Clearing Assessment Report – CPS 818

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Logue River Sections Widening & Overlay
GNH SLK 2249.7 - 2269.05 and Parking Bay at GNH SLK 2269.9

Great Northern Highway (H006)
Kimberley Region
EOS No. 3110

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Contents

List of Figures

List of Tables

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1 PROPOSAL

1.1 Purpose and Justification

Main Roads WA is planning to upgrade the section of Great Northern Highway (GNH) in the Willare section to align with current safety standards as this section of the National Highway is sub-standard and has a narrow-sealed shoulder. The purpose of the project is to improve the road geometry of the GNH between SLK 2249.7 - 2269.05 by overlaying and widening the existing surface to a lane 3.5m wide with a 2m sealed shoulder. The overall width of the sealed surface is expected to be approximately 11m. The project will also involve the installation of a parking bay at SLK 2269.90. Most of the works will occur within the road maintenance zone.

1.1.1 Main Roads Approach to Road Safety and the Environment

Main Roads is committed to minimising the environmental impacts of all of its activities and manages the State road network to achieve balanced economic, social, safety and environmental benefits for the community. Main Roads recognises that Western Australia's environment is significant from a global perspective and the unique conservation values that are contained within its road reserve. Main Roads road network often adjoins natural areas and, in some locations, the reserve itself hosts remnant vegetation with high environmental values. Although the reserves were not established for this purpose, Main Roads recognises that it has a responsibility to conserve the environmental values that occur within the State's road network and minimise the impact its proposals have on the environment. In addition to providing a safe and efficient road network for all people using the roads under its control, Main Roads is also committed to protecting and enhancing the natural environment.

In accordance with National and State Government road safety policies, Main Roads is also committed to substantially reducing road trauma on the road network through Safe System Principles. The Safe System approach acknowledges that more than two thirds of all serious crashes are due to human error rather than deliberate risk taking (e.g., speeding or drink driving) and seeks to improve behaviour through education and enforcement while managing the safety of vehicles, speeds and the road and road infrastructure. It is shown that improving sub-optimal road formation will substantially reduce the likelihood and severity of road crashes. For example, according to the Road Safety Management Guideline, increasing the sealed shoulder from 0.5 m to 2 m will reduce Killed and Seriously Injured numbers by more than 50%.

As the statutory authority responsible for providing and managing a safe and efficient main road network in Western Australia, Main Roads focuses on improving road safety by thoroughly considering all environmental, economic and community benefits and impacts. It operates on a hierarchy of avoiding, minimising, reducing and then, if required, offsetting our environmental impacts. This has been achieved through changes in proposal scope and design. Main Roads regularly reduces its clearing footprint by restricting earthworks limits for proposals, steepening batters, installing barriers, establishing borrow pits in cleared paddocks and avoiding temporary clearing for storage, stockpiles and turn around bays to avoid and minimise its impacts.

Further details on measures to avoid, minimise and reduce are provided in Section 1.5.

1.2 Proposal Scope

The project involves upgrading the section of the GNH between SLK 2249.7 - 2269.05 to current safety standards by overlaying and widening the existing surface to a lane 3.5 m wide with a 2 m sealed shoulder. The overall width of the sealed surface is expected to be approximately 11m. The project also involves installing a parking bay at SLK 2269.90. No changes to the highway alignment are proposed and most of the works will occur in the maintenance zone. However, some clearing outside the maintenance zone is required for additional works that have been identified to support the upgrade works such as borrow pits and water points. The Project details are provided below:

- Proposed material sources – The base course material is to be sourced from proposed pits at SLK 2255, SLK 2266, SLK 2266.60, SLK 2267.77 and SLK 2263.7. Other materials will be sourced from the existing table drains.
- Proposed water sources –The nominated existing bore for extraction of water to support the project is located at SLK 2279.2 and the existing water source is located at SLK 2268.40.
- Proposed side tracks required – Tracks will be installed within the maintenance zone.
- Aggregate stockpiles identified – Existing Laydown / Dump Site at SLK 2268.77 & 2271.77 to be used as required.
- Turnaround locations – Historical turn around sites located at SLK 2250.77, SLK 2255.97, SLK 2259.77, SLK 2261.27, SLK 2265.07 and SLK 2269.47 will be used as required.
- Camp location – Historically cleared area at SLK 2265 (regrowth to be cleared under separate approvals) will be utilised.

1.3 Proposal Location

The Project is located approximately 138 km east of Broome on Great Northern Highway (H006) between SLK 2249.7 - 2269.05 in the Shire of Derby – West Kimberley as shown in Figure 1.
The central coordinate of the proposal is:

Latitude: -17.674395
Longitude: 123.378788

1.4 Clearing Details

Proposed Clearing to be undertaken using CPS 818: 135 ha in a 478 ha Project Development Envelope (PDE).

Areas of Native Vegetation Clearing: The areas of native vegetation to be cleared are shown in Figure 5.

Type of Native Vegetation:
The vegetation types with the PDE as mapped by Ecoscape, (2023) are listed below and shown in Figure 5.

- **AtMc** - *Acacia tumida* var. *tumida* low woodland over *Microstachys chamaelea, Aristida holathera* var. *holathera* and *Sida rohlenae* subsp. *occidentalis* low open forbland/grassland.

- **EtSpCp** - *Eucalyptus tectifica, Melaleuca nervosa* subsp. *crosslandii* and *Lysiphyllum cunninghamii* low open woodland over *Sorghum plumosum* tall tussock grassland over *Chrysopogon pallidus, Aristida holathera* var. *holathera* and *Eriachne obtusa* low open hummock/tussock grassland.

- **GsEo** - *Grevillea striata* and *Lysiphyllum cunninghamii* low open woodland over *Eriachne obtusa* and *Chrysopogon pallidus* mid tussock grassland.

- **MaEo** - *Melaleuca alsophila* low woodland over *Eriachne obtusa* and **Stylosanthes hamata* low tussock grassland/forbland.

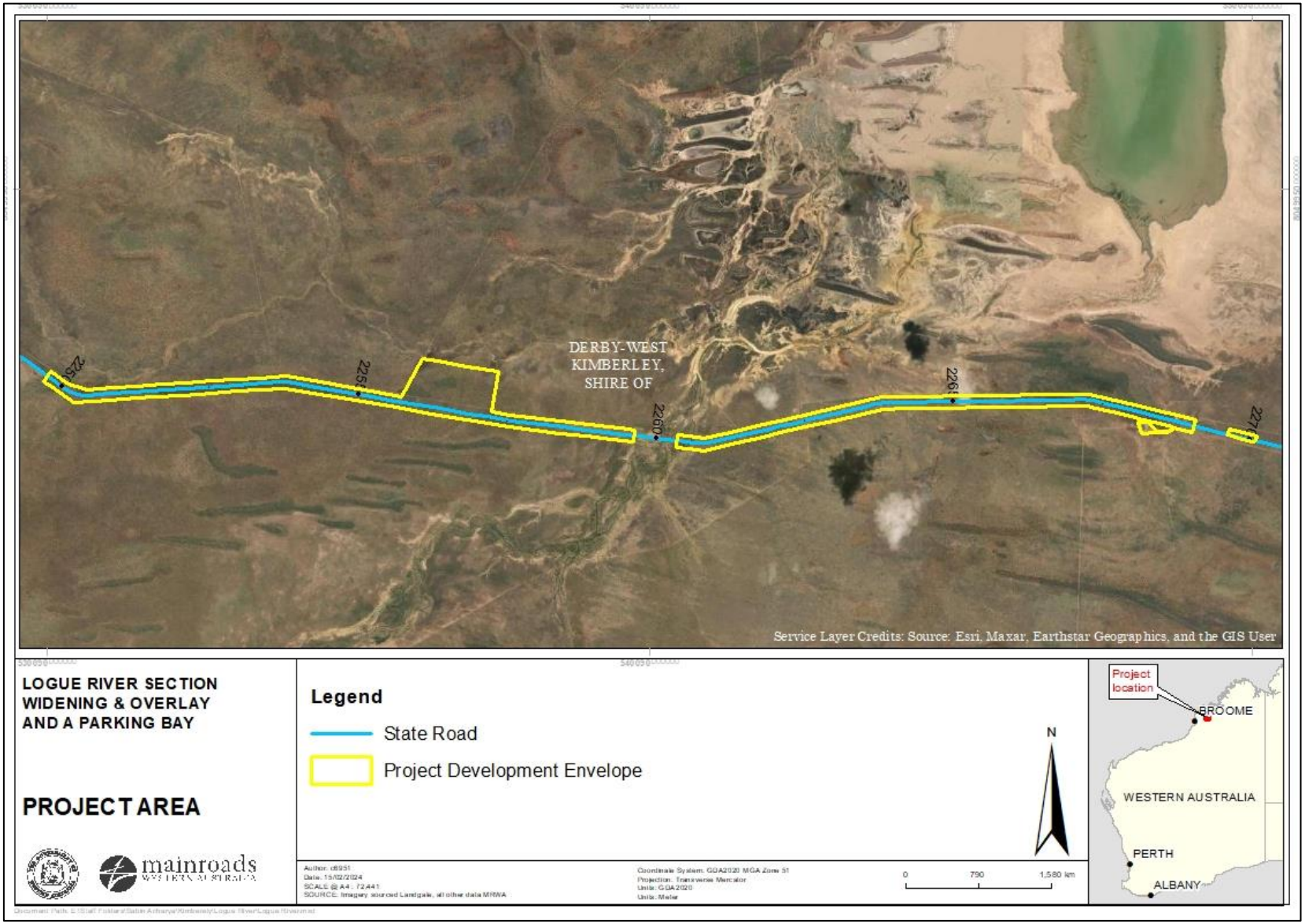


Figure 1. Project Area

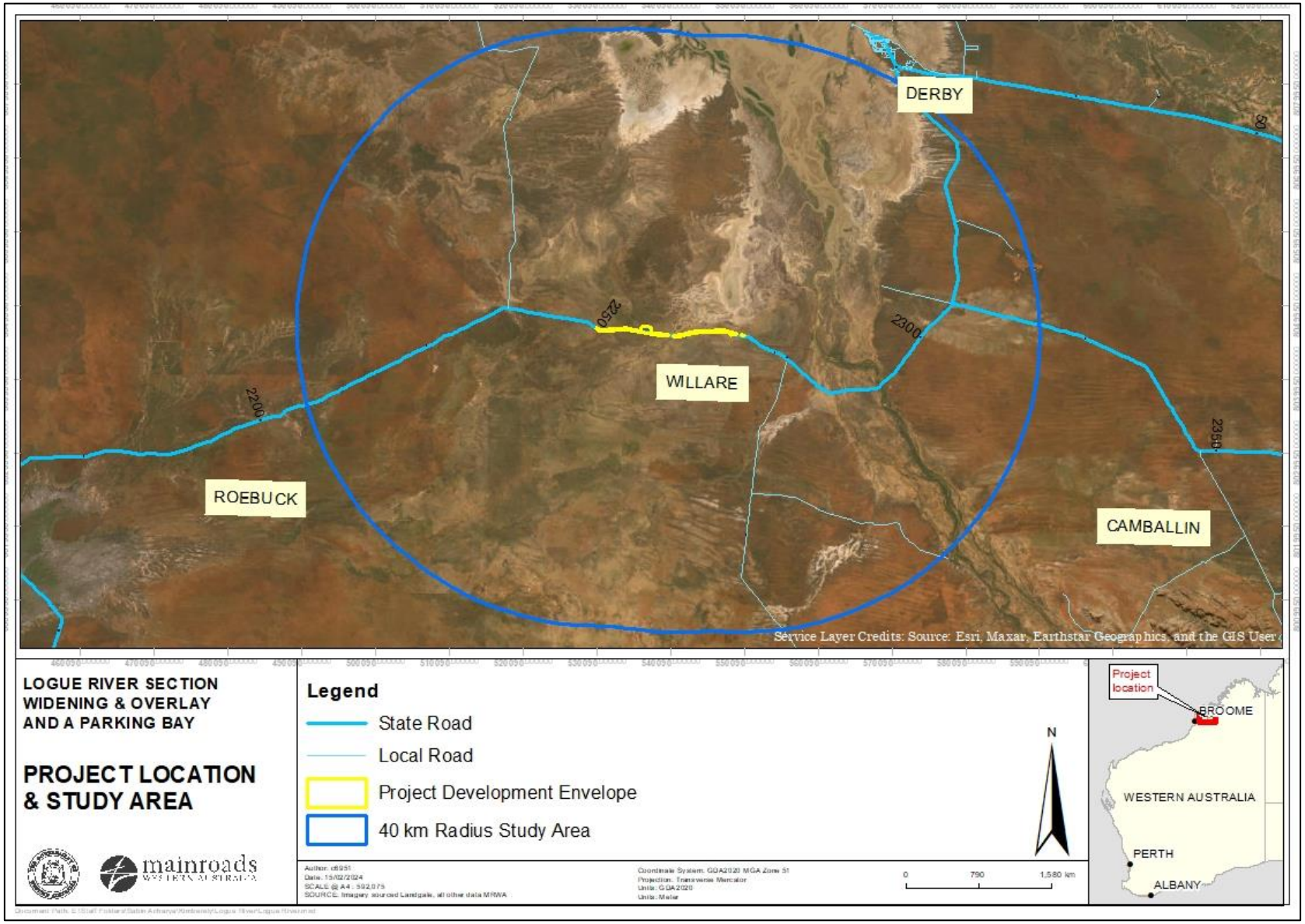


Figure 2. Project Location and Study Area

1.5 Alternatives to Native Vegetation Clearing Considered During Proposal Development

The following alternatives to clearing were considered during the development of the proposal:

