Collie Green Steel Mill – EPBC Act Significance Assessment

20 March 2024

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Proposal Name	Green Steel of WA Collie Pty Ltd – Collie Green Steel Mill		
Subject	*Environment Protection and Biodiversity Conservation Act 1999* Significance Assessment		

1. Introduction

Green Steel of Western Australia Pty Ltd (GSWA) propose to develop the Collie Green Steel Mill and associated infrastructure (the Proposal) at 154 Boys Home Road, Palmer (Lot 2 on Deposited Plan 74040). The Proposal area is located approximately 5 km northeast of the Collie townsite within the Coolangatta Industrial Estate in the Shire of Collie. The Proposal area is approximately 111.1 hectares (ha) and comprises the land generally between the Bluewaters Power Station, Griffin Coal's Ewington open cut mine and the Collie State Forest (Figure 1, Appendix A).

The Proposal area currently being used for agricultural purposes, in particular grazing. The section of the site where the rail extension is to be built passes through an area of Department of Biodiversity, Conservation and Attractions (DBCA) managed Collie State Forest and a water pipeline will also be constructed within an existing Western Power easement to the west of Lot 2. The Proposal area comprises the following land parcels:

– Plant and access road:
  - Part Lot 2 on Deposited Plan 74040 (154 Boys Home Road, Palmer)
– Rail spur (Collie State Forest):
  - Part Lot 1486 on Plan 110882, part Lot 1505 on Plan 110876 and part Land ID 4035609
– Water pipeline:
  - Within Western Power easement in portion of Lot 116 on Deposited Plan 412278.

Referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is triggered if a Proposal has or potentially has a significant impact on any Matters of National Environmental Significance (MNES). MNES are factors that require legislated protection in order to conserve biodiversity, protect World Heritage and National Heritage Places, and comply with international treaties.

This assessment has been undertaken to determine whether MNES are likely to or may be present within the Proposal area (Table 1). The potential occurrence of MNES was informed at a desktop level by the EPBC Act PMST (DCCEEW, 2023) included in Appendix B and supplemented and verified by the biological survey field observations completed by Onshore Environmental (2023; 2024a; 2024b).

Referral to DCCEEW under the EPBC Act may be required depending on the extent of clearing and impacts to MNES species.

1.1 Purpose of this report

The purpose of this document is to provide a significance assessment of Matters of National Environmental Significance (MNES) listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) which may be potentially impacted by the Proposal.

1.2 Proposal location

1.2.1 Proposal area

The Proposal area comprises the Collie Green Steel Mill plant site and enabling infrastructure such as power transmission line, road, rail and scheme water corridors. The Proposal area is approximately 111.1 ha (Figure 1, Appendix A) and includes the following land parcels:

– Plant and access road:
  - Part Lot 2 on Deposited Plan 74040 (154 Boys Home Road, Palmer)
– Rail spur (Collie State Forest):
  - Part Lot 1486 on Plan 110882, part Lot 1505 on Plan 110876 and part Land ID 4035609
– Water pipeline:
  - Within Western Power easement within portion of Lot 116 on Deposited Plan 412278.

1.2.2 Survey area

The survey area for the flora and fauna surveys is located within 154 Boys Home Road, Palmer (Lot 2 on Deposited Plan 74040), and Collie State Forest (F4) to the south (Lot 1486 on Plan 110882 and Lot 1505 on Plan 110876) and within Western Power easement within portion of Lot 116 on Deposited Plan 412278. The survey area is approximately 149.8 ha (Figure 1, Appendix A).

1.2.3 Desktop assessment areas

The following buffers have been applied to the Proposal area for the purpose of desktop assessments:

– A 10 km buffer is defined as the study area for the purpose of EPBC Act PMST, flora and vegetation database searches.
– A 12 km buffer has been used for desktop assessment of available foraging resources for Black Cockatoos as this represents the distance Black Cockatoos will generally forage while breeding (DAWE, 2022).
– A 20 km buffer been used for desktop assessment of available of known night roosting habitat as Black Cockatoos will mainly forage in areas up to 20 km during the non-breeding period (DAWE, 2022).

1.2.4 Clearing footprint

The clearing footprint includes approximately 41.5 ha of native vegetation which is proposed to be cleared within the Proposal area (Figure 1, Appendix A).

1.3 Scope of works

The scope of work for the EPBC Act significance assessment included:

– A desktop assessment of the study area to identify vegetation and flora values, which may be in, or near the Proposal area.
– Review of flora and fauna field survey results to identify the vegetation community types and condition present, including any Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs), other significant vegetation, and habitat for significant flora.
– Significance assessment of species listed as under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or *Biodiversity Conservation Act 2016* (BC Act) known or considered likely to occur based on the results of the desktop and field surveys.

