



NGH

LAND CATEGORY ASSESSMENT

Burrawong Wind Farm

October 2021

Project Number: 20-468



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LAND CATEGORY ASSESSMENT

INTRODUCTION

NGH were engaged by Windlab to prepare a Land Category Assessment (LCA) for the proposed Burrawong Wind Farm. The proposal would be subject to an EIS assessed under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). To satisfy the requirements of the *Biodiversity Conservation Act 2016* (BC Act), a Biodiversity Development Assessment Report (BDAR) would be prepared for the proposal.

Section 6.8(3) of the BC Act determines that the Biodiversity Assessment Method (BAM) is to exclude the assessment of the impacts of clearing of native vegetation on Category 1 - Exempt Land (within the meaning of Part 5A of the *Local Land Services Act 2013* (LLS Act)). Boundaries mapping Category 1 - Exempt Land on the Native Vegetation Regulatory Mapping are not yet publicly available. During the transitional period, accredited assessors may establish the categorisation of land for the agency head to consider, following the method utilised to develop the Native Vegetation Regulatory Map.

Category 1 – Exempt Land is defined as:

- Land cleared of native vegetation at 1 January 1990 or lawfully cleared of vegetation between 1 January 1990 and 25 August 2017;
- Low Conservation Grasslands;
- Land containing only low conservation groundcover (not being grasslands);
- Native vegetation identified as regrowth in a Property Vegetation Plan under the repealed Native Vegetation Act 2003; or
- Land biodiversity certified under the BC Act.

Category 2 – Regulated Land is defined as:

- Land not cleared as at 1st January 1990 or unlawfully cleared after 1st January 1990;
- Native vegetation grown with the assistance of public funds;
- Land that is (or was previously) subject to a Private Native Forestry Plan or Private Native Forestry PVP;
- Grasslands that are neither low nor high conservation grasslands;
- Travelling stock reserves.

Additionally, two subcategories of Category 2 – Regulated Land are also relevant and include:

Category 2 Vulnerable Regulated Land, including:

- Steep or highly erodible land
- Protected riparian areas,
- Land susceptible to erosion, or land that is otherwise environmentally sensitive).

Category 2 Sensitive Regulated Land, including:

- Land subject to a private land conservation agreement
- A set aside under the Land Management Code
- Land subject to a biocertification conservation measure
- Land comprising an offset under a Property Vegetation Plan or set aside under a code under the Native Vegetation Act 2003
- Coastal wetlands and littoral rainforests (Coastal Management Act 2016)
- High conservation grassland

- Core Koala habitat identified in a plan of management (Koala Habitat Protection SEPP)
- Critically endangered plants and critically endangered ecological communities
- Ramsar wetlands (EPBC Act)
- Land subject to remedial action or conservation measures under the BC Act
- Land subject to a property, trust or conservation agreement
- Land recommended for listing as an Area of Outstanding Biodiversity Value
- Conservation Areas under the Southern Mallee Land Use Agreement
- Native vegetation that must be retained under the Plantation and Reafforestation Act 1999
- Land subject to a condition of development consent requiring the land to be set aside for conservation purposes under the Environmental Planning and Assessment Act 1979
- Rainforest and old growth forest.

METHOD

A desktop assessment of available spatial data, literature review of previous studies in the region and field observations were undertaken for the subject land to determine the ecological constraints, native vegetation communities and land class categories. A precautionary approach was used when identifying Category 2 – Regulated Land. Where data was conflicting, land was mapped as Category 2.

Desktop Assessment

A desktop assessment of the development site as Category 1 – exempt land and Category 2 – regulated land was undertaken using the following data sources:

- Aerial imagery of historic land use (Sourced from Spatial Services Delivery).
- 2017 V1.2 Land Use Dataset (Australian Land Use and management (ALUM) Classification Version 8 (Department of Planning, Industry and environment, 2020).
- NSW Woody Vegetation Extent and Foliage Projective Cover (FPC) 2011 (Office of Environment and Heritage, 2015).
- Sensitive Regulated and Vulnerable Regulated Lands (Native Vegetation Regulatory Map Portal, 2020).
- Riverina State Vegetation Mapping (VIS_ID 4469, DPIE 2020).
- Plant Community Types identified from NGH field assessments.

Site Assessment

A site assessment was conducted by a BAM accredited ecologist on the 8th and 9th December 2020. The site assessment included assessment and classification of Plant Community Types (PCTs), vegetation condition and ground-truthing of vegetation mapping according to the Biodiversity Assessment Method (BAM).

RESULTS

The entire subject land is zoned as Primary Production - RU1 (Appendix A.5).

The analysis of the above sources identified evidence areas of broad native vegetation modification resulting from agricultural land use as well as areas of native vegetation within the development site. The following table (Table 1) demonstrates how the above-mentioned layers were used in determining land category.

Table 1 Summary of data sources and interpretation

Data Source	Category 1 – Exempt Land	Category 2– Regulated Land
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Current aerial imagery	<ul style="list-style-type: none"> • Clear evidence of cropping • Clear evidence of significant groundcover modification 	<ul style="list-style-type: none"> • Woody vegetation evident in 1990 photography,
1990 aerial imagery	<ul style="list-style-type: none"> • Clear evidence of cropping. • Clear evidence of significant groundcover modification 	<ul style="list-style-type: none"> • Woody vegetation present in 1990
NSW Landuse 2017	Land use identified as: <ul style="list-style-type: none"> • Cropping 	Land use identified as: <ul style="list-style-type: none"> • Grazing native vegetation • Grazing modified pastures (within areas of sensitive regulated land) • Marsh/wetland • Lake
NSW Woody Vegetation Extent 2011	<ul style="list-style-type: none"> • Areas of woody vegetation regrowth that has occurred post 1990 following previous clearing events 	<ul style="list-style-type: none"> • Areas of woody vegetation mapped in NSW woody Vegetation extent layer
Plant Community Types (PCTs)	<ul style="list-style-type: none"> • Areas of woody vegetation regrowth that has occurred post 1990 following previous clearing events 	<ul style="list-style-type: none"> • PCTs 13, 15, 23, 44, 46, 57, 163, 170 and 173 identified from Riverina state vegetation mapping and site visit by ecologist
Native Vegetation Regulatory Map, 2017 <ul style="list-style-type: none"> • Sensitive regulated land • Vulnerable regulated land • Excluded land 	N/A	<ul style="list-style-type: none"> • All areas identified as vulnerable regulated land which included marsh wetlands and lake. • No areas mapped as sensitive regulated land or excluded land

Category 1 – Exempt Land

A large area of the subject land shows evidence of modification prior to 1990 and has been used continuously for cropping and agricultural activities, and can therefore be classed as Category 1 - Exempt Land (Table 1, Appendix A.1). A determining feature of agricultural use is a lack of woody vegetation regrowth in the majority of areas, as represented in the aerial imagery (both 1990 and current) and field observations. The preliminary site assessment confirmed presence of cropping and exotic species (Appendix A.3).

Category 2 – Regulated Land

Historic imagery shows areas of native vegetation present in 1990. The preliminary site assessment confirmed areas of native vegetation as;

- **PCT 13:** *Black Box - Lignum woodland wetland of the inner floodplains in the semi-arid (warm) climate zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion).*
- **PCT 15:** *Black Box open woodland wetland with chenopod understorey mainly on the outer floodplains in south-western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)*

- **PCT 23:** *Yarran tall open shrubland of the sandplains and plains of the semi-arid (warm) and arid climate zones*
- **PCT 44:** *Forb-rich Speargrass - Windmill Grass - White Top grassland of the Riverina Bioregion*
- **PCT 46:** *Curly Windmill Grass - speargrass - wallaby grass grassland on alluvial clay and loam on the Hay Plain, Riverina Bioregion*
- **PCT 57:** *Belah/Black Oak - Western Rosewood - Wilga woodland of central NSW including the Cobar Peneplain Bioregion*
- **PCT 163:** *Dillon Bush (Nitre Bush) shrubland of the semi-arid and arid zones*
- **PCT 170:** *Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones*
- **PCT 173:** *Sandplain mallee of central NSW*

Areas of PCT present in 1990 have been mapped as Category 2 -regulated Land.

Historic and current aerial imagery and Woody Vegetation Extent spatial data identified scattered paddock trees present in the subject land in 1990. These areas have been mapped as Category 2 - Regulated Land.

Native Regulatory mapping further identified areas of vulnerable lands within the Development Site(Appendix A.7) which has been classed as Category 2 – Regulated Land.

