# Appendix B  Land Category Assessment

# Introduction

NGH were engaged by Infigen Energy. to prepare a Land Category Assessment (LCA) for the proposed Flyers Creek Wind Farm. Biodiversity Development Assessment Report (BDAR) has been 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- Native vegetation identified as regrowth in a Property Vegetation Plan under the repealed Native Vegetation Act 2003; or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:

  o Land subject to a private land conservation agreement
  o A set aside under the Land Management Code
  o Land subject to a biocertification conservation measure
  o Land comprising an offset under a Property Vegetation Plan or set aside under a code under the Native Vegetation Act 2003
  o Coastal wetlands and littoral rainforests (Coastal Management Act 2016)
  o High conservation grassland
  o Land Categorisation Assessment Procedure – Final 1.0 September 2020
  o Core Koala habitat identified in a plan of management (Koala Habitat Protection SEPP)
  o Critically endangered plants and critically endangered ecological communities
  o Ramsar wetlands (EPBC Act)
  o 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.

Based on the **Native Vegetation Regulatory (NVR) Map Excluded Land** includes:

- All areas within the boundaries of Canobolas State Forest (i.e., pine plantation).

# Land Category Assessment

## Methodology

An initial desktop assessment, multiple field inspections and literature review of previous studies was undertaken over the development site to determine the ecological constraints and native vegetation communities on site. Assessment of the development site as Category 1 – exempt and Category 2 – regulated land was undertaken using the following data sources:

- 2017 Land Use Dataset (Australian Land Use and Management (ALUM) Classification version 7 (Office of Environment and Heritage (OEH), 2017).
- NSW Woody Vegetation extent and Foliage Projective Cover (FPC) 2011 (OEH, 2015).
- Sensitive regulated and vulnerable lands on the Native Vegetation Regulatory Map Portal (LLS, 2020).
- Central West Lachlan State Vegetation Mapping (OEH, 2018).
- Field surveys via rapid assessment and vegetation integrity plots.
- Aerial imagery of historical land use (Sourced from Spatial Services).

## Results

The analysis of the above sources identified demonstrates evidence of broad native vegetation modification resulting from agricultural land use within the development site, and in some areas, used continuously for cropping and modified pasture grazing prior to and post 1990 (Figure 1 to Figure 24). 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 Sources | Category 1 – Exempt Land | Category 2– Regulated Land | Excluded Land |
|---|---|---|---|
| Current Aerial Imagery Flyers Creek Locality | <ul><li>Clear evidence of grazing.</li><li>Clear evidence of significant groundcover modification.</li></ul> | <ul><li>Woody vegetation present at 1990 demonstrated within woody vegetation extent layer</li></ul> | N/A |
| 1990 Historic Aerial Imagery Flyers Creek Locality | <ul><li>Clear evidence of grazing.</li><li>Clear evidence of significant groundcover modification.</li></ul> | <ul><li>Woody vegetation present at 1990 demonstrated within woody vegetation extent layer</li></ul> | N/A |
| 2017 Land Use Dataset | Land use identified as;<ul><li>Managed resource protection</li><li>Grazing native vegetation</li><li>Production native forests</li><li>Plantation forests</li><li>Grazing modified pastures</li><li>Cropping</li><li>Residential and farm infrastructure</li><li>Transport and communication</li></ul> | Land use identified as:<ul><li>Production native forest</li><li>Grazing native vegetation</li><li>Managed resource protection</li><li>Cropping</li><li>Transport and communication</li><li>River</li><li>Grazing modified pastures</li><li>Marsh/Wetland</li><li>Residential farm infrastructure</li></ul> | N/A |

| Data Sources | Category 1 – Exempt Land | Category 2– Regulated Land | Excluded Land |
|---|---|---|---|
| | • Mining | | |
| NSW Woody vegetation extent | • Areas of woody vegetation regrowth that has occurred post 1990 following previous clearing events | • Woody vegetation present as at 1990 in conjunction with historic aerial imagery. | N/A |
| Native Regulatory Map<br>• Sensitive regulated land<br>• Vulnerable regulated land<br>• Excluded land | • N/A | • Areas identified as vulnerable or sensitive regulated land occur within the development site. | N/A |

Another determining feature of constant agricultural use is a lack of woody canopy vegetation regrowth in the majority of areas, as represented in the aerial images. The 2011 Woody Vegetation extent does however identify scattered paddock trees and small patches of remnant native vegetation in the development site which has been mapped as Category 2 regulated land. Although subjected to grazing, in areas where it is not 100% conclusive whether areas with a high abundance and cover of modified pasture species have been previously cropped or significantly modified, and more established via a derived nature, a precautionary approach has been applied and mapped as Category 2 – Regulated land.

## Conclusion

Based on the above data sources, there is evidence to suggest that large areas of the development site, have been heavily modified from agricultural use including improved pastures and some cropping. This is supported by recent imagery as well as 2017 Land Use Mapping data. 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 has been produced and shown in Figure 1 to Figure 8. The relevant datasets used in the assessment are included in Figure 9 to Figure 17.
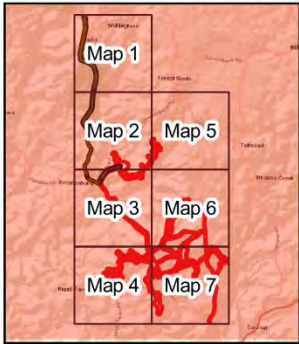
# Figures

Figure 1 Development Site overview and Land categorisation - Overview.

**18-558 Flyers Creek Wind Farm LCA**
**Land Category Assessment Map 1**

☐ Transmission Line Development Site

Land Category Assessment

🟨 Category 1 Land

🟦 Category 2 Land

⬜ Excluded Land

0    0.5    1 km

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Ref: 18-558 Flyers Creek Wind Farm Offsets Land
Category Assessment 20210827 \ Land Category
Assessment
Author: D. Bambrick
Date created: 27.08.2021
Datum: GDA94 / MGA zone 55

