



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	10170/1
Permit type:	Purpose Permit
Applicant name:	Abra Mining Pty Limited
Application received:	27 April 2023
Application area:	70 hectares
Purpose of clearing:	Mineral Production and Associated Activities
Method of clearing:	Mechanical Removal
Tenure:	General Purpose Lease 52/292 Mining Lease 52/776 Miscellaneous Licences 52/194, 52/198, 52/210, 52/240
Location (LGA area):	Shire of Meekatharra
Colloquial name:	Abra Base Metals Project

1.2. Description of clearing activities

Abra Mining Pty Limited proposes to clear up to 70 hectares of native vegetation within a boundary of approximately 1065 hectares, for the purpose of mining related infrastructure (Abra Mining, 2023). The project is located approximately 170 kilometres south of Newman, within the Shire of Meekatharra (GIS Database).

The application is to allow for new underground mining operations including ore processing via conventional flotation process plant to produce lead/silver concentrate (Abra Mining, 2023). The clearing permit has been applied for to cover the clearing associated with these works and to allow for additional infrastructure on the mine tenement (Abra Mining, 2023).

Native vegetation clearing was undertaken in the eastern portion of the application area under CPS 8558/1 where a total of 52.0853 hectares had been cleared to the end of 2021/2022 for the construction of an airstrip, this clearing has been completed and the airstrip is now operational (Abra Mining, 2023).

Native vegetation clearing was undertaken in the western portion of the application area under CPS 8234/1 where a total of 114.025 hectares had been cleared to the end of 2021/2022 for mineral production including the construction of infrastructure including tailing storage facilities (TSFs), borrow pits and storage areas (Abra Mining, 2023).

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	18 July 2023
Decision area:	70 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 27 April 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), 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 assessment identified that the proposed clearing may result in:

- 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 conservation significant flora;
- loss of native vegetation that is suitable foraging habitat several conservation significant fauna species;
- potential land degradation in the form of wind erosion; and

- potential impacts to riparian vegetation and surface water.

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 lead to long-term adverse impacts on 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;
- undertake slow directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity which will minimise impact to individuals;
- watercourse management condition to reduce the impacts to surface water and riparian vegetation; and
- staged clearing – the purpose for which the clearing is authorised is enacted within 6 months of the authorised clearing being undertaken.

