



# Clearing Permit Decision Report

## 1. Application details and outcomes

### 1.1. Permit application details

Permit number:	10080/1
Permit type:	Purpose Permit
Applicant name:	Beach Energy (Perth Basin) Pty Ltd
Application received:	17 February 2023
Application area:	6 hectares
Purpose of clearing:	Petroleum Appraisal Well
Method of clearing:	Mechanical Removal
Tenure:	Production Licence L11
Location (LGA area/s):	Shire of Irwin
Colloquial name:	Beharra Springs Project

### 1.2. Description of clearing activities

Beach Energy (Perth Basin) Pty Ltd proposes to clear up to 6 hectares of native vegetation within a boundary of approximately 17.1 hectares, for the purpose of constructing a petroleum appraisal well. The project is located approximately 30 kilometres southeast of Port Dennison, within the Shire of Irwin.

### 1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	27 July 2023
Decision area:	6 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 17 February 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 E), supporting information provided by the applicant including the results of a flora and vegetation survey (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:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- impacts to conservation significant flora;
- the loss of native vegetation that is suitable foraging habitat for Carnaby's Cockatoo (*Zanda latirostris*); and
- potential land degradation in the form of wind erosion.

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 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 and dieback;
- commence construction no later than three months after undertaking clearing to reduce the risk of erosion;
- retain cleared vegetation and topsoil and respread this on cleared areas following completion of activities to ensure fauna habitat is not permanently lost.