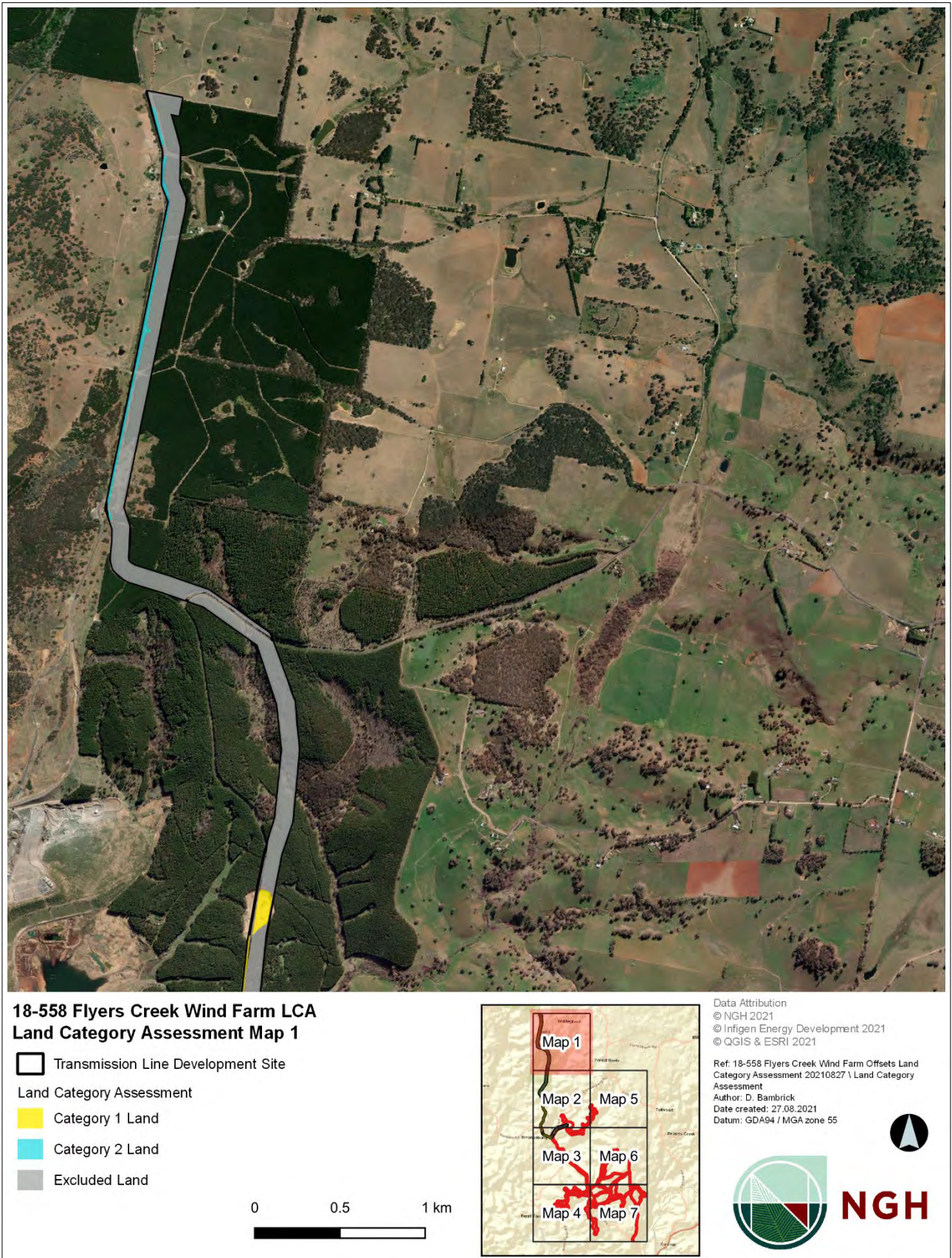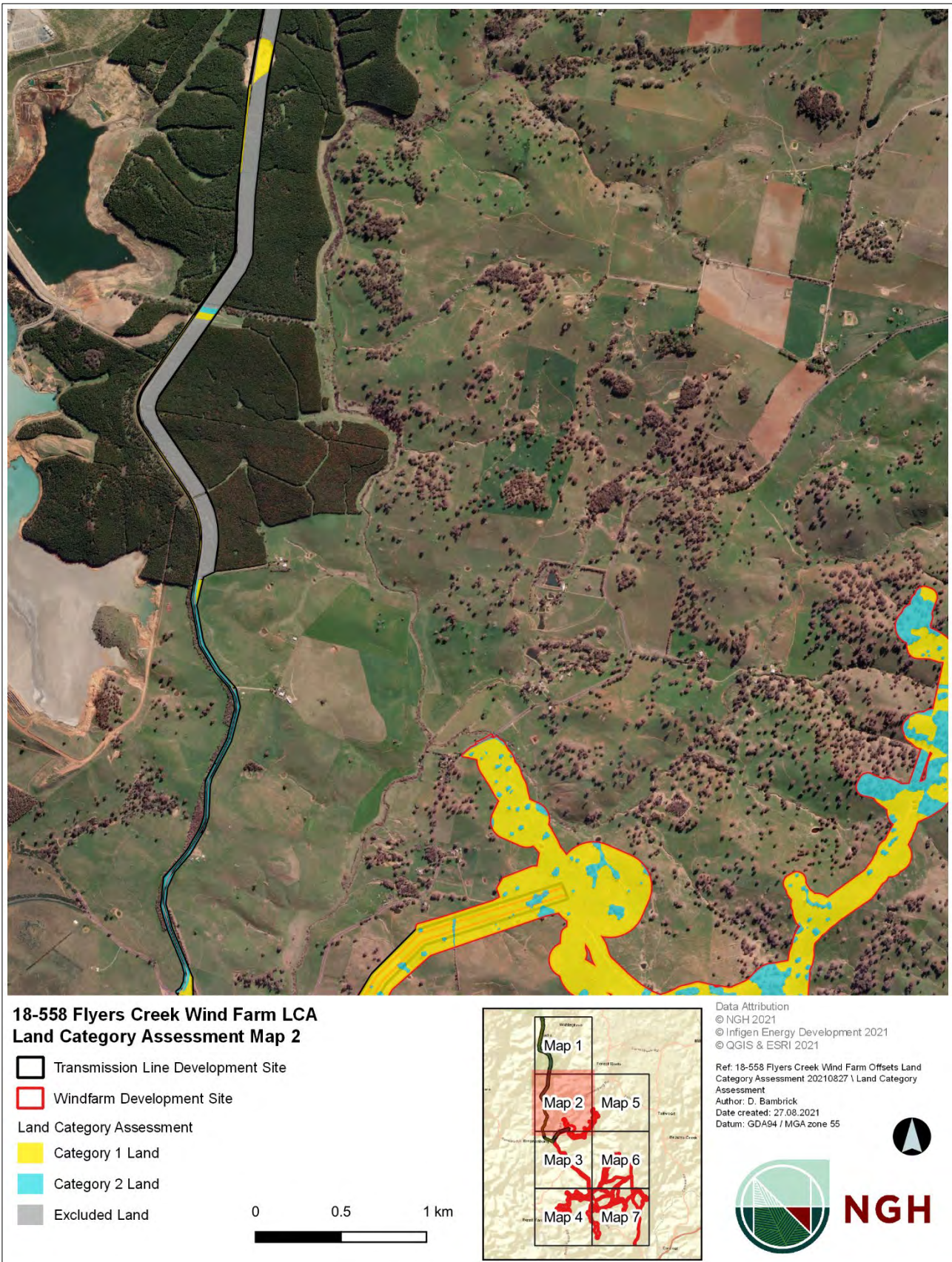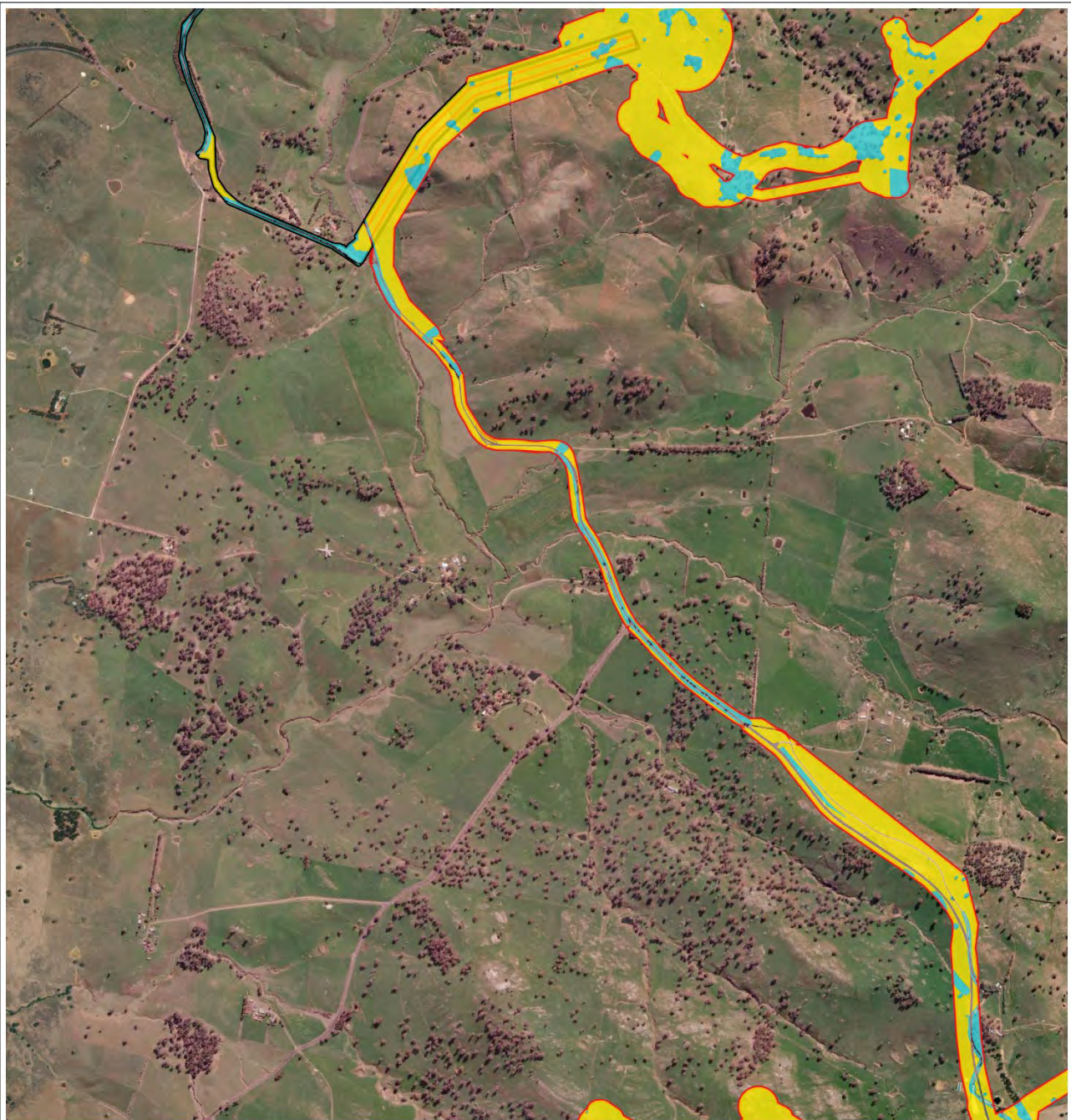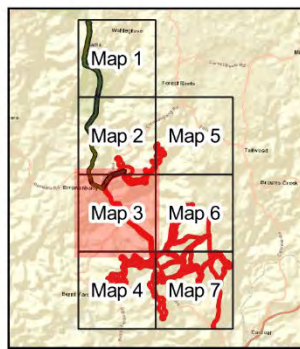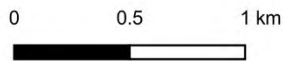Figure 2 Development Site overview and Land categorisation - Map 1

