



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 9292/1
Permit Holder:	Western Australian Agriculture Authority
Duration of Permit:	From 22 July 2021 to 22 July 2031

The permit holder is authorised to clear native vegetation subject to the following conditions of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear native vegetation for the purpose of topsoil extraction.

2. Land on which clearing is to be done

Lot 750 on Deposited Plan 420666, Inggarda

3. Clearing authorised

The permit holder must not clear more than 2.5 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

4. Period during which clearing is authorised

The permit holder must not clear any native vegetation after 22 July 2026.

PART II – MANAGEMENT CONDITIONS

5. Avoid, minimise, and reduce impacts and extent of clearing

In determining the native vegetation authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

6. Weed management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known weed-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

7. Revegetation and rehabilitation – retention of vegetative material and topsoil

The permit holder must:

- (a) retain the vegetative material removed by clearing authorised under this permit and stockpile the vegetative material in an area that has already been cleared;
- (b) retain 100 millimetres of topsoil from the cleared area and stockpile the topsoil in an area that has already been cleared;
- (c) immediately following clearing authorised under this permit, *revegetate* and *rehabilitate* the area(s) that are no longer required for topsoil extraction by:
 - (i) re-shaping the surface of the land so that it is consistent with the surrounding five metres of uncleared land;
 - (ii) ripping the ground on the contour with tynes at 60-centimetre spacing to remove soil compaction;
 - (iii) laying the topsoil retained under condition 7(b) on the cleared area(s); and
 - (iv) laying the vegetative material retained under condition 7(a) on the cleared area(s); and
 - (v) undertake *weed* control activities as required, to reduce *weed* cover within the cleared areas to no greater than the *weed* cover within the surrounding five metres of uncleared land.

PART III - RECORD KEEPING AND REPORTING

8. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ol style="list-style-type: none">(a) the species composition, structure, and density of the cleared area;(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;

No.	Relevant matter	Specifications
		(c) the date that the area was cleared; (d) the size of the area cleared (in hectares); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 5; (f) actions taken to minimise the risk of the introduction and spread of weeds in accordance with condition 6; and (g) actions taken to <i>revegetate</i> and <i>rehabilitate</i> in accordance with condition 7.

9. Reporting

The permit holder must provide to the *CEO* the records required under condition 8 of this permit when requested by the *CEO*.

DEFINITIONS


In this permit, the terms in Table have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
fill	means material used to increase the ground level, or to fill a depression.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
rehabilitate/ rehabilitated/ rehabilitation	means actively managing an area containing native vegetation in order to improve the ecological function of that area.
revegetate / vegetated / revegetation	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
weeds	means any plant – (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i> ; or

Term	Definition
	(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS


 Ryan Mincham
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Ryan Mincham
 MANAGER
 NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
 of the Environmental Protection Act 1986*

29 June 2021

Schedule 1

Plan 9292/1 - The boundary of the area authorised to be cleared is shown in the map below.

