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WESTERN AUSTRALIA

Clearing Desktop Report – CPS 818

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Western Australia.*

Wiluna to Meekatharra Package 3

Goldfields Highway (H049)
Goldfields-Esperance Region

EOS 577

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1 PROPOSAL

1.1 Purpose and Justification

Goldfields Highway (H049) is an important link in the Regional Road Network providing access between Kalgoorlie/Boulder in the Eastern Goldfields through to Meekatharra, the southern Gascoyne, and Pilbara Regions of Western Australia.

The increase in mining activity along this section of Goldfields Highway has increased traffic volume, especially heavy vehicles carting materials. As a result, the section between Wiluna and Meekatharra requires increasingly frequent maintenance with a corresponding increase in costs.

Proposed works under this Package 3 proposal, between SLK 653.54 and SLK 665.70, include widening of the current road formation, sealing unsealed sections of the highway and improvement of drainage infrastructure to direct overland surface water flows off the road formation and into existing floodways adjacent to the road alignment.

The Project Objectives are:

- Improve road user safety, to reduce the frequency and severity of crashes;
- Reduce the risk to safe freight movements and efficiency;
- Provide consistent driver experience and comfort by addressing driver fatigue and frustration,
- Implement revised Road Design Criteria.

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 roads 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

Main Roads proposes to improve a section (SLK 653.54 to SLK 665.70) of Goldfields Highway between the town sites of Meekatharra and Wiluna under this proposal. The works will comprise the following components:

- Regrading, shoulder widening, overlay and seal of a 12 km section of unsealed highway.
- New road delineation, signage and line marking.
- Upgrade drainage infrastructure and improve existing road drainage.

1.3 Proposal Location

The Proposal Area is located on Goldfields Highway (H049), from SLK 653.54 to SLK 665.70, in the Shire of Wiluna as shown in Figure 1. The central coordinate of the proposal is:

- Latitude: -26.4914382
- Longitude: 119.7778836

1.4 Clearing Details

Proposed Clearing to be undertaken using CPS 818:

6.92 ha

Areas of Native Vegetation Clearing:

The areas of native vegetation to be cleared are shown in Figure 1.

Type of Native Vegetation:

The type of vegetation to be cleared under this Proposal consists of Mixed tall shrublands, Mixed Acacia tall shrublands and Chenopod low shrublands and shown in Appendix 1.

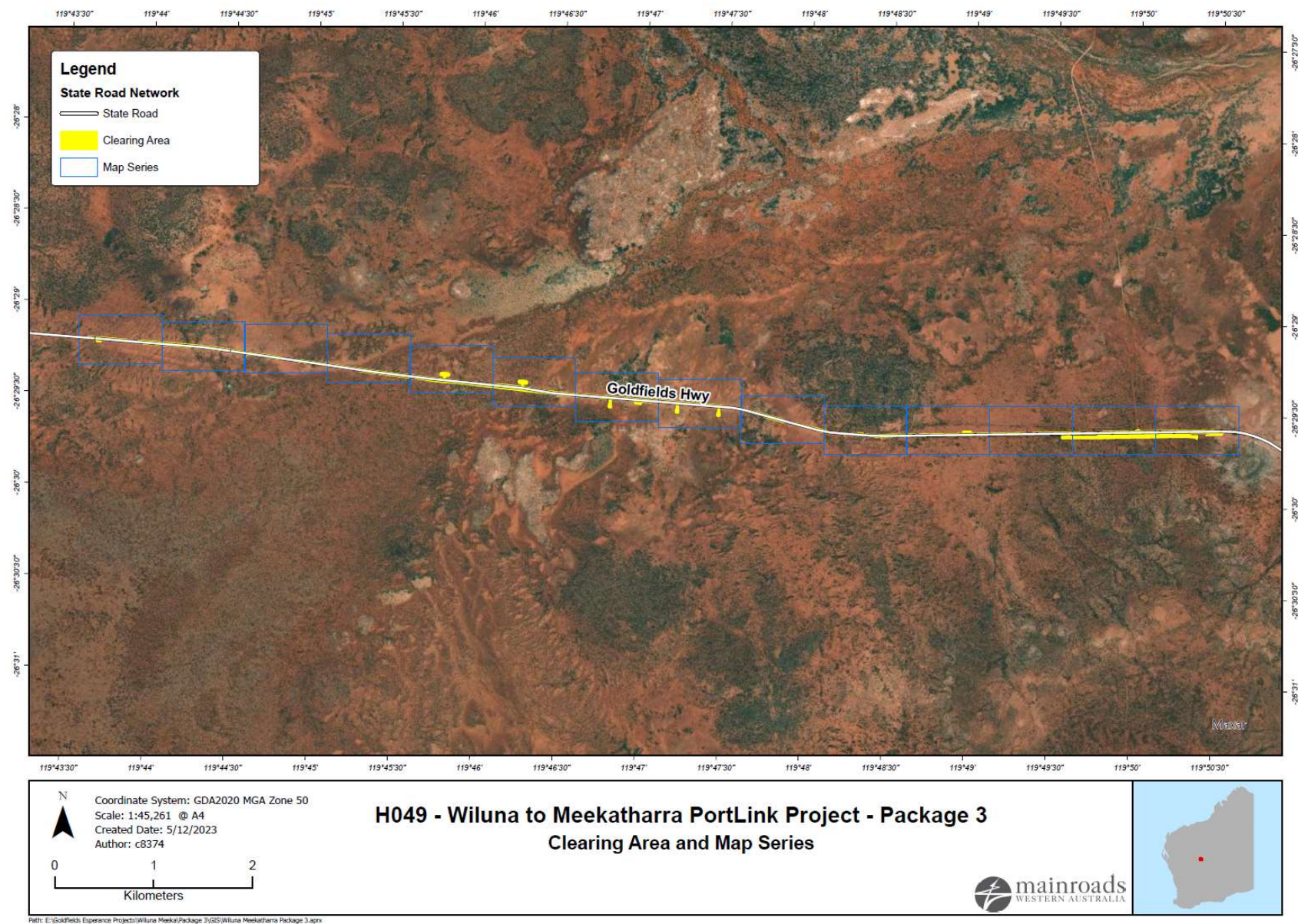


Figure 1. Clearing Area/Development Envelope

1.5 Alternatives to Native Vegetation Clearing Considered During Proposal Development

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

- 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 applicable given speed limits are not a relevant factor to all components of the works such as drainage and turnaround infrastructure.

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.

Further details on how the clearing impacts have been avoided and minimised include:

- Existing material pits, laydown areas and access tracks being used,
- Clearing boundaries clearly demarcated prior to clearing,
- Clearing activities to ensure machinery stays within the approved clearing area,
- Pre-Starts to detail the approved clearing areas,
- Infrastructure used to maintain surface drainage patterns, if required (e.g., culverts, diversions),
- Hygiene inspections conducted for all vehicles and machinery, prior to entry into and exit from site, and
- Hygiene inspection checklist will be used to record the results of hygiene inspections.

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	Drainage works will only occur to the south of the existing road and will not impact on vegetation north of the road. This will reduce impacts associated with machinery access and laydown areas to the north of the road alignment during works.
Alternative alignment located within pasture or degraded areas	Road improvements will be maintained within the existing road alignment, clearing is minimal and will involve clearing of roadside vegetation. Existing cleared areas have been utilised for turn arounds points where possible.
Use of existing cleared areas for access tracks, construction storage and stockpiling	No temporary clearing for storage, side tracks, stockpiles, turn around bays etc. will be undertaken as part of proposed activities. Additional clearing will be avoided as the site office, materials storage areas, construction vehicles/machinery and access tracks will be located on previously disturbed or cleared areas.
Drainage modification	Existing offshoot drains will be regraded to maintain functionality and suitability for management of surface water flows during significant rainfall events in preference of increased impacts associated with culvert installations. The drain levee works, as mentioned above, will be constructed 30m south of the existing road formation and will result in reduced total clearing and avoid impacts to vegetation assessed to be in a better quality.

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 Desktop Report (CDR).

The CDR 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:

- **Native Vegetation Clearing Area** – 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.
- **Proposal Area** – The total footprint of the Proposal including both cleared and uncleared areas. This is based on the current design and is less than the Development Envelope. It usually includes a buffer to allow for constructability and the movement of machinery during construction.
- **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 2.

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 8.

2.3 Surveys and Assessments

The following surveys/assessments were undertaken to inform this CDR:

- Goldfields Highway Biological Survey (GHD, 2013)
- Goldfields Highway Wiluna to Meekatharra PortLink Project Environmental Impact Assessment and Management Plan (GHD, 2014)
- Goldfields Highway Detailed Flora & Vegetation Assessment (Spectrum, 2023)
- Goldfields Highway Vertebrate & Short Range Endemic Terrestrial Fauna Assessment (Spectrum, 2023)
- *Euploca mitchellii*: Goldfields Highway Targeted Flora Assessment (Spectrum, 2023)
- Goldfields Highway Pre-Clearance Malleefowl Assessment (Spectrum, 2023).

Biological and targeted surveys conducted for the proposal are outlined in Table 2 and a summary of the findings in these reports are presented in Section 3.

The most recent biological survey by Spectrum (2023) covers only a portion of the Proposal Area, whereas the biological survey undertaken by GHD (2014) covers the full extent. A review of the vegetation associations described by each report shows that the vegetation types and conditions are consistent across the reports, as shown in the table below. In order to accurately calculate vegetation impacts, vegetation condition and fauna habitat, the 2014 vegetation mapping was used to provide consistency in the application of data and a complete assessment of the Proposal Area. All biological surveys listed above will be utilised to assess the presence of significant flora and fauna species.

Table 2. Comparison of Mapped Vegetation Associations by GHD (2014) and Spectrum (2023)

Vegetation Association – GHD (2014)	Vegetation Association - Spectrum (2023)
VA04 <i>Acacia pteraneura</i>, <i>A. pruinocarpa</i> isolated trees over <i>A. caesaneura</i>, <i>A. incurvaneura</i>, <i>A. aptaneura</i>, <i>A. mulganeura</i> over tall open shrubland over <i>A. craspedocarpa</i>, <i>A. tetragonophylla</i>, <i>A. ramulosa</i> var. <i>linophylla</i> over <i>Eremophila flabellata</i>, <i>Ptilotus obovatus</i>, <i>E. forrestii</i>, <i>E. spectabilis</i> subsp. <i>brevis</i> low sparse shrubland over <i>Eriachne helmsii</i>, <i>Aristida contorta</i>, <i>Eragrostis eriopoda</i> sparse tussock grassland.	P-1 <i>Acacia incurvaneura</i>, <i>Acacia pruinocarpa</i>, and +/- <i>Acacia fuscaneura</i> low open woodland, over <i>Eremophila spectabilis</i> subsp. <i>brevis</i>, <i>Eremophila forrestii</i> and <i>Ptilotus obovatus</i> mid sparse shrubland, over <i>Eragrostis eriopoda</i> low sparse grassland.
VA01 <i>Acacia pteraneura</i>, <i>A. craspedocarpa</i>, <i>A. incurvaneura</i> tall sparse shrubland over <i>A. tetragonophylla</i> isolated shrubs over <i>Eremophila fraseri</i>, <i>E. forrestii</i> low sparse shrubland over <i>Aristida contorta</i>, <i>Eriachne helmsii</i>, <i>Tripogon loliiformis</i> open tussock grassland.	