2. EPBC Act Significance assessment

2.1 Potential impacts to Matters of National Environmental Significance

The 111.1 ha Proposal area is located within the existing Coolangatta Industrial Estate and has been selected to minimise the impact to the environment and threatened species. The road access and water pipeline route is proposed to be located in previously cleared areas within Lot to and an easement to the west. The rail spur is proposed to be located within Collie State Forest to the south of Lot 2 and is an extension from an existing rail which is currently used to load coal from Griffin Coal. The rail alignment has been selected on the boundary of the vegetation with the existing coal mine area to the west so as to avoid fragmentation of remaining native vegetation and increase edge effects of clearing.

Up to 41.5 ha of native vegetation is proposed to be cleared within the Proposal area. The remainder of the 111.1 ha Proposal area is mapped as 0.3 ha of Melaleuca scrub, which has been avoided by using directional drilling construction methods, and 69.3 ha of Paddock (Completely Degraded) and Road/ Rail/ Tracks (Cleared) (Figure 2, Appendix A).

Flora and fauna surveys have been undertaken within a portion of Lot 2 and the Collie State Forest within an approximately 148.9 ha Survey area by Onshore Environmental (2023; 2024a; 2024b). Nine vegetation units, of varying condition, were identified within native vegetation in the Proposal area including the following (Figure 3 and Figure 4, Appendix A):

– FL EWCc MitHp Xp: Open Low Woodland A of *Eucalyptus wandoo* and *Corymbia calophylla* over Scrub of *Melaleuca incana* subsp. cf. *tenella* and *Hakea prostrata* over Low Scrub A (0.3 ha) – Good condition.
– FL MpNfXp PcDbVd HeLiMt: Open Scrub of *Melaleuca preissiana*, *Nuytsia floribunda* and *Xanthorrhoea preissii* over Low Heath C (2.5 ha) – Good condition.
– HC Em: Forest of *Eucalyptus marginata* subsp. *marginata* (*Allocasuarina fraseriana*) over parkland cleared (23.1 ha) – Degraded condition.
– HC Em Hh Tj: Forest of *Eucalyptus marginata* subsp. *marginata* (*Allocasuarina fraseriana*) over Low Heath D (2.7 ha) – Good to Very Good condition.
– HS Kg: Thicket of *Kunzea glabrescens* (1.6 ha) – Completely Degraded condition.
– LS EmAf AfBa DbAoCf: Open Woodland of *Eucalyptus marginata* subsp. *marginata* and *Allocasuarina fraseriana* over Low Forest A of *Allocasuarina fraseriana* and *Banksia attenuata* over Dwarf Scrub D (1.3 ha) – Good to Very Good condition.
– LS EmAf Xp PcDb: Low Woodland A of *Eucalyptus marginata* subsp. *marginata* and *Allocasuarina fraseriana* over Open Low Scrub A of *Xanthorrhoea preissii* over Low Heath D (2.5 ha) – Good condition.
– MS EmAf XoPl Hh: Forest of *Eucalyptus marginata* subsp. *marginata* and *Allocasuarina fraseriana* (*Corymbia calophylla*) over Open Scrub (6.6 ha) – Very Good condition.
– MS EmAf XoPlXp HhDb: Forest of *Eucalyptus marginata* subsp. *marginata* and *Allocasuarina fraseriana* over Open Scrub (to Scrub) (1.2 ha) – Good to Very Good condition.

The native vegetation proposed to be cleared is mapped as the following fauna habitat types, with varying Black Cockatoo foraging values (Onshore Environmental, 2024a):

– Jarrah-Sheoak Forest (15.5 ha) – High quality Black Cockatoo foraging habitat
– Parkland cleared Jarrah Forrest remnant (20.0 ha) – High quality Black Cockatoo foraging habitat
– Paddock (3.0 ha) – Low quality Black Cockatoo foraging habitat.

The remaining 3.0 ha is mapped as Disturbed and includes regrowth of native vegetation, which has been previously cleared for powerline easements, rail and road access in the Collie State Forest to the south of Lot 2 (Onshore Environmental, 2024a).

Table 1 summarises the potential impacts to MNES based on the proposed clearing of native vegetation and fauna habitat within the Proposal area.