Figure 3 Development Site overview and Land categorisation - Map 2

18-558 Flyers Creek Wind Farm LCA
Land Category Assessment Map 3

☐ Transmission Line Development Site

☐ Windfarm Development Site

Land Category Assessment

■ Category 1 Land

■ Category 2 Land

0    0.5    1 km

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18-558 Flyers Creek Wind Farm LCA
Land Category Assessment Map 6

Windfarm Development Site

Land Category Assessment
- Category 1 Land
- Category 2 Land

0    0.5    1 km

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Author: D. Bambrick
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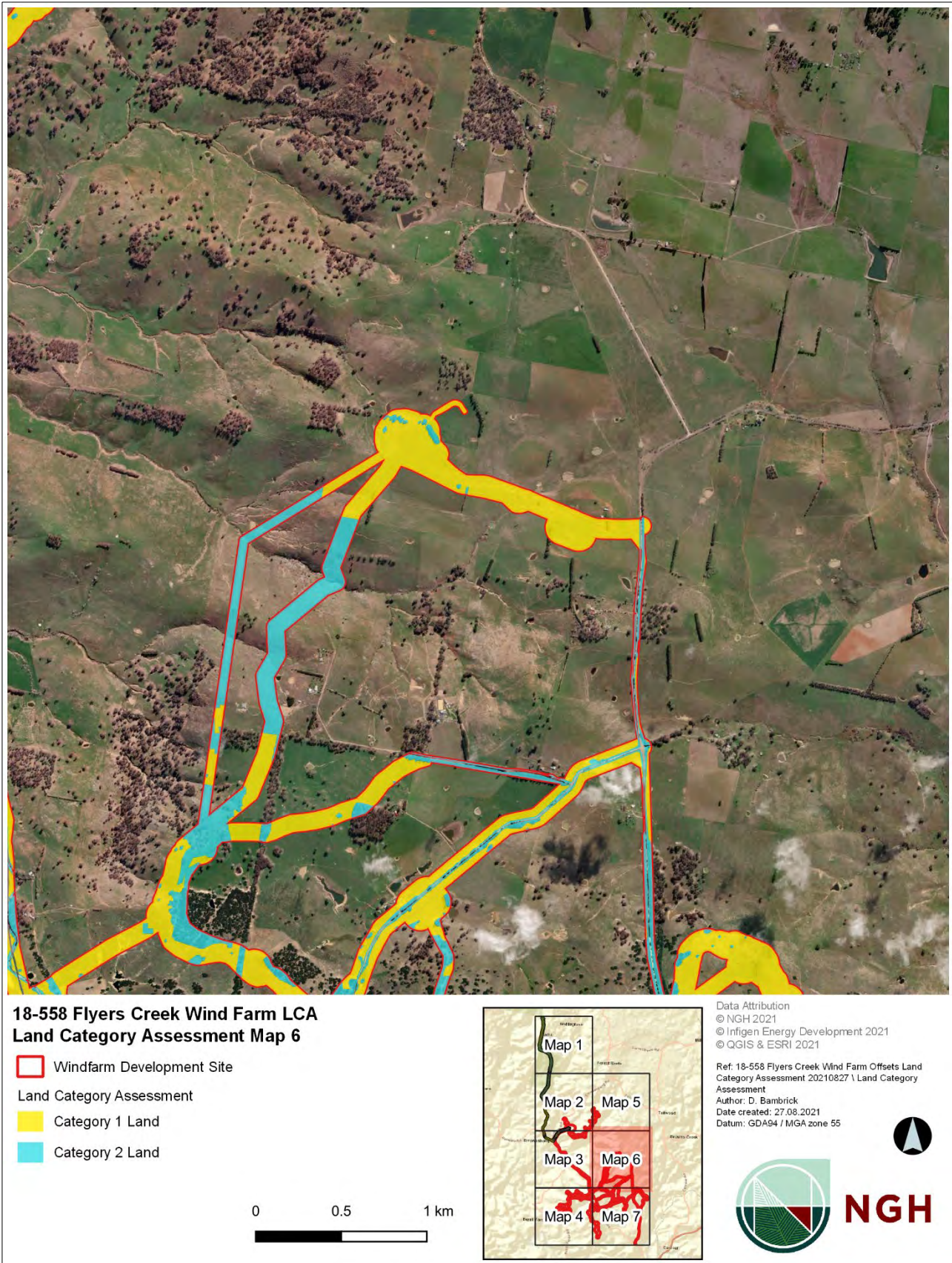Datum: GDA94 / MGA zone 55

