



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	5617/6
Permit type:	Purpose Permit
Applicant name:	BHP Iron Ore Pty Ltd
Application received:	22 February 2023
Application area:	2,010.3 ha
Purpose of clearing:	Mineral production, mineral exploration, construction and maintenance of infrastructure and associated activities
Method of clearing:	Mechanical Removal
Tenure:	<p><i>Iron Ore (Mount Newman) Agreement Act 1964</i>, Mineral Lease 244SA (AML 70/244)</p> <p><i>Iron Ore (Mount Newman) Agreement Act 1964</i>, Special Lease for Mining Operations 3116/3687 (Document I 154279 L), Lease Extension K846790, Lot 19 on Deposited Plan 48921</p> <p><i>Iron Ore (Mount Newman) Agreement Act 1964</i>, Special Lease for Mining Operations 3116/3685, (Lease K858923), Lot 556 on Deposited Plan 400578</p> <p><i>Iron Ore (McCamey's Monster) Agreement Authorisation Act 1972</i>, Mining Lease 266SA (AM 70/266)</p> <p>Miscellaneous Licences 47/92, 52/99, 52/185</p> <p>General Purpose Leases 52/19, 52/20, 52/21, 52/22, 52/23, 52/24, 52/25, 52/26, 52/27, 52/28, 52/29, 52/30, 52/31, 52/32, 52/33, 52/34, 52/35, 52/36, 52/37, 52/38, 52/39, 52/40, 52/41, 52/42, 52/43, 52/44, 52/45, 52/46, 52/47, 52/48, 52/49, 52/50, 52/51, 52/52, 52/53, 52/54, 52/55, 52/56, 52/57, 52/58, 52/59, 52/60, 52/61, 52/62, 52/63, 52/64, 52/65, 52/66, 52/67, 52/68, 52/69, 52/70, 52/71, 52/72, 52/73, 52/74, 52/75, 52/76, 52/77, 52/78, 52/79, 52/80, 52/81, 52/82, 52/83, 52/84, 52/85, 52/86, 52/87, 52/88, 52/89, 52/90, 52/91, 52/92, 52/93, 52/94, 52/95, 52/96, 52/97, 52/98, 52/99, 52/100, 52/101, 52/102, 52/103, 52/104, 52/105, 52/106, 52/107, 52/108, 52/109, 52/110, 52/111, 52/112, 52/113, 52/114, 52/115, 52/116, 52/117, 52/118, 52/119, 52/120, 52/121, 52/122, 52/123, 52/124, 52/125, 52/126, 52/127, 52/128, 52/129, 52/130, 52/131, 52/132, 52/133, 52/134, 52/135, 52/136, 52/137, 52/138, 52/139, 52/140, 52/141, 52/142, 52/143, 52/144, 52/145, 52/146, 52/147, 52/148, 52/149, 52/150, 52/151, 52/152, 52/153, 52/154, 52/155, 52/156, 52/157, 52/158, 52/159, 52/160, 52/161, 52/162, 52/163, 52/164, 52/165, 52/166, 52/167, 52/168, 52/169, 52/170, 52/171, 52/172, 52/173, 52/174, 52/175, 52/176, 52/177, 52/178, 52/179, 52/180, 52/181, 52/182, 52/183, 52/184, 52/185, 52/186, 52/187, 52/188, 52/189, 52/190, 52/191, 52/192, 52/193, 52/194, 52/195, 52/196, 52/197, 52/198, 52/199, 52/200, 52/201, 52/202, 52/203, 52/204, 52/205, 52/206, 52/207, 52/208, 52/209, 52/210, 52/211, 52/212, 52/213, 52/214, 52/215, 52/216, 52/217, 52/218, 52/219, 52/220, 52/221, 52/222, 52/223, 52/224, 52/225, 52/226, 52/227, 52/228, 52/229, 52/230, 52/231, 52/232, 52/233, 52/234, 52/235, 52/236, 52/237, 52/238, 52/239, 52/240, 52/241, 52/242, 52/243, 52/244, 52/245, 52/246, 52/247, 52/248, 52/249, 52/250, 52/251, 52/252, 52/253, 52/254, 52/255, 52/256, 52/258, 52/259, 52/260, 52/261, 52/262, 52/263, 52/264, 52/265, 52/266, 52/267, 52/268, 52/269, 52/270, 52/271, 52/272, 52/273, 52/274, 52/276, 52/277, 52/279</p>
Location (LGA area/s):	Shire of East Pilbara
Colloquial name:	Mt Whaleback Project

1.2. Description of clearing activities

BHP Iron Ore Pty Ltd proposes to clear up to 2,010.3 hectares of native vegetation within a boundary of approximately 8,884 hectares, for the purpose of mineral production, mineral exploration, construction and maintenance of infrastructure and associated activities. The project is located approximately 0.3 kilometres west of Newman, within the Shire of East Pilbara. As of 30 June 2022, 982.40 hectares have been cleared under previous clearing permits (CPS 5617/1, CPS 5617/2, CPS 5617/3, CPS 5617/4, and CPS 5617/5) (BHP, 2022). Out of those 982.40 hectares, 316.96 hectares have been rehabilitated as of 30 June 2022 (BHP, 2022).

Clearing permit CPS 5617/1 was granted by the Department of Mines and Petroleum (now the Department of Mines, Industry Regulation and Safety) on 31 October 2013 and was valid from 23 November 2013 to 23 November 2020. The permit

authorised the clearing of up to 2,100 hectares of native vegetation within a boundary of approximately 8,800 hectares, for the purpose of mineral production, mineral exploration, construction and maintenance of infrastructure and associated activities.

CPS 5617/2 was granted on 14 August 2014, amending the permit to increase the permit boundary to 8,875 hectares and reducing the amount of clearing authorised to 2,010.3 hectares.

CPS 5617/3 was granted on 7 April 2016, amending the permit to remove Conditions 7 and 8 from the permit and extend the permit duration from 23 November 2030 to 30 November 2030.

CPS 5617/4 was granted on 28 June 2018, amending the permit to increase the permit boundary by 10 hectares, from 8,875 to 8,885 hectares. The amount of clearing authorised remained unchanged.

CPS 5617/5 was granted on 11 April 2019, amending the permit to update the tenure on the permit, and amend the area subject to Condition 7. The area of clearing authorised and permit boundary remained unchanged.

On 22 February 2023, the Permit Holder applied to amend CPS 5617/5 to extend the clearing period to 30 November 2028 and the permit duration to 30 November 2033 and to update the permit holder name from BHP Billiton Iron Ore Pty Ltd to BHP Iron Ore Pty Ltd as well as amend the permit boundary to exclude an area where a ghost bat cave is located.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	18 May 2023
Decision area:	2,010.3 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 22 February 2023. DMIRS advertised the application for a public comment for a period of 7 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix E), supporting information provided by the applicant (Appendix D) including the results of a flora and vegetation survey (Appendix D), the clearing principles set out in Schedule 5 of the EP Act (Appendix C), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

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;
- potential impacts to waterflows and to vegetation growing in association with a watercourse;
- potential land degradation in the form of erosion; and
- potential loss of native vegetation.

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 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;
- maintain existing surface flow of Whaleback Creek;
- commence construction no later than six months after undertaking clearing to reduce the risk of erosion; and
- retain cleared vegetation and topsoil and respread this on a cleared area of equivalent size within the adjacent existing gravel extraction area within 12 months of clearing to ensure fauna habitat is not permanently lost.

The assessment has not changed since the assessment for CPS 5617/5, The Delegated Officer determined that the proposed extension of duration, permit holder name change, and reduction of the permit boundary is not likely to lead to an unacceptable risk to environmental values.

1.5. Site map

A site map of proposed clearing is provided in Figure 1 below.

