

Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number: 10213/1

Permit type: Purpose Permit

Applicant name: Legacy Iron Ore Limited

Application received: 29 May 2023
Application area: 261 hectares

Purpose of clearing: Mineral production and associated activities

Method of clearing: Mechanical Removal

Tenure: Mining Lease 39/1127, 39/1128, 39/1145

Location (LGA area/s): Shire of Menzies

Colloquial name: Mt Celia Gold Project

1.2. Description of clearing activities

Legacy Iron Ore Limited proposes to clear up to 261 hectares of native vegetation within a boundary of approximately 1,872 hectares, for the purpose of mineral production and associated activities. The project is located approximately 95 kilometres south of Laverton, within the Shire of Menzies.

The application is to allow for the establishment of Mt Celia Gold Mine.

1.3. Decision on application and key considerations

Decision: Grant

Decision date: 14 July 2023

Decision area: 261 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 29 May 2023. DMIRS advertised the application for a public comment for a period of 21 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A.1), relevant datasets (Appendix D), the clearing principles set out in Schedule 5 of the EP Act (Appendix B), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3). The

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values, and
- the loss of native vegetation that is suitable habitat for malleefow and long-tailed dunnart.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to have adverse impacts on environmental values and the impacts of clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- · avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- engage a fauna spotter to traverse the area ahead of the clearing activity to avoid fauna deaths or injuries; and
- a pre-clearance survey for Malleefowl mounds, where areas proposed to be cleared during the Malleefowl breeding season must be inspected to identify any active Malleefowl mounds.

2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 510 of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- Biodiversity Conservation Act 2016 (WA) (BC Act)
- State Biosecurity and Agriculture Management Act 2007 (BAM Act)
- Conservation and Land Management Act 1984 (WA) (CALM Act)
- Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)
- Mining Act 1978 (WA)

The key guidance documents which inform this assessment are:

- A guide to the assessment of applications to clear native vegetation (DER, December 2013)
- Procedure: Native vegetation clearing permits (DWER, October 2019)
- Technical guidance Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance Terrestrial Fauna Surveys for Environmental Impact Assessment (EPA, 2020)
- Technical guidance Subterranean Fauna Surveys for Environmental Impact Assessment (EPA, 2021)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant has provided the following avoidance and mitigation measures to support this clearing permit application (Legacy Iron Ore Limited, 2023a):

- Where possible previously disturbed area, such as existing tracks, will be utilised to minimise the clearing required to safely develop project infrastructure;
- Clearing Permit conditions will be read and understood prior to clearing activities commencing;
- Clearing will occur progressively;
- Education and training provided to contractors and staff on following clearing procedures;
- Areas will be adequately surveyed and visibly marked to ensure only the required clearing is undertaken;
- Inspection of clearing boundary prior to clearing;
- Dust suppression activities will be implemented in high traffic areas;
- Speed limits will be implemented on vehicle access roads;
- Cleared areas will be progressively rehabilitated when no longer required;
- All vehicles and workshops will have fire extinguishing equipment;
- Weed hygiene procedure and inspection for vehicles and machinery will be implemented;
- Regular weed inspections will be undertaken across the Project;
- · A weed management plan will be developed;
- A weed control program will be implemented if an increase in weed populations is observed;
- A Vertebrate Fauna Management Plan in place prior to clearing activities commencing;
- Sightings and observations of Malleefowl, their mounds or Long-tailed dunnart will be recorded in the Project fauna register;
- Disturbance will be progressively rehabilitated as soon as areas become available;
- Habitat characteristics will be reinstated within the Project area during rehabilitation activities to encourage fauna recolonization:
- Diversion drains designed for storm events will be constructed to engineered designs for capacity of predicted maximum flow, and rip-rap at areas of predicted erosive potential;
- Landform and stockpiles will have windrows surrounding to prevent migration of any sediment from erosion events;
- Landforms and stockpiles will have adequate drainage installed to direct water away from the base of the landform;
- Diverted flows will be returned to the same catchment area.

The Delegated Officer is satisfied that reasonable efforts have been made to avoid and mitigate the impacts of the proposed clearing.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix B) identified the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable with an avoid and minimise, water resources management, and hygiene management conditions.