Conclusion

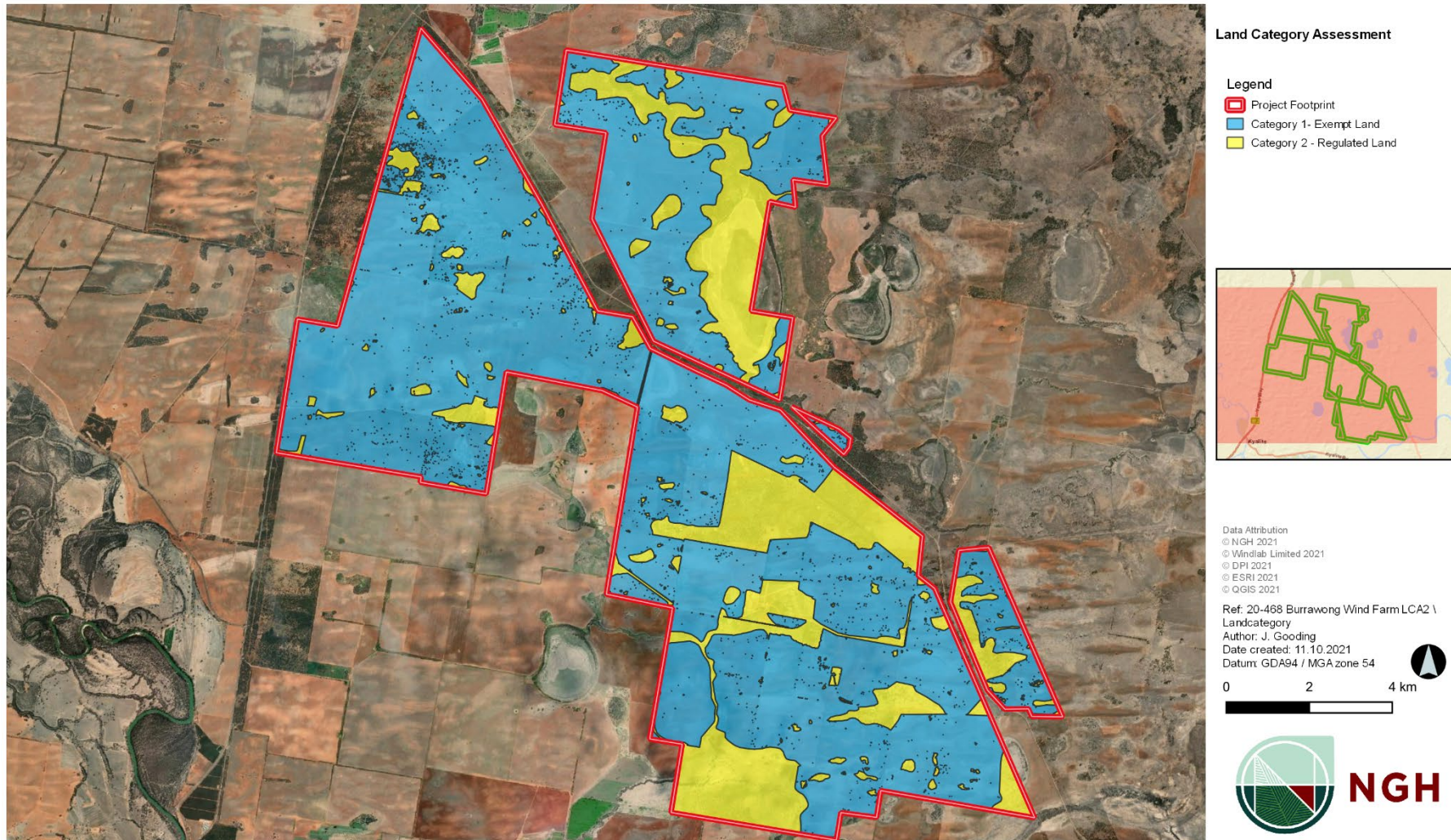
Based on the above data sources, there is evidence to suggest that large areas of the subject land, have been heavily modified from agricultural use pre 1990. This is supported by the 2017 landuse datasets, historic aerial imagery and woody extent spatial data. These areas have been mapped as Category 1 - Exempt Land.

Areas of woody vegetation and scattered paddock trees present in 1990 have been mapped as Category 2 – regulated land.

Where in doubt, or where data sources are conflicting, a precautionary approach has been implemented for areas deemed inconclusive in terms of determining historical land use. Draft maps of those areas considered to be Category 1 - Exempt land and Category 2 – Regulated land have been produced and shown in Appendix A.1 The relevant datasets used in the assessment are included in Appendix A.2 – Appendix A.7

APPENDIX A LAND CATEGORY ASSESSMENT

A.1 PROPOSAL SITE AND LAND CATEGORISATION






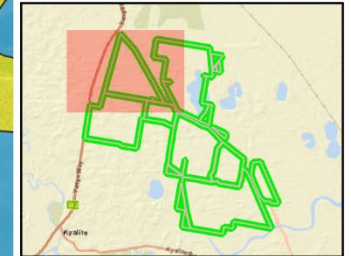
Land Category Assessment Burrawong Wind Farm



20-468 Burrawong Wind Farm LCA
Land Category Assessment

Legend

-  Project Footprint
-  Category 1 - Exempt Land
-  Category 2 - Regulated Land

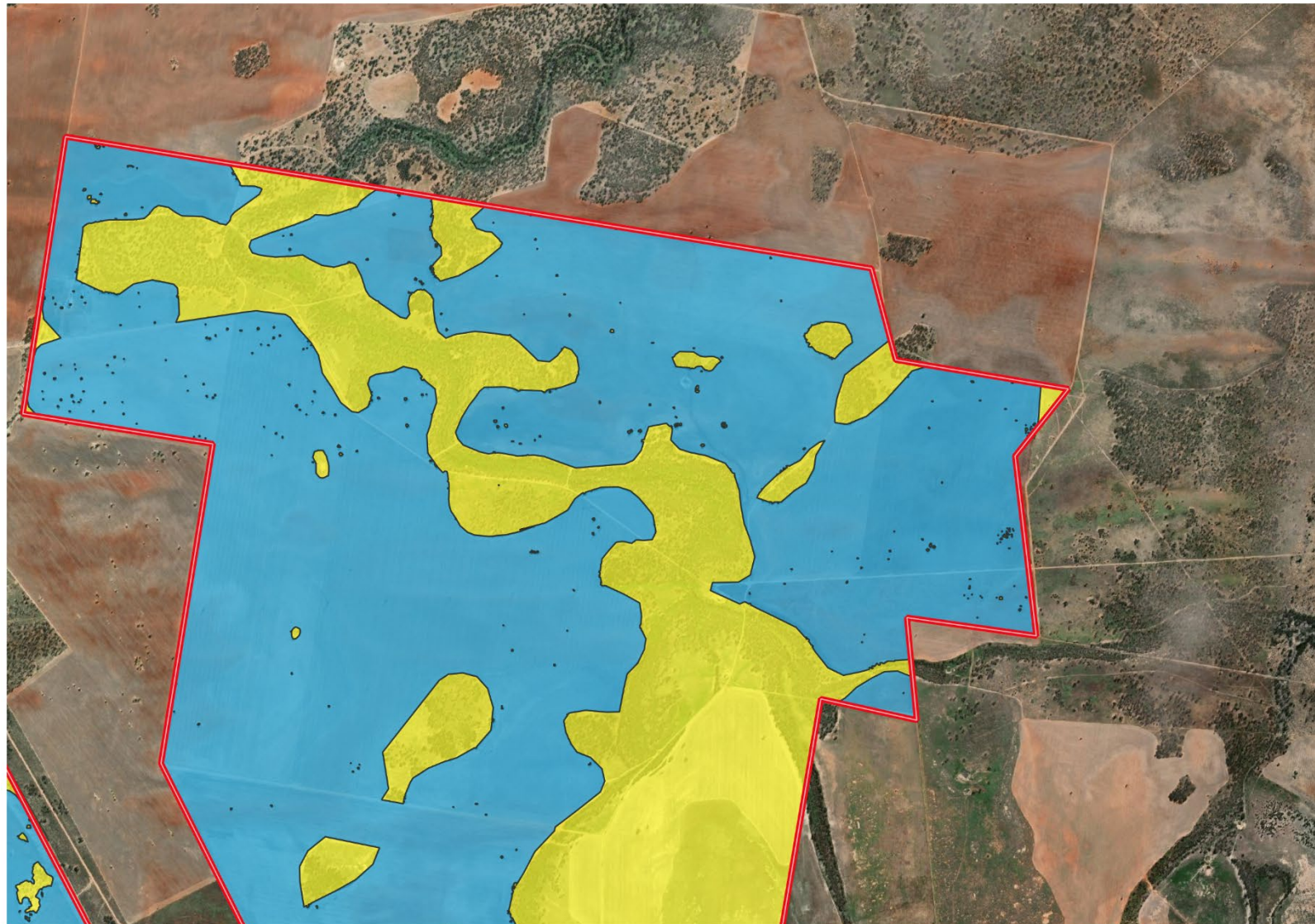


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Land Category Assessment
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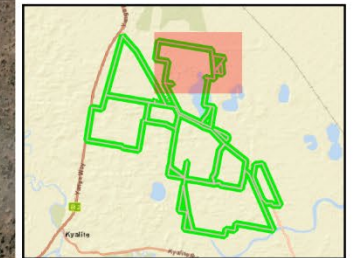
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20-468 Burrawong Wind Farm LCA
Land Category Assessment

