Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10432/1
Permit type:	Area permit
Applicant name:	Stella Bella Wines Pty Ltd
Application received:	29 November 2023
Application area:	0.04 hectares of native vegetation
Purpose of clearing:	Installation of a wastewater pipe
Method of clearing:	Mechanical
Property:	Lot 101 on Diagram 64801
Location (LGA area/s):	Shire of Augusta-Margaret River
Localities (suburb/s):	Karridale

1.2. Description of clearing activities

The application is to temporarily clear native vegetation to facilitate trenching works for the installation of an underground pipe to transport treated wastewater to a nearby effluent storage dam. The vegetation proposed to be cleared is distributed across three (3) separate areas (see Figure 1, Section 1.5), the southern section is composed of jarrah and marri forest and the northern section is composed of wetland vegetation.

The application was revised and slightly increased from 0.02 ha to 0.04 ha during the assessment process following a site inspection. The changes included the extension of the area across the watercourse to better reflect the length of the clearing footprint through the wetland and the inclusion of clearing planned for the construction of the pump shed associated with the pipe.

1.3. Decision on application

Decision:	Refused
Decision date:	20 January 2025

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for:

- the site characteristics (see Appendix C),
- relevant datasets (see Appendix H.1),
- the results of a site inspection (see Appendix G),
- the clearing principles set out in Schedule 5 of the EP Act (see Appendix D), and
- relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The assessment identified that the proposed clearing may result in:

- the loss of native vegetation that may represent the 'Empodisma peatlands of southwestern Australia' threatened ecological community,
- the loss of native vegetation that may contain individuals of and/or suitable habitat for threatened flora species *Reedia spathacea*,
- the loss of native vegetation growing in association with a watercourse,
- the potential to impact on surface water hydrology,
- the loss of 0.04 ha of native vegetation composed of suitable foraging habitat for black cockatoos,
- the loss of 0.04 ha of native vegetation that forms part of a mapped ecological linkage,
- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values; and
- indirect impacts to adjacent native vegetation protected and conserved under an Agreement To Reserve(ATR) under the *Soil and Land Conservation Act 1945*.

After consideration of the available information, the Delegated Officer concluded that despite the small size of the application, the proposed clearing was likely to result in significant residual impacts to the environment. In the absence of further avoidance and mitigation measures to reduce the impacts of the proposed clearing (see Section 3.1), as well as biological surveys to confirm the environmental values present within the area, the Delegated Officer was not confident that impacts could be mitigated and managed to an acceptable level. The Delegated Officer notes that the applicant was provided with multiple opportunities to provide additional information in the form of a flora and vegetation survey and evidence of consideration of alternatives, avoidance, mitigation and management measures however, this information has not been provided to the Department, to date.

The Delegated Officer also noted the additional approvals are required for the proposed activity including from the Local Government Authority and that the applicant has not obtained approval under the *Rights in Water and Irrigation Act 1914* (RIWI Act) to interfere with bed and banks of a watercourse.

Given the above and having regard for the precautionary principle, the Delegated Officer determined that environmental impacts of the proposed clearing are unacceptable, and it would not be appropriate to manage them through conditions on a clearing permit (including environmental offsets). The Delegated Officer therefore decided that, on balance, it would not be appropriate to grant a clearing permit and, accordingly, refused Stella Bella Wines' application.

