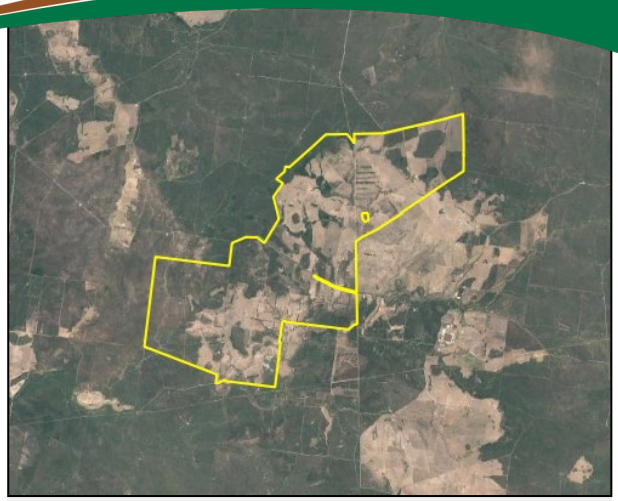

CATTLE CREEK WIND FARM: DESKTOP AGRICULTURAL LAND ASSESSMENT

Prepared for ERM Consulting

July 2026

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Rev 0	L. Thompson	M. Crawford	27/08/2025
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EXECUTIVE SUMMARY

Landloch Pty Ltd (Landloch) were engaged by ERM Consulting to provide a desktop assessment of land and soil capabilities for the Cattle Creek Wind Farm Project (the Project). This study may be used to address relevant Performance Outcomes (POs) of State Code 23 (specifically PO5) and State Code 27 (specifically PO9 to P12).

Cattle Creek Wind Farm is located approximately 110 km west of Toowoomba within the Toowoomba Regional Local Government Area. The Project Area is ~20,405 ha, with a proposed Disturbance Footprint to account for ~2,221 ha.

A desktop review was undertaken to assess the agricultural capabilities of the Project Area. Publicly available data sources were reviewed, including information on topography (slope, elevation), hydrology (watercourses), surface geology, radiometric imagery, vegetation, and existing land resources (soil and land studies).

Seven (7) Land Resource Areas (LRAs) were identified for the Project Area. These LRAs were developed from the land resource study of the Central Darling Downs (Harris et al. 1999) and land resource study of the Murilla, Tara and Chinchilla Shires (Maher 1996), both published at scale of 1:250,000. The seven LRAs overlying the Project Area are:

- Brigalow Uplands;
- Poplar Box Sodosols;
- Light Forests;
- Sandstone Forests;
- Ironbark Bulloak Sodosols;
- Cypress Pine Sands; and
- Brigalow Rises.

Information from the land resource studies (Harris et al. 1999; Maher 1996) were used to assess the LRAs against suitability criteria for several cropping systems common for the region. The higher the number of crops an LRA is suited to, the higher the Agricultural Land Classification (ALC). Approximately 43% of the Project Area is suited for mixed or limited crop use (Class A1/B). Less than 1% is considered suitable for horticultural land use (Class A2). Approximately 8% is classed as a mix of pasture and cropping land (C2/A1). The remaining 48% of the Project Area is considered suitable for grazing only (Class C2/C3).

For the Disturbance Footprint, ~1,189 ha (~54% of the footprint) is considered suitable for cropping land uses (Class A1/B agricultural land). Approximately 214 ha (~9%) of the Disturbance Footprint is considered suitable as a mix of grazing and cropping land uses (Class C2/A1 agricultural land). And the remaining ~818 ha (37%) is currently considered suitable for grazing land uses only (Class C1/C2/C3). More broadly, the Disturbance Footprint will impact ~10% of the entire mapping polygon (beyond the Project Area) of Class A1/B agricultural land.

Strategic Cropping Land (SCL) trigger mapping overlies ~8,391 ha (41%) of the Project Area and ~1,191 ha (52%) of the Disturbance Footprint. Landloch recommends a pre-lodgement meeting with the State Assessment Referral Agency (SARA) to understand any possible pathways to satisfy state government conditions regarding SCL.

The current land uses within the Project Area, mapped at a scale of 1:250,000, are grazing on dryland cropping and grazing on native pastures. Dry land cropping

accounts for ~15% of the Project Area (~2,995 ha), with the Disturbance Footprint overlying ~250 ha (~8%).

The State Codes are assessed through the desktop review of available soil and land resource information. The information presented in the report is ultimately limited to the scale of the land resource assessment completed by the QLD Government (Harris et al, 1999) (1:250,000). From the information presented in this desktop report, the Project is considered to meet the requirements of PO5 for State Codes 23 and PO10 and PO12 of State Code 27.

The Project may demonstrate compliance with PO9 if the BESS lies outside of good quality agricultural land. If the BESS lies within good quality agricultural land mapping, the project must allow for restoration to pre-construction values after operations cease. To demonstrate compliance with PO11, a soil management plan is recommended.

Desktop assessments are based on information provided by public databases, mapping, and historical records. Landloch has not performed physical inspection or laboratory testing of the soil. As such, while the findings are based on reasonable skill and care, no liability is accepted for inaccuracies within the source data or for unforeseen site conditions that differ from those anticipated in this report.

TABLE OF CONTENTS

1 INTRODUCTION

ERM Consulting (ERM) have been engaged by RWE Cattle Creek Onshore Wind (RWE) to provide planning support for the proposed Cattle Creek Wind Farm (the Project). As part of this, ERM has engaged Landloch to undertake a desktop assessment of land and soil, including an agricultural land evaluation and assessment of strategic cropping areas within the project boundaries (Project Area). This report may be used to address the POs of State Code 23 and State Code 27.

1.1 Background

Cattle Creek Wind Farm is located approximately 110 km west of Toowoomba within the Toowoomba Regional Local Government Area. The Project Area is ~20,405 ha, with a proposed Disturbance Footprint to account for ~2,221 ha. The Disturbance Footprint will include wind turbines and associated infrastructure such as roads, underground cables, laydown yards, site offices, and buildings.