Legend

-  Project Footprint
-  Category 1 - Exempt Land
-  Category 2 - Regulated Land



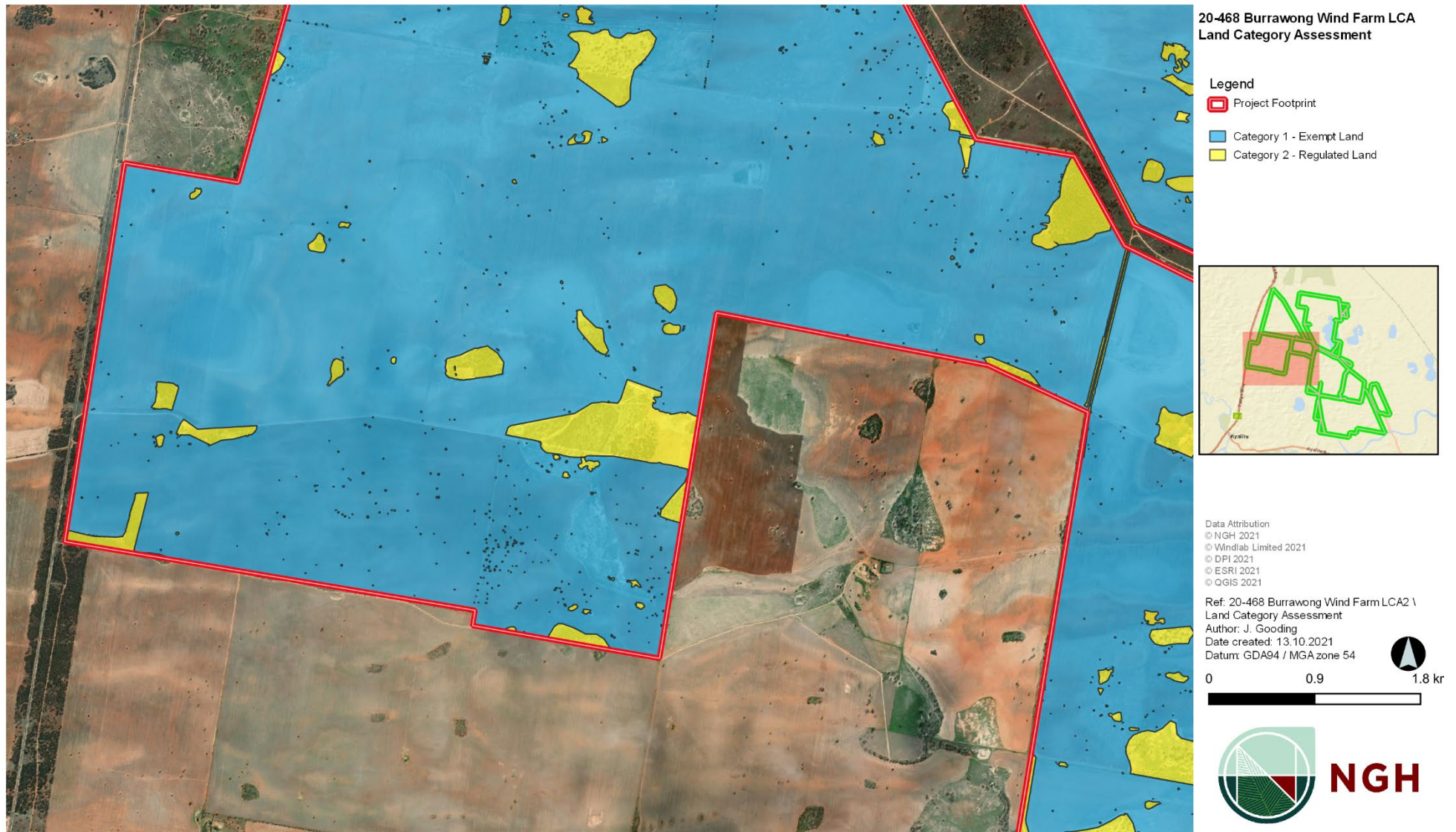
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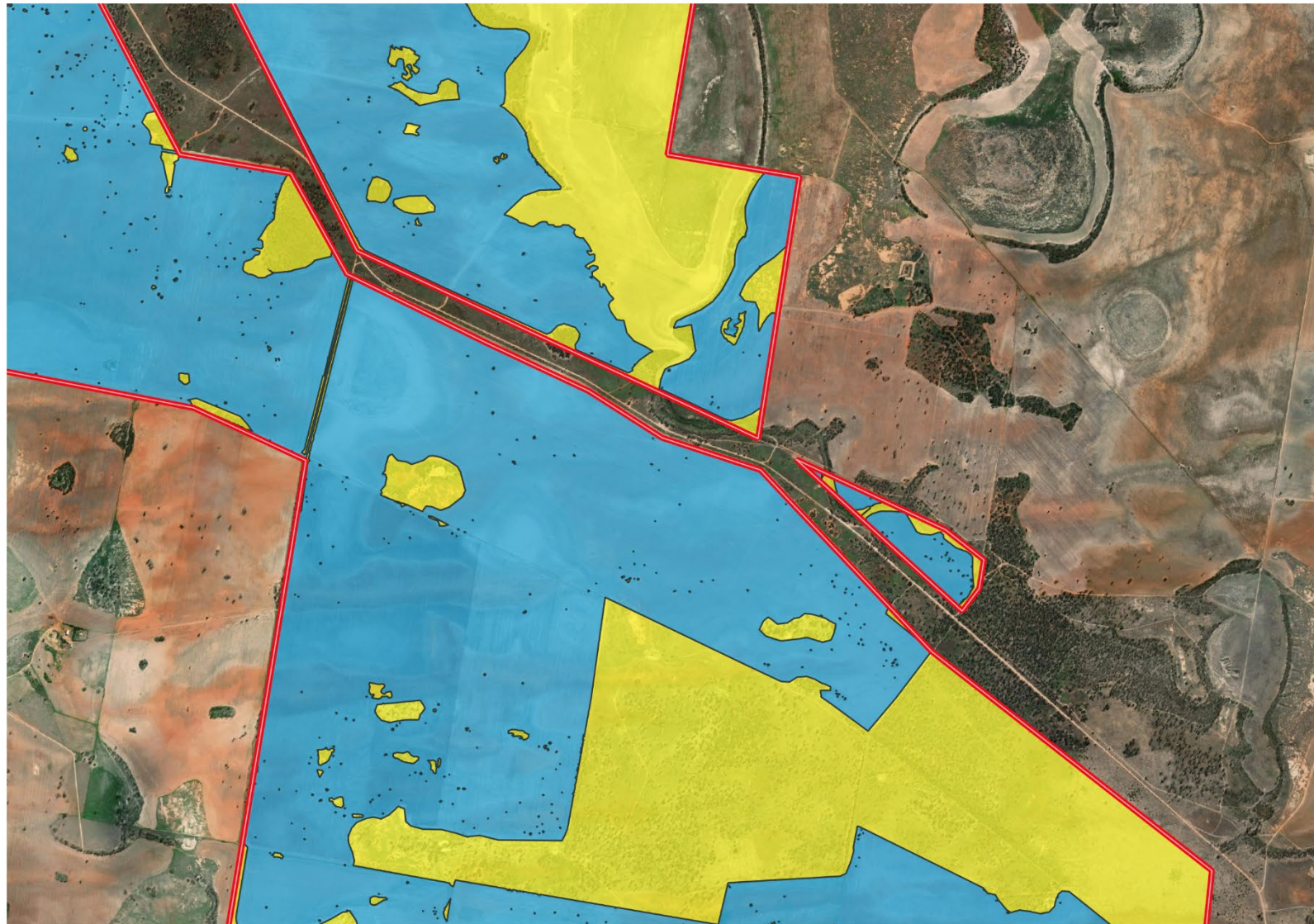
0 0.7 1.4 km



Land Category Assessment Burrawong Wind Farm






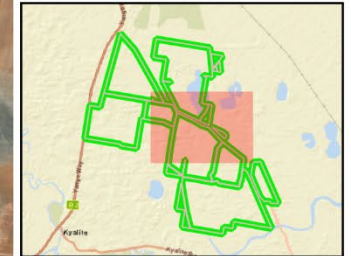
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Land Category Assessment