1.5. Site map

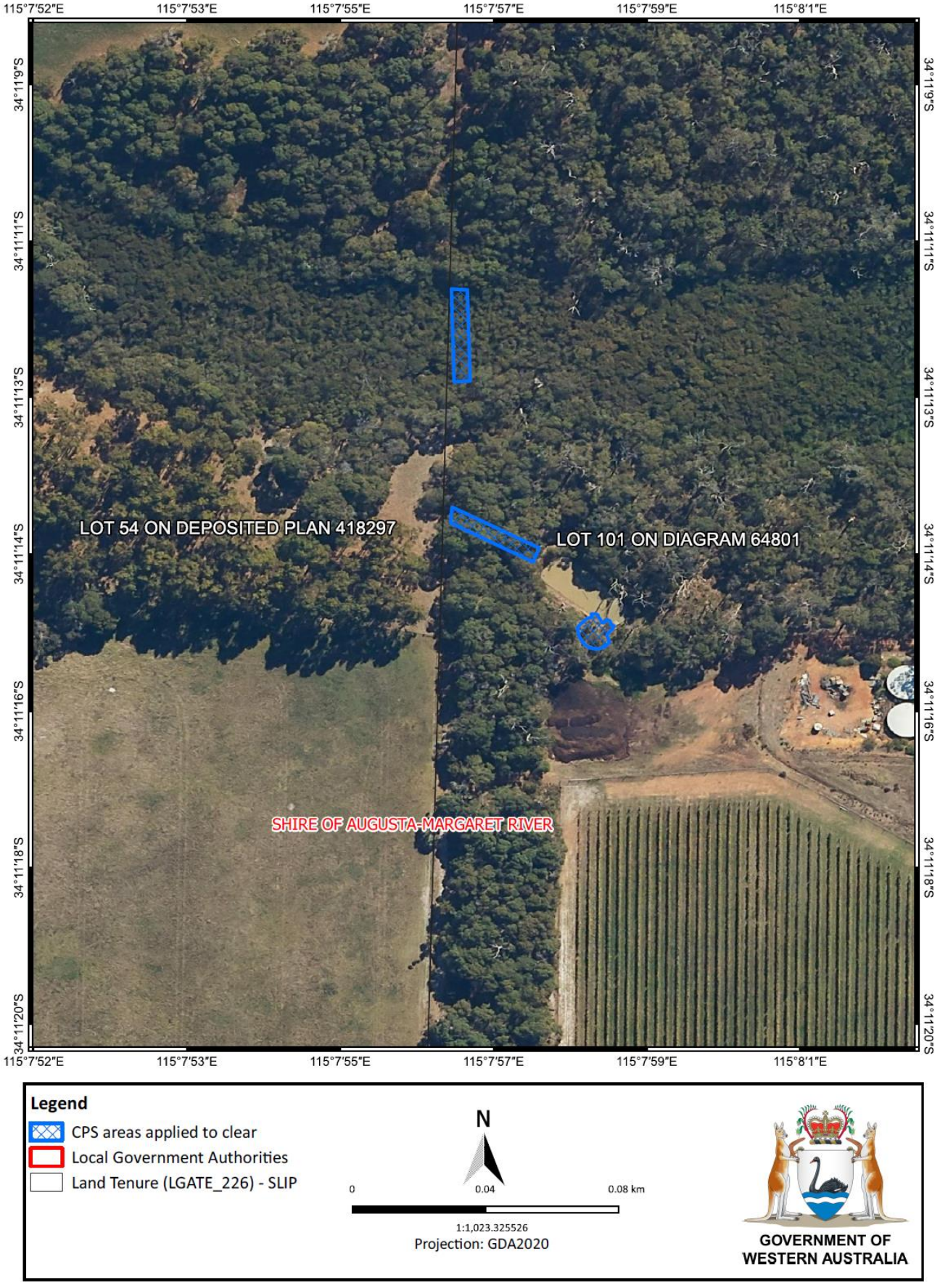


Figure 1. Map of the application area.

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)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA) (SLC 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 has minimised the extent required for clearing by routing most of the pipe through the firebreak on the property rather than through native vegetation. The Applicant has advised that further reduction is not practicable as the property is extensively vegetated and a portion of the proposal is contained within a completely vegetated area between the firebreaks.

The preliminary assessment and a site inspection undertaken by the department (see Appendix G) identified that the proposed clearing is likely to contain suitable habitat for threatened flora species *Reedia spathacea* and the 'Empodisma peatlands of southwestern Australia' Threatened Ecological Community (TEC). Further information was requested from the applicant in August 2024 in the form of a biological survey for threatened flora and ecological communities as well as additional avoidance and mitigation measures for impacts to these values if identified. Additional information was also requested regarding what avoidance and mitigation measures for impacts to surface water hydrology the Applicant proposes to reduce impacts.

To date, none of the requested information has been received by the department. Given this, the Delegated Officer is not satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix C) 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 D identified that the impacts of the proposed clearing present a risk to biological values (fauna, flora and vegetation), significant remnant vegetation and conservation areas, 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. Biological (fauna) - Clearing Principles (a) and (b)

Assessment

The desktop assessment identified 69 fauna species within the local area (10km radius), composing of one amphibian, 41 birds, three fish, two invertebrates, 21 mammals and one reptile species. Of these species, ten were identified as having potential suitable habitat within the proposed clearing area, namely:

- Baudin's cockatoo (*Zanda baudinii*) (EN)
- Carnaby's cockatoo (*Zanda latirostris*) (EN)
- chuditch (*Dasyurus geoffroii*) (VU)
- forest red-tail black cockatoo (*Calyptorhynchus banksii naso*) (VU)
- quenda (*Isoodon fusciventer*) (P4)

- quokka (*Setonix brachyurus*) (VU)
- south-western brush-tailed phascogale (*Phascogale tapoatafa wambenger*) (CD)
- western ringtail possum (*Pseudocheirus occidentalis*) (CR)
- white-bellied frog (*Anstisia alba*) (CR)

Black cockatoos (VU – EN)

According to available mapping, the application area is located within the known breeding distribution for Carnaby's (*Zanda latirostris)*, the core distribution for forest red-tailed black cockatoo (FRTBC) (*Calyptorhynchus banksii naso*) and the known distribution for Baudin's cockatoo (*Zanda Baudinii*). While habitat requirements for the three species of black cockatoos differ, the requirements in general can be categorised as breeding habitat, foraging habitat and night roosting habitat. The nearest record is the Carnaby's cockatoo, located approximately 0.54 km from the proposed clearing.