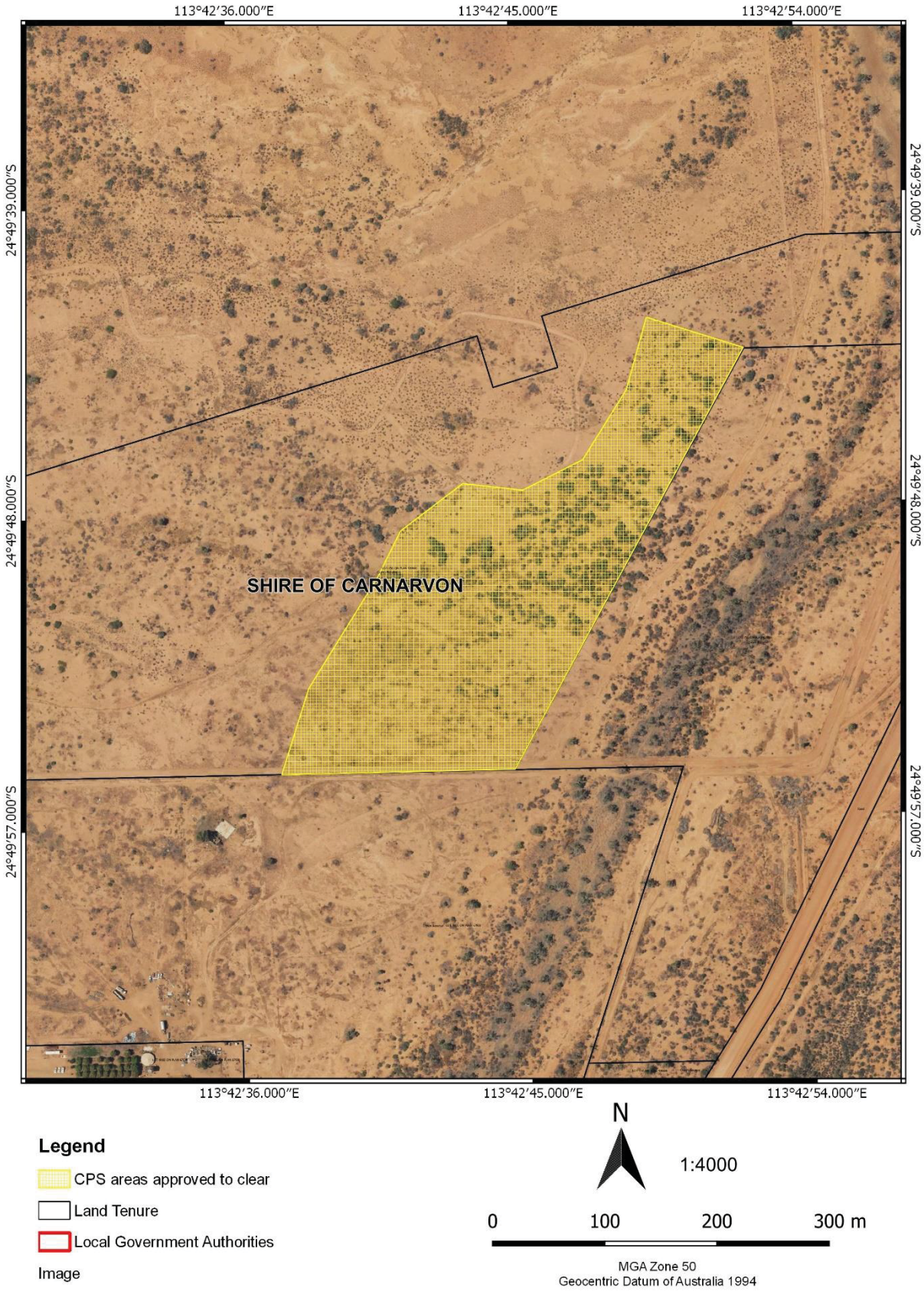


Figure 1: Map of the boundary of the area within which clearing may occur



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9292/1
Permit type:	Purpose permit
Applicant name:	Western Australian Agriculture Authority
Application received:	17 May 2021
Application area:	2.5 hectares of native vegetation
Purpose of clearing:	Topsoil extraction
Method of clearing:	Mechanical
Property:	Lot 750 in Plan 420666
Location (LGA area/s):	Shire of Carnarvon
Localities (suburb/s):	Inggarda

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single continuous area of approximately 6.7 hectares (see Figure 1, Section 1.4). The proposed removal of 2.5 hectares of native vegetation within this clearing footprint is to facilitate topsoil extraction (WAAA, 2021).

Decision:	Granted
Decision date:	29 June 2021
Decision area:	2.5 hectares of native vegetation, as depicted in Section 1.5, below.

1.3. 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 14 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), the findings of a flora and vegetation survey (see Appendix E), 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 3.3), land degradation advice provided by the Commissioner of Soil and Land Conservation (2021), as well as relevant datasets available at the time of the assessment (see Appendix F). The Delegated Officer also took into consideration the purpose of the clearing is to replace the topsoil for private farm landowners that were affected by the Carnarvon flooding event in January-February 2021.

The assessment identified that the proposed clearing may cause appreciable land degradation in the form of accelerated wind and/or water erosion; and introduce and spread weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values.

Whilst the proposed clearing may impact suitable habitat for flora and fauna, it is not considered significant habitat due to the extent of native vegetation remaining in the local area, and the relatively small amount of clearing.

After consideration of the available information, the Delegated Officer has determined that with appropriate management conditions, the proposed clearing is not likely to lead to an unacceptable risk to the environment. The Delegated Officer has decided to grant a clearing permit subject to conditions to:

- undertake rehabilitation of the extraction site immediately following extraction, to mitigate the long-term impact of erosion, and allow the cleared area to regenerate.
- uake hygiene steps to minimise the risk of the introduction and spread of weeds.

