



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10664/1
Permit type:	Purpose permit
Applicant name:	APA Pilbara Holdings Pty Ltd
Application received:	28 June 2024
Application area:	105.2 hectares of native vegetation
Purpose of clearing:	Expanding the existing Chichester Power Project to increase operational capacity.
Method of clearing:	Mechanical clearing
Property:	Miscellaneous Licence 46/138
Location (LGA area/s):	Shire of East Pilbara
Localities (suburb/s):	Newman

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area (see Figure 1, Section 1.5). The proposed clearing is to facilitate the expansion of the existing solar panel arrays, to install a battery energy storage system (BESS) and for perimeter fencing, firebreaks and amenity facilities. The area proposed to be cleared is up to 105.2 hectares within a permit boundary of 136.6 hectares surrounding the existing solar panel arrays within Miscellaneous Licence 46/138.

The delegated officer notes that a large portion of the proposed area to be cleared have been previous assess for clearing under clearing permit CPS 7985/1.

1.3. Decision on application

Decision:	Granted
Decision date:	5 September 2024
Decision area:	105.2 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and one submission was received. Consideration of matters raised in the public submission is summarised in Appendix A.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix F.1), the findings of a flora, vegetation and fauna surveys, the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration the following:

- A fauna survey over the application area did not observe the occurrence of conservation significant fauna species.
- A flora and vegetation survey over the application area did not observe the occurrence of *Rhagodia* sp. Hamersley (M. Trudgen 17794) Priority 3 and *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) Priority 3 and determined there were limited preferred habitat areas for these flora within the application area.
- That over 99% of the pre-European and existing extent for Beard vegetation association 29 remains.

The assessment identified that the proposed clearing would result in:

- the potential introduction and spread of weeds, which could impact on the quality of the adjacent vegetation and habitat values within the local area; and
- the potential for water erosion to occur within ephemeral watercourses.

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 appreciable land degradation, and long-term adverse impacts on environmental values including those values within the adjacent vegetation areas. Potential impacts on the above environmental values can be minimised and managed to reduce the likelihood leading to an unacceptable risk to environmental values. The applicant has suitably demonstrated avoidance and minimisation measures, to counterbalance the impacts to clearing watercourses (see Section 4).

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;
- ensure that the existing surface flow is maintained or reinstated downstream into existing natural drainage lines;
- avoid the clearing of riparian vegetation where possible; and
- undertake slow, progressive, one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