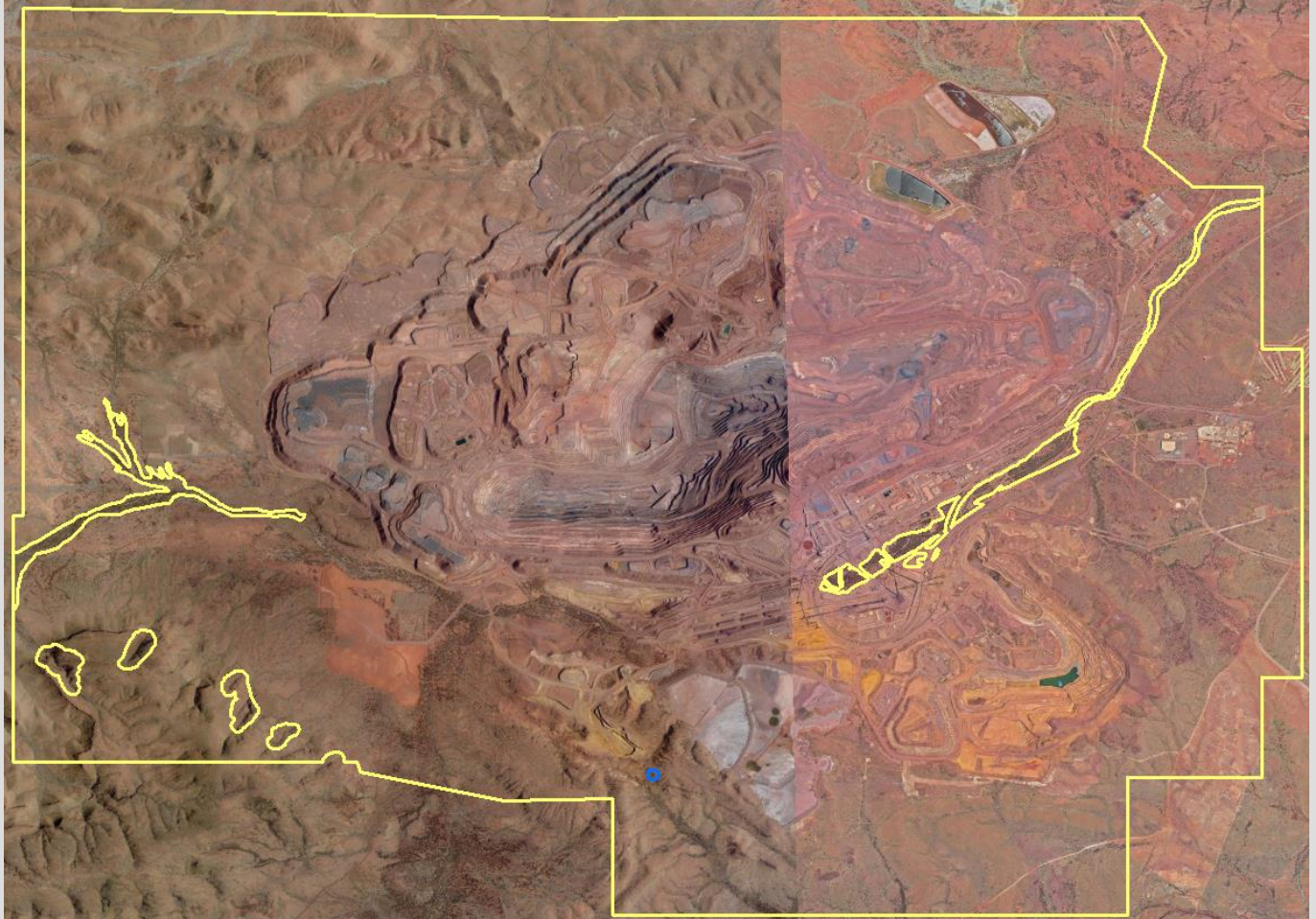


Figure 1. Map of the application area. The yellow area indicates the previous permit area (CPS 5617/5) and the blue area indicates area to be excised for this application.

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 51O 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)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)
- *Iron Ore (Mount Newman) Agreement Act 1964*
- *Iron Ore (McCamey's Monster) Agreement Authorisation Act 1972*

Relevant agreements (treatys) considered during the assessment include:

- Japan-Australia Migratory Bird Agreement
- China-Australia Migratory Bird Agreement
- Republic of Korea-Australia Migratory Bird Agreement

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant advised that disturbance will be kept to the smallest size possible with previously cleared areas used where practicable (BHP, 2023b). Additionally BHP has stated that control of established weed populations will be carried out according to BHP's standard *Weed Control and Management Procedures* (BHP, 2023a). The applicant has committed to place a 10 metre buffer zone around Priority flora where practicable (BHP, 2023a). Additionally, a potential roosting cave for ghost bats has been excised from the application area and a 50 metre buffer has been established (BHP, 2023a). The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

Half of the conservation significant fauna present in the application area, such as the common greenshank, common redshank, common sandpiper, glossy ibis, long-toed stint, marsh sandpiper, pectoral sandpiper, sharp-tailed sandpiper, and wood sandpiper, rely on artificial water sources or wetlands to forage in the application area (BHP, 2023a). Additionally, these species are migratory and are not permanently present in the application area (BHP, 2023a). The rest of the conservation significant fauna recorded in the application have more suitable habitat in better condition occurring outside of the application area and are widespread across the Pilbara region (BHP, 2023a).

The proposed clearing permit boundary intersects protection zone related to bore V18 (DWER, 2023; GIS Database). Mining operations and related activities are incompatible with wellhead protection zones (DWER, 2023). However, Bore V18 currently provides water to the Yarnima Power Station and in July 2020, the bore has been removed from the town supply system (DWER, 2023). For this reason, the proposed amendment is unlikely to have significant impacts to the quality of surface or underground water. There are numerous ephemeral drainage lines within the application area, the most significant being Whaleback Creek (GIS Database). The majority of Whaleback Creek is covered by a number of existing clearing permits. Clearing within drainage lines may lead to a short term increase in turbidity, however, it is not expected to result in the deterioration of surface water quality. Impacts to surface water within Whaleback Creek may be minimised by the implementation of a watercourse management condition.

A review of current environmental information (Appendix A and B) reveals that the assessment against the clearing principles has not changed significantly from the Clearing Permit Decision Report CPS 5617/5. The proposed amendment is not likely to cause significant impacts to the environmental values of the application area. The amendment has been granted without changes to the conditions placed on the previous clearing permit (CPS 5617/5).

3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 28 March 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 is one native title claim (WC2005/006) over the area under application (DPLH, 2023). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. 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 30 registered Aboriginal Sites of Significance within the application area (DPLH, 2023). 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 Programme of Work approved under the *Mining Act 1978*.
- 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 area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia (GIS Database). It is adjacent to the town of Newman and it is surrounded by native vegetation (GIS Database).
Ecological linkage	The application area does not form part of any formal or informal ecological linkages (GIS Database).
Conservation areas	The application area is not located within any known conservation areas (GIS Database). The closest conservation area is approximately 64 kilometres north of the application area (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations:</p> <p>82: Hummock grasslands, low tree steppe; snappy gum over <i>Triodia wiseana</i>; and</p> <p>18: Low woodland; mulga (GIS Database).</p> <p>Various flora and vegetation survey were conducted over the application area by Onshore Environmental during 2014 and by Biologic during, 2021, and 2022. The following vegetation associations were recorded within the application area (Biologic, 2021a, 2021b, 2022a; Onshore Environmental, 2014):</p> <p>*Cenchrus mid tussock grassland (FP CcCsChf AaApAte Ex): Mid tussock grassland of <i>*Cenchrus ciliaris</i>, <i>*Cenchrus setiger</i>, and <i>Chrysopogon fallax</i> with tall sparse shrubland to scattered trees of <i>Acacia aptaneura</i>, <i>Acacia paraneura</i>, and <i>Acacia tetragonophylla</i> with low scattered trees of <i>Eucalyptus xerothermica</i> on brown clay loam on drainage areas/ floodplains and minor drainage lines.</p> <p>*Cenchrus mid tussock grassland (FP CcCsChfAciAaAinExEgCocd): Mid tussock grassland of <i>*Cenchrus ciliaris</i>, <i>*Cenchrus setiger</i>, and <i>Chrysopogon fallax</i> with tall open shrubland of <i>Acacia citrinoviridis</i>, <i>Acacia aptaneura</i>, and <i>Acacia incurvaneura</i> with low open woodland of <i>Eucalyptus xerothermica</i>, <i>Eucalyptus gamophylla</i>, and <i>Corymbia candida</i> subsp. <i>dipsodes</i> on brown clay loam on drainage areas/ floodplains.</p> <p>*Cenchrus tussock grassland (MA CcTtEuaChCaAbAtpAss): Tussock Grassland of <i>*Cenchrus ciliaris</i>, <i>Themeda triandra</i> and <i>Eulalia aurea</i> with Low Open Woodland of <i>Corymbia hamersleyana</i> and <i>Corymbia aspera</i> over High Open Shrubland of <i>Acacia bivenosa</i>, <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i> on brown loamy sand on levee banks of major drainage lines.</p> <p>Acacia low open forest (HS AcaoAaAprScaEriIAbTbrTw): Low Open Forest of <i>Acacia aptaneura</i>, <i>Acacia aneura</i> x <i>ayersiana</i> and <i>Acacia pruinocarpa</i> over Hummock Grassland of <i>Triodia epactia</i> and <i>Triodia</i> sp. Shovelanna Hill (S. van Leeuwen 3835) with Open Shrubland of <i>Eremophila forrestii</i> subsp. <i>forrestii</i>, <i>Grevillea berryana</i> and <i>Dodonaea petiolaris</i> on red brown loamy sand on stony plains.</p> <p>Acacia low open woodland (FP AaAinAte(±ExEg)CcEnpoChfBbClvAbl): Low open woodland of <i>Acacia aptaneura</i>, <i>Acacia incurvaneura</i>, and <i>Acacia tetragonophylla</i> (± <i>Eucalyptus xerothermica</i>, <i>Eucalyptus gamophylla</i>) over low open tussock grassland of <i>*Cenchrus ciliaris</i>, <i>Enneapogon polyphyllus</i>, <i>Chrysopogon fallax</i> with low scattered herbs of <i>*Bidens bipinnata</i>, <i>Arivela viscosa</i>, <i>Abutilon lepidum</i> on brown clay loam on drainage areas/ floodplains and minor drainage lines.</p> <p>Acacia low open woodland (SP Aa AsyErpdCcTt): Low open woodland of <i>Acacia aptaneura</i> over tall open shrubland <i>Acacia synchronia</i> over low sparse grassland of <i>Eriachne pulchella</i> subsp. <i>dominii</i>, <i>Cenchrus ciliaris</i> and <i>Themeda triandra</i> on red clay loam on stony plains and floodplains.</p> <p>Acacia low open woodland (SP AaAayAiArAadsAteSeahSeglErfEreTpTw PacI): Low open woodland of <i>Acacia aptaneura</i>, <i>Acacia ayersiana</i> (hybrid) and <i>Acacia incurvaneura</i> over tall open shrubland of <i>Acacia rhodophloia</i>, <i>Acacia adsurgens</i> and <i>Acacia tetragonophylla</i> over mid isolated shrubs of <i>Senna artemisioides</i> subsp. <i>helmsii</i> and <i>Senna glutinosa</i> subsp. <i>xluersenii</i> over low isolated shrubs of <i>Eremophila forrestii</i> subsp. <i>forrestii</i> and <i>Eremophila exilifolia</i> over mid scattered hummock grasses of <i>Triodia pungens</i> and <i>Triodia wiseana</i> with low scattered tussock grasses of <i>Paspalidium clementii</i> on red clay loam on stony plains.</p> <p>Acacia low woodland (FP AaAprAciRheAaCcChfAri): Low Woodland of <i>Acacia aptaneura</i>, <i>Acacia pruinocarpa</i> and <i>Acacia catenulata</i> subsp. <i>occidentalis</i> over Open Shrubland of <i>Eremophila forrestii</i> subsp. <i>forrestii</i>, <i>Dodonaea petiolaris</i> and <i>Sida ectogama</i> over Open Tussock Grassland of <i>Aristida contorta</i>, <i>Digitaria ammophila</i> and <i>Aristida inaequiglumis</i> on red orange clay loam on floodplains.</p> <p>Acacia low woodland (FP AcaoAaExErf Tp): Low Woodland of <i>Acacia catenulata</i> subsp. <i>occidentalis</i>, <i>Acacia aptaneura</i> and <i>Eucalyptus xerothermica</i> over Open Shrubland of <i>Eremophila</i></p>