1.4. Site map

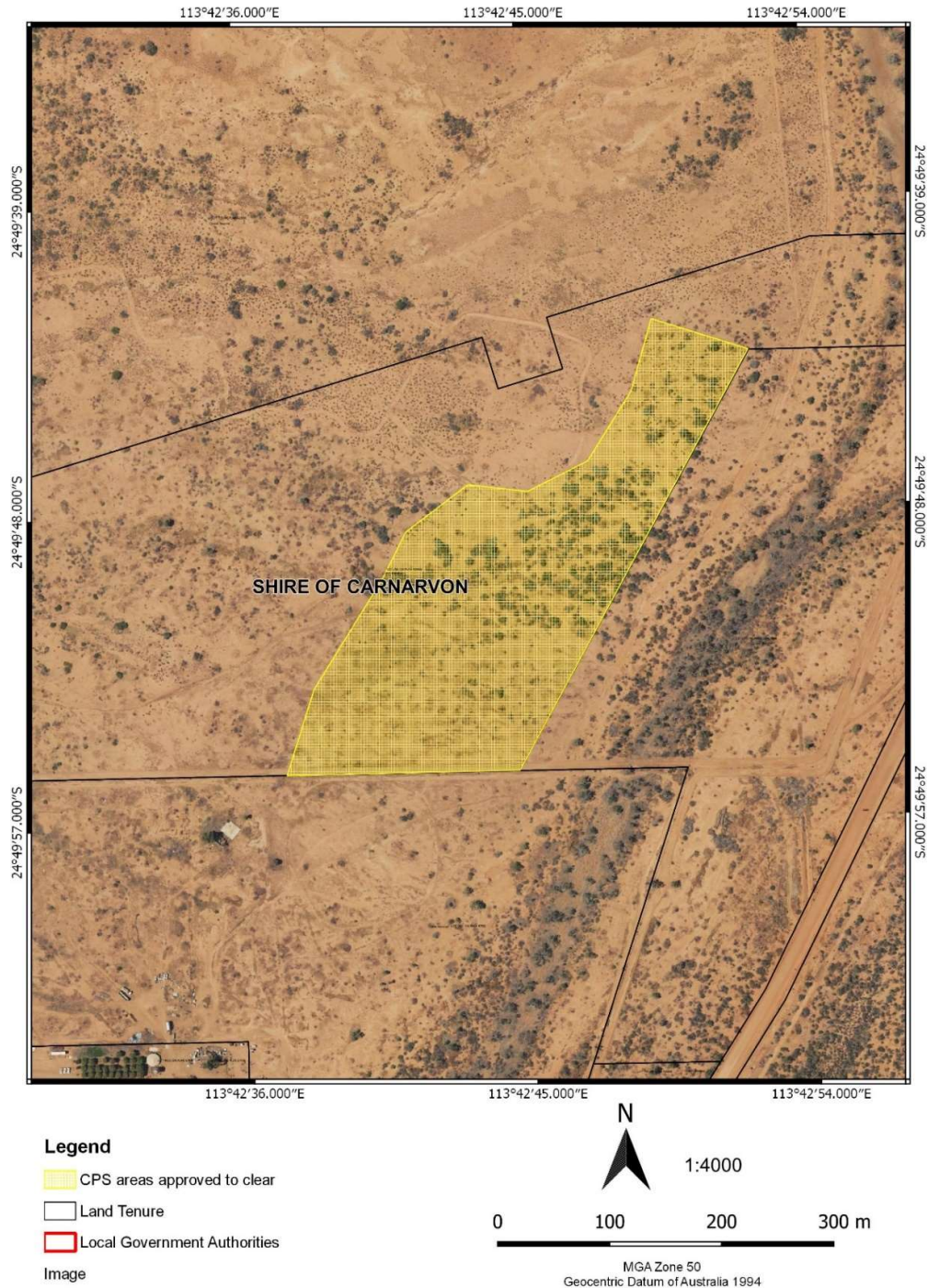


Figure 1. Map of the application area. The area cross-hatched yellow indicates the area authorised to be cleared under the granted clearing permit.

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)
- *Rights and Water Irrigation Act (1914)*
- *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* (December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016).

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The application initially proposed to clear up to 5 hectares of native vegetation across five separate extraction sites in two properties, being Lot 750 on Deposited Plan 420666, Inggarda, and Lot 556 on Deposited Plan 415841, North Plantations (WAAA, 2020). The application was revised during the assessment to avoid clearing within the Priority Agricultural Zone, Environmental Conservation Reserve, and watercourses (DPIRD, 2021) (see Section 3.3). Consequently, the proposed clearing was reduced to 2.5 hectares from one extraction site within Lot 750 (see Figure 1, Section 1.4).

The Delegated Officer was satisfied that the applicant has undertaken reasonable measures 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 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 values (biodiversity 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.

3.2.1. Environmental value: biological values (flora and fauna) – Clearing Principle (a) and (b)

Assessment:

Flora

According to available databases, no threatened flora species and nine priority flora species have been recorded within the local area (20 kilometre radius from the perimeter of the application area). The vegetation and/or soils present within the application area have the potential to provide suitable habitat for the following species (Appendix B.3):

- *Schoenia filifolia* subsp. *arenicola* (P1)
- *Abutilon* sp. Quobba (H. Demarz 3858) (P2)
- *Chthonocephalus tomentellus* (P2)
- *Rumex crystallinus* (P2)
- *Sporobolus blakei* (P3)

A total of six vegetation types were recorded within the survey area of 921.6 hectares. Only one vegetation type, ASL (1) (*Acacia* shrubland) was recorded within the application area. Vegetation type ASL (1) was the most dominant within the survey area, representing 55.7 per cent (513.3 hectares) of the survey area (Strategen 2017; 2019). The condition of this vegetation was given a quality score of 3, as the structure of the vegetation has been altered from ongoing disturbance from livestock and human activities (Strategen, 2017; see Appendix D).

One Priority flora species, *Corchorus congener* (P3), was potentially recorded during the survey. Subsequent review of the specimen confirmed that the record was an *Acacia* sp., and not *Corchorus congener* (P3) as initially thought (Strategen, 2017). No threatened or priority flora species were recorded during the surveys (Strategen, 2017; 2019; Strategen-JBS&G, 2020). The surveys were completed during the prime flowering time for the majority of the conservation significant species potentially occurring within the survey area (Strategen, 2017; 2019; Strategen-JBS&G, 2020). The survey was not undertaken at an optimal time for *Abutilon* sp. Quobba (H. Demarz 3858) (P2), which flowers between July to September. However, the soil type preferred by this species is sandplain, and along dune ridges (Western Australian Herbarium, 1998-), which is not present within the application area. It is not likely that the application area contains habitat significant for this species. If present, the remaining above-listed priority flora species would have likely been recorded from within the application area. It is not likely that the proposed clearing will significantly impact on the habitat availability of conservation significant species that may be present within the local area.

Fauna

According to available databases, 56 conservation significant fauna species have been recorded within the local area. Noting the habitat requirements of the recorded species, the mapped vegetation type, and the condition of the vegetation within the application area, the application area may comprise suitable habitat for the Carnarvon shield-backed trapdoor spider (*Idiosoma incomptum*; Priority 3) and Peregrine Falcon (*Falco peregrinus*; other specially protected fauna).

The Carnarvon shield-backed trapdoor spider has a relatively widespread, near-coastal distribution in the southern Carnarvon Basin, from Zuytdorp north to at least Boolathana Station. The known extent of occurrence is nearly 6,500 kilometres squared, although due to the lack of inland records, it is expected that this value is likely to be an underestimate (Rix et al., 2018). The local area (20 kilometre radius of the application area, excluding the area covered by ocean), retains approximately 96 per cent remnant vegetation. Noting the degraded condition of the vegetation within the application area, and the extent of vegetation remaining within the application area, it is likely that suitable habitat for this species is widespread through the Carnarvon region. It is not likely that the relatively small extent of the proposed clearing will significantly impact on habitat for this species.

The Peregrine falcon is widespread, highly mobile, and is found in various habitats, from rainforests to the arid zone and at most altitudes, from the coast to alpine areas. It requires abundant prey and secure nest sites and prefers coastal and inland cliffs or open woodlands near water and may even be found nesting on high city buildings (Australian Museum, 2020). The application area may comprise suitable habitat for this species, however, noting the extent of remnant vegetation remaining within the local area (approximately 95 per cent) and the small extent of the proposed clearing, the application area is unlikely to comprise significant habitat for this species.