Table 3. Summary of Biological and Targeted Surveys Relevant to the Proposal

Consultant & Survey Name	Survey Details
GHD (2013) Goldfields Highway Biological Survey	Survey Area: Survey area comprised of six sections along the Goldfields Highway and 15 material pit locations adjacent to the Highway. Type: Flora, Vegetation and Fauna survey. Timing: Fieldwork was conducted in November 2012. Survey Results Shapefile TRIM Ref: - Document TRIM Ref: D13#579936

Consultant & Survey Name	Survey Details
GHD (2014) Wiluna to Meekatharra PortLink Project Environmental Impact Assessment and Management Plan	Survey Area: The survey area extends 180 km from Wiluna (SLK 618.23) to Meekatharra (SLK 793.28) and includes a 50m buffer either side of the existing Goldfields Highway alignment. The survey area covered 17,962 ha. Type: Level 2 vegetation and flora and Level 1 fauna survey undertaken to inform the EIA. Timing: Vegetation and flora survey from 28 October to 5 November 2013. The fauna field survey was undertaken in conjunction with the vegetation and flora survey. Survey Results Shapefile TRIM Ref: D14#627386 Document TRIM Ref: D14#627341
Spectrum (2023) Detailed Flora and Vegetation Assessment	Survey Area: Survey area comprised approximately 114.9 ha along the Goldfields Highway at the following areas: Package 1 (SLK 644.4 to 646.6; 0.6 ha), Package 2 (SLK 625.80 to 636.50; 99.8 ha), and Package 3 (SLK 653.7 to 665; 14.4 ha). Type: One phase detailed flora and vegetation survey. Timing: 19th to 28th June 2023 (following higher than usual median rainfall in the region). Survey Results Shapefile TRIM Ref: D23#924122 Document TRIM Ref: D23#924024
Spectrum (2023) Vertebrate & Short Range Endemic Terrestrial Fauna Assessment	Survey Area: Survey area comprised approximately 114.9 ha along the Goldfields Highway at the following areas: Package 1 (SLK 644.4 to 646.6; 0.6 ha), Package 2 (SLK 625.80 to 636.50; 99.8 ha), and Package 3 (SLK 653.7 to 665; 14.4 ha). Type: Basic and targeted terrestrial vertebrate fauna assessment and a Level 1 short range endemic (SRE) invertebrate fauna assessment. Timing: Fieldwork was conducted between 19th and 28th June 2023 Survey Results Shapefile TRIM Ref: D23#1233183 Document TRIM Ref: D23#1232449
Spectrum (2023) <i>Euploca mitchellii</i> Targeted Flora Assessment	Survey Area: Goldfields Highway SLK 624.85 to SLK 785.95 covering an area of 488 ha. Type: Targeted flora assessment for P1 species <i>Euploca mitchellii</i> and other significant species likely to occur. Timing: Fieldwork was conducted between 19th and 28th June 2023 Survey Results Shapefile TRIM Ref: D23#825030 Document TRIM Ref: D23#772515

Consultant & Survey Name	Survey Details
Spectrum (2023) <i>Pre-clearance Malleefowl Assessment</i>	Survey Area: Goldfields Highway Wiluna to Meekatharra – Packages 2, 3 and 4. Type: Pre-clearance survey for Malleefowl or secondary evidence. Timing: Fieldwork was conducted between 19 th and 23 rd June 2023 Survey Results Shapefile TRIM Ref: D23#825626 Document TRIM Ref: D23#772529

3 SURVEY RESULTS

3.1 Summary of Flora and Vegetation Surveys

The below summary discusses the GHD 2014 biological assessment which informed the EIA and Management Plan and the Spectrum 2023 biological survey.

GHD (2014)

28 vegetation associations (including two disturbance related associations) were identified within the Survey area and described based on field observations, including:

- Woodlands (containing six vegetation associations);
- Tall shrublands (containing eleven vegetation associations);
- Low shrublands (containing five vegetation associations);
- Tussock grasslands (containing two vegetation associations);
- Hummock grasslands (containing two vegetation associations);
- Disturbed (containing two vegetation associations).

Vegetation mapped within the Proposal Area was rated as Excellent to Very Good and Very Good (Keighery 1994 scale). Grazing and trampling impacts were generally more prevalent within drainage lines and adjacent floodplain areas, as well as the margins of artificial water sources. The most noticeable areas of disturbance throughout the Proposal Area included existing pastoral infrastructure (access tracks) and roadside margins.

No Threatened Ecological Communities (TEC) occur, or are likely to occur, within the Survey area. One Priority Ecological Community (PEC) was recorded within the Survey area: Calcrete Groundwater Assemblages (CGA) (Priority 1). One identified PEC occurs within the Proposal Area.

A total of 398 flora taxa (including subspecies and varieties) representing 53 families and 154 genera were recorded in the Survey area during the field survey. This total comprised 391 native taxa and seven introduced taxa.

The field survey did not record any flora taxa listed under Commonwealth or State legislation within the Survey area.

Nine Priority listed flora taxa were recorded in the Survey area. Species identified during the biological survey are listed below;

- *Eremophila congesta* (Priority 1),
- *Calytrix uncinata* (Priority 3),
- *Calytrix verruculosa* (Priority 3),
- *Gunniopsis propinqua* (Priority 3),
- *Homalocalyx echinulatus* (Priority 3),
- *Indigofera sp. Gilesii* (Priority 3),
- *Ptilotus luteolus* (Priority 3),
- *Sauropus ramosissimus* (Priority 3),
- *Stackhousia clementii* (Priority 3).

It is noted that *Calytrix uncinata* and *Gunniopsis propinqua* have since been delisted as priority species.

Spectrum (2023)

Spectrum Ecology & Spatial was engaged by Main Roads Western Australia to undertake a single-season detailed flora and vegetation assessment across three sections of the Goldfields Highway between Meekatharra and Wiluna to total a survey area of 114.9 ha: Package 1 (SLK 644.4 to 646.6; 0.6 ha), Package 2 (SLK 625.80 to 636.50; 99.8 ha), and Package 3 (SLK 653.7 to 665; 14.4 ha).

A total of nine vegetation types were identified in the Survey Area:

- Plains (containing 5 vegetation associations);
- Crest (2 vegetation associations);
- Creek lines & Floodplains (2 vegetation associations).

Vegetation condition within the survey area ranges from Completely Degraded to Very Good with the majority of the area mapped as Very Good.

A total of 187 flora taxa representing 37 families and 94 genera were recorded during the field survey. Of the 187 flora taxa, 3 were introduced weeds.

No Threatened flora were recorded within the Survey Area. One Priority flora species, and six range extensions were recorded in the Survey Area.

- Priority 1: *Eremophila congesta*
- Range extensions: *Brachyscome pusilla*, *Enneapogon avenaceus*, *Eremophila fraseri* subsp. *parva*, *Goodenia lamprosperma*, *Goodenia nuda*, and *Panicum laevinode*.

No individuals of *Euploca mitchellii* were identified during targeted survey.

3.2 Summary of Fauna Surveys

GHD (2014)

Eight broad fauna habitat types were identified in the Survey area, as listed below:

- *Acacia* shrubland over tussock grasses;
- *Acacia* shrubland over hummock grasses;
- Mulga (sparse to open) shrubland over tussock grassland;
- Tussock grassland;
- Chenopod shrubland;
- *Eucalyptus/Corymbia* woodland (including riparian habitat around Bubble Creek);
- Rocky outcrops, breakaways and Banded Ironstone Formation (BIF) hills;
- Sand dune.

A desktop review of the Survey Area identified a total of 107 bird, 68 reptile, 31 mammal and 4 amphibian species previously recorded within or adjacent to the Survey area. In addition, 9 exotic (introduced) fauna species were determined to occur or likely to occur in the Survey Area. Following the field survey 31 bird, 5 mammal and 2 reptile species were recorded in the Survey area, a total of 5 introduced mammals were also recorded within the Survey area.

The fauna survey recorded one current conservation significant species, the Grey Falcon (*Falco hypoleucos*), listed as Vulnerable under the BC Act and EPBC Act.

Based on current conservation species listings under the BC Act and EPBC Act, two species Grey Falcon (*Falco hypoleucos*) and Malleefowl (*Leipoa ocellata*) were the only species determined to be Present or Likely to occur in the Proposal Area. This was determined from a likelihood of occurrence assessment which takes into account field survey data, habitat present, known species distribution and previous records of each species.

Spectrum (2023)

Six fauna habitat types were recorded during the assessment, none of which are restricted to the Survey Area, as listed below:

- Mulga Woodland;
- Drainage Line;
- Open Shrubland on Limestone;
- Rocky Hillslope and Footslopes;
- Bluebush Open Shrubland; and
- Mixed Tall Shrubland on Sandy Clay.

A total of 45 vertebrate fauna species were recorded during the field survey, with 2 species of significance recorded during the concurrent Malleefowl survey:

- One Southern Whiteface (*Aphelocephala leucopsis*, EPBC Act Vulnerable); and
- Brush-tailed Mulgara (*Dasycercus blythi*, DBCA P4) - secondary evidence (burrows and diggings).

No Malleefowl or secondary evidence was recorded during the targeted pre-clearance assessment undertaken by Spectrum (2023d).

4 VEGETATION DETAILS

4.1 Proposal Site Vegetation Description

The Proposal Area is located within the Murchison Interim Biogeographical Regionalisation for Australian (IBRA) Regional and East-Murchison sub-region. Broad vegetation of this IBRA is described as being Mulga low woodlands rich in ephemerals.

The 2014 survey maps all of the Proposal Area, whereas the 2023 survey maps only a portion. However, the surveys are consistent with regards to vegetation type and condition. As such, for reference and consistency in the application of data, the calculations have been made using the 2014 vegetation mapping to provide a complete and accurate assessment of the Proposal Area.

The biological survey undertaken along GEH mapped four native vegetation associations within the Proposal Area (GHD):

- Association 4 - Mulga (sparse to open) shrubland over *Eriachne helmsii*, *Aristida contorta*, *Eragrostis eriopoda* tussock grassland;
- Association 7 - Mixed Mulga shrubland over mixed hummock and tussock grasses with occasional Eucalyptus;
- Association 14 – Chenopod shrubland with scattered emergent Hakea and Acacia shrubs; and
- Association 1 – *Acacia spp.*, *Eremophila spp.* Sparse shrubland over tussock grasses.

The vegetation condition of the Proposal Area ranges from Very Good to Excellent.

Table 4 and Table 5 provide details of the vegetation types and their condition within the Proposal Area and the remaining extents of these associations.

Table 4. Summary of Vegetation Types within Clearing Area

Vegetation Type	Extent within Clearing Area (ha)	Total Extent Mapped (ha) within Survey Area
VA01 - <i>Acacia spp.</i> , <i>Eremophila spp.</i> sparse shrubland over tussock grasses	0.953	1,954.1
VA04 - Mulga (sparse to open) shrubland over <i>Eriachne helmsii</i> , <i>Aristida contorta</i> , <i>Eragrostis eriopoda</i> tussock grassland	4.734	10,228.7
VA07 - Mixed Mulga shrubland over mixed hummock and tussock grasses with occasional Eucalyptus	0.362	1,826.8
VA14 - Chenopod shrubland with scattered emergent Hakea and Acacia shrubs	0.870	432.5
Total	6.92	

Table 5. 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. 18	Statewide	694,638.14	346,425.77	49.87	6.77
	IBRA Bioregion Murchison	961.99	961.99	100.00	-
	IBRA Sub-region Eastern Murchison	961.99	961.99	100.00	-
	Local Government Authority Shire of Wiluna	-	-	-	-
Veg Assoc No. 29	Statewide	7,903,991.45	7,898,973.24	99.94	6.28
	IBRA Bioregion Murchison	2,956,382.06	2,955,695.34	99.98	3.15
	IBRA Sub-region Eastern Murchison	796,235.27	796,026.03	99.97	10.51
	Local Government Authority Shire of Wiluna	2,027,699.12	2,027,505.14	99.99	9.99
		2,854,683.44	2,851,596.18	99.89	4.99
Veg Assoc No. 204	Statewide	199,475.40	198,735.10	99.63	6.75
	IBRA Bioregion Murchison	185,601.68	184,861.37	99.60	7.26
	IBRA Sub-region Eastern Murchison	75,042.26	74,305.79	99.02	11.47
	Local Government Authority Shire of Wiluna	39,116.94	38,380.47	98.12	-

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 is not at, or not likely to be at variance with the ten Clearing Principles.

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

Proposed clearing is not at variance to this Principle.

Assessment

Flora

The proposal will result in the removal of up to 6.92 ha of native vegetation adjacent to the existing Goldfields Highway. Condition of the vegetation ranges from Very Good to Excellent. The Proposal Area comprises the following four vegetation types, which are considered typical of the local and wider area:

- Association 4 - Mulga (sparse to open) shrubland over *Eriachne helmsii*, *Aristida contorta*, *Eragrostis eriopoda* tussock grassland;
- Association 7 - Mixed Mulga shrubland over mixed hummock and tussock grasses with occasional Eucalyptus;
- Association 14 – Chenopod shrubland with scattered emergent Hakea and Acacia shrubs; and
- Association 1 – *Acacia spp.*, *Eremophila spp.* Sparse shrubland over tussock grasses.

