



mainroads
WESTERN AUSTRALIA

Clearing Desktop Report – CPS 818

*We're working for
Western Australia.*

York-Merredin (M041) Bridge 0597
Upgrade

May 2021

826

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Amendments

Report Compilation & Review	Name and Position	Document Revision	Date
Author:	Environment Officer	Draft v1	21/04/2021
Reviewer:	Environment Officer	Draft v1	03/05/2021

1 PURPOSE

This Clearing Desktop Report (CDR) is a desktop assessment of native vegetation clearing that is proposed to be cleared using the Statewide Clearing Permit CPS 818 issued to Main Roads Western Australia (Main Roads).

2 SCOPE

2.1 Project Scope

Project Name: York-Merredin (M041) Bridge 0597 Upgrade

Project Purpose / Components:

Bridge 0597 is past its functional usage and capacity levels. The condition and age of the bridge is such that it is economically unviable to spend any funding on its maintenance. The project involves the replacement of bridge 0597 and associated road widening. A side-track will also be required as part of the project.

The proposed clearing under CPS 818 is : 0.78 ha

The proposed temporary clearing under CPS 818 is: None.

Project Location(s): The project area is located on York-Merredin Road (M041) SLK 86.98 – 87.58 within the Shire of Quairading as shown in Figure 1.

- Latitude: -31.962561
- Longitude: 117.596283

The location of the proposed works is at Figure 1.

2.2 Desktop Assessment Scope

The assessment area is confined to a local area of a 15 km radius, as shown in Figure 2.