Outcome:

Based on the above, the Delegated Officer determined that the proposed clearing is not likely to impact on vegetation that is significant habitat for flora or fauna species, or impact on an area that contains high biodiversity. To mitigate long-term impacts of the proposed clearing, a rehabilitation condition will be imposed on the permit.

Conditions:

No fauna or flora management conditions are required. However, long-term impacts to biodiversity as a result of the clearing may be mitigated by the implementation of a rehabilitation condition, which will require the applicant to undertake the following activities immediately following topsoil extraction:

- cross-rip the base of the soil pit with tynes at 60-centimetre spacing.
- respread topsoil (at a depth of approximately 100mm) which was stockpiled prior to soil extraction onto the pit area.

3.2.2. Environmental value: land and water resources – Clearing Principles (g)

Assessment:

The application area falls within the floodplains of the Delta land system, which is described as floodplains of the major rivers, supporting low shrublands of bluebush and saltbush, widely degraded and eroded (CSLC, 2021). The extraction site is situated on a level alluvial plain, and therefore is not subject to frequent flooding (DPIRD, 2020). However, the floodplains are highly susceptible to erosion by water and wind whenever perennial cover is significantly reduced (CLSC, 2021).

Noting the above, the proposed clearing is likely to cause appreciable land degradation in the form of wind and water erosion. Rehabilitation of the extraction site immediately following the extraction of topsoil will mitigate any long-term land degradation impacts.

Outcome:

Based on the above assessment, the Delegated Officer has determined that the proposed clearing is considered acceptable subject to conditions (see below) in relation to this environmental value.

Conditions:

To address the above impacts, a rehabilitation condition will be added to the permit, which will require the applicant to undertake the following activities immediately following topsoil extraction:

- cross-rip the base of the soil pit with tynes at 60-centimetre spacing.
- respread topsoil (at a depth of approximately 100mm) which was stockpiled prior to soil extraction onto the pit area.

3.3. Relevant planning instruments and other matters

The Department of Agriculture and Food, Western Australia (DAFWA) and the Shire of Carnarvon secured funding from the Western Australia State Government's Royalties for Regions program to implement the Gascoyne Food Bowl Initiative. The initiative will increase horticulture production in the area by an additional 400 hectares. Part of the initiative involves the introduction of a Special Control Area (SCA) to the Shire District Zoning Scheme 11 to provide for subdivision and development control within the SCA boundary (Strategen, 2017).

Following the level 1 flora and vegetation survey undertaken by Western Botanical in 2013, the scheme amendment proposal was submitted to the Environmental Protection Authority (EPA) for assessment under Part IV, Division 3 of the EP Act. The EPA provided formal correspondence to the Shire of Carnarvon on 4 April 2016, stating that the environmental impacts of the proposed scheme amendment were not so significant to warrant formal assessment. Part of EPA advice included a recommendation that a level 2 flora and vegetation was undertaken within the initiative area to inform the provision of SCA. Strategen were subsequently commissioned to undertake the flora and vegetation survey (Strategen, 2017; 2019) (see Appendix E).

In January-February 2021, the Shire of Carnarvon experienced a flooding event that significantly impacted the horticultural district, most notably through the erosion of productive topsoil. DPIRD and other agencies commenced works to manage immediate and ongoing issues associated with the loss of topsoil and erosion. The Western Australian Government made an election commitment to assist in the recovery through (DPIRD, 2021):

- restoration of lost topsoil;
- identifying and addressing the contributing factors to the severity of impacts within the Carnarvon Flood Plain; and
- assessing the opportunities throughout the Gascoyne catchment that may lessen flood impact on the Carnarvon Flood plain.

The original application included multiple topsoil extraction sites (WAAA, 2020). On 2 June 2021, the Shire of Carnarvon advised DWER that a portion of the application area was located within the Priority Agricultural Zone, Environmental Conservation Reserve, and is also affected by the Special Control Area 3 (SCA3). The Shire of Carnarvon advised that the proposed works do not meet the objectives of the Environmental Conservation Reserve, and that Development Approval would be required for the portions of the application area which are subject to SCA3 (Shire of Carnarvon, 2021).

The Shire of Carnarvon also advised that the application area fell within the Gascoyne Food Bowl District Structure Plan, and noted that the purpose of the proposed clearing would be in direct conflict with the envisaged plan for the area in relation to agricultural activities (Shire of Carnarvon, 2021).

Based on the advice received from the Shire of Carnarvon, the original application was revised to a single topsoil extraction site located outside of the SCA3 (see section 3.1 and Appendix A; DPIRD, 2020).

On 2 June 2021, the Midwest Gascoyne regional branch of DWER advised any interference, disturbance, or alteration of creek lines, tributaries, and riparian vegetation associated with them, would require a Bed and Banks Permit under the RIWI Act. No licences or permits for works or abstraction activities within the application area had been applied for (DWER, 2021). The Midwest Gascoyne branch advised that should activities be carried out (DWER, 2021):

- a minimum 50 metre buffer to creek lines/ tributaries/ riparian vegetation should be maintained; and
- no disturbance of vegetation should be undertaken within the buffers to ensure adequate stabilisation in accordance with Water Quality Protection Note 6.

No registered Aboriginal sites of significance have been mapped within the application area. The nearest registered site is a ceremonial waterhole within the Gascoyne/Murchison region, located approximately 3.5 kilometres from the application area. Given the separation distance, the proposed clearing is unlikely to impact on this site. 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.