Desktop searches of DBCA and WA Herbarium databases identified the presence/potential presence of 22 conservation significant flora within the 40 km Study Area, being:

- | | |
|--|--|
| • <i>Beyeria lapidicola</i> (P1) | • <i>Indigofera rotula</i> (P3) |
| • <i>Calandrinia mirabilis</i> (P1) | • <i>Maireana prosthocochaeta</i> (P3) |
| • <i>Eremophila anomala</i> (P1) | • <i>Olearia mucronate</i> (P3) |
| • <i>Eremophila congesta</i> (P1) | • <i>Prostanthera ferricola</i> (P3) |
| • <i>Eremophila regia</i> (P1) | • <i>Ptilotus chrysocomus</i> (P1) |
| • <i>Euryomyrtus inflata</i> (P3) | • <i>Ptilotus luteolus</i> (P3) |
| • <i>Goodenia lyrate</i> (P3) | • <i>Sida picklesiana</i> (P3) |
| • <i>Goodenia modesta</i> (P3) | • <i>Stackhousia clementii</i> (P3) |
| • <i>Hibiscus sp. Perrinvale Station (J. Warden & E. Ager WB 10581)</i> (P1) | • <i>Thryptomene sp. Leinster (B.J. Lepschi & L.A. Craven 4362)</i> (P3) |
| • <i>Homalocalyx echinulatus</i> (P3) | • <i>Tribulus adelacanthus</i> (P3) |
| • <i>Indigofera gilesii</i> (P3) | • <i>Vittadinia pustulata</i> (P3) |

No conservation significant flora species identified during the desktop assessment were situated within the Proposal Area with the nearest record being ~10km east of the Proposal Area.

The field surveys undertaken by GHD (2014), and Spectrum (2023a) recorded the following conservation significant species within the Survey areas: *Eremophila congesta* (P1)

- *Calytrix ?verruculosa* (P3)
- *Calytrix uncinata* (P3)
- *Calytrix ?creswellii* (P3)
- *Gunniopsis ?propinqua* (P3)
- *Indigofera sp. Gilesii (M.E. Trudgen 15869)* (P3)
- *Sauropus ramosissimus* (P3)

- *Homalocalyx echinulatus* (P3)
- *Ptilotus luteolus* (P1)
- *Stackhousia clementii* (P3)

None of the recorded species were located within the Proposal Area and none will be impacted by the Proposal given the closest identified species (*Eremophila congesta*) occurs 21 km southeast of the Proposal Area.

It is noted that *Calytrix uncinata* and *Gunniopsis propinqua* have since been delisted as Priority species.

No conservation significant flora species identified during the desktop assessments were positively identified within the Proposal Area during either of the field investigations by GHD (2014) and Spectrum (2023a).

GHD (2014) recorded 398 flora taxa (including subspecies and varieties) representing 53 families and 154 genera. This total comprised 391 native taxa and seven introduced taxa.

Spectrum (2023a) recorded 187 flora taxa representing 37 families and 94 genera during the field survey. Of the 187 flora taxa, 3 were introduced weeds.

None of the introduced species identified are listed as a Declared Pest under the *Biosecurity and Management Act 2007* or a Weed of National Significance (WoNS).

Fauna

The Proposal Area comprises of three fauna habitat types as described by GHD (2014):

- Acacia shrubland over hummock grasses (0.36 ha);
- Acacia shrubland over tussock grasses (5.69 ha); and
- Chenopod shrublands (0.87 ha).

These habitat types are well represented in the immediate vicinity of the Proposal Area and in the broader Murchison region.

38 and 45 vertebrate fauna species were recorded during field surveys by GHD (2014) and Spectrum (2023b), respectively.

Database searches identified 7 conservation significant fauna species records (4 birds and 3 mammals) within the 40km Study Area, none of which were located within the Proposal Area. The nearest record (from 2013) was a Grey Falcon located 4.6 km west of the Proposal Area. Field Surveys by GHD (2014) and Spectrum (2023b) did not identify any conservation significant species within the Proposal Area.

A targeted Malleefowl survey undertaken by Spectrum (2023d) found no evidence or secondary evidence of Malleefowl within the Proposal Area.

Ecological Communities

A desktop search of the DBCA database and EPBC Protected Matters database for Threatened Ecological Communities (TEC) and Priority Ecological Communities (PEC) was undertaken within 40km of the Proposal Area. No TECs were identified, and four PECs occur within 40km of the Proposal area. One PEC intersects the Proposal Area being:

- Paroo Calcrete – Paroo Calcrete groundwater assemblage type on Carey palaeodrainage on Paroo Station (Priority 1).

All PECs are related to Calcrete Groundwater Assemblages of subterranean invertebrates and will not be impacted by the clearing of vegetation.

None of the vegetation surveyed by GHD (2014) and Spectrum (2023a) is representative of a TEC or PEC.

The native vegetation proposed to be cleared is not considered to provide a high level of biological diversity with no significant flora and fauna species identified within the Proposal Area or immediate surrounds. The clearing is adjacent to the existing highway and will not further impact on ecological linkages within the local area with the vegetation types and fauna habitat types well represented within the surrounding area and in the broader Murchison region.

The proposed clearing is not at variance to this Principle.

Methodology

- Biological Survey (GHD, 2014)
- Biological Survey (Spectrum, 2023)
- Biological Survey (Spectrum, 2023b)
- Targeted Flora Survey (Spectrum, 2023c)
- Targeted Fauna Survey (Spectrum, 2024d)
- DCCEEW Protected Matters Search Tool Report
- Department of Natural Resources and Environment (2002)
- Government GIS Shapefiles:
 - DBCA Threatened and Priority Ecological Community database search (Accessed 04/12/2023)
 - DBCA Threatened and Priority flora database search (Accessed 04/12/2023)
 - DBCA Threatened and Priority fauna database search (Accessed 04/12/2023)
 - Western Australia Herbarium database search (Accessed 04/12/2023)

(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 at variance to this Principle.

Assessment

Three native vegetation fauna habitat types were recorded within the Proposal Area during the biological survey, with habitat types aligning to mapped native vegetation associations (GHD, 2014). Habitats include:

- Acacia shrubland over hummock grasses (0.36 ha);
- Acacia shrubland over tussock grasses (5.69 ha); and
- Chenopod shrublands (0.87 ha).

These habitat types are well represented in the immediate vicinity of the Proposal Area and in the broader Murchison region.

Desktop searches by Spectrum (2023b) identified nine conservation significant fauna species that are known to, or may occur within the Proposal Area, being:

- Bilby (*Macrotis lagotis*);
- Long-tailed Dunnart (*Antechinomys longicaudata*);
- Brush-tailed Mulgara (*Dasycercus blythi*);
- Malleefowl (*Leipoa ocellata*);
- Grey Falcon (*Falco hypoleucos*);
- Southern Whiteface (*Aphelocephala leucopsis*);
- Pacific Swift (*Apus pacificus*);
- Peregrine Falcon (*Falco peregrinus*);
- Norther Shield-backed Trapdoor Spider (*Idiosoma clypeatum*).

All species were determined by Spectrum (2023b) as having a very low likelihood of occurrence post survey due to no suitable habitat within the Proposal Area, with the exception of Malleefowl, Grey Falcon, Southern Whiteface, Pacific Swift and Peregrine Falcon.

No sightings of conservation significant species were made within the Proposal Area during the biological surveys and no sightings of Malleefowl or secondary evidence in the form of mounds were identified during the fauna survey (Spectrum, 2023b) and targeted Malleefowl pre-clearance assessment (Spectrum, 2023d).

The Grey Falcon occupies diverse habitats and has the potential to occur in the habitats present for foraging. No suitable nesting habitat was recorded, and no sightings or evidence of the species was recorded during the survey by Spectrum (2023).

The Peregrine Falcon occupies diverse habitats and has the potential to occur within the Proposal Area. No suitable nesting habitat was recorded, and no sightings or evidence of the species was recorded during the survey by Spectrum (2023b).

One Southern Whiteface individual was observed during the biological survey (Spectrum, 2023b), however this individual was 120 km west of the Proposal Area. Southern Whiteface has a wide distribution across Australia.

The Pacific Swift has a wide distribution across all states and territories of Australia and is almost exclusively aerial. Given the wide distribution and that no individuals were sighted during the field survey the removal of vegetation is unlikely to have a significant impact on this species.

No species of conservation significance were sighted within the Proposal Area.

With the Project Area adjacent to the existing roadway, the proposed clearing will not disturb or break ecological linkages or large areas of intact vegetation.

Whilst the Proposal Area may provide some habitat value for fauna, including conservation significant species, all habitat types are well represented locally and regionally. The clearing of 6.92 ha of native vegetation adjacent to the existing roadway does not represent significant habitat for fauna indigenous to Western Australia and will not impact on the maintenance of significant fauna.

The proposed clearing is not at variance to this Principle.

Methodology

- Biological Survey (GHD, 2014)
- Biological Survey (Spectrum, 2023b)
- Targeted Fauna Survey (Spectrum, 2023d)
- DCCEE Protected Matters Search Tool Report
- Government GIS Shapefiles:
 - DBCA Threatened and Priority fauna database search (Accessed 04/12/2023)

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

Proposal is not at variance to this Principle.

Assessment

A search of DBCA databases did not identify any known records of Threatened flora species within the 40km study area. Biological Surveys by GHD (2013) and Spectrum (2023a and 2023c) did not identify any Threatened species within the Proposal Area.

Given the above, no Threatened species are not likely to occur in the Proposal Area.

The proposed clearing is not at variance to this Principle.

Methodology

- Biological Survey (GHD, 2013)
- Biological Survey (GHD, 2014)
- Biological Survey (Spectrum, 2023a)
- Targeted Flora Survey (Spectrum, 2023c)
- Government GIS shapefiles:
 - DBCA Threatened flora database search (Accessed 4 December 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.

Assessment

None of the vegetation surveyed by GHD (2013) and Spectrum (2023a) is representative of a TEC or PEC.

A search of the EPBC protected matters database and DBCA TEC/PEC database within 40km of the Proposal Area, identified the following Priority Ecological Communities listed by the Department of Biodiversity and Conservation and Attractions (DBCA):

- Paroo Calcrete – Paroo Calcrete groundwater assemblage type on Carey palaeodrainage on Paroo Station (Priority 1);
- Millbillillie Bubble Well Calcrete - Millbillillie Bubble Well groundwater calcrete assemblage type on Carey palaeodrainage on Millbillillie Station (Priority 1);
- Wiluna West BIF (Wiluna North 01 and Wiluna West Central 01)- Wiluna West vegetation complexes (banded ironstone formation) (Priority 1);
- Lake Violet Calcrete - Lake Violet south and Lake Violet calcrete groundwater assemblage types on Carey palaeodrainage on Millbillillie Station (Priority 1).

All PECs are related to Calcrete Groundwater Assemblages of subterranean invertebrates and will not be impacted by the clearing of vegetation.

The Proposal Area does intersect the Paroo Calcrete PEC, however given that the project will remove vegetation from the area that is adjacent to an existing cleared road, no impact on the PEC is expected.

The proposed clearing is not at variance to this Principle.

Methodology

- Biological Survey (GHD, 2014)
- Biological Survey (Spectrum, 2023a)
- Community specific conservation listing advice and recovery plans
- Government GIS shapefiles:
 - DBCA Threatened Ecological Community database search (Accessed 20 November 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.

Assessment

The proposal is located within the Murchison IBRA region and Eastern Murchison sub-region.

The National Objectives and Targets for Biodiversity Conservation recognise that the retention of 30% or more of the pre-clearing extent of each ecological community is necessary if Australia's biological diversity is to be protected (Commonwealth of Australia 2001) except in constrained areas (Perth & Peel) where 10% representation should be maintained.

According to the broadscale mapping undertaken by Beard (Shepherd et al 2001), the project area lies within vegetation association 8, 29 and 204, described as being:

- 18: Low woodland; mulga (*Acacia aneura*);
- 29: Sparse low woodland; mulga, discontinuous in scattered groups;
- 204: Succulent steppe with open scrub; scattered mulga & *Acacia sclerosperma* over saltbush & bluebush.

The Proposal Area is not located within a "constrained area", with all three vegetation types having greater than 30% of pre-European vegetation remaining at all levels, as summarised in the Table below.