Table 1 Potential impacts to Matters of National Environmental Significance

Matters of National Environmental Significance	Presence/ potential presence within the Proposal area
World heritage properties	None present
National heritage places	None present
Wetlands of International Importance (Ramsar)	None present
Listed threatened ecological communities and threatened species	Threatened Ecological Communities (TECs) No listed TECs are located within the Proposal area or within the 10 km buffer study area (DCCEEW, 2023). No listed TECs were identified in the Detailed Flora and Vegetation Survey undertaken by Onshore Environmental (Onshore Environmental, 2024b). Threatened Flora A search of the NatureMap database (DBCA, 2007-) identified 475 flora taxa (including subspecies and varieties), potentially occurring within 10 km of Proposal area (the study area) comprising representing 59 families and 216 genera. Of the flora taxa previously recorded, 442 are native species and 33 are introduced species. This included presence/ potential presence of 21 conservation significant flora taxa, including five Threatened taxa listed under the EPBC Act and/ or the BC Act, and 16 DBCA Priority listed species within a 10 km buffer of the survey area. Desktop assessment of PMST (DCCEEW, 2023) results identified the following aspects listed under the EPBC Act: – Threatened flora species or species habitat known or likely to occur within the survey area: - *Caladenia leucochila* (Collie Spider Orchid) – Endangered (EN) - *Diuris micrantha* (Dwarf Bee-orchid) – Vulnerable (VU) – Threatened flora species or species habitat known or may to occur within the study area: - *Caladenia lodgeana* (Lodge's Spider-orchid) – Critically Endangered (CR) - *Grevillea rara* (Rare Grevillea) – EN - *Jacksonia velveta* (Collie Jacksonia) – EN. A total of 189 flora taxa (including subspecies and varieties), representing 44 families and 123 genera, were recorded within the survey area during the Detailed Flora and Vegetation Survey undertaken in spring 2023. This total comprised 173 native taxa and 16 introduced flora taxa (Onshore Environmental, 2024b). The post survey likelihood of occurrence assessment, based on soil types and habitats observed (i.e. lack of water courses and winter wet swamps) within the Proposed area, identified that of the five Threatened flora species listed only *Caladenia leucochila* (EN) was considered to possibly occur and the others considered unlikely to occur (Onshore Environmental, 2024b). The Detailed Flora and Vegetation field survey was completed in September and November 2023 and February 2024 and is considered to have been undertaken at a suitable time of year given that *Caladenia leucochila* (EN) flowers in September to October (WA Herbarium, 1998-). No Threatened flora species, listed under the EPBC Act, were identified during the Detailed Flora and Vegetation field survey (Onshore Environmental, 2024b). Threatened Fauna A search of the NatureMap database (DBCA, 2007-) identified 280 vertebrate species potentially occurring within 10 km of Proposal area (the study area) comprising 98 birds, 25 reptiles, 35 mammals, 10 amphibians and four fish. The 10 km radius used for the desktop assessment of the fauna assemblage included habitat types, such as marine habitats, that did not occur with the Proposal area. Therefore, marine species and fish, restricted to these habitat types are considered unlikely to occur within the Proposal area. Of the fauna species previously recorded, 163 are native species and nine are naturalised (introduced species). Searches of the Commonwealth *Environment, Biodiversity and Conservation Act 1999* (EPBC Act) PMST (DCCEEW, 2023) and NatureMap database (DBCA, 2007-) identified the potential presence of 29 conservation significant fauna including 16 Threatened species listed under the State Biodiversity Conservation Act 2016 (BC Act) and/ or EBPC Act, one Priority 2, one Priority 3, five Priority 4, one Other Specially protected fauna species and four Migratory terrestrial and wetland birds within 10 km of the Proposal area. This does not include those species that are exclusively marine, or marine bird species as there is no marine habitat present within the Proposal area.

Matters of National Environmental Significance	Presence/ potential presence within the Proposal area
	Desktop assessment of PMST results identified the following (DCCEEW, 2023): – Threatened fauna species or species habitat known or may occur within the study area: Birds - *Aphelocephala leucopsis* (Southern Whiteface) – VU - *Botaurus poiciloptilus* (Australasian Bittern) – EN - *Calidris ferruginea* (Curlew Sandpiper) – CR - *Calyptorhynchus banksii naso* (Forest Red-tailed Black Cockatoo) – VU - *Leipoa ocellata* (Malleefowl) – VU - *Zanda baudinii* (Baudin's Black Cockatoo) – EN - *Zanda latirostris* (Carnaby's Black Cockatoo) – EN Mammals - *Dasyurus geoffroii* (Chuditch) – VU - *Myrmecobius fasciatus* (Numbat) – EN - *Pseudocheirus occidentalis* (Western Ringtail Possum) – CR Fish - *Nannatherina balstoni* (Balston's Pygmy Perch) – VU – Threatened fauna species or species habitat known or may to occur within the study area: Birds - *Rostratula australis* (Australian Painted Snipe) – EN Mammals - *Bettongia penicillata ogilbyi* (Woylie) – EN - *Setonix brachyurus* (Quokka) – VU Invertebrates - *Westralunio carteri* (Carter's Freshwater Mussel) – VU. The Black Cockatoo Habitat Tree Assessment (Onshore Environmental, 2024a) confirmed the presence of the following EPBC Act listed fauna and their habitats within the Proposal area: – *Calyptorhynchus banksii naso* (Forest Red-tailed Black Cockatoo) – VU – *Zanda baudinii* (Baudin's Black Cockatoo) – EN – *Zanda latirostris* (Carnaby's Black Cockatoo) – EN. There were no water courses or winter wet swamps present within the Proposal area therefore aquatic fauna surveys were not required. No other fauna species, listed under the EPBC Act were identified in the Targeted Camera Trap Fauna Survey (Onshore Environmental, 2023).
Listed migratory species	Five bird species listed as Migratory (terrestrial and wetland) only under the EPBC Act (marine migratory species excluded) however it is considered, based on the findings of the Onshore Environmental flora and fauna surveys undertaken in spring 2023, that no suitable habitat exists within the Proposal area for these species.
Commonwealth marine areas	None present
Great Barrier Reef Marine Park	None present
Nuclear actions	None present
Water resources in relation to coal seam gas and coal mining development	None present

2.2 Assessment of significance

2.2.1 Black Cockatoos

Overview of impact

The Proposal may result in potential impacts to three threatened Black Cockatoo species listed under the EPBC Act:

– Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – Vulnerable
– Baudin's Cockatoo (*Zanda baudinii*) – Endangered
– Carnaby's Cockatoo (*Zanda latirostris*) – Endangered.