## 1.5. Site map

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

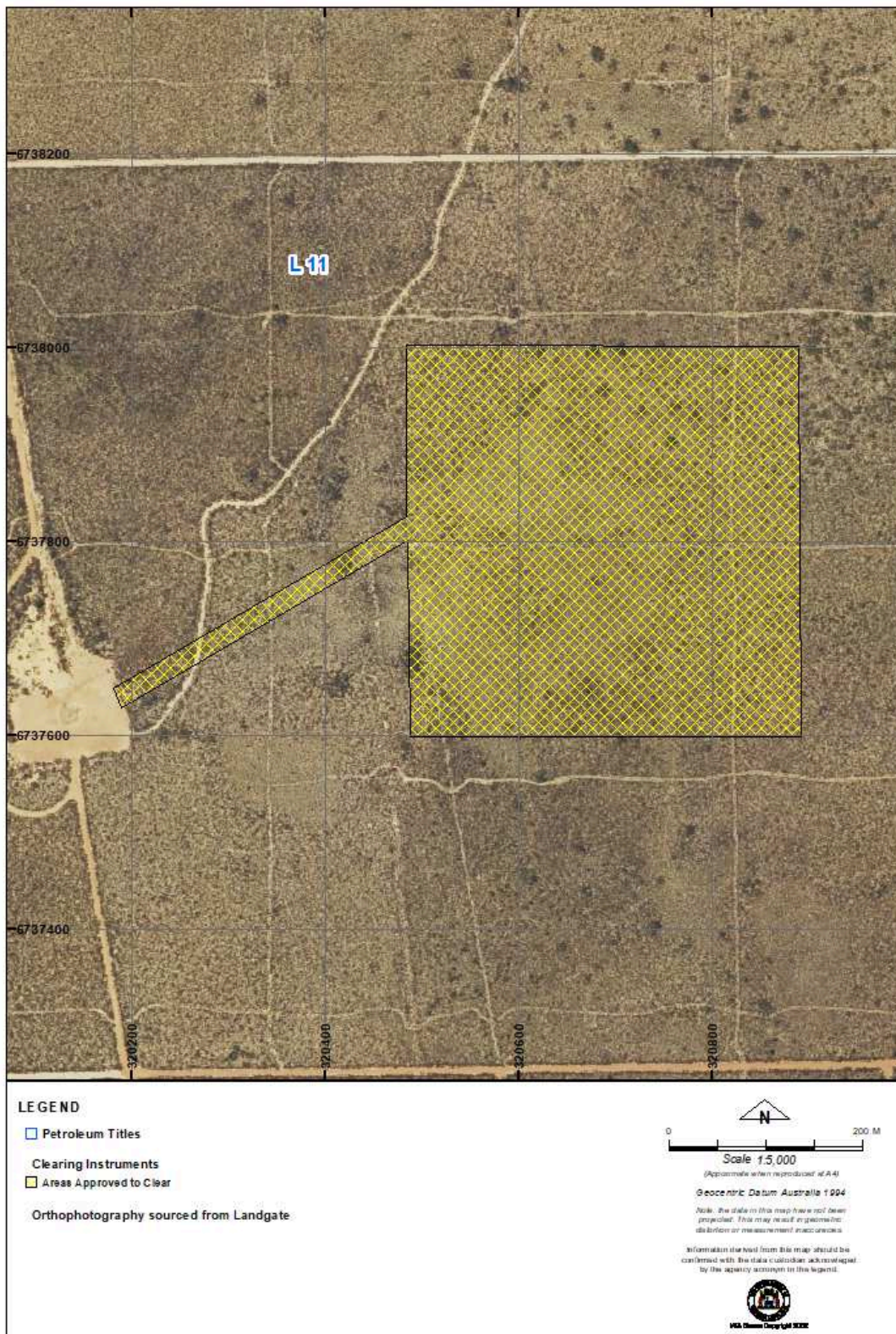


Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit.

## 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)
- *The Petroleum and Geothermal Energy Resources Act 1967* (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, 2020)

## 3. Detailed assessment of application

### 3.1. Avoidance and mitigation measures

Alternative locations for the well site were considered, however, given the lack of existing cleared areas large enough to support the drill rig, the required separation from existing facilities and the expense of undertaking horizontal drilling, no other location was considered feasible for this well (Beach Energy, 2023).

Where possible, existing tracks and cleared areas will be utilised instead of clearing new areas (Beach Energy, 2023). Clearing will also be undertaken progressively so only the areas required for the appraisal well are disturbed (Beach Energy, 2023).

### 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 (flora and fauna). 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) and (c)

##### Assessment

A flora and vegetation survey was conducted over the application and surrounding areas during May-June 2022 and a targeted flora survey in October-November 2022 (JBS&G, 2022; 2023).

The area proposed to be cleared may contain habitat for the Threatened flora species *Paracaleana dixonii* (JBS&G, 2022; GIS Database). This species is typically found on deep grey sands in beneath dense tall shrubs with scattered banksias (DEWHA, 2008). Suitable habitat is present within the application area. There are records of this species within two kilometres of the application area (GIS Database). A targeted search was conducted between 31 October and 17 November 2022 during flowering season. No individuals of *Paracaleana dixonii* were recorded during this survey (JBS&G, 2022). Whilst no individuals were recorded, there is still the potential that they could be present within the application area. The surrounding area is largely uncleared and there is areas of suitable habitat throughout the local area (surrounding 10 kilometres). Whilst the proposed clearing will remove 6 hectares of potential habitat for this species it is not expected to have a significant impact on the local population.

The targeted flora searches recorded 15 individuals of *Beyeria gardneri* (Priority 3) from 13 locations (JBS&G, 2022). There are 9 locations within the application area of which 4 are likely to be impacted by the proposed clearing (Beach Energy, 2023). Previous surveys in the areas surrounding the application area have recorded an additional 109 individuals (Beach Energy, 2023). There are 37 records of this species lodged with the Western Australian Herbarium (1998-) from an approximate range of 390 kilometres. The potential clearing of nine individuals is not likely to have a significant impact on the local population.

The priority flora species *Schoenus griffinianus* (Priority 4) and *Tricoryne* sp. Wongan Hills (Priority 2) were both also recorded within 50 metres of the application area during the targeted survey (JBS&G, 2022). Based on nearby records and the vegetation within the application area, there are several other species of priority flora which also have the potential to be present within the application area. Whilst the proposed clearing will remove habitat for priority flora, the vegetation is well represented in adjacent areas and the proposed clearing is not likely to have a significant impact on priority flora in the local area.