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. 18	Statewide	694,638.14	346,425.77	49.87	6.77
	IBRA Bioregion Murchison	961.99	961.99	100.00	-
	IBRA Sub-region Eastern Murchison	961.99	961.99	100.00	-
	Local Government Authority Shire of Wiluna	-	-	-	-
Veg Assoc No. 29	Statewide	7,903,991.45	7,898,973.24	99.94	6.28
	IBRA Bioregion Murchison	2,956,382.06	2,955,695.34	99.98	3.15
	IBRA Sub-region Eastern Murchison	796,235.27	796,026.03	99.97	10.51
	Local Government Authority Shire of Wiluna	2,027,699.12	2,027,505.14	99.99	9.99
		Shire of Meekatharra 2,854,683.44	2,851,596.18	99.89	4.99
Veg Assoc No. 204	Statewide	199,475.40	198,735.10	99.63	6.75
	IBRA Bioregion Murchison	185,601.68	184,861.37	99.60	7.26
	IBRA Sub-region Eastern Murchison	75,042.26	74,305.79	99.02	11.47
	Local Government Authority Shire of Wiluna				
		39,116.94	38,380.47	98.12	-

The proposed works involve the widening of unsealed shoulders and construction of drainage features parallel to the existing Goldfields Highway. The vegetation within the Proposal Area is well represented

locally and regionally and is not considered significant as a remnant of native vegetation, as summarised in the Table above.

The proposed clearing is not at variance to this Principle.

Methodology

- Aerial photography
- Government GIS shapefiles:
 - Pre-European vegetation (Accessed 20 November 2023)
 - IBRA Regions (Accessed 20 November 2023)
 - IBRA Sub-regions (Accessed 20 November 2023)
- Statewide Vegetation Statistics (Government of Western Australia 2019)

(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.

Assessment

No defined drainage channels or rivers listed under the RIWI Act occur within the study area. There are a number of minor drainage channels that intersect the survey area, including Bubble Creek, however none of these occur within the Proposal Area.

No drainage lines or vegetation associated with wetlands or watercourses were identified during biological surveys conducted by GHD (2013, 2014) as occurring within the Proposal Area or that may be impacted by proposed clearing.

No significant surface water features occur within or adjacent to the Proposal Area. The proposed works will not result in clearing of vegetation growing in, or in association with, a watercourse or wetland.

The proposed clearing is not at variance to this Principle.

Methodology

- Biological Survey (GHD, 2013 & 2014)
- Government GIS shapefiles:
 - Ramsar Wetlands (Accessed 20 November 2023)
 - Important Wetlands (Accessed 20 November 2023)
 - Watercourses (Accessed 20 November 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.

Assessment

The Proposal Area is located within the Salinaland Plains zone of the Murchison Province Soil–Landscape Zones. The Salinaland Plains zone is characterised by Sandplains on granitic rocks of the Yilgarn Craton. The soils consist of red sandy earths with some red brown hardpan shallow loams, salt lake soils and red shallow sandy duplexes (GHD, 2013).

Clearing of up to 6.92 ha of native vegetation is not expected to substantially increase runoff or sedimentation.

The CSIRO ASRIS Acid Sulphate Soils Shapefiles indicated an extremely low risk of acid sulphate soils within the Proposal Area and surrounds. The proposed works are not anticipated to have an impact on soil acidity.

Proposed works are intended to only alter drainage and surface water flows locally. Surface flows will be directed to existing flood ways and are not anticipated to lead to increased erosion or degradation as a consequence of the works.

Wind erosion and dust will be managed via the Construction Environmental Management Plan for the life of the project.

The proposed clearing is not likely to lead to a long-term increase in wind erosion caused by appreciable land degradation.

The proposed clearing is not likely to be at variance to this Principle.

Methodology

- Biological Survey (GHD, 2013)
- Government GIS Shapefiles:
 - Acid Sulphate Soil risk mapping (Accessed 20 November 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.

Assessment

A desktop assessment did not identify any listed or proposed Nature Reserves or Conservation Areas (including Bush Forever Sites, Important Wetlands, DBCA Managed Lands) within 40 km of the Proposal Area. The closest area being the Wanjarri Nature Reserve, located over 100 km south-east of the Proposal Area.

Two Landgate Reserves are located within close proximity of the Proposal Area, being the Rabbit Proof Fence (directly adjacent to the project) and Peak Hill Stock Route (located 3.7 km north of the Proposal Area). Neither of these two reserve areas will be impacted by the proposed works.

No impact to known or proposed Conservation Reserves/Areas or features are anticipated.

The proposed clearing is not at variance to this Principle.

Methodology

- Biological Survey (GHD, 2014)
- Government GIS Shapefiles:
 - DBCA Legislated Lands and Waters & Lands of Interest (DBCA-011) (Accessed 20 November 2023)
 - Bush Forever Area (DPLH-019) (Accessed 20 November 2023)
 - Ramsar Wetlands (DBCA-010) (Accessed 20 November 2023)
 - Important Wetlands (DBCA-045) (Accessed 20 November 2023)
 - Landgate (LGATE-227) Reserves (July 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.

Assessment

The Proposal Area is located in the East Murchison Groundwater Proclamation Area.

The proposal does not occur within any Surface Water or Public Drinking Water Source Areas.

No impact to drinking water source areas is likely given the clearing is restricted to within the Proposal Area and will not intersect groundwater.

No watercourses are located within or adjacent to the Proposal Area and the nearest wetland (Lake Annean) is located 139 km south west of the Proposal Area.

No riparian vegetation was identified during the field survey (GHD, 2014).

The clearing of 6.92 ha of vegetation will not cause deterioration to the quality of surface or underground water.

The proposed clearing is not at variance to this Principle.

Methodology

- Biological Survey (GHD, 2014)
- Government GIS Shapefiles:
 - RIWI Act, Surface Water Areas and Irrigation Districts (Accessed 2 December 2023)
 - RIWI Act, Groundwater Areas (Accessed 2 December 2023)
 - Public Drinking Water Source Area – DWER-033 (Accessed 2 December 2023)

(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.

Assessment

The Meekatharra-Wiluna area experiences low rainfall and ephemeral surface drainage. The topography of the Proposal Area is typically flat, and forms part of a broad watershed on the interior plateau of Western Australia. The Proposal Area and surrounds consist of mostly extensive plains with low hill ranges and plateaux (GHD, 2014).

The Proposal Area averages 261 mm of rainfall per year with very high evaporation rates (x10 rainfall).

Rainfall within the region is unreliable, drainage lines are predominantly ephemeral and no permanent wetlands occur within the Proposal Area.

The proposed works are aimed to facilitate the direction of flows away from the road alignment and into existing floodways. The incidence or intensity of flooding is not likely to be increased due to the proposed clearing of native vegetation.

The proposed clearing is not at variance to this Principle.

Methodology

- EIA and Management Plan (GHD, 2014)
- BoM Website (Accessed 2 December 2023)

6 REHABILITATION, REVEGETATION & OFFSETS

6.1 Revegetation and Rehabilitation

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

6.2 Offset Proposal

No offset proposal is required as the proposed clearing will not result in significant residual impacts to native vegetation within the region.

7 COMPLIANCE WITH CPS 818

The clearing associated with the proposal is not at variance with the Clearing Principles. Additional management actions under CPS 818 are detailed in Table 66.