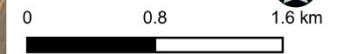
Legend

-  Project Footprint
-  Category 1 - Exempt Land
-  Category 2 - Regulated Land

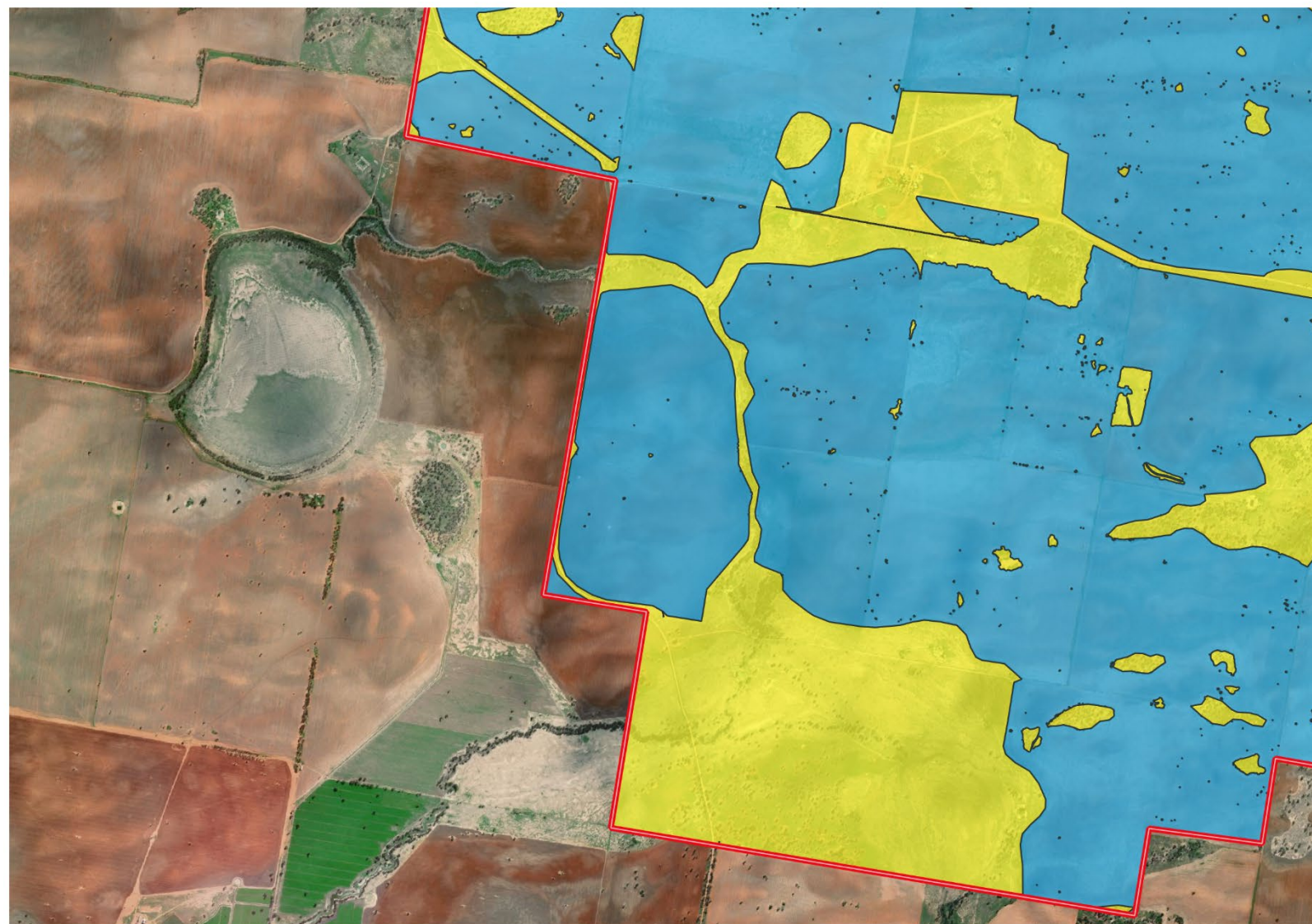


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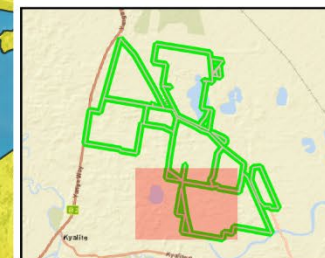


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Land Category Assessment

- Legend
-  Project Footprint
 -  Category 1 - Exempt Land
 -  Category 2 - Regulated Land



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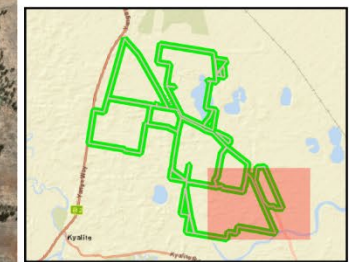


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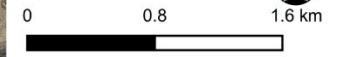
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Land Category Assessment

- Legend
-  Project Footprint
 -  Category 1 - Exempt Land
 -  Category 2 - Regulated Land

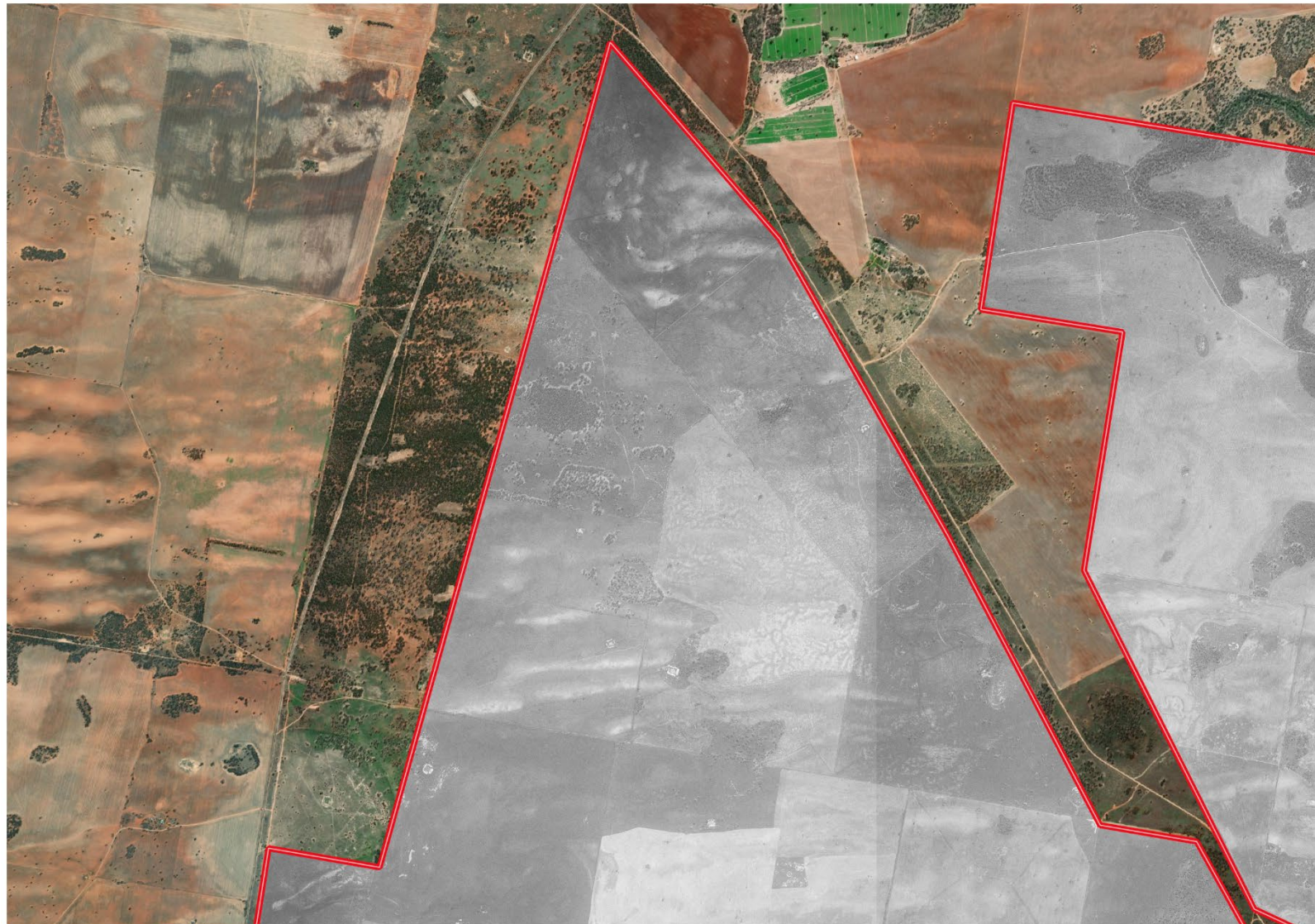


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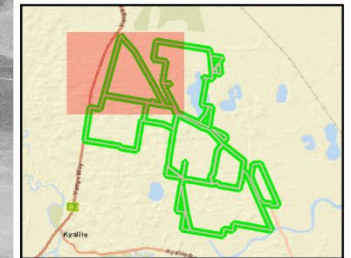