1.5. Site map

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

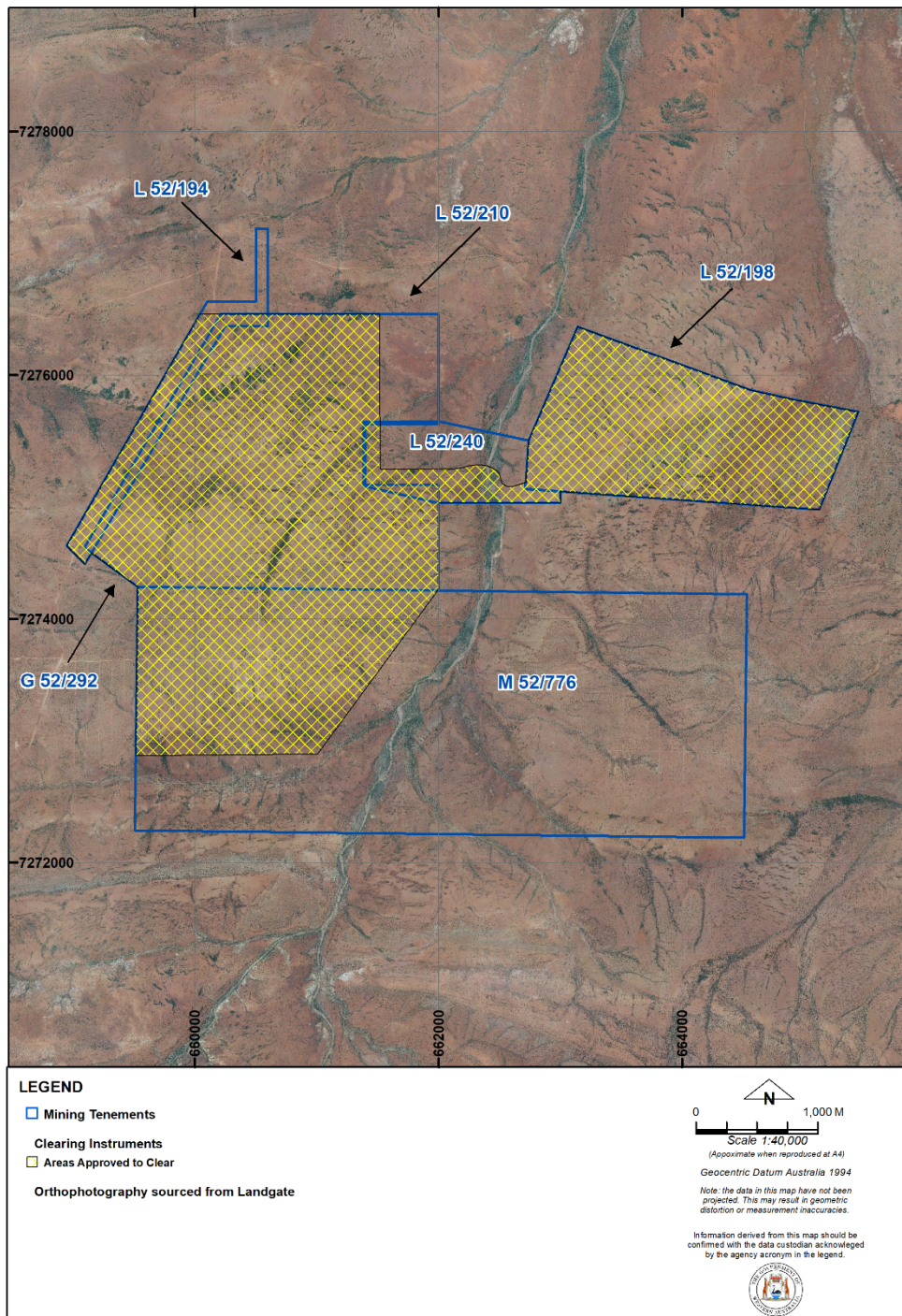


Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit.

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)
- *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 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

Evidence was submitted by the applicant, demonstrating that avoidance and mitigation measures such as those listed below will be undertaken:

- infrastructure has been located to minimise impacts on drainage lines;
- development has been kept compact to minimise the clearing envelope;
- Abra Mining have developed an EMS (Environmental Management System) to manage environmental impacts associated with its mining operations;
- detention basins will be prepared to contain sediment off disturbed areas prior to discharge to the environment as per Abra Mining EMS water monitoring procedure;
- all personnel are to be inducted on the importance of minimising clearing and disturbance;
- all clearing will be supervised by the relevant site supervisor (Abra Mining, 2023).

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

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 identified that the impacts of the proposed clearing present a risk to biological values (fauna and flora). The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

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

Assessment

Two field surveys were carried out in April and October 2018 (Stantec, 2018; 2019). A total 101 vascular flora species, representing 25 families and 58 genera were recorded during the field surveys (Stantec, 2018; 2019). No conservation significant flora species were recorded during the field survey, however four Priority flora could potentially occur (Stantec, 2018; 2019; GIS Database):

Eremophila gracillima, Priority 3, is a low flat shrub growing 1.2 metres wide and can be found inhabiting stony flats (Western Australian Herbarium, 1998-). This species has been recorded at two locations primarily within the Gascoyne Interim Biogeographic Regionalisation for Australia (IBRA) region (Western Australian Herbarium, 1998-). As suitable habitat is present within the application area, this conservation significant flora species may potentially occur (Stantec, 2018; 2019). As suitable habitat is widespread within the region, the proposed clearing would not significantly impact the conservation status of the species and impacts can be managed via the avoid and minimise condition.

Eremophila humilis, Priority 1, is a low rounded shrub growing 0.3 metres high and can be found inhabiting stony clay and loam soils on rocky ridges (Western Australian Herbarium, 1998-). This species has been recorded at five locations primarily within the Gascoyne IBRA region (Western Australian Herbarium, 1998-). As suitable habitat is present within the application area, this conservation significant flora species may potentially occur (Stantec, 2018; 2019). As suitable habitat is widespread within the region, the proposed clearing would not significantly impact the conservation status of the species and impacts can be managed via the avoid and minimise condition.