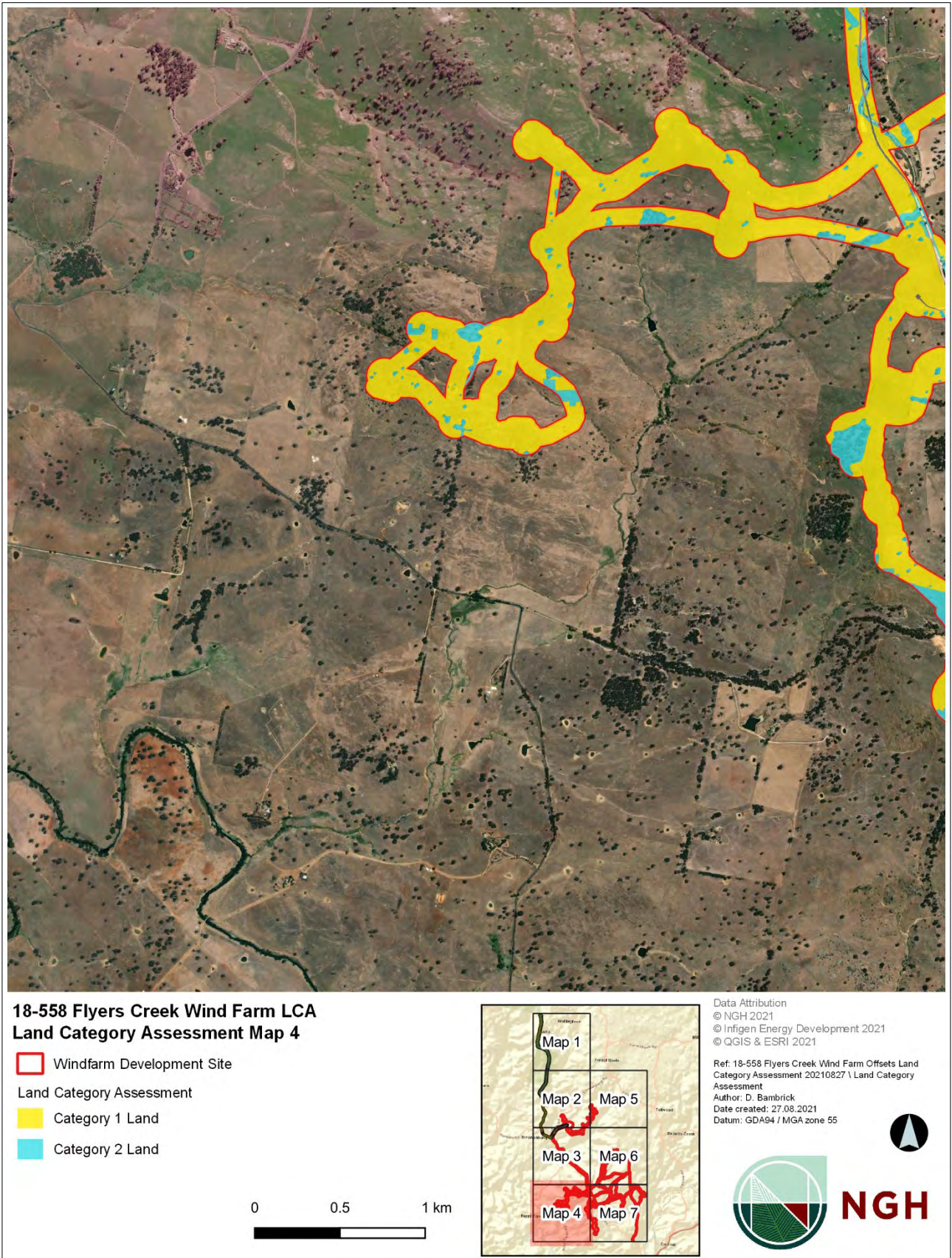Figure 4  Development Site overview and Land categorisation - Map 3