Appendix A. Additional information provided by applicant

During the assessment of the application, DWER wrote to the applicant advising that a portion of the proposed clearing area is located within the Priority Agricultural Zone, Environmental Conservation Reserve and is affected by the Special Control Area 3 (SCA3). DWER advised the applicant that the Shire of Carnarvon is unlikely to support the proposed works. DWER invited the applicant to provide further information to demonstrate that they have been issued with planning approvals from the Shire of Carnarvon for the proposed land use. As described in sections 3.1 and 3.3, the application area was revised to exclude activities from the Priority Agricultural Zone, Environmental Conservation Reserve and SCA3.

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is located within the extensive land use zone of Western Australia. Based on aerial imagery, the application area is surrounded by vegetation of similar condition and extent. Spatial data indicates the local area (20 kilometre radius of the application area, excluding the ocean) retains approximately 96 per cent (93,351 hectares) of the original native vegetation cover.
Ecological linkage	The application area does not occur within any mapped ecological linkages.
Conservation areas	The application area does not occur within any conservation areas. The closest conservation area is Chinamans Pool Nature Reserve (Class A) located approximately 4.4 kilometres southwest of the application area.
Vegetation description	<p>A vegetation survey conducted by Strategen (2019) indicates the vegetation within the application area is <i>Acacia</i> shrubland, described as:</p> <ul style="list-style-type: none"> • ASL (1): Tall Sparse to Open Shrubland of <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i> and / or <i>Acacia synchronicia</i> with a Sparse to Open Shrubland of <i>Rhagodia eremaea</i> and <i>Alectryon oleifolius</i> subsp. <i>oleifolius</i> and an Open Tussock Grassland of <i>*Cenchrus ciliaris</i> and / or <i>Chloris pumilio</i>. <p>This vegetation type is consistent with the mapped Beard vegetation association 308, which is described as:</p> <ul style="list-style-type: none"> • Mosaic: Shrublands; <i>Acacia sclerosperma</i> sparse scrub / Succulent steppe; saltbush & bluebush (Shepherd et al., 2002). <p>The mapped Beard vegetation association retains approximately 99.22 per cent of the original extent (Government of Western Australia, 2019).</p>
Vegetation condition	The vegetation survey conducted by Strategen (2019) assigned the application area with a vegetation condition score of 3 (EPA and DPaW, 2015); that is, the vegetation proposed to be cleared shows some relatively slight signs of damage caused by

Characteristic	Details								
	human activities since European settlement. The full EPA and DPaW (2015) condition rating scale is provided in 0.								
Climate and landform	<ul style="list-style-type: none"> • Mean annual rainfall: 219 millimetres per annum. • Evapotranspiration: 300 millimetres per annum. • Groundwater Salinity: 500-1,000 milligrams per litre total dissolved solids. • The extraction site is situated on a level alluvial plain and is not subject to frequent flooding (DPIRD, 2020). 								
Soil description	<p>The soils within the application area occur within the following subsystems mapped by the Department of Primary Industries and Regional Development (DPIRD) (2020):</p> <table border="1"> <thead> <tr> <th>Subsystem</th> <th>Description (Purdie et al., 2004)</th> </tr> </thead> <tbody> <tr> <td>Delta bluebush flat Subsystem</td> <td>Plains carrying scattered to very scattered low (0.8-1.2 m high) shrubland dominated by Gascoyne bluebush (<i>Maireana polypterygia</i>). Dominant soils belong to the Coburn and Moyamber associations</td> </tr> <tr> <td>Gascoyne association - 'over buried soils' Phase</td> <td>Flat terrace plains and levee surfaces. Reddish brown earthy sands and less commonly reddish brown siliceous sands</td> </tr> <tr> <td>River loamy terrace Subsystem</td> <td>Level alluvial plain developed on the upper terraces of the Gascoyne River and carrying acacia shrubland with an understorey including buffel grass (<i>Cenchrus ciliaris</i>).</td> </tr> </tbody> </table>	Subsystem	Description (Purdie et al., 2004)	Delta bluebush flat Subsystem	Plains carrying scattered to very scattered low (0.8-1.2 m high) shrubland dominated by Gascoyne bluebush (<i>Maireana polypterygia</i>). Dominant soils belong to the Coburn and Moyamber associations	Gascoyne association - 'over buried soils' Phase	Flat terrace plains and levee surfaces. Reddish brown earthy sands and less commonly reddish brown siliceous sands	River loamy terrace Subsystem	Level alluvial plain developed on the upper terraces of the Gascoyne River and carrying acacia shrubland with an understorey including buffel grass (<i>Cenchrus ciliaris</i>).
Subsystem	Description (Purdie et al., 2004)								
Delta bluebush flat Subsystem	Plains carrying scattered to very scattered low (0.8-1.2 m high) shrubland dominated by Gascoyne bluebush (<i>Maireana polypterygia</i>). Dominant soils belong to the Coburn and Moyamber associations								
Gascoyne association - 'over buried soils' Phase	Flat terrace plains and levee surfaces. Reddish brown earthy sands and less commonly reddish brown siliceous sands								
River loamy terrace Subsystem	Level alluvial plain developed on the upper terraces of the Gascoyne River and carrying acacia shrubland with an understorey including buffel grass (<i>Cenchrus ciliaris</i>).								
Land degradation risk	The rangeland survey information indicates that the soils of the application area are moderately to highly susceptible to both water and wind erosion when cleared of perennial vegetation (CSLC, 2021).								
Waterbodies	The application area does not occur within any mapped wetlands or intersect any watercourses. The closest wetland is the McNeill Claypan System, located approximately 3.5 kilometres south of the application area. The nearest watercourse is a minor, non-perennial tributary of the Gascoyne River, located approximately 90 metres east of the application area.								
Hydrogeography	The application area is mapped within the Gascoyne River and Tributaries Surface Water Area, and the Gascoyne Groundwater Area, both proclaimed under the RIWI Act. The application area is not located within any Public Drinking Water Source Areas.								
Flora	<p>According to available databases, the following conservation significant flora have been recorded within the local area:</p> <ul style="list-style-type: none"> • Nine records of flora species listed as Priority by DBCA; and • No records of flora taxa listed as threatened under the BC Act. <p>Based on the similarities shared between the soil and vegetation types in habitats for these flora taxa and within the application area, the flora species as detailed in Appendix B.3 may occur within the application area.</p>								
Ecological communities	No known threatened or priority ecological communities (TEC or PEC) occur within the application area. The closest TEC or PEC is the Subtropical and Temperate Coastal Saltmarsh listed as 'Priority 3' by DBCA and 'Vulnerable' under the EPBC Act, mapped approximately 5 kilometres southwest of the application area.								