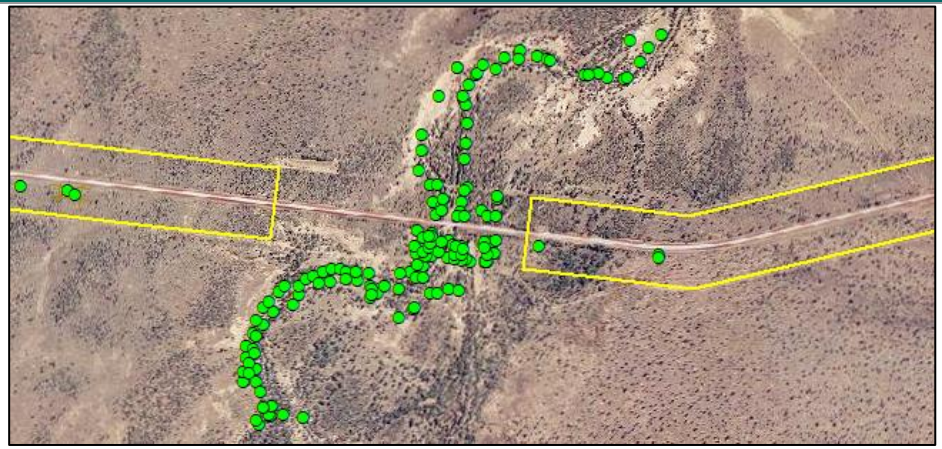
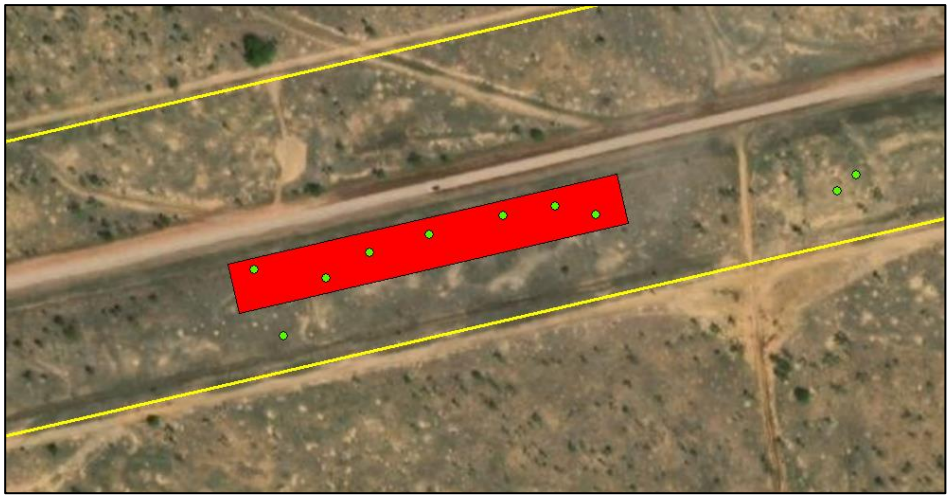
- Locating the new alignment in cleared pasture areas over the existing road reserve would require more clearing and more planning. The works are proposed predominantly within the maintenance zone, reducing the overall clearing impacts.
- Upgrading other alternative routes that are less vegetated and environmentally constrained, however there are no existing alternate routes that may be upgraded.
- Do not upgrade the road, however this will potentially result in a poorer safety outcome and may result in future fatalities or serious injuries and further degradation of the State Road asset.
- Main Roads retains frangible vegetation where a clear zone is to be established for road projects. For this project, however, clearing will only be required to accommodate the road formation, with no clear zone being established. Accordingly, the retention of frangible vegetation does not apply to this proposal.
- Reducing the speed limit to minimise clearing requirements, while still balancing safety (driver fatigue) and freight efficiency. Speed Limits are an essential mechanism to ensure the safe and efficient operation of road networks. The application of appropriate speed limits and other traffic management measures is a key mechanism in managing vehicle speeds to achieve desired safety, mobility, traffic management, local amenity, and road user expectations. There are several factors involved in road safety, including road conditions, driver behaviour and overall road design. Except in special situations, reducing speed limits below national standards on state and national roads is not typically supported as it has the potential to contribute to driver frustration, impatience, tiredness and recklessness. The environmental values protected by reducing the speed limit, do not justify the impacts on freight efficiencies nor road user safety. Accordingly, the reduction of the speed limits to avoid clearing of native vegetation for this proposal is not proposed.
- A significantly larger more expansive design was initially proposed but was ultimately reduced due to costs and potential environmental impacts.

1.6 Measures to Avoid, Minimise, Reduce and Manage Proposal Clearing Impacts

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

Table 1. Measures Undertaken to Avoid, Minimise, Reduce and Manage the Proposal Clearing Impacts

Design or Management Measure	Discussion and Justification
Alignment to one side of existing road	The Great Northern Highway is surrounded by remnant vegetation in this section, there are no alternate alignments available to reduce the amount of clearing required. Temporary diversion roads for public traffic will use existing cleared areas where possible, subject to safety requirements being met.
Alternative alignment located within pasture or degraded areas	The alignment chosen for this project follows the current Great Northern Highway Alignment. As the highway is in an area with minimal clearing, this route will require the least amount of clearing. There are no alternative alignments available.
Simplification of design to reduce number of lanes and/or complexity of intersections	The widening scope of works cannot be further simplified whilst retaining the necessary safety benefits. The upgrade of the highway retains dual carriageway, single lane design with the nominated widths solely determined by safety requirements (wider sealed shoulder to increase reaction time available to drivers, and a gentler batter slope that is recoverable from run-off road incidents. If the widening was not undertaken, this would likely result in no improvements in crash density, which is unacceptable to Main Roads on this isolated and remote stretch of road network.
Steepen batter slopes	A 1:10 batter slope is proposed for this section as incidents, often fatigue related are typically run-off-road crashes. A gentle batter angle will increase the recoverability of such events. Adjustments have been made to the vertical height of the finished road design, as this reduces the amount of fill required and by extension the footprint on the ground (from the actual road width required and clearing for borrow pits to supply fill).
Installation of barriers	Safety barries are not feasible for this section of road due to the long and straight alignment, coupled with the cost of providing and maintaining barriers. Barriers also cause concern as run-off-road incidents may result in vehicles being directed back onto incoming traffic.
Installation of kerbing	Kerbing is not a practical solution in the Kimberley due to the nature of material used for pavements, rainfall and the types of crashes (high speed, run off-road).
Use of existing cleared areas for access tracks, construction storage and stockpiling	Due to the surrounding environment, there were limited areas of existing cleared or disturbed vegetation available for use. Where possible, these have been included into the drainage design and access points for pits and laydowns.
Drainage modification	There is limited ability for drainage modification due to the region receiving on average, over 600mm of rain, typically within a four-month period, coupled with the extremely flat surrounds of the project. This requires an extensive network of drainage structures.
Modification of Development Envelope to exclude sensitive areas	The Project Development Envelope was refined numerous times taking into account the findings of biological surveys. An example is illustrated below where the Envelope was reduced where possible to specifically avoid areas of Priority Flora occurrence. Where Priority Flora cannot be avoided, efforts have been made to minimise impacts to area with high population densities.

Design or Management Measure	Discussion and Justification
	 **Figure 3: Reduced Development Envelope (depicted by yellow outline) at GNH SLK 2260 avoiding clearing of the majority of the population of *Thespidium basiflorum* (P1).**
Implementation of "no-go areas" within the Project Development Envelope (PDE) to exclude sensitive areas	Implementation of "no-go areas" within the PDE will be applied to avoid areas of Priority Flora with high population abundance. An example is illustrated below:  **Figure 4: No-go area (highlighted red area) at SLK 2262.2 reducing clearing impacts on the population of *Thespidium basiflorum (P1).***

1.7 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, Main Roads has also had regard to the below instruments where relevant.

Other Legislation potentially relevant 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).

Environmental Protection Policies:

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

Other relevant policies and guidance documents:

- Environmental Offsets Policy (Government of Western Australia, 2011)
- A guide to the assessment of applications to clear native vegetation (Government of WA, December 2014)
- Procedure: Native vegetation clearing permits (Government of WA, October 2019)
- Environmental Offsets Guidelines (Government of Western Australia, 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.

2 SCOPE AND METHODOLOGY ASSESSMENT OF CLEARING

Native vegetation will be cleared to accommodate this Proposal. This clearing will be undertaken using the Main Roads Statewide Clearing Permit CPS 818.

To comply with CPS 818, Main Roads must prepare a Clearing Assessment Report (CAR).

The CAR outlines the key activities associated with the Proposal, the existing environment and an assessment of native vegetation clearing. This assessment provides an evaluation of the vegetation clearing impacts associated with the Proposal using the ten Clearing Principles listed under s51 of the *Environmental Protection Act 1986* (EP Act) and strategies used to manage vegetation clearing.

2.1 Report Terminology and Sources

The following terms are used in this Clearing Report:

- **Indicative Clearing Footprint** – The maximum amount of native vegetation to be cleared for the Proposal that will accommodate the designed earthworks and, typically, a nominal buffer to allow for the safe movement of machinery during construction. A footprint based on most current designs is used in the assessment to give a realistic estimate of potential impacts. Final construction impacts are expected to be in line with this area.

  Project Development Envelope (PDE) – The maximum extent within which the Clearing Area will be located. This envelope is larger than the Clearing Footprint to account for minor and unexpected changes that may occur during construction, such as working to avoid large trees or encountering buried boulders or services. This flexibility also allows site personnel to make modifications to the Proposal to avoid areas that may contain higher environmental values if an opportunity to modify the design arises. The CAR has assessed all environmental values within the Development Envelope up to the amount specified within the Clearing Footprint.

- **Study Area** – Area covered by the Desktop Assessment. The Study Area for the Proposal is confined to a local area of a 40 km radius.

- **Survey Area** – Area covered by the Biological Survey, which is typically larger than the Development Envelope.

2.2 Desktop Assessment

A desktop assessment of the Development Envelope was undertaken by viewing internal datasets and other government agency managed databases, and consulting with relevant stakeholders where necessary. Results from searches can be found in Appendix 3.

GIS layer viewing and mapping is done using ArcMap and/or Main Roads corporate mapping system known as iMaps. 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, which are found under References in Section 10.

2.3 Surveys and Assessments

The following surveys were undertaken to inform this CAR:

- Ecoscape (Australia) Pty Ltd., (2023). Logue River Section Widening and Overlay Biological Surveys, prepared for Main Roads Western Australia.
- Ecoscape (Australia) Pty Ltd., (2022). Logue River Section Widening and Material Areas Biological Survey, prepared for Main Roads Western Australia.

The Biological surveys conducted for the proposal are outlined in **Error! Reference source not found.** and a summary of the findings in the report is presented in Sections 3.1.

Table 2. Summary of Biological and Targeted Surveys Relevant to the Proposal

Consultant & Survey Name	Survey Details
Ecoscape (Australia) Pty Ltd., (2023). Logue River Section Widening and Overlay Biological Surveys, prepared for Main Roads Western Australia.	**Survey Area:** Main Roads commissioned Ecoscape to undertake a biological survey of a section of GNH between SLK 2049 – 2270.2 to support the road upgrade works. The survey area totals 636 ha, of which a large portion (381.5 ha) was previously surveyed (Ecoscape 2022), with the remainder unsurveyed. A 500 m area around the survey area, known as the 'context area', was included for vegetation mapping extrapolation. The desktop assessment took into consideration the area within 40 km of the survey area, known as the 'study area'. **Type:** The field survey included a detailed and targeted flora and vegetation assessment and a basic and targeted fauna assessment. **Timing:** The field survey for flora, vegetation and fauna was conducted between 16-21 July 2023. **Survey Results Shapefile TRIM Ref:** D23#1038549 **Document TRIM Ref:** D23#1038398
Ecoscape (Australia) Pty Ltd (2022). Logue River Section Widening and Material Areas Biological Survey, prepared for Main Roads Western Australia.	**Survey Area:** Main Roads commissioned Ecoscape in 2022 to undertake a biological survey of a 19 km section of GNH between SLK 2249 - 2268 with materials pits located at approximately SLK 2242, 2250, 2265 and 2276 required to provide materials for road widening project. The survey area totalled 889.9 ha. The desktop assessment took into consideration the area within 40 km of the survey area known as the 'study area'. **Type:** The field survey included a detailed and targeted flora and vegetation survey and basic fauna survey. **Timing:** The field survey for flora and vegetation was conducted between 9 -18 May 2022 and fauna survey between 23-27 May 2022. **Survey Results Shapefile TRIM Ref:** D22#1068317 **Document TRIM Ref:** D22#1068304

3 SURVEY RESULTS

In accordance with CPS 818 condition 8 (e) (iii), a copy of the relevant sections of the executive summary and report conclusions from the biological survey is provided in Appendix 1. Section 3.1 contains the summary extract of the survey report prepared by Ecocscape, (2023). The Summary extract of the biological survey by Ecoscape in 2022 is not provided below given the area surveyed that is relevant to this project was revisited by Ecoscape in 2023.

3.1 Logue River Widening & Overlay Biological Survey (Ecoscape, 2023) - Executive Summary

Main Roads Western Australia (Main Roads) proposes to undertake road widening and overlay along a 19 km section of the GNH between Straight Line Kilometre (SLK) 2249 and 2268.75. Additional areas have been identified to support the works, including a borrow pit at GNH SLK 2255, a water point at GNH SLK 2268.40 and a parking bay at GNH SLK 2269.90.

Main Roads appointed Ecoscape to undertake a biological assessment to define and delineate the key environmental aspects associated with the road. The outcome of the assessment will be used to inform the environmental assessment and approvals process and may assist in the preparation of Environmental Impact Assessment documentation.

The survey area is 636 ha, of which a large portion (381.5 ha) has been previously surveyed by Ecoscape in 2022.

The key findings of the desktop assessment were:

- three pre-European vegetation associations have been mapped within the survey area, each with greater than 99% of their original extent remaining.
- five Priority Ecological Communities (PECs) identified by database searches within the study area (40 km buffer); none of the mapped occurrences intersect the survey area.
- thirteen Priority-listed flora identified by the database searches and previous survey within the study area (40 km buffer), five of which have been recorded from within the survey area.
- six Threatened and Priority fauna species were identified by database searches (40 km buffer) as being likely or known to occur in the survey area or as having previously recorded from within the survey area.

The flora and vegetation field survey and subsequent analysis identified:

- 262 vascular flora species recorded from 26 floristic quadrats and opportunistic observations.
- six Priority-listed flora:
  - *Haemodorum capitatum* (P1)
  - *Thespidium basiflorum* (P1)
  - *Goodenia crenata* (P3)
  - *Polymeria* sp. Broome (K.F. Kenneally 9759) (P3)
  - *Rothia indica* subsp. *australis* (P3)
  - *Stylidium pindanicum* (P3).
- ten introduced species; of these, **Calotropis procera* (Calotrope) is a Declared Pest plant (Exempt category).
- five vegetation types, none of which is considered likely to represent a Threatened Ecological Community (TEC) or Priority Ecological Community (PEC). Two of the vegetation types were considered wetland/riparian. All vegetation types were represented in the context area.
- vegetation condition ranged from Completely Degraded to Very Good with the majority in Very Good condition.

The fauna field survey identified:

- four fauna habitats: Woodland over tussock grass, Woodland over shrubs, Riparian woodland, and Waterbody. None are of local nor regional significance.
- sixty-three vertebrate fauna species.
- three conservation-listed species: the Yellow-lipped Cave Bat *Vespadelus douglasorum* (P2 DBCA status), Northern Coastal Free-tailed Bat *Ozimops cobourgianus* (P1 DBCA status) and Rainbow Bee-eater *Merop ornatus* (MA EPBC status; IA BC status).
- fauna habitat quality was reduced due to disturbance from roaming cattle across the entire survey area.
- Waterbody and Riparian woodland habitats are seasonally inundated, potentially providing resources for conservation-listed migratory wetland bird species, although these habitats are also degraded.

4 VEGETATION DETAILS

4.1 Proposal Site Vegetation Description

Ecoscape, (2023) recorded four vegetation types from within the PDE based on a combination of structural vegetation type as identified in the field, floristic analysis and desktop review. The vegetation types within the PDE, grouped broadly based on landform types, are presented below in Table 3.

Table 3. Summary of Vegetation Types within the PDE

Landform Types	Vegetation Types	Total Extent - Survey and Contextual Area (ha)	Extent within the PDE (ha) % Surveyed Area	Indicative Total Clearing (ha) % Surveyed Area
Linear Dunes	**AtMc** - *Acacia tumida* var. *tumida* low woodland over *Microstachys chamaelea, Aristida holathera* var. *holathera* and *Sida rohlenae* subsp. *occidentalis* low open forbland/grassland.	**185.36**	**96.78** 52.21%	**30.25** 16.32%
Plains	**EtSpCp** - *Eucalyptus tectifica, Melaleuca nervosa* subsp. *crosslandii* and *Lysiphyllum cunninghamii* low open woodland over *Sorghum plumosum* tall tussock grassland over *Chrysopogon pallidus, Aristida holathera* var. *holathera* and *Eriachne obtusa* low open hummock/tussock grassland.	**1131.31**	**171.98** 15.20%	**53.02** 4.69%
	GsEo - *Grevillea striata* and *Lysiphyllum cunninghamii* low open woodland over *Eriachne obtusa* and *Chrysopogon pallidus* mid tussock grassland.	**1389.25**	**157.14** 11.31%	**50.85** 3.66%
Drainage Lines	**MaEo** - *Melaleuca alsophila* low woodland over *Eriachne obtusa* and **Stylosanthes hamata* low tussock grassland/forbland.	**130.67**	**4.87** 3.73%	**0.49** 0.38%

No vegetation recorded during the field survey was assessed as being representative of any TECs, PECs or having other significance according to the EPA Technical Guidance.