Breeding habitat

Suitable breeding habitat for black cockatoos includes trees which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow (DAWE, 2022). The proposed clearing is mapped within the Warren bioregion where Jarrah and Marri forests are utilised by all three black cockatoo species for breeding and is the main breeding region for Baudin's and Forest red-tailed black cockatoos (DAWE, 2022). All three species prefer to breed in woodland or forest but have been known to breed in partially cleared areas including isolated trees (DAWE, 2022). According to available databases there are no confirmed breeding sites recorded within the local area.

Habitat trees considered potentially suitable for Black Cockatoo breeding have a Diameter at Breast Height (DBH) greater than 500 millimetres. Photographs supplied by the applicant and a subsequent site inspection by the department indicate the trees within the proposed clearing include jarrah, marri and Melaleuca sp. Are immature and are not likely to have a DBH suitable for forming hollows (Appendix G).

Foraging habitat

Foraging habitat differs between the three species of black cockatoos; however, marri are considered to be a primary foraging resource for both Baudin's cockatoo and the forest red-tailed black cockatoo (DAWE, 2022).

Food resources within the range of roosting and breeding sites are important to sustain populations of black cockatoos, and foraging resources should therefore be viewed in the context of the proximity to the known night roosting and breeding sites to the application area. Black cockatoos will generally forage up to 12 kilometres from an active breeding site. Following breeding, they will flock in search of food, usually within six kilometres of a night roost (DAWE, 2022). Available databases note that there is one record of a roosting site within the local area and despite there being no records of breeding sites, the proposed clearing is mapped within the breeding distribution of Carnaby's cockatoos. Therefore, the vegetation within the application area is likely to support foraging by both breeding and roosting populations.

Given the small size of the proposed clearing and extensive areas of native vegetation within the property, the proposed clearing is not likely to significantly impact on the availability of foraging resources for black cockatoos.

Night Roost sites

Black cockatoo night roosts are usually located in the tallest trees of an area, and near both a food supply and surface water (DAWE, 2022). *Corymbia calophylla* (marri), one of the species proposed to be cleared, is a key roosting species for both Carnaby's cockatoo and the forest red-tailed black cockatoo and riparian habitats are known to be the preferred roosting sites for all three species due to the proximity to freshwater (DAWE, 2022). One black cockatoo roost is mapped within the local area, approximately 8.06 km from the proposed clearing.

Black cockatoos rely upon the availability of night roosting habitat in proximity to foraging resources and rely on access to watering points in selecting night roost sites, with roost sites usually within two kilometres of a watering point. Given the small size of the proposal and extensive vegetation within the property, the proposed clearing is not likely to significantly impact on the availability of roosting habitat for black cockatoos.

Western Ringtail Possum (CR)

Based on available datasets there are 568 records of the western ringtail possum (*Pseudocheirus occidentalis*) (WRP) within the local area, the nearest being 1.84 km from the proposed clearing. The 'Western Ringtail Possum Recovery Plan' (DPaW, 2017) outlines strategies to slow the decline in population size, extent and area of occupancy through managing major threatening processes affecting the subpopulations and their habitats and allowing the

persistence of the species in each of the identified key management zones: Swan Coastal Plain, southern forests and south coast (DPaW, 2017).

The proposed clearing is mapped within the Swan Coastal Plain Management Zone (DPaW, 2017) which characterises vegetation communities critical to WRP as long unburnt mature remnants of *Agonis flexuosa* (peppermint) woodlands with high canopy continuity and high foliage nutrients; *Eucalyptus marginata* (jarrah)/ *Corymbia calophylla* (marri) forests and woodlands with limited anthropogenic disturbance (unlogged or lightly logged, and a low intensity and low frequency fire history), that are intensively fox-baited and have low indices of fragmentation. Any habitat where WRPs occur naturally are considered critical and worthy of protection (DPaW, 2017).

Photographs provided by the applicant and from the site inspection (Appendix F & Appendix G) suggest that the proposed clearing areas contain suitable habitat for WRPs as the southern sections of the proposal is composed of jarrah-marri forest with peppermint trees. Given the small size of the proposed clearing and extensive vegetation remaining within the property, the proposed clearing is not likely to have a significant impact on habitat for WRPs. Noting the location of the proposal and large number of records, it is likely that WRP are present in the area and may use the site as a linkage to move through the landscape.