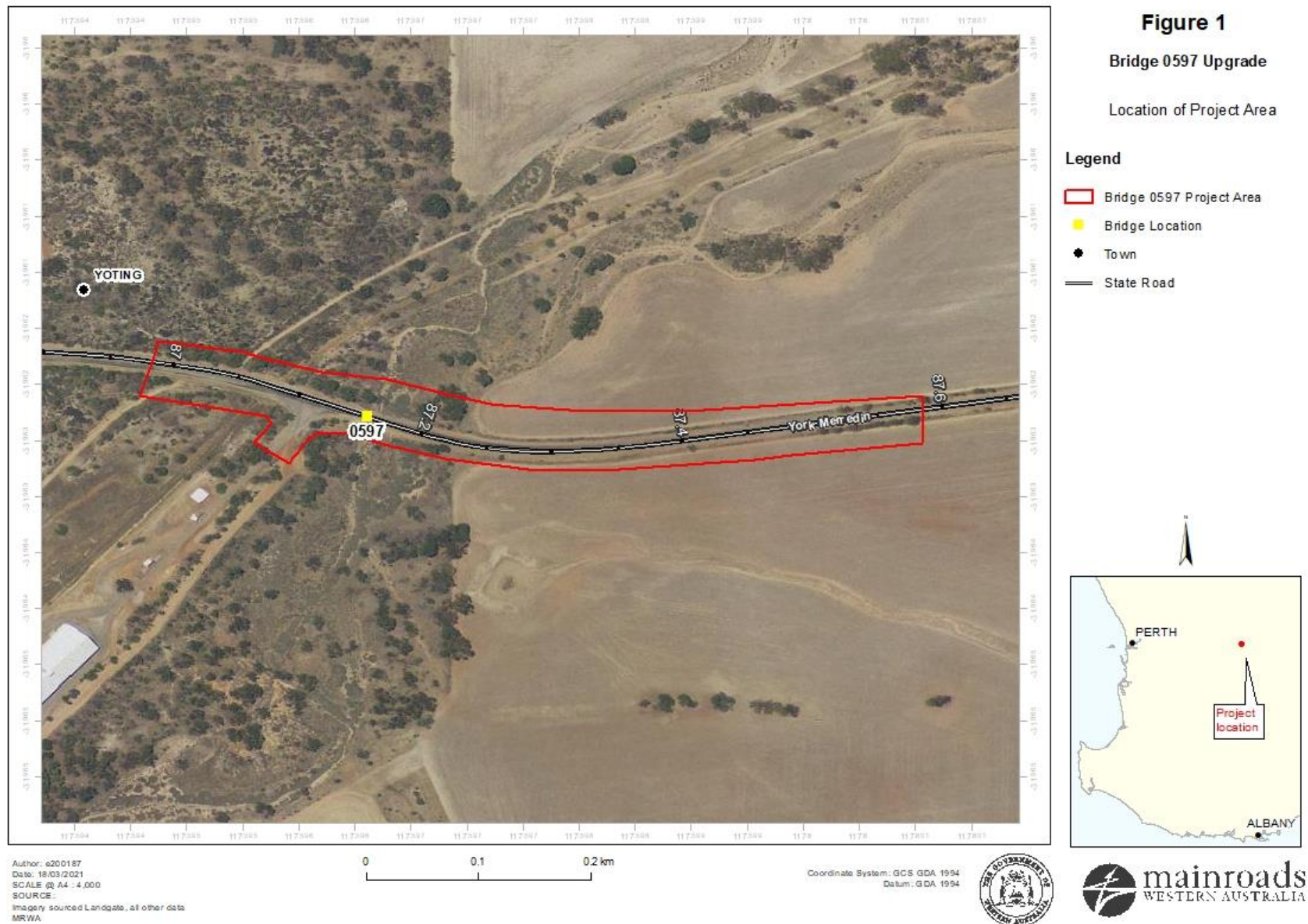


Figure 1. Project Area

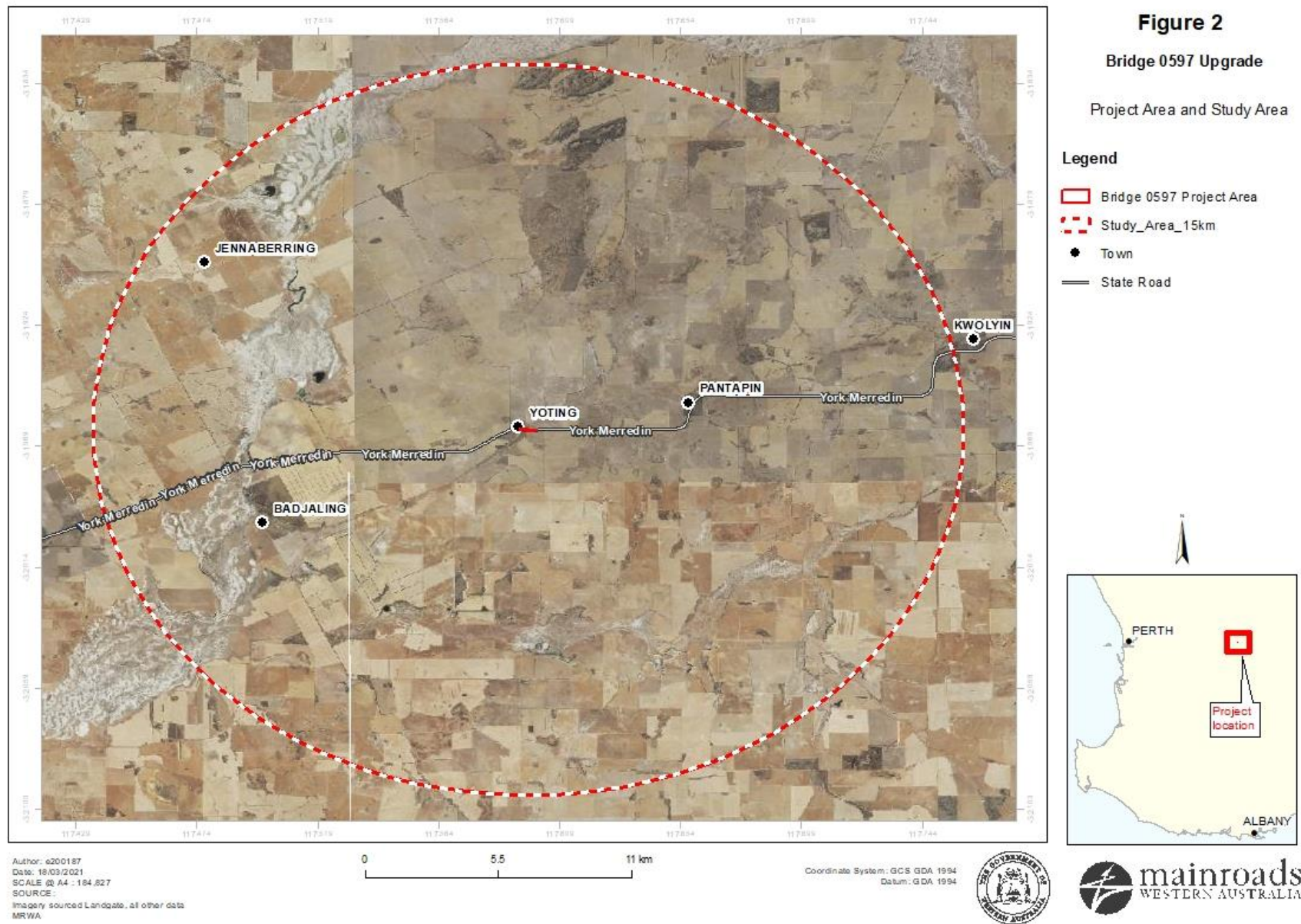


Figure 2. Project Location and Study Area

2.3 Alternatives to Clearing

There are no alternatives to the clearing proposed as only a minimal amount of native vegetation will be removed for the bridge upgrade works.

2.4 Measures to Avoid, Minimise, Mitigate and Manage Project Clearing Impacts

The design and management measures implemented to avoid and minimise the project clearing impacts are provided in Table 1.

