIS identifies measures to avoid and minimise impacts on the relevant EPBC Act-listed threatened species and communities. Section 8 of the FBA requires that proponents detail these efforts and commitments in the EIS. Identify gaps in the discussion on measures to avoid and minimise impacts on Commonwealth matters. Provide references to sections and page numbers in the EIS.

Avoidance

Section 6 of the BAR addresses avoidance and mitigation measures. A ‘traffic light’ model was developed for the study area, with areas of potentially high biodiversity mapped as red, medium ecological value as orange, and low ecological value as green. This was available when mine planning and design was occurring and was used to guide placement of mine infrastructure.

Table 1.2 of the EIS (May 2020) lists the key project design alternatives considered. Project components have been located to avoid impacts to creeks. Soil stockpiles have been designed to reduce the area of vegetation to be removed.

The Submissions Report for the project (June 2021) states that another key adjustment made to the Mine Site design was the decision to proceed with reduced open cut pits (52ha) rather than the enlarged open cut pit (73ha) originally proposed by Kingsgate (as shown on Figure 1.5 of the EIS). Whilst this decision was principally informed by economic considerations, it is considered that the decision to proceed with reduced open cut pits would minimise impacts to biodiversity values.

The Amendment Submissions Report (March 2022) outlines that the traffic light model has been used to guide more recent changes to the mine site, including the addition of water storage dams and relocation of mine site infrastructure. Efforts have also been made to make the mine site footprint more compact.

A water pipeline that was originally proposed in the EIS has been removed from the project. The water pipeline would have required clearing of 15.12 hectares of native vegetation.

Mitigation

General mitigation is addressed in Sections 6.2 and 6.3 of the BAR. These include a proposed fauna management sub-plan to minimise potential impacts to fauna species during clearing. A seed collection sub-plan will include targeted collection of Small Purple-pea seed with an aim to propagate and translocate the species. Other mitigation measures include pest and weed management and design of the tailings storage facility to minimise risk of fauna interactions.

Comment on the adequacy and feasibility of measures to avoid and minimise impacts. Identify inadequacies where further efforts could be made to avoid and minimise impacts on Commonwealth matters. Provide references to sections and page numbers in the EIS that discuss avoidance and mitigation measures relevant to EPBC Act-listed species and communities.

The ability to avoid impacts is constrained by the location of the resource being mined. Measures to avoid and minimise impacts are considered adequate and feasible.

Additional mitigation measures to avoid introduction of *Phytophthora cinnamomi* (Root-rot Fungus) into surrounding native vegetation and land-based offset sites should be included in appropriate management plans.

Revised BAR references are as above.

4. Offsetting

(a) **Verify** [by ticking the following boxes] that the offsets proposed to address impacts to EPBC-listed threatened species and communities are in accordance with the requirements under the EPBC Act.

- ✓ An appropriate offset for any residual adverse significant impact has been determined.
- ✓ Proposed offsets for EECs provide a like for like outcome i.e. proponents have identified PCTs attributed to the specific threatened ecological community being impacted
- ✓ Proposed offsets have been determined using the FBA

If offsets have not been determined in accordance with the FBA, Planning is required to discuss the proposed approach with the Commonwealth as soon as possible.

The proponent submitted a biodiversity offset strategy (BOS) with the Water Pipeline Amendment Report in March 2022.

Offsets will be satisfied in accordance with the *Biodiversity Conservation Act 2016*. Credits calculated under the FBA will be converted to BAM credits. Offsetting will be achieved through a combination of:

- Land-based offsets (on-site and possibly off-site)
- Purchase of credits on the market
- Payment into the Biodiversity Conservation Trust Fund.

Detail of the proportions of offsets to be satisfied through each mechanism has not been provided. However, the BOS identifies on-site offsets that will satisfy a proportion (41%) of the ecosystem credit requirements. The on-site offsets include like-for-like offsets for White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC.

The proponent is also seeking additional land-based offsets, and will investigate purchasing available credits through the market, and paying into the NSW Biodiversity Conservation Trust Fund. If required supplementary measures would be investigated subject to agreement.

A staged approach will be applied to retiring offsets. Offset obligations for each stage will need to be satisfied before that stage impacts biodiversity values.

The BOS has calculated the ecosystem credits generated by the proposed on-site offset sites in accordance with the FBA.

Land-based offset sites that generate species credits have not yet been identified.

If the biodiversity credit obligation is fulfilled in accordance with the *Biodiversity Conservation Act 2016*, no residual impacts will occur.

5. Comment on whether the information and data relied upon for the assessment have been appropriately referenced in the EIS. Comment on the validity of the sources of information and robustness of the evidence.

The information and data used in the assessment has been appropriately referenced, and the sources of information are generally valid, except for Koala.

Koala

In discussing Koalas, the revised BAR (section 5.4.3) refers to a study from southeast Queensland to argue that Koalas recorded within the study area were likely to be dispersing rather than being resident at the site. The BAR states that Dique *et al* (2003) found that Koalas disperse up to 10.6 kilometres, often in a southerly

or westerly direction. The BAR states that two Koalas were recorded November and December, which are months where Dique *et al* recorded dispersals, indicating that the Koalas were dispersing rather than resident.

