GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9412/1

File Number: DWERVT8536

Duration of Permit: From 5 March 2023 to 5 March 2025

PERMIT HOLDER

Matthew Peter Brewer

LAND ON WHICH CLEARING IS TO BE DONE

Lot 104 on Deposited Plan 412812, Rosa Brook

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.71 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. 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.

2. Weed and dieback 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* and *dieback*:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(b) ensure that no known dieback or 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.

3. Bed and banks permit/licence to take water

Prior to undertaking any clearing authorised under this permit within the areas cross-hatched yellow on Figure 1 of Schedule 1, the permit holder must obtain the following approvals from the Department of Water and Environmental Regulation.

(a) Permit to Interfere with Bed and Banks of a Watercourse under the *Rights in Water and Irrigation Act 1914*.

(b) Licence to take water under the *Rights in Water and Irrigation Act 1914*.

4. Water erosion management

(a) The Permit Holder must commence development no later than three (3) months after undertaking the authorised clearing activities to reduce the potential for sediment and nutrient runoff into Margaret River.

(b) The Permit Holder shall not cause or allow the discharge of sediments and nutrients, from within the areas permitted to be cleared under this permit, into Margaret River.

5. 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	(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; (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 1; and (f) actions taken to minimise the risk of the

No.	Relevant matter	Specifications
		introduction and spread of *weeds* and *dieback* in accordance with condition 2.
2.	In relation to additional approvals	(a) a copy of the bed and banks permit in accordance with condition 3. (b) a copy of the licence to take water in accordance with condition 3.
3.	In relation to sediment and nutrient run off	(a) actions undertaken to prevent sediments and nutrients entering Margaret River in accordance with condition 4.

6. Reporting

The permit holder must provide to the *CEO* the records required under condition 5 of this permit when requested by the *CEO*.

DEFINITIONS

In this permit, the terms in Table 2 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 *Environmental Protection Act 1986*.
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.
dieback	means the effect of *Phytophthora* species on native vegetation.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	*Environmental Protection Act 1986* (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.
weeds	means any plant – (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or (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

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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

10 February 2023

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).