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

Impact of Clearing	Yes/No or NA	Further Action Required
1. The CDR indicates that the clearing is 'At Variance' or 'May be at Variance' with one or more of the Clearing Principles.	No	No further action required.
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), <u>Hygiene Checklists</u> and <u>Vehicle, Plant and Machinery Hygiene Register Template</u> 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. CEMP requires that all vehicles and machinery arrive on site clean and that weed infested mulch be removed from site, therefore there is a low risk of weed spread.
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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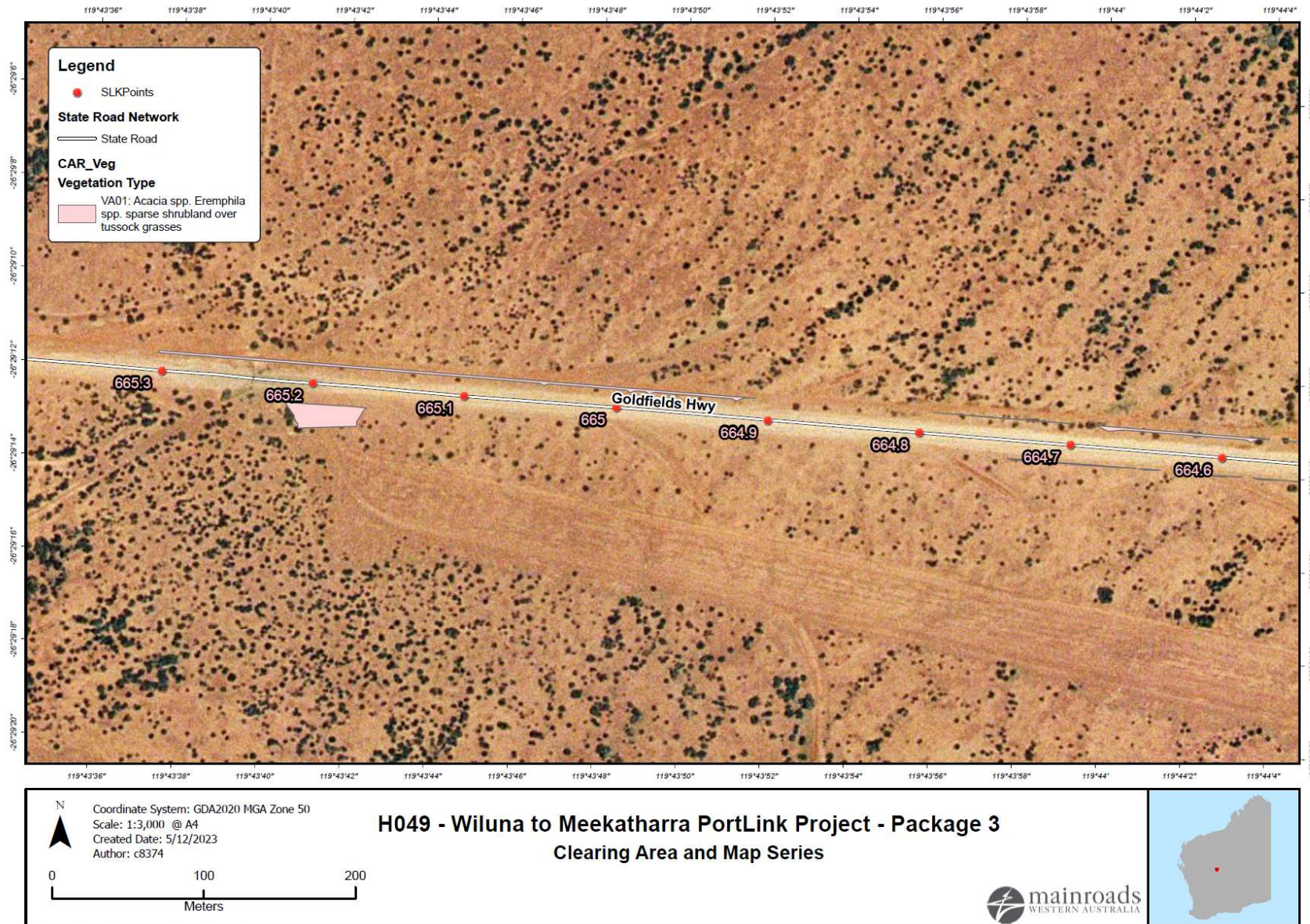
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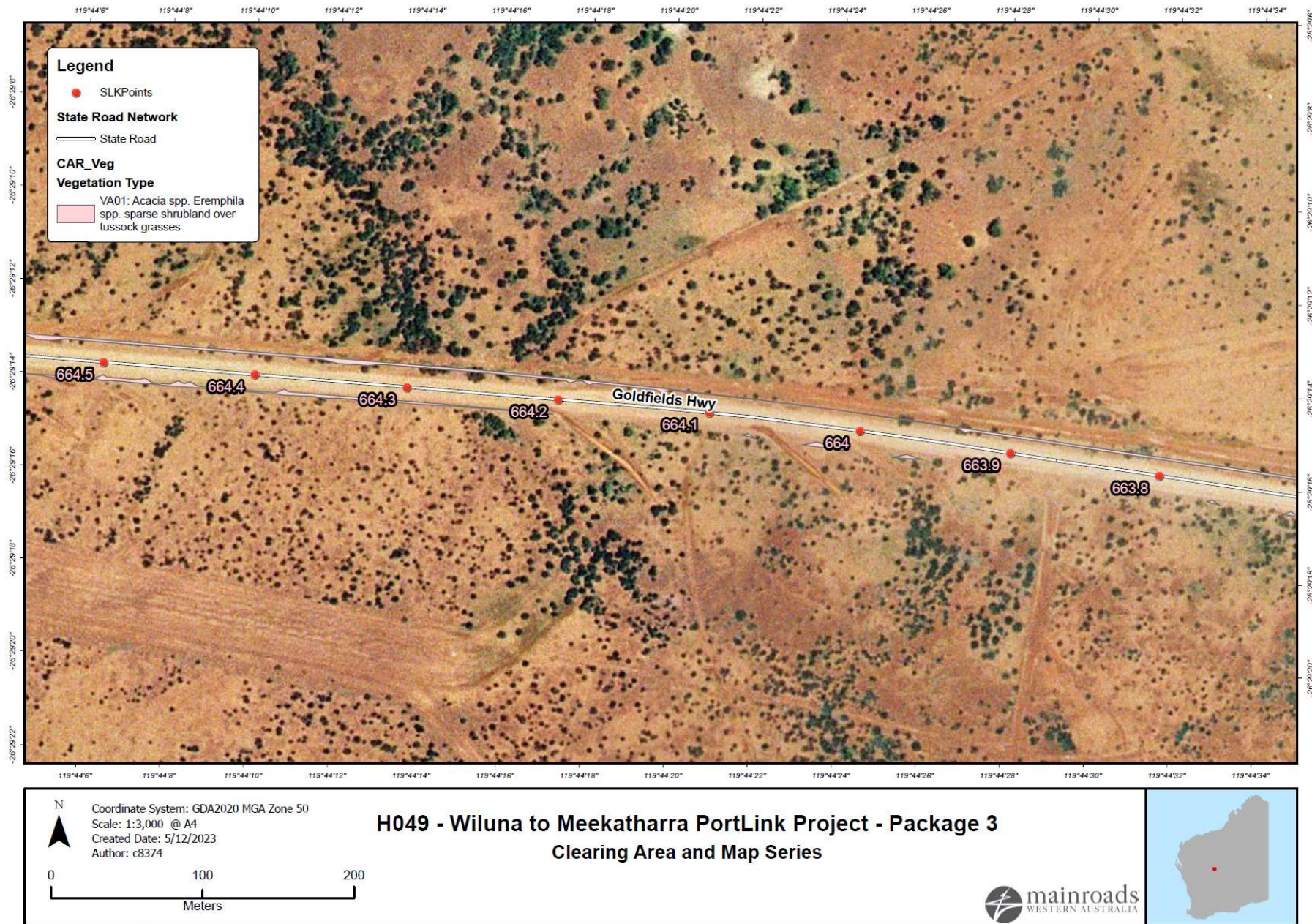
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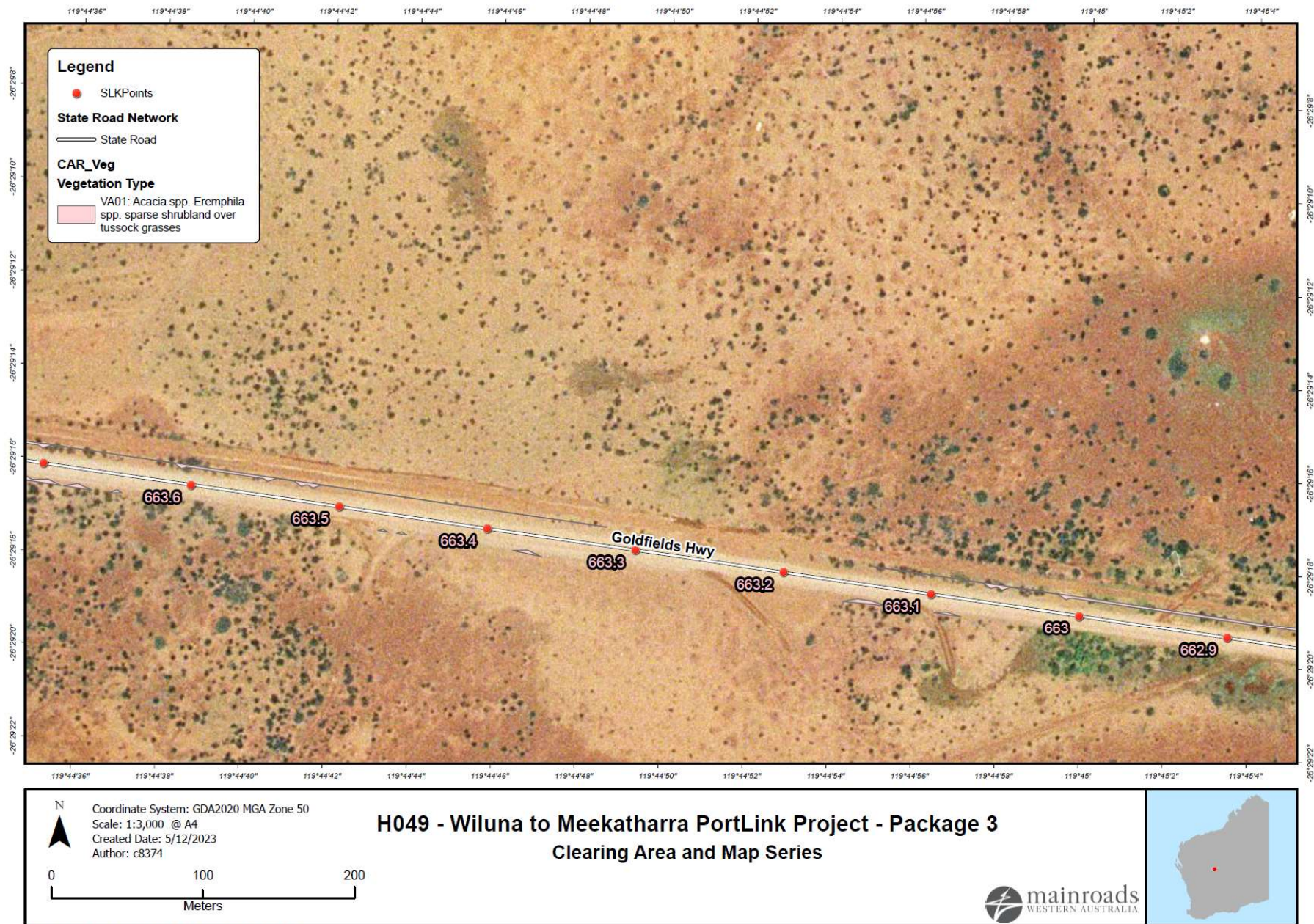
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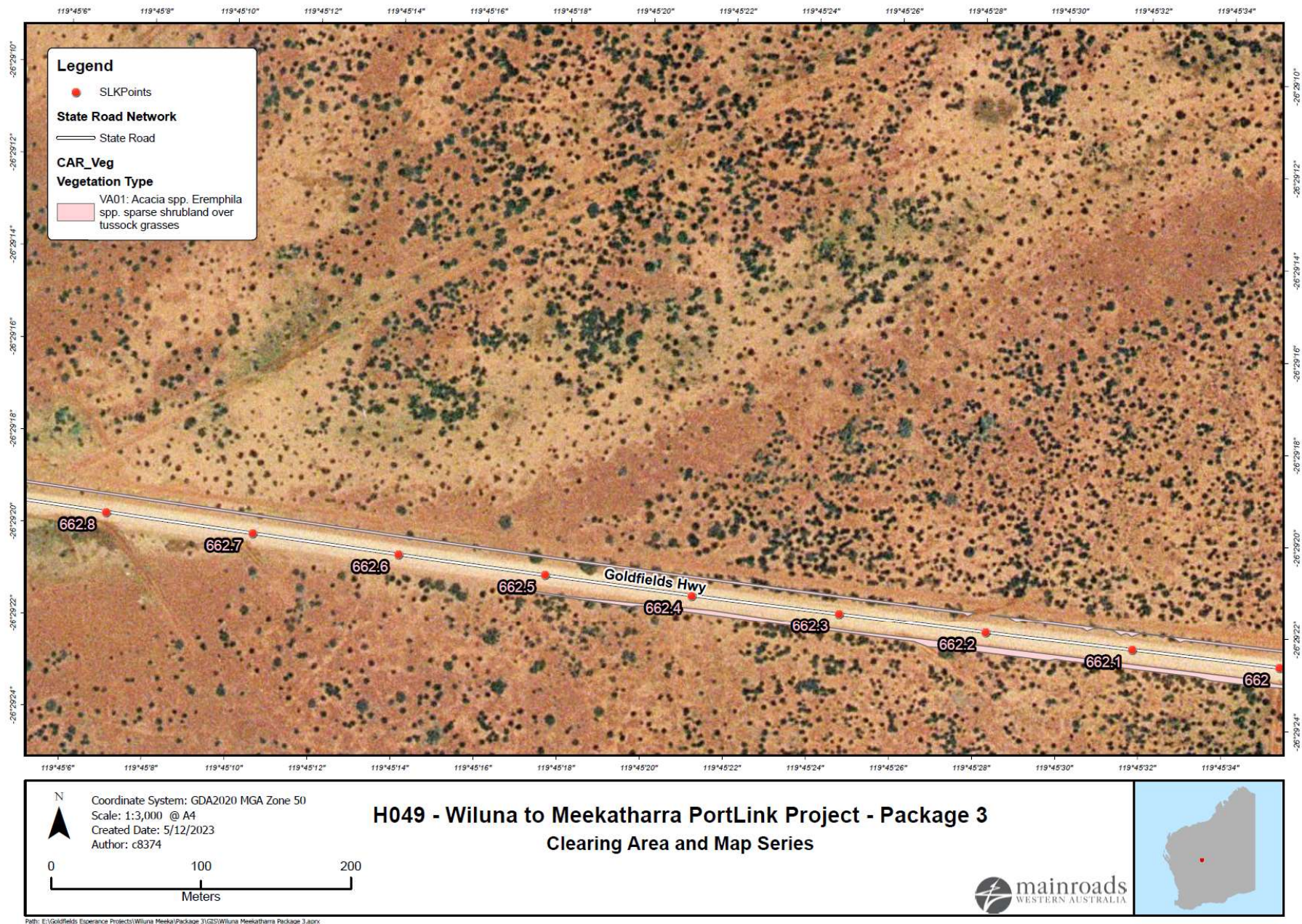
9 APPENDICES