1.5. Site map

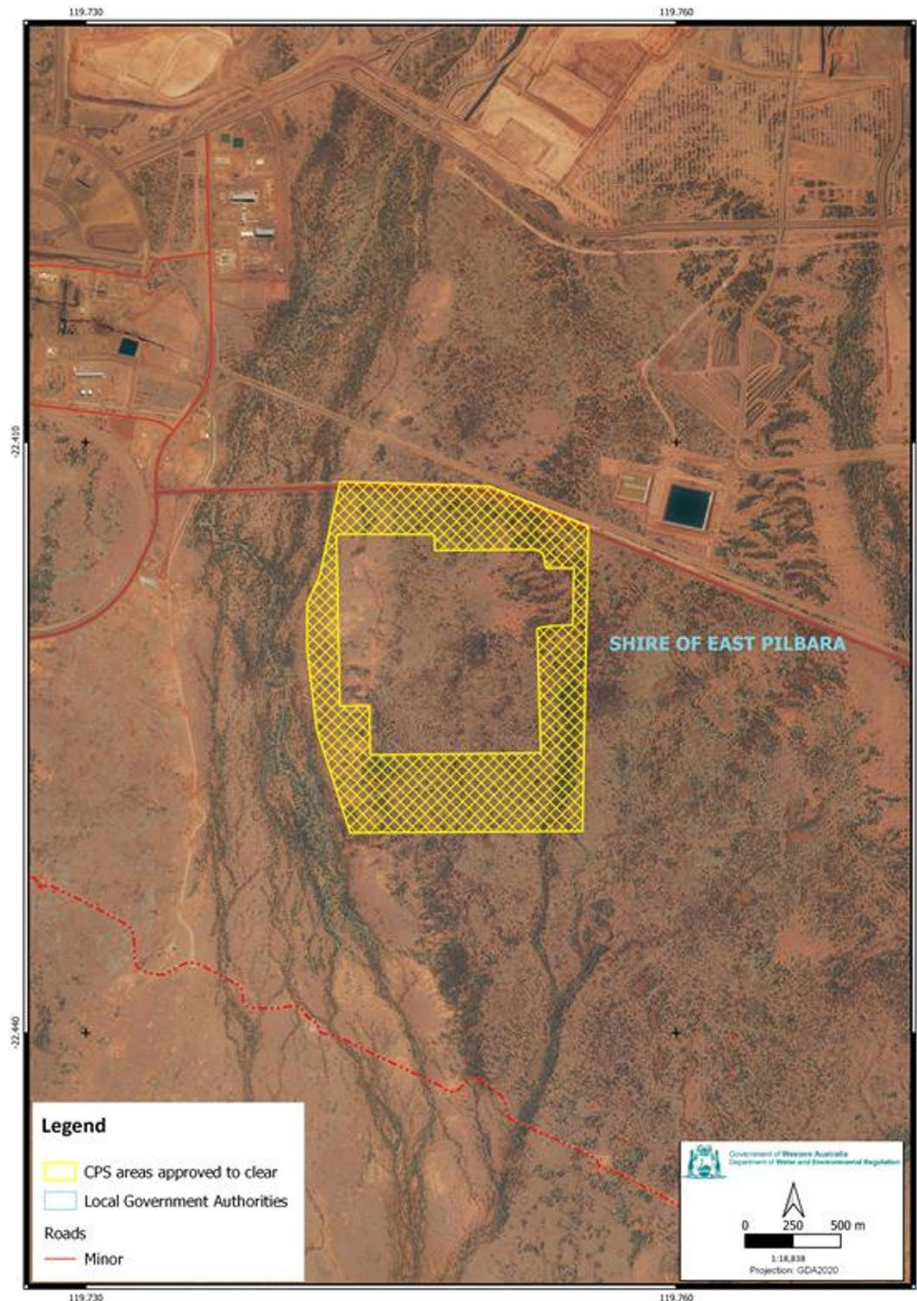


Figure 1. Map of the application area

The areas cross-hatched yellow indicate the area authorised to be cleared under the 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)*
- *Planning and Development Act 2005 (WA) (P&D Act)*
- *Soil and Land Conservation Act 1945 (WA)*

The key guidance documents which inform this assessment are:

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

2.1. Avoidance and mitigation measures

The applicant has expressed a commitment to minimise topsoil disturbance by clearing the vegetation only leaving the topsoil in place, reducing land and water quality degradation resulting from rainfall events (Preston Consulting, 2024).

2.2. Assessment of impacts on environmental values

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

The assessment against the clearing principles (see Appendix C) identified that the impacts of the proposed clearing present a risk to biological diversity and fauna, and land and water resources. 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.

2.2.1. Biological values (Biodiversity & Fauna) - Clearing Principles (a) and (b)

Assessment

Flora and vegetation

The flora and vegetation survey conducted by Biota (2023) over the application and surrounding areas found no threatened or priority flora species. Potential suitable habitat was present but limited, for two Priority 3 species; *Rhagodia* sp. Hamersley (M. Trudgen 17794) and *Themeda* sp. Hamersley Station (M.E. Trudgen 11431). The survey found a total of 140 native flora species from 30 families and 76 genera.

The application area does not contain any known Threatened or Priority Ecological Communities (TECs, PECs) (GIS Database). The application area lies within the buffer zone of the Fortescue Marsh Priority Ecological Community (PEC) (GIS Database). The Fortescue Marsh is located approximately 3.5 kilometres south west of the application area (GIS Database), therefore the proposed clearing is unlikely to cause direct impacts to the Priority Ecological Community.

Nine weed species were recorded from the survey area, none of which were listed as Weeds of National Significance (WoNS) or declared pests under the *Biosecurity and Agriculture Management Act 2007* (BAM Act). Weeds were present within areas of disturbance, associated with previously modified areas including areas close to the existing solar farm, drainage lines, and areas of cattle grazing and trampling. Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. Potential impacts to biodiversity as result of the proposed clearing may be minimised by the implementation of a weed management condition.

Fauna

During the Biota (2023) field survey, 67 vertebrate species were recorded, including 15 mammal species, 50 bird species and two reptile species. The 15 mammal species comprised 11 species of bat from three families, and four introduced species (rabbit, cat, dog and cattle). The recorded avifauna represented 27 families, and 52% of the species recorded were passerines (perching birds). The reptiles were represented by two families, comprising one species of varanid and one dragon species.