3.2.1. Biological values (flora) - Clearing Principles (a) and (c)

<u>Assessment</u>

A detailed flora and vegetation survey was undertaken over the application area and its immediate surroundings, encompassing a total of approximately 2,029 hectares of survey area (Native Vegetation Solutions, 2020a; 2020b). The survey was carried out in two stages, from 3 - 9 June 2020 with 43 quadrats established within the survey area, and from 8 - 9 September 2020 (Native Vegetation Solutions, 2020b).

A total of 123 vascular plant species within 12 vegetation types were recorded (Native Vegetation Solutions, 2020a). The most abundant species identified were *Ptilotus obovatus* and *Acacia aneura* (Native Vegetation Solutions, 2020b). Results of the Species Accumulation Curve analysis conducted by Native Vegetation Solutions (2020a) demonstrated that the sampling effort was sufficient to determine the species richness within the survey area.

The survey did not record any conservation significant flora species nor ecological communities within the application area (Native Vegetation Solutions, 2023; Legacy Iron Ore Limited, 2023a).

Seven introduced species (weeds) were recorded:

- · Citrullus amarus (Pie Melon);
- · Cucumis myriocarpus (Prickly Paddy Melon);
- · Cenchrus ciliaris (Buffel Grass);
- Schinus mollee var. areira (Pepper Tree);
- Nerium oleander (Oleander Tree);
- Yucca aloifolia (Yucca Tree); and
- Tamarix aphylla (Athel pine).

Of the seven non-native species above, only *Tamarix aphylla* (Athel pine) is a declared pest in the state of Western Australia (Native Vegetation Solutions, 2020b). A Weed Management Plan including details on the management control of *Tamarix aphylla* (Athel pine) was submitted in support to this native vegetation clearing permit (NVCP) application (Native Vegetation Solutions, 2020a).

Conclusion

For the reasons set out above, it is considered that the proposed clearing is unlikely to represent an area of high biodiversity value. There is potential for weeds being present within the application area and the proposed clearing has the potential to exacerbate the spread of weeds.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- avoid, minimise to reduce the impacts and extent of clearing; and
- take hygiene steps to minimise the risk of the introduction and spread of weeds.

3.2.2. Biological values (fauna) - Clearing Principles (b)

Assessment

A basic fauna survey was undertaken between 19 and 23 October 2020, by Terrestrial Ecosystems (2021), over the application area. The survey identified six broad fauna habitats, consisting of (Terrestrial Ecosystems, 2021):

- Open Mulga shrubland on sandy soil;
- Mulga and chenopod shrubland on rocky soil;
- Mulga shrubland over rocky soil;
- Mulga on rocky slopes and hills;
- · Shrubs on granite rocks and bedrock; and
- Mulga drainage lines.

Terrestrial Ecosystems (2021) did a risk assessment of the impact of ground disturbance activity on fauna and concluded that the proposed clearing activities will have low impacts overall.

The survey identified Malleefowl (*Leipoa ocellata* - Vulnerable under the *BC Act 2016* and the *EPBC Act 1999*) tracks within the Open Mulga shrubland on sandy soils, indicating there are foraging habitats within the application area (Terrestrial Ecosystems, 2021). However, no mounds were recorded (Terrestrial Ecosystems, 2021). Moreover, the habitats within the application area were considered very open, and therefore, unsuitable for Malleefowl nesting as they would be more susceptible to predation once predators are present in the application area (Terrestrial Ecosystems, 2021).

There were no records of Long-tailed Dunnart (*Sminthopsis longicaudata*) - Priority 4 with the DBCA; however, it is likely that they occur in breakaways and rocky areas within the application area as it is their preferred habitat (Terrestrial Ecosystems, 2021). The proponent acknowledged that the proposed clearing activities will impact part of these habitats; however, the individuals are expected to migrate to a nearby remaining habitats when disturbance activities are in place (Legacy Iron Ore Limited, 2023a). To minimise potential death or injuries to this species, it is recommended implementing a fauna management condition to engage a fauna spotter to traverse the project area ahead of clearing machinery and alert machinery operators to avoid fauna injury or mortality.

Peregrine Falcon may infrequently appear in project area, however, the proposed clearing is unlikely to have a significant impact on this species as it would readily move away to other abundant areas of similar habitat in the region (Terrestrial Ecosystems, 2021).