Table 1. Justification of Avoiding, Minimising, Mitigating and Managing Project Clearing Impacts

Design or Management Measure	Discussion and Justification
Steepen batter slopes	Yes, Batter Slopes have been designed to align with the MRWA safety and maintenance standards. There is an intersection along the road re-alignment. Where possible, steepest possible batter slopes were adopted in the design. In particular, where barriers have been installed, however generally 1 in 4 & 1 in 6 batters have been adopted (1 in 6 is typical, where barriers are not used).
Installation of safety barriers	Yes, Where appropriate, the installation of safety barriers have been included in the design, typically along the bridge ends. The barriers have allowed implementation of steepened batters near the bridge thereby reducing the clearing footprint.
Alignment to one side of existing road	Yes, The road alignment will extend to one side to eliminate the reverse curve within this section of York-Merredin Road.
Alternative alignment to follow existing road (or) to preferentially locate within pasture or a degraded areas	No, Project scope is to replace bridge and improve the reverse curve / road alignment for safety reasons. The laydown will be established in an existing area of disturbance.
Installation of kerbing	No, This section of the York-Merredin Road is located in a rural zone and does not require kerbing.
Simplification of design to reduce number of lanes and/or complexity of intersections	No, The existing York-Merredin Road is on a poor geometric road alignment and the existing bridge is situated on a reverse curve. To remove this reverse curve, the road will be realigned to the north. As a result, an approximately 500 m long section of road (including bridge 0597) is to be reconstructed. An existing westbound acceleration lane is located to the west of the bridge and is to be maintained as part of the realignment, with a short section of the acceleration lane to be reconstructed.
Preferential use of existing cleared areas for access tracks, construction storage and stockpiling	Yes, For the majority of the section, existing seal road will be used as sidetrack. However, for existing road tie-ins and bridge construction, separate access/side tracks will be required. Stockpiling and the laydown area will be established on already cleared areas.
Drainage modification	No, Drainage will match existing (mostly table drains) designs.

2.5 Approved Policies and Planning Instruments

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 1.3), Main Roads has also had regard to

EPPs

- Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992;
- Environmental Protection (Western Swamp Tortoise Habitat) Policy 2011

Relevant other policies and guidance documents:

- The Western Australian Environmental Offsets Policy (Government of Western Australia, 2011)
- A guide to the assessment of applications to clear native vegetation (DWER, December 2014)
- Procedure: Native vegetation clearing permits (DWER, October 2019)
- Environmental Offsets Guidelines (Government of Western Australia, August 2014)
- Technical guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020)
- Approved conservation advice under section 266B of the EPBC Act for threatened flora/fauna/vegetation communities
- Approved Recovery Plans for threatened species
- EPBC Act Referral guidelines for the three threatened black cockatoo species
- Strategic advice - EPA

Other Legislation of relevance for assessment of clearing and planning/other matters

- Biodiversity Conservation Act 2016 (WA) (BC Act)
- Conservation and Land Management Act 1984 (WA) (CALM Act)
- Country Areas Water Supply Act 1947 (WA) (CAWS 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)
- Rights in Water and Irrigation Act 1914
- Aboriginal Heritage Act 1972 (WA)
- Town Planning and Development Act 1928

3 Methodology

3.1 Desktop Study

A desktop assessment of the project area and an assessment of native vegetation clearing were undertaken by reviewing a number of government agency managed databases, viewing GIS shapefiles and consulting with relevant stakeholders where necessary. Results from searches can be found in the relevant Appendix.

GIS layer viewing and mapping is done using ArcMap and / or Main Roads Integrated Mapping System (IMS). Referencing of the GIS layers accessed is done under the relevant methodology section of each clearing principle. Government managed databases were searched to locate additional information, these are referenced in Section 7.

4 VEGETATION DETAILS

4.1.1 Project Site Vegetation Description

Biological surveys conducted within and in the vicinity of the project area did not identify any significant fauna and flora (Astron 2016, Ecoscape 2021). Findings from these surveys defined three vegetation units within the area to be cleared under CPS 818/15 as follows:

- *Acacia acuminata* low open woodland over *Allocasuarina campestris* and *Grevillea anethifolia* mid open shrubland over *Mesomelaena pseudostygia*, *Persoonia quinquenervis* and *Monachather paradoxus* low open sedgeland/shrubland/tussock grassland (AaLOW).
- *Eucalyptus loxophleba* subsp. *loxophleba* low woodland over *Maireana brevifolia*, *Lomandra effusa* and *Enchylaena tomentosa* low open chenopod shrubland/forbland (EILW).
- *Eucalyptus loxophleba* subsp. *loxophleba* low open woodland over *Acacia saligna* subsp. *lindleyi* tall open shrubland over *Senna artemisioides* subsp. *filifolia* and **Malva parviflora* (LOW).

Approximately 0.08 ha supporting native vegetation and located within the southern section of the project area was not surveyed. Examination of Google Map street view images shows that the vegetation mapped in adjacent areas next to the road extends to the unsurveyed segments. Another area (0.14 ha) on the easternmost section of the project area occurs outside of the biological survey area. This section supports only planted *Acacia acuminata* shrubs and is analogous to the adjoining mapping provided by Ecoscape (Ecoscape 2021). The location of the unsurveyed areas and corresponding images are provided in Appendix 3.