A desktop assessment indicated that 33 vertebrate conservation significant fauna species are likely to occur within the survey area (GIS Database). Based on available habitat, only the Shory-tailed Mouse (*Leggadina lakedownensis* - Priority 4) is considered likely to occur within the application area (Biota 2023). The Acacia woodland and tussock grassland habitats within the application area may provide habitat for the species,

particularly where patches of cracking clay soils exist. However, given the proximity to existing disturbed areas, the habitat is not considered likely to represent significant habitat for this species.

The following species were considered be likely to occur within the application area as transient or foraging visitors, where the habitat within the application area is considered representative as secondary habitat (Biota 2023):

- Northern Quoll, *Dasyurus hallucatus* (Endangered);
- Pilbara Leaf-nosed Bat, *Rhinonictis aurantia* (Vulnerable);
- Ghost Bat, *Macroderma gigas* (Vulnerable).
- Grey Falcon, *Falco hypoleucos* (Vulnerable);
- Pacific Swift, *Apus pacificus* (Migratory);
- Peregrine Falcon, *Falco peregrinus* (Other Specially Protected Fauna).
- Pilbara Olive Python, *Liasis olivaceus barroni* (Vulnerable); and
- Gane's Blind Snake, *Anilius ganei* (Priority 1).

Given the proposed clearing is adjacent to an existing solar farm, and that abundant suitable habitat for the above species is located adjacent to the application area, it is expected that any individuals present at the time of clearing will be able to disperse into adjacent suitable habitat ahead of the clearing, given the application of slow, progressive, one directional clearing.

Conclusion:

Given the variety of biodiversity within the proposed clearing area and the biodiversity of ecological communities adjacent to the application area, the proposed clearing is not likely to have an impact on the biodiversity values of the surrounding and greater ecosystem environment. The application area is not likely to represent significant habitat for any conservation significant fauna species or be critical for the continuation of these species.

Conditions:

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

- undertake slow, progressive, directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

2.2.2. Water resources - Clearing Principles (f) and (i)

Assessment

There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database; Preston Consulting, 2024). Several small un-named ephemeral watercourses are located close to the west boundaries of the application area, and two minor ephemeral watercourses are located within the application area that drains into the Fortescue Marsh (GIS Database).

The proposed clearing may result in the removal of riparian vegetation which increases the mobilisation of soil within the watercourses. However, this should only be short term, localised impact, and limited to during the clearing process and construction of solar panel arrays. As the watercourses are ephemeral, if the clearing and works are undertaken during the dry season these impacts would be significantly reduced. Furthermore, the applicant has indicated that clearing will focus on vegetation removal rather than topsoil removal in most areas, leaving topsoil in-situ (Preston Consulting 2024). DWER (2024) considers the proposed clearing unlikely to impact the quality of water resources, provided the clearing activities are undertaken in accordance with best practice. A watercourse management condition is recommended to facilitate a best practice outcome.

The creek lines in the region are dry and only flow for brief periods, immediately following significant rainfall events (generally cyclone activity). The proposed clearing is unlikely to result in significant changes to surface water flows nor the proposed solar panel arrays. Surface water flow during flood conditions will be able to easily move over the access track and through and around the panel structures. Any sheet flow will be able to pass under solar panels with minimal disruption to flow.

The groundwater within the application area is between 500 – 1,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). This is marginal quality water. It would not be expected that the proposed clearing would cause salinity levels within the application or surrounding area to alter.

Conclusion: Based on the above assessment, the proposed clearing is not likely to significantly impact on the minor watercourses or downstream Fortescue Marsh but may result in deterioration of surface water if clearing is undertaken when minor watercourses are flowing.

Conditions: To address the potential impacts on the surface watercourses, the following management measure will be required as a condition on the clearing permit:

- avoid clearing riparian vegetation and maintaining waterflows or reinstate them downstream into existing natural drainage lines.

2.3. Relevant planning instruments and other matters

Other relevant authorisations required for the proposed land use include:

- Development approval under the *Planning and Development Act 2005* (issued by the Shire of East Pilbara).
- Licence issued under Part V Division 3 of the EP Act.
- Licence to abstract water under the *Rights in Water and Irrigation Act 1914*.
- Permit to interfere with bed and banks under the *Rights in Water and Irrigation Act 1914*.