Characteristic	Details
	<p><i>forrestii</i> subsp. <i>forrestii</i> over Open Hummock Grassland of <i>Triodia pungens</i> on red sandy loam on floodplains.</p> <p>Acacia low woodland (FP AciChAaAancApyPITtAriCc): Low Woodland of <i>Acacia citrinoviridis</i>, <i>Corymbia hamersleyana</i> and <i>Acacia aptaneura</i> over High Shrubland of <i>Acacia ancistrocarpa</i>, <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> and <i>Petalostylis labicheoides</i> over Very Open Tussock Grassland of <i>Themeda triandra</i>, <i>Aristida inaequiglumis</i> and *<i>Cenchrus ciliaris</i> on brown sandy loam on floodplains and medium drainage lines.</p> <p>Acacia low woodland (FP ApAaAprAsyErffPtoCcAriArc): Low Woodland of <i>Acacia paraneura</i>, <i>Acacia aptaneura</i> and <i>Acacia pruinocarpa</i> over Open Shrubland of <i>Acacia synchronicia</i>, <i>Eremophila forrestii</i> subsp. <i>forrestii</i> and <i>Ptilotus obovatus</i> over Open Tussock Grassland of *<i>Cenchrus ciliaris</i>, <i>Aristida inaequiglumis</i> and <i>Aristida contorta</i> on red brown loam on floodplains.</p> <p>Acacia low woodland (MI AaApr CcPacl ChClvBbDiaa): Low woodland of <i>Acacia aptaneura</i> and <i>Acacia pruinocarpa</i> over mid open tussock grassland of <i>Cenchrus ciliaris</i> over a low sparse grassland of <i>Paspalidium clementii</i> with low open hermland of <i>Cleome viscosa</i>, <i>Bidens bipinnata</i> and <i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i> with low scattered trees of <i>Corymbia hamersleyana</i> mid to low scattered trees on red silty clay loam on minor drainage lines and drainage areas.</p> <p>Acacia low woodland (SP AprAaAiAb Ts): Low Woodland of <i>Acacia pruinocarpa</i> and <i>Acacia aptaneura</i> over Scattered Shrubs of <i>Acacia inaequilatera</i> and <i>Acacia bivenosa</i> over Open Hummock Grassland of <i>Triodia</i> sp. Shovelanna Hill (S. van Leeuwen 3835) on red brown clay loam on stony plains.</p> <p>Acacia tall open to sparse shrubland (HS AaSeglErpIErtEnpoEmu): Tall open to sparse shrubland of <i>Acacia aptaneura</i> over mid sparse shrubland of <i>Senna glutinosa</i> subsp. <i>xluerssenii</i>, <i>Eremophila ?platycalyx</i>, and <i>Eremophila latrobei</i> over low scattered tussock grasses of <i>Enneapogon polyphyllus</i>, and <i>Eriachne mucronata</i> on brown silty loam on hillslopes and upper hillslopes/hillcrests.</p> <p>Acacia tall shrubland (FP ApyAancAbTp Cc AnlCh): Tall open shrubland of <i>Acacia pyrifolia</i> var. <i>pyrifolia</i>, <i>Acacia ancistrocarpa</i> and <i>Acacia bivenosa</i> over mid open hummock grassland of <i>Triodia pungens</i> with mid sparse tussock grasses of <i>Cenchrus ciliaris</i> with mid isolated shrubs of <i>Androcalva luteiflora</i> with low isolated trees of <i>Corymbia hamersleyana</i> on brown sandy clay loam on floodplains, drainage areas and minor drainage lines.</p> <p>Acacia tall shrubland to tall open shrubland (FP AaApAteSeglMamEnpoEmuAriTp): Tall shrubland to tall open shrubland of <i>Acacia aptaneura</i>, <i>Acacia paraneura</i> and <i>Acacia tetragonophylla</i> over mid to low scattered shrubs of <i>Senna glutinosa</i> subsp. <i>xluerssenii</i>, and <i>Maireana melanocoma</i> over low scattered, tussock and hummock grasses of <i>Enneapogon polyphyllus</i>, <i>Eriachne mucronata</i>, <i>Aristida inaequiglumis</i> and <i>Triodia pungens</i> on brown clay loam on stony plains and drainage areas/ floodplains.</p> <p>Corymbia low open woodland (GO CfCocdAhPI DopErhrErmuPaclCya Tp CyvCyh): Low open <i>Corymbia ferritcola</i> woodland, with occasional low trees of <i>Corymbia candida</i> subsp. <i>dipsodes</i>, over low tall sparse shrubland of <i>Acacia hamersleyensis</i> and <i>Petalostylis labicheoides</i> over mid sparse shrubland of <i>Dodonaea pachyneura</i> and <i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136) over mid sparse tussock grassland of <i>Eriachne mucronata</i>, <i>Paspalidium clementii</i> and <i>Cymbopogon ambiguous</i> with mid scattered hummock grasses of <i>Triodia pungens</i> with occasional mid scattered sedges of <i>Cyperus vaginatus</i> and <i>Cyperus hesperius</i> on black/brown clay loam in gorges.</p> <p>Eucalyptus mid open woodland (ME EvAcpCcTtEuaApyAciMgCyv Clv): Low open woodland of <i>Eucalyptus victrix</i> and <i>Acacia coriacea</i> subsp. <i>pendens</i> over mid open tussock grassland of <i>Cenchrus ciliaris</i>, <i>Themeda triandra</i> and <i>Eulalia aurea</i> open tussock grassland with <i>Acacia pyrifolia</i> var. <i>pyrifolia</i>, <i>Acacia citrinoviridis</i> and <i>Melaleuca glomerata</i> over tall sparse sedgeland of <i>Cyperus vaginatus</i> over sparse hermland of <i>Cleome viscosa</i> on red/ brown loamy sand on medium drainage lines.</p> <p>Eucalyptus woodland (MA EcrEvAciApyMgCcEuaTt): Woodland of <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> and <i>Eucalyptus victrix</i> over High Open Shrubland of <i>Acacia citrinoviridis</i>, <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> and <i>Melaleuca glomerata</i> over Tussock Grassland of *<i>Cenchrus ciliaris</i>, <i>Eulalia aurea</i> and <i>Themeda triandra</i> on brown clay loam on banks of major drainage lines.</p> <p>Senna mid sparse shrubland (SP SeglAsyAteApErcu): Mid sparse shrubland of <i>Senna glutinosa</i> subsp. <i>xluerssenii</i> with tall isolated shrubs of <i>Acacia synchronicia</i>, <i>Acacia tetragonophylla</i> and <i>Acacia paraneura</i> over low isolated shrubs of <i>Eremophila cuneifolia</i> over low scattered chenopods and grasses on stony plains.</p> <p>Senna mid to low sparse shrubland (FP SeoSesmSeglAaAsyAteArcEnpoDar): Mid to low sparse shrubland of <i>Senna artemisioides</i> subsp. <i>oligophylla</i>, <i>Senna</i> sp. Meekatharra (E. Bailey 1-36), and <i>Senna glutinosa</i> subsp. <i>xluerssenii</i> with tall scattered shrubs of <i>Acacia aptaneura</i>, <i>Acacia synchronicia</i>, and <i>Acacia tetragonophylla</i> over low scattered tussock grasses of <i>Aristida contorta</i>,</p>