White-bellied frog (CR)
The white-bellied frog (*Anstisia alba* (formerly *Geocrinia alba*)) is a small, frog found in the south-west of Western Australia listed as Critically Endangered under both the BC Act and EPBC Act. According to available datasets, there are 69 records of the species in the local area, the nearest being 1.21 km from the application area.

Habitat of the white-bellied frog is described as swampy flows along drainage depressions and is typically associated with dense overstorey vegetation dominated by *Homalospermum firmum*, *Taxandria linearifolia* (Swamp Peppermint), *Astartea fascicularis* (False Baeckea), and a dense ground layer of rhizomatous vegetation, usually composed of *Taraxis* sp., *Loxocarya* sp. and *Tetrarrhena laevis* (forest ricegrass) (DPAW, 2015). The white-bellied frog's specific habitat requirements means that it has a highly restricted distribution, with the combined occupied habitat patches totalling to approximately 1.9 km^2 (DPAW, 2015). While this species has not previously been recorded within the property, photographs taken from a DWER site inspection of the proposal indicate that the riparian vegetation may be consistent with the white-bellied frog's habitat preferences (see Appendix G).

The Recovery Plan for the white-bellied frog (DPAW, 2015) states that critical habitat is anything that is considered to provide suitable hydrology, vegetation structure, and protection from threats, even if the species is not present within it. Unoccupied habitat that may facilitate movement of the species between populations, or other unoccupied habitat is also considered to be necessary for the survival of the frog for genetic exchange (DPAW, 2015).

Considering the above, while the vegetation may be suitable, the white-bellied frog is not likely to be present within the site due to a history of disturbance on the property and surrounding area from ongoing agricultural practices, such as the dam east of the proposed clearing, which has resulted in a lack of connectivity with other suitable habitat in the local area.

Other mammalian species
Chuditch (*Dasyurus geoffroii*) (VU) are known to occupy a range of habitats including jarrah forests, eucalypt woodlands, mallee shrublands and heathland (DEC, 2012a). They require den resources such as tree hollows, hollow logs, burrows or rock crevices (DEC, 2012a). According to available databases there are 406 records within the local area approximately 3.30 km from the application area.

Quenda (*Isoodon fusciventer*) (P4) are ground-dwelling marsupials, typically associated with forest or woodlands near watercourses, where understorey consists of dense scrub and leaf litter is abundant (DBCA, 2017). According to available databases there are 792 records within the local area, the nearest being 2.75 km from the application area.

Quokka (*Setonix brachyurus*) (VU) are ground dwelling marsupials and within the southern forests regions are associated with eucalyptus forests with riparian habitats dominated by sedges (DEC, 2013). There are 544 records of the quokka within the local area, the nearest being 3.30 km from the proposed clearing.

The south-western brush-tailed phascogale (*Phascogale tapoatafa wambenger*) is an arboreal dasyurid, associated with dry sclerophyll forests and open woodlands that contain hollow-bearing trees, characterised by high canopy cover and connectivity (DEC, 2012b). There are 90 records of the species within the local area, the nearest being 1.99 km from the proposed clearing.

Based on the photographs provided by the applicant and a DWER site inspection (Appendix F & Appendix G), the proposed clearing areas likely contain suitable habitat for these species, however, given the small size of the proposed clearing and the presence of extensively vegetated areas on the property, the proposed clearing is not likely to have a significant impact on the availability of habitat for these species.

Ecological linkage

The proposed clearing is mapped along the axis line of a South West Regional Ecological Linkage (Molloy et al., 2009). The ecological linkage axis lines are used to link protected patches of regional significance by identifying the best condition remnants available as stepping stones for flora and fauna movement between regionally significant areas (Molloy et al, 2009).

Given that the patch of vegetation that the proposed clearing is contained within is mapped within the axis line of the SWREL, it is considered that the remnant containing the application is a significant ecological linkage, especially given that the surrounding landscape has been subject to ongoing clearing for agricultural and urban developments. Noting that a large portion of the property remains vegetated and that the small size of the proposed clearing will not sever any connections within the linkage, it is not considered that the proposed clearing will have a significant impact on the function of the SWREL.

Conclusion

Based on the above assessment, the proposed clearing is not likely to have a significant impact on the availability of habitat for conservation significant fauna species or significantly impact on ecological linkage values.

3.2.2. Biological (flora and ecological community) - Clearing Principles (a), (c) and (d)

Assessment

The desktop assessment and site inspection identified that the proposed clearing may contain suitable habitat for *Reedia spathacea* (Reedia), which is listed as Threatened under the *Biodiversity Conservation Act 2016* (BC Act) and Critically Endangered under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). This species is a perennial sedge found from Augusta-Margaret River to Walpole. According to available databases, there are three previous records of Reedia within the local area.