Several Aboriginal sites of significance have been mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972 (WA)* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Details of public submissions

Summary of comments	Consideration of comment
The proposed clearing will impact vegetation within the current native title, and that the determination referenced is incorrect.	The Delegated Officer notes this information.
There is no Indigenous Land Use Agreement (ILUA) in place.	The Delegated Officer notes this information.
There are significant water users in proximity to the application area operating groundwater dewatering projects and surface water diversions in the region.	The Delegated Officer notes this information and has assessed surface and groundwater in Appendix C.

Appendix B. Site characteristics

C.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 rural land use zone of Western Australia. It is surrounded by large tracks of continuous native vegetation and the Christmas Creek Mine Site (owned and operated by Chichester Metals Pty Ltd). Cloudbreak Iron Ore Mine and Roy Hill Iron Ore Mine operate further afield to the west and east respectively. The proposed clearing area is part of a large area of vegetation that surrounds the operating mine sites.</p> <p>Aerial imagery indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately seventy-five per cent of the original native vegetation cover.</p>
Ecological linkage	According to available databases, the application area does not contain any known or mapped ecological linkages (GIS Database).
Conservation areas	According to the available databases, the application area does not contain any known or mapped conservation areas within or within a 10 kilometres radius of the application area (GIS database).
Vegetation description	<p>The vegetation survey (Biota, 2023) recorded the vegetation within the proposed clearing area consisting of:</p> <ul style="list-style-type: none"> • 19.2 hectares of low open forest of <i>Acacia aptaneura</i> over mixed <i>Acacia</i> sp., <i>Malvastrum americanum</i> (weed) shrubs over mixed tussock grassland dominated by <i>Cenchrus</i> sp. (weed) and <i>Aristida</i> sp. • 60.4 hectares low open woodland of <i>Acacia aptaneura</i> over mixed <i>Acacia</i> sp., <i>Senna</i> sp. and <i>Eremophila cuneifolia</i> shrubs over mixed tussock grasses dominated by <i>Aristida</i> sp. • 21.1 hectares scattered low trees of <i>Acacia aptaneura</i> over scattered shrubs of mixed <i>Acacia</i> sp., over scattered tussock grasses dominated by <i>Aristida contorta</i>, <i>Enneapogon polyphyllus</i> and <i>Eragrostis xerophila</i>, with scattered herbs of <i>Sclerolaena</i> sp. • 4.5 hectares of low open woodland of <i>Acacia xiphophylla</i> over scattered shrubs of <i>Senna artemisioides</i> subsp. <i>oligophylla</i> and <i>Eremophila cuneifolia</i> over scattered tussock grasses of <i>Enteropogon ramosus</i> and <i>Aristida contorta</i>, with scattered herbs of <i>Sclerolaena cornishiana</i>. <p>The application area is located within the pre-European vegetation of Fortescue Plains. This is consistent with the mapped vegetation type:</p> <ul style="list-style-type: none"> • Beard 1975, which is described as Fortescue Valley 29 – Mulga (<i>Acacia aneura</i>) low woodland, open woodland or spare woodland and associated species (Shepherd et al., 2001).