Characteristic	Details
	<p><i>Enneapogon polyphyllus</i>, and <i>Dactyloctenium radulans</i> on brown clay loam on drainage areas/ floodplain.</p> <p>Triodia hummock grassland (CP TwTaEseAbPIApyy): Hummock Grassland of <i>Triodia wiseana</i> and <i>Triodia angusta</i> with Open Mallee of <i>Eucalyptus socialis</i> subsp. <i>eucentrica</i> and Open Shrubland of <i>Acacia bivenosa</i>, <i>Petalostylis labicheoides</i> and <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> on light brown clay loam on calcrete plains and rises.</p> <p>Triodia hummock grassland (HC TsTpEkkEg): Hummock Grassland of <i>Triodia</i> sp. Shovelanna Hill (S. van Leeuwen 3835) and <i>Triodia pungens</i> with Very Open Mallee of <i>Eucalyptus kingsmillii</i> subsp. <i>kingsmillii</i> and <i>Eucalyptus gamophylla</i> on red sandy loam on hill crests and upper hill slopes.</p> <p>Triodia hummock grassland (HC TwTbrTpEIIChAmaGrwhAb): Hummock Grassland of <i>Triodia wiseana</i>, <i>Triodia brizoides</i> and <i>Triodia pungens</i> with Low Open Woodland of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and <i>Corymbia hamersleyana</i> over High Open Shrubland of <i>Acacia maitlandii</i>, <i>Grevillea wickhamii</i> subsp. <i>hispidula</i> and <i>Acacia bivenosa</i> on red brown sandy loam on hill crests and upper hill slopes.</p> <p>Triodia hummock grassland (HS TbrTWAiAprHcErfrErpd): Hummock Grassland of <i>Triodia brizoides</i> and <i>Triodia wiseana</i> with High Open Shrubland of <i>Acacia inaequilatera</i>, <i>Acacia pruinocarpa</i> and <i>Hakea chordophylla</i> over Open Shrubland of <i>Eremophila fraseri</i> and <i>Eremophila platycalyx</i> subsp. <i>pardalota</i> on red loamy sand on lower hill slopes and footslopes.</p> <p>Triodia hummock grassland (HS TwEIIChHcAancAbAa): Hummock Grassland of <i>Triodia wiseana</i> with Low Open Woodland of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>, <i>Corymbia hamersleyana</i> and <i>Hakea chordophylla</i> and Open Shrubland of <i>Acacia ancistrocarpa</i>, <i>Acacia bivenosa</i> and <i>Acacia aptaneura</i> on red sandy loam on hill slopes.</p> <p>Triodia hummock grassland (ME TpTloExAciChPIApyyGoro): Hummock Grassland of <i>Triodia pungens</i> and <i>Triodia longiceps</i> with Low Woodland of <i>Eucalyptus xerothermica</i>, <i>Acacia citrinoviridis</i> and <i>Corymbia hamersleyana</i> over High Shrubland of <i>Petalostylis labicheoides</i>, <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> and <i>Gossypium robinsonii</i> on red brown clay loam on medium drainage lines and surrounding floodplains.</p> <p>Triodia hummock grassland (SP TpTb EgPIAbAanc): Hummock Grassland of <i>Triodia pungens</i> and <i>Triodia basedowii</i> with Open Mallee of <i>Eucalyptus gamophylla</i> and Shrubland of <i>Petalostylis labicheoides</i>, <i>Acacia bivenosa</i> and <i>Acacia ancistrocarpa</i> on red brown loamy sand on stony plains and footslopes.</p> <p>Triodia hummock grassland (SP Ts Ai): Hummock Grassland of <i>Triodia</i> sp. Shovelanna Hill (S. van Leeuwen 3835) with High Open Shrubland of <i>Acacia inaequilatera</i> on red brown loamy sand on lower hill slopes and stony plains.</p> <p>Triodia low hummock grassland (CP TragTpTwAbAsySeaoEse): Low hummock grassland of <i>Triodia angusta</i>, <i>Triodia pungens</i>, and <i>Triodia wiseana</i> with mid to tall sparse shrubland to scattered shrubs of <i>Acacia bivenosa</i> (wispy form), <i>Acacia synchronicia</i>, and <i>Senna artemisioides</i> subsp. <i>oligophylla</i> with low scattered tree of <i>Eucalyptus socialis</i> subsp. <i>eucentrica</i> on red-brown clay loam on calcrete stony plains and platforms.</p> <p>Triodia low hummock grassland (FP Tp(±Tw)AssAdErloEnpoTtChf): Low hummock grassland of <i>Triodia pungens</i>, ± <i>Triodia wiseana</i> with mid to tall sparse shrubland of <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>, <i>Acacia dictyophleba</i>, and <i>Eremophila longifolia</i> over mid to low sparse tussock grassland of <i>Enneapogon polyphyllus</i>, <i>Themeda triandra</i>, and <i>Chrysopogon fallax</i> on brown silty clay loam on drainage areas/ floodplains and minor drainage lines.</p> <p>Triodia low hummock grassland (FP Trag(±Tw)AbAsyAsiEgExCh): Low hummock grassland of <i>Triodia angusta</i>, ± <i>Triodia wiseana</i> with mid to low scattered shrubs of <i>Acacia bivenosa</i>, <i>Acacia synchronicia</i>, and <i>Acacia sibirica</i> with occasional low scattered trees of <i>Eucalyptus gamophylla</i>, <i>Eucalyptus xerothermica</i>, and <i>Corymbia hamersleyana</i> on brown clay loam on low slopes, drainage areas/ floodplains and undulating hills.</p> <p>Triodia low hummock grassland (HC TvTpEgEkAhAmaHcSeel): Low hummock grassland of <i>Triodia vanleeuwenii</i> and <i>Triodia pungens</i> with low sparse woodland of <i>Eucalyptus gamophylla</i> and <i>Eucalyptus kingsmillii</i> over tall sparse shrubland of <i>Acacia hamersleyensis</i>, <i>Acacia maitlandii</i> and <i>Hakea chordophylla</i> over low isolated shrubs of <i>Seringia elliptica</i> on red clay loam on hillcrests and summits.</p> <p>Triodia low hummock grassland (HS Ts(±TragTw)AbHallAadsSeahSeglErf): Low hummock grassland of <i>Triodia vanleeuwenii</i> ± <i>Triodia angusta</i>, and <i>Triodia wiseana</i> with mid to tall sparse shrubland to scattered shrubs of <i>Acacia bivenosa</i>, <i>Hakea lorea</i> subsp. <i>lorea</i>, and <i>Acacia adsurgens</i> over low scattered shrubs of <i>Senna artemisioides</i> subsp. <i>helmsii</i>, <i>Senna glutinosa</i> subsp. <i>xluerssenii</i>, and <i>Eremophila fraseri</i> subsp. <i>fraseri</i> on brown silty loam on undulating low hills.</p> <p>Triodia low hummock grassland (HS TvTpEIIcddSeelAspCaca HcAmaAhSeggMivErmuErla): Low hummock grassland of <i>Triodia vanleeuwenii</i> and <i>Triodia pungens</i> with low sparse woodland of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and <i>Corymbia deserticola</i> subsp. <i>deserticola</i> over with</p>