**18-558 Flyers Creek Wind Farm LCA**
**Land Category Assessment Map 4**

⬜ Windfarm Development Site

Land Category Assessment

🟨 Category 1 Land

🟦 Category 2 Land

0    0.5    1 km

Figure 5 Development Site overview and Land categorisation - Map 4

**18-558 Flyers Creek Wind Farm LCA**
**Land Category Assessment Map 5**

Windfarm Development Site

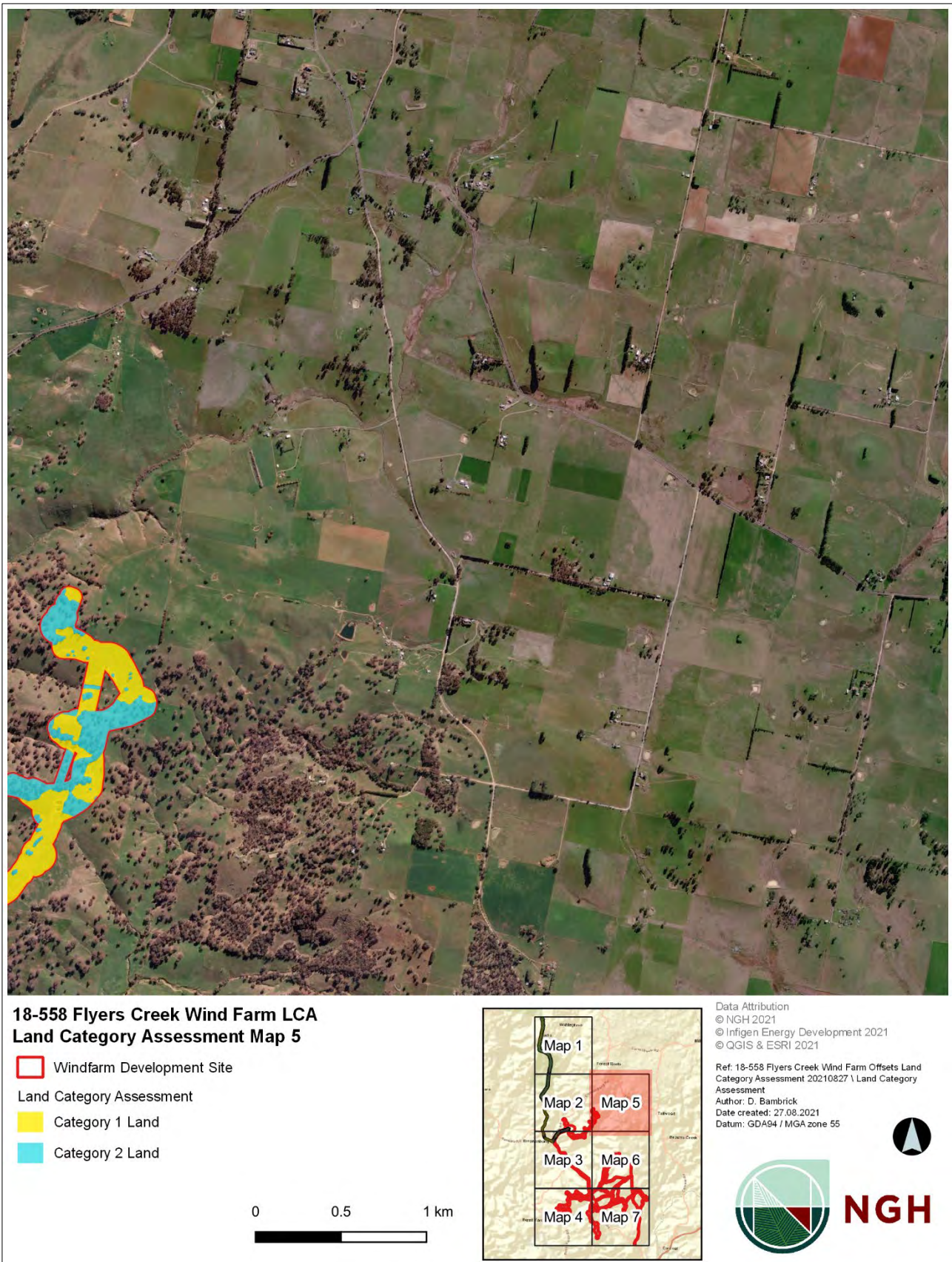Land Category Assessment

Category 1 Land

Category 2 Land

0    0.5    1 km
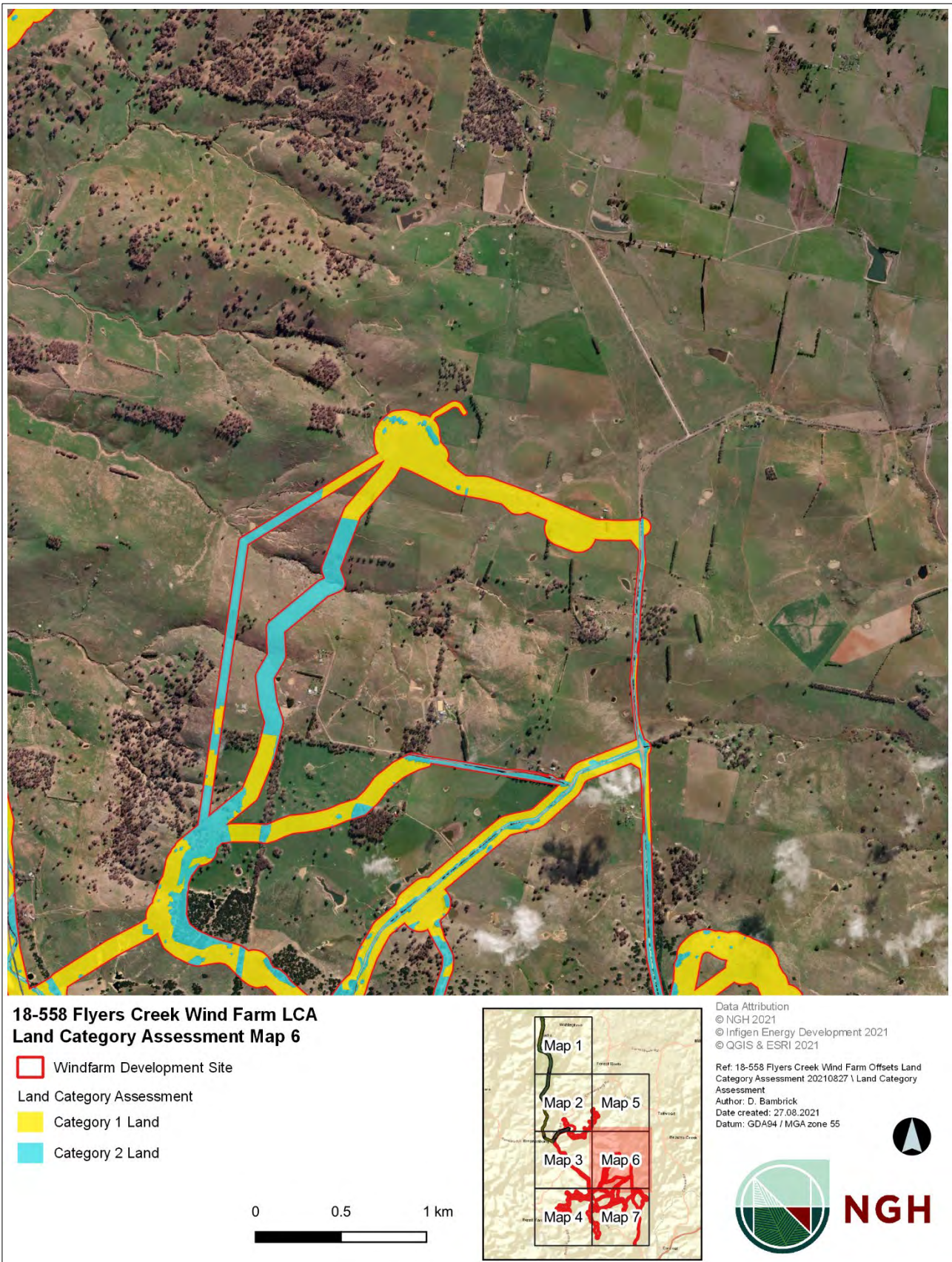
Figure 6 Development Site overview and Land categorisation - Map 5

18-558 Flyers Creek Wind Farm LCA
Land Category Assessment Map 6

Windfarm Development Site

Land Category Assessment

Category 1 Land

Category 2 Land

0    0.5    1 km

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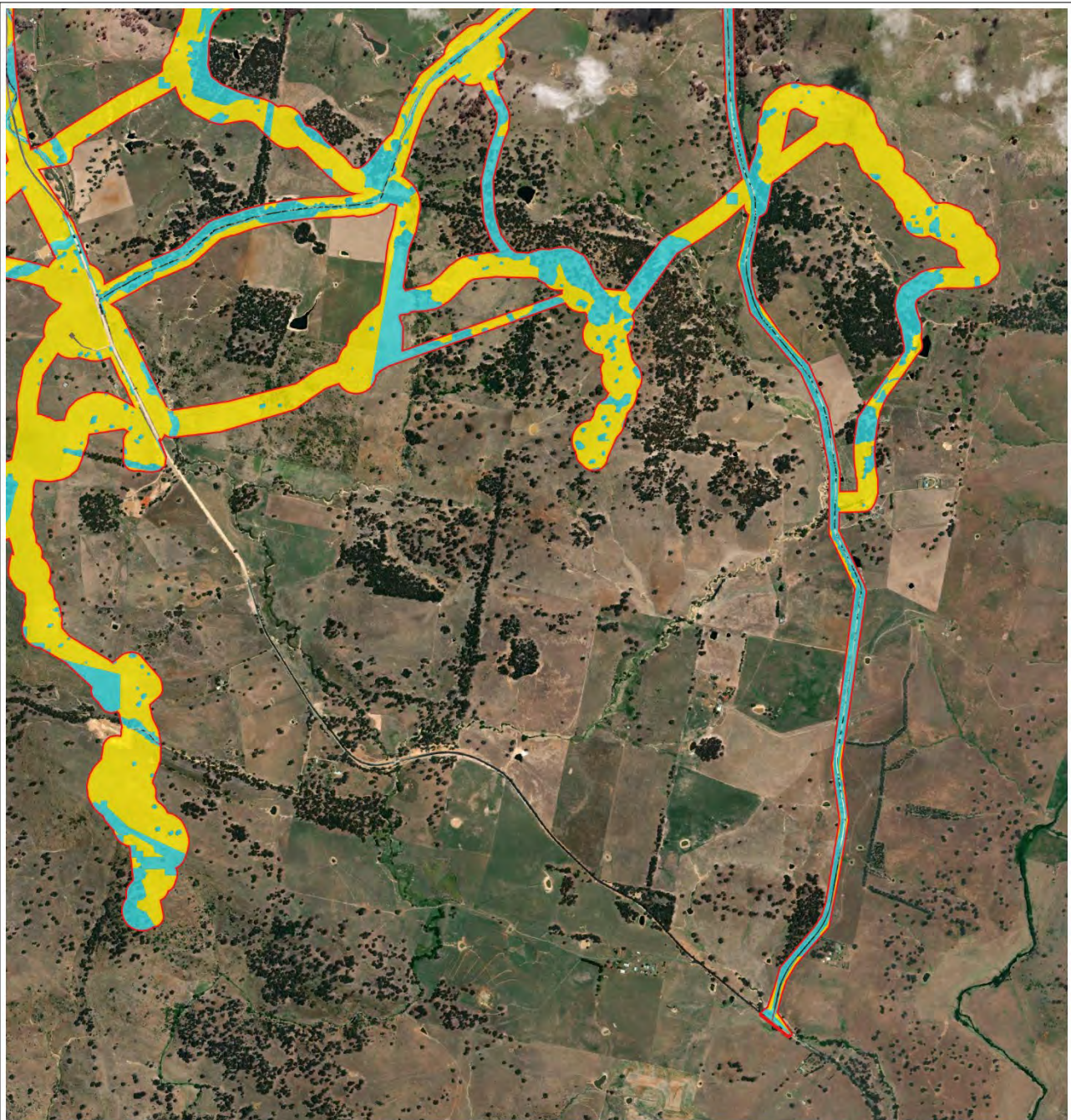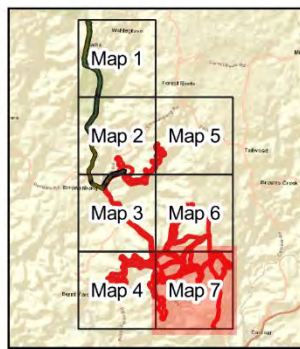Date created: 27.08.2021
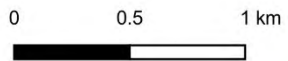Datum: GDA94 / MGA zone 55