A minor non-perennial watercourse, Logue River, intersects the PDE, running approximately south-north. This was the only riparian area recorded within the PDE and corresponds with the **MaEo** vegetation type.

The vegetation condition within the PDE ranges from Completely Degraded to Very Good condition. The majority is in Very Good condition (>75%) and the PDE also includes approximately 46.69 ha of cleared areas (that includes roads and tracks) without vegetation (approx. 9.7%). Grazing/trampling by cattle and the presence of weeds (particularly **Stylosanthes hamata*) were the most significant factor affecting the condition.

Fig 5: Vegetation Mapping within the Project Development Envelope (Ecoscape, 2023)

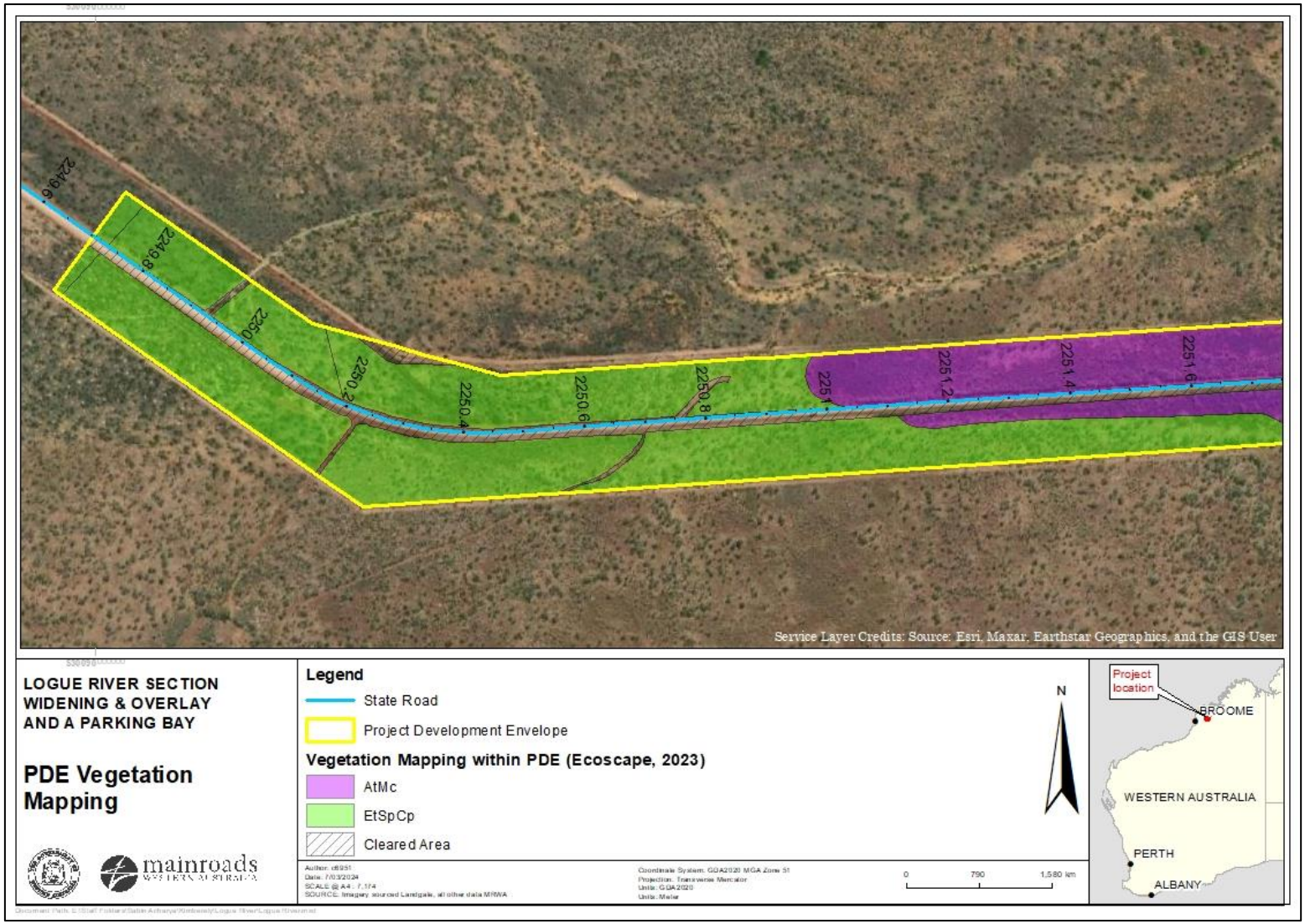


Fig 5a: Vegetation Mapping within the PDE - SLK 2249.7 to SLK 2251.7 (Ecoscape 2023)

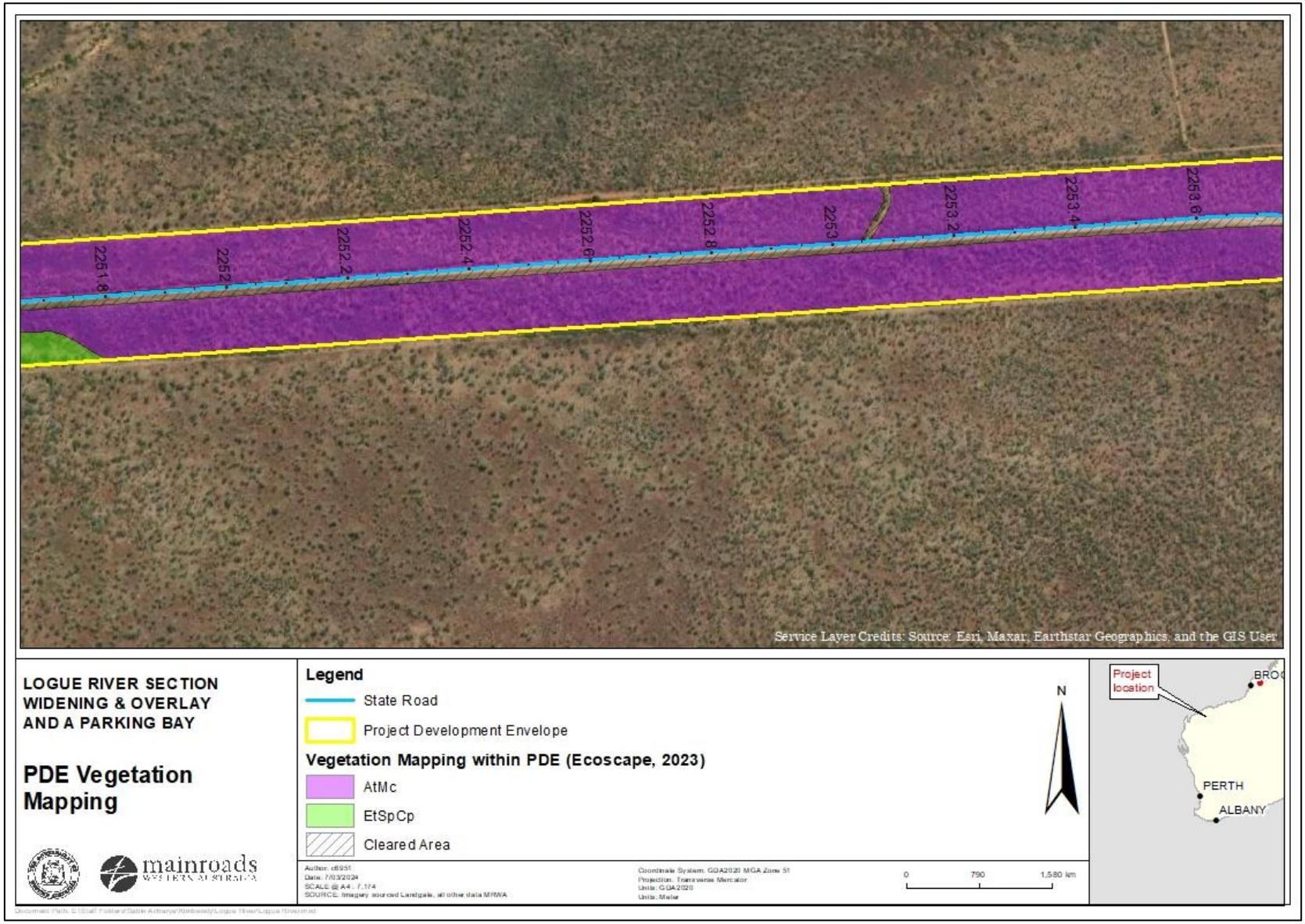


Fig 5b: Vegetation Mapping within the PDE – SLK 2251.7 to SLK 2258.7 (Ecoscape 2023)

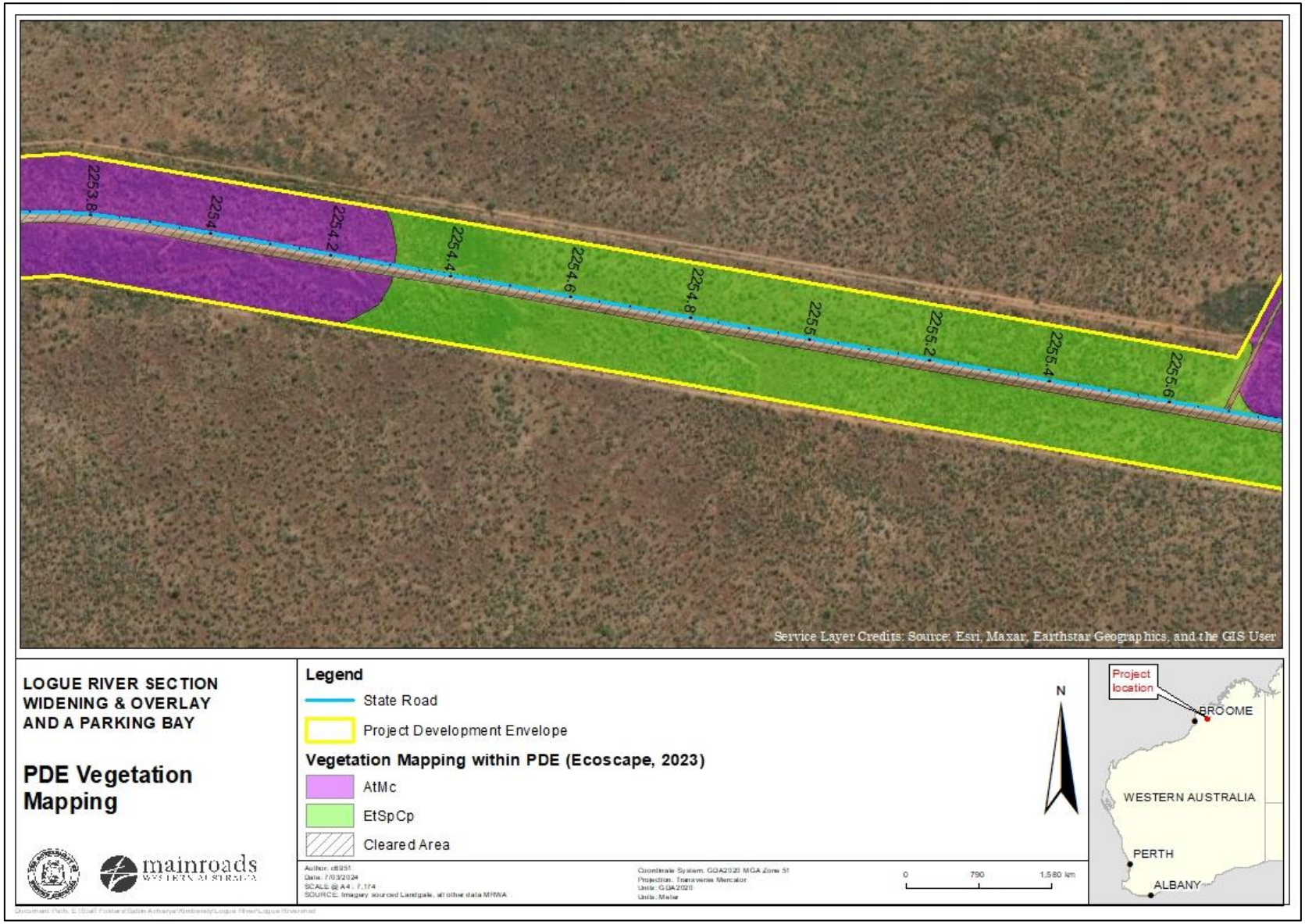


Fig 5c: Vegetation Mapping within the PDE – SLK 2253.7 to SLK 2255.7 (Ecoscape 2023)

Fig 5d: Vegetation Mapping within the PDE – SLK 2255.7 to SLK 2257.7 (Ecoscape 2023)

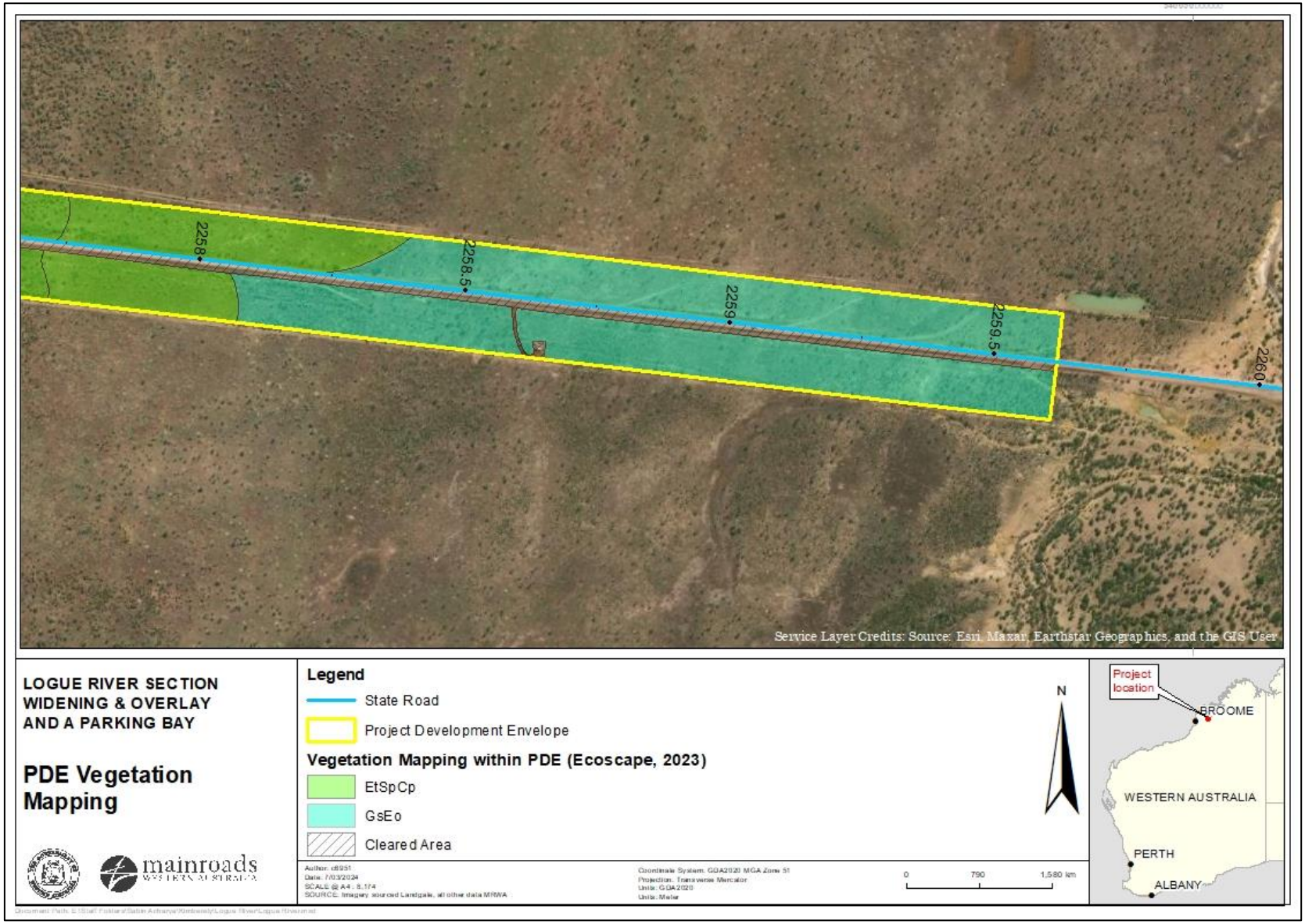


Fig 5e: Vegetation Mapping within the PDE – SLK 2257.7 to SLK 2259.7 (Ecoscape 2023)