Characteristic	Details
	<p>low sparse shrubland of <i>Seringia elliptica</i>, <i>Acacia spondylophylla</i> and <i>Calytrix carinata</i> with tall isolated shrubs of <i>Hakea chordophylla</i>, <i>Acacia maitlandii</i> and <i>Acacia hamersleyensis</i> over mid isolated <i>Senna glutinosa</i> subsp. <i>glutinosa</i> and <i>Mirbelia viminalis</i> low isolated tussock grasses of <i>Eriachne mucronata</i> and <i>Eriachne lanata</i> on red clay loam on hill crests, hill slopes and ridgelines/ tops.</p> <p>Triodia low hummock grassland (HS TvTpHcAiHIIAmaAbSeggAsp EIIApr): Low hummock grassland of <i>Triodia vanleeuwenii</i> and <i>Triodia pungens</i> with tall isolated shrubs of <i>Hakea chordophylla</i>, <i>Acacia inaequilatera</i> and <i>Hakea lorea</i> subsp. <i>lorea</i> over mid isolated shrubs of <i>Acacia maitlandii</i>, <i>Acacia bivenosa</i> and <i>Senna glutinosa</i> subsp. <i>glutinosa</i> over low isolated shrubs of <i>Acacia spondylophylla</i> with low isolated trees of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and <i>Acacia pruinocarpa</i> on red silty clay loam on hillcrests/ upper hillslopes and undulating low hills.</p> <p>Triodia low hummock grassland (HS TwAinAbAadsEgEIICh): Low hummock grassland of <i>Triodia wiseana</i> with mid to tall sparse shrubland to scattered shrubs of <i>Acacia inaequilatera</i>, <i>Acacia bivenosa</i>, and <i>Acacia adsurgens</i> with low scattered trees of <i>Eucalyptus gamophylla</i>, <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>, and <i>Corymbia hamersleyana</i> on brown silty loam on undulating hills and lower slopes.</p> <p>Triodia mid hummock grassland (HS Tw AiErfrSeglSegg Ptro): Mid hummock grassland of <i>Triodia wiseana</i> with tall isolated shrubs of <i>Acacia inaequilatera</i> over mid isolated shrubs of <i>Eremophila fraseri</i>, <i>Senna glutinosa</i> subsp. <i>xluerssenii</i> and <i>Senna glutinosa</i> subsp. <i>glutinosa</i> over low isolated shrubs of <i>Ptilotus rotundifolius</i> mid to tall scattered shrubs on red clay loam on low hills, slopes and undulating hills.</p> <p>Triodia mid open hummock grassland (FP Tp EgAbAteAsiAancAaCc): Mid open hummock grassland of <i>Triodia pungens</i> with low open <i>Eucalyptus gamophylla</i> woodland over mid open shrubland of <i>Acacia bivenosa</i> and <i>Acacia tetragonophylla</i> with tall isolated shrubs of <i>Acacia sibirica</i>, <i>Acacia ancistrocarpa</i> and <i>Acacia aptaneura</i> over mid sparse tussock grassland of <i>Cenchrus ciliaris</i> on red sandy clay loam on floodplains.</p> <p>Triodia low hummock grassland (GO TpDopAmAniAhPI CfErmu): Mid open hummock grassland of <i>Triodia pungens</i> with mid sparse shrubland of <i>Dodonaea pachyneura</i>, <i>Acacia monticola</i> and <i>Androcalva luteiflora</i> with tall sparse shrubland of <i>Acacia hamersleyensis</i> and <i>Petalostylis labicheoides</i> with low sparse woodland of <i>Corymbia ferritcola</i> over low sparse tussock grassland of <i>Eriachne mucronata</i> on red sandy clay loam cliffs, upper slopes, gorges and gullies.</p> <p>Triodia low hummock grassland (HS TwTbrAbAiErfAsp): Mid open hummock grassland of <i>Triodia wiseana</i> and <i>Triodia brizoides</i> with mid to tall open shrubland of <i>Acacia bivenosa</i>, <i>Acacia inaequilatera</i> and <i>Eremophila fraseri</i> subsp. <i>fraseri</i> over low scattered shrubs of <i>Acacia spondylophylla</i> on red silty loam on hillslopes, hillcrest/ upper hillslopes and undulating low hills.</p> <p>Triodia low hummock grassland (SP TwTpAiAadsAancAsiApr Segg): Mid open hummock grassland of <i>Triodia wiseana</i> and <i>Triodia pungens</i> with tall sparse shrubs of <i>Acacia inaequilatera</i>, <i>Acacia adsurgens</i> and <i>Acacia ancistrocarpa</i> with isolated low trees of <i>Acacia sibirica</i> and <i>Acacia pruinocarpa</i> over mid isolated shrubs of <i>Senna glutinosa</i> subsp. <i>glutinosa</i> on red clay loam on stonyplains, floodplains and minor drainage lines.</p> <p>Triodia open hummock grassland (FP TscTpExAaAprAteAssGrwh): Open Hummock Grassland of <i>Triodia schinzii</i> and <i>Triodia pungens</i> with Low Open Woodland of <i>Eucalyptus xerothermica</i>, <i>Acacia aptaneura</i> and <i>Acacia pruinocarpa</i> over Scattered Shrubs of <i>Acacia tetragonophylla</i>, <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i> and <i>Grevillea wickhamii</i> subsp. <i>hispidula</i> on red brown clay loam on floodplains.</p> <p>Triodia open hummock grassland (HS TsTpTbAaAprAwAteEreEriI): Open Hummock Grassland of <i>Triodia</i> sp. Shovelanna Hill (S. van Leeuwen 3835), <i>Triodia pungens</i> and <i>Triodia basedowii</i> with Low Open Woodland of <i>Acacia aptaneura</i>, <i>Acacia pruinocarpa</i> and <i>Acacia wanyu</i> and Open Shrubland of <i>Acacia tetragonophylla</i>, <i>Eremophila exilifolia</i> and <i>Eremophila latrobei</i> subsp. <i>latrobei</i> on red sandy loam on hill slopes.</p> <p>Triodia open hummock grassland (SP TIAancApaAprCh): Open Hummock Grassland of <i>Triodia lanigera</i> with Open Shrubland of <i>Acacia ancistrocarpa</i> and <i>Acacia pachyacra</i> and Scattered Low Trees of <i>Acacia paraneura</i>, <i>Acacia pruinocarpa</i> and <i>Corymbia hamersleyana</i> on red sandy loam on stony plains.</p> <p>Vegetation mapping is available in Appendix D.</p>
Fauna habitats	<p>Biologic (2017, 2020, 2022b and 2022c) identified the following nine vertebrate fauna habitats within the application area:</p> <p>Hillcrest / Hill slope: These fauna habitats tend to be more open and structurally simple due to their recent depositional history than other fauna habitats, and are dominated by varying species of spinifex. A common feature of these habitats is a rocky substrate, often with exposed bedrock, and</p>

Characteristic	Details
	<p>skeletal red soils. These are usually dominated by <i>Eucalyptus</i> woodlands, <i>Acacia</i> and <i>Grevillea</i> scrublands and <i>Triodia</i> spp. low hummock grasslands.</p> <p>Breakaway / Cliff: Breakaways/Cliffs are rugged, incised rocky hills and ranges. They tend to contain large rock fragments and more rock outcropping than other fauna habitats. Significant habitat features such as caves were sometimes encountered in this habitat type. Vegetation can be dense and complex in areas of soil deposition or sparse and simple where erosion has occurred.</p> <p>Gorge / Gully: Gorges and gullies are rugged, steep-sided valleys incised into the surrounding landscape. Gorges tend to be deeply incised, with vertical cliff faces, while gullies are more open (but not as open as Minor Drainage Lines). Caves and rock pools are most often encountered in this habitat type. Vegetation can be dense and complex in areas of soil deposition or sparse and simple where erosion has occurred.</p> <p>Drainage Area / Floodplain: Characterised by <i>Eucalyptus xerothermica</i> and <i>Corymbia hamersleyana</i> woodland over broad-leafed <i>Acacia</i> shrubland on sandy loam soils sometimes with exposed rocky areas. These can have high vegetation density, complexity and diversity, and because they tend to occur on accretional or depositional areas, often have deeper and richer soils than other fauna habitats. Grasses tend to be dominated by tussock grasses rather than spinifex, or the weed Buffel Grass *<i>Cenchrus ciliaris</i>.</p> <p>Minor Drainage Line: Located within the minor gullies and depressions, generally through the Crest/Slope habitat. Consists primarily of <i>Acacia</i> low shrubland. The understorey generally lacks density and often consists solely of sparse tussock grassland, often including the weed Buffel Grass *<i>Cenchrus ciliaris</i> where it has been introduced. The substrate can be sandy in places but generally consists of a skeletal loam gravel or stone.</p> <p>Major Drainage Line: Major Drainage Lines comprise mature River Red Gums (<i>Eucalyptus camaldulensis</i>), Coolibahs and stands of Silver Cadjeput (<i>Melaleuca argentea</i>) over river pools. Open, sandy or gravelly riverbeds characterise this habitat type. In ungrazed areas, the vegetation adjacent to the main channel or channels is denser, taller and more diverse than adjacent terrain and can include reedbeds around pools.</p> <p>Mulga Woodland: This habitat includes woodlands and other ecosystems in which Mulga (<i>Acacia aneura</i>) is dominant, either as the principal <i>Acacia</i> species or mixed with others. It consists of disintegrating groves on stony soils with spinifex. This habitat type is grouped with other habitat occurring on the plains; however it is noted that small groves of Mulga occur on ridgelines.</p> <p>Sand Plain: Sand Plain habitat is characterised by relatively deep sandy soils supporting dense spinifex grasslands and sparse shrubs. This habitat transitions into patches of Mulga in places. This habitat often occurs as terraces along Major Drainage Lines.</p> <p>Stony Plain: These are erosional surfaces of gently undulating plains, ridges and associated footslopes. Mainly support hard spinifex (and occasionally soft spinifex) with a mantle of gravel and pebbles.</p> <p>Habitat mapping is available in Appendix D.</p>
Vegetation condition	<p>The vegetation survey (Biologic, 2021a, 2021b, 2022a; Onshore Environmental, 2014) and aerial imagery indicate the vegetation within the proposed clearing area is in Excellent to Completely Degraded (Trudgen, 1991) condition.</p> <p>The full Trudgen (1991) condition rating scale is provided in Appendix C.</p>
Climate	<p>The application area is located in an arid zone with an annual rainfall average of approximately 323.8 millimetres (BoM, 2023).</p>
Soil description	<p>The soil within the application area is mapped as soil units BE6, Fa13, Fa14, and Oc64 (BHP, 2023a; GIS Database). These soil units are described by Northcote et al, (1960-68) as:</p> <p>BE6: Extensive flat and gently sloping plains, which sometimes have a surface cover of gravels and on which redbrown hardpan frequently outcrops: chief soils are shallow earthy loams.</p> <p>Fa13: Ranges of banded jaspilite and chert along with shales, dolomites, and iron ore formations; some areas of ferruginous duricrust as well as occasional narrow winding valley plains and steeply dissected pediments. This unit is largely associated with the Hamersley and Ophthalmia Ranges. The soils are frequently stony and shallow and there are extensive areas without soil cover: chief soils are shallow stony earthy loams.</p> <p>Fa14: Steep hills and steeply dissected pediments on areas of banded jaspilite and chert along with shales, dolomite, and iron ore formations; some narrow winding valley plains: chief soils are shallow stony earthy loams.</p> <p>Oc64: Low stony hills and dissected pediments on granite with occasional basic dykes: chief soils are hard, alkaline red soils having shallow stony A horizons.</p>