The Proposed Development consists of the construction, operation, maintenance, and decommissioning of up to 135 WTGs, Battery Energy Storage System (BESS) of up to 450 MW and ancillary infrastructure (supporting infrastructure) consisting of:

- WTG foundations, crane hardstands, crane boom laydown, blade laydown and rotor assembly area;
- Access tracks, including:
    - New and upgraded tracks within the Project Area, generally comprising of a nominal range of 5.5 m – 10 m wide permanent access track, and a maximum 50 - 95 m wide cleared corridor for Oversize Overmass (OSOM) vehicles;
- Low voltage (LV) and medium voltage (MV) underground cabling, as well as MV and high voltage (HV) overhead transmission lines;
- Internal collector substations;
- A switching station adjacent to the existing 330 kV Powerlink transmission line. This has been accounted for within the Disturbance Footprint, thereby allowing the clearing of the site to be assessed as part of the impacts associated with the Proposed Development (noting, however, that the switching station infrastructure will be constructed, owned and operated by Powerlink);
- Permanent meteorological masts;
- Construction compounds and laydown areas;
- Washdown areas;
- Operational and maintenance facilities; and
- A construction workers accommodation facility.

Further, there is the potential for the inclusion of the below infrastructure:

- Concrete batching plant;
- Borrow pits; and
- Communications tower.

The Project Area and Disturbance Footprint is presented in Figure 1.

1.2 Scope of work

The scope of work includes a desktop assessment of agricultural and strategic cropping land for the Project Area. The key tasks for each part are:

- Undertake a desktop review of publicly available land resource data to assess agricultural land and strategic cropping land; and
- Detail the findings of the desktop review including the distribution of agricultural land evaluation throughout the Project Area.

1.3 Regulatory guidelines

The scope of works involves the following legislative guidelines:

- State Code 23 – Wind Farm Development;
- State Code 27 – Battery Storage Facility Development;
- Planning Act 2016; and
- Agricultural land evaluation (DISITI & DNRM 2015).

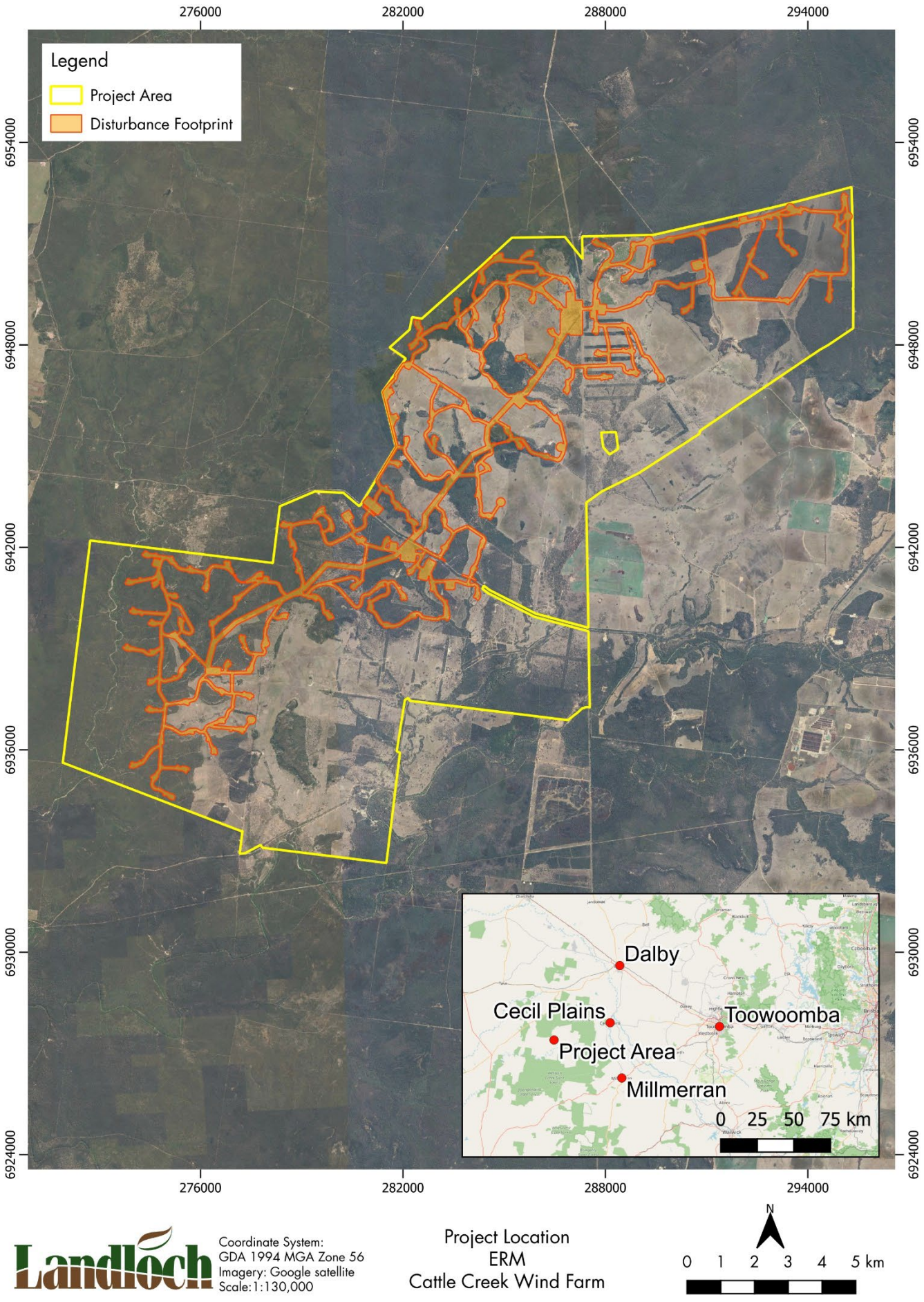


Figure 1: Project Area location and layout.

2 DESKTOP REVIEW

A variety of data sources were used to undertake the agricultural land evaluation for the Project Area. Readily available and accessible data such as existing land resource information (soil and land studies), topography (slope and elevation), hydrology (waterways), vegetation, surface geology, radiometric imagery, and climate data were used to gain an understanding of the soil and landscapes present within the Project Area. These data sets provided insight into their spatial distribution, physical and chemical composition, and ultimately their agricultural land capabilities.