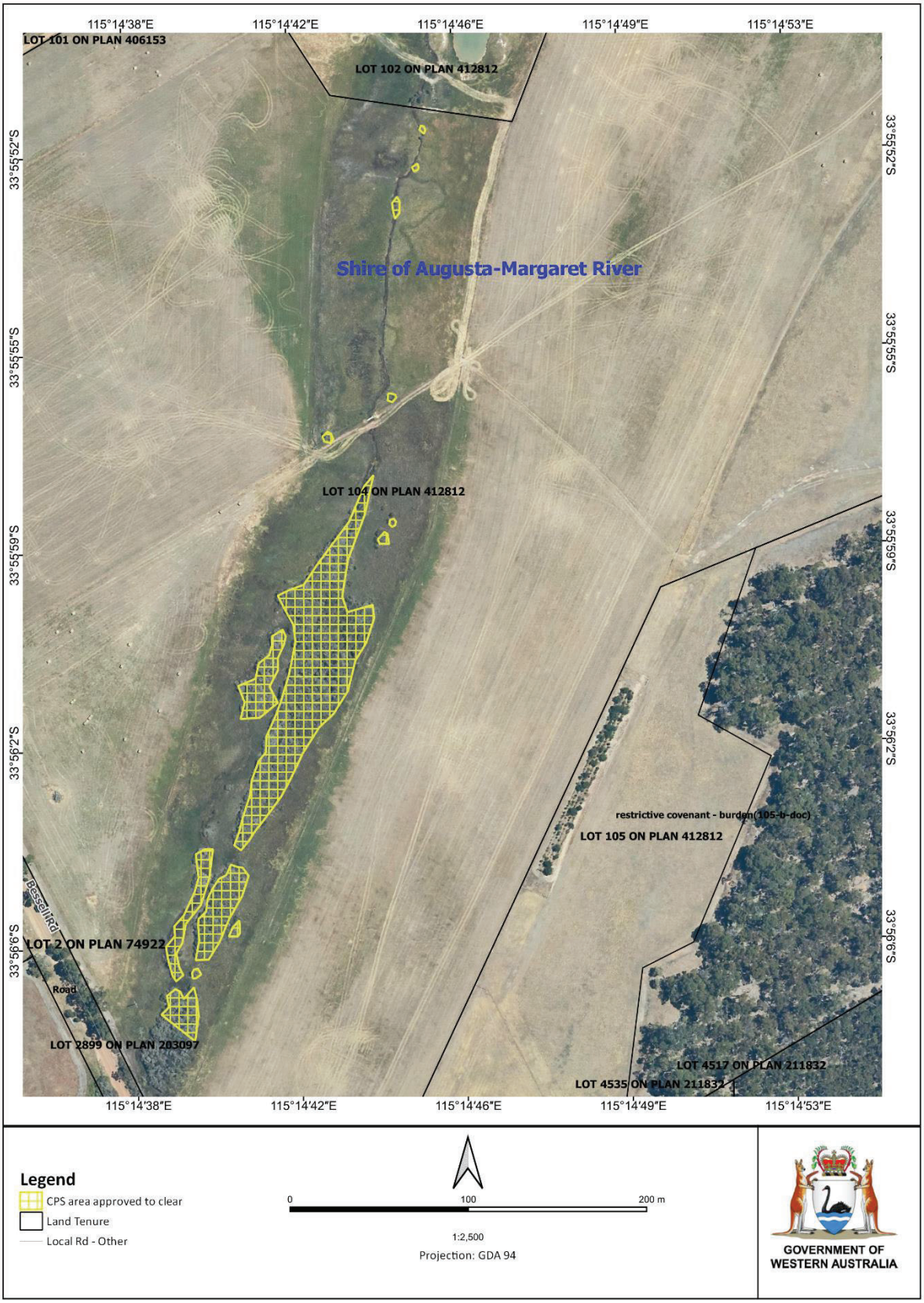


Figure 1: Map of the boundary of the area within which clearing may occur

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1.1. Permit application details

Permit number:	CPS 9412/1
Permit type:	Area permit
Applicant name:	Matthew Peter Brewer
Application received:	27 August 2021
Application area:	0.71 hectares of native vegetation
Purpose of clearing:	Dam construction
Method of clearing:	Mechanical
Property:	Lot 104 on Deposited Plan 412812
Location (LGA area/s):	Shire of Augusta-Margaret River
Localities (suburb/s):	Rosa Brook

1.2. Description of clearing activities

The vegetation proposed to be cleared is distributed across multiple areas centred along a minor tributary to Margaret River (see Figure 1, Section 1.5). The vegetation proposed to be cleared are Melaleuca species. The proposed clearing is for a dam development (Brewer, 2021).

1.3. Decision on application

Decision:	Granted
Decision date:	10 February 2023
Decision area:	0.71 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 (the department) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix E.1), photographs supplied by the applicant (see Appendix D), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration that the tributary within which the dam is to be constructed has been dammed upstream and already has modified flows into Margaret River.

The assessment identified that the proposed clearing will result in:

- the potential introduction and spread of weeds and dieback into surface water expression areas, which could impact on the quality of downstream vegetation and its habitat values;
- clearing of riparian vegetation;
- potential erosion and transport of sediment and nutrients to Margaret River.

After consideration of the available information, the Delegated Officer determined the proposed clearing is unlikely to have long-term adverse impacts on the environment. The site can be managed to be unlikely to lead to an unacceptable risk to the environment.

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;
- obtain relevant approvals under the *Rights in Water and Irrigation Act 1914* prior to undertaking the proposed clearing activities;
- commence development no later then three months after undertaking the authorised clearing;
- ensuring that no sediments or nutrients discharge into Margaret River.