A.2 HISTORIC 1990 AERIAL IMAGERY



20-468 Burrawong Wind Farm LCA
1990 Historic Imagery

Legend
Project Footprint



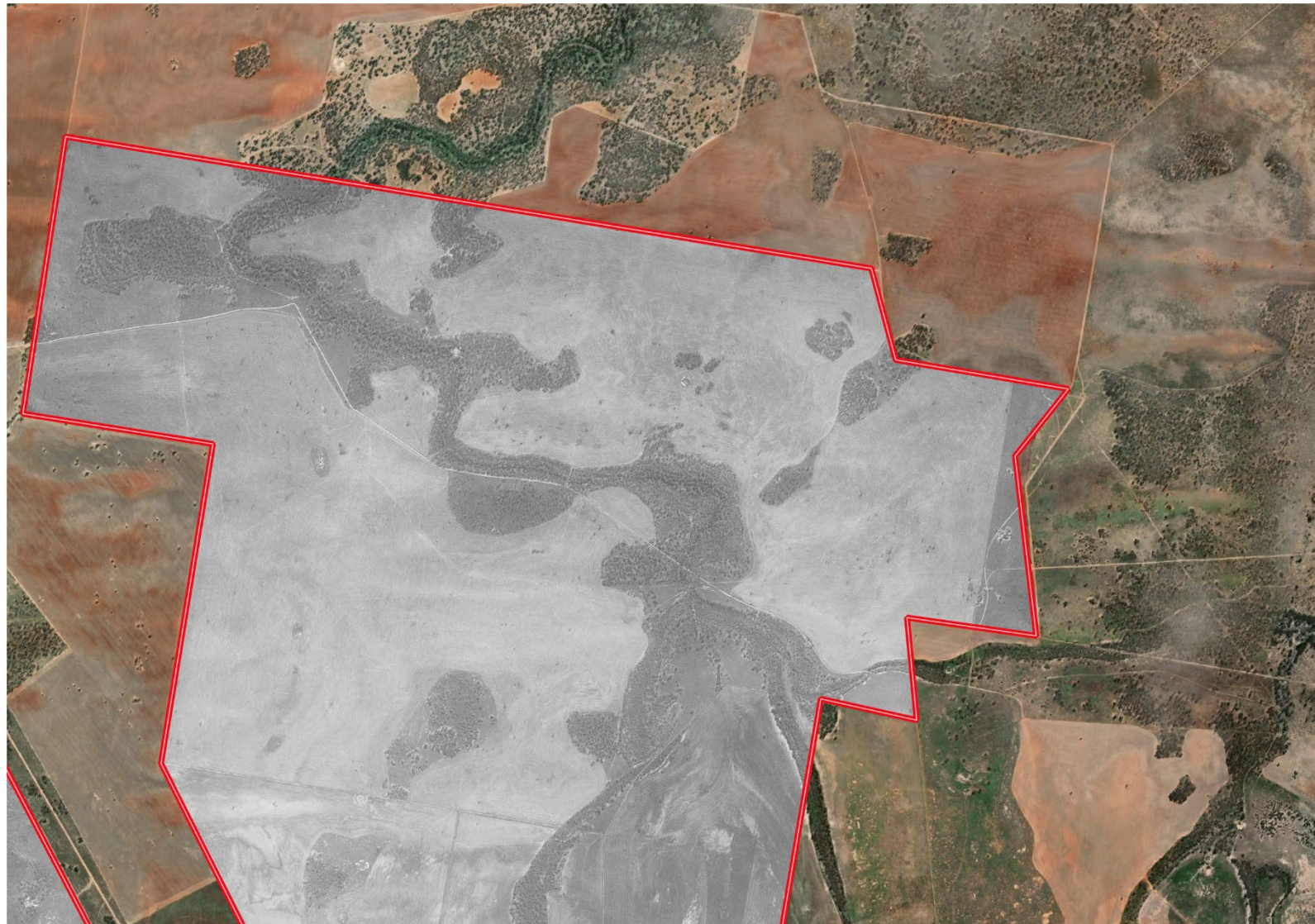
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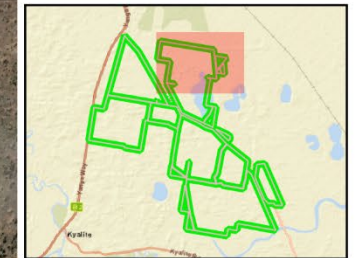
Land Category Assessment Burrawong Wind Farm



20-468 Burrawong Wind Farm LCA
1990 Historic Imagery

Legend

 Project Footprint



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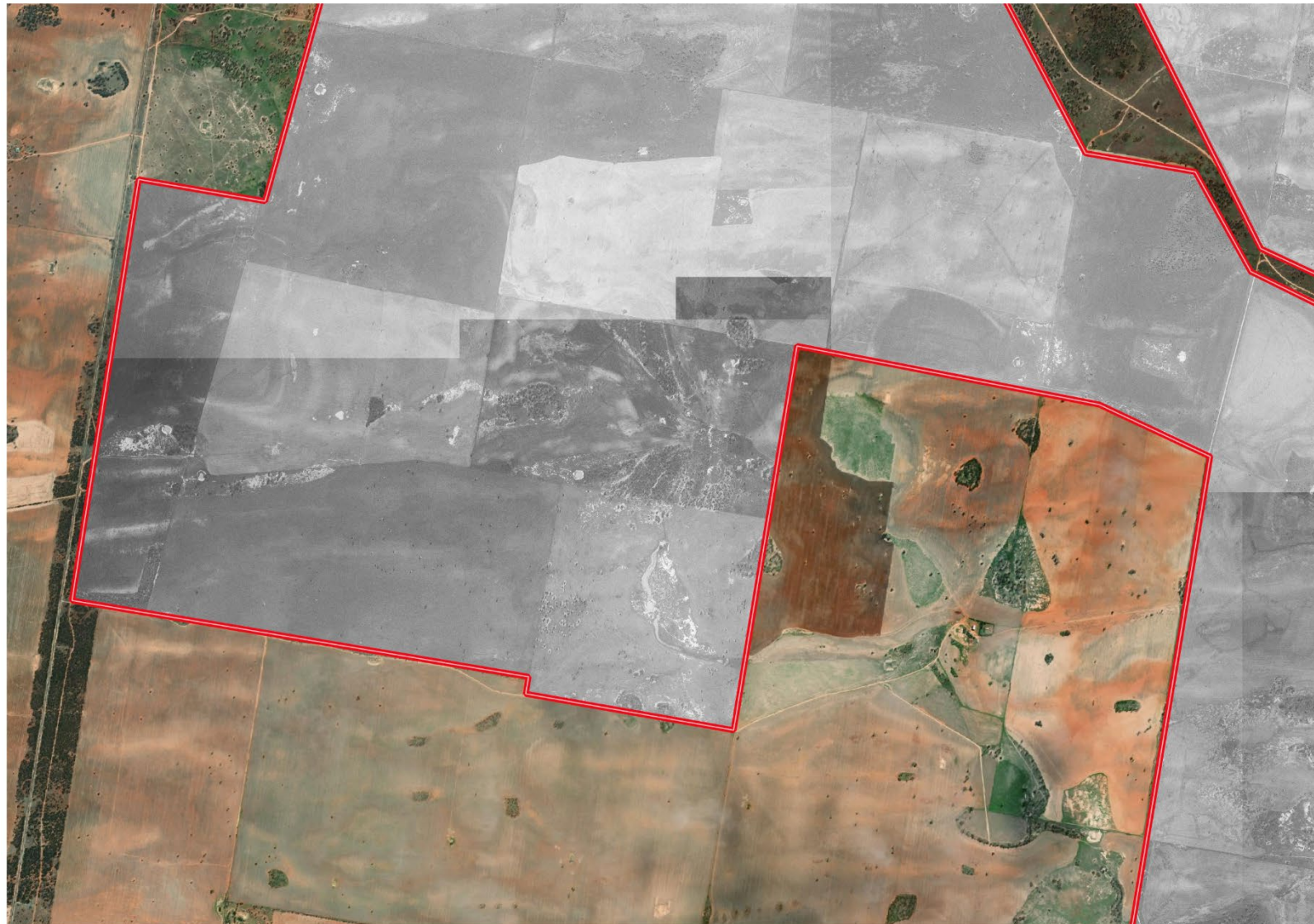
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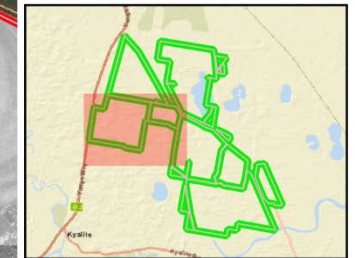
Land Category Assessment Burrawong Wind Farm