Eremophila rigida, Priority 3, is a bushy shrub growing 0.3-4 metres high and can be found inhabiting red sand alluvium on hardpan plains and stony clay depressions (Western Australian Herbarium, 1998-). This species has been recorded at nine locations primarily within the Gascoyne and Pilbara IBRA regions (Western Australian Herbarium, 1998-). As suitable habitat is present within the application area, this conservation significant flora species may potentially occur (Stantec, 2018; 2019). As suitable habitat is widespread within the region, the proposed clearing would not significantly impact the conservation status of the species and impacts can be managed via the avoid and minimise condition.

Isotropis forrestii, Priority 1, is an erect shrub growing 0.4-1.5 metres and can be found inhabiting stony clay loam and sandy alluvium along drainage lines (Western Australian Herbarium, 1998-). This species has been recorded at six locations primarily within the Carnarvon, Gascoyne and Pilbara IBRA regions (Western Australian Herbarium, 1998-). As suitable habitat is present within the application area, this conservation significant flora species may potentially occur (Stantec, 2018; 2019). As suitable habitat is widespread within the region, the proposed clearing would not significantly impact the conservation status of the species and impacts can be managed via the avoid and minimise condition.

The vegetation associations, fauna habitats and landform types present within the application area, are well represented in surrounding areas (Stantec, 2019; GIS Database). The application area is unlikely to represent an area of higher biodiversity than surrounding areas, in either a local or regional context.

Conclusion

Based on the above assessment, the proposed clearing is unlikely to impact on conservation significant flora. For the reasons set out above, it is considered that the impacts of the proposed clearing on flora can be managed by the mitigation and management strategies provided by the applicant.

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 Principle (b)

Assessment

Two field surveys were carried out in April and October 2018 (Stantec, 2018; 2019). A total of 27 species of vertebrate fauna were recorded during the field survey (Stantec, 2018; 2019). No conservation significant fauna species were recorded during the field surveys (Stantec, 2018; 2019). The following five broad habitats were identified within the application area:

- Open shrubland on stony plain;
- Drainage;
- Gully;
- Riparian; and
- Banded Mulga on plain (Stantec, 2018; 2019).

Two conservation significant fauna species may potentially occur within the application area (Stantec, 2018; 2019; GIS Database):

Macrotis lagotis (bilby), Vulnerable, is a medium-sized burrowing marsupial that has been recorded within 50 kilometres of the application area (DaWE, 2023; GIS Database). In Western Australia, the bilby has been recorded in the Gibson Desert, Little Sandy Desert, Great Sandy Desert and parts of the Pilbara and Southern Kimberley (DaWE, 2023). The species can be found inhabiting three main habitats: open tussock grassland on uplands and hills, *Acacia aneura* (mulga) woodland/shrubland growing on ridges and rises, and hummock grassland in plains and alluvial areas (DaWE, 2023). Suitable habitat may occur within the application area, however, given the permit area lies outside of the species current range and it has not been recorded nearby since 1970, the proposed clearing will not likely lead to a significant impact to this species.

Pseudomys chapmani (western pebble-mound mouse), Priority 4, is endemic to the Pilbara region of Western Australia (DaWE, 2023). The species is patchily distributed on gentle colluvial slopes of rocky, hummock grasslands with little or no soil and a sparse shrub layer (DaWE, 2023). The species has been recorded within 50 kilometres of the application area and suitable habitat may be present, however, the species has not been recorded within the local area since 1994. Given there is extensive suitable habitat outside the permit area, the proposed clearing will not likely lead to a significant impact to this species

The riparian habitat identified during the field surveys include a major drainage line (Stantec, 2018). The riparian habitat contained an upper storey of tall *Eucalyptus victrix* and *Acacia citrinoviridis* over *Tephrosia rosea* var. *clementii* and tussock grasses including *Cymbopogon ambiguous* and *Eulalia aurea* (Stantec, 2018). The riparian habitat contained relatively dense vegetation, a substantial amount of woody debris, trees with exposed roots forming crevices and a relatively large amount of leaf litter (Stantec, 2018). The abundance of dense vegetation, debris, crevices and alcoves would provide shelter for a variety of mammal and reptile species (Stantec, 2018). The habitat contained water supporting amphibian species and when inundated may provide habitat for wetland bird species (Stantec, 2018). Tall Eucalyptus trees may provide nesting and roosting habitat for a variety of bird species, particularly those containing hollows (Stantec, 2018). This includes the Peregrine Falcon, which inhabits wooded water courses and is assessed as possibly occurring within the local area.