Characteristic	Details
Fauna	<p>According to available databases, 56 conservation significant fauna species have been recorded within the local area. The boundary of the local area overlaps the ocean, Gascoyne River (including the river mouth), and wetlands listed in the directory of important wetlands in Western Australia. A number of the recorded fauna species are exclusively associated with marine, estuarine or freshwater habitats that do not occur within the application area.</p> <p>Noting the habitat requirements, distribution of the recorded species, the vegetation type and condition within the application area, the application area may comprise suitable habitat for two species described in Appendix B.4.</p>

B.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*					
Carnarvon	8,382,890.35	8,360,801.46	99.74	12.20	12.17
Beard vegetation association*					
308	446,976.92	443,483.90	99.22	0.87	0.87
Local area					
20 kilometre radius	-	~ 93,351	~ 96	-	-

*Government of Western Australia (2019)

B.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), the flora and vegetation survey information (Strategen, 2017; 2019), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status (priority)	Suitable vegetation type?	Suitable soil type?	Distance of closest record to application area (m)	Number of known records (total)*	Are surveys adequate to identify?
<i>Schoenia filifolia</i> subsp. <i>arenicola</i>	1	No	Yes	4,324	3	Yes
<i>Abutilon</i> sp. <i>Quobba</i> (H. Demarz 3858)	2	Yes	No	5,779	8	No
<i>Chthonocephalus tomentellus</i>	2	No	Yes	10,340	31	Yes
<i>Rumex crystallinus</i>	2	No	Yes	8,337	3	Yes
<i>Sporobolus blakei</i>	3	No	Yes	7,476	10	Yes

B.4. Fauna analysis table

Species name	Conservation status	Suitable habitat features?	Distance of closest record to application area (m)	Are surveys adequate to identify?
<i>Idiosoma incompitum</i> (Carnarvon shield-backed trapdoor spider)	P3	Yes	4,941	N/A
<i>Falco peregrinus</i> (Peregrine falcon)	OS	Yes	3,719	N/A

CR: critically endangered, EN: endangered, VU: vulnerable, EX: Presumed extinct species, IA (M) Migratory birds protected under an international agreement, CD: Conservation dependent fauna, OS: Other specially protected fauna

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> <i>"Native vegetation should not be cleared if it comprises a high level of biodiversity."</i></p> <p><u>Assessment:</u></p> <p>The application area does not contain values which are considered to indicate a high level of biodiversity. The vegetation within the application area is not representative of any conservation significant ecological communities, and does not provide significant habitat for conservation significant fauna. The application area is not likely to provide habitat for threatened or priority flora species.</p>	Not likely to be at variance	Yes Refer to Section 3.2.1, above.
<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 not contain habitat that is significant for any conservation significant fauna.</p>	Not likely to be at variance	Yes Refer to Section 3.2.1, above.
<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>The area proposed to be cleared does not contain habitat for threatened flora species listed under the BC Act.</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>The proposed clearing area does not contain species composition that is indicative of a TEC listed by the Western Australian Minister for Environment.</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 extent of the mapped vegetation association and 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.</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

Assessment against the clearing principles	Variance level	Is further consideration required?
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> <p>Given no watercourses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact vegetation growing in, or in association, with a watercourse or wetland.</p>	Not likely to be 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 rangeland survey information indicates that the soils of the application area are moderately to highly susceptible to both water and wind erosion when cleared of perennial vegetation. The proposed clearing may cause appreciable land degradation if not managed appropriately.</p>	At variance	Yes Refer to Section 3.2.2, above.
<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 watercourses or wetlands mapped within the application area. The nearest Public Drinking Water Sources Area is the Carnarvon Water Reserve (P1), which is located approximately 8 kilometres from the application area. The proposed clearing is unlikely to impact on the quality of surface or groundwater.</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>The application area occurs in floodplains and adjacent to drainage zones. The proposed clearing is not likely to contribute to increased incidence or intensity of flooding that is naturally experienced within the area.</p>	Not likely to be 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 a number of interacting disturbance types.

The vegetation condition scale used in the flora and vegetation survey (Strategen, 2019) is that for the Eremaean and Northern Botanical Provinces indicated in EPA and DPaW (2015):

Condition	Description
1	N/A
2	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
3	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.
4	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.
5	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.
6	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.
7	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 E. Biological survey information excerpts

To support the Gascoyne Food Bowl Initiative, a detailed flora and vegetation survey was undertaken during 17-20 October 2016 (Strategen, 2017), with additional areas being surveyed on 5 December 2018 (Strategen, 2019) (Figure 1). A targeted survey for priority flora species was also undertaken on 3 September 2020, of the additional areas surveyed in 2019 (Strategen-JBS&G, 2020) (Figure 2).