1.5. Site map

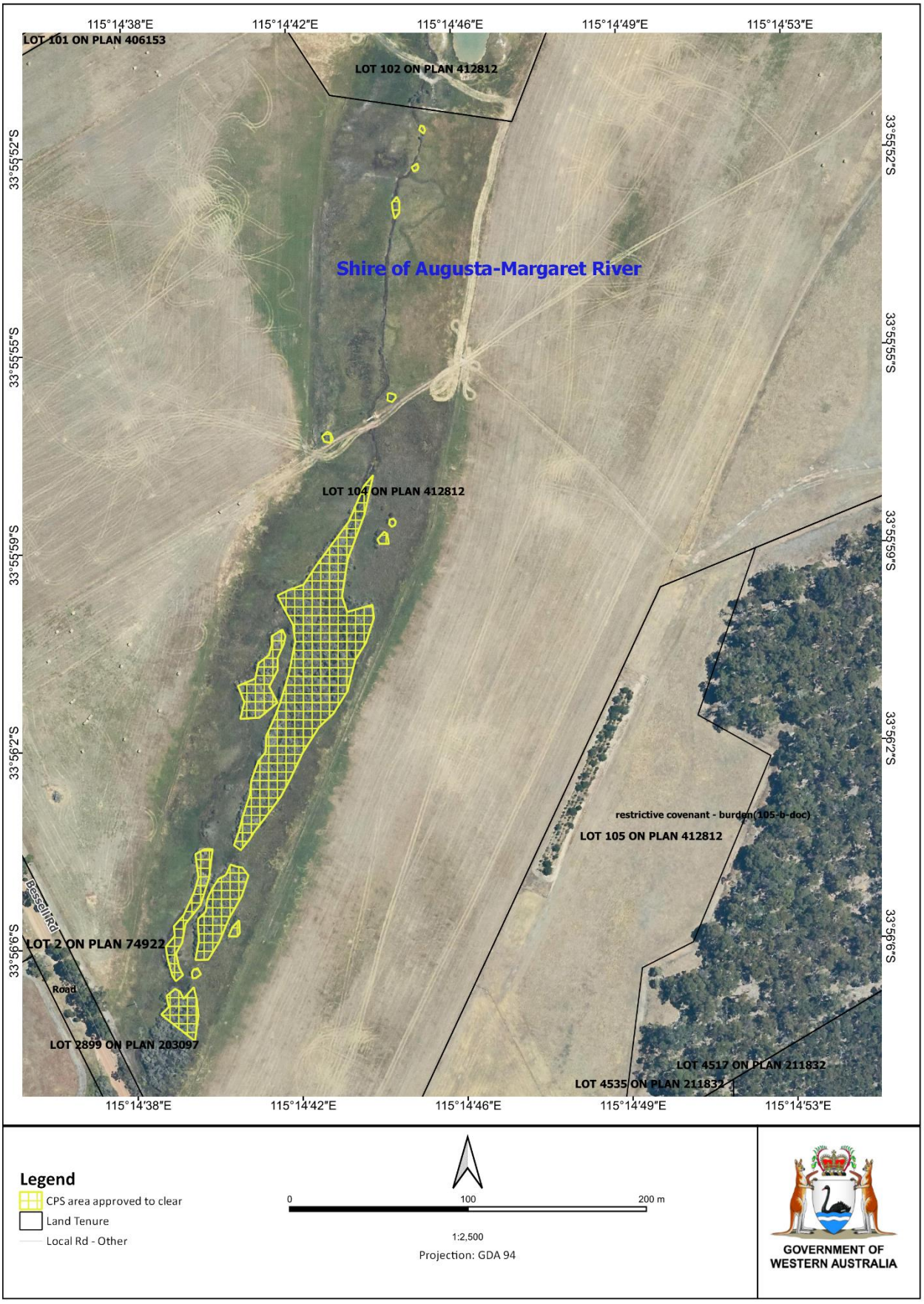


Figure 1 Map of the application area

The areas cross-hatched yellow indicate the areas 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)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA)
- *Rights in Water and Irrigation Act 1914* (RIWI Act)

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)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant provided plans for the dam, demonstrating that dam placement sought to avoid and minimise the clearing of native vegetation as far as practicable. The applicant has further advised the department that revegetation is proposed around the dam and the full supply water lines (Brewer, 2021).

It was noted during the assessment that the Shire of Augusta-Margaret River has conditioned revegetation as part of the Planning approval. A revegetation plan for the watercourse is to be prepared by a qualified/experienced consultant. Revegetation is to commence within two years from the Planning approval and the planting must demonstrate survival over two summer seasons at a minimum of 75 per cent success rate (Shire of Augusta-Margaret River, 2022).

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 the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable with standard avoid, minimise and hygiene management conditions.

3.2.1. Biological values (fauna) - Clearing Principles (b)

Assessment

Vegetation over the application area consists of Melaleuca species in a good to degraded (Keighery, 1994) condition (Brewer, 2021). A desktop assessment of the application area identified 30 conservation significant fauna species within the local area (ten-kilometre radius of the application area) which included:

- Three species listed as Critically Endangered
- Six species listed as Endangered
- Eight species listed as Vulnerable
- One species listed as Priority 1
- Two species listed as Priority 3
- Eight species listed as Priority 4

- Two species listed as Conservation Dependent

The application area is located within a non-perennial watercourse. Based on the desktop assessment, a total of two conservation significant fauna species previously recorded within the local area may have suitable habitat features present within the application area.