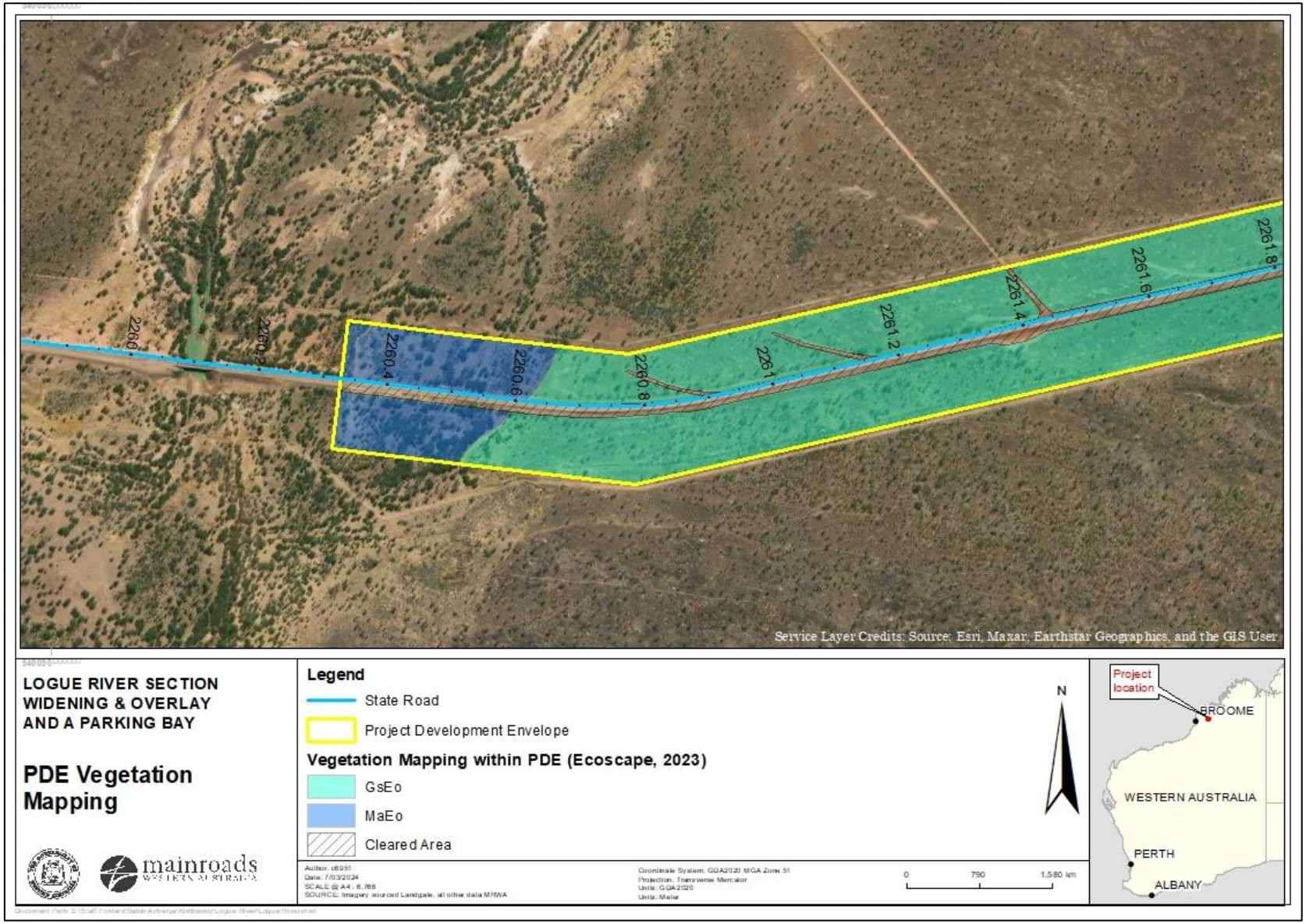


Fig 5f: Vegetation Mapping within the PDE – SLK 2259.7to SLK 2261.7 (Ecoscape 2023)

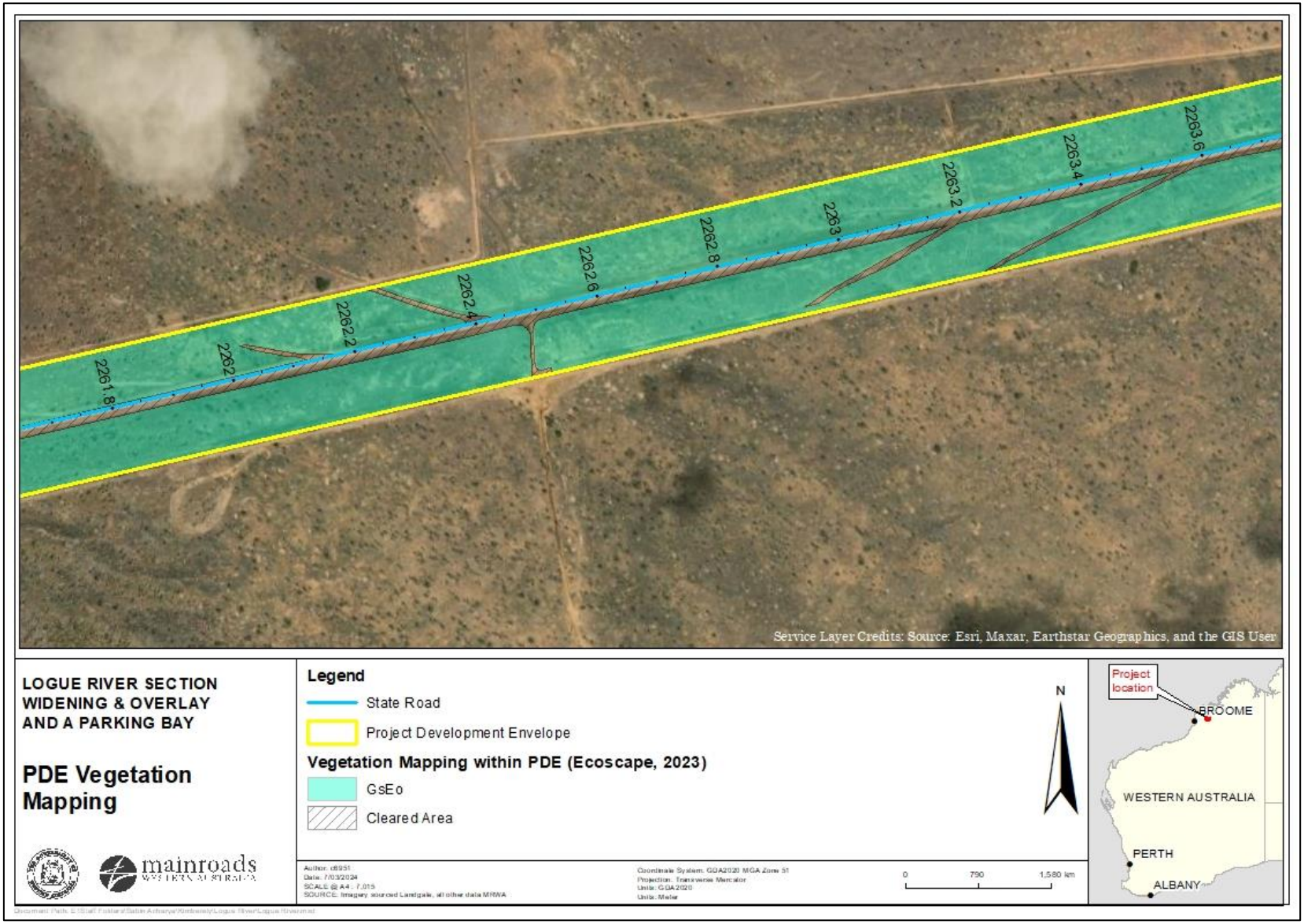


Fig 5g: Vegetation Mapping within the PDE – SLK 2261.7 to 2263.7 (Ecoscape 2023)

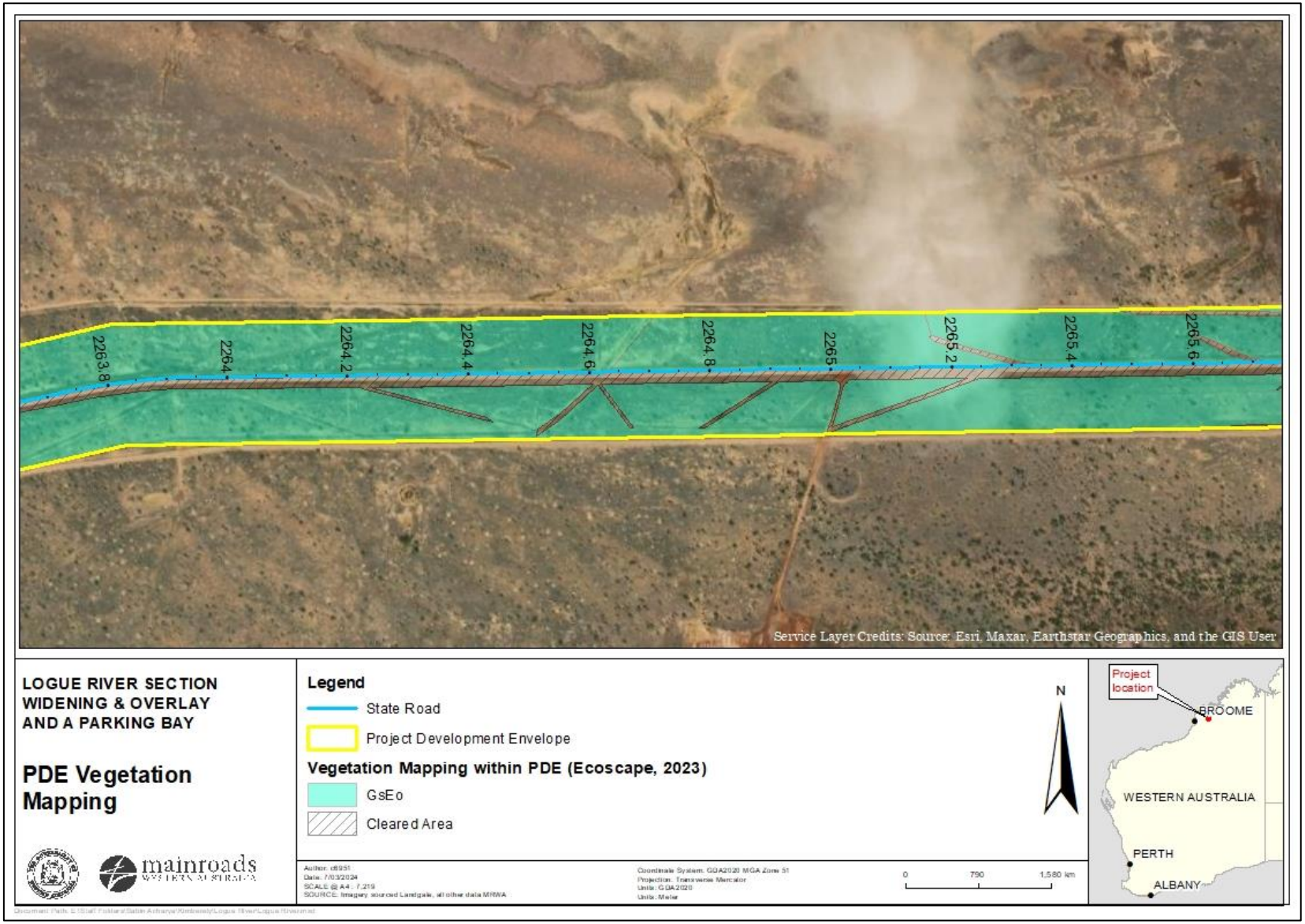


Fig 5h: Vegetation Mapping within the PDE – SLK 2263.7 to SLK 2265.7 (Ecoscape 2023)