The vegetation of the project area was assessed as being in a mostly Degraded (76.9%) condition with patches ranked as Good (14.1%), Very Good (6.4%) and Completely Degraded (2.6%). These vegetation assemblages are not exclusive to the project area and occur within the road reserve to the east and west of the project area.

Tables 2 and 3 below summarise the pre-European vegetation association mapped for the project area. At the national level, the aim of biodiversity conservation is to prevent clearance of ecological communities having an area of below 30% compared to their pre-1750 cover given that below this threshold, species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001). According to Beard's mapping (Shepherd et al. 2001), the project area lies within Vegetation Association 1023, defined as 'Medium woodland; York gum, wandoo & salmon gum (*Eucalyptus salmonophloia*)'. Vegetation Association 1023 is classified as a significant remnant vegetation as less than 30% of its pre-European extent remains at the State, Bioregion and Local Government Authority levels.

Table 2. Summary of Project Area's Mapped Pre-European Vegetation Associations

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Vegetation Association 1023, described as 'Medium woodland; York gum, wandoo & salmon gum (<i>Eucalyptus salmonophloia</i>)' (Government of Western Australia, 2019)	Clearing of up to 0.78 ha for Bridge replacement on York-Merredin Road (M041).	Mostly Degraded to Completely Degraded with patches rated as Good and Very Good (EPA 2016)	Vegetation description and condition determined from a 2017 and 2020 flora and vegetation surveys as well as aerial imagery.

Table 3. Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Assoc No. 1023	Statewide	1,601,605.76	172,875.16	10.79	10.95
	IBRA Bioregion Avon Wheatbelt	1,522,680.40	165,123.60	10.84	10.46
	IBRA Sub-region Merredin	398,944.17	26,714.63	6.70	11.11
	Local Government Authority Shire of Quairading	72,485.65	4,899.78	6.76	5.61

5 Assessment Against the Ten Clearing Principles

In assessing whether the project's proposed clearing is likely to have a significant impact on the environment, the project was assessed against the ten Clearing Principles (*Environmental Protection Act 1986* (EP Act), Schedule 5).

Each principle has been assessed in accordance with DWER's 'A Guide to the Assessment of Applications to Clear Native Vegetation'.

The proposed clearing of 0.78 ha under CPS 818/15 is considered not at variance to Principles (c), (d), (f), (g), (h), (i) and (j) and not likely to be at variance to Principles (a), (b) and (e).

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Proposed clearing is not likely to be at variance to this Principle
<p>Comments</p> <p>Findings from flora and vegetation surveys undertaken within and in the vicinity of the clearing footprint, defined three vegetation types for the project area (Section 4.1.1). Vegetation condition within the project area was mostly Degraded to Completely Degraded (79.5%) with patches assessed as Good (14.1%) and Very good (6.4%). The vegetation assemblages recorded during the surveys (Astron 2016, Ecoscape 2021) are not exclusive to the project area and occur in this locality within sections of the road reserve.</p> <p>Results from a desktop assessment indicated that there are known records of 28 significant flora species within the study area. Of these, five species were assessed as having the potential to occur within the project</p>

<p>area due to the availability of suitable habitats: <i>Acacia ataxiphylla</i> subsp. <i>magna</i> (T), <i>Banksia cuneata</i> (T), <i>Frankenia conferta</i> (T), <i>Hakea aculeata</i> (T) and <i>Frankenia glomerata</i> (P4). Flora and vegetation surveys undertaken in 2016 and 2020 (Astron 2016, Ecoscape 2021) did not identify any Threatened or Priority species in the project area and all were assessed as unlikely or highly unlikely to occur post survey (Ecoscape 2021).</p> <p>A desktop assessment showed records of eight significant fauna species within the study area. None of them would occur in the project area due to a lack of suitable habitats. Data from the two biological surveys indicated that no significant fauna species are present in the project area and the vegetation was rated as a low quality foraging habitat for the Black Cockatoo (Ecoscape 2021). Although Carnaby's Cockatoo may occasionally visit the project area for the purposes of foraging, it is highly unlikely that the birds are reliant on the vegetation to be cleared for foraging.</p> <p>Given that no significant flora or fauna species will be impacted and that the vegetation assemblages identified during the surveys also occur outside of the project area, it is not expected that the loss of native vegetation will have any significant impacts on flora and fauna species or fauna habitats.</p> <p>The project area lies within the mapped buffer area for the 'Eucalypt Woodlands of the WA Wheatbelt' TEC (Wheatbelt TEC). However, the 2016 and 2020 biological surveys did not record any vegetation corresponding to the Wheatbelt TEC in the project area.</p> <p>Given the size of the clearing footprint and the fact that no significant flora and fauna species or ecological communities will be impacted, it is unlikely that clearing will significantly reduce the biodiversity of the locality.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
<p>Methodology</p> <p>Astron 2016 DEC 2012 DAWE website Ecoscape 2021 EPA (2016) NatureMap (Accessed 18/03/2021) Main Roads GIS Shapefiles</p>

(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 indigenous to Western Australia.