The overall native vegetation clearing impacts on terrestrial vertebrate fauna are unlikely to be significant given the probable low abundance of fauna species due to the sparseness of the vegetation and ground cover within the application area, as well as the presence of similar habitats in adjacent areas (Terrestrial Ecosystems, 2021). Furthermore, Legacy Iron Ore Limited (2023b) developed a Vertebrate Fauna Management Plan in order to minimise potential impacts during clearing activities and mining operations. Some of the management actions stated in the plan include minimisation of impacts to potential habitats for Longtailed Dunnart (breakaway and rocky areas); clearing areas will be checked for Malleefowl presence and mounds prior to clearing activity commencing; and if Malleefowl mounds are found, they are to be avoided by 50 metres and at least 250 metres during breeding season (Legacy Iron Ore Limited, 2023b). Therefore, in line with the proposed vertebrate fauna management plan, implementing a fauna management condition is recommended to engage a fauna spotter to traverse the project area ahead of clearing machinery and alert machinery operators to avoid fauna injury or mortality.

The Arid Bronze Azure Butterfly (ABAB) (*Ogyris subterrestris petrina* - Critically Endangered under the EPBC Act and BC Act) butterfly is difficult to survey because adults are present only for a few weeks each year and may disperse through habitat unsuitable for breeding (Phoenix, 2023). Caterpillars of the ABAB are found only within nests of a sugar ant *Camponotus* sp. nr. *terebrans*, associated with smooth-barked eucalypt woodlands (Phoenix, 2023). However, Terrestrial Ecosystems (2021) claims that ABAB may also be found in areas with Wheatbelt Wandoo (*E. capillosa capillosa*) and Salmon Gum (*E. salmonophloia*). At Lake Douglas, the host tree was *Eucalyptus concinna* (Field 1999, Threatened Species Scientific Committee 2014 as cited in Terrestrial Ecosystems, 2021). A small section near the eastern extent of the application area contains smooth-barked Eucalypt trees (*Eucalyptus salubris*) (Terrestrial Ecosystems, 2023). The proponent advised that the proposed clearing activities will not impact this area of smooth-barked Eucalyptus trees as it is located outside the project layout (Legacy Iron Ore Limited, 2023c). Therefore, a condition restricting the clearing of this area has been implemented in accordance with the proponent's advice.

Bennelongia (2023) was commissioned to undertake a desktop assessment and field survey on subterranean fauna over the project area to determine the significance of potential impacts on these fauna assemblages. The field survey was conducted at Mt Celia Project between 5 and 6 December 2022 and recorded a total of 85 individuals belonging to six species (Bennelongia, 2023). The project area encompassed the application area and surroundings.

Contrary to the desktop assessment results, the project area does harbour some suitable habitat for stygofauna as six species of stygofauna were collected (Bennelongia, 2023). Suitable habitat was found in local fractured rock aquifers, probably restricted to relatively shallow depths where rocks were highly weathered (Bennelongia, 2023).

Given the sampling effort, species composition and specimen numbers, the application area appears to have a low to moderate diversity stygofauna community (Bennelongia, 2023). However, half of the species identified during the survey are currently known only from the project area, namely the syncarid *Atopobathynella* `BSY239`, copepods *Anzcyclops* `BCY096' and *Megastygonitocrella* `BHA350` (Bennelongia, 2023).

Stygofauna abundance and diversity tend to be greatest when the water table is less than 30 metres below ground level (mbgl); however, a few species occur at greater depths (Humphreys 2006; Halse et al. 2014 as cited in Bennelongia, 2023). Certain species of stygofauna occur in streambeds and springs; however, at least in the Pilbara and Yilgarn, most species occur in groundwater aquifers that are not directly connected to the surface (Bennelongia, 2023). The aquifers in other fractured rocks or rocks with cavities inside also have the potential to support stygofauna (Bennelongia, 2023). Considering that the most prospective habitat for stygofauna in the project area (high to medium weathering rock) occurs below the water table (at approximately 21.39 mbgl), the proposed clearing activities are unlikely to adversely affect stygofauna species.

Furthermore, the habitat within the project area is considered unlikely to harbour troglofauna due to the presence of clays near the surface and the absence of prospective geologies for troglofauna (Bennelongia, 2023).

Conclusion

Based on the above assessment, it is considered that the impacts of the proposed clearing on potential habitats for conservation significant species are not likely to be significant if avoidance, mitigation and management measures are implemented.