Characteristic	Details
	The mapped vegetation type retains approximately 99 per cent of the original pre-European extent (Government of Western Australia, 2019).
Vegetation condition	<p>Vegetation survey (Biota, 2023) and DWER aerial desktop inspection indicate the vegetation within the proposed clearing area is in Eremaean Botanical Province (Keighery, 1994) condition scale, described as:</p> <ul style="list-style-type: none"> • 78.1 hectares as very good • 25.6 hectares as good • 1.5 hectares as good to poor. <p>The main disturbances are weed invasion, existing disturbances, and cattle grazing and trampling.</p>
Climate and landform	The Department of Primary Industries and Regional Development (DPIRD) (van Vreeswyk et al., 2004) has defined the land systems of the region from landforms, soils, vegetation and aerial photography, providing the largest-scale interpretation of vegetation units for the proposed clearing area. The proposed clearing area is entirely within the Turee Land System and represents less than 1% of the approximately 62,032 hectare extent of this land system in the Pilbara Bioregion. This land system is characterised by stony alluvial plains with gilgaied and non-gilgaied surfaces supporting tussock grasslands and grassy shrublands of mulga and snakewood.
Soil description	The soil is mapped as Fortescue Valley Zone – alluvial plains, hardpan wash plains and sandplains on alluvial deposits over Hamersley Basin sedimentary rocks with red deep sands, red loamy earths and red/brown non-cracking clays.
Land degradation risk	<p>DPIRD Natural Resource Information (WA) indicates the following:</p> <ul style="list-style-type: none"> • 0% of the map unit has moderate to extreme salinity at surface hazard with a 99% of map unit has a moderate hazard for salinity. • 99% of the map unit has a moderate to high hazard for flood hazard and waterlogging and inundation risk and very high to extreme hazard for water erosion. (It is noted that rainfall is associated with cyclone events and the resultant hazards linked to these events). • 99 % of the map unit has a high to extreme hazard for wind erosion hazard
Waterbodies	The desktop assessment and aerial imagery indicated that minor, non-perennial watercourses transect the area proposed to be cleared. The watercourse flows to the Fortescue Marsh (Fortescue River).
Hydrogeography	Area is located within the Proclaimed Pilbara Groundwater Area, Esat Pilbara subarea Hamersley – Fractured Rock under the RIWI Act Groundwater bores are at a depth greater than 50 metres below ground level, water degradation unlikely.
Flora	<p>The applicant's desktop assessment determined that there are two Priority species which were considered likely to occur within the Survey Area, these include:</p> <ul style="list-style-type: none"> • <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) – Priority 3; and • <i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431) – Priority 3. <p>The desktop assessment determined that five other Priority species may occur within the Survey Area:</p> <ul style="list-style-type: none"> • <i>Calotis squamigera</i> – Priority 1; • <i>Eragrostis crateriformis</i> – Priority 3; • <i>Rostellularia adscendens</i> var. <i>latifolia</i> – Priority 3; • <i>Swainsona thompsoniana</i> – Priority 3; and • <i>Eremophila youngii</i> subsp. <i>lepidota</i> – Priority 4. <p>A flora survey (Biota 2023) determined that no species were recorded in the area, where suitable habitat was present, none were identified.</p> <p>No recorded priority flora was recorded within the application area, but <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) was recorded within the local area (GIS Database).</p>
Ecological communities	The application area is not located within any known or mapped Threatened or Priority Ecological Communities (GIS Database).

Characteristic	Details
Fauna	<p>The applicant’s desktop assessment identified two Priority 1 and 4 fauna records in the local area, nearest record 500 metres east of the application area, consisting of the Short-tailed Mouse (<i>Leggadina lakedownensis</i>). The cracking clays and adjacent habitats have been identified as prime habitat for this species.</p> <p>During the Biota (2023) field survey, 67 vertebrate species were recorded, including 15 mammal species, 50 bird species and two reptile species. The main fauna habitats identified in the survey were Acacia woodland, minor drainage lines and low-lying floodplains.</p>

C.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Vegetation complex*					
Beard vegetation association 29 - bioregion	1,133,249.76	1,131,712.01	99.87	106,259.86	9.38
Beard vegetation association 29 -state	1,133,249.76	1,131,712.01	99.87	106,259.86	9.38

*Government of Western Australia (2019)

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<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 may contain regionally significant flora, fauna and habitats.</p>	Not likely to be at variance	Yes Refer to Section 3.2.1
<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 is likely to contain significant habitat for conservation significant fauna.</p>	Not likely to be at variance	Yes Refer to Section 3.2.1
<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>	Not at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<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 (Biota, 2023).</p> <p>The vegetation associations within the application area are common and widespread within the region (GIS Database), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened (rare) flora.</p> <p>The area proposed to be cleared is unlikely to contain flora species listed under the BC Act.</p>		
<p><u>Principle (d):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.”</i></p> <p><u>Assessment:</u></p> <p>Flora and vegetation surveys of the application area did not identify any TECs (Biota, 2023). No TECs were identified within or adjacent to the application area. The area proposed to be cleared does not species that can indicate a threatened ecological community</p>	Not 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 Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Pilbara Bioregion (Government of Western Australia, 2018). The application area is broadly mapped as Beard vegetation association Fortescue Valley 29: sparse low woodland, mulga (GIS Database). The pre-European extent of this vegetation association remains at approximately 99% uncleared at both the state and bioregional level (Government of Western Australia, 2018).</p> <p>The extent of native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia (Commonwealth of Australia, 2001). The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area (GIS Database).</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>There are no conservation areas in the vicinity of the application area. The nearest DBCA managed land is the Karijini National Park which is located approximately 100 kilometres west of the application area (GIS Database).</p> <p>Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the conservation values of Karijini National Park.</p>	Not 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>	May be at variance	Yes Refer to Section 3.2.2