The preliminary assessment identified that the mapped soils and vegetation type within the northern section of the proposed clearing area provides suitable habitat for Reedia. The Conservation Advice for Reedia states that the species is found in wetlands habitats with acidic soils, usually composed of peat substrates (DEWHA, 2008). A site inspection conducted by the Department, in April 2024, noted that the northern section of the proposed clearing area and surrounding vegetation contains wetland habitat dominated by sedges (See Appendix G), however, was unable to identify if this species was present due to the density of the vegetation and the time of year being outside of its flowering period which is from November to January (WA Herbarium, 1998-).

Reedia is associated with the "*Reedia spathacea* - *Empodisma gracillimum* – *Sporadanthus rivularis* dominated floodplains and paluslopes of the Blackwood River catchment" (Reedia Swamps – Blackwood River) ecological community which is listed as Priority 1 (PEC) in Western Australia. This community is described as diverse closed sedges and rushes to 1.5 m in height of *R. spathacea*/*E. gracillimum*/*S. rivularis* with open low shrubs to open scrub of *Taxandria linearifolia* (DBCA, 2023). According to available databases, there are two records of this PEC in the local area, the nearest being 5.26 km from the application.

The Reedia Swamps – Blackwood River PEC is also part of the '*Empodisma* peatlands of Southwestern Australia' (Empodisma Peatlands) threatened ecological community (TEC) which is listed as Endangered under the EPBC Act. The Conservation Advice characterises the Empodisma Peatlands TEC as seasonally waterlogged wetlands that typically do not receive inflows from permanent bodies of water such as rivers (DCCEEW, 2023). Vegetation composition can differ depending on the geomorphology of the wetland (e.g. channel, slope, flat etc.), however, are generally composed of mid-dense to dense shrubs, rushes, sedges and perennial herbs (DCCEEW, 2023). Trees are generally sparse or absent, however, some occurrences of the community in channels or troughs can include tall shrubs upwards of two (2) to six (6) metres in height (DCCEEW, 2023). Another defining feature of this community is that it is often distinguishable from the surrounding landscape due to abrupt changes in vegetation structure since surrounding dryland vegetation contains few or no specialist wetland species (DCCEEW, 2023).

It should be noted that the description for the Empodisma Peatlands TEC under the EPBC Act does not specify Reedia as a key species for the TEC, stating that the species has affinity to some occurrences of the community (DCCEEW, 2023). The EPBC Act listed TEC is rather characterised by the presence of *E. gracillimum*, which the

Conservation Advice states is almost always present in occurrences of the community (DCCEEW, 2023). Therefore, if the proposed clearing does not contain Reedia, it may still be representative of the Empodisma Peatlands TEC.

Based on the above description, the northern, riparian area of the proposed clearing may be representative of the Reedia Swamps – Blackwood River PEC and/or Empodisma peatlands TEC. Photographs provided by the applicant and from a site inspection (Appendix F & Appendix G) noted that the northern section of the proposal is composed of dense wetland vegetation and includes *E. gracillimum* (Figure 2). Furthermore, satellite imagery of the wetland also shows an abrupt change in vegetation structure from tall jarrah-marri forest to dense wetland vegetation (Figure 3).

The Conservation Advice for the Empodisma Peatlands TEC notes that the community is sensitive to changes in hydrology due to the clearing of native vegetation and removal of substrate which can subsequently cause the drying of the wetland leading to peat loss and changes in fire regimes (DCCEEW, 2023). This may further indirectly impact on any Reedia that may be present within the wetland by altering the habitat.

Without further information, it cannot be determined whether the vegetation within the application area is likely to be representative of the Empodisma Peatlands TEC or contain individuals of Reedia. A flora and vegetation survey is required to confirm the presence or absence of these significant environmental values. A survey has been requested from the application to support this assessment however one has not been received by the Department, to date.

The site inspection identified that a portion of thew riparian zone has experienced significant weed invasion from couch grass, however, this appears to be largely contained within one portion of the site and much of the wetland vegetation appears to be healthy and have no signs of invasion. The proposed clearing may result in the spread of weeds into adjacent vegetation.

Figure 2. Photograph of *Empodisma gracillimum* observed during the DWER site inspection.

Figure 3. Map of the proposed clearing area with the change in vegetation structure outlined in light blue.

Conclusion
Based on the above assessment, the proposed clearing may result in the loss of suitable habitat and/or individuals of threatened flora and may result in the loss of vegetation representative of a priority and/or threatened ecological community. An appropriately timed flora and vegetation survey is required to determine the presence or absence of threatened flora and ecological communities.