The data gathered for the desktop review used the following information sources:

- Rainfall data (Bureau of Meteorology 2026);
- Temperature data (SILO, 2026);
- Radiometric data (Geoscience Australia, 2015) (100 m resolution);
- Vegetation data (Neldner et al. 2023) (1:1 million scale);
- Land resource data (Harris et al. 1999; Maher 1996) (1:250,000 scale);
- Surface geology data (Geoscience Australia 2021) (1:100,000 scale);
- Topography data (Intergovernmental Committee on Surveying and Mapping 2021) (1 second grid digital elevation modelling);
- Existing land use mapping (ABARES 2023) (1:250,000 scale);
- Planning Act 2016; and
- Strategic Cropping Area trigger mapping (DNRM, 2024).

This section details the findings of the desktop review.

2.1 Climate

Climate records for the Project Area were used to define the broad climate of the region. Historical rainfall data was accessed from Bureau of Meteorology (BoM) as recorded from Dunmore Exchange TM (site number 041545), ~12 km south-east of the Project Area. The weather station has historical climate data spanning 25 years. Historical temperature data was taken from Scientific Information for Land Owners (SILO) for the Dunmore area (SILO, 2026). Mean rainfall and temperature recorded at Dunmore Exchange TM is presented in Figure 2 and Figure 3 respectively.

The climate for the Dunmore Exchange TM is described as subtropical with hot summers and warm winters. Rainfall is summer dominant, with the majority of rainfall received between the months of November and February, with an annual average of ~614 mm. The high rates of rainfall during summer are conducive to erosion.

The mean annual temperature for Dunmore Exchange TM ranges between ~12–27°C. The hottest month on average is January with a mean maximum daily temperature of ~33°C. The coldest month on average is July with a mean minimum daily temperature of 4°C.

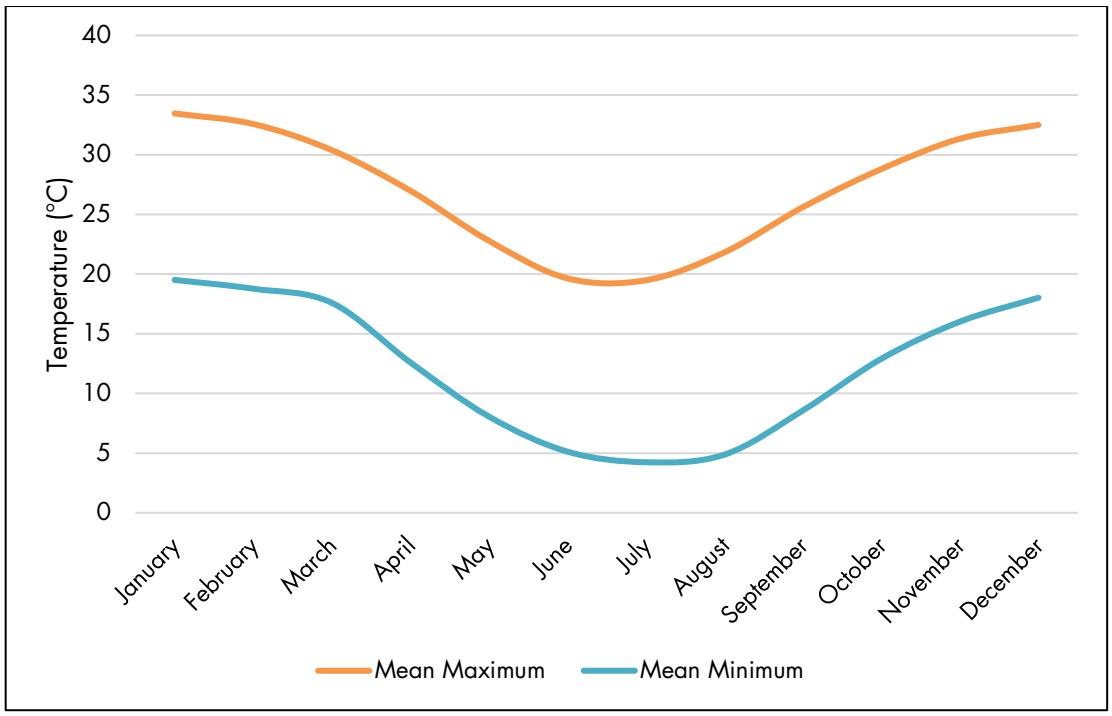


Figure 2: Mean daily temperatures recorded at Dunmore Exchange TM. Adapted from BoM (2026).