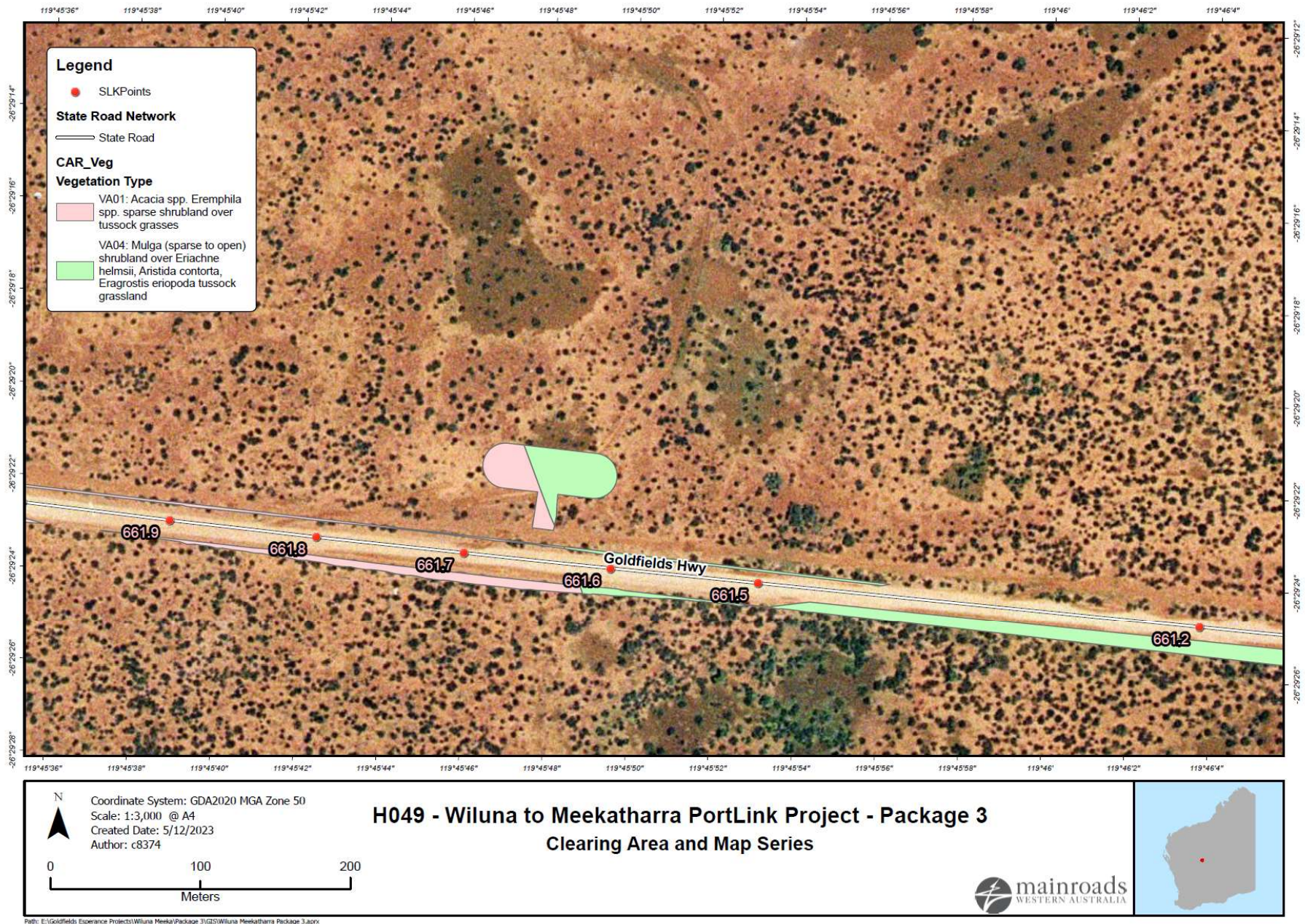
Appendix 1: Vegetation within Clearing Area/Development Envelope