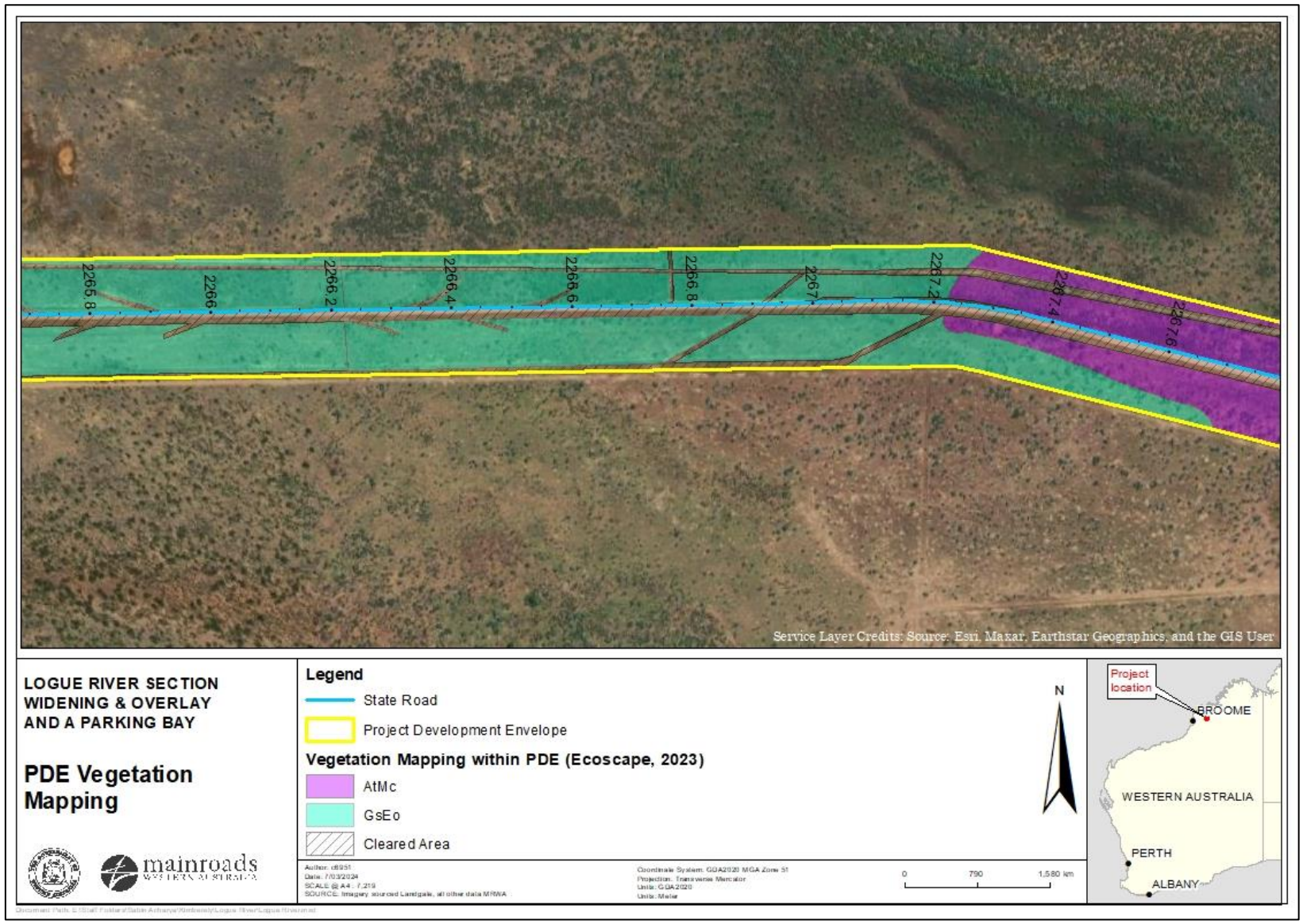


Fig 5i: Vegetation Mapping within the PDE SLK 2265.7 to SLK 2267.7 (Ecoscape 2023)

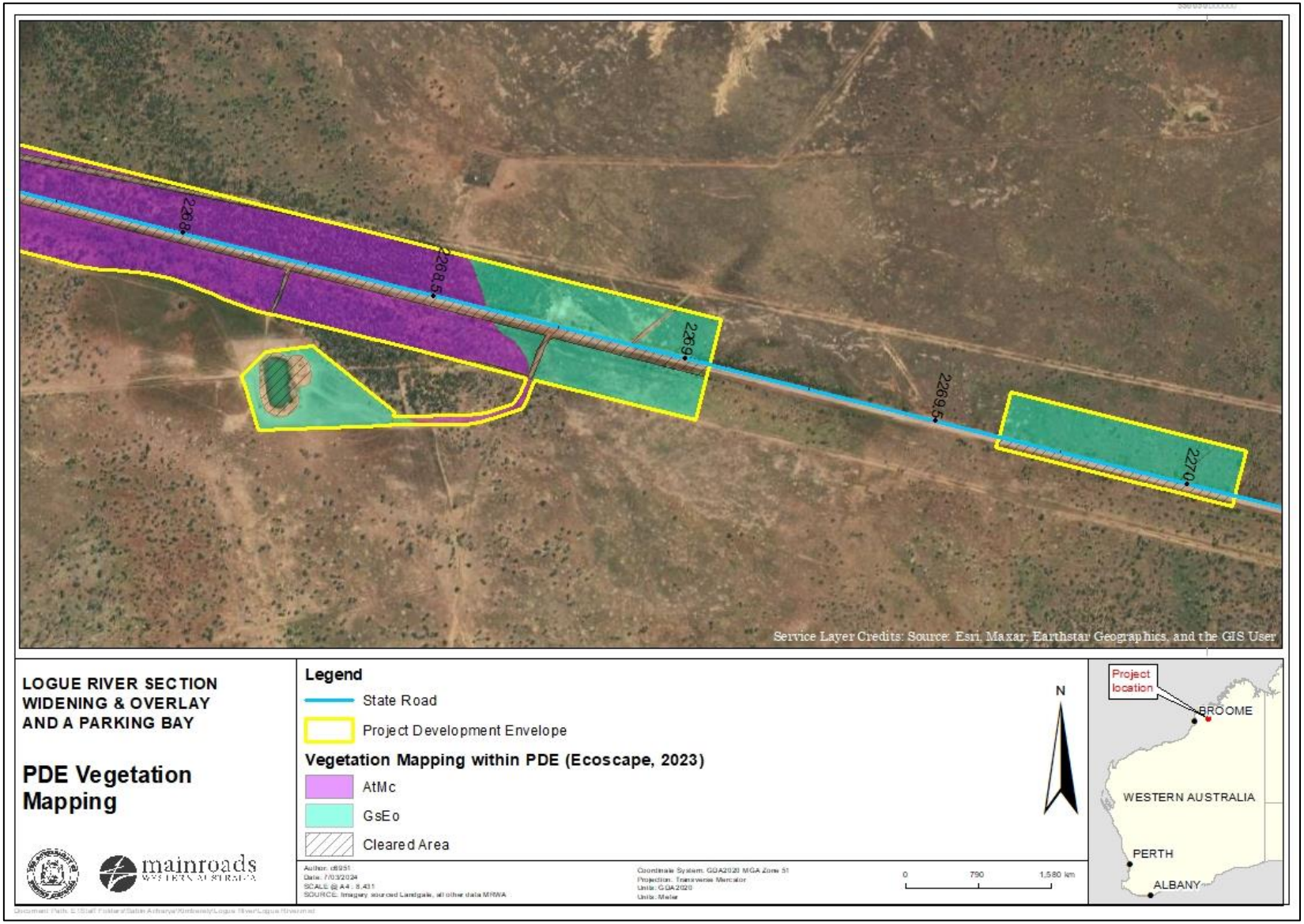


Fig 5j: Vegetation Mapping within the PDE – SLK 2267.7 to SLK 2270.1 (Ecoscape 2023)

Table 4 provides details of the pre-European Vegetation Associations and the remaining extents of these associations.

Table 4. Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre–European Extent (ha)	Current Extent (ha)	% Remaining	% Current Extent in DBCA Managed Land (proportion of pre-European Extent)
Veg Assoc No. 64 described as "Grasslands, tall bunch grass savanna low tree; baobabs (*Adansonia gregorii*), bauhinia & beefwood (*Grevillea striata* over ribbon grass)"	**Statewide**	434,783.66	434,560.88	99.95	-
	IBRA Bioregion Dampierland	434,783.66	434,560.88	99.95	-
	IBRA Sub-region Fitzroy Trough	410,085.60	409,862.82	99.95	-
	Pindanland	24,698.06	24,698.06	100.00	-
	Local Government Authority Shire of Derby/West Kimberley	427,578.09	427,355.31	99.95	-
Veg Assoc No. 750 described as "Shrublands, pindan; *Acacia tumida* shrubland with grey box & cabbage gum medium woodland over ribbon grass & curly spinifex".	**Statewide**	1,231,155.50	1,225,687.52	99.56	2.77
	IBRA Bioregion Dampierland	1,229,182.16	1,225,280.52	99.68	2.78
	IBRA Sub-region Pindanland	1,221,734.45	1,217,843.72	99.68	2.79
	Local Government Authority Shire of Derby/West Kimberley	115,596.13	115,556.34	99.97	-
Veg Assoc No. 7001 described as "Shrublands, pindan; *Acacia eripoda* & *A. tumida* shrubland with scattered low cabbage gum & *Eucalyptus setosa* over ribbon & curly spinifex"	**Statewide**	422,036.47	422,036.47	100.00	-
	IBRA Bioregion Dampierland	422,036.47	422,036.47	100.00	-
	IBRA Sub-region Pindanland	419,041.99	419,041.99	100.00	-
	Local Government Authority Shire of Derby/West Kimberley	373,712.89	373,712.89	100.00	-

4.2 Proposal Site Flora Details

Table 5 details the occurrence of conservation significant flora species detected in surveys, against the likely impacts, given the indicative clearing footprint and extent of the PDE.

Table 5. Conservation Significant Flora with the PDE

Taxon	Abundance in Survey Area	Abundance in Development Envelope (% of Surveyed Population)	Abundance in Indicative Clearing Footprint (% of Surveyed Popoulation)
Haemodorum capitatum	2	0	0
Thespidium basiliflorum	20,749	6,306 30.4%	2,574 12.4%
Goodenia crenata	2,108	491 23.3%	0
Polymeria sp. Broome (K.F. Kenneally 9759)	20	13 65%	0
Rothia indica subsp. *australis*	13	11 84.6%	2 15.4%
Stylidium pindanicum	41,168	10,006 24.3%	3,505 8.5%
Cyperus concinnus	63	44 (69.84%)	0

4.3 Proposal Site Fauna Habitats Description

The following fauna habitat types were recorded from the PDE by Ecoscape (2023):

Table 6. Fauna Habitats Representation within the PDE

Habitat Types	Description	Corresponding Vegetation Type	Extent within Survey Area (ha)	Extent within the PDE (ha) (% Surveyed Area)	Extent within Indicative Clearing Footprint (ha) (% Surveyed Area)
Woodland over tussock grassland	Open woodland dominated by *Eucalyptus, Melaleuca* and *Acacia* species, with occasional *Hakea* and *Grevillea* species. Tree density variable. Understory of tussock grassland.	GsEo EtSpCp	201.84	171.89 (85.16%)	50.61 (25.07%)

Open Woodland over tussock grassland	Open woodland dominated by *Eriachne*, *Marsilea*, *Grevillea* and *Lysiphyllum* over *Chrysopogon*. Understory of tussock grassland.	GsEo	8.02	2.37 (29.55%)	2.37 (29.55%)
Woodland over shrubs	Open woodland dominated by *Eucalyptus*, *Melaleuca* and *Acacia* species, with occasional Hakea and Grevillea species, over dense mixed shrubs of variable height. Understory generally tussock grass or absent in recently burnt areas.	AtMc EtSpCp	359.22	251.06 (69.89%)	80.58 (22.43%)
Riparian woodland	Open riparian woodland fringing Logue River, density variable with trees becoming less dense with increasing distance from riverbed.	MaEo	15.75	4.88 (30.98%)	0.49 (3.11%)
Waterbody	Constructed waterbody (dam) surrounded by pastoral infrastructure (fencing and paddocks) with no wetland specific vegetation)	N/A	0.94	0.94 (100%)	0.94 (100%)

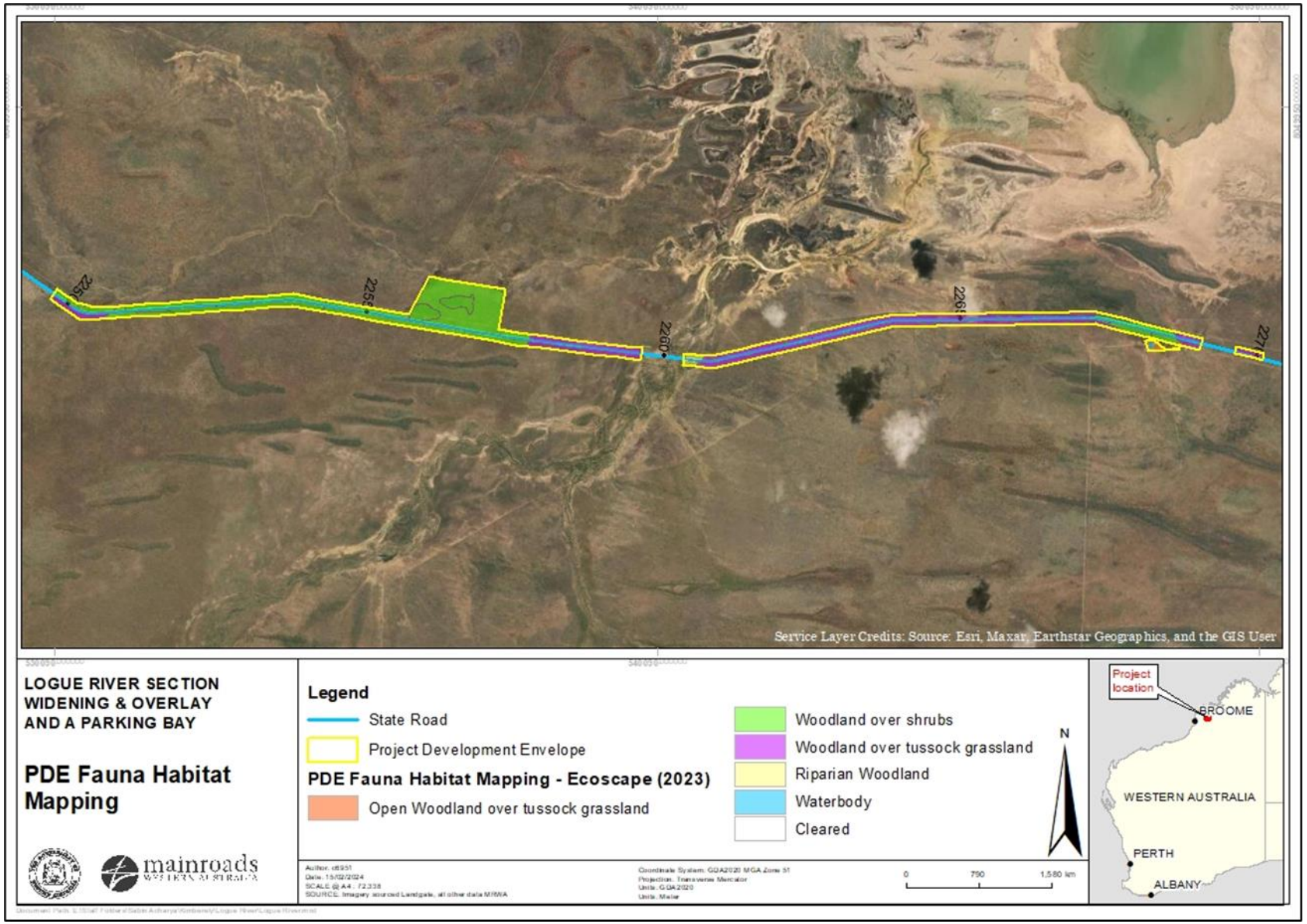


Figure 6. Fauna Habitat Mapping of the Project Development Envelope (Ecoscape, 2023)

5 ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

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

Each principle has been assessed in accordance with the former Department of Environment Regulation (now Department of Water and Environmental Regulation (DWER) '*A Guide to the Assessment of Applications to Clear Native Vegetation*' (Department of Environment Regulation, 2014) and other relevant clearing permit application decision reports prepared by DWER.

The proposed clearing may be at variance to Principle (a) and is at variance to Principle (f). The proposed clearing is not at variance, or not likely to be at variance to the remaining Clearing Principles.

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

Proposed clearing may be at variance to this Principle.

Vegetation

No Threatened Ecological Communities (TECs) listed under the EPBC Act or BC Act were recorded from within the Project's 40km radius desktop search (PMST report and Government GIS Shapefiles). Five Priority Ecological Communities (PECs) listed under the BC Act or listed by DBCA were recorded from within the Project's 40km radius desktop search:

- Kimberley Vegetation Association 67
- Kimberley Vegetation Association 767
- Kimberley Vegetation Association 759
- Lowangan Land System
- Gogo Land System.