20-468 Burrawong Wind Farm LCA
1990 Historic Imagery

Legend

 Project Footprint



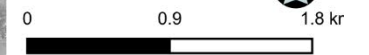
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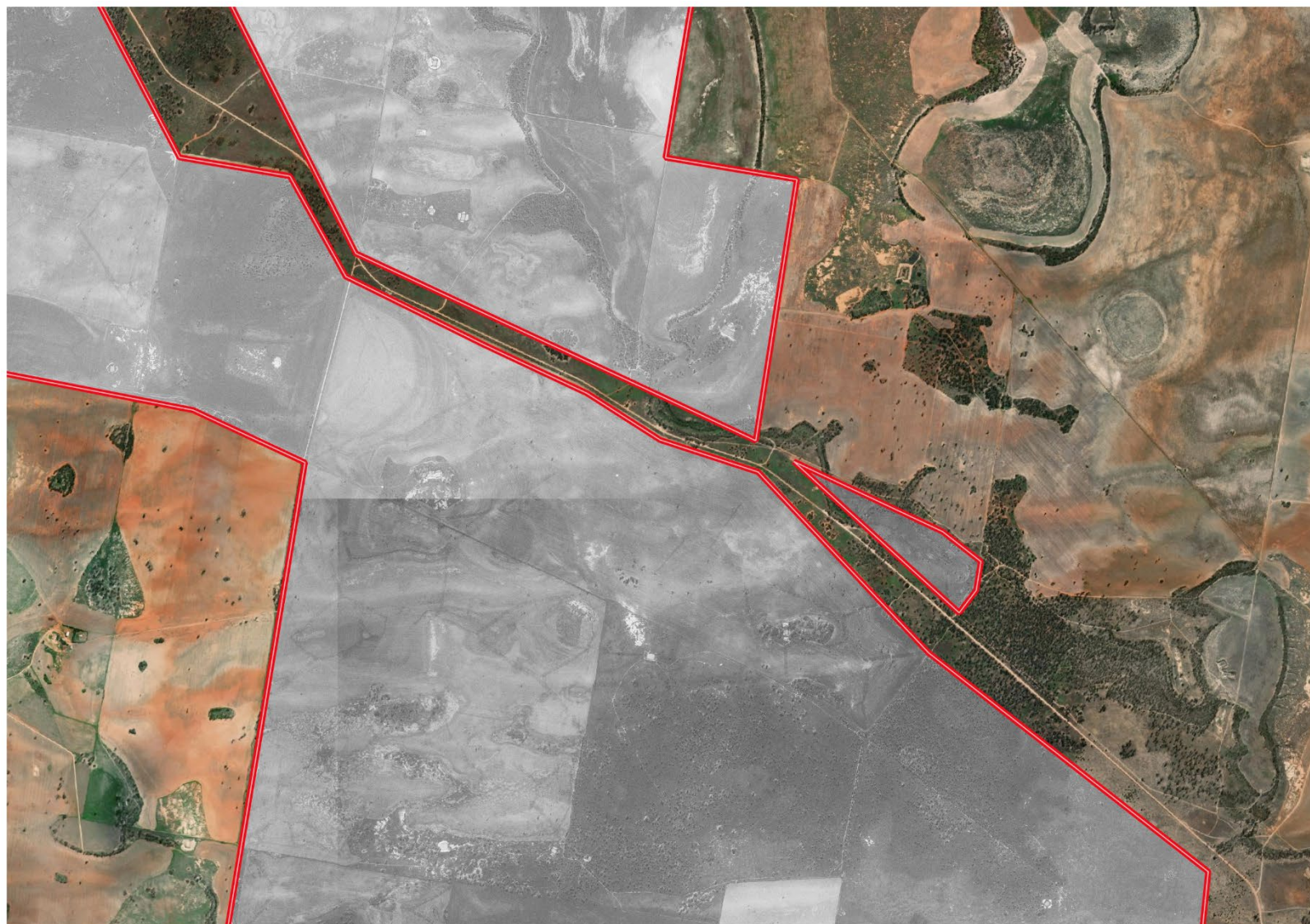
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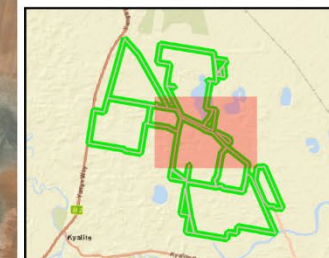
Land Category Assessment Burrawong Wind Farm



20-468 Burrawong Wind Farm LCA
1990 Historic Imagery

Legend

 Project Footprint



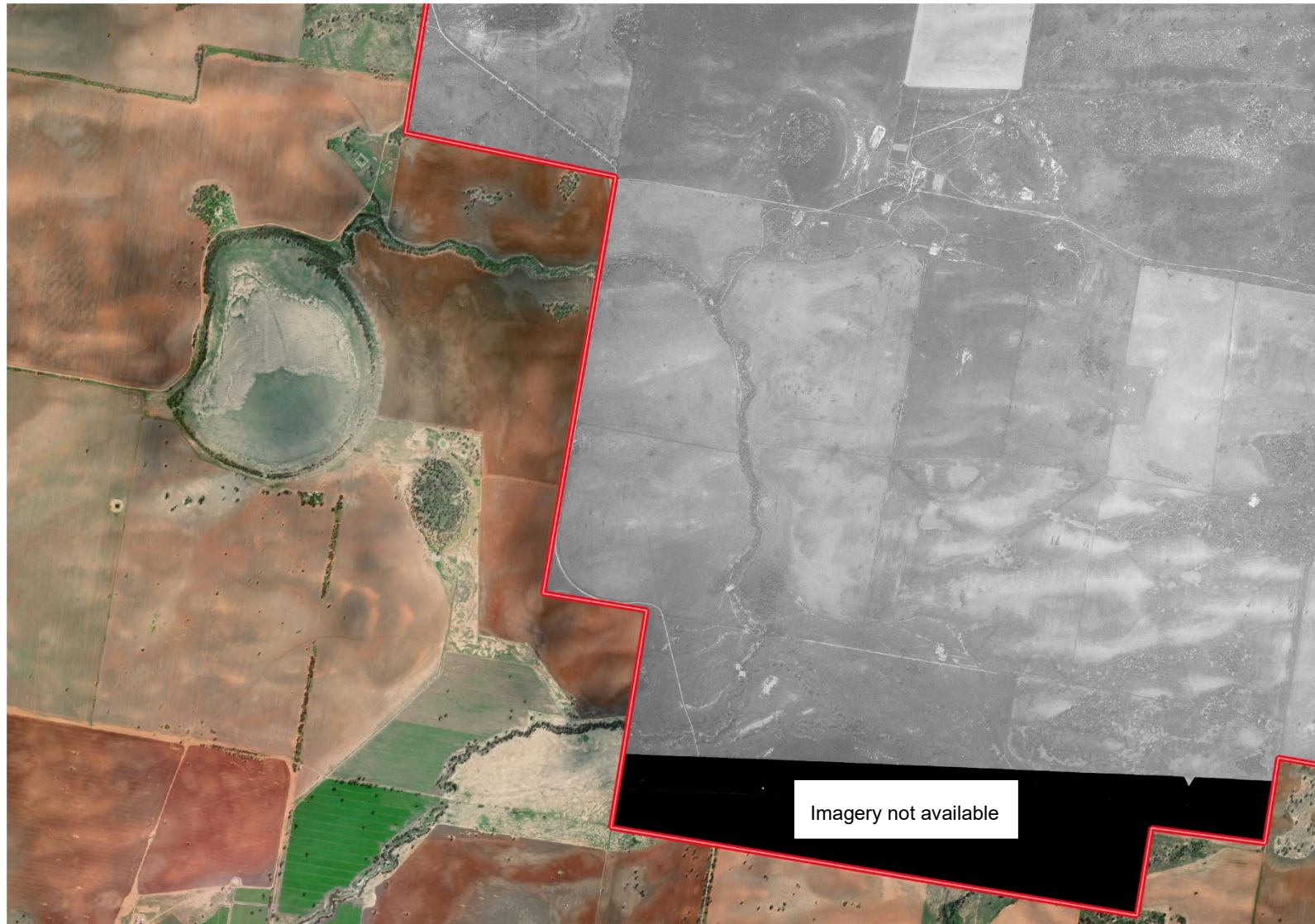
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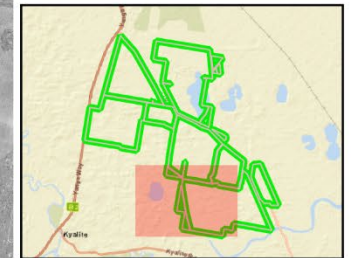
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1990 Historic Imagery