For the reasons set out above, it is considered that the impacts of the proposed clearing on potential habitats for conservation significant fauna species can be managed with conditions to be environmentally acceptable.

Conditions:

While low impact to the above habitats and species is anticipated, the below measures will require implementation to further reduce risk to these findings.

- A fauna management condition requiring a fauna spotter to traverse the project area ahead of clearing machinery at the
 time of clearing, and alert machinery operators to avoid injury or mortality to native fauna and relocate them when
 possible; and
- a pre-clearance survey for Malleefowl mounds, where areas proposed to be cleared during the Malleefowl breeding season must be inspected to identify any active Malleefowl mounds, and where mounds have been identified, no clearing occurs within 50 metres of the mound.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 30 June 2023 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There are two native title claims (WC2019/00 and WAD91/2019) over the area under application (DPLH, 2023). These claims have been registered with the National Native Title Tribunal / determined by the Federal Court on behalf of the claimant group/s. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are two registered Aboriginal Sites of Significance (Mount Celia Station - Register Site 1562 and Wongatha Soak' - Registered Site 17033) within the application area (DPLH, 2023, Legacy Iron Ore Limited, 2023a). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:

• A Mining Proposal / Mine Closure Plan approved under the Mining Act 1978.

It is the proponent's responsibility to liaise with the Department of Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The project is located approximately 95 km kilometres south of Laverton, within the Shire of Menzies, within the extensive land use zone (GIS Database). The predominant land use in the region is grazing of native pastures, conservation and mining activities.
Ecological linkage & Conservation areas	According to available databases, the application area is not considered an ecological linkage, nor is it located in close proximity to conservation areas (GIS Database).
Vegetation description	The vegetation of the application area is broadly mapped as the following Beard vegetation association: 18: Low woodland; mulga (<i>Acacia aneura</i>) (GIS Database). A detailed flora and vegetation survey was conducted over the application area and its surroundings by Native Vegetation Solutions in two stages, during June and September 2020. The following vegetation associations were recorded within the application area (Native Vegetation Solutions, 2020b): Mulga over <i>Maireana sedifolia</i> and mixed sclerophyll shrubland Mulga shrubland (sandy substrate) Open Mulga shrubland (sandy substrate) Mulga over Small rocky ironstone hills Acacia aneura and Acacia burkittii on rocky basalt hills Mulga over Chenopod shrubland Mulga Thicket- Drainage Open Mulga shrubland on ironstone flats Acacia quadrimarginea shrubland over granite bedrock Casuarina pauper and Acacia aneura over sclerophyll shrubland on rocky laterite hills Mulga over Eremophila forrestii on large rocky granite/basalt hills Majority of the survey area is comprised by Mulga shrubland (sandy substrate), covering 32.2% of the surveyed area (Native Vegetation Solutions, 2020b).
Vegetation condition	The vegetation survey (Native Vegetation Solutions, 2020b) indicate the vegetation within the proposed clearing area is in Very Good to Degraded condition (Keighery, 1994), described as: • Very Good: Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing To • Degraded: Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing. Part of the application area has been subjected to historic exploration activities and grazing (Native Vegetation Solutions, 2020b). The full Keighery (1994) condition rating scale is provided in Appendix C.
Climate and landform	The application area is mapped within elevations of 420 to 440 meters AHD (GIS Database). The climate of the region is semi-arid, and the annual rainfall average of approximately 281.3 millimetres (BoM, 2023).
Soil description & Land degradation risk	 The soil is mapped as part of the following soil systems (DPIRD, 2023): Leonora system (279e): Low greenstone hills and stony plains supporting mixed chenopod shrublands; Crete system (279Cr): Breakaways and lower plains based on weathered granites, supporting halophytic shrublands; Monk system (279Mk): Hardpan plains with occasional sandy banks supporting mulga tall shrublands and wanderrie grasses; Laverton system (279Lv): Greenstone hills and ridges with acacia shrublands; Gundockerta system (279Gu): Extensive, gently undulating calcareous stony plains supporting bluebush shrublands; and Rainbow system (279Rb): Hardpan plains supporting mulga tall shrublands. Local erosion of topsoil from disturbed areas and steep slopes could occur (Legacy Iron Ore Limited, 2023). However, it is unlikely to affect the wider environment (Hydrologia, 2023).