Figure 7 Development Site overview and Land categorisation - Map 6

**18-558 Flyers Creek Wind Farm LCA**
**Land Category Assessment Map 7**

Windfarm Development Site

Land Category Assessment

Category 1 Land

Category 2 Land

0    0.5    1 km

Map 1
Map 2    Map 5
Map 3    Map 6
Map 4    Map 7

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**18-558 Flyers Creek Wind Farm LCA**
**Land Category Assessment Total**

◻ Transmission Line Development Site

◻ Windfarm Development Site

Land Category Assessment

◼ Category 1 Land

◼ Category 2 Land

◼ Excluded Land

0    2    4 km

Map 1
Map 2    Map 5
Map 3    Map 6
Map 4    Map 7

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Author: D. Bambrick
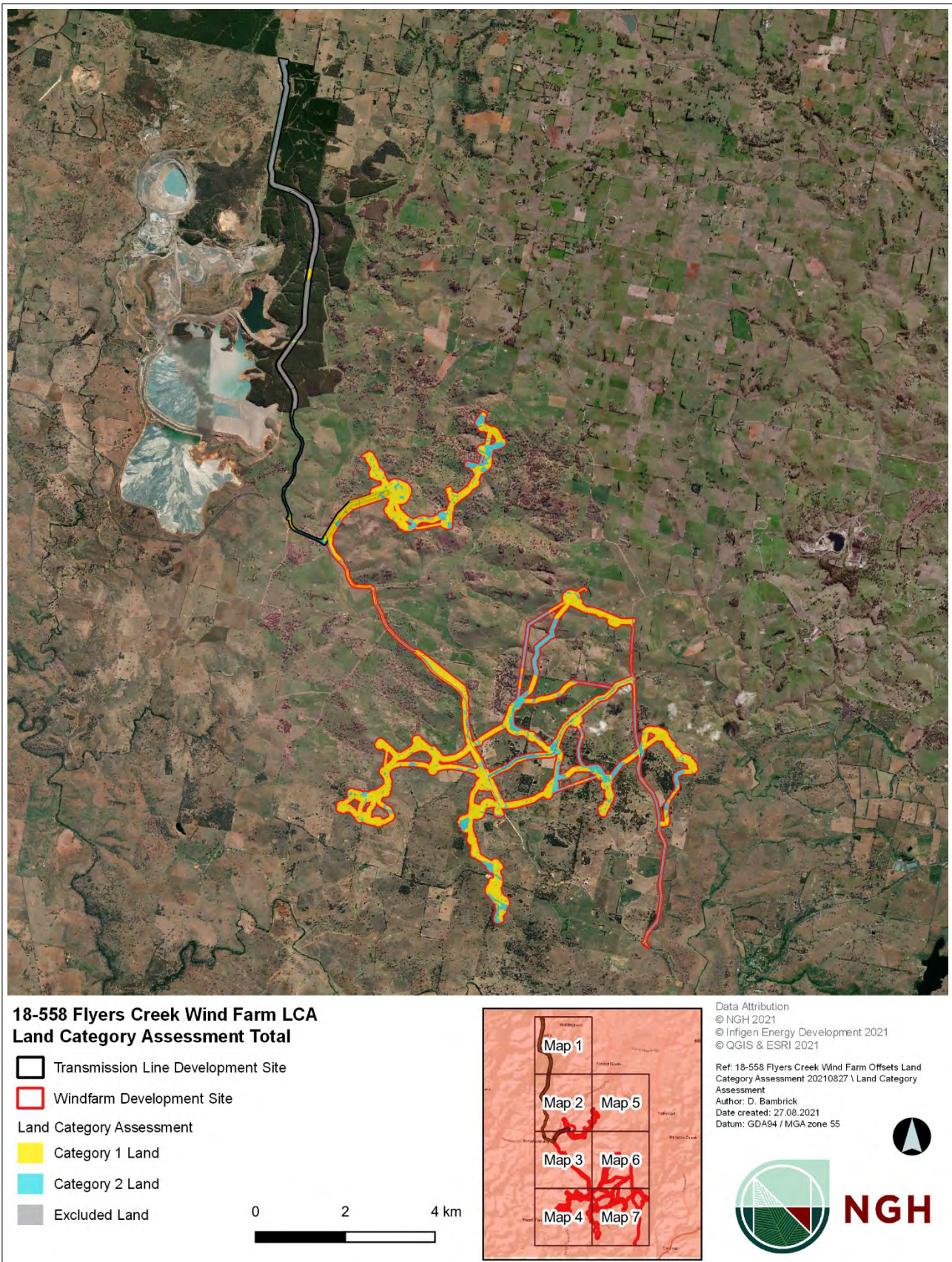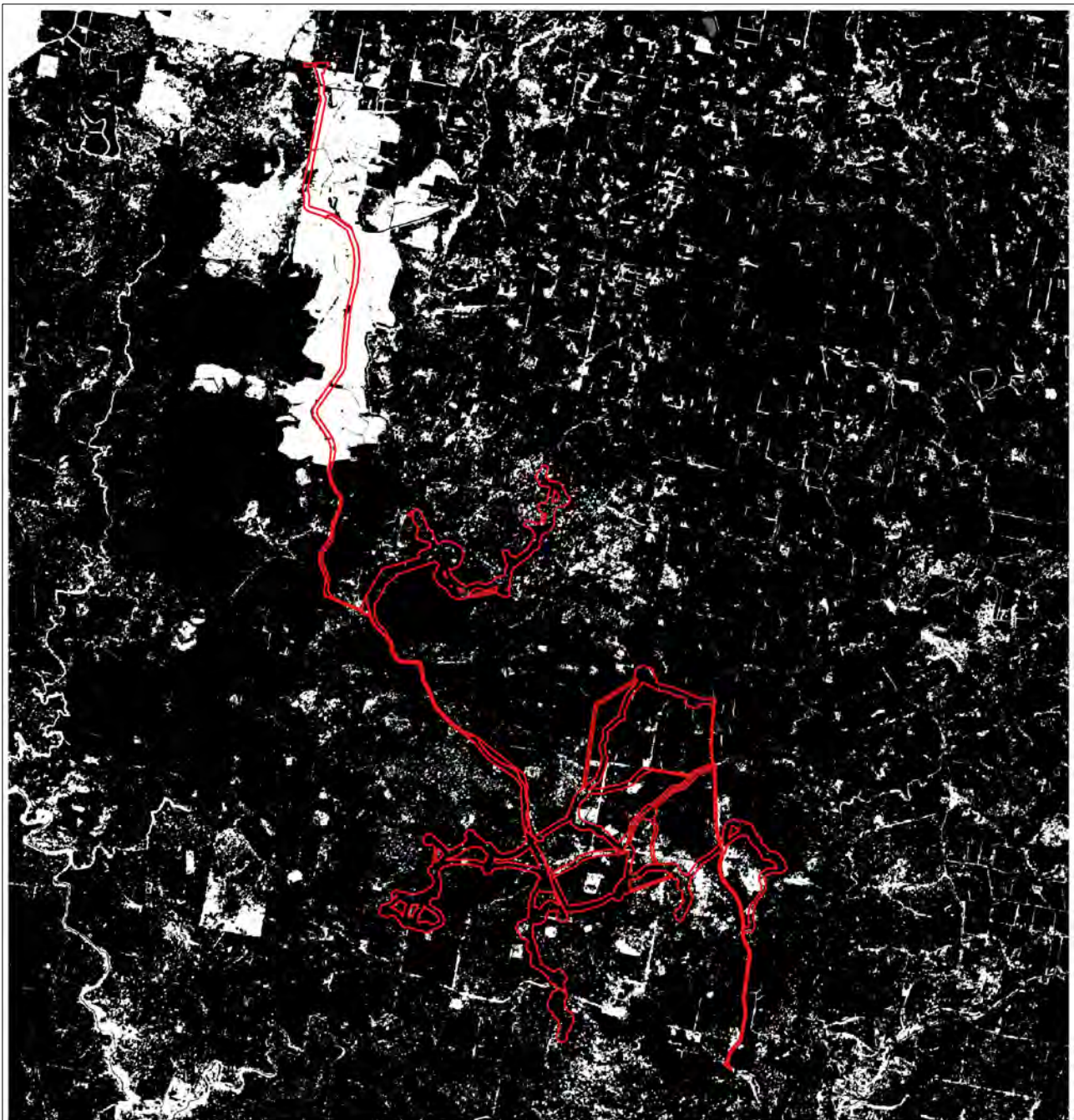Date created: 27.08.2021
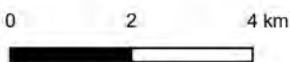Datum: GDA94 / MGA zone 55