3.2.3. Land and water resources (watercourse and wetland) - Clearing Principles (f) and (i)

Assessment
According to available mapping, the northern section of the proposal is mapped within a watercourse associated with Rushy Creek which is tributary of the Blackwood River. Additionally, as discussed in Section 3.2.1. of this report the proposed clearing may be representative of a peatland habitat.

The proposed clearing will involve clearing across the whole length of watercourse to allow for the trenching and installation of the wastewater pipe which may lead to land degradation and alterations in surface hydrology of the area. Alterations to hydrology may impact on the surrounding environmental values including the remaining waterbodies. While the northern section of the proposed clearing is small, the proposal will require clearing along the entire width of the waterbody, splitting it into two. Without further information, it cannot be determined whether the proposed clearing will have significant environmental impacts on the wetland and watercourse.

Additional avoidance and mitigation measures to maintain surface hydrology were requested which have not been received by the department to date.

Conclusion
Based on the above assessment, the proposed clearing is likely to impact on the surface hydrology of the watercourse and wetland. Additional measures to avoid and mitigate impacts from the proposed clearing on the watercourse/wetland and surface water hydrology is required.

3.2.4. Significant remnant vegetation and conservation areas (ATR) - Clearing Principle (h)

Assessment
The northern section of the proposed clearing area is mapped directly adjacent to an Agreement to Reserve (ATR) under the *Soil and Land Conservation Act 1945*. Like a conservation covenant, an ATR is a voluntary agreement to conserve an area of land, however, an ATR can be conserved in perpetuity or for a specified amount of time and can be varied or discharged by the Minister (CSLC, 2021). Given the proximity of the application, the proposed clearing may have indirect impacts to the area protected under an ATR.

Satellite imagery indicates that the vegetation proposed to be cleared is part of a single remnant of native vegetation which includes the area protected under the ATR. As discussed in Section 3.2.3., the proposed clearing area is mapped within a wetland and watercourse and the proposed clearing may result in alterations in hydrology and may additionally introduce and spread weeds into the area protected under the ATR impacting on its environmental values.

Conclusion
Based on the above assessment, the proposed clearing will likely result in indirect impacts to native vegetation protected under an Agreement to Reserve. Additional measures to avoid and mitigate impacts from the proposed clearing to the conservation area are required.

3.3. Relevant planning instruments and other matters

Other relevant authorisations required for the proposed land use include:

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

The Shire of Augusta-Margaret River advised the Department that local government approvals are required. The Shire of Augusta-Margaret River expressed concern regarding the proposed clearing along the creek line due to potential impacts to threatened fauna and ecological communities and considered that alternative locations on the property should be explored (Shire of Augusta-Margaret River, 2024). Development approval has not been obtained to date.

Licence under Part V Division III of the EP Act
The purpose of this proposed clearing is related to an amendment to Stella Bella Wines' Licence under Part V Division III of the EP Act (L7749/1999/9) for the disposal of wastewater from alcohol production. It is understood that a decision on this amendment is yet to be made.

Rights in Water and Irrigation Act 1914 (RIWI Act)
The Applicant was advised that if they wish to clear along the creek line, they will require a permit to interfere with the bed and banks of a watercourse under the RIWI Act (DWER, 2024b). The applicant has not advised as to whether they have applied or intend to apply for this approval from the Department.

Agreement to Reserve
The initial desktop assessment identified that the northern section of the proposed clearing formed part of the Agreement to Reserve (ATR) discussed in Section 3.2.3. Advice received from the Commissioner for Soil and Land Conservation confirmed that this area should not be part of the ATR and is a digitising error (CLSC, 2024).

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

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
Provided photographs of the vegetation proposed to be cleared.	Photographs can be found in Appendix F.