<p>Proposed clearing is not likely to be at variance to this Principle</p>
<p>Comments</p> <p>A desktop assessment showed records of eight significant fauna species within the study area. Based on the habitats present within the project area, none of these species were considered as having the potential to occur. No significant fauna species were recorded in the project area during the 2016 and 2020 biological surveys and the likelihood of these species being present is considered to be low to very low (Ecoscape 2021). Given that the project area extends mostly over Degraded to Completely Degraded vegetation (0.62 ha), with small patches ranked as Good to Very Good (0.16 ha), significant fauna species are not expected to be reliant on the disturbed habitats within the project area.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
<p>Methodology</p> <p>Astron 2016 DBCA Shapefiles DBCA website Ecoscape 2021</p>

EPA (2016)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.**Proposal is not at variance to this Principle****Comments**

No Threatened flora species were recorded during the 2016 and 2020 biological surveys and it is considered highly unlikely that any would occur (Astron 2016, Ecoscape 2021). Given the small size of the clearing footprint that consists of mostly Degraded vegetation that does not support habitats suitable for the occurrence of Threatened flora species, this project is not likely to directly or indirectly impact any Threatened flora.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

Astron 2016
 DBCA shapefiles
 Ecoscape 2021
 Florabase (Accessed 18/03/2021)

(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.**Proposed clearing is not at variance to this Principle****Comments**

The project area lies within the mapped buffer area for the 'Eucalypt Woodlands of the WA Wheatbelt' TEC (Wheatbelt TEC). However the 2016 and 2020 biological surveys undertaken by Astron and Ecoscape respectively did not identify any TECs within and in the vicinity of the project area.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

Astron 2016
 DBCA shapefiles
 Ecoscape 2021
 Florabase (Accessed 18/03/2021)

(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.**Proposed clearing is not likely to be at variance to this Principle****Comments**

According to Beard's mapping (Shepherd et al. 2001), the project area occurs within Vegetation Association 1023 (Medium woodland; York gum, wandoo & salmon gum (*Eucalyptus salmonophloia*)' (Government of Western Australia, 2019).

Pre-European Vegetation Association 1023	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Statewide	1,601,605.76	172,875.16	10.79	10.95
IBRA Bioregion Avon Wheatbelt	1,522,680.40	165,123.60	10.84	10.46
IBRA Subregion Merredin	398,944.17	26,714.63	6.70	11.11

Local Government Authority Shire of Quairading	72,485.65	4,899.78	6.76	5.61
<p>Vegetation that has less than 30% remaining is said to represent an area that is significant as a remnant vegetation. As evident from the table above, Vegetation Association 1023 is classified as a significant remnant vegetation as less than 30% of its pre-European extent remains at the State, Bioregion and Local Government Authority levels.</p> <p>Vegetation types EILW and LOW broadly corresponds to Vegetation Association 1023 and extend over 0.54 ha within the project area. However, vegetation types EILW and LOW were assessed as being in a Degraded condition (Astron 2016¹, Ecoscape 2021²). Given their disturbed status, these vegetation assemblages are unlikely to (a) support conservation significant flora or ecological communities, (b) contain a high level of biodiversity, and (c) contribute to a wildlife corridor or comprise of significant habitat for indigenous fauna. The project area is therefore not considered to support significant remnant vegetation within an extensively cleared landscape. Previous granted clearing permits where the application area supported vegetation that retained less than 30% of its extents but was not considered to be significant remnant by DWER are as follows:</p> <ul style="list-style-type: none"> • CPS 7978 – Approximately 10 ha of vegetation in Good to Degraded condition was not considered to be a significant remnant as the majority of the application area was in a Degraded condition. • CPS 8385 – Approximately 1 ha of vegetation assessed as being in a Very Good to Excellent condition was not considered to be a significant remnant as the application area was less than 0.01% of the vegetation association within the IBRA region. <p>It should be noted that most of the vegetation of the project area was assessed as being in a Degraded to Completely Degraded condition (0.62 ha or 79.5%) and the proposed footprint is small in size. Based on the above, the project area is not considered a significant remnant vegetation. Consequently, this project is not expected to have any impact on a significant remnant vegetation.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>				
<p>Methodology Aerial Imagery Astron 2016 EPA (2016) Ecoscape 2021 Government of Western Australia (2019) Shepherd et al. 2001</p>				

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Proposed clearing is not at variance to this Principle
<p>Comments The vegetation proposed to be cleared under CPS 818/15, comprises vegetation units AaLOW, EILW and LOW. These vegetation assemblages are not associated with a watercourse or wetland (Astron 2016). Based on the above, the proposed clearing is not at variance to this Principle.</p>
<p>Methodology Astron 2016 DWER and DBCA shapefiles</p>