None of the vegetation communities recorded during the field survey by Ecoscape (2023 & 2021), were considered to represent any Federal or State listed TECs or PECs.

The broad scale pre-European vegetation mapped within the PDE are listed below:

- **Veg Assoc No. 64** described as "Grasslands, tall bunch grass savanna low tree; baobabs (*Adansonia gregorii)*, bauhinia & beefwood (*Grevillea striata* over ribbon grass)".
- **Veg Assoc No. 750** described as "Shrublands, pindan; *Acacia tumida* shrubland with grey box & cabbage gum medium woodland over ribbon grass & curly spinifex".
- **Veg Assoc No. 7001** described as "Shrublands, pindan; *Acacia eripoda* & *A. tumida* shrubland with scattered low cabbage gum & *Eucalyptus setosa* over ribbon & curly spinifex".

All three Vegetation Associations have more than 99% of pre-European extent remaining intact at all levels (Statewide, IBRA Bioregion and LGA). These vegetation associations are widespread throughout the area and are well-represented locally and regionally.

The vegetation communities recorded by Ecoscape (2023) within the PDE are widespread across the region and do not represent any locally or regionally significant vegetation. The most impacted vegetation type is the **AtMc** type, associated with the Linear Dunes Landform type. Of the areas mapped during Biological Surveys, only 30.25 ha is proposed to be cleared. This area corresponds to 16.32% of the surveyed extents of this vegetation type. This vegetation type is not restricted to the PDE based on survey results, or the surveyed area. The **AtMc** type is closely aligned with Unit 2 of the Wanganut Land System, described as 'Linear Dunes: Low woodland (pindan) with patches of dense acacia shrubs with deep red sands and Unit 1 of the Luluigui System, described as 'Dunes, linear: Low open woodlands (pindan), sparse to moderately dense Acacia spp. Shrub layer with deep red sands (Schocknecht and Payne 2011). Work by Schocknecht and Payne (2011) to map the extent of landform types in the West Kimberley identified a total of 105,450 ha attributable to the two units described above. Considering this, the likely impact on the **AtMc** vegetation type is 0.03% of the regional extent.

The vegetation condition ranges from Completely Degraded to Very Good condition. The majority is in Very Good condition (>75%) and the PDE also includes 46.69 ha of cleared areas without vegetation (that includes roads and tracks) (approx. 9.7%). Grazing/trampling by cattle and the presence of weeds (particularly **Stylosanthes hamata*) were reported as the significant factors affecting the condition.

Conservation Significant Flora Taxa

Ecoscape, (2023, 2022 & 2021) did not record any EPBC Act or BC Act listed Threatened or Rare Flora taxa from the PDE. The Desktop Database Searches (PMST report and Government GIS Shapefiles) also identified no known records of listed Threatened flora taxa from the Project 40km radius Study Area.

The field survey by Ecoscape, (2023 & 2022) recorded 6 Priority flora taxa from within the PDE of which only three taxa may be impacted due to project clearing as described in detail below:

- ***Thespidium basiflorum* (P1)** – A total of 20,749 plants were recorded by Ecoscape (2023 & 2022) from the survey area, contextual area and beyond. Of this, 6,306 individuals were recorded from the PDE, of which only 2,578 (12.4%) individuals are located within the indicative clearing footprint and may be impacted. *T. basiliflorum* is found in coastal or near-coastal areas ranging from Queensland through the Northern Territory and into Western Australia, where its preferred habitat is described as 'floodplains and riverbanks, often where the water is brackish' (Commonwealth of Australia 2015). These habitats are common throughout Northern Australia (Ecoscape 2023). Over 97% of records were from riparian vegetation (MaEo) surrounding the Logue River and plains on clay soils (GsEo). Clearing of 0.49 ha of MaEo, and 50.85 ha of GsEo from the surveyed extents corresponds to an impact to 0.38% and 3.66% of surveyed extents respectively. Impacts of clearing on this species are not likely to be significant.
- ***Goodenia crenata* (P3)** – 2,108 plants from six populations were recorded by Ecoscape (2023, 2022 & 2021) from the survey area, contextual area and beyond. 491 individuals were recorded within the PDE of which none occur within the indicative clearing footprint. The distribution of this species is broad and its occurrence in this area represents a significant range extension to the populations in WA, and it has been detected in large numbers when targeted. No impact on this species is expected however, if individuals were to be cleared, impacts on the species would not be significant.
- ***Stylidium pindanicum* (P3)** – 41,168 individuals from five populations were recorded by Ecoscape (2023 & 2022) from the survey area, contextual area and beyond. Of this, 10,006 individuals were recorded within the PDE, of which 3,505 (8.5%) individuals are located within the indicative clearing footprint and may be impacted. Barrett et al., (2015b) describes the distribution and habitat of the species as 'Restricted to seasonally damp areas over pindan sands on the Dampier Peninsula, east to near Fitzroy Crossing, growing with C*hrysopogon fallax, Cleome tetrandra* s.l., *Eucalyptus tectifica, Mitrasacme* spp. and *Sorghum plumosum*'. The species was recorded by Ecoscape to occur in the AtMc, EtSpCp and GsEo vegetation types along with some records within cleared areas. 97.5% of records were found within the EtSpCp vegetation type, indicating it is the preferred habitat, being in line with information reported by Barrett et al., (2015b). Clearing of 4.7% of EtSpCp from the surveyed extents is not likely to result in a significant impact on this species.
- ***Rothia indica* subsp. *australis* (P3)** – 13 plants were recorded from the four isolated populations from GsEo vegetation type, of which 11 individuals were recorded within the PDE. Only 2 (15.4%) individuals occur within the indicative clearing footprint and may be impacted. *R. indica* subsp. *australis* is described as occurring on sandy soils on sandy hills and flats (Holland 1997; Boatwright et al. 2008). The 13 plants were found exclusively within the GsEo vegetation type and were widely dispersed, which along with the low number of specimens collected, indicates it may occur at low densities across a broad area or habitat (Ecologia 2023). Clearing of 3.7% GsEo from the surveyed extents is not likely to result in a significant impact on this species.
- ***Polymeria sp*. Broome (K.F. Kenneally 9759) (P3)** – 20 individuals of this species were recorded during Ecologia's surveys, 13 of which were found in the PDE, and none occur within the indicative clearing footprint. *P.* sp. Broome was previously thought to be found on deep red soils on pindan (characterised by Corymbia species over acacia dominated woodlands) sandplains (Markey et al., 2018). However, all records by Ecologia were found in the **EtSpCp**, a Plains type vegetation more associated with floodplains (soils being generally yellow-grey sandy clay) (Ecologia, 2023). This indicates that the species' habitat preference may be broader than originally thought (Markey et al., 2018). No impact on this species is expected however, if individuals were to be cleared, impacts on the species would not be significant.

Taxon	Surveyed Population	% Impact
Haemodorum capitatum	2	None
Thespidium basiliflorum	20,749	12.4%

Goodenia crenata	2,107	None
Polymeria sp. Broome	20	None
Rothia indica subsp. *australis*	13	15.4%
Stylidium pindanicum	41,168	8.5%

Flora of Taxonomic Interest

A collection of *Cyperus* was previously identified as a potential new taxon (Ecoscape, 2022) based on a formal identification by the Western Australian Herbarium (WAH). This taxon was targeted for additional sampling in 2023 to provide clarification. The 2023 collections were found to be a good match for another Kimberley specimen (A.I. Craigie 1501-0149) that has been determined by *Cyperaceae* specialist Karen Wilson as *Cyperus concinnus*. However, according to the details provided with the formal identification, the specimens are significantly different from other Western Australian collections of *Cyperus concinnus* that have shorter spikelets and darker glumes. As such the collections of *Cyperus concinnus* within the survey area are considered to represent flora of taxonomic interest. 63 individuals of this species were recorded during Ecologia's surveys, of which 44 individuals were found in the PDE. None of these individuals were recorded from within the indicative clearing footprint. No impact on this species is expected.

Post-survey Likelihood Assessment of Significant Flora

Ecoscape (2023) revised the likelihood of occurrence assessment of conservation significant flora occurring in the survey area following the field survey. This revised assessment considered the vegetation condition, grazing and other disturbances, actual habitat availability and search effort. The post-survey likelihood of occurrence assessment identified none of the conservation significant flora from the desktop assessment not already recorded are considered likely to occur within the survey area. *Goodenia sepalosa* var *glandulosa* was considered 'likely' to occur due to a nearby existing record. However, this taxon was downgraded to 'unlikely' to occur following the field survey as suitable habitat nearby was extensively searched, was subject to three surveys in the vicinity (Ecoscape 2021; 2022; 2023), and the existing location relates to an old record (1980) of doubtful accuracy.

Fauna Habitats

The fauna habitats recorded in the PDE are typical of the local area and representative of the Fitzroy Trough and Pindanland subregions. Ecoscape (2023) delineated fauna habitats based on the vegetation types recorded during the 2022 survey. **AtMc** is the vegetation type that will be most impacted with 16.32% of the surveyed extents of this vegetation type proposed to be cleared. The **AtMc** vegetation type corresponds to the 'Woodland over shrubs' habitat type. With consideration of regional habitat representation, impacts on this vegetation type are in the order of 0.03% (Schocknecht and Payne 2011). The occurrence of these habitats within the PDE is not of local or regional significance when it is more broadly represented locally and regionally.

Conservation Significant Fauna

A more detailed assessment of fauna values is contained in Principle (b). This section summarises the findings of that assessment.

Ecoscape (2023, 2022 & 2021) field surveys recorded a combined species total of 65 birds, 4 reptiles and 16 mammal species from within the survey area. Of these, four species as described in detail below are conservation-listed species:

- Rainbow Bee-eater *Merop ornatus* (MA, MI)
- White-bellied Sea Eagle *Haliaeetus leucogaster* (MA, MI)
- Northern Coastal Free-tailed Bat *Ozimops cobourgianus* (P1)
- Yellow-lipped Cave Bat *Vespadelus douglasorum* (P2)

The PDE contains potential foraging habitat for all of these species but lacks breeding or nesting habitat. These species are not dependent on the habitats within the PDE. More suitable habitat for these species occurs outside of the PDE in the surrounding area mainly in larger river systems and wetlands such as the Fitzroy River and Munkajarra Wetland in the east. Impacts to these species as a result of project clearing is unlikely to be significant.

Targeted surveys for **Greater Bilby** (*Macrotis lagotis*) were conducted during both the 2022 and 2023 surveys, of which neither survey recorded evidence of Bilbies and both surveys determined the post-survey likelihood of Bilbies occurring in the survey area to be "Unlikely".

Ecoscape (2023, 2022 & 2021) assessed the likelihood of occurrence of conservation significant fauna species identified during the desktop assessment based on species' habitat requirements, findings of the field survey and survey effort. Based on the assessment, the following species were considered as 'may occur' or 'likely to occur' within the survey area:

- *Anseranas semipalmata* Magpie Goose (MA)
- *Apus pacificus* Fork-tailed Swift (MI)
- *Cuculus optatus* Oriental Cuckoo (MI)
- *Numenius minutus* Little Curlew (MI)
- *Pandion cristatus* Osprey (MA, MI)
- *Crocodylus johnstoni* Freshwater Crocodile (OS)

Magpie Goose usually occur in floodplains and wet grasslands (Birds in Backyard, 2023). They have a very limited habitat within the PDE mainly the extent of Logue River that intersects with the PDE. More suitable habitat occurs in the surrounding areas and the presence of this species within the PDE is only likely to be transient in nature.

The **Fork-tailed Swift** and **Oriental Cuckoo** are non-breeding migrants to Australia. The Fork Tailed Swift is almost exclusively aerial in habit (DCCEEW, 2023b) and the Oriental Cuckoo mainly inhabits forests and riverside trees (OzAnimals, 2021). As such, the habitat within the PDE for these species is very limited and would represent only marginal habitat.

Ospreys have a wide range of distribution along coastal Australia and occur in littoral and coastal habitats and occasionally travel inland along major rivers, particularly in northern Australia (DCCEEW, 2023b). The suitable habitat for the species within the PDE is limited only to the extent of Logue River that intersects with the PDE. As such the presence of this species within the PDE is only likely to be transient in nature.

Freshwater Crocodile inhabit various freshwater environments, including rivers, creeks, pools, and swamps, and may shelter in burrows among the roots of trees fringing the water bodies (Australian Museum, 2020). While not recorded in the survey area, was determined to be 'Likely' in the post likelihood assessment given it has been previously recorded in Logue River. Clearing of 0.49 ha of vegetation associated with the Logue River is not likely to impact on this species.

Ecological Linkages

There are no known conservation areas, DBCA managed lands, Ramsar Sites, or Important Wetlands within the immediate vicinity of the PDE. No major watercourse occurs in the PDE, with only one minor non-perennial watercourse – Logue River, flowing through the PDE on the eastern side and a man-made water body within the PDE. Only up to 0.49 ha of riparian vegetation associated with the watercourse is proposed to be cleared. Remnant native vegetation in the local and regional area is widespread and the proposed clearing is unlikely to fragment the landscape. Habitat critical for the conservation significant species does not occur in the PDE.

The recorded and potential species present in the PDE, are not unique to the area with broad representation of species, vegetation associations and communities both locally and regionally beyond the PDE. The PDE does not represent an area of higher biodiversity to that of the surrounding area.

Based on above, the project may be at variance to this Principle.

Methodology

- Australian Museum, (2020)
- Birds in Backyard, (2023)
- DCCEEW, (2023a)
- DCCEEW, (2023b).
- Ecoscape (Australia) Pty Ltd., (2023)

- Ecoscape (Australia) Pty Ltd., (2022)
- Ecoscape (Australia) Pty Ltd., (2021)
- OzAnimals, (2021)
- Government of Western Australia, (2019)
- Government GIS Shapefiles:
  - DBCA Threatened Flora database search (Accessed 11/12/2023)
  - DBCA Threatened Fauna database search (Accessed 11/12/2023)
  - DBCA Threatened Ecological Community database search (Accessed 11/12/2023)
  - DBCA Legislated Lands and Waters (Accessed 11/12/2023)
  - Ramsar Wetlands (Accessed 11/12/2023)
  - Nationally Important Wetlands (Accessed 11/12/2023)
  - Watercourses (Accessed 12/12/2023)
  - Pre-European vegetation (Accessed 06/12/2023)

(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.

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

The five fauna habitats recorded in the PDE are typical of the local area and representative of the Fitzroy Trough and Pindanland subregions therefore the occurrence of these habitats in the survey area is not of local or regional significance. As detailed in Principle (a), the impacts to vegetation types comprising these habitats were low, considering the survey area and regional area representation. Evidence of introduced species was found in all recorded habitats impacting the quality of habitat availability. The recorded habitats provide resources for the general fauna assemblage, however, are not considered to comprise significant habitat.