Falco peregrinus (peregrine falcon), Other Specially Protected Species, is one of the most widespread birds in the world and occurs across most of Australia (DCCEEW, 2023). The species inhabits cliffs, coastal habitats, rivers, wooded water courses, lakes and urban environments (DCCEEW, 2023). No individuals were recorded during the survey, however, this species has been recorded within 90 kilometres from the application area, suggesting that they may use the application area as part of a larger home range, however there is no suitable breeding habitat within the application area (Stantec, 2018; GIS Database).

Conclusion

Based on the above assessment, the proposed clearing will result in loss of potential foraging habitat for a number of conservation significant fauna species. For the reasons set out above, it is considered that the impacts of the proposed clearing on fauna habitats can be managed by implementing a fauna management condition.

Conditions

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

- slow directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity which will minimise impact to individuals; and
- avoid, minimise and reduce the impacts and extent of clearing.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 2 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 is one native title claim (Nhamuwangga Wajarri And Ngarlawangga - WAD72/1998) over the area under application (DPLH, 2023). This claim has been determined by the Federal Court 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 is one 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 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 170 kilometres south of Newman, within the Shire of Meekatharra (GIS Database). 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). The project is located wholly within the Gascoyne Interim Biogeographic Regionalisation for Australia (IBRA) region and is used for pastoral purposes (Abra Mining, 2023; GIS Database). The proposed area is located on the Mugul pastoral lease, which is approximately 279,850 hectares in area (Abra Mining, 2023).
Ecological linkage	According to available databases, the application area does not contain any known or mapped ecological linkages (GIS Database).
Conservation areas	The nearest conservation area, Collier Range National Park (R 35104), is located approximately 3.8 kilometres east from the application area (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations:</p> <ul style="list-style-type: none"> • 18: Low woodland; mulga (<i>Acacia aneura</i>); and • 39: Shrublands; mulga scrub (GIS Database). <p>A flora and vegetation survey was conducted over the application area by Stantec during April, and October in 2018. The following vegetation associations were recorded within the application area (Stantec, 2018; 2019):</p> <ul style="list-style-type: none"> • AcAcPISpSchs: <i>Acacia citrinoviridis</i> (<i>Grevillea berryana</i>) low woodland over <i>Acacia citrinoviridis</i> and <i>Psydrax latifolia</i> (<i>Acacia aneura</i> and <i>Acacia ?ramulosa</i> var. <i>ramulosa</i>) tall shrubland over <i>Sida ?sp. spiciform panicles</i> (E. Leyland 14/08/90), <i>Senna cuthbertsonii</i> and <i>Hibiscus sturtii</i> var. <i>forrestii</i> open shrubland to shrubland. • AiAcEspp: <i>Acacia incurvaneura</i> and <i>Acacia citrinoviridis</i> tall open shrubland over <i>Eremophila</i> spp. open shrubland. • AiArrEfEe: <i>Acacia incurvaneura</i> and <i>Acacia ramulosa</i> var. <i>ramulosa</i> tall open shrubland over <i>Eremophila forrestii</i> open shrubland over <i>Eragrostis eriopoda</i> very open tussock grassland. • ArlApEsppEe: <i>Acacia ramulosa</i> var. <i>linophylla</i> and <i>Acacia pteraneura</i> tall shrubland over <i>Eremophila</i> spp. low shrubland over <i>Eragrostis eriopoda</i> open tussock grassland. • GbArrAiEf: <i>Grevillea berryana</i> open low woodland over <i>Acacia ?ramulosa</i> var. <i>ramulosa</i> and <i>Acacia incurvaneura</i> tall shrubland to open scrub over <i>Eremophila forrestii</i> subsp. <i>?forrestii</i> open low shrubland. • GbArrExEjEm: <i>Grevillea berryana</i> open low woodland over <i>Acacia ?ramulosa</i> hybrid open shrubland to tall open shrubland over <i>Eremophila exilifolia</i> and <i>Eremophila jucunda</i> subsp. <i>jucunda</i> over <i>Eriachne mucronata</i> very open tussock grassland to open tussock grassland. • Mosaic of GbArrAiEf/GbArrExEjEm: <i>Grevillea berryana</i> open low woodland over <i>Acacia ?ramulosa</i> var. <i>ramulosa</i> and <i>Acacia incurvaneura</i> tall shrubland to open scrub over <i>Eremophila forrestii</i> subsp. <i>?forrestii</i> open low shrubland / <i>Grevillea berryana</i> open low woodland over <i>Acacia ?ramulosa</i> hybrid open shrubland to tall open shrubland over <i>Eremophila exilifolia</i> and <i>Eremophila jucunda</i> subsp. <i>jucunda</i> low shrubland over <i>Eriachne mucronata</i> very open tussock grassland to open tussock grassland.
Vegetation condition	<p>The vegetation survey (Stantec, 2018; 2019) indicate the vegetation within the proposed clearing area is in 'Degraded' to 'Excellent' (Trudgen, 1991) condition, described as</p> <ul style="list-style-type: none"> • 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. • 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.