### Conclusion

Based on the above assessment, the proposed clearing will result in the clearing of 6 hectares of vegetation which supports priority flora.

For the reasons set out above, it is considered that the impacts of the proposed clearing of conservation significant flora does not constitute a significant residual impact.

### Conditions

No flora management conditions required.

## 3.2.2. Biological values (fauna) - Clearing Principle (b)

### Assessment

There are two broad fauna habitats mapped within the application area (JBS&G, 2023):

- Kwongan: Low scrub or heath of Banksia and Myrtaceous low shrubs, with sedges on pale undulating sandplain.
- Sedgeland: Low-lying heath or open sedgeland.

The kwongan habitat is the most common habitat, with over 183 hectares mapped during the survey of the greater Perth Basin project area (JBS&G, 2023). This habitat is suitable for nectivorous birds, honey possums, reptiles and raptors (JBS&G, 2023). The sedgeland habitat is less common with only 6.22 hectares mapped over the larger survey area, the majority of which is within the application area (JBS&G, 2023). This habitat consists of low cover which may support reptiles, foraging emus and kangaroos with exposed areas preferable for raptors (JBS&G, 2023).

The kwongan habitat is potential foraging habitat for the Carnaby's cockatoo (*Zanda latirostris* – Endangered). A targeted assessment of the values for Carnaby's cockatoos for the greater Beharra Springs project area was undertaken by Bamford Consulting Ecologists in October 2022. Carnaby's cockatoo habitat can be considered in terms of breeding habitat, night roosting habitat, and foraging habitat. Carnaby's cockatoos will generally forage up to 12 kilometres from an active breeding site (DSEWPaC, 2012; DoEE, 2017; DPaW, 2013). Following breeding, they will flock in search of food, usually within six kilometres of a night roost (DSEWPaC, 2012; DoEE, 2017; DPaW 2013), but may range up to 20 kilometres (Commonwealth of Australia, 2017). There are no known breeding or roosting habitat present within the application area (Bamford Consulting Ecologists, 2023; GIS Database). The nearest record of a night roost is approximately 17 kilometres north of the application area (GIS Database). There are records of Carnaby's cockatoos in the local area and there is potential for them to utilise the application for foraging (GIS Database).

The assessment of the habitat value for Carnaby's cockatoos considered that the majority of the application area has no to very low foraging value (see Appendix D) (Bamford Consulting Ecologists, 2023). The areas associated with the sedgeland habitat were considered to have no foraging habitat due to the absence of species with food value. The majority of the kwongan vegetation surrounding the proposed well site was only assessed as having a low foraging value due to the relatively low cover of banksia species (Bamford Consulting Ecologists, 2023). There was only a small area associated with the access track (approximately 0.3 hectares) which was rated as having a moderate foraging value (Bamford Consulting Ecologists, 2023). Based on known records of roosting and breeding, Carnaby's cockatoo is likely to be an irregular visitor to the application area (GIS Database). The local area has not been extensively cleared (90% of vegetation remaining) and provides extensive foraging habitat of similar if not better value (Bamford Consulting Ecologists, 2023; GIS Database). Given the application area is largely of low foraging value and the presence of extensive habitat in the local area, the proposed clearing is not likely to have a significant impact for Carnaby's cockatoos in the local area.

Western Brush Wallaby (*Notamacropus irma* – Priority 4) has been recorded in the local area and is likely to be a transient visitor within the application area (GIS Database). There is suitable habitat present throughout the local area and the proposed clearing of 6 hectares is not likely to have a significant impact on this species at a local or regional level.

There are recent records of Malleefowl (*Leipoa ocellata* – Vulnerable) within 20 kilometres of the application area (GIS Database). The vegetation within the application area consists of low sedgeland and open mid shrublands so it is not considered likely that the area would be used for mound construction. Whilst they may be transit visitors to the application area, the vegetation is not likely to represent significant habitat for this species.

Given the local area is largely uncleared, the proposed clearing of 6 hectares is not likely to have a significant impact on local fauna species.