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Figure 8 Development Site overview and Land categorisation - Map 7

**18-558 Flyers Creek Wind Farm LCA**
**Woody Vegetation Extent**

Legend

▢ Development Site

◼ Woody Vegetation

▢ Non Woody Vegetation

0    2    4 km

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Land Category Assessment \ Woody
Vegetation Extent
Author: D. Bambrick
Date created: 15.04.2021
Datum: GDA94 / MGA zone 55

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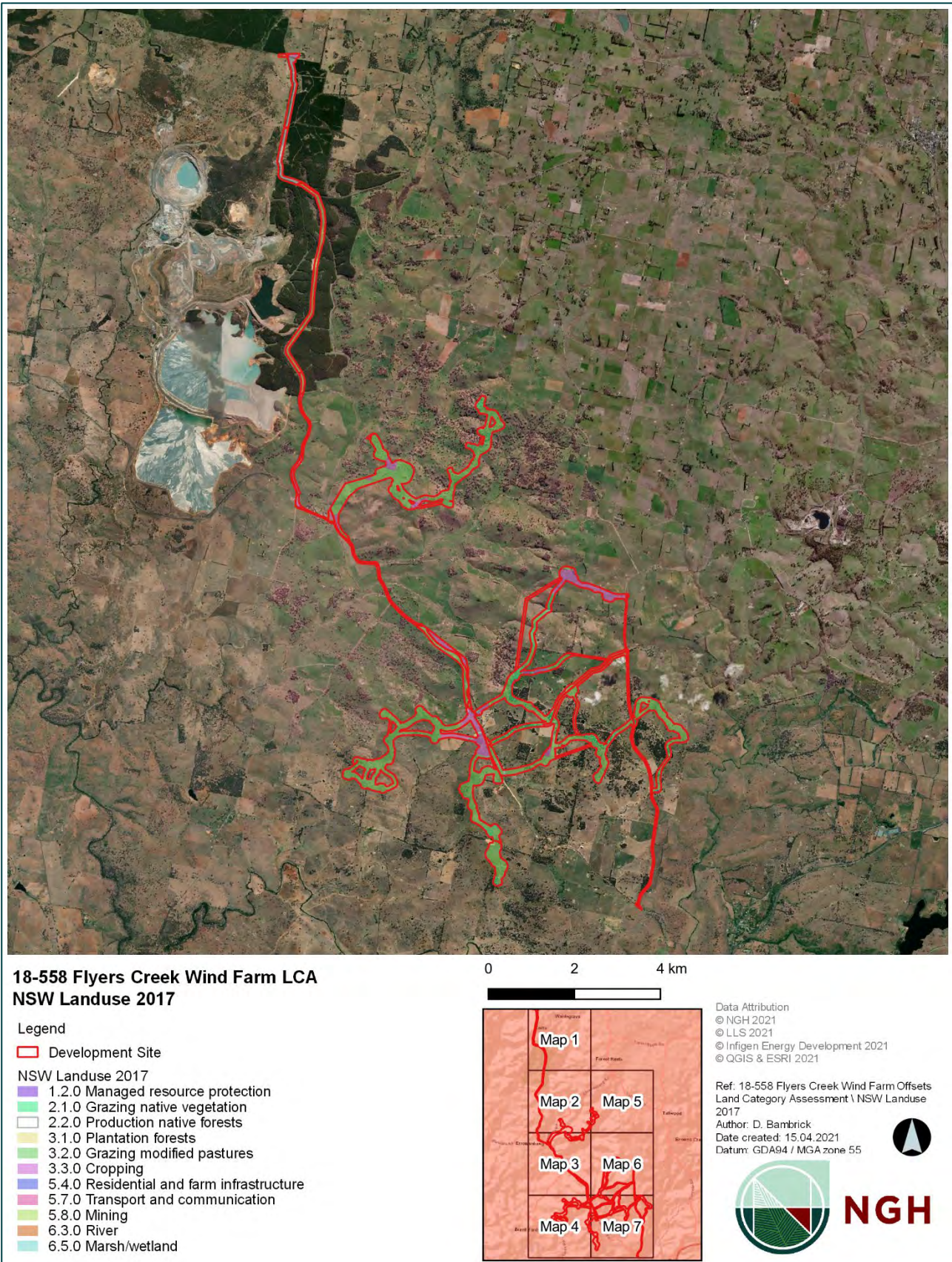Figure 9 NSW Woody Vegetation Extent and FPC 2011.