Characteristic	Details
Land systems and land degradation risk	<p>The application area is located within the Boolgeeda, Elimunna, McKay, Newman, River, and Rocklea land systems (DPIRD, 2023). These land systems are described by van Vreeswyk et al. (2004) as:</p> <p>Boolgeeda land system: Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands. Vegetation is generally not prone to degradation and the system is not susceptible to erosion.</p> <p>Elimunna land system: Stony plains on basalt supporting sparse acacia and cassia shrublands and patchy tussock grasslands. Gilgai plains and drainage floors support tussock grass vegetation attractive to grazing animals and prone to degradation if grazing pressure is excessive. Some drainage floors are slightly susceptible to erosion but most of the system is inherently resistant.</p> <p>McKay land system: Hills, ridges, plateaux remnants and breakaways of meta sedimentary and sedimentary rocks supporting hard spinifex grasslands. Some areas are poorly accessible and the system is not prone to degradation or soil erosion.</p> <p>Newman land system: Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands. The system contains iron ore deposits which are currently being mined and deposits which are likely to be mined in the future. Spinifex is the dominant vegetation and the system is burnt fairly frequently.</p> <p>River land system: Active flood plains and major rivers supporting grassy eucalypt woodlands, tussock grasslands and soft spinifex grasslands. The system is largely stabilised by buffel and spinifex and accelerated erosion is uncommon. However, susceptibility to erosion is high or very high if vegetative cover is removed.</p> <p>Rocklea land system: Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands. The system is subject to fairly regular burning. The system has very low erosion hazard.</p>
Waterbodies	The desktop assessment and aerial imagery indicated that several minor, non-perennial watercourses including Whaleback Creek transect the area proposed to be cleared (BHP, 2023a; GIS Database).
Hydrogeography	<p>The application area is located within the Pilbara Groundwater Area, which is legislated by the <i>R/VI Act 1914</i> (GIS Database). The mapped groundwater salinity is 500-1,000 milligrams per litre total dissolved solids which is described as marginal (GIS Database).</p> <p>The application area is located within the Newman Water Reserve, which is legislated by the <i>CAWS Act 1947</i> (GIS Database). The majority of the Newman Water Reserve (approximately 97 per cent) is listed as a Priority 1 Public Drinking Water Source Area (PDWSA) (GIS Database). The rest of the reserve (approximately 2 per cent) is listed as a Priority 3 PDWSA (GIS Database).</p>
Flora	<p>There were no Threatened flora species recorded within the application area (BHP, 2023a; GIS Database). There were five Priority flora species recorded within the application area (BHP, 2023a).</p> <p>Mapping with the location of the Priority flora within the application area is available in Appendix D.</p>
Ecological communities	None of the vegetation associations or landforms identified within the boundaries of the application area are associated with a TEC or PEC (Biologic, 2021a; 2021b; 2022a; Onshore Environmental, 2014).
Fauna	<p>There were 10 fauna species of conservation significance recorded within the application area (BHP, 2023a).</p> <p>Mapping with the location of the conservation significant fauna within the application area is available in Appendix D.</p>

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p>Principle (a): <i>"Native vegetation should not be cleared if it comprises a high level of biodiversity."</i></p> <p><u>Assessment:</u></p> <p>The vegetation within the application area is represented in the same condition within the broader region and is not considered to be of outstanding biodiversity in the</p>	<p>May be at variance</p> <p>(as per CPS 5617/5)</p>	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>bioregion (BHP, 2023a). None of the vegetation associations recorded within the application area were indicative of any known or mapped Priority Ecological Communities or Threatened Ecological Communities (BHP, 2023a). The Priority flora recorded within the application area have been previously assessed are unlikely to be significantly impacted by the proposed amendment given that almost half of the approved clearing has already occurred.</p> <p>Twenty seven weed species have been recorded within the application area (BHP, 2023a). One of these species (*<i>Tamarix aphylla</i>) is listed as a Declared Pest. Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the continued implementation of a weed management condition.</p>		
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The application area contains nine fauna habitats that extend beyond the boundaries of the application area and are common in the surrounding region (BHP, 2023a). The proposed amendment is unlikely to significantly impact conservation significant fauna present in the application area given the high mobility of the species and the lack of natural habitat in the application area.</p>	<p>May be at variance</p> <p>(as per CPS 5617/5/)</p>	<p>Yes</p> <p>(see section 3.2)</p>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>There are no records of Threatened flora occurring within the application area (BHP, 2023a; GIS Database). In previous decision reports (CPS 5617/1 and CPS 5617/2) <i>Lepidium catapycnon</i> was identified as a Threatened flora species occurring within the application area. However, this species has been reclassified to a Priority 4 species, with potential impacts assessed in decision reports CPS 5617/3, 5617/4, and 5617/5.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 5617/5)</p>	<p>No</p>
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The desktop assessment shows the application area is intersected by a small portion of a mapped Threatened Ecological Community (TEC) buffer zone (GIS Database). However, the field surveys revealed that the vegetation types present in the application area do not correspond to any known or mapped TECs (BHP, 2023a).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 5617/5)</p>	<p>No</p>
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The application area falls within the Pilbara region of the Interim Biogeographic Regionalisation of Australia (GIS Database). Over 99 percent of the pre-European vegetation still exists in the Pilbara bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation associations 18 and 82 (GIS Database). These vegetation associations have not been extensively cleared as over 99 per cent of the pre-European extent of these vegetation associations remain uncleared at both state and bioregional level (Government of Western Australia, 2019).</p>	<p>Not at variance</p> <p>(as per CPS 5617/5)</p>	<p>No</p>
<p><u>Principle (h):</u> <i>“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></p> <p><u>Assessment:</u></p> <p>Given the distance to the nearest mapped conservation area (64 kilometres), the proposed clearing is unlikely to have an impact on the environmental values of any conservation areas (GIS Database).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 5617/5)</p>	<p>No</p>
Environmental value: land and water resources		

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>Principle (f): <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>There are numerous ephemeral watercourses within the application area (GIS Database). These drainage lines are widespread throughout the surrounding area (GIS Database). The most significant ephemeral watercourse that passes through the application area is Whaleback Creek (GIS Database). Fifteen out of the 45 vegetation types present in the application area grow in association with these drainage lines (see Appendix A). Any potential impacts to Whaleback Creek may be minimised by the implementation of a watercourse management condition.</p>	<p>At variance</p> <p>(as per CPS 5617/5)</p>	No
<p>Principle (g): <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>Some of the land systems where the application area is located are susceptible to erosion (see Appendix A). Noting the location of the application area, the proposed clearing is likely to have an appreciable impact on land degradation. Potential impacts from land degradation as a result of the proposed clearing may be minimised by the continued implementation of a staged clearing condition.</p>	<p>May be at variance</p> <p>(as per CPS 5617/5)</p>	No
<p>Principle (i): <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.”</i></p> <p><u>Assessment:</u></p> <p>There are no permanent watercourses within the application area, however, there are several drainage lines that intersect the application area (GIS Database). The application area is located within Newman Water Reserve, listed as a P1 and P3 PDWSA (GIS Database). Some mining operations are ‘compatible with conditions’ in a P1 Public Drinking Water Source Area (DWER, 2023). The proposed clearing is unlikely to cause deterioration in the quality of surface or underground water.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 5617/5)</p>	<p>Yes</p> <p>(see section 3.2)</p>
<p>Principle (j): <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>With an average annual rainfall of 323.8 millimetres and an average annual evaporation rate of 3,200-3,600 millimetres there is likely to be little surface flow during normal seasonal rains (BoM, 2023). Whilst large rainfall events may result in the flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 5617/5)</p>	No

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 Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)

Condition	Description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.