The Carter's freshwater mussel (*Westralunio carteri*) which is listed as vulnerable under the *Biodiversity Conservation Act 2016,* has previously been identified within the local area. The most recent record was in 2016. Carter's freshwater mussel inhabits sandy/muddy sediments of freshwater lakes, rivers and streams; usually occurring with woody debris and overhanging riparian vegetation (often flooded gum, Melaleuca sp. or Casuarina sp.). They retreat to shallow pools or damp mud with most moist leaf litter in times of drought (Klunzinger et al., 2015).

Margaret River burrowing crayfish (*Engaewa pseudoreducta*) is a poorly known invertebrate, known from one locality in two creek lines in Margaret River and is associated with narrow creek tributaries of the Margaret River which are densely vegetated with tall tea-trees (Melaleuca sp.) and eucalypts (Eucalyptus spp.) on heavy grey/yellow clay soils. This species is found in fragmented sites on the edge of a nature reserve (Burnham, 2010). The distribution of this species is unlikely to be significantly greater, due to other crayfish species being present in close proximity, but not overlapping. The extent of occurrence of this species has been estimated to be less than 100 km^2 (Burnham, 2010). This species constructs a complex burrow system in soil that can be several metres deep, extending down to the freshwater watertable in drier months and are marked by conspicuous chimneys of soil pellets at wetter times of the year. According to the available databases, the most recent record was from 2007 (DCCEEW, n.d).

The current distribution of the *Westralunio carteri* is within freshwater streams, rivers, reservoirs and lakes within 50-100 kilometers of the coast, from Gingin Brook southwards to the Kent River, Goodga River and Waychinicup River (Klunzinger et al, 2012). The *Engaewa pseudoreducta* has a very restricted area of occupancy (Burmha, 2010). Based on species distribution findings, it is unlikely that these species will occur within the minor, non-perennial tributary mapped within the application area. The assessment also notes that the area along the tributary is extensively cleared of riparian vegetation which is necessary to maintain the habitat quality of these species.

The watercourse within the application area has been modified from upstream damming. Based on the modified condition of the watercourse, condition of the vegetation, species distribution and the extent of adjoining cleared areas indicate that the vegetation within the application area is unlikely to represent habitat for these species.

Conclusion
For the reasons set out above, it is considered that the impacts of the proposed clearing on fauna species identified from the local area does not constitute a significant residual impact.

Conditions
No fauna management conditions required.

3.2.2. Environmental values - Clearing Principles (f and i)

Assessment
The application area is located within the Donnybrook hydrological zone of Western Australia and within the Margaret River catchment. A non-perennial creekline which is evident on aerial images and photographs provided by the applicant, runs south to north towards the Margaret River which is a major river. The proposed clearing is minimal, and vegetation is currently in a good to degraded (Keighery, 1997) condition. The cleared area will be replaced with a dam with drainage controls. Given the small scale of clearing, the purpose of clearing and the standard methodologies implemented for a dam construction, it is unlikely the proposed clearing would contribute, or cause appreciable impacts to the watercourse.

It is likely that clearing activity may disturb the soils on the banks and beds of the watercourse, which may result in increased transport of sediment and nutrient and degrade the river water quality downstream. Therefore, the proposed dam construction is subject to a sediment management plan and a nutrient and irrigation management plan under the Shire's planning approval. Licences under the RiWI Act to take water and to disturb the bed and banks of the watercourse are required to be sought for the construction of the dam.

Acid sulphate soils (ASS) risk mapping indicates the soils of the application area have a 'Moderate to low' risk of causing environmental damage, if those soils are disturbed. Moderate to low risk suggests that moderate to low risk of ASS occurring within three metres of the natural surface but a high to moderate risk of ASS occurring beyond three metres that could be disturbed by soil excavation and dewatering associated with infrastructure works (DER, 2015). Given the small scale of clearing, it is unlikely that the proposed clearing will lead to an appreciable

environmental impact from ASS. To mitigate potential environmental impacts resulting from ASS during the construction of the dam, the dam construction is subject to an Acid Sulphate Soil and a Dewatering Management Plan under the Shire's planning approval.

Conclusion
Clearing activities may have short term impact on quality of the surface water from sediment runoff. However, based on the above, the revegetation of the watercourse and the implementation of the management plans, the proposed clearing is unlikely to have significant impact on the quality and quantity of water in the watercourse.

The implementation of appropriate, standard development methodologies will ameliorate any potential land degradation in the form of water erosion and nutrient runoff.

Condition
To address the above, the proposed development should commence no later than three months post-clearing.