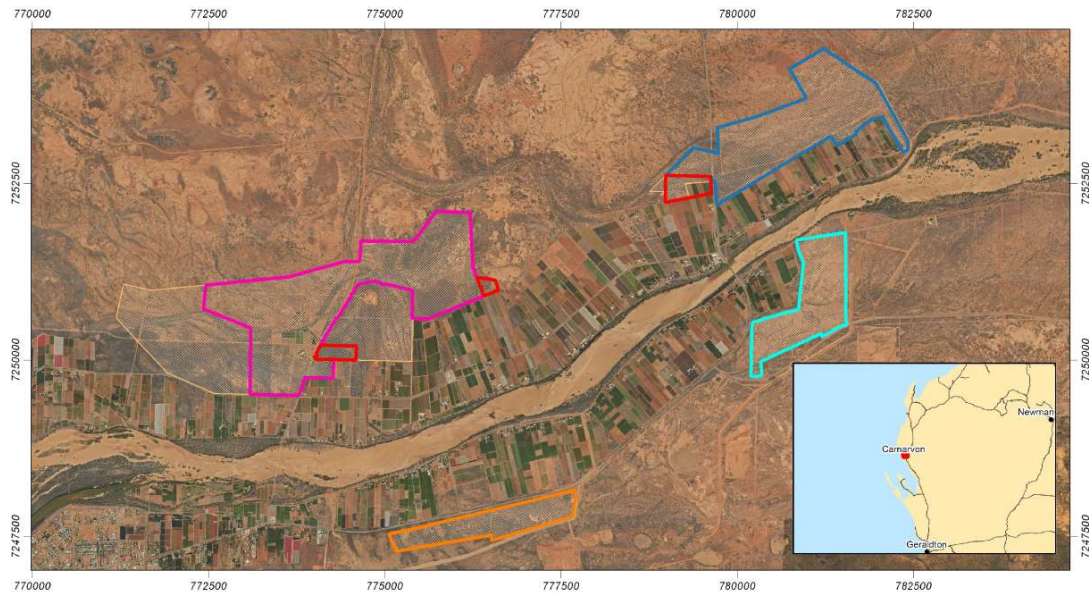


Figure 1: Survey area

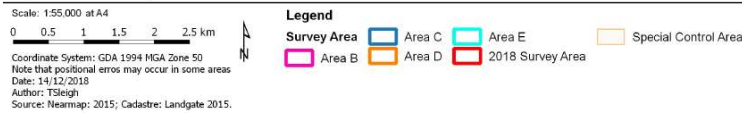


Figure 1. Boundaries of the survey area where red areas indicate 2019 survey efforts (Strategen, 2019).

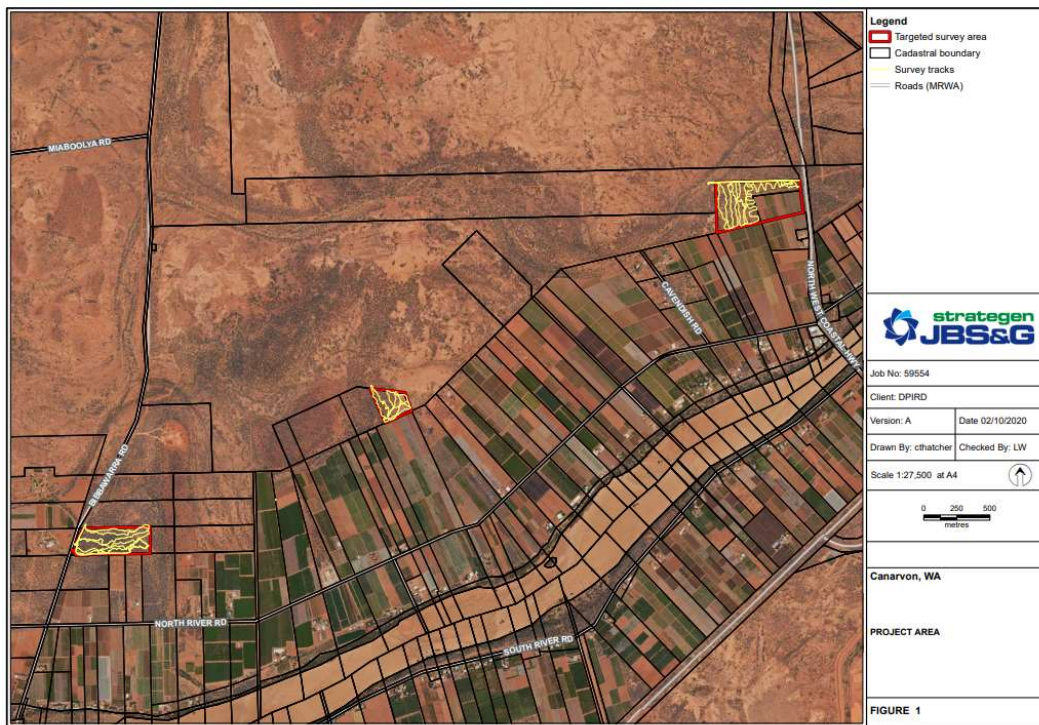


Figure 2. Boundaries of the targeted flora survey (Strategen-JBS&G, 2020).