Conservation Significant Fauna

Ecoscape (2023) field surveys recorded a combined species total of 65 birds, 4 reptiles and 16 mammal species from within the survey area. Of these, four species as described in detail below are conservation-listed species:

- Rainbow Bee-eater — *Merop ornatus* (MA, MI)
- White-bellied Sea Eagle — *Haliaeetus leucogaster* (MA, MI)
- Northern Coastal Free-tailed Bat — *Ozimops cobourgianus* (P1)
- Yellow-lipped Cave Bat — *Vespadelus douglasorum* (P2)

Rainbow Bee-eater are habitat generalists, occurring in a broad range of habitats including open woodlands, shrublands, riparian vegetation, inland and coastal dune systems, and often located near water. The species was recorded in the Woodland over shrub habitat type within the PDE, but no nesting activity was found during the field survey (Ecoscape, 2023). Given they have a wide range of known habitat and distribution range, it is unlikely that they would be dependent upon the habitats within the PDE.

White-bellied Sea Eagle are found primarily in coastal habitats but also occur in terrestrial wetlands and are known to forage over grasslands. This species was recorded from within the PDE by Ecoscape in 2022 and may use the Woodland over tussock grassland habitat for foraging but are not considered to be dependent upon this habitat (Ecoscape, 2023).

Northern Coastal Free-tailed Bat are associated with Mangrove habitats, where it roosts in hollows and crevices. They are also known to forage in open Eucalypt and Melaleuca woodlands. The Woodland over tussock grassland habitat type is considered to represent potential foraging habitat for this species. This

species is vulnerable to clearing of coastal mangrove habitats, which do not occur in the survey area, and less vulnerable to land use changes in its foraging habitat (Ecoscape, 2023). While this species has the potential to occur, it is unlikely the species would be dependent upon this habitat in the PDE.

Yellow-lipped Cave Bat is restricted to the Kimberley region but is widespread within the region. Very little is known about this species and its habitat requirements other than it forages over riparian habitat and roosts in limestone caves in small colonies. This bat species may use the survey area for foraging only, as the caves it requires for roosting and breeding do not occur within the PDE or in the immediate surrounding areas. Suitable foraging habitat for this species occurs along the portion of Logue River intersecting the survey area and the constructed waterbody (dam)/seasonally inundated area. However, the species is unlikely to be reliant upon these small areas in the PDE as larger river systems occur nearby such as the Fitzroy River (Ecoscape, 2023).

Post-survey Likelihood Assessment of Significant Fauna

Targeted surveys for **Greater Bilby** (*Macrotis lagotis*) were conducted during both the 2022 and 2023 surveys, of which neither survey recorded evidence of Bilbies and both surveys determined the post-survey likelihood of Bilbies occurring in the survey area to be "Unlikely". The preferred habitat for Bilbies is hummock grassland (spinifex) with an overstorey of *Acacia* and *Melaleuca*. Where present in the survey area, spinifex occurred sparsely and was mixed with other vegetation. There are records of the Bilby occurring within the desktop study area. If this species does occur within the local region, the survey area may potentially only be utilised for foraging habitat.

Ecoscape (2023) assessed the likelihood of occurrence of conservation significant fauna species identified during the desktop assessment based on species' habitat requirements, findings of the field survey and survey effort. Based on the assessment, the following species were considered as 'may occur' or 'likely to occur' within the survey area:

- *Anseranas semipalmata* Magpie Goose (MA)
- *Apus pacificus* Fork-tailed Swift (MI)
- *Cuculus optatus* Oriental Cuckoo (MI)
- *Numenius minutus* Little Curlew (MI)
- *Pandion cristatus* Osprey (MA, MI)
- *Crocodylus johnstoni* Freshwater Crocodile (OS)

Magpie Goose is widespread throughout coastal northern and eastern Australia and are found around Fitzroy River in WA. They are usually seen in floodplains and wet grasslands (Birds in Backyard, 2023). The preferred habitat for the species within the PDE is limited to the extent of Logue River that intersects the PDE. More suitable habitat occurs in the surrounding areas and the potential presence of this species within the PDE would only be transient in nature.

The **Fork-tailed Swift** is a non-breeding migrant to Australia and is almost exclusively aerial in habit. They mostly occur over inland plains and often over cliffs and beaches, islands, settled areas and in dry or open habitats (DCCEEW, 2023b). They are a potential sporadic visitor to airspace over the PDE rather than occurring within it.

Oriental Cuckoo is a non-breeding migrant to Australia and although the species utilises both forest and woodland, it mainly inhabits forests and riverside trees (OzAnimals, 2021). As such, the PDE would represent only marginal habitat for this species.

The **Little Curlew** is a non-breeding migrant shorebird to Australia for feeding purposes only. They are often found feeding in short, dry grassland and sedgeland, including dry floodplains and blacksoil plains, which have scattered, shallow freshwater pools or areas seasonally inundated. The general habitat includes grassy, open woodlands and on dry or recently burnt grasslands on floodplains, which may be without vegetation. Resting has also been recorded under partly submerged vegetation. After freshwater pools dry up, roosting may occur in the shallows of reservoirs and the sea (DCCEEW, 2023b). The preferred habitat for the species within the PDE is very limited. It is unlikely that this species would utilise the PDE given that larger river systems and wetlands exist in the surrounding areas.

Ospreys have a wide range of distribution along coastal Australia and occur in littoral and coastal habitats and occasionally travel inland along major rivers, particularly in northern Australia. They require extensive areas of open fresh, brackish or saline water for foraging and frequent a variety of wetland habitats including inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes They may also occur over atypical habitats such as heath, woodland or

forest when travelling to and from foraging sites (DCCEEW, 2023b). Suitable habitat for the species occurs within the PDE but is limited to the extent of Logue River that intersects with the PDE. More suitable habitat occurs in the local region and the potential presence of this species within the PDE would only be transient in nature.

The **Freshwater Crocodile** occurs along all but the near coastal reaches of the rivers, streams and creeks that flow into the waters off northern Australia between King Sound in the south-western Kimberley, WA and the northern part of Cape York Peninsula, Queensland. They inhabit various freshwater environments, including rivers, creeks, pools, billabongs, lagoons, and swamps. During the wet season these habitats become inundated with flood waters which allow the crocodiles to move throughout the flood plains. As the water levels drop the crocodiles tend to congregate in the larger and deeper water bodies, where they prefer to inhabit the shallower waters at the pool edges. Freshwater Crocodiles may shelter in burrows among the roots of trees fringing the water bodies they inhabit (Australian Museum, 2020). While not recorded in the survey area, it was determined as 'Likely to occur' in the post likelihood assessment given it has been previously recorded in the Logue River. Clearing of 0.49 ha of vegetation growing in association with the Logue River will not result in a significant impact on this species.

Based on the above, native vegetation in the PDE does not comprise the whole, or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Based on the above, the project is not likely to be at variance to this Principle.

Methodology

- Australian Museum, (2020)
- Birds in Backyard, (2023)
- DCCEEW, (2023a)
- DCCEEW, (2023b).
- Ecoscape (Australia) Pty Ltd., (2023)
- Ecoscape (Australia) Pty Ltd., (2022)
- Ecoscape (Australia) Pty Ltd., (2021)
- OzAnimals, (2021)
- Government GIS Shapefiles:
  - DBCA Threatened Fauna database search (Accessed 11/12/2023)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.

Proposed clearing is not at variance to this Principle.

The Desktop Database Searches (PMST report and Government GIS Shapefiles) identified no known records of listed Threatened or Rare Flora taxa from the Project's 40km radius desktop search.

Ecoscape (2023), did not record any EPBC Act or BC Act listed Threatened or Rare Flora taxa from the PDE.

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

Methodology

- Ecoscape (Australia) Pty Ltd., (2023).
- Ecoscape (Australia) Pty Ltd., (2021).
- DCCEEW, (2023a).
- Government GIS Shapefiles:
  - DBCA Threatened Flora database search (Accessed 11/12/2023)

(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.

No Threatened Ecological Communities (TECs) listed under the EPBC Act or BC Act were recorded from within the Project's 40km radius desktop search (PMST report and Government GIS Shapefiles).

None of the vegetation communities recorded during the field survey by Ecoscape (2023) were considered to represent any Federal or State listed TECs.

As such, the proposed clearing is not at variance to this Principle.

Methodology

- Ecoscape (Australia) Pty Ltd., (2023).
- Ecoscape (Australia) Pty Ltd., (2021).
- DCCEEW, (2023a).
- Government GIS Shapefiles:
  - DBCA Threatened Ecological Community database search (Accessed 11/12/2023)

(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 at variance to this Principle.

The pre-European vegetation associations within the project clearing envelope are mapped as:

- **Veg Assoc No. 64** described as "Grasslands, tall bunch grass savanna low tree; baobabs (*Adansonia gregorii*), bauhinia & beefwood (*Grevillea striata* over ribbon grass)".
- **Veg Assoc No. 750** described as "Shrublands, pindan; *Acacia tumida* shrubland with grey box & cabbage gum medium woodland over ribbon grass & curly spinifex".
- **Veg Assoc No. 7001** described as "Shrublands, pindan; *Acacia eripoda* & *A. tumida* shrubland with scattered low cabbage gum & *Eucalyptus setosa* over ribbon & curly spinifex".

As evident from Table 4 above, all three Vegetation Associations have more than 99% of pre-European extent remaining intact at all levels (Statewide, IBRA Bioregion and LGA). As such, the project is not located in an area with regionally significant remnant vegetation given these vegetation associations are widespread throughout the area and are well-represented locally and regionally.

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

Methodology

- Statewide Vegetation Statistics (Government of Western Australia 2018)
- Government GIS Shapefiles:
  - Pre-European vegetation (Accessed 06/12/2023)

(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 at variance to this Principle.

No major watercourses or wetlands occur within the PDE. One vegetation type associated with a watercourse was recorded from within the PDE:

- **MaEo** - *Melaleuca alsophila* low woodland over *Eriachne obtusa* and **Stylosanthes hamata* low tussock grassland/forbland.

The **MaEo** vegetation type is considered to represent riparian vegetation corresponding to the Logue River, which is a minor non-perennial watercourse. A total of 130.67 ha of this vegetation was recorded during the field survey, of which only 0.49 ha is proposed to be cleared for the project activities.

The limited clearing proposed will not significantly impact on the availability of riparian vegetation on a local or regional scale given the abundant representation.

The proposed clearing is at variance to this Principle.

Methodology

- Ecoscape (Australia) Pty Ltd., (2023).
- Ecoscape (Australia) Pty Ltd., (2021).
- Government GIS shapefiles:
  - Watercourses (Accessed 12/12/2023)

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

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

The PDE is located in the coastal Fitzroy River catchment. Overall drainage of the area flows to the east. Two land systems are mapped over the PDE:

- Wanganut System - described as Sandplains and linear dunes supporting pindan woodlands with acacias and bloodwoods and curly spinifex- ribbon grass, and broad low-lying swales supporting bloodwood-grey box woodlands with curly spinifex-ribbon grass.
- Luluigui system- Sandplains, dunes, stony plains and loamy plains supporting pindan vegetation of acacia shrubs, sparse bloodwoods, spinifex and ribbon grass, also spinifex grasslands with patchy low trees.

These land systems are generally not prone to degradation or erosion if the disturbances such as grazing pressure and frequency of burning are controlled.

The ASRIS database indicates that the area is classified as “Cq(p4) - Extremely Low Probability of Occurrence of Acid Sulphate Soils (ASS)”. Clearing of native vegetation will not require disturbance of soils below the water table.

The project is in an area prone to severe rainfall events, which could contribute to land degradation via flooding and heavy runoff. Clearing for drainage including offshoot and catchment drains and guide bank upgrade works will improve drainage while aligning with the current surface water drainage patterns to minimise the potential of flooding and possible erosion. The natural hydrology in the area will not be impacted as a result of clearing.

The project occurs within a region where pre-European levels of native vegetation is widespread. Clearing will be conducted in dry conditions and in accordance with Main Roads Standard Environment Management Plan. Given the clearing proposed represents a relatively small amount of vegetation in a region with vast areas of intact remnant vegetation, the project works are unlikely to cause appreciable land degradation.

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

Methodology

- ASRIS Mapping. CSIRO (2015)
- NRInfo Map Application. DPIRD, (2023)
- Government GIS Shapefiles:
  - Catchments (Accessed 11/12/2023)
  - Soil Landscape Maping Systems (Accessed 11/12/2023)
  - Acid Sulphate Soil risk mapping (Accessed 11/12/2023)

(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.

There are no known conservation areas, DBCA managed lands, Ramsar Sites or Important Wetlands within the project 40 km radius desktop area.

As such, the proposed clearing is not at variance to this Principle.

Methodology

- Government GIS Shapefiles:
  - DBCA Legislated Lands and Waters (Accessed 11/12/2023)
  - DBCA Conservation Covenants (Accessed 11/12/2023)
  - Ramsar Wetlands (Accessed 11/12/2023)
  - Nationally Important Wetlands (Accessed 11/12/2023)

(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.

The project is located in the Canning-Kimberley Proclaimed Groundwater Area. No Proclaimed Surface Water Area occurs within the PDE. No public drinking water source areas are located within the project 40 km radius desktop area. A minor non-perennial watercourse – the Logue River, intersects the project envelope and clearing is limited in this area to 0.49 ha. Clearing for drainage including offshoot and catchment drains and guide bank upgrade works are proposed and will improve drainage while aligning with the current surface water drainage patterns to minimise the potential of flooding and possible erosion. No change to local hydrology is anticipated from the proposed clearing.

Clearing of native vegetation from the PDE will not intersect groundwater.
Clearing of vegetation that is predominantly directly adjacent to the existing road alignment in a region and local area that retains widespread high levels of remnant vegetation, will not cause deterioration in the quality of surface or underground water.

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

Methodology

- Government GIS Shapefiles:
  - RIWI Act, Surface Water Areas and Irrigation Districts (Accessed 11/12/2023)
  - RIWI Act, Groundwater Areas (Accessed 11/12/2023)
  - Watercourses

(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.

The subregional climate is described as dry winter and hot semi-arid summer with an average annual rainfall of 713.4 mm (Willare Bridge Station, Site ID- 3086) (BoM, 2023). Extreme weather events are a significant component of the Kimberley climate. Tropical cyclones and tropical storms can bring heavy and sustained rainfall, particularly in the months leading up to and during the wet season. It is common for a large proportion of the Region's rainfall to be recorded in one single event, leading to extensive flooding of rivers, creeks and roadways. A minor non-perennial watercourse – the Logue River, intersects the PDE. Clearing does not propose to disturb the bed and banks of the watercourse.

The proposed clearing will take place in the dry season with Main Roads standard measures for environmental management in place during on ground works to avoid the potential escalation of flooding, waterlogging or erosion. The clearing is in a region where the pre-European level of native vegetation is widespread. No changes to the existing levels of flooding are anticipated given the relatively small clearing area proposed in a vast area of existing remnant vegetation. The project is unlikely to cause or exacerbate the incidence or intensity of flooding. As noted above, climatic conditions are the main factor influencing flooding and the removal of a relatively small amount of vegetation in a region with vast areas of intact remnant vegetation will have no measurable influence on flood regimes in the area.

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

Methodology

- BoM Website (Accessed 6/12/2023)
- NRInfo Mapping (DPIRD, 2023)
- Government GIS Shapefiles:
  - Watercourses (Accessed 06/12/2023)

6 VEGETATION MANAGEMENT

Main Roads will avoid clearing native vegetation where possible. Where clearing cannot be avoided then this clearing is kept to a minimum. A Vegetation Management Plan (VMP) has been developed to manage and minimise vegetation clearing for the Proposal (refer to Appendix 4).