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Proposed clearing is not at variance to this Principle	
Comments	
Aspect	Risk
Flood Risk	<3% of map unit has a moderate to high flood risk
Salinity	<3%-10% of map unit has a moderate to high salinity risk
Waterlogging	<3% of map unit have a moderate to very high waterlogging risk
Water Erosion	<3% of map unit has a high to extreme water erosion risk
Wind Erosion	10-30% and <70% of map unit have high to extreme wind erosion risk
Acid Sulphate Soils (ASS)	Low Probability of Occurrence
<p>As evident from the table above, the project area exhibits predominately low risk of flooding, salinity, waterlogging and water erosion but moderate to high risk of wind erosion. According to the DAFWA datasets, the project area lies within deep sandy and sandy earth soils. As small areas of native vegetation will be removed along a flat topography, wind erosion is unlikely to cause any significant deterioration.</p> <p>In addition, it is unlikely that acid sulphate soils will be an issue as the area is classified as low risk. Nonetheless, given that the project activities (albeit low impact), will involve dewatering and excavation below the water table in areas that are seasonally inundated, operational controls for ASS will be required from the contractor if uncovered during works. Standard management actions for ASS will be addressed in the Construction Environmental Management Plan (CEMP).</p> <p>Consequently, it is unlikely that this project will cause appreciable land degradation because of the minor nature of the road works and the fact that only a small amount of native vegetation found in an already disturbed habitat will be cleared.</p> <p>Based on the above, the proposed clearing is not at variance to this Principle.</p>	
Methodology CSIRO (2014) DAFWA shapefiles Natural Resource Management SLIP Soil Systems (Accessed 18/03/2021)	

(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.

Proposed clearing is not at variance to this Principle
Comments
<p>A search of ArcGIS shapefiles indicates that there are no reserves or conservation areas located within or in the vicinity of the project area.</p> <p>The nearest areas are an un-named timber Crown Land and the Badjaling North Nature Reserve located 5 km to the east and 9.5 km west of the project area, respectively. Given the distance to these areas, it is unlikely that this project will significantly impact any nature reserves or conservation areas.</p> <p>Based on the above, the proposed clearing is not at variance to this Principle.</p>
Methodology DBCA shapefiles EPA (2016)

(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.

Proposed clearing is not at variance to this Principle
<p>Comments</p> <p>The project area is not located within a Proclaimed Groundwater Area. It also does not occur on any Public Drinking Water Source Area but lies in a proclaimed surface water area (Avon River Catchment Area). The proposed clearing lies adjacent to a non-perennial minor drainage line and potential impacts to surface water quality will be managed during construction through a Construction Environmental Management Plan (CEMP).</p> <p>Based on the above, the proposed clearing is not at variance to this Principle.</p>
<p>Methodology</p> <p>DWER and DBCA shapefiles EPA (2016)</p>

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Proposed clearing is not at variance to this Principle
<p>Comments</p> <p>According to the nearest weather station (Tellenning Hill, Station No 010122), the project area receives a mean annual rainfall of 329.6 mm (BoM 2021). Based on the presence of sandy soils and small area of native vegetation to be removed, it is unlikely that this project will cause or exacerbate the incidence or intensity of flooding.</p> <p>Based on the above, the proposed clearing is not at variance to this Principle.</p>
<p>Methodology</p> <p>BoM (2021) DAFWA shapefiles</p>

6 ADDITIONAL ACTIONS REQUIRED

The clearing associated with the proposal is unlikely or not at variance with the Clearing Principles. Additional management actions under CPS 818 are detailed in Table 6.

Table 6. Summary of Additional Management Actions Required by Permit CPS 818

Impact of Clearing	Yes/No or NA	Further Action Required
1. The project involves clearing for temporary works (as defined by CPS 818).	N	No further action required.

Impact of Clearing	Yes/No or NA	Further Action Required
2 a. Project is within Region that: <ul style="list-style-type: none"> - Has rainfall greater than 400mm and - Is South of the 26th parallel and - Works are in 'Other than dry conditions' and - Works have potential for uninfested areas to be impacted 	N	Proceed with standard Vehicle and Plant management actions from PEMR's and Vehicle and Plant Hygiene Checklists.
3. Main Roads has been notified by DWER or an environmental specialist that the area to be cleared is susceptible to a pathogen other than dieback	N	No further action required.
4. The vegetation within the area to be cleared and/or the surrounding vegetation in a good or better condition and weeds likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition	N	Appropriate weed management strategies will be provided in Specification 204 and will be addressed in the CEMP. Management measures will include control of weeds prior to works commencing and separate stockpiling of materials (e.g. topsoil) from the infested locations. The CEMP requires that all vehicles and machinery arrive on site clean and remain within the extent of the demarcated clearing line.

7 VEGETATION MANAGEMENT

Main Roads will avoid clearing native vegetation where possible. Where clearing cannot be avoided then this clearing is kept to a minimum. Vegetation will be managed in accordance with the Principal Environmental Management Requirements (PEMR's) which will be addressed in the CEMP.