Characteristic	Details
	The full Trudgen (1991) condition rating scale is provided in Appendix C.
Climate and landform	The project is located within the Gascoyne IBRA region which typically receives low amounts of variable rainfall influenced by northern cyclonic events (Stantec 2018; 2019). Long term climate data suggests the application area received 238.5 millimetres of rain annually (BoM, 2023).
Soil description	The soils of the application area are broadly mapped as the following soil types: <ul style="list-style-type: none"> • 299Co: Collier system. Undulating stony uplands, low hills, ridges, stony plains and drainage floors supporting mulga shrublands and some spinifex; • 299Ja: Jamindie system. Stony hardpan plains and rises supporting groved mulga shrublands, occasionally with spinifex understorey; and • 290Tr: Three Rivers system. Hardpan plains and minor sandy banks supporting sparse mulga shrublands (DPIRD, 2023).
Land degradation risk	The application area lies within the Collier, Jamindie and Three Rivers land system (GIS Database). <ul style="list-style-type: none"> • The Jamindie land system is described as stony rises with grooved mulga shrublands. This land system is inherently resistant to erosion (Payne et al., 1988). • The Three Rivers land system consists of broad hard plains with minor sandy banks and sparse mulga shrublands. This land system may be susceptible to erosion (Payne et al., 1988). • The Collier land system consists of undulating stony uplands, low hills and ridges and stony lower plains supporting mulga shrublands. This land system may be susceptible to erosion if vegetation cover is removed (Payne et al., 1988).
Waterbodies	The desktop assessment and aerial imagery indicated that the Ethel River (non-perennial) is located 2.3 kilometres east of the application area (GIS Database). Five Mile Creek, a small tributary of the Ethel River, transects through the application area (Stantec, 2018). Several other ephemeral and temporary drainage systems were recorded within the application area (Stantec, 2018).
Hydrogeography	The application area is not mapped within a proclaimed groundwater area (GIS Database). The proposed area is located within the East Murchison Groundwater Area (GIS Database).
Flora	Two field surveys were carried out in April and October 2018 (Stantec, 2018; 2019). A total 101 vascular flora species, representing 25 families and 58 genera were recorded during the field surveys (Stantec, 2018; 2019). No conservation significant flora species were recorded during the field survey (Stantec, 2018; 2019). Five conservation significant flora species have been recorded within 50 kilometres of the application area (GIS Database). Two introduced weed species (<i>Bidens bipinna</i> and <i>Malvastrum americanum</i>) were recorded within the survey area growing in low densities in association with Five Mile Creek and other smaller incised drainage lines (Abra Mining, 2023). No weeds of National Significance were identified (Abra Mining, 2023).
Ecological communities	No Priority Ecological Communities (PECs) or Threatened Ecological Communities (TECs) were recorded within the application area (Stantec, 2018; 2019; GIS Database).
Fauna	Two field surveys were carried out in April and October 2018 (Stantec, 2018; 2019). A total of 27 species of vertebrate fauna were recorded during the field survey (Stantec, 2018; 2019). No conservation significant fauna species were recorded during the field surveys (Stantec, 2018; 2019). Five conservation significant species have previously been recorded within 50 kilometres of the application area (GIS Database). The following five broad habitats were identified within the application area: <ul style="list-style-type: none"> • Open shrubland on stony plain; • Drainage; • Gully; • Riparian; and • Banded Mulga on plain (Stantec, 2018; 2019).