Appendix C. Site characteristics

C.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is part of a remnant patch of native vegetation in the intensive land use zone of Western Australia. It is surrounded by remnant vegetation and adjacent to cleared agricultural lands. Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 45.99 per cent of the original native vegetation cover.
Ecological linkage	The proposed clearing is mapped within the South West Regional Ecological Linkages dataset.
Conservation areas	The northern section of the proposed clearing is mapped directly adjacent to an Agreement to Reserve. There are no other conservation areas within proximity of the proposed clearing, the nearest being Leeuwin-Naturaliste National Park located approximately 4.66 km from the application.
Vegetation description	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of jarrah-marri woodland in the southern section and dense wetland vegetation in the northern section. Representative photos are available in Appendix F. This is consistent with the mapped vegetation types (Government of Western Australia, 2019): • Glenarty Hills – uplands, which is described as Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla-Banksia grandis* with some *Eucalyptus diversicolor* on upland and slopes in hyperhumid and perhumid zones; and • Glenarty Hills - valleys, which is described as Mixture of open forest of *Eucalyptus diversicolor-Callistachys lanceolata*, woodland of *Eucalyptus patens-Corymbia calophylla* and woodland of *Eucalyptus rudis-Melaleuca rhaphiophylla* on depressions in hyperhumid and perhumid zones. The mapped vegetation types retain approximately 31.71 per cent and 35.37 per cent respectively of their original extent (Government of Western Australia, 2019).
Vegetation condition	Photographs supplied by the applicant and results of a site inspection indicate the vegetation within the proposed clearing area is in degraded to very good (Keighery, 1994) condition. The full Keighery (1994) condition rating scale is provided in Appendix E. Representative photos are available in Appendix F.
Climate and landform	Karridale is located within the South West Region of Western Australia which is generally considered to have a temperate climate with wet winters and dry summers. The landform within the proposed clearing area is characterised as both gentle valley slopes and swampy open drainage depressions.
Soil description	Two soil types are mapped within the proposed clearing area: • Glenarty gentle slope phase, which is described as slopes (gradients mainly 5-10%) with a variety of soil types, Loamy gravels, Duplex sandy gravels, semi wet soils and Grey and Yellow/brown deep sandy duplexes; and • Glenarty wet valley phase, which is described as broad U-shaped drainage depressions with swampy floors, Loamy gravels, Duplex sandy gravels, sandy duplexes and Wet and Semi-wet soils.

Characteristic	Details
Land degradation risk	Both soil types were identified as having a high risk of subsurface acidification. In addition, the Glenarty gentle slope phase has a high risk of wind erosion and the Glenarty wet valley phase has a high risk of phosphorous export.
Waterbodies	The desktop assessment and aerial imagery indicated that one nonperennial, minor tributary of the Blackwood River intersects the northern section of the proposed clearing.
Hydrogeography	The proposed clearing is mapped within the Lower Blackwood River Surface Water Area and Blackwood Groundwater Area. The mapped soils are not at high risk of water erosion, however, the Glenarty wet valley phase is mapped as high risk for waterlogging.
Flora	There are 71 records across 35 species of significant flora within the local area (10-kilometre radius), none of which are recorded within the proposed clearing area or within one kilometre of the application. The nearest record is Priority 4 species *Stylidium gloeophyllum* which is located approximately 4.16 km from the proposed clearing.
Ecological communities	The proposed clearing is not mapped within a threatened or priority ecological community. The nearest record is the '*Reedia spathacea* - *Empodisma gracillimum* – *Sporadanthus rivularis* dominated floodplains and paluslopes of the Blackwood River catchment' ecological community listed as Priority 1 under the BC Act and Endangered under the EPBC Act which is located approximately 5.26 km from the proposed clearing.
Fauna	There are 5833 records across 69 species of significant fauna within the local area (10-kilometre radius). Two of these species are recorded within one kilometre of the proposed clearing: • Carnaby's cockatoo (*Zanda latirostris*) (EN) – 0.54 km • glossy ibis (*Plegadis falcinellus*) (MI) – 0.54 km One black cockatoo roosting area is recorded within the local area approximately 8.06 km from the proposed clearing.

C.2. Flora analysis table

With consideration for the site characteristics set out above and relevant datasets (see Appendix H.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]
Reedia spathacea	T	Y	Y	Y	5.40	3	N/A

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

C.3. 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]
Anstisia alba (white-bellied frog)	CR	Y	Y	1.22	69	N/A
Calyptorhynchus banksii naso (forest red-tail black cockatoo)	VU	Y	Y	2.27	7	N/A
Dasyurus geoffroii (chuditch, western quoll)	VU	Y	Y	3.30	406	N/A
Engaewa pseudoreducta (Margaret River burrowing crayfish)	CR	Y	Y	3.35	1	N/A
Isoodon fusciventer (quenda, southwestern brown bandicoot)	P4	Y	Y	2.75	792	N/A
Phascogale tapoatafa wambenger (south-western brush-tailed phascogale, wambenger)	CD	N	Y	1.39	90	N/A

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]
Pseudocheirus occidentalis (western ringtail possum)	CR	Y	Y	1.84	568	N/A
Setonix brachyurus (quokka)	VU	Y	Y	3.30	574	N/A
Tyto novaehollandiae novaehollandiae (masked owl (southwest))	P3	Y	Y	4.90	2	N/A
Zanda baudinii (Baudin's cockatoo)	EN	Y	Y	3.75	25	N/A
Zanda latirostris (Carnaby's cockatoo)	EN	Y	Y	0.54	27	N/A
Zanda sp. 'white-tailed black cockatoo' (white-tailed black cockatoo)	EN	Y	Y	1.39	38	N/A