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>Given some minor non-perennial watercourses are recorded within the application area (GIS Database), the proposed clearing is likely to impact on- or off-site hydrology and water quality.</p>		
<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 application area lies within the Turee land system (GIS Database). The Turee land system is described as stony alluvial plains with gilgaed and non-gilgaed surfaces supporting tussock grasslands and grassy shrublands. This land system is not generally susceptible to erosion, however wind erosion can be an issue.</p> <p>The applicant has indicated that clearing will focus on vegetation removal rather than topsoil removal in most areas, leaving topsoil in-situ, this will reduce wind erosion impacts (Preston Consulting, 2024).</p> <p>The mapped soils are high to extreme susceptible to wind erosion (DPIRD, 2024). Noting the location of the application area and the condition and extent of the vegetation surrounding the proposed clearing area, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not 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>Given that perennial watercourses occur within the application that flow to the Fortescue Marsh, (GIS Database) the proposed clearing may impact surface and ground water quality.</p>	Not likely to be at variance	Yes Refer to Section 3.2.3
<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>Given that two minor water courses are recorded within the application area (GIS Database), the proposed clearing is likely to impact on in-situ hydrology and water quality, impact on offsite hydrology is not expected.</p> <p>The climate of the region is semi-arid, with a low average rainfall of approximately 332 millimetres per year (BOM, 2024). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall generally associated with cyclone events (Preston Consulting, 2024). The proposed clearing is unlikely to increase the incidence or intensity of natural flooding events, or contribute to waterlogging.</p> <p>The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding (GIS Database).</p>	Not at variance	No

Appendix D. 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 several 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)

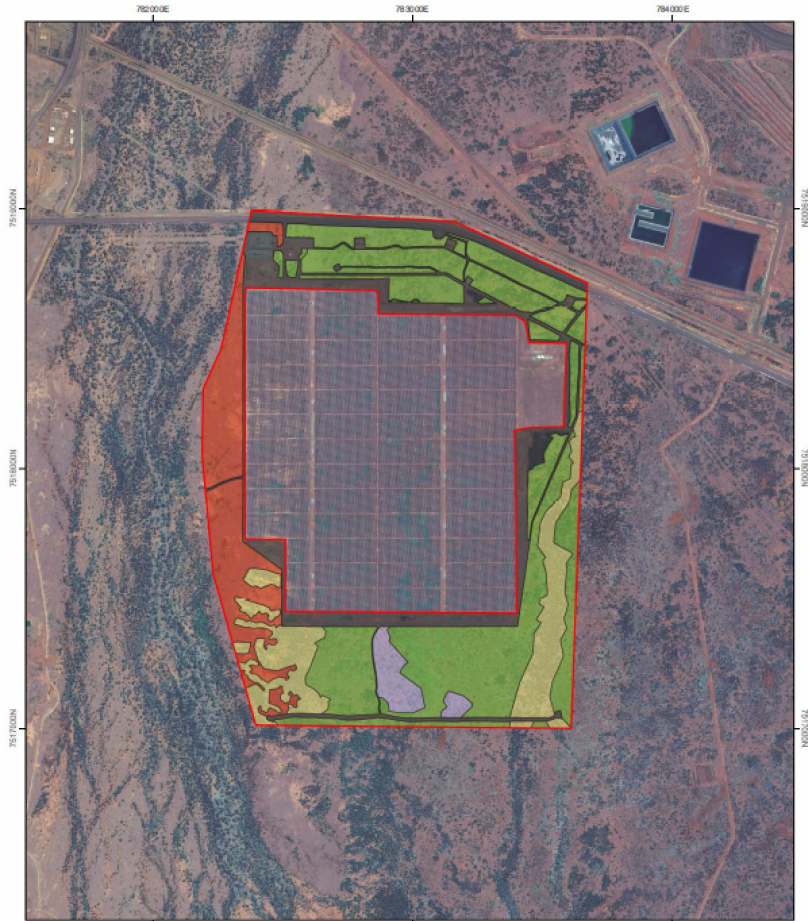
Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance 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 E. Biological survey information excerpts