### Conclusion

Based on the above, the proposed clearing will result in the removal of vegetation likely to be used for foraging by Carnaby's cockatoos. However, the large majority of the application area was assessed as having low to no foraging value.

For the reasons set out above, it is considered that the impacts of the proposed clearing on conservation significant fauna does not constitute a significant residual impact.

### Conditions

No fauna management conditions required.

### 3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 8 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 over the area under application (DPLH, 2023). This claim has been determined by the Federal Court on behalf of the claimant group. However, the petroleum 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 no registered Aboriginal Sites of Significance within the application area (DPLH, 2023). It is the proponent's responsibility to comply with the *Aboriginal Cultural Heritage Act 2021* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:

- An Environment Plan approved under the *Petroleum and Geothermal Energy Resources Act 1967*

It is noted that the proposed clearing may impact on Carnaby's cockatoos, which are a protected matter under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The proponent may be required to refer the project to the (Federal) Department of Agriculture, Water and the Environment for environmental impact assessment under the EPBC Act. The proponent is advised to contact the Department of Climate Change, Energy the Environment and Water for further information regarding notification and referral responsibilities under the EPBC Act.

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	<p>The area proposed to be cleared is part of an expansive tract of native vegetation in the intensive land use zone of Western Australia. It is adjacent to an existing petroleum well and surrounded by native vegetation.</p> <p>Spatial data indicates the local area (10 kilometre radius from the centre of the area proposed to be cleared) retains over 90 per cent of the original native vegetation cover.</p>
Ecological linkage	The application area is not part of an ecological linkage (GIS Database).
Conservation areas	The application area is located approximately 4.6 kilometres southeast of the Yandanogo Nature Reserve (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association (GIS Database): 378: Shrublands; scrub-heath with scattered <i>Banksia</i> spp, <i>Eucalyptus todtiana</i> &amp; <i>Xylomelum angustifolium</i> on deep sandy flats in the Geraldton Sandplains Region.</p> <p>A flora and vegetation survey was conducted over the application and surrounding areas by JBS&amp;G (2023) during May-June 2022. The following vegetation associations were recorded within the application area (JBS&amp;G, 2023):</p> <ul style="list-style-type: none"> <li>- BaEmMS: Open mid shrubland of <i>Banksia attenuata</i>, with or without isolated emergent <i>Acacia</i> spp., <i>Eucalyptus todtiana</i> or <i>Xylomelum angustifolium</i>, over <i>Ecdeiocolea monostachya</i>, <i>Mesomelaena pseudostygia</i> and <i>Lepidobolus</i> sp. sparse sedgeland; and</li> <li>- EmSL: Isolated low shrubs of <i>Banksia attenuata</i>, <i>Banksia shuttleworthiana</i> and <i>Calothamnus glaber</i>, over <i>Ecdeiocolea monostachya</i>, <i>Mesomelaena pseudostygia</i> and <i>Lepidobolus</i> sp. sedgeland.</li> </ul>
Vegetation condition	<p>The vegetation survey (JBS&amp;G, 2023) indicates the vegetation within the proposed clearing area is in pristine (Keighery, 1994) condition.</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix C.</p>
Climate and landform	The application area is mapped within elevations of 40-60 metres AHD (GIS Database). The annual average rainfall (Mingenew) is 392.3 millimetres (BoM, 2023).
Soil description	The soil is mapped as 221Be_3 which is described as level to gently undulating sandplain; yellow deep sand (DPIRD, 2023).
Land degradation risk	The application area has been mapped as being in an area with a high potential for wind erosion (DPIRD, 2023). The application area does not have a high risk of flooding, water erosion, waterlogging or phosphorus export (DPIRD, 2023).
Waterbodies	There are no watercourses or wetlands within the application area (GIS Database).
Hydrogeography	The application area is not located within any Public Drinking Water Source Areas (PDWSA) (GIS Database). The mapped groundwater salinity is 1,000-3,000 milligrams per litre total dissolved solids which is described as brackish (GIS Database).
Flora	The flora and vegetation survey recorded the Priority 3 flora species <i>Beyeria gardneri</i> within the application area. There are also records of 27 other species of conservation significance within the local area.
Ecological communities	There are no Threatened or Priority Ecological Communities recorded within the local area (GIS Database).
Fauna	There are no fauna records within the application area. There are records of Carnaby's cockatoo and the Western brush-wallaby within the local area (GIS Database).