The directs impacts from the Proposal include the following:

Breeding

– The Proposal will not result in clearing of any known or suitable nesting trees (Figure 5, Appendix A).
– Within the Proposal area there are 13 potential nesting trees > 500 mm DBH. No trees contained suitable hollows for Black Cockatoo breeding (Figure 5, Appendix A).
– The Proposal area occurs approximately 53 km south-west of the nearest recorded Black Cockatoo breeding site (GoWA, 2023) (Figure 6 - Appendix A).

Roosting

– Roosting evidence was recorded at one location within the Proposal area in Parkland Cleared Jarrah Forest habitat (Figure 5, Appendix A).
– The closest DBCA mapped roosting site (buffered) is located approximately 2.8 km to the west of the Proposal (Figure 6 - Appendix A).

Foraging

– Approximately 35.5 ha of High quality foraging habitat (Jarrah-Sheoak Forest and Parkland Cleared Jarrah Forrest) and 3.0 ha of Low quality foraging habitat (Paddock) has been identified within the Proposal area (Figure 5, Appendix A).
– Foraging habitat within the indicative clearing footprint represents <0.1% of the available foraging resources within a 12 km radius of the Proposal (estimated at 40,281.5 ha) – the 12 km radius represents the distance Black Cockatoos will generally forage while breeding (Appendix C).

Potential indirect impacts may include fauna injury/ mortality from vehicle strike during construction, habitat degradation from clearing edge effects, weeds, Phytophthora Dieback, rubbish and vehicle tracks, and disturbance of fauna due to noise, dust and vibration as a result of construction and operational activities.

Potential indirect impacts are not expected along the pipeline as the easement is approximately 23 m wide and therefore any construction activities or the location of the pipe is not expected to result in indirect impacts to adjacent habitat.

Assessment of significance

Table 2 presents an assessment of the potential impacts of the Proposal on Black Cockatoos against the *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (DoE 2013).

The criteria in the *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* refer to 'populations' and 'important populations'. The 'population of a species' is defined under the EPBC Act as an occurrence of the species in a particular area (DoE 2013). An 'important population' is defined as population that is necessary for the species' long-term survival and recovery (DoE 2013).

The Guideline states that an action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:

– *Lead to a long-term decrease in the size of a population*
– *Reduce the area of occupancy of the species*
– *Fragment an existing population into two or more populations*
– *Adversely affect habitat critical to the survival of a species*
– *Disrupt the breeding cycle of a population*

– *Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline*
– *Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat*
– *Introduce disease that may cause the species to decline, or*
– *Interfere with the recovery of the species.*

'Populations' and 'important populations' have not been defined for Black Cockatoos, due to the mobile and widely-distributed nature of these species, and the variation in flock compositions (for example, between breeding and non-breeding seasons). For Black Cockatoos, it is more appropriate to consider significance in terms of impacts on habitat rather than a resident population (DAWE, 2022).

The *Referral guideline for Three WA threatened Black Cockatoo species* (DAWE, 2022) provides guidance on actions that are likely to require referral in terms of habitat rather than population, and therefore an assessment against the Commonwealth (2022) guidance is additionally provided in Table 3.

The Commonwealth (2022) guidelines indicate that an action is likely to require referral if the Proposal involves:

– *Any loss of / impact upon known, suitable or potential nesting trees, and the habitat around these trees, is highly likely to require a referral to the Minister.*
– *Loss of any potential nesting habitat is likely to require a referral to the minister.*
– *Loss of greater than or equal to 1 ha of foraging habitat scoring 5-10 using the foraging quality scoring tool is likely to require referral to the minister.*
– *Loss of greater than or equal to 10 ha of foraging habitat scoring 0-4 using the foraging quality scoring tool is likely to require referral to the minister.*
– *Loss of greater than or equal to 1 ha of predominantly exotic habitat (e.g. Cape Lilac trees and pine trees) known to be utilised by black cockatoos is likely to require a referral to the minister.*
– *Removal of any part of a known night roosting site is likely to require referral to the minister.*

As presented in Table 2 and Table 3 the Proposal is unlikely to result in significant impacts to the three species of Black Cockatoos, due to avoidance of suitable nesting trees and the availability of significant foraging resources within the surrounding area, estimated at 40,281.5 ha which is 97% of the remnant native vegetation within a 12 km radius of the Proposal area (GoWA, 2023).