8 REFERENCES

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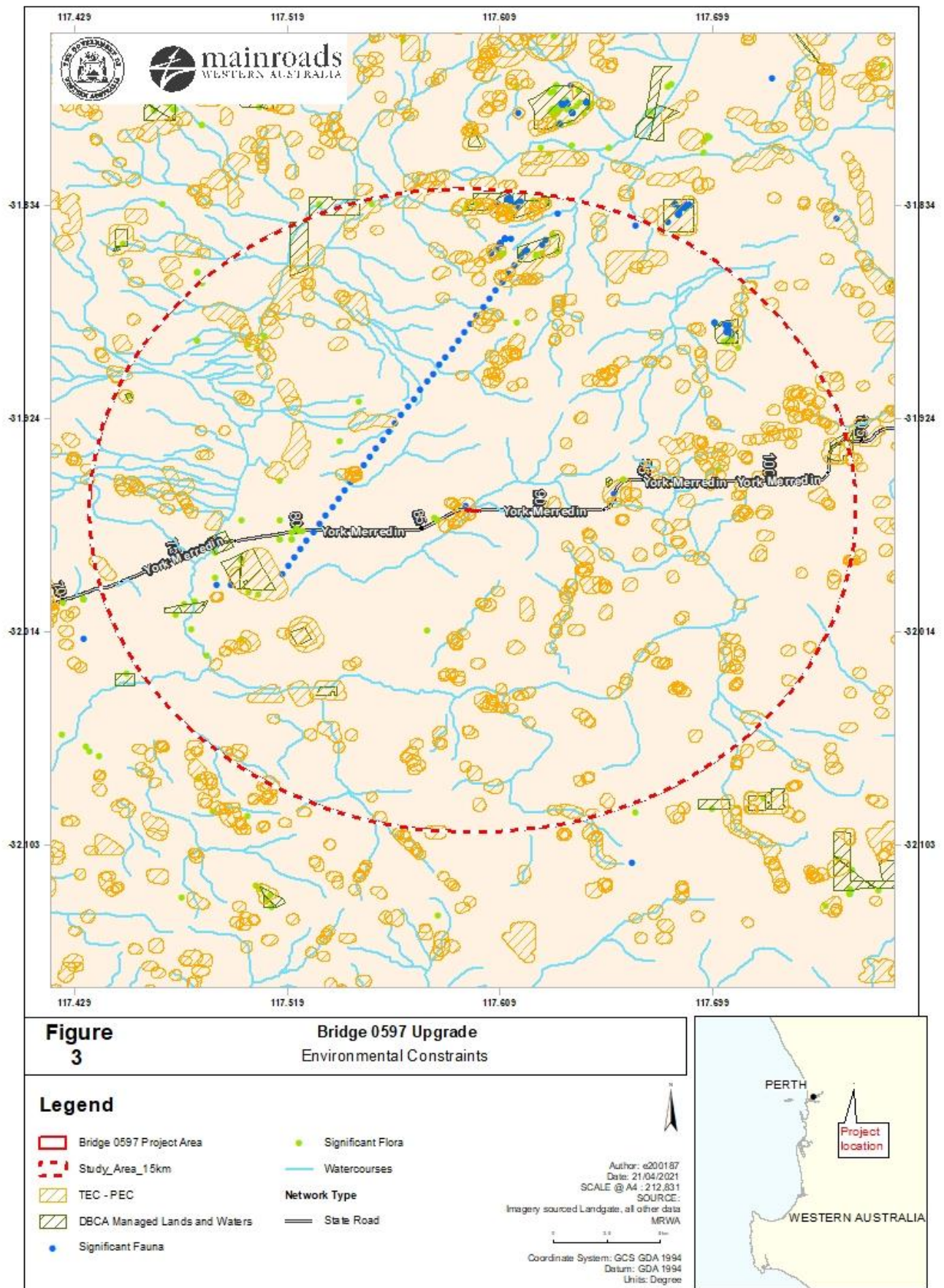
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9 APPENDICES

Appendix	Title
Appendix 1	DBCA Threatened Flora and Fauna Database Searches
Appendix 2	Vegetation Assemblages in Unsurveyed Areas