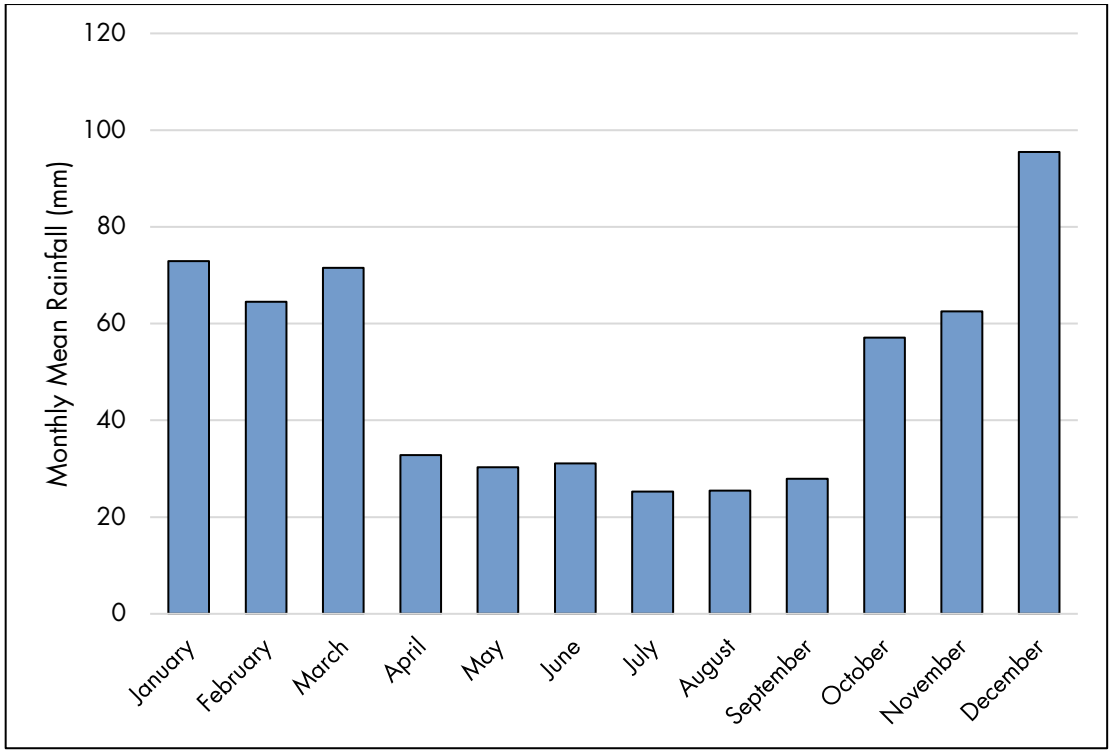


Figure 3: Mean monthly rainfall recorded at Dunmore Exchange TM (041545). Adapted from BoM (2026).

2.2 Topography and hydrology

The topography of the Project Area has a maximum relief of ~120 m with slope gradients of up to 18%. The Project Area is defined by gentle slopes forming gently undulating rises from the western boundary through to the eastern boundary. Steep slopes rise up to form low hills, plateaus, and scarps along the northern boundary with a prominent low hill situated on the southern boundary.

Cattle Creek dissects the gently undulating rises of the north and central Project Area, heading westward where it joins Weir River on the southern boundary. Waar Waar Creek dissects the western most portion of the Project Area, draining southward to join Weir River beyond the southern boundary.

Topography of the Project Area (elevation, slope, and waterways) are presented in Appendix A Figure A1, Figure A2, and Figure A3, respectively.

2.3 Vegetation

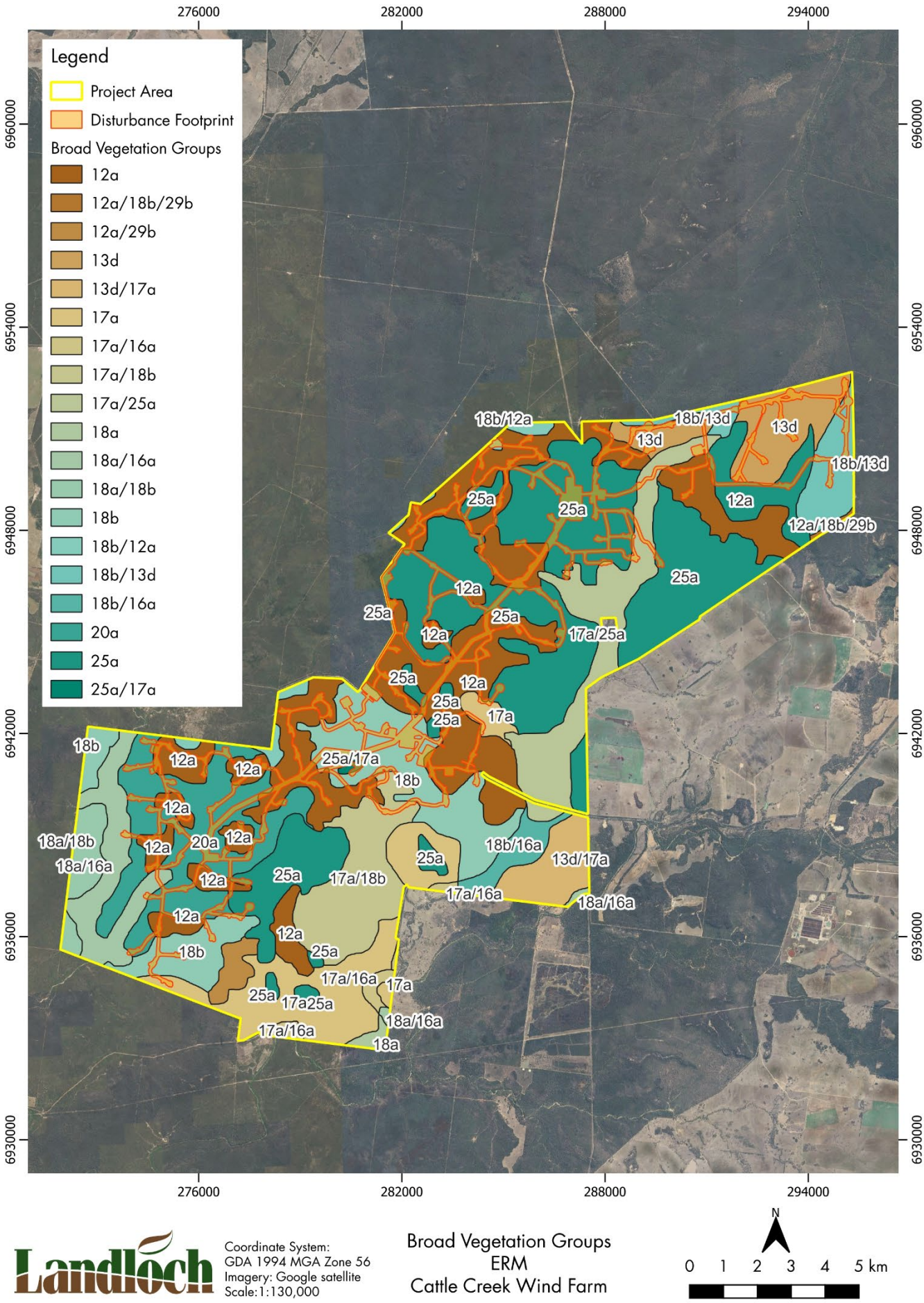
The pre-clearance Broad Vegetation Groups (BVGs) mapped across the Project Area show a range of vegetation patterns.

Woodlands of *Acacia harpophylla* (brigalow) dominate the undulating rises of the eastern half of the Project Area, with some minor occurrences in the western half. Woodlands of *Eucalyptus decorticans* (gum-topped ironbark) and *Corymbia trachyphloia* (yellow bloodwood) exist across remnant landforms on the northern boundary and extend through the central Project Area. Several isolated occurrences exist across the western half of the Project Area.