3.3. Relevant planning instruments and other matters

On 24 November 2022, the Shire of Augusta-Margaret River has issued the applicant with planning approval under the *Planning and Development Act 2005* for the proposed dam. The planning approval has conditioned that the development of the dam shall be carried out in accordance with the Nutrient and Irrigation Management Plan, and an Acid Sulphate Soil and Dewatering Management Plan. The planning approval also conditions that prior to commencement of works, a Sediment Management Plan and a Revegetation Plan for the watercourse shall be prepared and be approved by the Shire (Shire of Augusta-Margaret River, 2022).

The Shire of Augusta-Margaret River advised the department that that the proposed clearing is consistent with the Shire's Local Planning Scheme (Shire of Augusta-Margaret River, 2021).

The application area is located within the riparian area of a waterway, which is proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act). Therefore, expert advice was sought from the water licencing section of the department. The Water Licensing section of the department has provided the following advice (DWER, 2021):

> *The dam site is situated in a relatively broad flat valley. The proposed gully wall dam design with excavated borrow pit for the wall materials, including compacted clay core, is typical of small earth dams in South West WA. Because of the nature of the land contours not being a deeply incised valley, the surface area to storage ratio will be lower and the tailwaters shallow. Consequently, there will be more evaporative losses compared with deeper dams, although seepage inflows may offset that to some degree (note 5% seepage yield estimated by consultant). The Department is of the opinion that 15-20% is typical for evaporation in this area, dependent the watercourse profile/gully cross section shape and driven by local pan evaporation rates. Based on a borrow pit base level 85.5mAHD and invert level of the spillway being 91.0mAHD, at its deepest the reservoir will be 5.5m deep at full supply level. However, the tailwaters will shallow out to 0m.*
>
> *The Department is satisfied that the dam design is typical given the contours of the site and importantly that the tailwaters are constrained to reside within the property boundary. Given that the dam storage volume seems consistent with the calculated water demands, including the water requirements for 7HA of avocados, the Department does not envisage licensing would request the applicant to rescope the dam design.*
>
> *The Department may consider the need to re-scope the dam if a hydrological assessment necessitates scaling back the dam capacity to avoid unacceptable impacts to streamflow, the environment or existing users reliability of supply.*
>
> *Deeper excavation runs the risk of intercepting shallow water table and groundwater interactions. Given the site is mapped as a medium to high risk of disturbing ASS >3mBGL and the groundwater interaction issue, the Department is not supportive of deeper excavation activities at this site. The property resides within Management Zone 11 under the South West Groundwater Areas Allocation Plan (DoW, 2009). The objective of this zone and associated local area licensing rules is to restrict abstraction of groundwater and surface water to the Margaret River pools to maintain the river base flows in summer that supports the ecology. In accordance with local area licensing rule (m-iv (Table 9 of SWGAAP), The Department would not support any new excavation into the groundwater as this take of water would have the potential to impact on the pools downstream and associated ecology.*

In order to progress the assessment of the water licence applications the Department is undertaking internal investigation into Surface Water Hydrology in the form of a hydrological assessment. This will enable the Department to determine the impacts of the proposed take on the surface water resource, and what the effect will this have on the reduction of flows including implications for the downstream environment. This streamflow analysis will also consider what the impact to reliability of supply to downstream users would be (this is a key consideration in determining a licence application and whether the proposal if granted would have an impact on another person's water rights).

The applicant has applied for a licence to take water and for a bed and banks permit under the RiWI Act. Department's water licensing branch has advised that a bed and banks permit and licence to take water for a dam limited to 50 Megalitres with an automatic bypass system will be granted upon the granting of the clearing permit. The Delegated Officer has decided to grant the clearing permit subject to a condition to obtain the final bed and banks permit and licence to take water prior to undertaking any clearing activities.

The application area occurs within the Priority three Margaret River Public Drinking Water Source Area. The department requested internal advice from the department's Water Source Protection team. The Water Source Protection team advised that "*As long as the proposal does not plan to use recycled water for irrigation then this proposal and the associated activity of avocado orchard is compatible with conditions in a priority 3 (P3) area of the Margaret River catchment area, under the Land use compatibility tables for public drinking water source areas. Therefore, the clearing is supported with conditions. The dam should be constructed consistent with WQPN 53 - Dam construction and operation in rural areas".* The department recommend that the applicant undertake works;

- in accordance with the Water Quality Protection Note 53 - Dam construction and operation in rural areas.
- in accordance with best management practices for the application of pesticides and fertiliser.