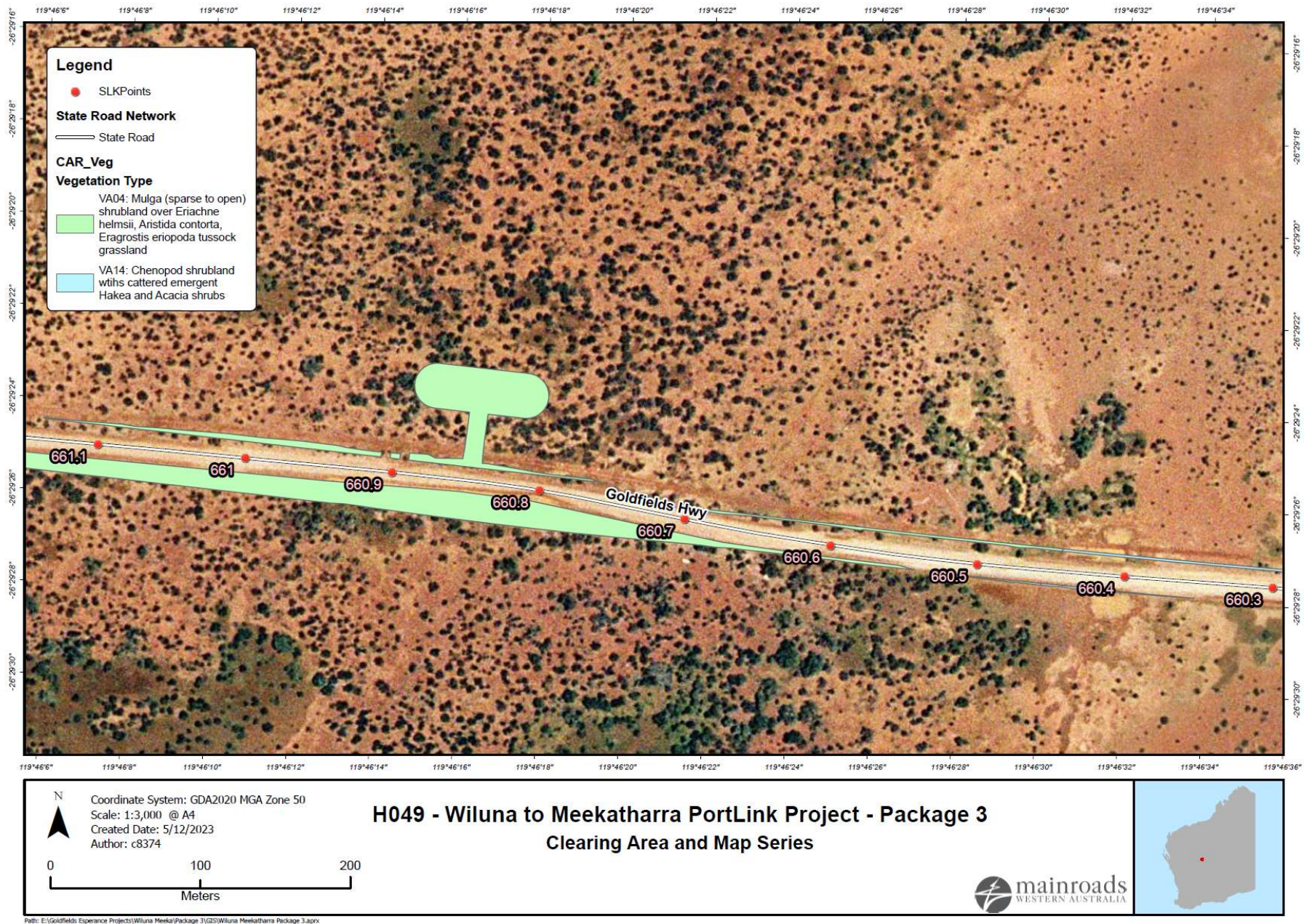


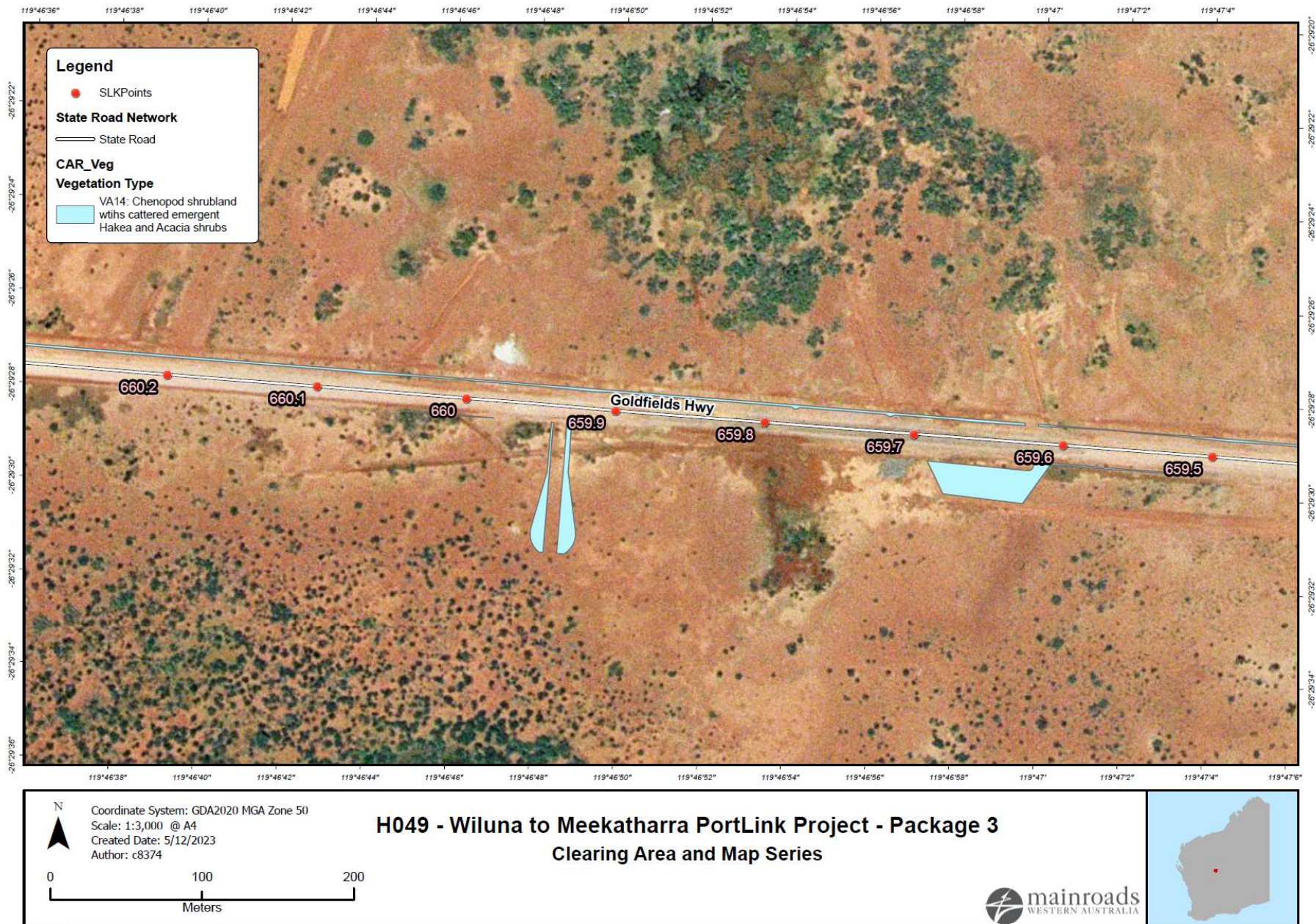


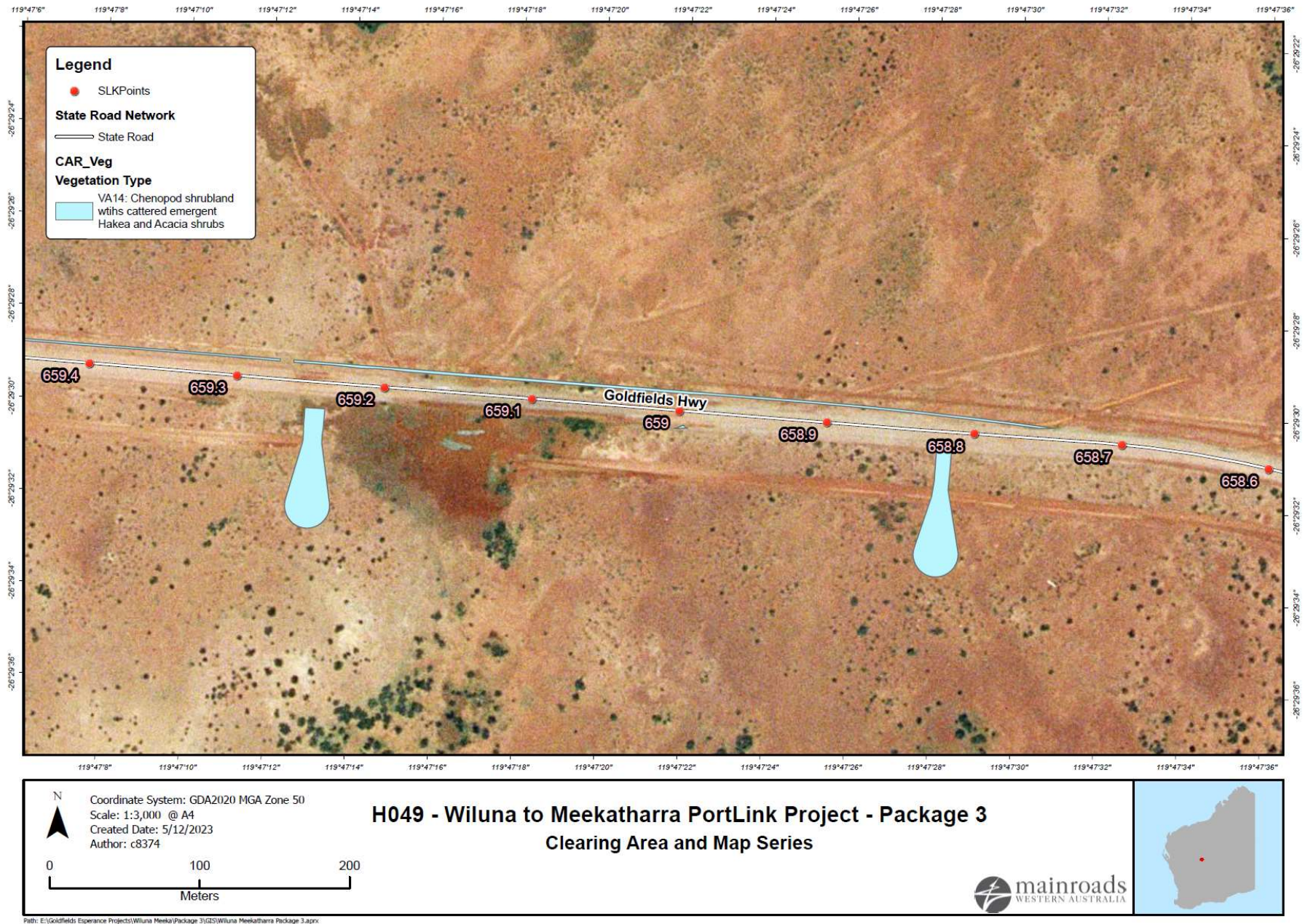


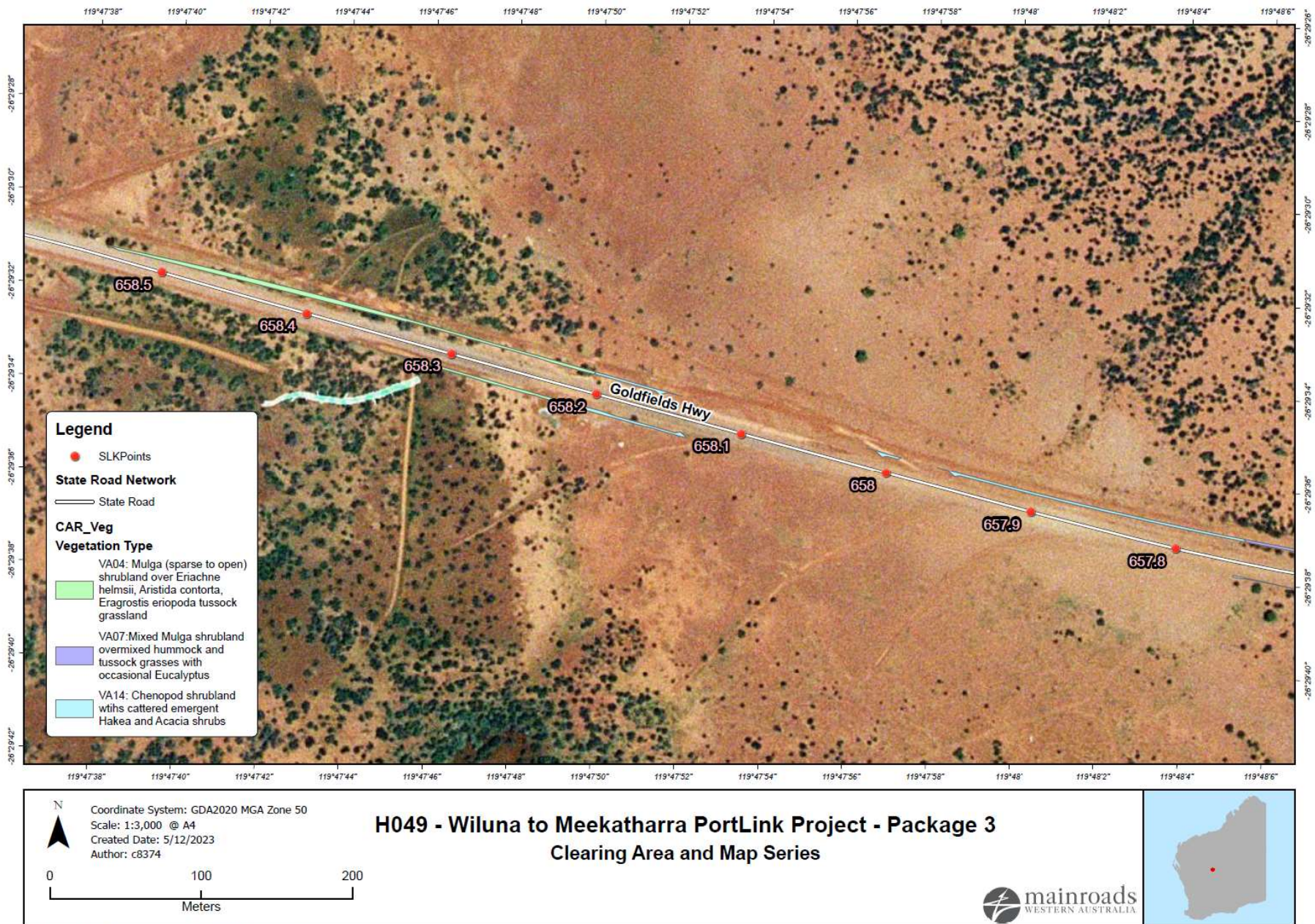


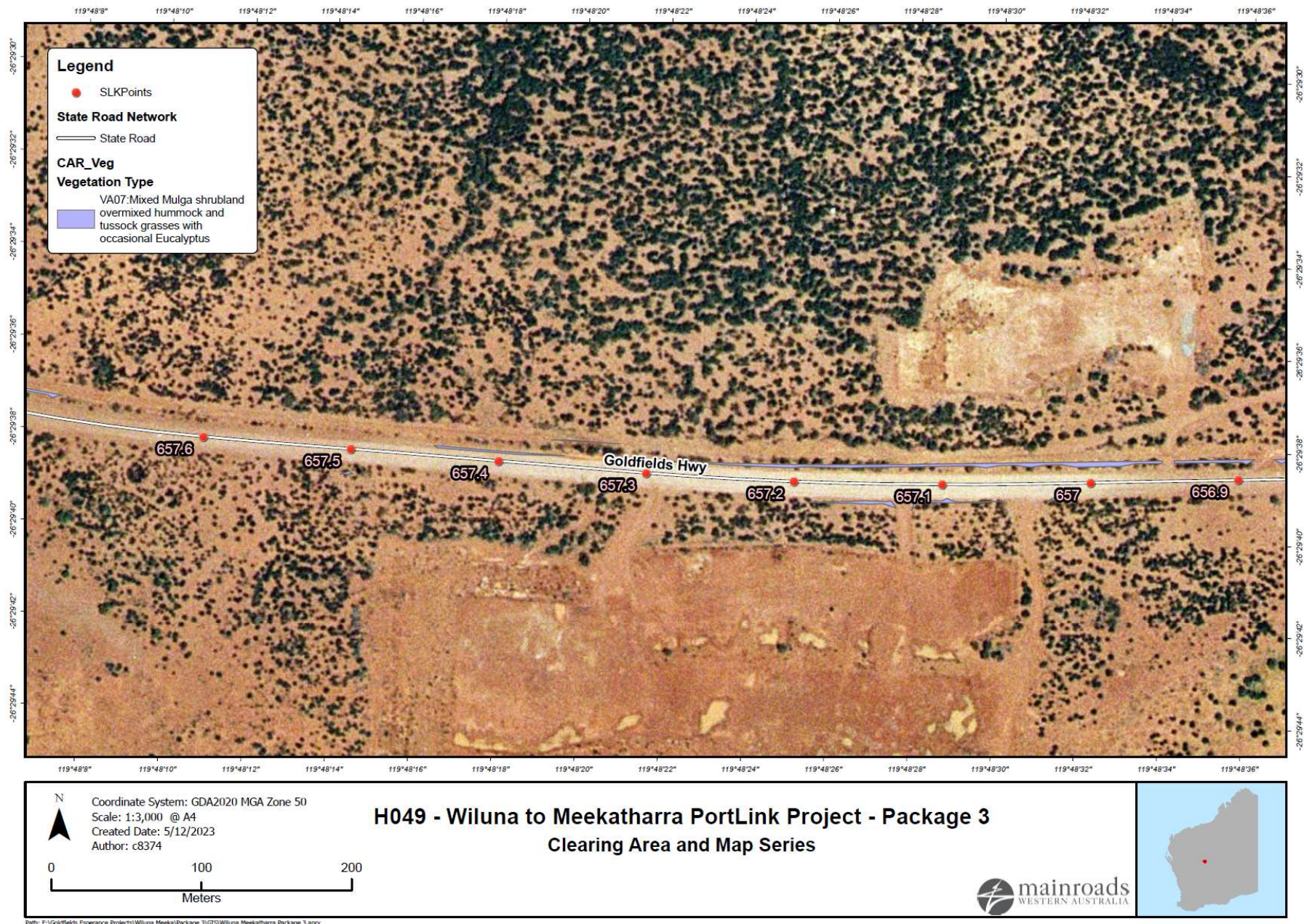