Appendix 1: DBCA Threatened Flora and Fauna Database Searches



Appendix 2: Vegetation Assemblages in Unsurveyed Areas

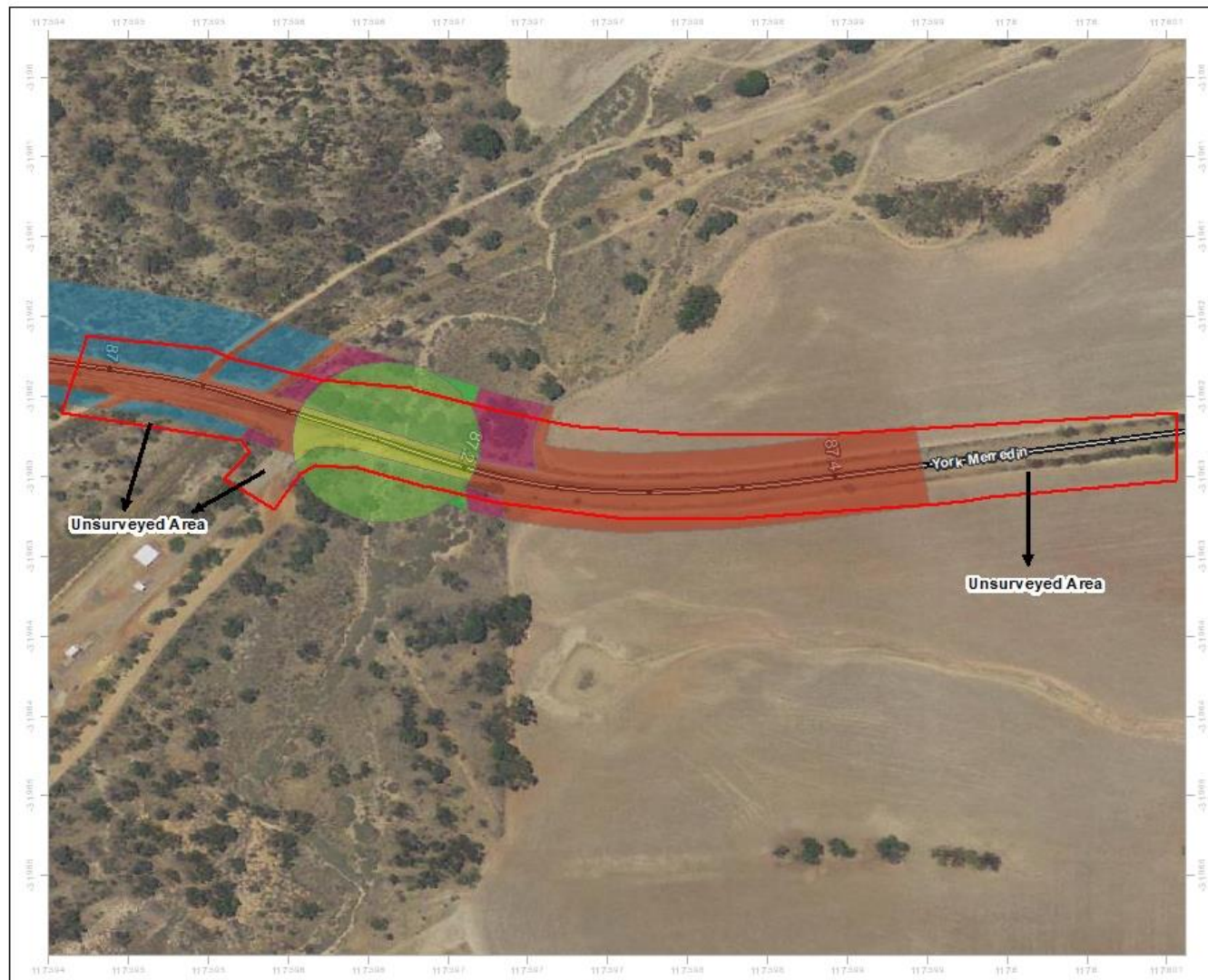


Figure 4

Bridge 0597 Upgrade

Vegetation Types Mapping

Legend

Bridge 0597 Project Area

State Road

Astron Vegetation Mapping

Cleared

LOW

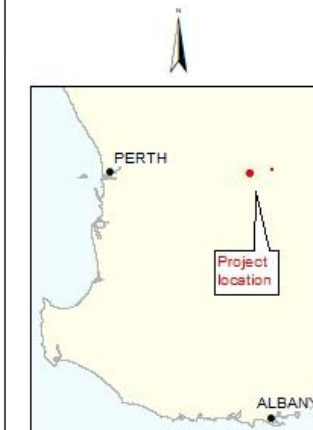
Ecoscape Vegetation Mapping

AaLOW

EILW

TpLCSS

X



Author: e200187
Date: 18/03/2021
SCALE @ A4 : 3.265
SOURCE:
Imagery sourced Landgate, all other data
MRWA

0 0.095 0.19 km

Coordinate System: GCS GDA 1994
Datum: GDA 1994





Image 1 - *Acacia acuminata* low open woodland over *Allocasuarina campestris* and *Grevillea anethifolia* mid open shrubland over *Mesomelaena pseudostygia*, *Persoonia quinquenervis* and *Monachather paradoxus* low open sedgeland/shrubland/tussock grassland (AaLOW) mapped the segment adjacent to the road extends over 'Unsurveyed Area 1' which is a small section of 0.04 ha.



Image 2. *Eucalyptus loxophleba* subsp. *loxophleba* low woodland over *Maireana brevifolia*, *Lomandra effusa* and *Enchylaena tomentosa* low open chenopod shrubland/forbland (EILW) mapped for the section mapped adjacent to the road extends to 'Unsurveyed Area 2' which covers 0.04 ha.



Image 3 – Unsurveyed Area 3 located around SLK 87.55 and showing disturbed habitat supporting planted *Acacia acuminata* on both sides of the road.