Woodlands of *Eucalyptus populnea* (poplar box) occur on the lower slopes of the undulating rises along the drainage lines of Cattle Creek, extending through the central portion of the Project Area and along the southern boundary. Woodlands of *Eucalyptus crebra* (narrow-leaved red ironbark) extend along the western and eastern boundary and in the central Project Area. Woodlands of *Eucalyptus moluccana* (gum-topped box) extend along the southern and northern boundary.

Minor occurrences of *Corymbia dallachiana* (western bloodwood) and *Eucalyptus camaldulensis* (river red gum) occur on alluvial plains, and sparse occurrence of open heathlands occur on rocky remnant landforms.

A summary of the pre-clearance BVGs within the Project Area are presented in Table 1 and shown in Figure 4.



Coordinate System:
GDA 1994 MGA Zone 56
Imagery: Google satellite
Scale:1:130,000

Broad Vegetation Groups
ERM
Cattle Creek Wind Farm

Figure 4: Broad Vegetation Groups within the Project Area.

Table 1: Pre-clearance broad vegetation groups within the Project Area. Adapted from Neldner et al. (2023).

BVG Code	Description	Occurrence (%)
25a	Open forests to woodlands dominated by *Acacia harpophylla* (brigalow), sometimes with *Casuarina cristata* (belah) on undulating plains of heavy clay soils.	28
12a	Dry to open woodlands dominated by ironbarks (*Eucalyptus decorticans* (gum-topped ironbark)), and/or bloodwoods (*Corymbia trachyphloia* (yellow bloodwood)), occasionally with *E. thozetiana* (mountain yapunyah), *E. cloeziana* (Gympie messmate) or *E. mediocris* on shallow soils of inland/sub-coastal tablelands and ranges.	22
17a	Woodlands dominated by *Eucalyptus populnea* (poplar box) or *E. Brownii* (Reid River box) on alluvium, sand plains and footslopes of hills and ranges.	16
18b	Woodlands dominated by *Eucalyptus crebra* (narrow-leaved red ironbark), frequently with *Corymbia* spp. or *Callitris* spp. on flat to undulating plains.	15
20a	Open forests to woodlands dominated by *Callitris glaucophylla* (white cypress) or *C. intratropica* (northern cypress pine) on alluvial plains.	8
13d	Woodlands dominated by *Eucalyptus moluccana* (gum-topped box) or *E. macrocarpa* (inland grey box) on a range of substrates over sand plains to alluvial plains.	6
18a	Open woodlands dominated by *Corymbia dallachiana* (western bloodwood), *C. leichhardtii* (rustyjacket) or *Eucalyptus quadricostata* (Pentland ironbark), often with *E. acmenoides* (narrow-leaved white stringybark) on sandplains and alluvial plains.	4
16a	Open forests and woodlands dominated by *Eucalyptus camaldulensis* (river red gum), or *E. coolabah* (coolabah), or *E. tereticornis* (blue gum), fringing on drainage lines of alluvial plains.	<1
29b	Open and dwarf open heathlands with associated shrublands on open woodlands, and rocky headlands.	<1

2.4 Radiometric imagery

The radiometric, or gamma-ray spectroscopic, method measures the natural variations in gamma-rays detected near the Earth's surface as a result of the natural radioactive decay of potassium (K), uranium (U), and thorium (Th). This can be useful in revealing where changes occur in surface geology, soil weathering, and surface soil texture.

Three distinct patterns occur across the Project Area. A mottled dark blue and red pattern wraps along the northern and western boundary, likely reflecting older sedimentary materials. Pale, indistinct mottles of green and pink occur throughout the majority of the north and central Project Area, reflecting highly weathered material, likely of colluvial or mixed origin. Distinct mottling of pale yellows, blues, and greens occur on the western boundary of the Project Area, reflecting material that is of mixed origin, highly weathered, and likely high in silica.

The radiometric imagery for the Project Area is shown in Appendix A Figure A4.

2.5 Surface geology

The majority of the Project Area is comprised of Quaternary period sedimentary formations occurring through the northern and central portion of the Project Area. These Quaternary sediments generally form gentle slopes and undulating terrain. Late Jurassic to early Cretaceous period formations extend across the northern boundary, and parts of the central and western portion of the Project Area. The Kumbarilla beds generally form steeper slopes and hilly terrain. Tertiary period sediments lie along the western boundary of the Project Area, forming gently slopes on undulating terrain.

The surface geology underlying the Project Area is summarised in Table 2 and shown in Appendix A Figure A5.

Table 2: Surface geology underlying Project Area.

Geology	Mapping Code	Age	Description	Occurrence (%)
Qs-SQ> Kumbarilla Beds	Qs>JKk	Quaternary	Sand, red sandy soil, silt and some gravel; flood out and sheet sand with some alluvium	56
Qs-SQ	Qs	Quaternary	Sand, red sandy soil, silt and some gravel; flood out and sheet sand with some alluvium	13
Kumbarilla Beds (w)	JKk(w)	Late Jurassic-Early Cretaceous	Sandstone, siltstone, mudstone, conglomerate - kaolinised deeply weathered sediments	25
Ts-QLD	Ts	Tertiary	Clayey, commonly poorly to semi-consolidated, sub labile to quartzose sandstone, sandy claystone, laminated siltstone, and local conglomerate	6

2.6 Existing land resources

Two land resource surveys were previously undertaken by the Queensland Government overly the Project Area; one for the Central Darling Downs area (Harris et al. 1999), and one for the Murilla, Tara and Chinchilla Shires (Maher 1996). These assessments were completed at a scale of 1:250,000 and delineate broad soil groups as Land Resource Areas (LRAs) with a minimum polygon mapping size of 250 ha. The LRA map is not a soil map. Errors in the use and interpretation of this map will occur by enlarging the map scale or by expecting map boundaries and LRA relationships to predict soil information without confirmation by soil survey (Harris et al. 1999).