Characteristic	Details
Waterbodies & Hydrogeography	There are no permanent waterbodies or watercourses within the application area; however, numerous ephemeral drainage lines run through it (GIS Database). The application area is not located within a Public Drinking Water Source Area (GIS Database). The mapped groundwater salinity is between 6,700 and 16,000 milligrams per litre total dissolved solids which is described as brackish (Legacy Iron Ore Limited, 2023).
Flora	Desktop analysis identified four conservation significant flora species within 20 kilometres radius from the application area (GIS Database). The detailed vegetation survey undertaken by Native Vegetation Solutions (2020b) did not record any Priority or Threatened flora species within the application area.
Ecological communities	There are no mapped Threatened or Priority Ecological Communities (TEC/PEC) within the application area or in close proximity (GIS Database). The closest PEC is Mount Linden Range vegetation complex (banded ironstone formation) located approximately nine kilometres from the application area (GIS Database).
Fauna	Despite of the absence of conservation significant fauna species records within the application area during the basic fauna survey, Long-Tailed Dunnarts were considered likely to occur and the application area has foraging habitats for Mallefowls (Terrestrial Ecosystems, 2021). The subterranean fauna survey concluded that the application area is unlikely to contain prospective habitat for troglofaunal or significant habitat for stygofauna (Legacy Iron Ore Limited, 2023a).

A.2. Flora analysis table

Flora analysis of records within 50 kilometres of the survey area and their likelihood of occurrence (Native Vegetation Solutions, 2020a).

		Likelihood of occurring in	
Taxon	Cons_Code	survey area	Comment
Acacia eremophila var. Numerous-nerved variant (A.S.George 11924)	P3	Unlikely	Known records within 50km, Lack of suitable habitat
Calandrinia sp. Menzies (F. Hort et al. FH 4100)	P3	Unlikely	Possible suitable habitat, habitat searched extensively
Eremophila mirabilis	P2	Unlikely	Known records within 50km, Lack of suitable habitat
Hemigenia exilis	P4	Possible	Possible suitable habitat in the survey area, habitat searched extensively
Hybanthus floribundus subsp. chloroxanthus	P3	Possible	Suitable habitat in the survey area, habitat searched extensively
Melaleuca apostiba	P3	Unlikely	Known records within 50km, Lack of suitable habitat
Placynthium nigrum	P3	Unlikely	Known records within 50km, Lack of suitable habitat
Tecticornia mellarium	P1	Unlikely	Known records within 50km, Lack of suitable habitat
Tecticornia sp. Lake Way (P. Armstrong 05/961)	P1	Unlikely	Known records within 50km, Lack of suitable habitat
Thryptomene eremaea	P2	Unlikely	Known records within 50km, Lack of suitable habitat

Likely – suitable habitat, close (<10km) records and/or field survey completed in sub-optimal season, suggest species is likely to occur Possible-suitable habitat, record(<50km) and/or field survey completed in sub-optimal season.

Unlikely- Lack of suitable habitat and/or no records(<50km) and /or field survey completed in optimal season, suggests species is unlikely to occur

A.3. Fauna analysis table

Table 2-7: Potential Presence of Conservation Significant Fauna within the Application Area