Dique *et al* found that the mean straight-line distance between the natal and breeding home ranges for males and females was similar and was measured at 3.5 km (range 1.1-9.7 km) and 3.4 km (range 0.3-10.6 km) respectively. In addition, Dique *et al* recorded dispersal occurring between June and December (ie over a period of six months).

BCS considers that the Dique *et al* study has been misused in the revised Bowdens Silver BAR due to the selective use of the data. BCS also considers that it is of low relevance to the BAR as the climate, vegetation and associated behavioural characteristics of south-east Queensland Koala populations are considerably different to those of central-west NSW.

The BAR also states that,

Since the EIS was exhibited, Bowdens Silver personnel have recorded five additional sightings of six Koala. Four sightings were of an individual Koala actively traversing the Study Area and one of a mother and joey. Map 20 of the BAR shows Koala records in the vicinity of the BAR footprint. Nine records are within the study area for the mine. This indicates that Koalas may be resident on the site.

Table 3 Summary of Offset Requirements

A	B	C	D	E	F
Threatened species or EEC (listed under the EPBC Act)	Credits required as calculated by the FBA	Credits generated from offsets in remnant vegetation	Credits generated from offsets proposed by other means	Comment on the proposed offsets.	Relevant page numbers in the EIS and Appendices
White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland	11,368.38 Note that this credit requirement includes both EPBC and non-EPBC Box-Gum vegetation	On-site offset generates 4,925 credits	6,443.38 May include additional land-based offset sites	A biodiversity offset strategy (BOS) was submitted with the Water Supply Amendment Report (March 2022) While some on-site offset areas were investigated and presented in the BOS, these do not provide adequate offset credits. The BOS states that other offset sites, purchase of credits from the market and paying into the Biodiversity Conservation Trust are being investigated to fulfil offset obligations.	BOS Table 6: On-site offset site biodiversity values and condition improvement scores 5.2: Credit conversions and approach to offsetting
Koala	9,910	Targeted surveys on offset sites not yet completed	Not yet calculated	Koala Koala credits will be created after survey of on-site and off-site offset areas. Any shortfall in the number of credits required will be addressed through purchase of credits from the market (biobanking or BAM credits).	Annexure 4: Biodiversity credit report from the biobanking credit calculator (Offset Sites)
Regent Honeyeater	29,350	Will not require species credit offsets after conversion to BAM credits	Not yet calculated	Koala Koala credits will be created after survey of on-site and off-site offset areas. Any shortfall in the number of credits required will be addressed through purchase of credits from the market (biobanking or BAM credits).	BAR Annexure 7: Development site biodiversity credit reports
Small Purple-pea	104	Has been recorded in the on-site offset site. Credits generated have not been calculated	Not yet calculated	Regent Honeyeater Under FBA, all Regent Honeyeater habitat was considered for species credits. Under BAM, Regent Honeyeater only requires species credits where mapped important habitat is impacted. The project will not impact important habitat. Once the credits are converted to BAM, Regent Honeyeater	

Large-eared Pied Bat	4,391	Targeted surveys on offset sites not yet completed	Not yet calculated	<p>will be an ecosystem credit species. No species credits will be required.</p> <p>Small Purple-pea Surveys have recorded this species in the proposed on-site offset area. The full offset requirement is likely to be satisfied by the on-site offset area establishment.</p> <p>Large-eared Pied Bat Targeted surveys are needed on proposed offset sites. The on-site offset site is likely to generate some species credits. Any shortfall in the number of credits required will be addressed through purchase of credits from the market (biobanking or BAM credits) or payment into the BCT fund.</p>	
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- (A) **List** the relevant threatened species or ecological community included in the proposed offset package (these are the listed species and communities that will be significantly impacted in accordance with the *EPBC Act Significant Impact Guidelines 1.1*). Identify any relevant species or ecological communities which have not been included in the proposed offset package.
- (B) **List** the total credit requirement identified by the FBA for impacted listed threatened species and ecological community. For EECs and ecosystem credit species this is the sum of the credits generated by PCTs associated.
- (C) **Identify** the total number of required credits which are proposed to be retired through conserving and managing remnant / mature vegetation.
- (D) **Identify** the number of credits proposed to be met through other methods allowable under the FBA, such as rehabilitation of impacted areas or regrowth vegetation.
- (E) **Comment** on the adequacy of the proposed offset in meeting requirements of the FBA and the EPBC Act. In particular is there a reasonable argument for a shortfall in credits required for MNES and/or non-compliance with like-for like? Are the offsets proposed by means other than protection of remnant vegetation adequate?
- (F) **Reference** the relevant page numbers from the EIS and Appendices for each threatened species and community.