LRAs are broad landscape units developed from related geological units with recurring patterns of topography and vegetation, that consist of groups of different soils. The purpose of an LRA is to define soil types and their distribution, and to assist in defining their agricultural capabilities. Each LRA is defined by dominant Soil Profile Classes (SPCs) that share a central concept with a range of values. The broader the survey scale, the more inclusive (and hence variable) the LRA becomes. The soils of an LRA are described based on their location within landscape units. Hence, the LRA map units are not designed to strictly identify the soils in a particular map unit but predict their probable occurrence (Harris et al. 1999).

As this assessment is desktop in nature, only the available data is being reported upon. Therefore, the LRAs are the sole source of soils information for the Project Area.

Within the Project Area seven LRAs exist, and are briefly described as:

- Brigalow Uplands: Grey and brown cracking clays and loams over clays on gently undulating rises.
- Poplar Box Sodosols: Bleached sands and loams over brown and grey clays on undulating plains.
- Light Forests: Sands and loams over acidic, red, massive subsoils on undulating plains and rises.
- Sandstone Forests: Bleached/gravelly sands and loams over mottled yellow and grey clays on gently undulating plains and/or low hills and scarps.
- Ironbark Bulloak Sodosols: Bleached sands and loams over mottled grey brown and yellow clays on undulating plains.
- Cypress Pine Sands: Deep sands and often bleached, over yellow or grey clays on gently undulating sandy plains.
- Brigalow Rises: Brown and grey self-mulching, cracking clays on gently undulating rises.

The LRAs within the Project Area consist of whole polygons and occasionally, as mixed polygons consisting of more than one LRA (Figure 5). Where mixed polygons occur, the contribution of each LRA to the Project Area is broken down based on the SPC distribution and their associated LRA. They are described in the following sections.

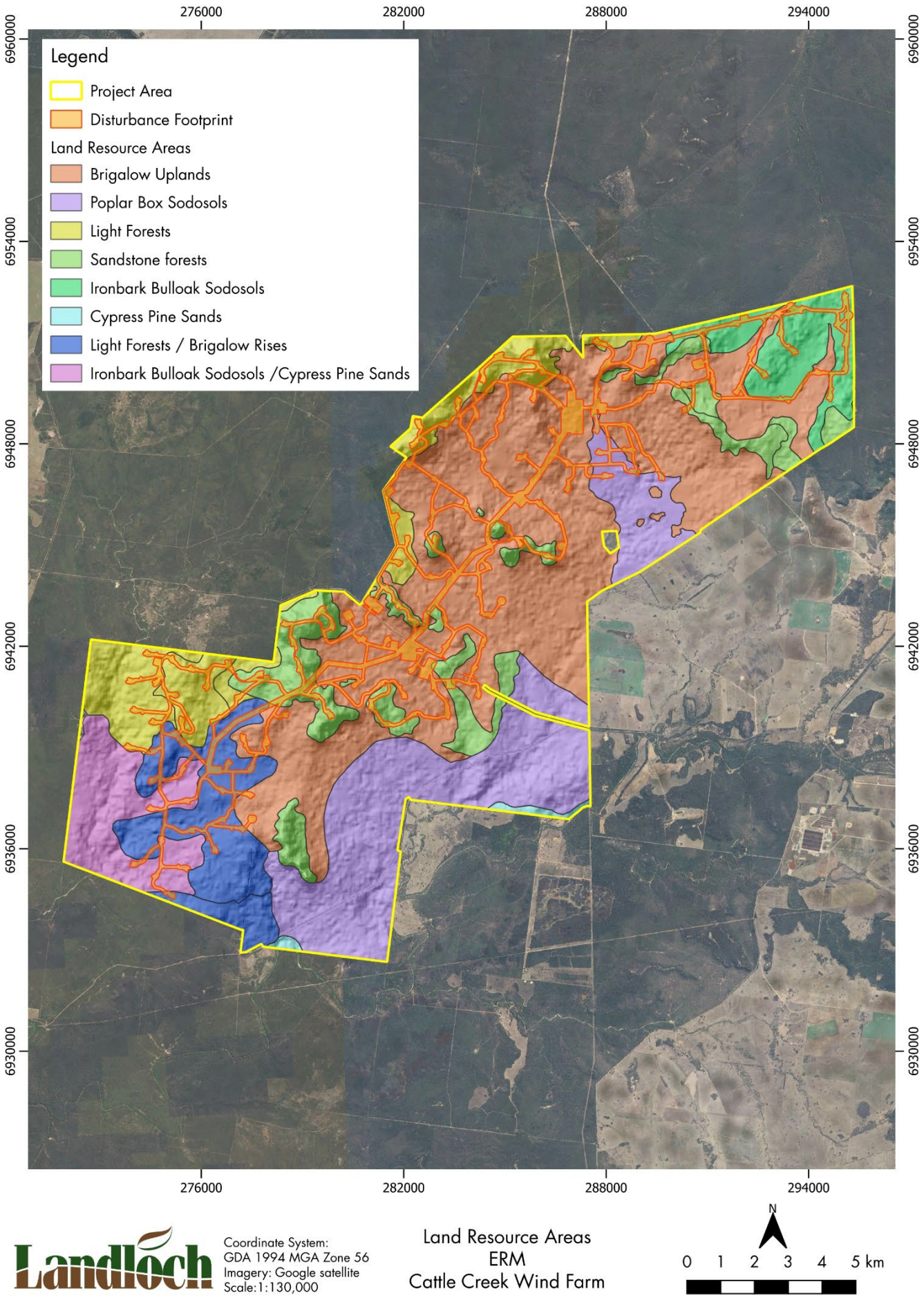


Figure 5 : Land Resource Areas within the Project Area.

2.6.1 Brigalow Uplands

The Brigalow Uplands LRA occupies ~43% of the Project Area. The soils within this LRA occur on gently undulating rises and plains on fine grained sediments. The distribution of dominant and sub-dominant SPCs within this mapping polygon present a variety of soil types. The dominant SPC within the mapping polygon is Calingunee, occupying ~40% of the area. The sub-dominant SPCs include Kurumbul (~30%) and Murra Cul Cul (~30%).

Calingunee is described as a self-mulching cracking clay with moderate gilgai micro-relief. The representative profile is characterised by neutral surfaces and strongly alkaline to acidic, saline, and sodic subsoils. The agricultural potential of this SPC is limited by the complex soil variation of the gilgai micro-relief, poor drainage, saline and sodic subsoils, and strong alkalinity and acidity at depth.