	DRGA	Chatra under	
Species	DBCA Schedule / Priority	Status under Commonwealth EPBC Act	Comment on the potential presence of a species
Night Parrot Pezoporus occidentalis	Critically Endangered	Endangered	Highly unlikely to be in the project area due to a lack of suitable habitat (i.e. mature spinifex). The potential for impacting on this species is therefore very low.
Arid Bronze Azure Butterfly Ogyris subterrestris petrina	Critically Endangered	Critically Endangered	A lack of smooth-barked Eucalypt trees and thus <i>Camponotus terebrans</i> ants means it is highly improbable that the butterfly will be present and therefore impacted.
Sandhill Dunnart Sminthopsis psammophil	Endangered	Endangered	Highly unlikely to be in the project area due to a lack of suitable habitat (i.e. mature spinifex). The potential for impacting on this species is therefore very low.
Malleefowl Leipoa ocellata	Vulnerable	Vulnerable	No Malleefowl nesting mounds were recorded, however, Malleefowl tracks were present.
Grey Falcon Falco hypoleucos	Vulnerable	Vulnerable	Highly unlikely to be in the project area due to a lack of suitable habitat. The potential for impacting on this species is therefore very low.
Chuditch Dasyurus geoffroii	Vulnerable	Vulnerable	Highly unlikely to occur in the project area. The potential for impacting on this species is therefore very low.
Princess Parrot Polytelis alexandrae	Priority 4	Vulnerable	May infrequently be seen in the region, however, clearing vegetation is unlikely to impact on this species.
Mulgara Dasycercus blythi	Priority 4	N/A	Highly unlikely to be in the project area due to a lack of suitable habitat (i.e. mature spinifex). The potential for impacting on this species is therefore very low.
Oriental Plover Charadrius veredus	Migratory	Migratory	Unlikely to be in the project area due to a lack of suitable habitat. The potential for impacting on this species is therefore low.
Fork-tailed Swift Apus pacificus	Migratory	Migratory	May very infrequently be seen in the region, however, clearing vegetation is unlikely to impact on this aerial species.
Grey Wagtail Motacilla cinerea	Migratory	Migratory	Highly unlikely to be present in the project area. The potential for impacting on this species is therefore low
Yellow Wagtail Motacilla flava	Migratory	Migratory	Highly unlikely to be present in the project area. The potential for impacting on this species is therefore low.
Peregrine Falcon Falco peregrinus	os	N/A	May infrequently be seen in the region, however, clearing vegetation is unlikely to impact on this species.
Long tailed Dunnarts Sminthopsis longicaudata	P4	N/A	May be present in the breakaway areas and rocky hills in the project area.

[|] Sminthopsis longicaudata | IA – Migratory birds protected under international agreements

OS - Other Specially protected fauna

Assessment against the clearing principles	Variance level	Is further
recoccinent against the clearing principles	Turidiloo iovoi	consideration required?
Environmental value: biological values		
Principle (a): "Native vegetation should not be cleared if it comprises a high level of biodiversity."	Not likely to be at variance	Yes Refer to Section
Assessment:		3.2.1, above.
According to available databases and detailed flora survey, there are no known Threatened or Priority flora within the application area (Native Vegetation Solutions, 2023; Legacy Iron Ore Limited, 2023a; GIS Database).		
No Threatened or Priority Ecological Communities were identified within the application area (Native Vegetation Solutions, 2023; Legacy Iron Ore Limited, 2023a; GIS Database).		
The six broad fauna habitats identified within the application area not considered to be restricted at a local or regional level (Terrestrial Ecosystems, 2021).		
Principle (b): "Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."	May be at variance	Yes Refer to Section
Assessment:		3.2.2, above.
Part of the application area contains suitable habitat for Long-tailed Dunnart (Sminthopsis longicaudata) and foraging habitats for Malleefowl (Leipoa ocellata).		
Principle (c): "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."	Not likely to be at variance	Yes Refer to Section
Assessment:		3.2.1, above.
There are no known records of Threatened flora within the application area (GIS Database). A detailed flora survey of the application area did not record any species of Threatened flora, and none were considered likely to occur (Native Vegetation Solutions, 2023; Legacy Iron Ore Limited, 2023a).		
Principle (d): "Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."	Not at variance	No
Assessment:		
There are no known or mapped Threatened Ecological Communities (TECs) located within or in close proximity to the application area (Native Vegetation Solutions, 2023; GIS Database).		
Environmental value: significant remnant vegetation and conservation areas	<u>'</u>	l
Principle (e): "Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."	Not at variance	No
Assessment:		
The application area falls within the Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (GIS Database). Approximately 99% of the pre-European vegetation still exists in the Murchison Bioregion (Government of Western Australia, 2019).		
The application area is broadly mapped as Beard vegetation association 18 (GIS Database). Approximately 99% of the pre-European extent of this vegetation association remains uncleared at both the state and bioregional level (Government of Western Australia, 2019). The permit area does not contain any remnants nor does it form part of any remnants in the local area (GIS Database).		
Principle (h): "Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."	Not likely to be at variance	No
Assessment:		
Given the distance (85 kilometres) to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of any known or mapped conservation areas.		