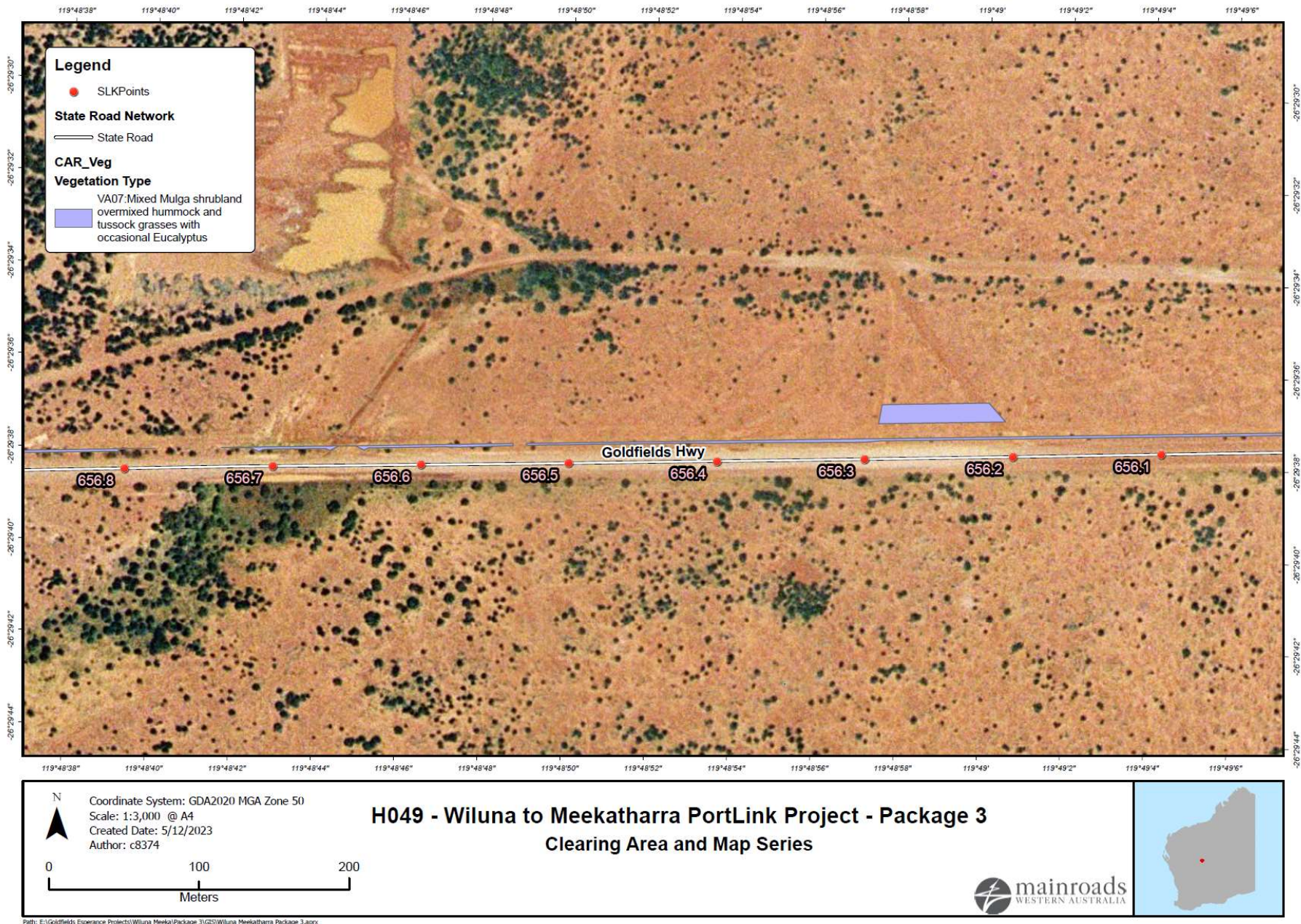


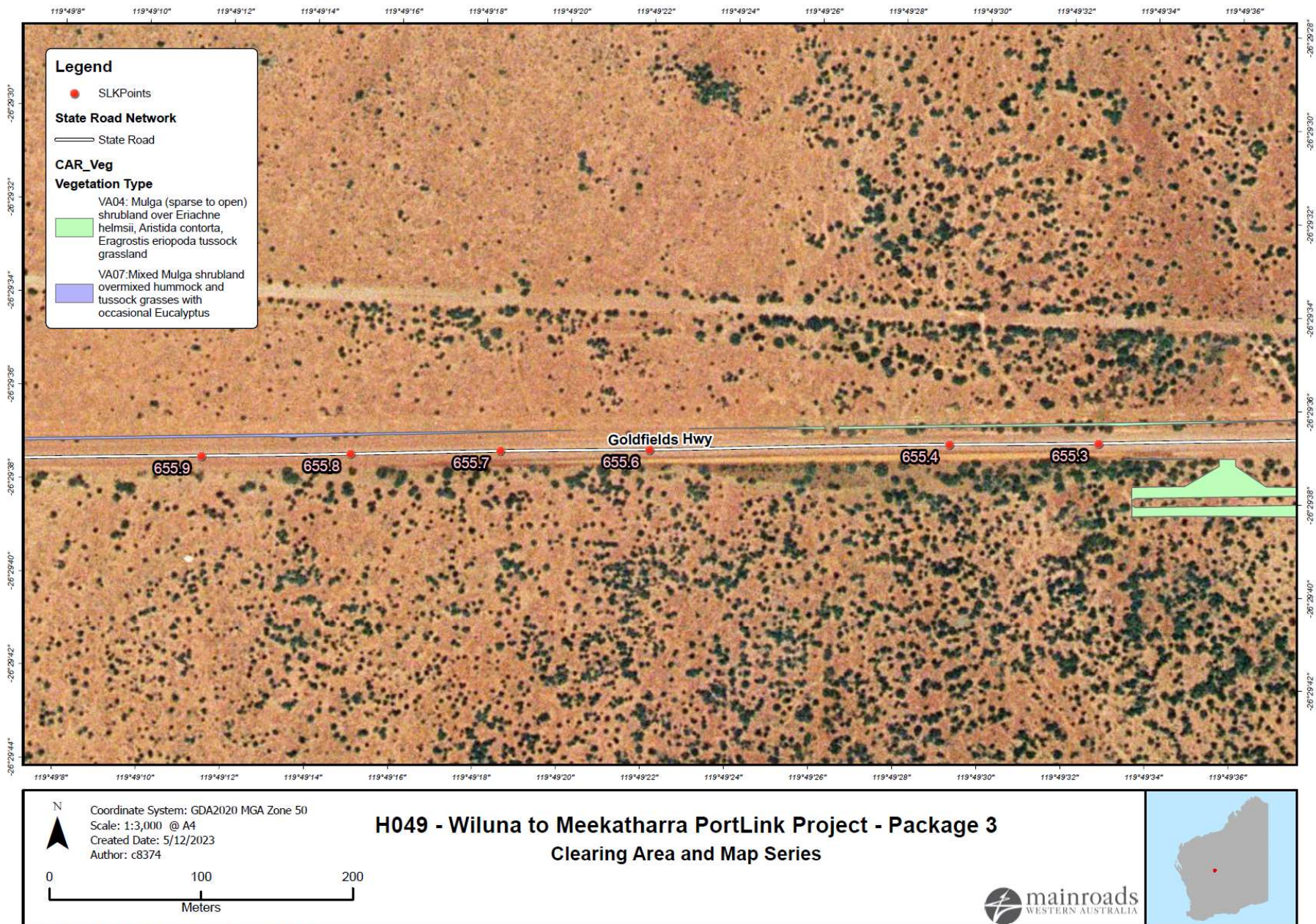


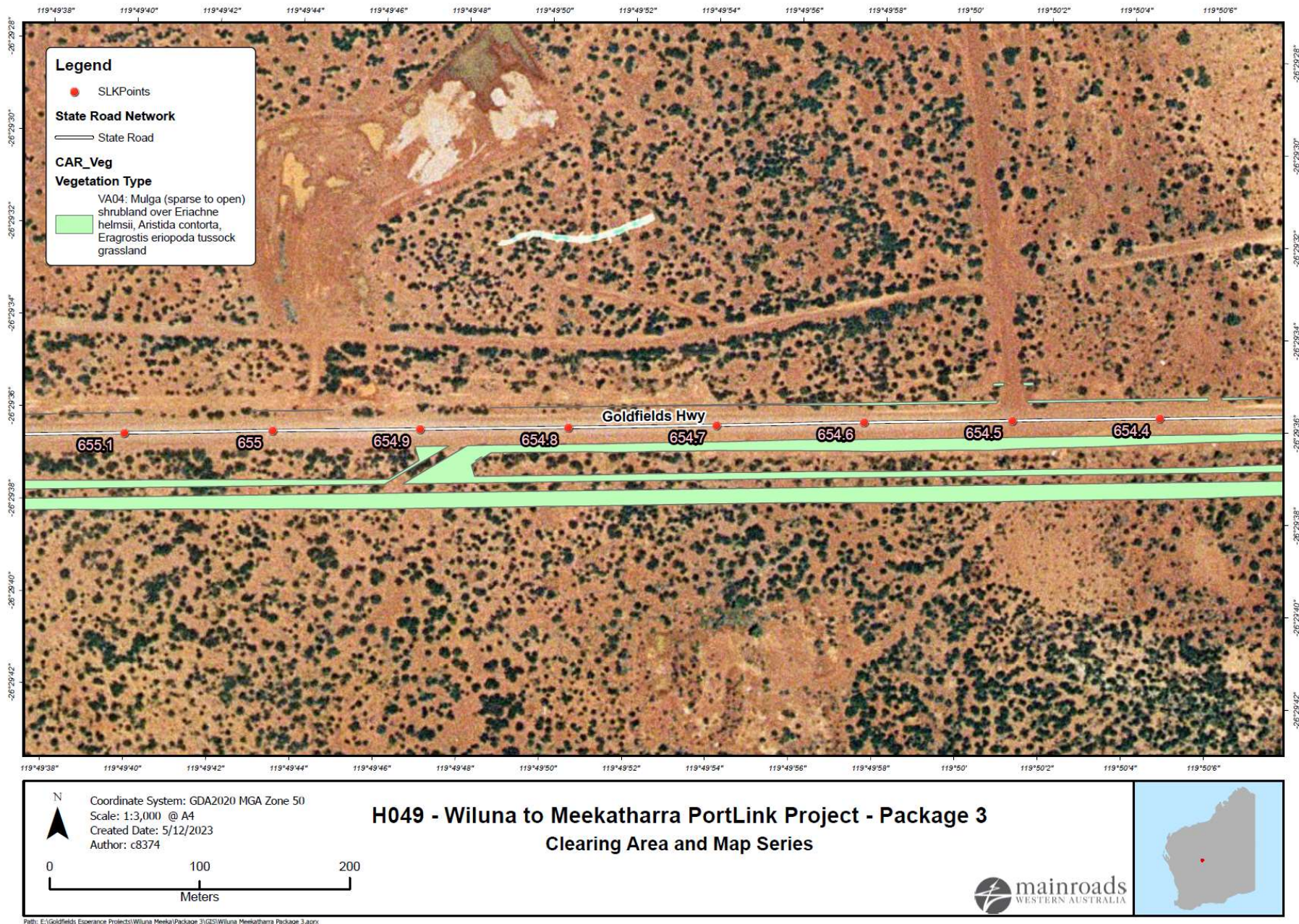


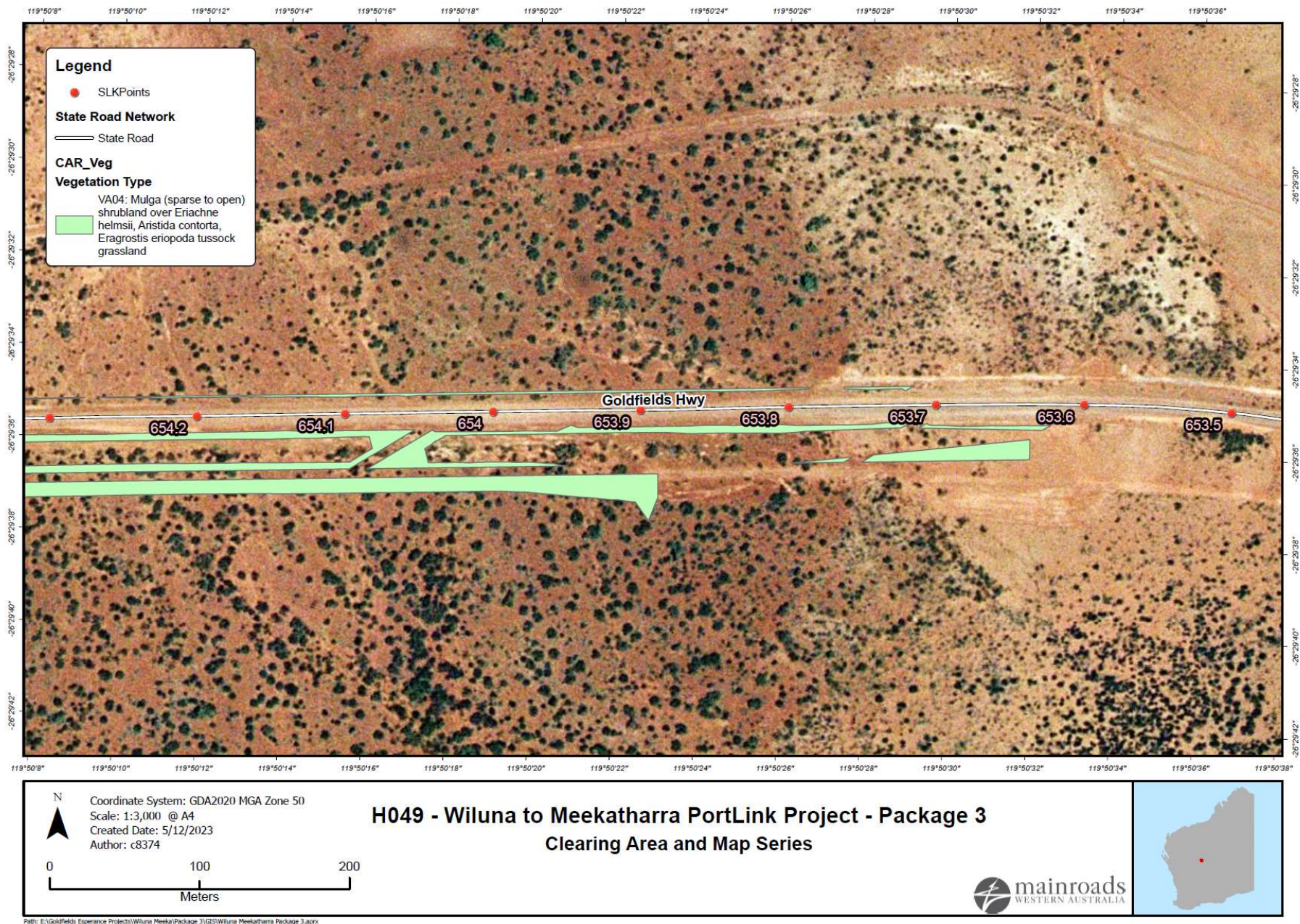












Appendix 2: DBCA Threatened Flora and Fauna Database Searches