Table 2 Assessment against Significant Impact Guidelines 1.1 for Black Cockatoos (Endangered species)

Criteria	Assessment	Significance
Lead to a long-term decrease in the size of a population	The Proposal is not expected to lead to a long-term decrease in the size of a Black Cockatoo population as: – **Breeding:** • The Proposal will not result in the clearing of any known or suitable nesting trees • Within the clearing footprint there are 13 potential nesting trees (>500 mm DBH) (Figure 5, Appendix A). No trees contained suitable hollows for Black Cockatoo breeding. • The Proposal occurs approximately 53 km south-west of the nearest recorded Black Cockatoo breeding site (Figure 6, Appendix A). – **Roosting:** • Roosting evidence was observed at one location within Parkland Cleared Jarrah Forest habitat (Figure 5, Appendix A). • The closest known roosting site (buffered) is located approximately 2.8 km to the west of the Proposal (Figure 6, Appendix A). – **Foraging:** • Foraging habitat within the indicative clearing footprint represents <0.1% (38.5 ha) of the available foraging resources within a 12 km radius of the Proposal area (estimated at 40,281.5 ha) (Appendix C) – the 12 km radius represents the distance Black Cockatoos will generally forage while breeding. Black Cockatoos are highly mobile species and are expected to forage outside of the Proposal area amongst the extensive foraging and roosting resources in the vicinity (estimated at 40,281.5 ha within 12 km) and are not dependent on a particular patch of foraging habitat within the Proposal area.	Unlikely to be significant

Criteria	Assessment	Significance
	The Proposal will not result in the clearing of breeding habitat or significant areas of roosting habitat.	
Reduce the area of occupancy of the species	Black Cockatoos are highly mobile species and are expected to forage outside the Proposal. On this basis the Proposal is unlikely to significantly reduce the area of occupancy of this species, which are expected to continue to utilise the immediate area with the Collie State Forest to the south and east.	Unlikely to be significant
Fragment an existing population into two or more populations	Black Cockatoos are highly mobile and for this species fragmentation is considered when gaps between habitat patches exceed 4 km. The Proposal will not fragment existing habitat and will not result in the fragmentation of Black Cockatoo populations.	Unlikely to be significant
Adversely affect habitat critical to the survival of a species	Habitat critical to survival for Carnaby's Cockatoo (as described in the DPaW (2013) recovery plan, includes: – The Eucalypt woodlands that provide nest hollows used for breeding, together with nearby vegetation that provides foraging, roosting and watering habitat that supports successful breeding – Woodland sites known to have supported breeding in the past and which could be used in the future, provided adequate nearby food and/or water resources are available or are re-established – In the non-breeding season the vegetation that provides food resources as well as the sites for nearby watering and night roosting that enable the cockatoos to effectively utilise the available food resources. Habitat critical for the survival of populations of Black Cockatoo species comprise all Marri, Karri and Jarrah forests, woodlands and remnants in the south-west of Western Australia receiving more than 600 mm of annual average rainfall (DEC, 2008). DCCEEW (2022) identifies critical habitat for all three species of Black Cockatoo as foraging habitat associated with breeding within the Jarrah Forest. The Proposal will not require the clearing of known or suitable nesting trees, nor any known or former breeding sites. The Proposal area has suitable food resources for Black Cockatoo species, with up to 38.5 ha of potential foraging habitat within native vegetation proposed to be cleared (Onshore Environmental, 2024a). The clearing of potential Black Cockatoo foraging habitat required for the Proposal is not considered significant, as the proposed clearing of native vegetation (38.5 ha) is estimated to represent <0.1% of 40,281.5 ha of foraging habitat located within 12 km (GoWA, 2023). This estimate is considered to be conservative as it is based on remnant vegetation mapped in the DPIRD Native Vegetation Extent dataset (DPIRD-005) which does not include all pine plantation and road reserves within the buffer. Therefore, the Proposal is unlikely to adversely affect habitat critical to the survival of Black Cockatoo species.	Unlikely to be significant
Disrupt the breeding cycle of a population	The Proposal is not expected to disrupt the breeding cycle of a population of Black Cockatoos as no known breeding of Black Cockatoos occurs within the clearing footprint. The Proposal will not result in the clearing of any known or suitable nesting trees. The Proposal occurs approximately 53 km south of the nearest DBCA mapped breeding site and 2.8 km east of the nearest DBCA mapped Black Cockatoo roosting site (GoWA, 2023) (Figure 6, Appendix A). Roosting evidence was observed at one location within Parkland Cleared Jarrah Forest habitat on farmland within the Proposal area (Onshore Environmental, 2024a).	Unlikely to be significant
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The Proposal is not expected to impact the availability or quality of habitat to the extent that Black Cockatoos are likely to decline, as: – The Proposal will not result in the clearing of known roosting or breeding habitat nor does the Proposal lie adjacent to known breeding habitat – The Proposal area has existing weed disturbance in areas of vegetation currently utilised for grazing. The Proposal will implement management measures to mitigate and reduced the spread of the weeds within the Proposal area and the surrounding area – The Proposal construction will include Dieback hygiene management during construction to protect adjacent Black Cockatoo habitat within Collie State Forest. The Proposal will establish protectable areas along	Unlikely to be significant