Legend

 Project Footprint



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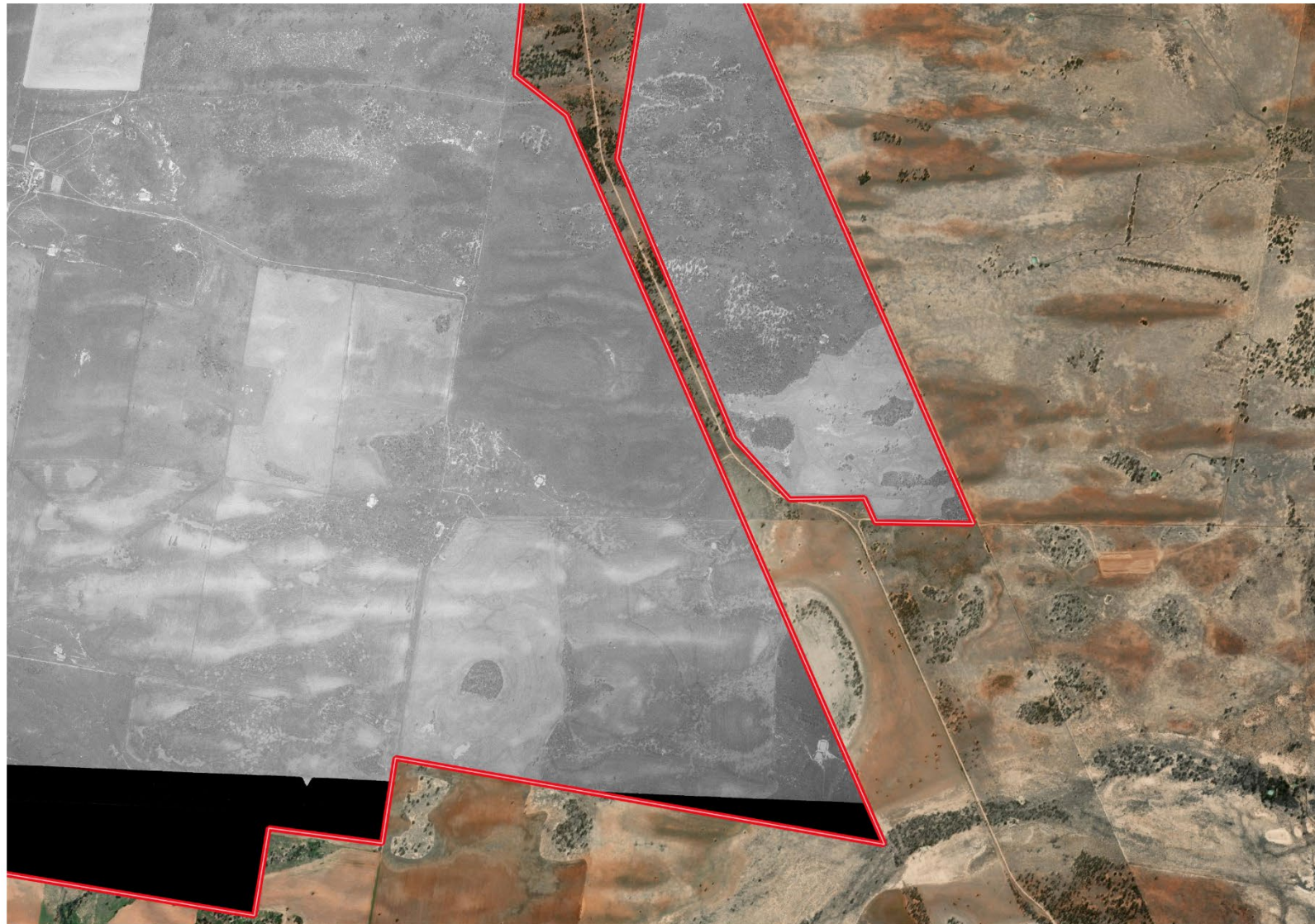
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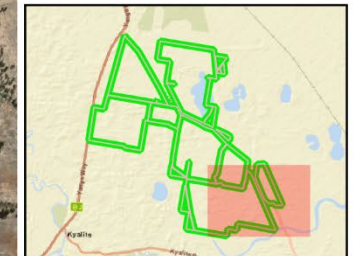
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1990 Historic Imagery

Legend

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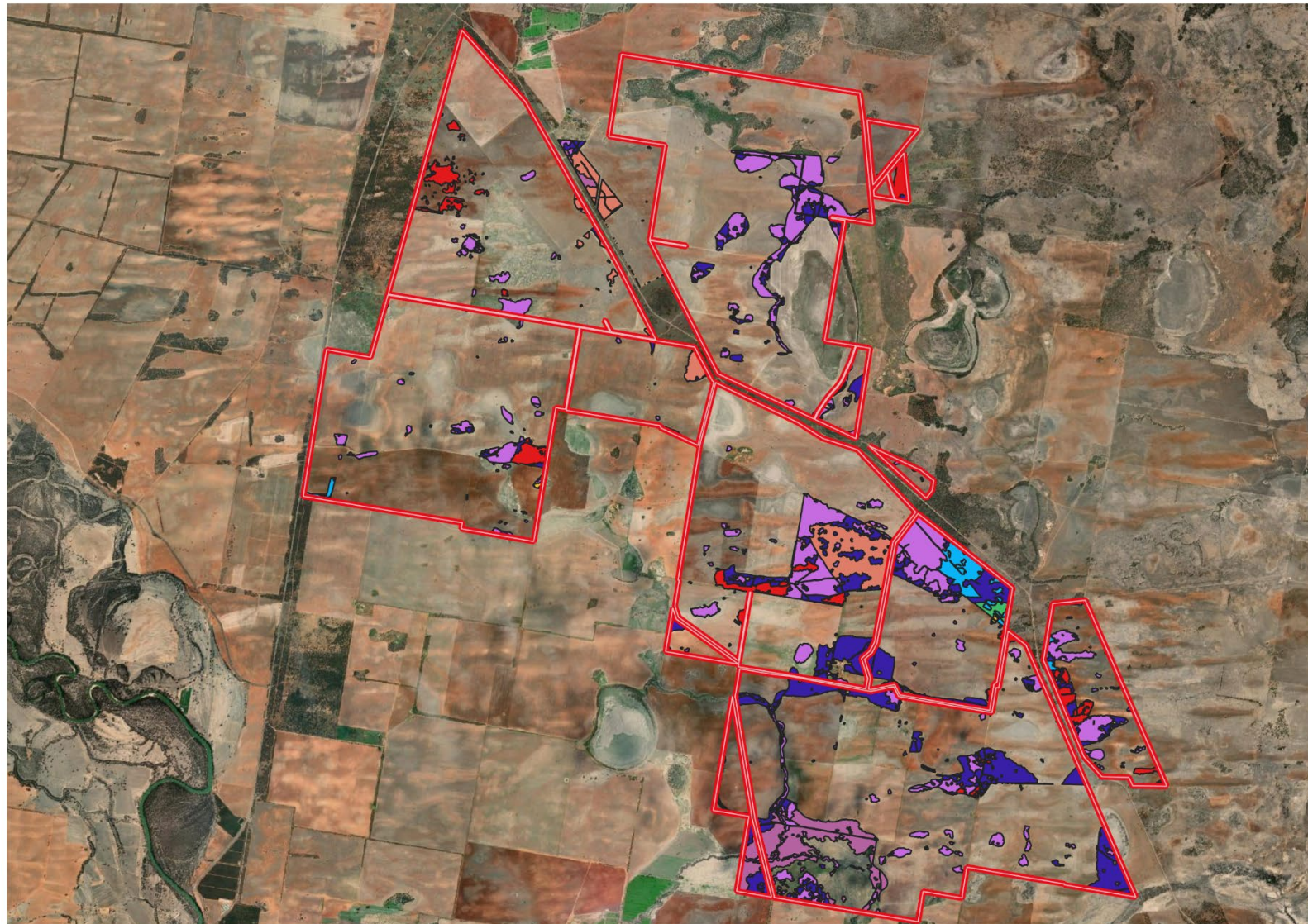
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0 0.8 1.6 km