No Aboriginal sites of significance have been mapped within the application area, however, the watercourse along which the clearing is to take place is a tributary to Margaret River which is a mapped Aboriginal site of significance. 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

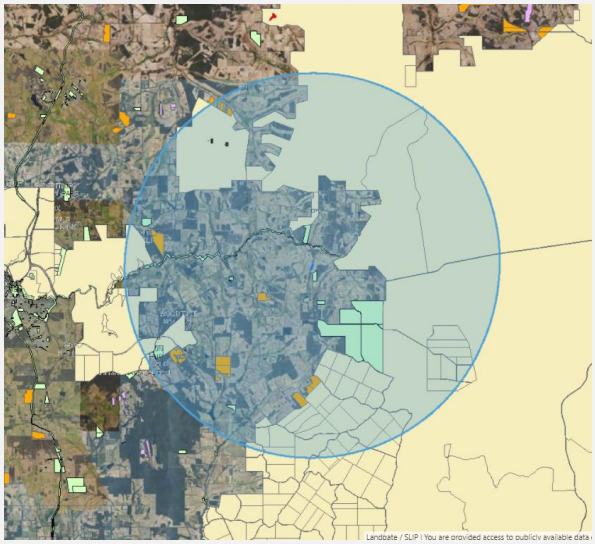
Appendix A. Additional information provided by applicant

Information	Description
Photographs of the vegetation proposed to be cleared (Brewer, 2021).	The applicant submitted photographs of the proposed clearing area as supporting documentation (Brewer, 2021).
Planning Approval issued by the Shire (Shire of Augusta-Margaret River, 2022)	The applicant has provided the department with a copy of the Planning Approval issued by the Augusta-Margaret River shire (Shire of Augusta-Margaret River, 2022).

Appendix B. Site characteristics

B.1. Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to the department at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix C.

Characteristic	Details
Local context	The area proposed to be cleared is part of a patch of native vegetation associated with a watercourse, in the intensive land use zone of Western Australia. The surrounding area is well vegetated with much of the remaining native vegetation held in conservation estate, Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 60.6 per cent of the original native vegetation cover
Ecological linkage	The application area is mapped south of an existing South West Regional Ecological Linkage (SWREL) associated with Margaret River. The vegetation within the application area is not likely to significantly contribute to the ecological function of this ecological linkage.
Conservation areas	The application area is surrounded by conservation areas with extensive tracts of Department of Biodiversity, Conservation and Attraction (DBCA) tenure to the east of the application area. The closest conservation area is Rapids Conservation Park located approximately one kilometre east of the application area.  **Figure 2:** extent of the mapped DBCA tenure within the 10km radius local area (blue).
Vegetation description	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of Melaleuca species (Brewer, 2021). Representative photos are available in Appendix E.

Characteristic	Details
	This is inconsistent with the mapped vegetation types: • 273 (Tw) Treeton, which is described as open forest of *Eucalyptus patens-Corymbia calophylla-Eucalyptus marginata* subsp. *marginata* on lower slopes and on floors of minor valleys in the perhumid zone. • Chapman vegetation association (3) described as mainly jarrah (*Eucalyptus marginata*) and marri (*Corymbia calophylla*). The mapped vegetation types retain more than 30 per cent of the original extent (Government of Western Australia, 2019).
Vegetation condition	Photographs supplied by the applicant (Brewer, 2021) indicates that the vegetation within the proposed clearing area is in good to degraded (Keighery, 1994) condition. The full Keighery (1994) condition rating scale is provided in Appendix D. Representative photos are available in Appendix E.
Climate and landform	The application area is subject to a Mediterranean climate. Mean annual rainfall is mapped as 1100 millimetres and evapotranspiration is mapped as 800 millimetres annually. The application area is mapped within the Treeton Hills System described as rises and low hills, of the western Donnybrook Sunkland (DPIRD, 2019).
Soil description	The soil is mapped as Treeton wet valley phase which is described as broad U-shaped drainage depressions with swampy floors (Schoknecht et al., 2004). The soils are described as sandy gravel, grey deep sandy duplex and loamy gravel (DPIRD, 2019).
Land degradation risk	The application area is mapped as having a high risk of waterlogging and subsurface acidification, both of which are expected of surface water expression areas. A review of the Acid Sulfate Soil (ASS) risk mapping indicates that the application area falls within a 'Moderate to low' risk of containing ASS. Table B.5 below provides the risk level for each land degradation category.
Waterbodies	Spatial data identifies one unreviewed wetland and one minor tributary to Margaret River occur within the application area. Photographs supplied by the applicant (Brewer, 2021) support the mapped data. Representative photos are available in Appendix E.
Hydrogeography	The application area occurs within the Margaret River Public Drinking Water Source Area (Priority 3). The application area also falls within Busselton-Capel groundwater area and the Margaret River tributaries river area proclaimed under the Rights in *Water and Irrigation Act 1914* (RIWI Act) The application area is not subject to the *Country Areas Water Supply Act 1947* (DWER-034). Groundwater salinity level (Total Dissolved Solids) is mapped as less than 500 milligrams per litre (Fresh water) (DWER-026).
Flora	Spatial data identified 73 conservation significant flora taxa within the local area (WA Herbarium, 1998-). Of these, five are threatened species: • *Acacia rhamphophylla* • *Banksia mimica* • *Banksia squarrosa subsp. Argillacea* • *Daviesia megacalyx* • *Drakaea micrantha* The remaining 68 records are of priority flora, of which 16 are priority one, eight are priority two, 19 are priority three and 25 are priority four.