Criteria	Assessment	Significance
	sections of the Proposal area boundary and incorporate access controls, equipment and vehicle washing/segregation, soil movement controls, and monitoring during construction. – The Proposal will incorporate construction management to protect the integrity of Black Cockatoo habitat adjacent to the Proposal area. This includes erosion control, stormwater runoff and contaminant control measures. – The clearing of potential foraging habitat required for the Proposal is not considered significant, as the proposed clearing of native vegetation (38.5 ha) is estimated to represent <0.1% of 40,281.5 ha of foraging habitat located within 12 km.	
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	The Proposal is not expected to introduce or spread invasive species into Black Cockatoo habitat. DPaW (2013), DEWHA (2009a) and TSSC (2018) identify the potential threats to the survival of Black Cockatoo species as nest competition from feral bees (such as *Apis mellifera* [European honeybee]) and other native invasive species. Continued loss of Black Cockatoo nesting hollows in general will increase the competition for remaining hollows by a variety of invasive species. Black Cockatoos are generally less resilient to these pressures and can be displaced by other native and invasive species. The Proposal does not involve any actions which could potentially introduce the European honeybee into the Proposal area or surrounds. The Proposal area has existing weed infestation associated with rural and existing land uses. The Proposal is not expected to result in the introduction or spread of weeds that will result in significant impacts to Black Cockatoo habitat, as the Proposal will implement management measures to mitigate and reduced the spread of the weeds within the Proposal area and the surrounding area. The Proposal is not expected to introduce any predator species (e.g., foxes, feral cats or rabbits). Feral cats and foxes may be vagrant visitors to the area, however the Proposal will not create a destination or facilitate access for predator species into surrounding areas of native vegetation.	Unlikely to be significant
Introduce disease that may cause the species to decline	The Proposal is not expected to introduce or spread disease that could cause Black Cockatoo populations to decline. The disease status of Black Cockatoos in the wild remains unknown, although infectious diseases such as beak and feather disease, avian polyomavirus and chlamydophilosis may pose a threat, as they are significant in other captive and free-living psittacine species. The Proposal does not involve any actions which could potentially introduce infectious diseases within Black Cockatoo populations which could cause the species to decline. The Proposal will include Dieback hygiene management during construction to protect adjacent Black Cockatoo habitat and incorporate access controls, equipment and vehicle washing/segregation, soil movement controls, and monitoring during construction. The Proposal is not expected to spread Dieback through sediment in stormwater runoff, as stormwater will be captured and will not discharge into Black Cockatoo habitat adjacent to the Proposal.	Unlikely to be significant
Interfere with the recovery of the species	The Proposal is unlikely to significantly interfere with the recovery of the Black Cockatoos. Carnaby's Cockatoo recovery, as defined by the Recovery Plan (DPaW, 2013), is dependent upon stopping the further decline in the distribution and abundance of Carnaby's Cockatoo by protecting the species throughout their life stages and enhancing habitat critical for survival throughout their breeding and non-breeding range. Forest Red-tailed Black Cockatoo recovery, as defined by the Recovery Plan (DEC, 2008), is dependent on stopping further decline in the breeding populations of Forest Red-tailed Black Cockatoo and to ensure their persistence throughout their current range in the south-west of Western Australia. The Proposal does not involve clearing of breeding habitat, minimises fragmentation of foraging habitat and protects adjacent patches of foraging habitat from indirect impacts. Therefore, the Proposal is consistent with the Black Cockatoo recovery plans.	Unlikely to be significant

Criteria	Assessment	Significance
Conclusion	Based on the above assessment against the *Significant Impact Guidelines 1.1* (DoE, 2013), the Proposal is unlikely to result in a significant impact to Black Cockatoos, due to the availability of extensive foraging and roosting resources within 12 km of the Proposal area (estimated to be 40,281.5 ha).	

Table 3 Assessment against the referral guidelines for Black Cockatoos (DAWE, 2022)