Key findings for vegetation and flora

Six vegetation types were recorded within the survey area (Strategen, 2017; 2019):

Vegetation Type	Description
ASL (1): Acacia Shrubland	Tall Sparse to Open Shrubland of <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i> and / or <i>A. synchronicia</i> with a Sparse to Open Shrubland of <i>Rhagodia eremaea</i> and <i>Alectryon oleifolius</i> subsp. <i>oleifolius</i> and an Open Tussock Grassland of * <i>Cenchrus ciliaris</i> and / or <i>Chloris pumilio</i> .
ASL (2): Acacia Shrubland	Tall Sparse Shrubland of <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i> and / or <i>A. synchronicia</i> with a Sparse Chenopod Shrubland of <i>Atriplex amnicola</i> and <i>A. semilunaris</i> and Sparse Tussock Grassland of * <i>Cenchrus ciliaris</i> .
EWL (3): <i>Eucalyptus</i> woodland	Low Woodland of <i>Eucalyptus victrix</i> with a Sparse Tall Shrubland of <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i> and <i>Rhagodia eremaea</i> and an Open Tussock grassland of * <i>Cenchrus ciliaris</i> .
CSL (4): Chenopod shrubland	Low Open mixed Chenopod Shrubland (<i>Atriplex holocarpa</i> , <i>A. amnicola</i> , <i>Threlkeldia diffusa</i>).
CSL (5): Chenopod shrubland	Open Chenopod Shrubland of <i>Maireana polypterygia</i> with a mixed Low Sparse Chenopod Shrubland (<i>Sclerolaena eurotioides</i> , <i>Atriplex codonocarpa</i> , <i>A. semilunaris</i>) with a Low Open Forbland of <i>Tetragonia diptera</i> .
CDSL (6): <i>Chenopodium</i> and <i>Duma</i> shrubland	<i>Chenopodium</i> and <i>Duma</i> Shrubland Open Shrubland of <i>Chenopodium auricomum</i> and <i>Duma florulenta</i> with a Low Sparse mixed Tussock grassland (<i>Eulalia aurea</i> , <i>Panicum decompositum</i> , <i>Sporobolus mitchellii</i>) and +/- Isolated Low Trees of <i>Eucalyptus victrix</i> .
Cleared	Cleared areas.

The majority of the survey area (89 per cent) showed signs of degradation due to historical clearing and grazing by livestock. The remaining area was recorded as being pristine, or nearly so (Figure 3).

Within the survey area, 103 native flora taxa representing 29 families and 68 genera were recorded during the survey, including the additional areas surveyed in 2019 (Strategen, 2019). A total of 14 introduced taxa were recorded in the survey area, of which none are a Declared Plant species pursuant to section 22 of the *Biosecurity and Agriculture Management Act 2007*. No EPBC Act or BC Act listed flora were recorded within the survey area (Strategen, 2017; 2019). One Priority flora species, *Corchorus congener* (P3), was potentially recorded during the survey. Subsequent review of the specimen determined that it is likely an *Acacia* sp. A targeted survey was only undertaken over the additional areas (2019 survey areas), no conservation significant flora species were recorded (Strategen-JBS&G, 2020).

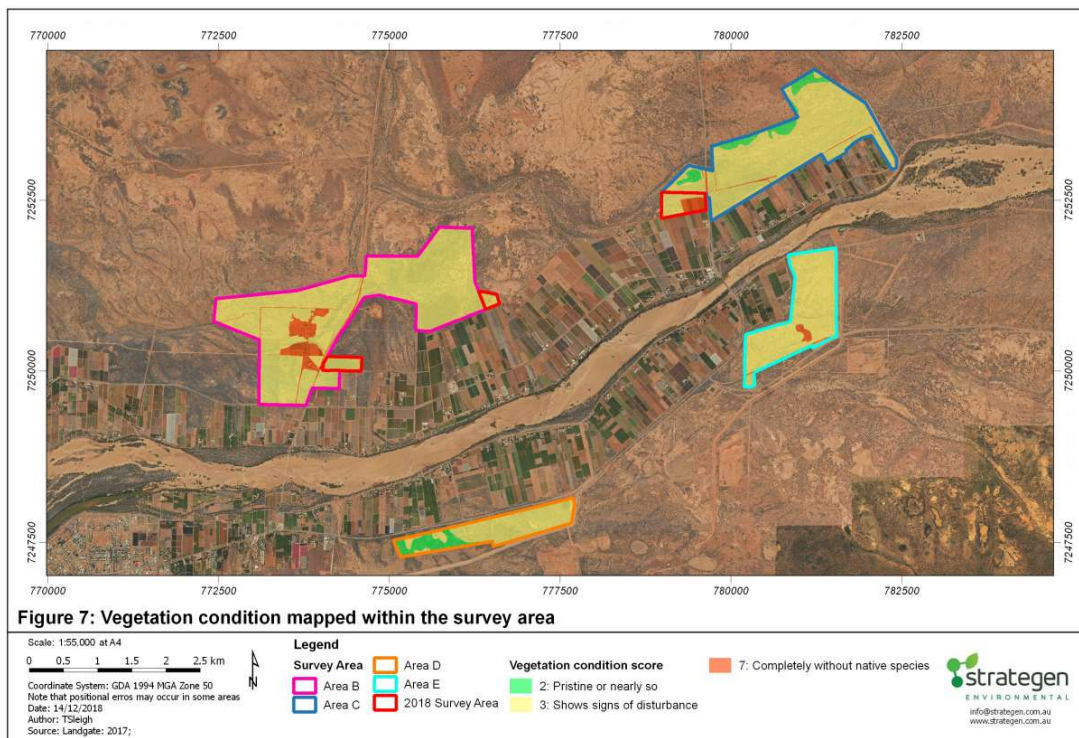


Figure 3. Vegetation condition within the survey area (Strategen, 2019).

Limitations

A review of the survey limitations identified no constraints that might have affected the flora and vegetation assessment. However, it is noted that the survey was conducted in October (spring), which is slightly later than what is recommended within the Eremaean Province, that is, 6-8 weeks post-wet season (August-September). While the survey was conducted slightly later than recommended, annual species were still present and able to be identified in most cases, therefore this factor is not considered to be a constraint (Strategen, 2019).



Figure 4. Representative vegetation within the application area (Strategen, 2017)

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

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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