The Kurumbul and Murra Cul Cul SPCs are both texture contrast soils with thin loamy surfaces above heavy, coarse structure clays. They are generally neutral in the surface and grade to strongly alkaline or strongly acidic, saline, and sodic at depth. The agricultural potential is limited by the hard-setting and low fertility of the surface soils and poor drainage and high salinity and sodicity of the subsoils. These soils have high erosion potential if the subsoils are exposed to the surface during civil works.

2.6.2 Poplar Box Sodosols

The Poplar Box Sodosols LRA occupies ~18% of the Project Area and occurs on undulating plains formed on sandstone. The dominant SPC within the mapping polygon is Leyburn, occupying ~40% of the LRA. The sub-dominant SPC is Downfall, occupying ~40% of the LRA.

Leyburn and Downfall are both texture contrast soils with moderately thick clay loam surfaces above coarse structured clayey subsoils. They have neutral surfaces grading to strongly alkaline or acidic, saline, and sodic subsoils. The limitations to agricultural use are the hard-setting and low fertility of the surface soils and poor drainage and high salinity and sodicity of the subsoils. These soils have high erosion potential if the subsoils are exposed to the surface during civil works.

2.6.3 Light Forests

The Light Forests LRA occupies ~15% of the Project Area, occurring on undulating plains and rises. The distribution of dominant and sub-dominant SPCs within this mapping polygon present a variety of soil types. The dominant SPCs are Minnabilla and Flinton, combined occupying 60% of the LRA. Subdominant SPCs include Braemar and Binkey, making up the remaining 40% of the LRA.

Minnabilla are very shallow, gravelly, red soils with rock outcrops. They are acidic, non-saline, and non-sodic throughout the profile. The limitations to agricultural use are that they are very shallow and stony, plant available water capacity is very low, and fertility levels are often low.

Flinton are shallow to deep, sandy to loamy surface topsoils over acidic, red, massive, subsoils. Soil pH is medium acid to very strongly acid throughout and phosphorus is very low. The limitations to agricultural use are low fertility, low plant available water capacity in the root zoon, hard setting, and susceptibility to erosion.

Braemar and Binkey are texture contrast soils with bleached sandy surfaces over mottled, clay subsoils. pH is strong to medium acid throughout and the subsoils are often strongly sodic with high to extreme salinity levels. Possible agricultural limitations include gravelly soils, low plant available water levels, low fertility, strongly sodic subsoils, extreme salinity in the subsoils, and high susceptibility to erosion if the subsoils are exposed to the surface during civil works.

2.6.4 Sandstone Forests

The Sandstone Forests LRA occupies ~12% of the Project Area, occurring on low hills, plateaus, and scarps. The distribution of dominant and sub-dominant SPCs within this mapping polygon present a variety of soil types. The dominant SPC is Knoll, occupying ~50% of the mapping polygon. The sub-dominant SPCs include Cutthroat (40%) and Drome (10%).

The soils of the Knoll SPC are very shallow stony soils often found on scarps and slopes of low hills and eroded landforms. The agricultural potential of these soils is limited by the shallow soil depth, rock outcrop, steep landforms, and low fertility.

The Cutthroat soils have very thick sandy surfaces over coarse structured, mottled clay subsoil. These soils generally have slightly acidic surfaces and grade to strongly alkaline, saline, and sodic subsoils. The agricultural potential of these soils is limited by the hard-setting and low fertility of the surface soils and poor drainage and high salinity and sodicity of the subsoils. These soils have high erosion potential if the subsoils are exposed to the surface during civil works.

The soils of the Drome SPC are deep sandy soils overlying weathered sandstone. Their agricultural potential is limited by low surface fertility, poor water holding capacity, and susceptibility to wind erosion when surfaces are unprotected (i.e. unvegetated).

2.6.5 Ironbark Bulloak Sodosols

The Ironbark Bulloak Sodosols (10a) LRA occupies ~8% of the Project Area, occurring on undulating plains along the north-eastern boundary. The dominant SPC within the mapping polygon is Weranga, occupying 50% of the mapping polygon. The sub-dominant SPCs are Braemar (30%) and Cutthroat (10%).

The Braemar and Weranga soils are both texture contrast soils with moderately thick sandy surfaces over mottled grey and yellow clay subsoils. The Cutthroat soils have very thick sandy surfaces over coarse structured, mottled clay subsoils. These soils generally have slightly acidic surfaces and grade to strongly alkaline, saline, and sodic subsoils. The agricultural potential of these soils is limited by the hard-setting and low fertility of the surface soils and poor drainage, high salinity and sodicity of the subsoils. These soils have high erosion potential if the subsoils are exposed to the surface during civil works.

2.6.6 Cypress Pine Sands

The Cypress Pine Sands (11a) LRA occupies ~3% of the Project Area, occurring on the southern boundary, along the Weir River. The distribution of dominant and sub-dominant SPCs within this mapping polygon present a variety of soil types. The dominant SPC within the mapping polygon is Combidiban, occupying ~60% of the area. The sub-dominant SPC is Davey, accounting for ~40% of the polygon area.

The soils of the Combidiban SPC are texture contrast soils with very thick sandy surfaces over mottled yellow, grey, and brown clay subsoil. The surface soils are generally neutral to slightly acidic grading to neutral, sodic subsoils. The agricultural potential of these soils is limited by their imperfect drainage, low surface fertility, and sodic subsoils.

The soils of the Davey SPC are deep sands associated with recent alluvial deposits along creeks and levees. The soils are neutral to slightly acidic, non-saline, and non-sodic. The agricultural potential of theses soils is limited by low water holding capacity and low fertility.

2.6.7 Brigalow Rises

The Brigalow Rises LRA occupies < 2% of the Project Area, occurring on gently undulating rises and plains. Of the Brigalow Rises LRA occurring in the study area, a vast majority consists of the Ulimaroa SPC.

The Ulimaroa soils are moderately deep to deep, self-mulching, brown, grey, or occasionally black cracking clays. The surface soils are mildly alkaline, while the subsoils are strongly alkaline with deep subsoils being very strongly acid. The subsoils are sodic to strongly sodic and medium to very high salinity. The agricultural potential of these soils is limited by the strongly sodic and saline subsoils and the long slopes and large catchment sizes increasing the risk of erosion when cultivated.