A.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent Remaining %	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA Managed Lands
IBRA Bioregion Gascoyne	18,075,219.48	18,067,441.44	99.96	1,855,508.22	10.27
Beard vegetation associations - State					
Veg Assoc No. 18	19,892,306.46	19,843,148.07	99.75	1,317,179.00	6.62
Veg Assoc No. 39	6,613,567.48	6,602,578.44	99.83	795,070.69	12.02
Beard vegetation associations - Bioregion					
Veg Assoc No. 18	3,273,579.72	3,271,339.12	99.93	316,154.02	9.66
Veg Assoc No. 39	2,338,128.28	2,337,580.69	99.98	325,615.46	13.93

Government of Western Australia (2019)

A.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix D.1), and biological survey information, impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)
<i>Acacia wilcoxii</i>	P1	N	<50	6
<i>Eremophila gracillima</i>	P3	Y	<10	2
<i>Eremophila humilis</i>	P1	Y	<10	5
<i>Eremophila rigida</i>	P3	Y	<50	9
<i>Isotropis forrestii</i>	P1	Y	<10	6

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

A.4. Fauna analysis table

Species name	Common name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)
<i>Dasyercus blythi</i>	brush-tailed mulgara	P4	N	<10
<i>Leipoa ocellata</i>	malleefowl	VU	N	<50
<i>Macrotis lagotis</i>	bilby	VU	Y	<50
<i>Peregrine falcon</i>	falco peregrinus	OS	Y	<90
<i>Pezoporus occidentalis</i>	night parrot	CR	N	<50
<i>Pseudomys chapmani</i>	western pebble-mound mouse	P4	Y	<50

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority, OS: Other Specially Protected

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared contains vegetation types that would be expected from similar landforms in the broader Augustus subregion (Stantec, 2019). However, provides suitable habitat for several conservation significant flora species (Stantec, 2018; 2019).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<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 area proposed to be cleared does contain foraging habitat for conservation significant fauna.</p>	May be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<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 known records of Threatened flora within the application area (GIS Database). Flora surveys of the application area did not record any species of Threatened flora (Stantec, 2018; 2019).</p> <p>The vegetation associations within the application area are common and widespread within the region (Stantec, 2018; 2019), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened flora.</p>	Not likely to be at variance	No
<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>There are no known Threatened Ecological Communities (TECs) located within the application area and the flora and vegetation survey did not identify any TECs (Stantec, 2018; 2019; GIS Database).</p>	Not likely to be at variance	No
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 Gascoyne Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Gascoyne Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation association 18 and 39 (GIS Database). Approximately 99% of the pre-European extent of these vegetation associations remains uncleared at both the state and bioregional level (Government of Western Australia, 2019). Therefore, the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared and is not at variance to this principle.</p>	Not at variance	No
<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 conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas (GIS Database).</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> <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>	At variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Given water courses are recorded within the application area, the proposed clearing may impact on- or off-site hydrology and water quality. Impacts to surface water may be managed by implementing a condition requiring the maintenance of existing surface flow when impacting drainage lines or watercourses.		
<p><u>Principle (g):</u> <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>The mapped soils are moderately susceptible to wind erosion (GIS Database). Noting the location of the application area, the proposed clearing is likely to have an appreciable impact on land degradation. Land degradation may be managed by implementing a staged clearing condition where potential impacts from erosion may be minimised by the implementation of a staged clearing condition requiring areas that are cleared are utilised within six months.</p>	May be at variance	No
<p><u>Principle (i):</u> <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 Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Five Mile Creek and other ephemeral drainage lines intersect the permit area, these are dry for most of the year; short duration water flows follow intermittent heavy rainfall (Abra Mining, 2023). The proponent has committed to installing sediment basins off disturbed areas prior to discharge to the environment (Abra Mining, 2023). Impacts to surface water may be managed by implementing a condition requiring the maintenance of existing surface flow when impacting drainage lines or watercourses.</p>	May be at variance	No
<p><u>Principle (j):</u> <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>Seasonal drainage lines are common in the region and temporary localised flooding may occur briefly following heavy rainfall events. However, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.</p>	Not likely to be at variance	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.
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.

Condition	Description
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. Sources of information

D.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Bush Forever (Regional Scheme) (DPLH-022)
- 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)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Interim Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- 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

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- 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 12 July 2023).
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- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 12 July 2023).

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)
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)
DoEE	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	<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.