Vegetation types recorded within the proposed cleared area

Code	Mapping unit	Extent in Permit Area	
		Area (ha)	Proportion of Permit Area (%)
D1	Low open forest of <i>Acacia aptaneura</i> over mixed <i>Acacia</i> spp. and * <i>Malvastrum americanum</i> shrubs over mixed tussock grassland dominated by * <i>Cenchrus</i> spp. and <i>Aristida</i> spp.	19.2	14.1
F1	Low open woodland of <i>Acacia aptaneura</i> over mixed <i>Acacia</i> spp., <i>Senna</i> spp. and <i>Eremophila cuneifolia</i> shrubs over mixed tussock grasses dominated by <i>Aristida</i> spp.	60.4	44.2
F2	Scattered low trees of <i>Acacia aptaneura</i> over scattered shrubs of mixed <i>Acacia</i> spp. over scattered tussock grasses dominated by <i>Aristida contorta</i> , <i>Enneapogon polyphyllus</i> and <i>Eragrostis xerophila</i> , with scattered herbs of <i>Scierolaena</i> spp.	21.1	15.4
F3	Low open woodland of <i>Acacia xiphophylla</i> over scattered shrubs of <i>Senna artemisioides</i> subsp. <i>oligophylla</i> and <i>Eremophila cuneifolia</i> over scattered tussock grasses of <i>Enteropogon ramosus</i> and <i>Aristida contorta</i> , with scattered herbs of <i>Scierolaena cornishiana</i> .	4.5	3.3
C1	Cleared	31.4	23
Total		136.6	100

Vegetation types mapped with proposed clearing area (see above table for code references)



Legend

Chichester Solar Expansion Permit Area Imagery: Google Satellite

Vegetation Type

- D1
- F1
- F2
- F3
- Cleared

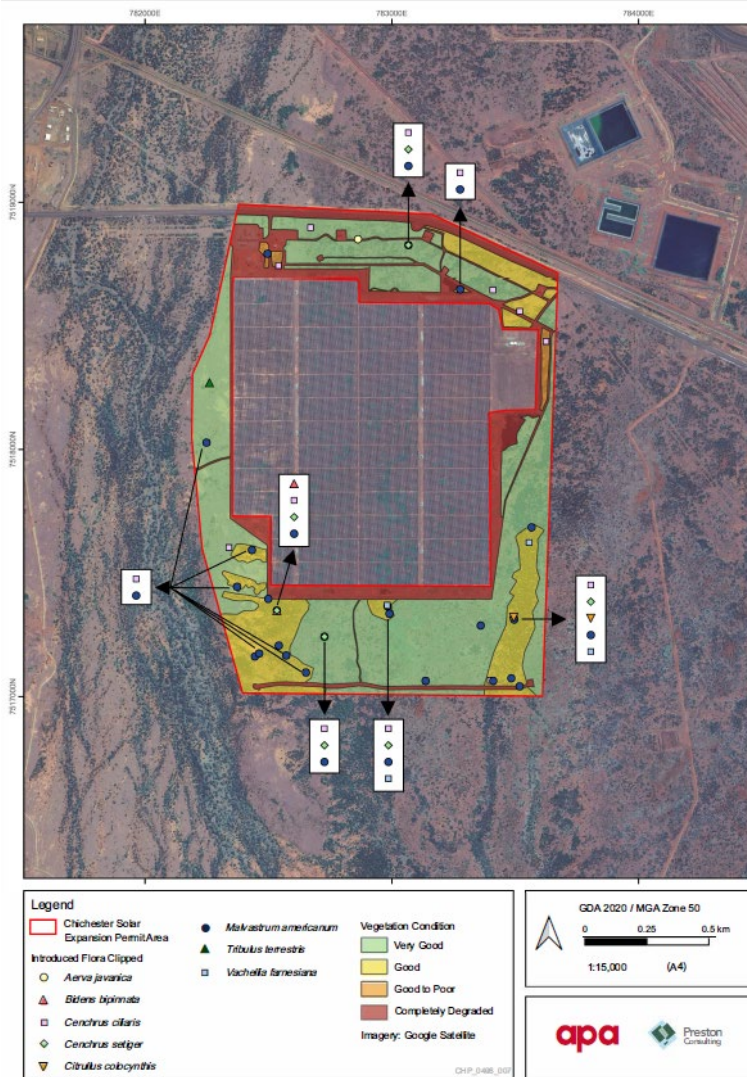
CHP 048 000

GDA 2020 / MGA Zone 50

1:15,000 (A4)

apa Preston Consulting

Vegetation condition and introduced flora mapping



Appendix F. Sources of information

F.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)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- 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 – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics

- Public Drinking Water Source Areas (DWER-033)
- 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 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
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

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