**18-558 Flyers Creek Wind Farm LCA**
**NSW Landuse 2017**

Legend

☐ Development Site

NSW Landuse 2017
- 1.2.0 Managed resource protection
- 2.1.0 Grazing native vegetation
- 2.2.0 Production native forests
- 3.1.0 Plantation forests
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 5.4.0 Residential and farm infrastructure
- 5.7.0 Transport and communication
- 5.8.0 Mining
- 6.3.0 River
- 6.5.0 Marsh/wetland

0    2    4 km

Map 1
Map 2    Map 5
Map 3    Map 6
Map 4    Map 7

**NGH**

Figure 10 Land Use Dataset – Overview map (OEH 2017).

**18-558 Flyers Creek Wind Farm LCA**
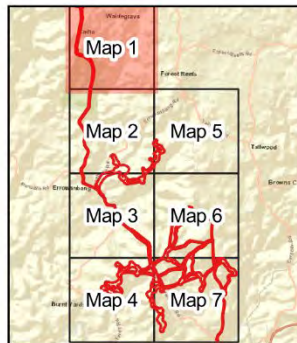**NSW Landuse 2017**

Legend

☐ Development Site

NSW Landuse 2017
- 🟩 2.1.0 Grazing native vegetation
- ☐ 2.2.0 Production native forests
- 🟨 3.1.0 Plantation forests
- 🟩 3.2.0 Grazing modified pastures
- 🟪 3.3.0 Cropping
- 🟪 5.7.0 Transport and communication
- 🟩 5.8.0 Mining

0    0.5    1 km

Map 1
Map 2    Map 5
Map 3    Map 6
Map 4    Map 7

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2017
Author: D. Bambrick
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**NGH**

Figure 11 Land Use Dataset – Map 1 (OEH 2017).

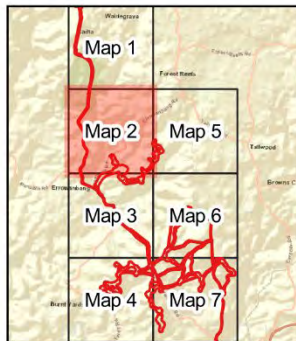**18-558 Flyers Creek Wind Farm LCA**
**NSW Landuse 2017**

Legend

▢ Development Site

NSW Landuse 2017
- 1.2.0 Managed resource protection
- 2.1.0 Grazing native vegetation
- 3.1.0 Plantation forests
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 5.7.0 Transport and communication
- 5.8.0 Mining
- 6.3.0 River

0    0.5    1 km

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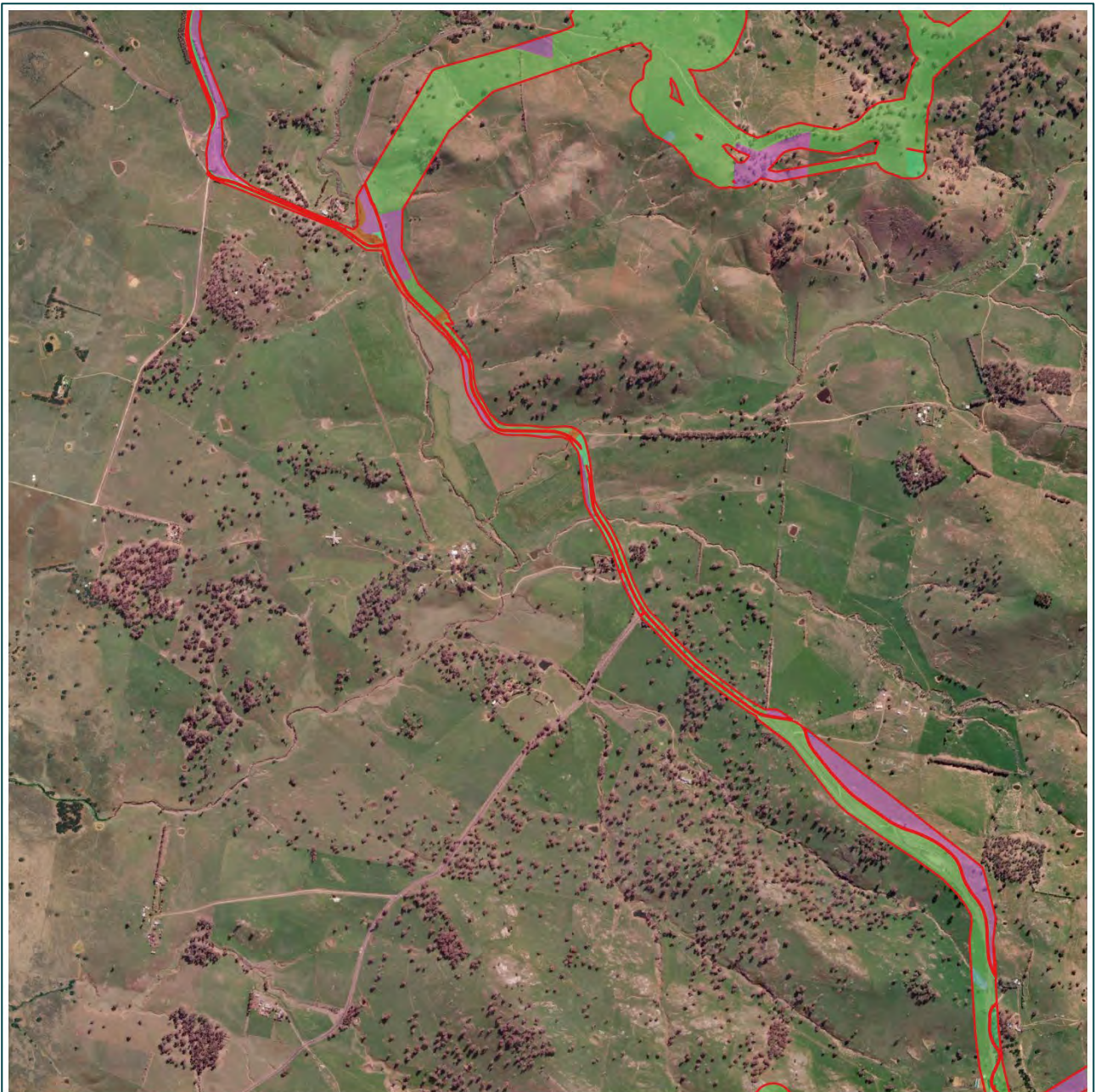© Infigen Energy Development 2021
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Figure 12 Land Use Dataset – Map 2 (OEH 2017).

**18-558 Flyers Creek Wind Farm LCA**
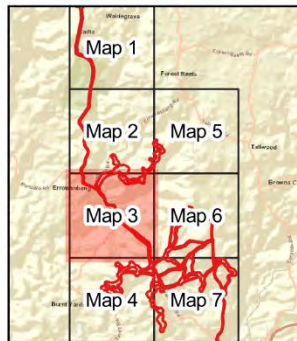**NSW Landuse 2017**

Legend

☐ Development Site

NSW Landuse 2017
- 2.1.0 Grazing native vegetation
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 5.4.0 Residential and farm infrastructure
- 6.3.0 River
- 6.5.0 Marsh/wetland

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Figure 13 Land Use Dataset – Map 3 (OEH 2017).