Condition	Description
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Biological survey mapping

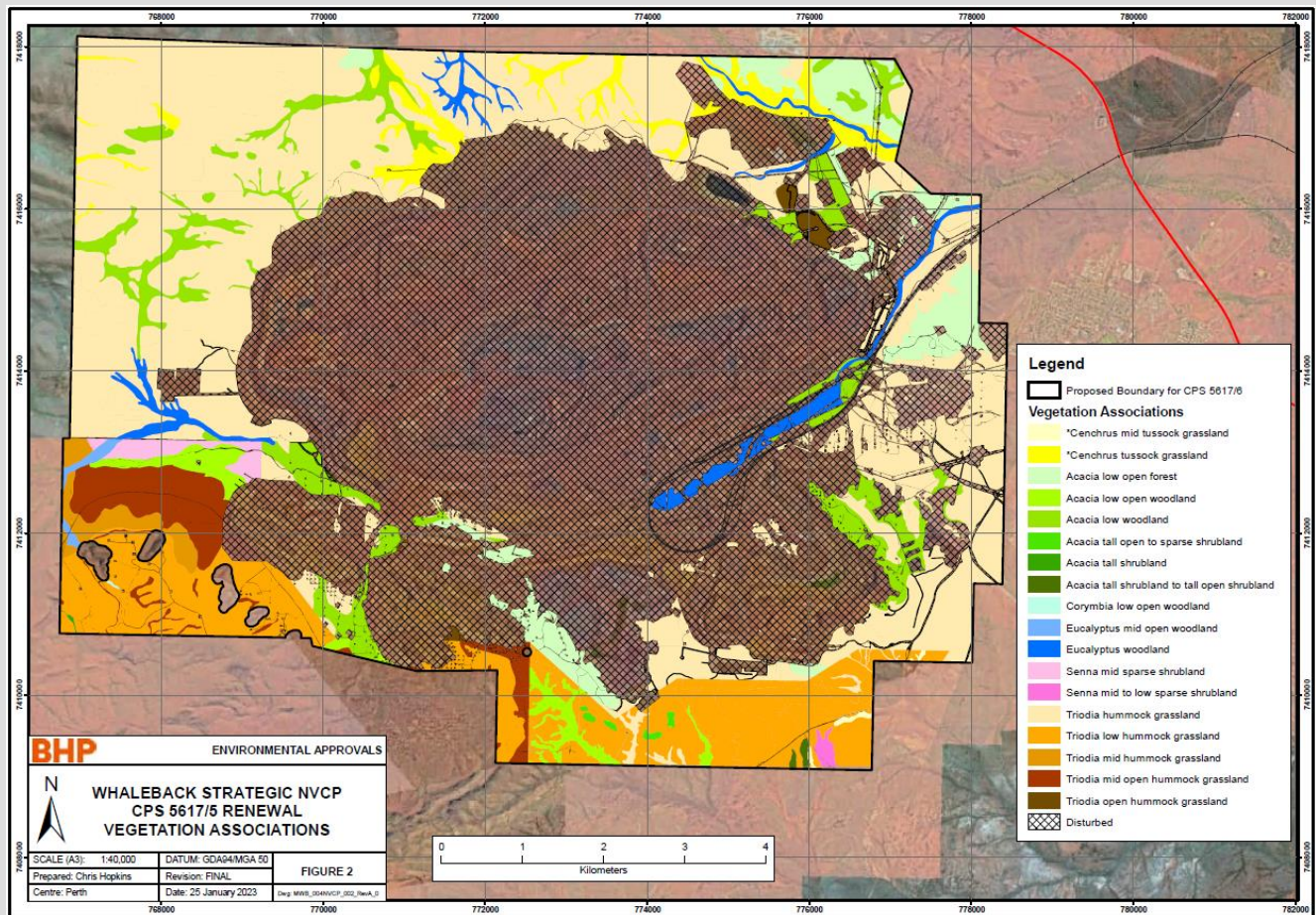


Figure 1. Vegetation mapping of the application area (BHP, 2023a)

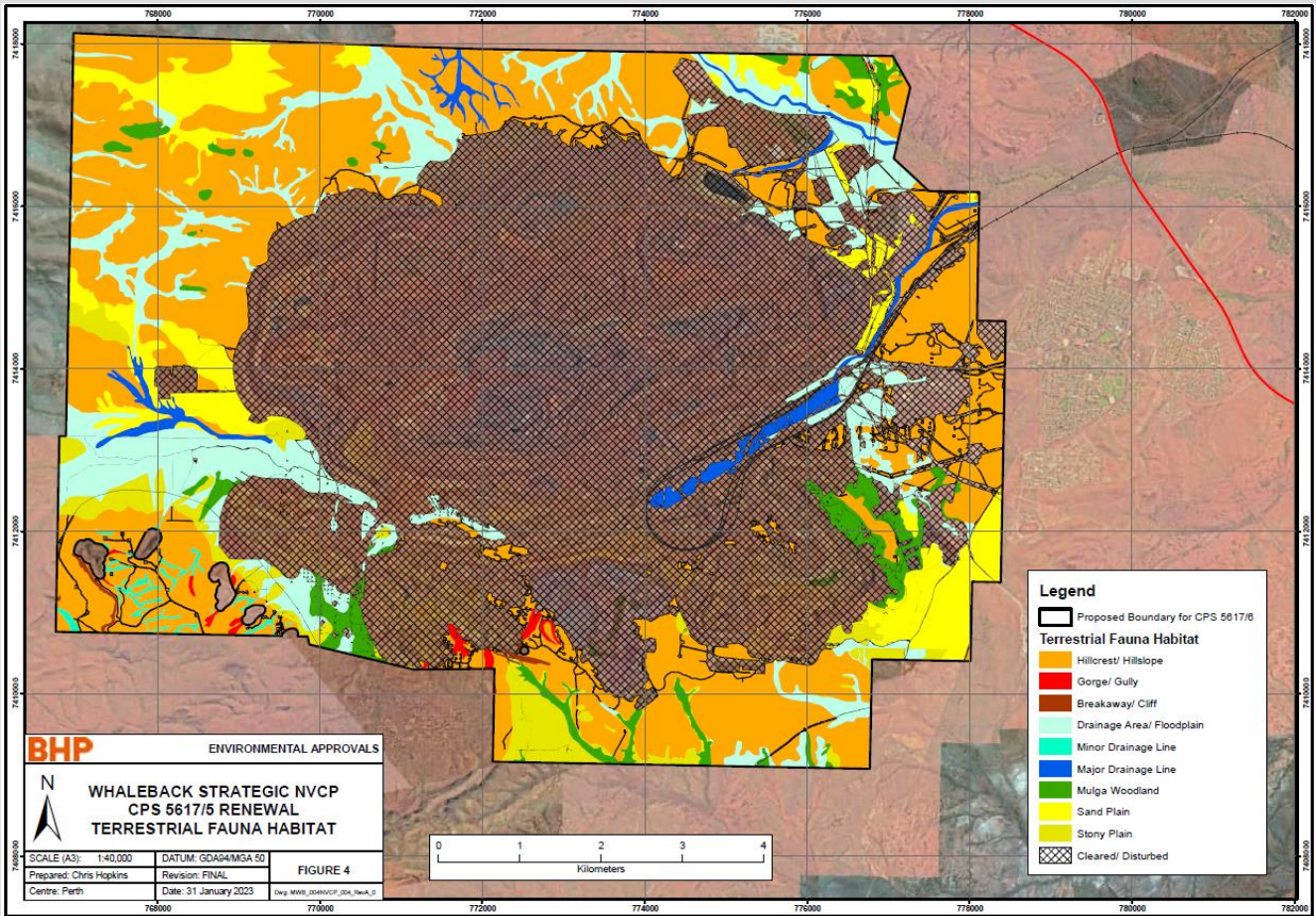


Figure 2. Fauna habitat mapping of the application area (BHP, 2023a)