### 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 - Geraldton Sandplains	3,136,038	1,404,424	44.78	568,255	18.12
IBRA Subregion - Lesueur Sandplain	1,171,775	502,977	42.92	212,498	18.13
Local Government – Shire of Irwin	236,968	117,014	49.38	28,642	12.09
Beard vegetation associations - State					
378	95,109	61,032	64.17	13,423	14.12
Beard vegetation associations - Bioregion					
378	95,109	61,032	64.17	13,425	14.12
Beard vegetation associations - subregion					
378	90,923	60,668	66.72	13,425	14.77

Government of Western Australia (2019)

### A.3. Flora analysis table

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

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
<i>Acacia vittata</i>	Priority 2	Y	Y	Y	<8	Y
<i>Banksia elegans</i>	Priority 4	Y	Y	Y	<2	Y
<i>Banksia fraseri</i> var. <i>crebra</i>	Priority 3	Y	Y	Y	<7	Y
<i>Banksia scabrella</i>	Priority 4	Y	Y	Y	<4	Y
<i>Beyeria gardneri</i>	Priority 3	Y	Y	Y	0	Y
<i>Calytrix chrysantha</i>	Priority 4	Y	Y	Y	<5	Y
<i>Comesperma griffinii</i>	Priority 2	Y	Y	Y	<6	Y
<i>Comesperma rhadinocarpum</i>	Priority 3	Y	Y	Y	<8	Y
<i>Eucalyptus macrocarpa</i> subsp. <i>elachantha</i>	Priority 4	Y	Y	Y	<7	Y
<i>Eucalyptus macrocarpa</i> x <i>pyriformis</i>	Priority 3	Y	Y	Y	<9	Y
<i>Eucalyptus zopherophloia</i>	Priority 4	N	Y	N	<10	Y
<i>Grevillia erinacea</i>	Priority 3	Y	Y	Y	<10	Y
<i>Guichenotia alba</i>	Priority 3	Y	Y	Y	<7	Y
<i>Hemiandra</i> sp. Eneabba	Priority 3	Y	Y	Y	<2	Y
<i>Hypocalymma gardneri</i>	Priority 3	Y	Y	Y	<4	Y
<i>Lasiopetalum ogilvieanum</i>	Priority 1	Y	Y	Y	<3	Y
<i>Paracaleana dixonii</i>	Threatened	Y	Y	Y	<2	Y
<i>Persoonia chapmaniana</i>	Priority 3	Y	Y	Y	<6	Y
<i>Persoonia filiformis</i>	Priority 3	Y	Y	Y	<6	Y
<i>Persoonia rudis</i>	Priority 3	Y	Y	Y	<3	Y
<i>Schoenus griffinianus</i>	Priority 4	Y	Y	Y	<1	Y
<i>Schoenus</i> sp. Eneabba	Priority 2	Y	Y	Y	<4	Y
<i>Stawellia dimorphantha</i>	Priority 4	Y	Y	Y	<2	Y
<i>Stylidium carnosum</i> subsp. Narrow leaves	Priority 1	Y	Y	Y	<2	Y

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
<i>Stylidium drummondianum</i>	Priority 3	Y	Y	Y	<7	Y
<i>Thysanotus glaucus</i>	Priority 4	Y	Y	Y	<9	Y
<i>Tricoryne</i> sp. Wongan Hills	Priority 2	Y	Y	Y	<1	Y
<i>Verticordia luteola</i> var. <i>luteola</i>	Priority 3	Y	Y	Y	<7	Y
<i>Verticordia luteola</i> var. <i>rosea</i>	Priority 1	Y	Y	Y	<10	Y