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: land and water resources		
Principle (f): "Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."	May be at variance	No
Assessment:		
There are several ephemeral drainage lines intersecting the application area (GIS Database). Impacts to vegetation growing in association with a watercourse can be managed by a vegetation management condition to avoid clearing of riparian vegetation where possible and maintaining water flows. The proponent committed to return streamflow to the same catchment (Hydrologia, 2023; Legacy Iron Ore Limited, 2023).		
Principle (g): "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."	May be at variance	No
Assessment:		
The mapped soils within the application (Appendix A.1) are generally not susceptible to wind or water erosion (DPIRD, 2023b; Tille, 2006).		
Local erosion of topsoil from disturbed areas and steep slopes could occur (Legacy Iron Ore Limited, 2023). However, it is unlikely to affect the wider environment (Hydrologia, 2023).		
Principle (i): "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."	Not likely to be at variance	No
Assessment:		
Given no permanent water courses, wetlands, or Public Drinking Water Source Areas are recorded within the application area (GIS Database), the proposed clearing is unlikely to impact surface or ground water quality.		
Lake Raeside lies about 17 km southwest of the site. The lake is hypersaline when water levels are low, and may be fresh or moderately saline when flooded (Hydrologia, 2023). Groundwater sampled at the application area is considered brackish with a total dissolved solids between 6,700 and 16,000 milligrams per litre (Legacy Iron Ore Limited, 2023a). Therefore, the proposed clearing activities are unlikely to adversely impact the quality of water or influence on its salinity levels (Hydrologia, 2023).		
<u>Principle (j):</u> "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."	Not likely to be at variance	No
Assessment:		
The average rainfall of approximately 281.3 millimetres per year and evaporation rate of approximately 2,400 millimetres are unlikely to cause or intensify flooding events within the application area (Legacy Iron Ore Limited, 2023a).		
No permanent water courses or waterbodies were recorded within the application area; however, there are several ephemeral drainage lines (GIS Database). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall. The drainage lines were considered small and flows do not cause a significant flood risk (Hydrologia, 2023).		
Therefore, the proposed clearing activities are unlikely to cause an incidence of, or intensity increase to flooding.		

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Sources of information

D.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- Clearing Regulations Schedule One Areas (DWER-057)
- DBCA Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments Catchments (DWER-028)
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Pre-European Vegetation Statistics
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping Best Available (DPIRD-027)
- Soil Landscape Mapping Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

D.2. References

Bennelongia (2023) Mt Celia Subterranean Fauna Assessment. Prepared for Legacy Iron Ore Limited by Bennelongia Pty Ltd, June 2023.

Bureau of Meteorology (BoM) (2023) Bureau of Meteorology Website – Climate Data Online, Laverton Aero. Bureau of Meteorology. http://www.bom.gov.au/climate/data/ (Accessed 27 July 2023).

Department of Planning, Lands and Heritage (DPLH) (2023) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS (Accessed 27 July 2023).

Department of Primary Industries and Regional Development (DPIRD) (2023) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL:

https://dpird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f (Accessed 27 July 2023).

Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure Native vegetation clearing permits v1.pdf

Environmental Protection Authority (EPA) (2016) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment. Available from:

http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf

- Environmental Protection Authority (EPA) (2020) Technical Guidance Terrestrial Fauna Surveys. Available from: https://www.epa.wa.gov.au/sites/default/files/Policies and Guidance/2020.09.17%20-%20EPA%20Technical%20Guidance%20-%20Vertebrate%20Fauna%20Surveys%20-%20Final.pdf
- Environmental Protection Authority (EPA) (2016) Environmental Factor Guideline Subterranean Fauna. Available from https://www.epa.wa.gov.au/policies-guidance/environmental-factor-guideline-subterranean-fauna
- Environmental Protection Authority (EPA) (2021) Technical Guidance Subterranean fauna surveys for environmental impact assessment. Available from https://www.epa.wa.gov.au/policies-guidance/technical-guidance-subterranean-fauna-surveys-environmental-impact-assessment
- Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions. https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics
- Hydrologia (2023) Surface Water Assessment Mt Celia Gold Project. Perth: Prepared for Legacy Iron Ore Limited by Hydrologia, February 2023.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Legacy Iron Ore Limited (2023a) Native Vegetation Clearing Permit Supporting Document M39/1127, M39/1128 and M39/1145. Mt Celia Gold Project. Prepared by Legacy Iron Ore Limited, May 2023.
- Legacy Iron Ore Limited (2023b) Vertebrate Fauna Management Plan. Prepared by Legacy Iron Ore Limited, August 2023.
- Legacy Iron Ore Limited (2023c) Additional information in support to the clearing permit CPS 10213/1 Mt Celia Smooth-Barked Eucalypt Trees Map. Prepared by Legacy Iron Ore Limited, August 2023
- Native Vegetation Solutions. (2020a). Detailed flora and vegetation survey of the Mt Celia Project Area Part 1. Prepared by Native Vegetation Solutions Pty Ltd.
- Native Vegetation Solutions. (2020b). Detailed Flora and Vegetation Survey of the Mt Celia Project Area Part 2. Prepared by Native Vegetation Solutions Pty Ltd.
- Phoenix (2023) Basic and Targeted Fauna Survey for the Crossroads Project. Prepared for Northern Star Resources Ltd by Phoenix Environmental Sciences Pty Ltd, January 2023.
- Terrestrial Ecosystems (2021) Basic vertebrate fauna survey and risk assessment. Prepared by Terrestrial Ecosystems Pty Ltd, January 2021.
- Terrestrial Ecosystems (2023) Desktop Vertebrate Fauna Risk Assessment for the Mt Celia Gold Project. Unpublished report prepared for Native Vegetation Solutions on behalf of Legacy Iron Ore Limited by Terrestrial Ecosystems, March 2023.
- Tille, P J. (2006) Soil-landscapes of Western Australia's rangelands and arid interior. Department of Primary Industries and Regional Development, Western Australia, Perth. Report 313.