Appendix 1 Bowden's Silver Mine – National Plans

Name of plan	Relevant matters	Key considerations in EIS / BAR	Reference in EIS / BAR
White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland			
National Recovery Plan: White Box – Yellow Box – Blakely's Red Gum grassy woodland and derived native grassland (May 2011)	Action 5.3. Require development assessments to be undertaken by qualified ecologists, at an appropriate time of year.	The BAR has been prepared by an accredited assessor in accordance with the FBA	BAR Annexure 7 Development Site Biodiversity Credit Reports. Accredited assessor is Steve Sass, assessor accreditation 0143
Koala			
National Recovery Plan for the Koala <i>Phascolarctos cinereus</i> (combined populations of Queensland, New South Wales and the Australian Capital Territory). (March 2022)	<p>Strategy 3: Increase the area of protected habitat for the listed Koala.</p> <p>Action 3b Establish or expand existing targeted private or leasehold land incentive mechanisms and programs to increase the area for long-term protection and conservation of areas identified as Koala habitats.</p> <p>Action 5d Improve the condition of existing Koala habitat on both private and public land through best-practice land management, including management of vegetation, fire, weeds, and introduced species.</p> <p>20.1 Habitat loss and fragmentation are the primary ecological threatening process to Koalas.</p>	Koala credits will be created after survey of on-site and off-site offset areas. Any shortfall in the number of credits required will be addressed through purchase of credits from the market (biobanking or BAM credits). These are readily available and Niche has received a number of EOIs from credit holders for these species.	BOS 5.2.2 Koala and Squirrel Glider credits

Regent Honeyeater

National Recovery Plan for the Regent Honeyeater (2016)

Strategy 1: Improve the extent and quality of Regent Honeyeater habitat

The EnviroKey (2022) BAR for the Project has considered the majority of the development site as Regent Honeyeater habitat and the species has been considered significantly impacted under the EPBC Act. No Regent Honeyeater biobanking credits were found to be available after searches of relevant registers. Therefore, in order to satisfy the offset requirement for this species BAM credits must be created (since Biobanking credits can no longer be created) and retired. Conversion of the current Biobanking credit requirement for the Project will be necessary to calculate how many BAM credits are required.

Both the NSW BCD and (then) Commonwealth DoEE were consulted in regard to the process for credit conversion for the Regent Honeyeater. Under the new BAM the Regent Honeyeater only requires credits where important habitat is impacted by development. Within the disturbance footprint no areas coincide with mapped important habitat. Therefore, after the required conversion process the eventual BAM credit requirement for the species will be confined to associated ecosystem credits.

BOS

5.2.1 Regent Honeyeater

		While not generating Regent Honeyeater species credits, proposed land-based offsets are likely to contain Regent Honeyeater habitat.	
Small Purple-pea			
National Recovery Plan for Small Purple-pea (2012)	Recovery actions: 3 Weed control 5 Negotiate improved management and/or formal protection of sites 7 Investigate potential sites suitable for enrichment planting or re-establishment of Small Purple-pea populations and undertake translocation projects	Surveys completed for this plant around the proposed mine site and within the proposed on-site offset areas have identified the species to the extent that the full offset requirement is likely to be satisfied by the on-site offset area establishment. A seed collection sub-plan will include collection of seed from Small Purple-pea. Seed will be stored in appropriate conditions for propagation	BOS 5.2.4 <i>Swainsona recta</i> (Small Purple-pea) BAR Section 6.2 Amendment submissions report (March 2022) Section 5.2 DPIE – Biodiversity Conservation and Science Directorate
Large-eared Pied Bat			
National recovery plan for the Large-eared Pied Bat (2011)	No actions relevant to the Bowdens Silver project	Proposed land-based offset sites are likely to contain habitat for Large-eared Pied Bat	BOS Section 5.2.3 Large-eared Pied Bat
Threat abatement plans			
Threat abatement plan for disease in natural ecosystems caused by <i>Phytophthora cinnamomi</i> , (2018).	No actions relevant to the Bowdens Silver project	Not addressed in assessment	
Threat abatement plan for predation by the European Red Fox (2008)	Action 4.7 Continue to promote the adoption and adaptation of the model codes of practice and standard operating procedures for humane management of foxes.	A Pest Animal Management Sub-plan (PAMSP) would be developed targeting the introduced Fox, Feral Deer, Wild Dog, Feral Pig, European Rabbit and Feral Cat. The PAMSP	Section 6.2 and 6.3.7

Threat abatement plan for predation by feral cats (2015)	Objective 1 Effectively control feral cats in different landscapes	objective would be to implement on-ground works to control these pest species if they are identified through rehabilitation (or other) monitoring as adversely impacting rehabilitation and habitat re-establishment or as part of local / regional control programs.	
Threat abatement plan for competition and land degradation by rabbits (2016)	Action 1.2 Continue to develop and implement cost effective and coordinated management programs across all land tenures, including urban areas		
Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (<i>Sus scrofa</i>) (2017)	<p>Action 2.1: Encourage the integration of feral pig management into land management activities at all levels of government, and regional groups.</p> <p>Action 4.1: Encourage monitoring to enable the evaluation of the effectiveness of feral pig control.</p>		