#### A.4. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
<i>Leipoa ocellata</i> (Malleefowl)	Vulnerable	Y	Y	<12	Y
<i>Notamacropus irma</i> (Western Brush Wallaby)	Priority 4	Y	Y	<8	Y
<i>Zanda latirostris</i> (Carnaby's Cockatoo)	Endangered	Y	Y	<2	Y

#### Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain locally significant flora, fauna, habitats, assemblages of plants.</p> <p>There are records of the Priority 3 flora species <i>Beyeria gardneri</i> within the application area.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> "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."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared contains foraging habitat for Carnaby's cockatoo.</p>	At variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (c):</u> "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared may contain habitat for the Threatened flora species <i>Paracaleana dixonii</i> (JBS&amp;G, 2022; GIS Database).</p>	May be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (d):</u> "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."</p> <p><u>Assessment:</u></p> <p>There are no records of any Threatened Ecological Communities (TECs) within the application area (GIS Database). The flora survey over the application area did not identify any vegetation communities which area which are considered to be a TEC (JBS&amp;G, 2023).</p>	Not likely to be at variance	No
<b>Environmental value: significant remnant vegetation and conservation areas</b>		



Assessment against the clearing principles	Variance level	Is further consideration required?
<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 extent of the native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</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.</p>	Not likely to be at variance	No
<b>Environmental value: land and water resources</b>		
<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> <p>There are no watercourses or wetlands within the application area and none of the vegetation has been identified as being riparian vegetation (JBS&amp;G, 2023; GIS Database).</p>	Not at variance	No
<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 soils of the application area are mapped as soil type Ca27 (GIS Database). This soil type is described as sandy plains with occasional pockets of sand dunes, a few small swamps and stream courses with chief soils of leached sands (Northcote et al., 1960-68). The application area is low lying and has been identified as having a high risk of wind erosion (DPRID, 2023). However, the application area is surrounded by uncleared vegetation and the relatively small amount of clearing is not expected to cause significant land degradation.</p> <p>Potential land degradation may be minimised by the implementation of a staged clearing condition.</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 permanent watercourses or wetlands within the application areas (GIS Database). The proposed clearing is unlikely to result in significant changes to surface water flows.</p> <p>The relatively small area of the proposed additional clearing is unlikely to cause deterioration in the quality of underground water.</p>	Not likely to 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>There are no water courses or waterbodies within or in close proximity to the application area (GIS Database). The application area is on sandy soils and water from rain events is likely to quickly infiltrate or runoff, with flooding considered unlikely.</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.