7 REHABILITATION, REVEGETATION & OFFSETS

7.1 Revegetation and Rehabilitation

No temporary clearing will be undertaken as part of the Proposal activities.

7.2 Offset Proposal

In accordance with CPS 818 condition 11(a), Main Roads is seeking an exemption from submitting an offset proposal.

8 STAKEHOLDER CONSULTATION

Main Roads will undertake stakeholder consultation in accordance with CPS 818 Condition 8.

9 COMPLIANCE WITH CPS 818

Table 5 summarises what further pre-clearing impact assessment is required in accordance with CPS 818.

Table 5. Summary of Additional Management Actions Required by CPS 818

Impact of Clearing	Yes/No or NA	Further Action Required
1. The CAR indicates that the clearing is 'At Variance' or 'May be at Variance' with one or more of the Clearing Principles.	**Yes**	**1.** Clearing Report to be published on website and submissions sought for 21 days. **2.** Submissions invited from relevant parties, including the LGA, the owner or occupier of the land, DWER's Urban Water and other stakeholders in accordance with Condition 8 of CPS 818. **3.** VMP has been completed, refer to Appendix 4. **4.** A request for exemption from an offset proposal will be sought from DWER based on the *WA Environmental Offsets Guidelines 2014*. **5.** Summary of submissions and a statement addressing each of those submissions to be published on website.
2. Clearing is at variance or may be at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality **or** (j) the incidence of flooding.	**No**	No further action required.
3. Clearing is at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality **and** (j) the incidence of flooding.	**No**	No further action required.
4. The Proposal involves clearing for temporary works (as defined by CPS 818).	**No**	No further action required.
5a. Proposal is within a Region that: • has rainfall greater than 400mm; and, • is South of the 26th parallel; and, • works are necessary in 'Other than dry conditions'; and, • works have potential for **uninfested** areas to be impacted.	**No**	Standard Vehicle and Plant management actions from Annexure 204B (TABLE 204B.9.1), Hygiene Checklists will be applied.
5b. Do the proposed works require clearing within or adjacent to DBCA managed lands in non-dry conditions?	**No**	No further action required.
6. 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.	**No**	No further action required.

Impact of Clearing	Yes/No or NA	Further Action Required
7. Weeds are likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition.	**No**	No further action required.
8. Did an environmental specialist conduct the survey or field assessment?	**Yes**	The Environmental Specialist undertaking the biological assessments was suitably qualified and had more than three years' experience.
9. Did an environmental specialist prepare the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal?	**Yes**	The Environmental Specialist preparing the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal was suitably qualified and had more than three years' experience.

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11 APPENDICES

Appendix 1: Logue River Widening & Overlay Biological Survey – Ecoscape (2023) – Executive Summary

EXECUTIVE SUMMARY

Main Roads Western Australia (Main Roads) proposes to undertake road widening and overlay along a 19 km section of the GNH between Straight Line Kilometre (SLK) 2249 and 2268.75. Additional areas have been identified to support the works, including a borrow pit at GNH SLK 2255, a water point at GNH SLK 2268.40 and a parking bay at GNH SLK 2269.90.

Main Roads appointed Ecoscape to undertake a biological assessment to define and delineate the key environmental aspects associated with the road. The outcome of the assessment will be used to inform the environmental assessment and approvals process and may assist in the preparation of Environmental Impact Assessment documentation.

The survey area is 636 ha, of which a large portion (381.5 ha) has been previously surveyed (Ecoscape 2022).

The key findings of the desktop assessment were:

- three pre-European vegetation associations have been mapped within the survey area, each with greater than 99% of their original extent remaining.
- five Priority Ecological Communities (PECs) identified by database searches within the study area (40 km buffer); none of the mapped occurrences intersect the survey area.
- thirteen Priority-listed flora identified by the database searches and previous survey within the study area (40 km buffer), five of which have been recorded from within the survey area.
- six Threatened and Priority fauna species were identified by database searches (40 km buffer) as being likely or known to occur in the survey area or as having previously recorded from within the survey area.

The flora and vegetation field survey and subsequent analysis identified:

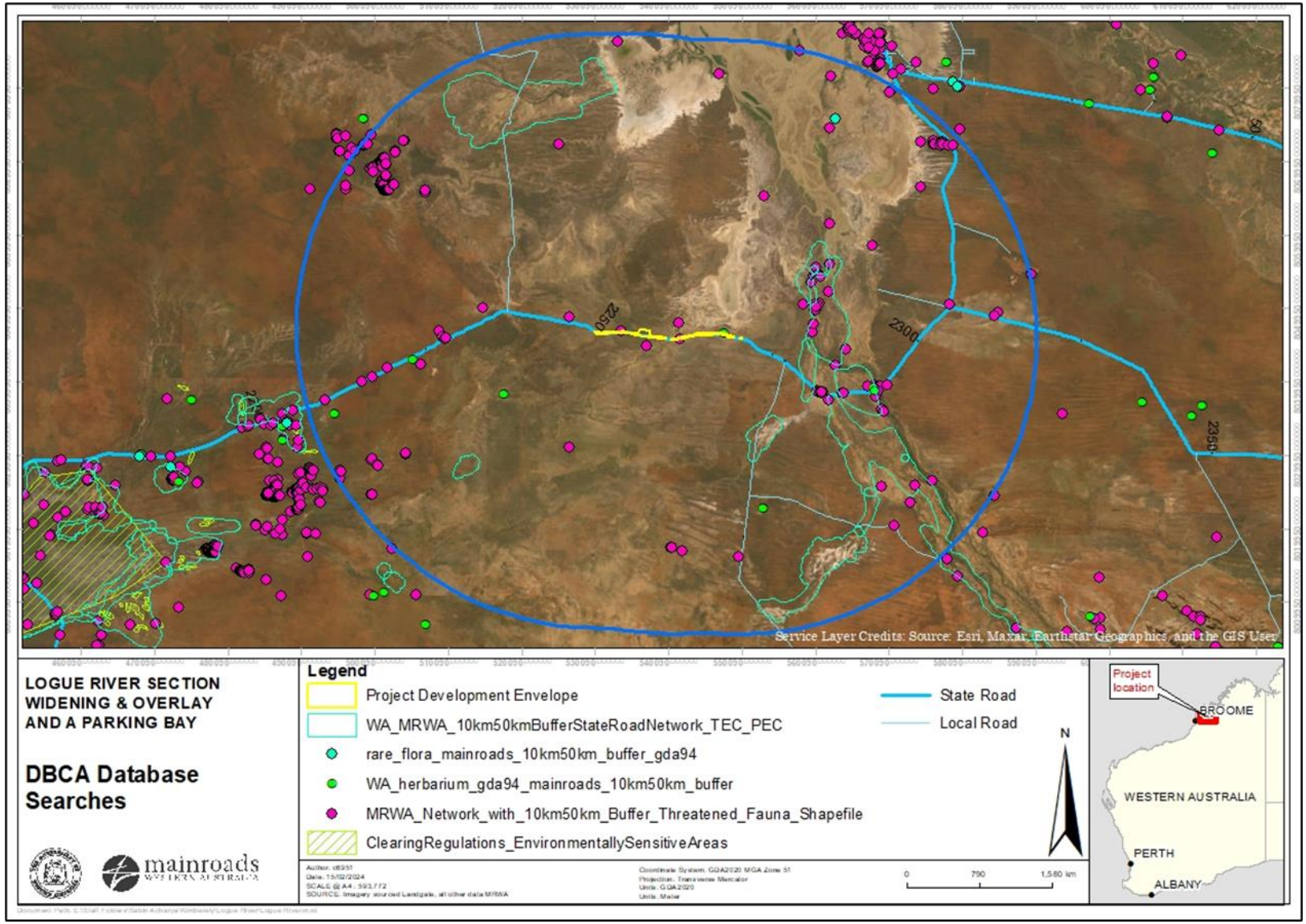
- 262 vascular flora species recorded from 26 floristic quadrats and opportunistic observations.
- six Priority-listed flora:
  - *Haemodorum capitatum* (P1)
  - *Thespidium basiflorum* (P1)
  - *Goodenia crenata* (P3)
  - *Polymeria* sp. Broome (K.F. Kenneally 9759) (P3)
  - *Rothia indica* subsp. *australis* (P3)
  - *Stylidium pindanicum* (P3).
- ten introduced species; of these **Calotropis procera* (Calotrope), is a Declared Pest plant (Exempt category).
- five vegetation types, none of which is considered likely to represent a Threatened Ecological Community (TEC) or Priority Ecological Community (PEC). Two of the vegetation types were considered wetland/riparian. All vegetation types were represented in the context area.
- vegetation condition ranged from Completely Degraded to Very Good with the majority in Very Good condition.

The fauna field survey identified:

- four fauna habitats: Woodland over tussock grass, Woodland over shrubs, Riparian woodland, and Waterbody. None are of local nor regional significance.
- sixty-three vertebrate fauna species.
- three conservation-listed species: the Yellow-lipped Cave Bat *Vespadelus douglasorum* (P2 DBCA status), Northern Coastal Free-tailed Bat *Ozimops cobourgianus* (P1 DBCA status) and Rainbow Bee-eater *Merop ornatus* (MA EPBC status; IA BC status).

- fauna habitat quality was reduced due to disturbance from roaming cattle across the entire survey area.
- Waterbody and Riparian woodland habitats are seasonally inundated, potentially providing resources for conservation-listed migratory wetland bird species, although these habitats are also degraded.

Appendix 2: DBCA Threatened Flora and Fauna Database Searches



Appendix 3: EPBC Act Protected Matters Search Report

1 12 2023 PMST Report - Logue River

Appendix 4: Vegetation Management Plan

LOGUE RIVER SECTIONS WIDENING & OVERLAY GNH SLK 2250 - 2268.75 AND PARKING BAY AT GNH SLK 2269.9

Purpose and Scope

This Vegetation Management Plan (VMP) has been prepared by Main Roads for the purpose of managing native vegetation clearing impacts associated with the Project.

Main Roads WA is planning to upgrade the section of Great Northern Highway (GNH) in the Willare section to align with current safety standards as this section of the National Highway is sub-standard and has a narrow-sealed shoulder. The purpose of the project is to improve the road geometry of GNH between SLK 2249.7 - 2269.05 by overlaying and widening the existing surface to a lane 3.5 m wide with a 2 m sealed shoulder, the overall width of the sealed surface is expected to be approximately 11m. The project also involves installing a parking bay at SLK 2269.90. No changes to the highway alignment are proposed and the majority of the works will occur in the maintenance zone. However, some clearing outside the maintenance zone is required for additional works that have been identified to support the upgrade works such as borrow pits and water points.

In specified circumstances, Main Roads VMP is required to be approved by Department of Water and Environmental Regulation (DWER) as a condition of the Main Roads Statewide Clearing Permit CPS 818.

Actions, and their relevant timeframes, from this VMP will be documented within the relevant Tender Documentation (Specifications), such as:

- Specification 204 Environmental Management
- Specification 301 Vegetation Clearing and Demolition
- Specification 303 Materials and Water
- Specification 304 Revegetation
- Specification 304 Rehabilitation of Disturbed Areas.

Once the Contract has been awarded, the Superintendent's Contract Management Team (or equivalent roles) are to ensure that the requirements are implemented by the Contractor.

Avoiding, Mitigating and Managing the Impacts of Clearing

A number of measures were undertaken during the development and design of the proposal to reduce its impact on the environment.

For further information on the alternatives that were considered during the proposal development, please refer to Section 1.5 of the Clearing Assessment Report for the proposal.

For further information on the measures undertaken to avoid, minimise, reduce and manage the proposal's clearing impacts, please refer to Section 1.6 of the Clearing Assessment Report for the proposal.

VMP Actions

General vegetation management actions to be undertaken are shown in Appendix 4.1: General Vegetation Management Actions for Clearing.

Appendix 4.1: General Vegetation Management Actions for Clearing

Management Action	Responsibility	Timing
The Contractor must ensure plant, machinery and equipment, is cleaned down prior to arrival to the site.	Superintendent	During construction
Vehicle hygiene inspection checklists will be utilised to manage potential weed/dieback spread on earth-moving machinery.	Superintendent	During construction
All Clearing must be undertaken in such a way to allow fauna to move out of the Clearing area.	Superintendent	During construction
The Limits of Vegetation Clearing will be demarcated on site prior to the commencement of clearing to prevent entry into areas of native vegetation.	Superintendent	During construction
Natural drainage pathways will not be obstructed from stockpile gravel, crushed rock and excavated material.	Superintendent	During construction
All recently cleared, exposed and loose surface areas shall be protected from wind, water and soil erosion.	Superintendent	During construction
The Contractor will ensure that clearing of native vegetation is only undertaken in dry conditions, unless otherwise approved and / or directed by the Superintendent.	Superintendent	During construction
All Special Environmental Areas will be pegged in accordance with Main Roads' Drawing 201928-0001-1 Construction Peg Colour Code (https://www.mainroads.wa.gov.au/globalassets/technical-commercial/technical-library/standard-contract-drawings/vegetation/construction-environmental-management/201928-0001-construction-peg-colour-code-drawing.pdf?v=49bd3b).	Superintendent	During construction
The Contractor must develop and detail a Site induction training program as part of the CEMP that includes as a minimum, the significant environmental impacts, actual or potential, of work activities associated with the Contract	Superintendent	During construction

The following specific actions shall also be implemented and will be the responsibility of the Superintendent to ensure they are completed prior to clearing commencing, unless otherwise specified:

- Engage an environmental specialist (flora) to identify the areas of priority flora individuals/populations within the development envelope to demarcate for avoidance.

The above action will be documented within Specifications 204 and 301.

Main Roads' preclearing **Hold Point** applies to all projects that require vegetation clearing, as documented within Specification 301 (301.12 PRE-CLEARING PROCESS). Accordingly, all Hold Point actions must be signed off prior to clearing commencing. This Hold Point comprises the following actions:

1. Prior to the commencement of any clearing operations, the Contractor must certify for the Superintendent's verification and approval, that the following activities have been completed in accordance with the relevant specification:

a) The pegging of limits of vegetation clearing has been undertaken.

b) The pegged vegetation clearing area does not exceed the Limits of Vegetation Clearing.

c) Mature trees have been conserved as far as practicable.

d) The pegging of special environmental areas has been undertaken.

f) All pre-clearing weed control has been undertaken.

g) All pre-clearing fauna operational controls have been undertaken.

h) All pre-clearing dieback operational controls have been undertaken.

i) Suitable and unsuitable topsoil zones have been identified.

j) Vegetation and topsoil stockpile locations have been identified.

o) All clearing machinery is compliant with controls.

Monitoring and Maintenance Program

The Superintendent's Contract Management Team shall monitor the implementation of management actions that are a **Hold Point**. **Hold Point** actions must be signed off by the Superintendent's Representative to confirm it has occurred and recorded within the Superintendent's Contract Management Plan.

Non-Compliance

Non-compliance with management actions will trigger corrective actions, preventative actions and/or an incident investigation. Non-compliances will be recorded with Main Roads incident management system and reviewed by Main Roads Manager Environment.

The need for reporting non-compliances with VMP management actions to DWER will be determined as part of an incident investigation.

Revegetation

Revegetation will be undertaken in accordance with Condition 9 of CPS 818. Relevant requirements from Condition 9 have been incorporated into the Project Revegetation Plan Template. The elements to be implemented by the Contractor will be incorporated into the relevant Specification 304.