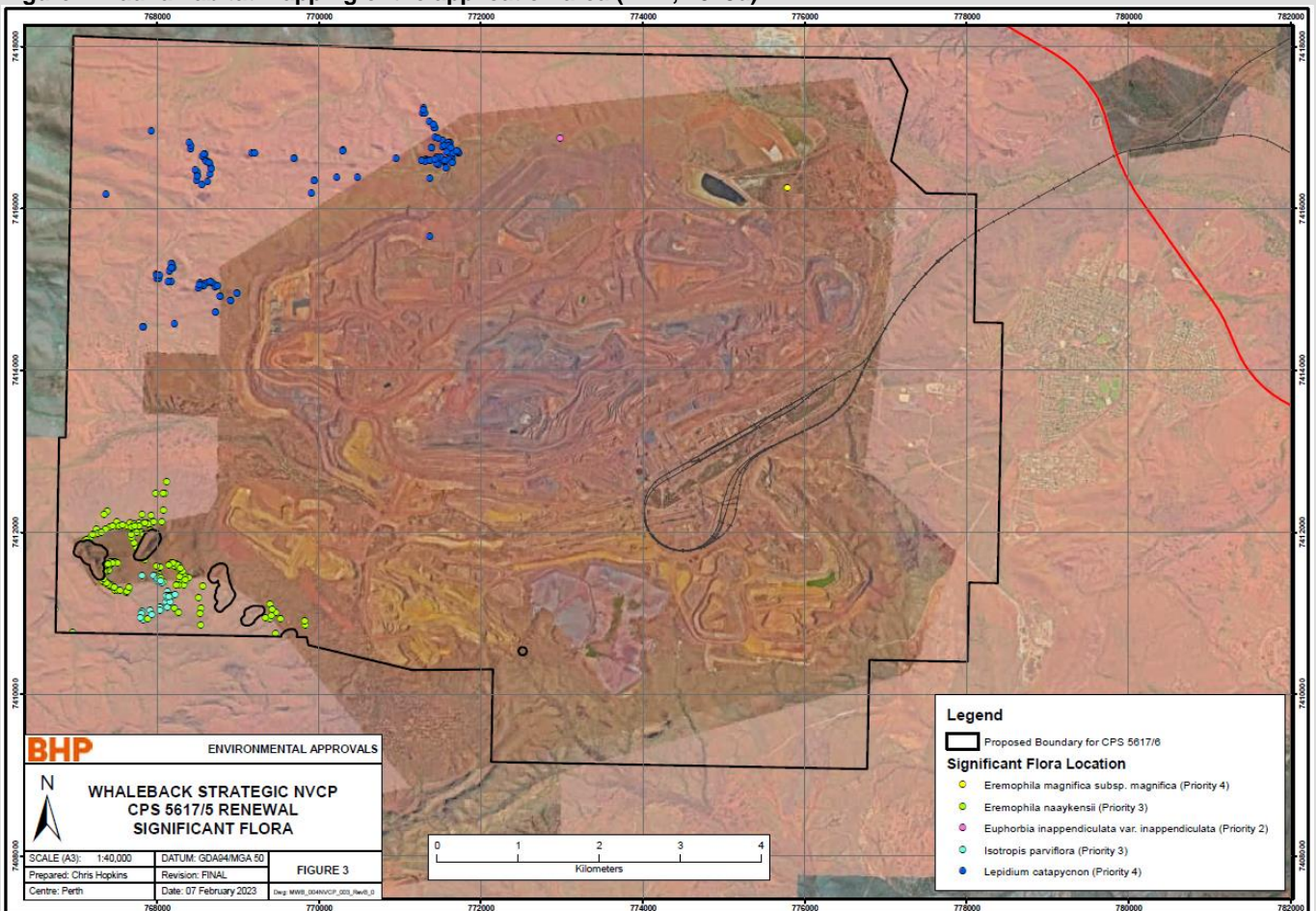


Figure 3. Location of Priority flora in the application area (BHP, 2023a)

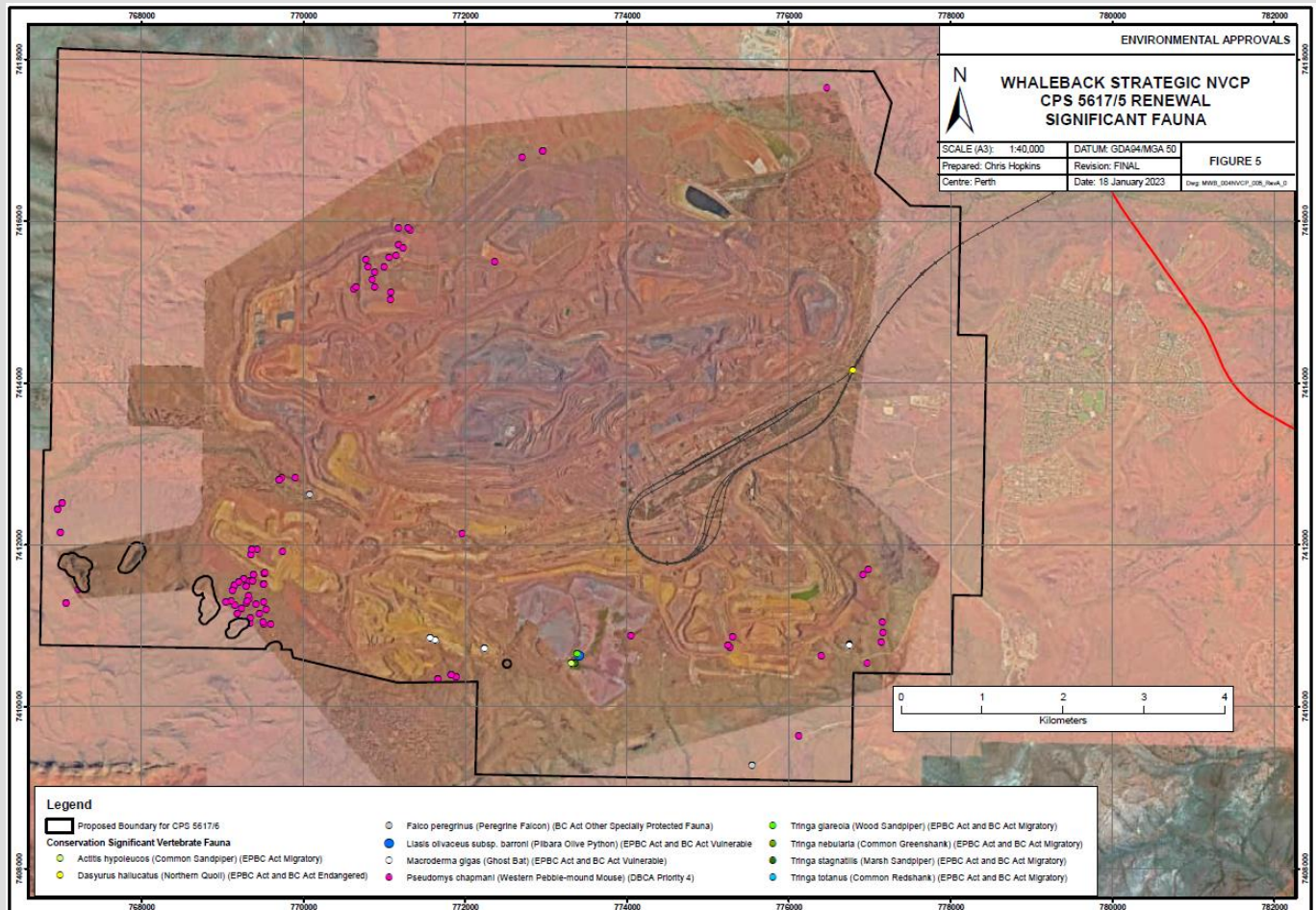


Figure 4. Location of conservation significant fauna in the application area (BHP, 2023a)

Appendix E. Sources of information

E.1. GIS databases

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

- Aboriginal Heritage Places (DPLH-001)
- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- 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)

E.2. References

BHP (2022) BHP Iron Ore Annual Environmental Report July 2021- June 2022. Report prepared for the Department of Mines, Industry Regulation and Safety.

- BHP (2023a) Application to amend NVCP CPS 5617/5 Whaleback Strategic NVCP – Native Vegetation Clearing Permit Amendment Application Supporting Document, February 2023.
- BHP (2023b) Clearing permit application form, CPS 5617/6, received 22 February 2023.
- Biologic (2017) *Consolidated Fauna Habitat Mapping 2017*. Unpublished report prepared for BHP Pty Ltd.
- Biologic (2020) *Western Ridge Targeted Vertebrate Fauna Survey*. Unpublished report prepared for BHP Pty Ltd.
- Biologic (2021a) *Western Ridge Pipeline Reconnaissance Flora and Vegetation Survey*. Unpublished report prepared for BHP Pty Ltd.
- Biologic (2021b) *Western Ridge Single Season Detailed Flora and Vegetation Survey*. Unpublished report prepared for BHP Pty Ltd.
- Biologic (2022a) *Paddy Bore Area Reconnaissance Flora and Vegetation Survey*. Unpublished report prepared for BHP Pty Ltd.
- Biologic (2022b) *Western Ridge Pipelines Targeted Fauna Survey*. Unpublished report prepared for BHP Pty Ltd.
- Biologic (2022c) *Western Paddy Bore Vertebrate Fauna Assessment*. Unpublished report prepared for BHP Pty Ltd.
- Bureau of Meteorology (BoM) (2023) Bureau of Meteorology Website – Climate Data Online, Marble Bar. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 12 April 2023).
- Department of Environment Regulation (DER) (2014) *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf
- 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 13 April 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://maps.agric.wa.gov.au/nrm-info/> (Accessed 13 April 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.pdf#:~:text=This%20Procedur e%3A%20Native%20vegetation%20clearing%20permit%20outlines%20how,%28EP%20Act%29%20and%20to%20ma nage%20granted%20clearing%20permits
- Department of Water and Environmental Regulation (DWER) (2023) Advice received in relation to Clearing Permit Application CPS 5617/6. Department of Water and Environmental Regulation, Western Australia, May 2023.
- 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
- 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>
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68) Atlas of Australian Soils, Sheets 1 to 10, with explanatory data. CSIRO and Melbourne University Press: Melbourne.
- Onshore Environmental (2014) *Consolidated Pilbara Vegetation Mapping*. Unpublished report prepared for BHP Pty Ltd.
- Trudgen, M.E. (1991) Vegetation condition scale in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.
- van Vreeswyk, A M, Leighton, K A, Payne, A L, and Hennig, P. (2004), *An inventory and condition survey of the Pilbara region, Western Australia*. Department of Agriculture, Western Australia, Perth. Technical Bulletin 92.

4. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016</i> , Western Australia
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DAWE	Department of Agriculture, Water and the Environment, 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)
DoEE	Department of the Environment and Energy (now DAWE)
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	<i>Environmental Protection Act 1986</i> , Western Australia

EPA	Environmental Protection Authority, Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (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	<i>Rights in Water and Irrigation Act 1914</i> , 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.