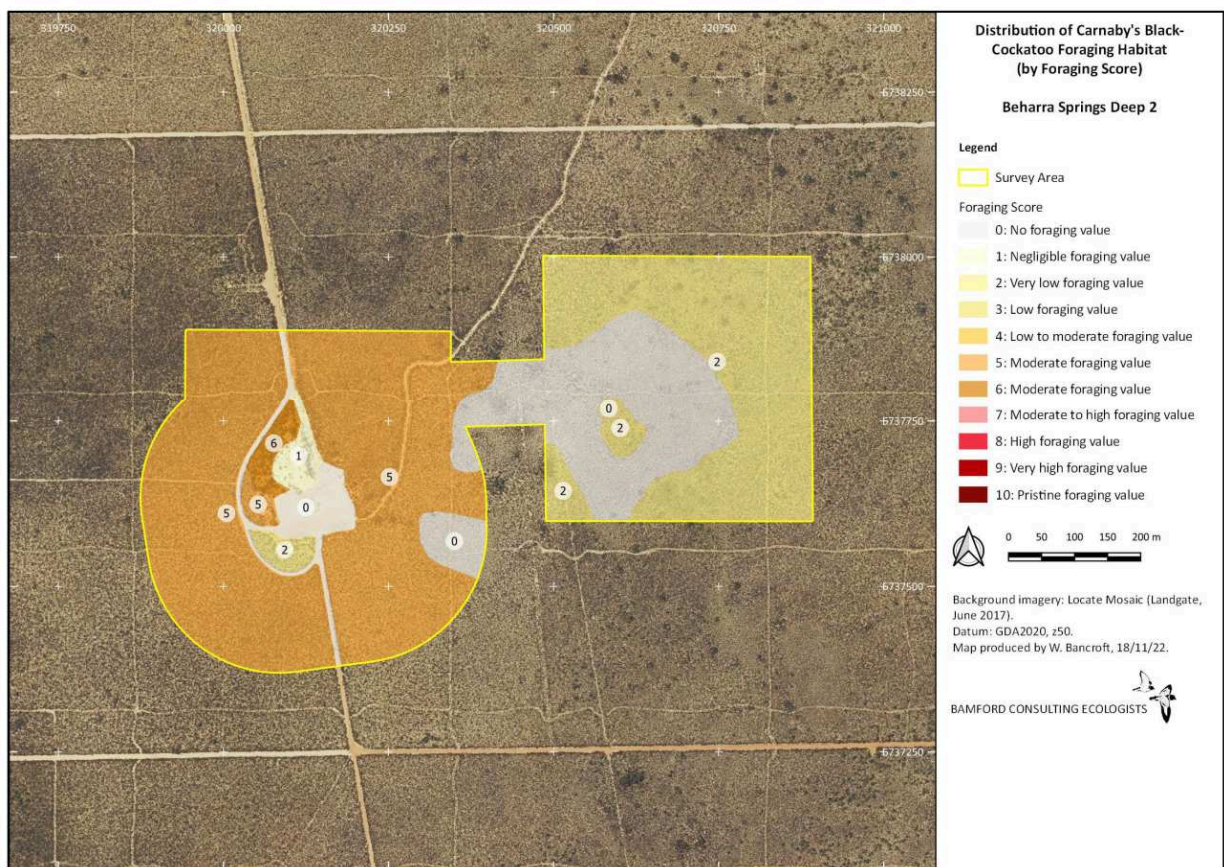
Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western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

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

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

**Appendix D. Biological survey information excerpts**

Assessment of Values for Black-Cockatoos for Beach Energy in the Beharra Springs Project Area



### E.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Bush Forever (Regional Scheme) (DPLH-022)
- Contours (DPIRD-073)
- 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)
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Remnant Vegetation, All Areas
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

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- Black Cockatoo FRTBC Breeding
- Black Cockatoo BC Roosts
- Black Cockatoo BC Feeding SCP
- Black Cockatoo Feeding JF
- Black Cockatoo Feeding Areas Buffered
- Black Cockatoo Baudins Distribution
- Black Cockatoo Forest Red Tail Distribution
- Black Cockatoo Carnabys Distribution
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
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## 4. Glossary

### Acronyms:

<b>BC Act</b>	<i>Biodiversity Conservation Act 2016</i> , Western Australia
<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>DAA</b>	Department of Aboriginal Affairs, Western Australia (now DPLH)
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia (now DPIRD)
<b>DCCEEW</b>	Department of Climate Change, Energy, the Environment and Water, Australian Government
<b>DBCA</b>	Department of Biodiversity, Conservation and Attractions, Western Australia
<b>DER</b>	Department of Environment Regulation, Western Australia (now DWER)
<b>DMIRS</b>	Department of Mines, Industry Regulation and Safety, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia (now DMIRS)
<b>DoEE</b>	Department of the Environment and Energy (now DCCEEW)
<b>DoW</b>	Department of Water, Western Australia (now DWER)
<b>DPaW</b>	Department of Parks and Wildlife, Western Australia (now DBCA)
<b>DPIRD</b>	Department of Primary Industries and Regional Development, Western Australia
<b>DPLH</b>	Department of Planning, Lands and Heritage, Western Australia
<b>DRF</b>	Declared Rare Flora (now known as Threatened Flora)
<b>DWER</b>	Department of Water and Environmental Regulation, Western Australia
<b>EP Act</b>	<i>Environmental Protection Act 1986</i> , Western Australia
<b>EPA</b>	Environmental Protection Authority, Western Australia
<b>EPBC Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia

<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>PEC</b>	Priority Ecological Community, Western Australia
<b>RIWI Act</b>	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
<b>TEC</b>	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.