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

C.1. Ecological community analysis table

Community 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]
Reedia spathacea - Empodisma gracillimum – Sporadanthus rivularis dominated floodplains and paluslopes of the Blackwood River catchment.	Priority 1 (DBCA) EN (EPBC Act)	Y	Y	Y	5.26	2	N/A

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

Appendix D. 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 proposed clearing area contains habitat suitable for threatened flora and fauna that may be impacted because of the proposed clearing and may be representative of a threatened/priority ecological community.	May be at variance	Yes *Refer to Section 3.2.1 and 3.2.2 above.*
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 contains suitable habitat for several conservation significant fauna species, however, given the small size of the proposed clearing, is not expected to be significant. The proposed clearing area is mapped on the axis line of a South Western Regional Ecological linkage and the proposed clearing may impact on fauna moving through the area.	May be at variance	Yes *Refer to Section 3.2.1, above.*

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: One flora species listed as threatened under the BC Act and Critically Endangered under the EPBC Act, *Reedia spathacea,* is recorded in the local area and may have suitable habitat within the northern section of the proposed clearing based on the mapped vegetation and soil types.	May be at variance	Yes *Refer to Section 3.2.2, above.*
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: Based on the mapped vegetation and soil types, in addition to photographs provided by the applicant and a site inspection, the proposed clearing may be representative of the 'Empodisma Peatlands of Southwestern Australia' threatened ecological community, listed as Endangered under the EPBC Act.	May be at variance	Yes *Refer to Section 3.2.1, above.*
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 types and native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia.	Not likely to be 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: An Agreement to Reserve is located adjacent to the northern section of the proposed clearing. While the application area is small, it may have an impact on the environmental values of adjacent conservation area given its proximity through the spread of weeds and dieback, and the potential to alter the surface hydrology of the wetland, impacting its values.	May be at variance	Yes *Refer to Section 3.2.3, above.*
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: The northern section of the proposed clearing intersects a minor, non-perennial tributary of the Blackwood River and is contained within a wetland. Therefore, the vegetation within the proposed clearing is considered to be growing in, or in association with a watercourse or wetland.	At variance	Yes *Refer to Section 3.2.4, above.*
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 nutrient export, wind erosion, and subsurface acidification. Advice received from the Commissioner for Soil and Land Conservation notes that the small size of the proposed clearing is not likely to increase the risk of land degradation on the property (CSLC, 2024).	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
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 one watercourse and a wetland is proposed to be cleared, the application may impact on surface water and off-site hydrology.	May be at variance	Yes *Refer to Section 3.2.4, above.*
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. The proposed clearing is unlikely to contribute to waterlogging given the small size of the application area.	Not likely to be at variance	No

Appendix E. 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 F. Photographs of the vegetation

Figure 2. Photographs of the native vegetation proposed to be cleared.

Appendix G. DWER site inspection photographs (DWER, 2024a)

Northern section	
	
Empodisma gracillimum observed within the creek line	Southern portion of the riparian zone facing north.

Portion of riparian zone with significant weed infestation.

Northern portion of riparian zone facing South.

Border of the woodland and wetland vegetation

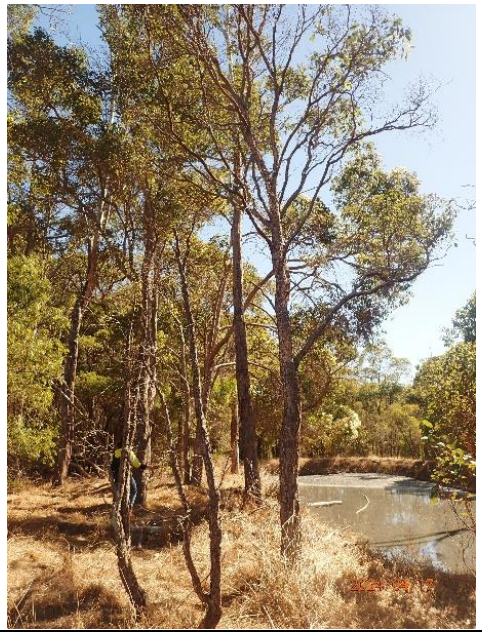
Typical wetland vegetation within the proposed clearing

Example of soil on the edge of the wetland (including a fauna digging of undetermined species).

Southern section

Vegetation within the southern section, the pipe is planned to go through the existing cleared path through the middle.

Proposed clearing area near the effluent dam (seen in the background on the left).



Trees proposed to be cleared for the pump shed.

Appendix H. Sources of information

H.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)
- Cadastre (LGATE-218)
- 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

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