A.3 PLANT COMMUNITY TYPES

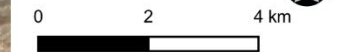


20-468 Burrawong Wind Farm LCA
Plant Community Types

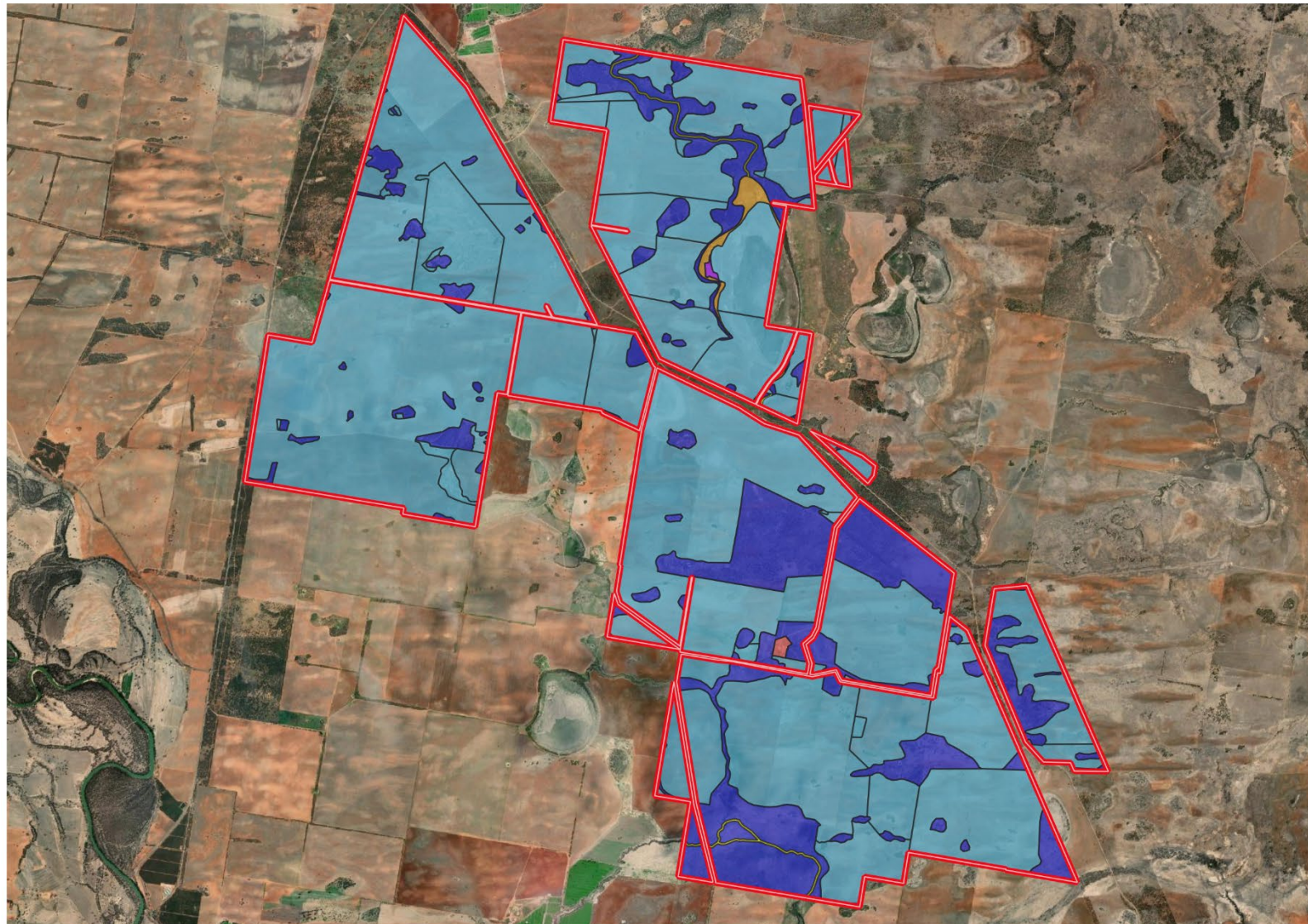
- Legend**
- Project Footprint
 - Belah/Black Oak - Western Rosewood - Wilga woodland of central NSW
 - Black Box - Lignum woodland wetland of the inner floodplain
 - Black Box open woodland wetland with chenopod understorey
 - Chenopod sandplain mallee woodland /shrubland
 - Curly Windmill Grass - speargrass - wallaby grass grassland on alluvial clay and loam
 - Dillon Bush (Nitre Bush) shrubland of the semi-arid and arid zones
 - Forb-rich Speargrass - Windmill Grass - White Top grassland
 - Sandplain mallee of central NSW
 - Yarran tall open shrubland

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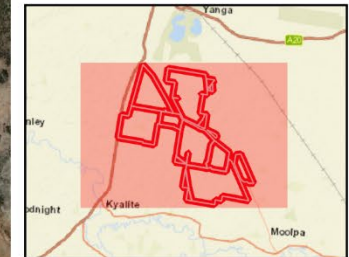


A.4 NSW LAND USE 2017



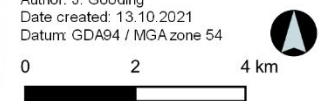
20-468 Burrawong Wind Farm LCA
NSW Land Use 2017

- Legend**
- Project Footprint
 - NSW Landuse 2017**
 - 2.1.0 Grazing native vegetation
 - 3.2.0 Grazing modified pastures
 - 3.3.0 Cropping
 - 5.4.2 Rural residential with agriculture
 - 6.1.0 Lake
 - 6.5.0 Marsh/wetland

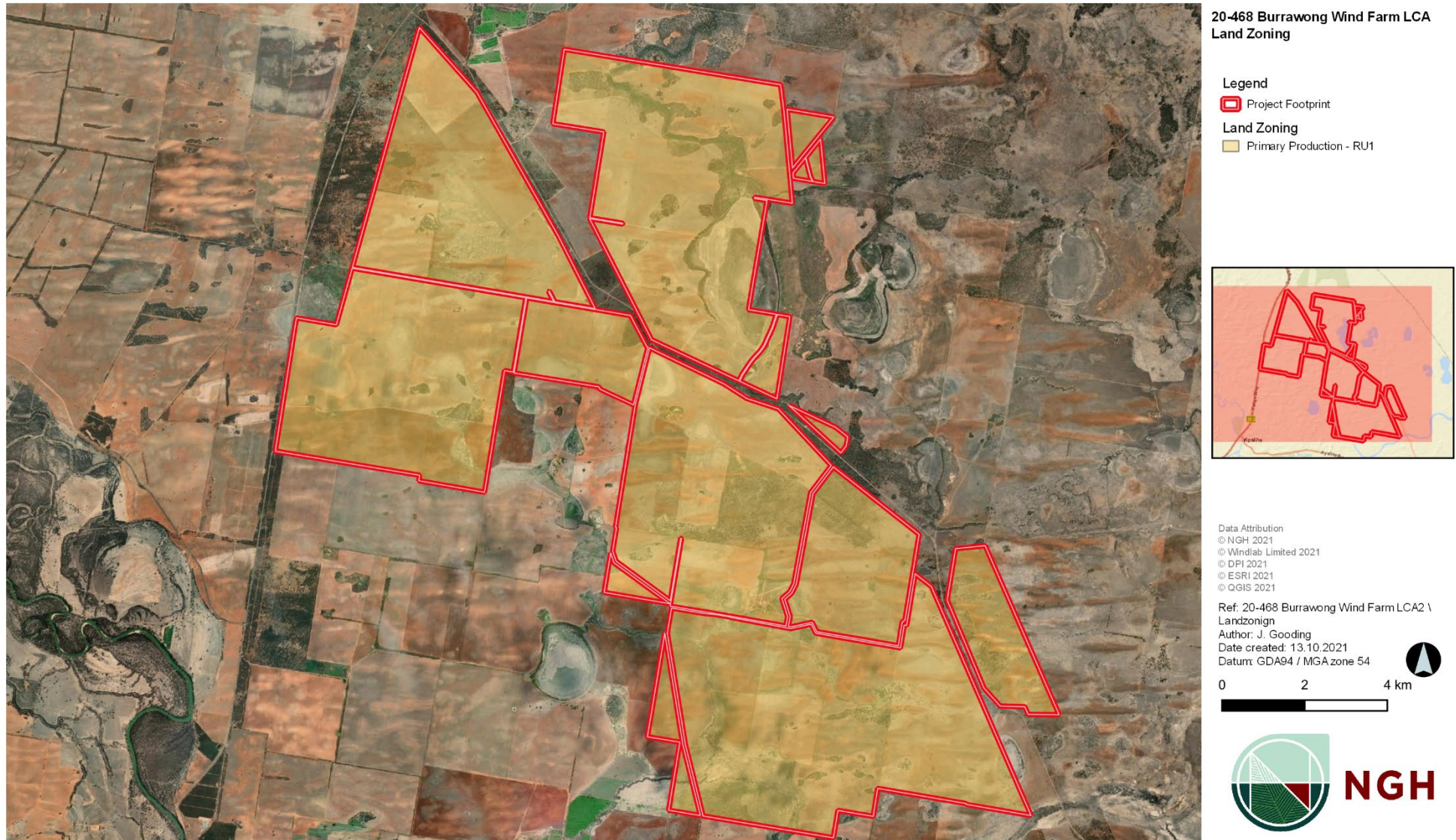


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A.5 LAND ZONING



A.6 WOODY VEGETATION EXTENT



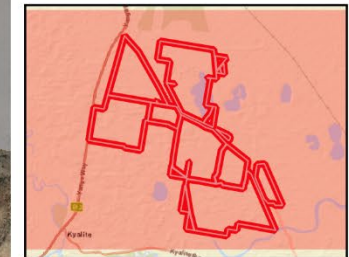
A.7 NATIVE REGULATED LAND



20-468 Burrawong Wind Farm LCA
Native Vegetation Regulatory Map

Legend

- Project Footprint
- Excluded Land
- Vulnerable Regulated Land



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