Criteria	Assessment	Conclusion
Breeding Any loss of / impact upon known, suitable or potential nesting trees, and the habitat around these trees, is highly likely to require a referral to the minister. Loss of any potential nesting habitat is likely to require a referral to the minister.	The Proposal is not expected to have a significant impact upon Black Cockatoo breeding habitat as: – The Proposal will not result in the clearing of any known or suitable nesting trees and/ or hollows (Onshore Environmental, 2024a) – The Proposal area is located approximately 53 km south-west of the nearest recorded Black Cockatoo breeding site (GoWA, 2023) (Figure 6, Appendix A).	Unlikely to be significant
High-quality native foraging habitat Loss of greater than or equal to 1 ha of foraging habitat scoring 5-10 using the foraging quality scoring tool is likely to require referral to the minister.	Whilst the proposed clearing of up to 35.5 ha of high-quality Black Cockatoo foraging habitat triggers the referral threshold to DCCEEW it is considered that the Proposal is not expected to have a significant impact upon Black Cockatoo high-quality native foraging habitat as there is an estimated 40,281.5 ha of foraging habitat with 12 km of the Proposal area. Proposed clearing represents <0.1% of these available foraging resources (Appendix C).	Proposed clearing of up to 35.5 ha of high-quality Black Cockatoo foraging habitat triggers the DCCEEW referral threshold for Black Cockatoos
Lower-quality native foraging habitat Loss of greater than or equal to 10 ha of foraging habitat scoring 0-4 using the foraging quality scoring tool is likely to require referral to the minister.	The Proposal will not result in the clearing of greater than 10 ha of lower-quality native foraging habitat.	Not applicable
Exotic foraging habitat Loss of greater than or equal to 1 ha of predominantly exotic habitat (e.g. Cape Lilac trees and pine trees) known to be utilised by black cockatoos is likely to require a referral to the minister.	The Proposal will not result in the clearing of any exotic foraging habitat.	Not applicable
Night roosting habitat Removal of any part of a known night roosting site is likely to require referral to the minister.	The Proposal is not expected to have a significant impact upon Black Cockatoo roosting habitat as roosting evidence was observed at only one location within Parkland Cleared Jarrah Forest habitat (Figure 5, Appendix A) and the closest DBCA mapped roosting site (buffered) is located approximately 2.8 km to the west of the Proposal (Figure 6, Appendix A). It is expected that the estimated 40,281.5 ha of foraging habitat with 12 km of the Proposal area would also provide suitable night roosting habitat.	Unlikely to be significant

3. References

DAWE. (2022). *Referral guideline for 3 WA threatened black cockatoo species Carnaby's Cockatoo (Zanda latirostris), Baudin's Cockatoo (Zanda baudinii) and the Forest Red-tailed Black-cockatoo (Calyptorhynchus banksii naso).* Department of Agriculture, Water and the Environment.

DBCA. (2007-). *NatureMap: Mapping Western Australia's Biodiversity.* Retrieved July 2018, from Department of Biodiversity, Conservation and Attractions: https://naturemap.dbca.wa.gov.au/

DCCEEW. (2023). *EPBC Protected Matters Search Tool.* Retrieved from Department of Climate Change, Energy, the Environment and Water: https://www.dcceew.gov.au/environment/epbc/protected-matters-search-tool

DEC. (2008). *Forest Black Cockatoo (Baudin's Cockatoo Calyptorhynchus Baudinii and Forest Red-Tailed Black Cockatoo Calyptorhynchus Banksii Naso) Recovery Plan.* Perth: Department of Environment and Conservation, Government of Western Australia.

DEWHA. (2009a). *Approved Conservation Advice for Calyptorhynchus banksii naso (Forest Red-tailed Black Cockatoo).* Department of the Environment, Water, Heritage and the Arts.

DoE. (2013). *Matters of National Environmental Significance, Significant Impact Guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999.* Canberra: Department of Environment.

DPaW. (2013). *Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan.* Perth: Department of Parks and Wildlife.

GoWA. (2023). *Spatial datasets*. Retrieved from data.wa.gov.au: https://catalogue.data.wa.gov.au/dataset

Onshore Environmental. (2023). *Targeted Camera Trap Fauna Survey.* Unpublished report prepared for Green Steel of WA Pty Ltd.

Onshore Environmental. (2024a). *Black Cockatoo Habitat Tree Assessment.* Unpublished report prepared for Green Steel of WA Pty Ltd.

Onshore Environmental. (2024b). *Detailed Flora and Vegetation Survey Collie Green Steel Recycling Mill.* Unpublished report prepared for Green Steel of WA Pty Ltd.

TSSC. (2018). *Conservation Advice Calyptorhynchus baudinii Baudin's cockatoo.* Canberra: Threatened Species Scientific Committee, Department of the Environment and Energy.

WA Herbarium. (1998-). *Florabase-the Western Australian Flora, Department of Biodiversity, Conservation and Attractions.* Western Australian Herbarium. Retrieved from http://florabase.dpaw.wa.gov.au

Table 4 Potential Black Cockatoo foraging habitat – 12 km buffer (GoWA, 2023)