Characteristic	Details
	The application area is within a watercourse. Based on the habitat features within the application area, no threatened and five priority flora may have suitable habitat within the application area. • *Gastrolobium formosum* (P3) • *Hybanthus volubilis* (P2) • *Melaleuca basicephala* (P4) • *Netrostylis* sp. Nannup (P.A. Jurjevich 1133) (P1) • *Pultenaea pinifolia* (P3)
Ecological communities	One known Threatened Ecological Community (TEC) and Two Priority Ecological Communities (PEC) are recorded within the local area. • Proteaceae dominated kwongkan shrublands of the southeast coastal floristic province of Western Australia (Endangered EPBC Act, Priority 3 EP Act) • Heath on Komatiite of the Ravensthorpe area (Priority 3 EP Act) • Very open mallee over *Melaleuca* sp. *Kundip* (now *Melaleuca sophisma*) dense heath (Priority 1 EP Act)
Fauna	Spatial data identifies 30 conservation significant fauna taxa within the local area. Of these, • 3 are listed as Critically Endangered • 6 are listed as Endangered • 8 are listed as Vulnerable Of the remaining records: • 1 is listed as Priority 1 • 2 are listed as Priority 3 • 8 are listed as Priority 4 • 2 are listed as Conservation Dependant The application area is within a watercourse. Based on the habitat within the application area, two threatened fauna have suitable habitat features within the application area.

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*					
Jarrah Forest*	4,506,656.99	2,514,549.9	55.8	1,689,684.2	67.2
Vegetation complex					
Beard vegetation association 3 *	2,390,591.54	1,604,101.56	67.10	1,299,263.74	54.35
Treeton complex 273**	8,676.11	2,926.58	33.73	1,747.41	20.14
Local area					
10km radius	31,423	19,048	60.6	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

B.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), 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)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Gastrolobium formosum	P3	Y	Y	Y	4.5 NE	39	N/A
Hybanthus volubilis	P2	Y	Y	Y	2.5 W	15	N/A
Melaleuca basicephala	P4	Y	Y	Y	9.3 SE	30	N/A
Netrostylis sp. Nannup (P.A. Jurjevich 1133)	P1	Y	Y	Y	9.8 SSE	6	N/A
Pultenaea pinifolia	P3	Y	Y	Y	3.5 E	44	N/A

P: priority

B.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)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Carter's freshwater mussel *Westralunio carteri*	VU	Y	Y	6.7 NE	427	N/A
Margaret River burrowing crayfish *Engaewa pseudoreducta*	CR	Y	Y	4.8 NW	15	N/A

CR: critically endangered, VU: vulnerable,

B.5. Land degradation risk table

Risk categories	*Land Unit 1*
Wind erosion	M1: 10-30% of map unit has a high to extreme risk
Water erosion	M1: 10-30% of map unit has a high to extreme risk
Salinity	L1: <3% of map unit has a moderate to high risk or is presently saline
Subsurface Acidification	H2: >70% of map unit has a high subsurface risk or is presently acid
Flood risk	L1: <3% of the map unit has a moderate to high hazard
Water logging	H2: >70% of map unit has a moderate to very high risk
Phosphorus export risk	M2: 30-50% of the map unit has a moderate to high risk