4. Glossary

Acronyms:

BC Act Biodiversity Conservation Act 2016, Western Australia

BoM Bureau of Meteorology, Australian Government

DAADepartment of Aboriginal Affairs, Western Australia (now DPLH)DAFWADepartment of Agriculture and Food, Western Australia (now DPIRD)

DCCEEW Department of Climate Change, Energy, the Environment and Water, Australian Government

DBCA Department of Biodiversity, Conservation and Attractions, Western Australia
DER Department of Environment Regulation, Western Australia (now DWER)
DMIRS Department of Mines, Industry Regulation and Safety, Western Australia
DMP Department of Mines and Petroleum, Western Australia (now DMIRS)

Dobe Department of the Environment and Energy (now DCCEEW)

Dow Department of Water, Western Australia (now DWER)

DPaW Department of Parks and Wildlife, Western Australia (now DBCA)

DPIRD Department of Primary Industries and Regional Development, Western Australia

DPLH Department of Planning, Lands and Heritage, Western Australia

DRF Declared Rare Flora (now known as Threatened Flora)

DWER Department of Water and Environmental Regulation, Western Australia

EP Act Environmental Protection Act 1986, Western Australia **EPA** Environmental Protection Authority, Western Australia

EPBC Act Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)

GIS Geographical Information System ha Hectare (10,000 square metres)

IBRA Interim Biogeographic Regionalisation for Australia

IUCN International Union for the Conservation of Nature and Natural Resources – commonly known as the

World Conservation Union

PEC Priority Ecological Community, Western Australia

RIWI Act Rights in Water and Irrigation Act 1914, Western Australia

TEC Threatened Ecological Community

Definitions:

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia}:-

T Threatened species:

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

Threatened fauna is that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for Threatened Fauna.

Threatened flora is that subset of 'Rare Flora' listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR Critically endangered species

Threatened species considered to be "facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines".

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

EN Endangered species

Threatened species considered to be "facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines".

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation* (Specially Protected Fauna) Notice 2018 for endangered fauna or the *Wildlife Conservation* (Rare Flora) Notice 2018 for endangered flora.

VU Vulnerable species

Threatened species considered to be "facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines".

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation* (Specially Protected Fauna) Notice 2018 for vulnerable fauna or the *Wildlife Conservation* (Rare Flora) Notice 2018 for vulnerable flora.

Extinct Species:

EX Extinct species

Species where "there is no reasonable doubt that the last member of the species has died", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for extinct fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for extinct flora

EW Extinct in the wild species

Species that "is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species:

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

MI Migratory species

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection

of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018.

CD Species of special conservation interest (conservation dependent fauna)

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018.

OS Other specially protected species

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018.

P Priority species:

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

P1 Priority One - Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2 Priority Two - Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3 Priority Three - Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4 Priority Four - Rare, Near Threatened and other species in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

- (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.
- (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Principles for clearing native vegetation:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- **(b)** Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.
- (d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.
- (e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- **(h)** Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.
- (i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.
- (j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.