Subregion	Class	Complex name	Subcategory	Description	Area (ha)	Potential Black Cockatoo foraging habitat (ha)
Vegetation Complexes – South West forest region of Western Australia (DBCA-047)						
Collie Plain	CF	Cardiff	Uplands	Open woodland of *Allocasuarina fraseriana-Banksia* spp.-*Xylomelum occidentale-Nuytsia floribunda* on sandy soils on valley slopes in the subhumid zone.	2,665.5	2,665.5
	CI	Collie	Uplands	Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla-Allocasuarina fraseriana* on gravelly-sandy upland soils in the subhumid zone.	4,402.9	4,402.9
	MJ	Muja	Depressions and Swamps	Open woodland of *Melaleuca preissiana-Banksia littoralis-Banksia ilicifolia* with some *Eucalyptus patens* on moister sites, *Banksia* spp. on drier sites of valley floors in the subhumid zone.	4,984.0	4,984.0
Darling Plateau	D1	Dwellingup	Uplands	Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla* on lateritic uplands in mainly humid and subhumid zones.	9,435.2	9,435.2
	D2		Uplands	Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla* on lateritic uplands in subhumid and semiarid zones.	784.6	784.6
	D4		Uplands	Open forest to woodland of *Eucalyptus marginata* subsp. *thalassica-Corymbia calophylla* on lateritic uplands in semiarid and arid zones.	4,574.3	4,574.3
	G	Goonaping	Depressions and Swamps on Uplands	Mosaic of open forest of *Eucalyptus marginata* subsp. *marginata* (humid zones) and *Eucalyptus marginata* subsp. *thalassica* (semiarid to perarid zones) on the sandy-gravels, low woodland of *Banksia attenuata* on the drier sandier sites (humid to perarid zones) with some *Banksia menziesii* (northern arid and perarid zones) and low open woodland of *Melaleuca preissiana-Banksia littoralis* on the moister sandy soils (humid to perarid zones).	1,990.7	1,990.7
	My1	Murray 1	Valleys	Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla-Eucalyptus patens* on valley slopes to woodland of *Eucalyptus rudis-Melaleuca rhaphiophylla* on the valley floors in humid and subhumid zones.	2,169.6	2,169.6

Subregion	Class	Complex name	Subcategory	Description	Area (ha)	Potential Black Cockatoo foraging habitat (ha)
	My2	Murray 2	Valleys	Open forest of *Eucalyptus marginata* subsp. *thalassica-Corymbia calophylla-Eucalyptus patens* and woodland of *Eucalyptus wandoo* with some *Eucalyptus accedens* on valley slopes to woodland of *Eucalyptus rudis-Melaleuca rhaphiophylla* on the valley floors in semiarid and arid zones.	311.7	311.7
	Pn	Pindalup	Valleys	Open forest of *Eucalyptus marginata* subsp. *thalassica-Corymbia calophylla* on slopes and open woodland of *Eucalyptus wandoo* with some *Eucalyptus patens* on the lower slopes in semiarid and arid zones.	2,808.5	2,808.5
	S	Swamp	Depressions and Swamps on Uplands	Mosaic of low open woodland of *Melaleuca preissiana-Banksia littoralis*, closed scrub of Myrtaceae spp., closed heath of Myrtaceae spp. and sedgelands of *Baumea* and *Leptocarpus* spp. on seasonally wet or moist sand, peat and clay soils on valley floors in all climatic zones.	1,340.8	-
	Y5	Yalanbee	Uplands	Mixture of open forest of *Eucalyptus marginata* subsp. *thalassica-Corymbia calophylla* and woodland of *Eucalyptus wandoo* on lateritic uplands in semiarid to perarid zones.	294.4	294.4
	Yg1	Yarragil 1	Valleys	Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla* on slopes with mixtures of *Eucalyptus patens* and *Eucalyptus megacarpa* on the valley floors in humid and subhumid zones.	2,914.6	2,914.6
	Yg2	Yarragil 2	Valleys	Open forest of *Eucalyptus marginata* subsp. *thalassica-Corymbia calophylla* on slopes, woodland of *Eucalyptus patens-Eucalyptus rudis* with *Hakea prostrata* and *Melaleuca viminea* on valley floors in subhumid and semiarid zones.	2,945.5	2,945.5
				Total	41,622.3	40,281.5

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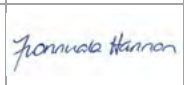
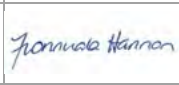
Proposal name		Green Steel of WA Collie Pty Ltd – Collie Green Steel Mill					
Document title		Collie Green Steel Mill – EPBC Act Significance Assessment					
Project number		12609060					
Document number		12609060-GHD-00-00-RPT-EN-00001					
File name		12609060-GHD-00-00-RPT-EN-00001_1_EPBC Significance Assessment.docx					
Status Code	**Revision**	**Author**	**Reviewer**		**Approved for issue**		
			Name	**Signature**	**Name**	**Signature**	**Date**
S3	A	V Davies	F Hannon		I Fanton		13/12/2023
S4	0	V Davies	F Hannon		I Fanton		11/03/2024
S4	1	V Davies	F Hannon		I Fanton		20/03/2024
[Status code]							
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Project name		Green Steel of WA Collie Pty Ltd – Collie Green Steel Mill					
Document title		Collie Green Steel Mill – DWER Native Vegetation Clearing Permit application					
Project number		12609060					
Document number		12609060-GHD-00-00-RPT-EN-00002					
File name		12609060-GHD-00-00-RPT-EN-00002_1_DWER NVCP application.docx					
Status Code	**Revision**	**Author**	**Reviewer**		**Approved for issue**		
			Name	**Signature**	**Name**	**Signature**	**Date**
S4	1	V Davies	F Hannon		Ian Fanton		20/03/2024
[Status code]							
[Status code]							
[Status code]							
[Status code]							

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