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The area proposed to be cleared is unlikely to contain locally or regionally significant flora, fauna, habitats, assemblages of plants. Consideration of spatial data and habitat requirements identified five priority flora and two threatened fauna with habitat features within the application area. Further consideration of the condition of the vegetation, modified watercourse from upstream damming and extent of adjoining cleared areas indicate that the vegetation within the application area is unlikely to be suitable habitat for these species. No records of conservation significant flora species are mapped within the application area.	Not likely to be at variance	No
Principle (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."* Assessment: The area proposed to be cleared is unlikely to contain significant habitat for conservation significant fauna. Consideration of spatial data and habitat requirements identified two threatened fauna species with habitat features within the application area. Further consideration of the condition of the vegetation, modified watercourse from upstream damming and extent of adjoining cleared areas indicate that the vegetation within the application area is unlikely to be suitable habitat for these species.	Not likely to be at variance	Yes
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The area proposed to be cleared is unlikely to contain habitat for threatened flora species listed under the BC Act.	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (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."* Assessment: The area proposed to be cleared does not contain species that can indicate a threatened ecological community.	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (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."* Assessment: The extent of the mapped vegetation type and extent of 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.	Not at variance	No
Principle (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."* Assessment: 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.	Not likely to be at variance	No
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: Given the application area occurs along a watercourse, the proposed clearing will include riparian native vegetation growing in association with this watercourse.	At variance	Yes
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils are highly susceptible to waterlogging and acid sulfate soils. Noting the application area is within a watercourse, and the construction of the dam is undertaken in accordance with various management plans, the land degradation impacts of proposed clearing are likely to be localised and not appreciable.	Not likely to be at variance	No
Principle (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."* Assessment: Given the application area is within a watercourse, a Public Drinking Water Sources Areas, Rights in Water Irrigation Act River and Groundwater areas, the proposed clearing may impact surface water quality. The purpose for clearing is for a dam. Management of the dam and water quality are regulated by the Planning Approval and Water Licences. The	May be at variance	Yes

Assessment against the clearing principles	Variance level	Is further consideration required?
department's water licencing team have undertaken surface water investigations to determine potential impacts to water.		
Principle (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."* Assessment: 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.	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.

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. photographs of the vegetation

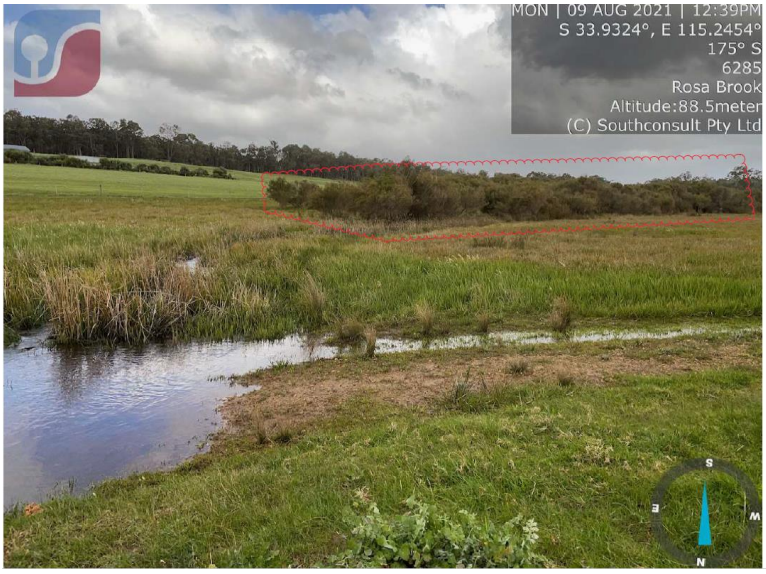
Figure 3-4: Site Inspection photographs from the Shire of Augusta-Margaret River (Augusta-Margaret River, 2021).

Figure 5-12: Drone and ground level photographs of the vegetation within the application area provided by the applicant (Brewer, 2021).


CPS 9412/1 - Supporting information - Photographs of vegetation proposed to be cleared


MON | 09 AUG 2021 | 12:38PM
S 33.9324°, E 115.2454°
25° NE
6285
Rosa Brook
Altitude:88.6meter
(C) Southconsult Pty Ltd
N
E
W
S


S 33.9328°, E 115.2452°
142° SE
6285
Rosa Brook
Altitude:90.0meter
(C) Southconsult Pty Ltd


MON | 09 AUG 2021 | 12:39PM
S 33.9324°, E 115.2454°
175° S
6285
Rosa Brook
Altitude:88.5meter
(C) Southconsult Pty Ltd


S 33.9328°, E 115.2452°
61° NE
6285
Rosa Brook
Altitude:90.0meter
(C) Southconsult Pty Ltd

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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