2.7 Agricultural land classification

Agricultural land classification (ALC) in Queensland follows a simple hierarchical scheme that is applicable across the state. It allows the presentation of interpreted land evaluation data to indicate the location and extent of agricultural land that can be used sustainably for a wide range of uses with minimal land degradation. Provision is also made to highlight areas that may be suitable for a specific crop considered important in a particular area. Three broad classes of agricultural land and one non-agricultural land class are identified:

- Class A – Crop land:
    - A1 – suitable for a wide range of broadacre and horticultural crops; and
    - A2 – suitable for a wide range of horticultural crops only.
- Class B – Limited crop land.
- Class C – Pasture land:
    - C1 – suitable for sown pastures on high fertility soils;
    - C2 – suitable for native pastures on lower fertility soils; and
    - C3 – suitable for light grazing of native pastures in accessible area: more suitable for forestry or catchment protection.
- Class D – Non agricultural land.

The method for assessment of ALC uses suitability data generated from the land suitability assessment (Harris et al. 1999; Maher 1996). This data is assessed against a range of criteria to determine the land class and thus, provide an assessment of the type of agriculture for which the land is currently suitable.

The current ALC mapping of the Project Area has been completed at a scale of 1:250,000. The agricultural land classes for the Project Area is presented in Figure 6. From this mapping, ~43% of the Project Area is suited for mixed or limited crop use (Class A1/B). Less than 1% is considered suitable for horticultural land use (Class A2). Approximately 8% is classed as suitable for pasture or cropping land (C2/A1). The remaining ~48% of the Project Area is considered suitable for grazing only (Class C1, C2, and C3).

For the Disturbance Footprint, ~1,189 ha (~54% of the footprint) is considered suitable for cropping land uses (Class A1/B agricultural land). Approximately 214 ha (~10%) of the Disturbance Footprint is considered suitable as a mix of grazing and cropping land uses (Class C2/A1 agricultural land). The remaining ~818 ha (36%) is currently considered suitable for grazing land uses only (Class C1/C2/C3). More broadly, the Disturbance Footprint will impact approximately 8% of the entire mapping polygon (beyond the Project Area) of Class A1/B agricultural land as shown in Figure 7.

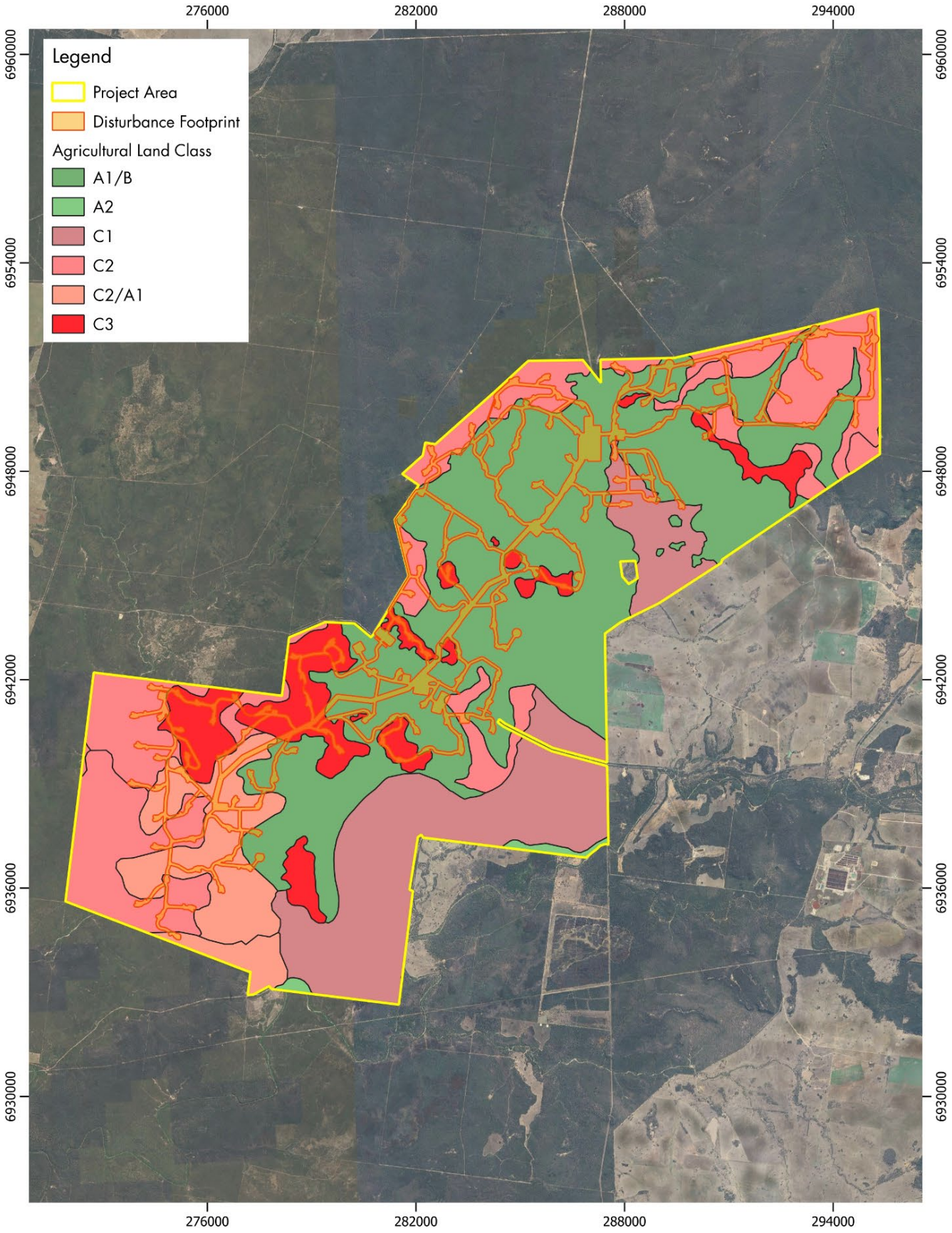


Figure 6: Agricultural Land Classes for the Project Area.

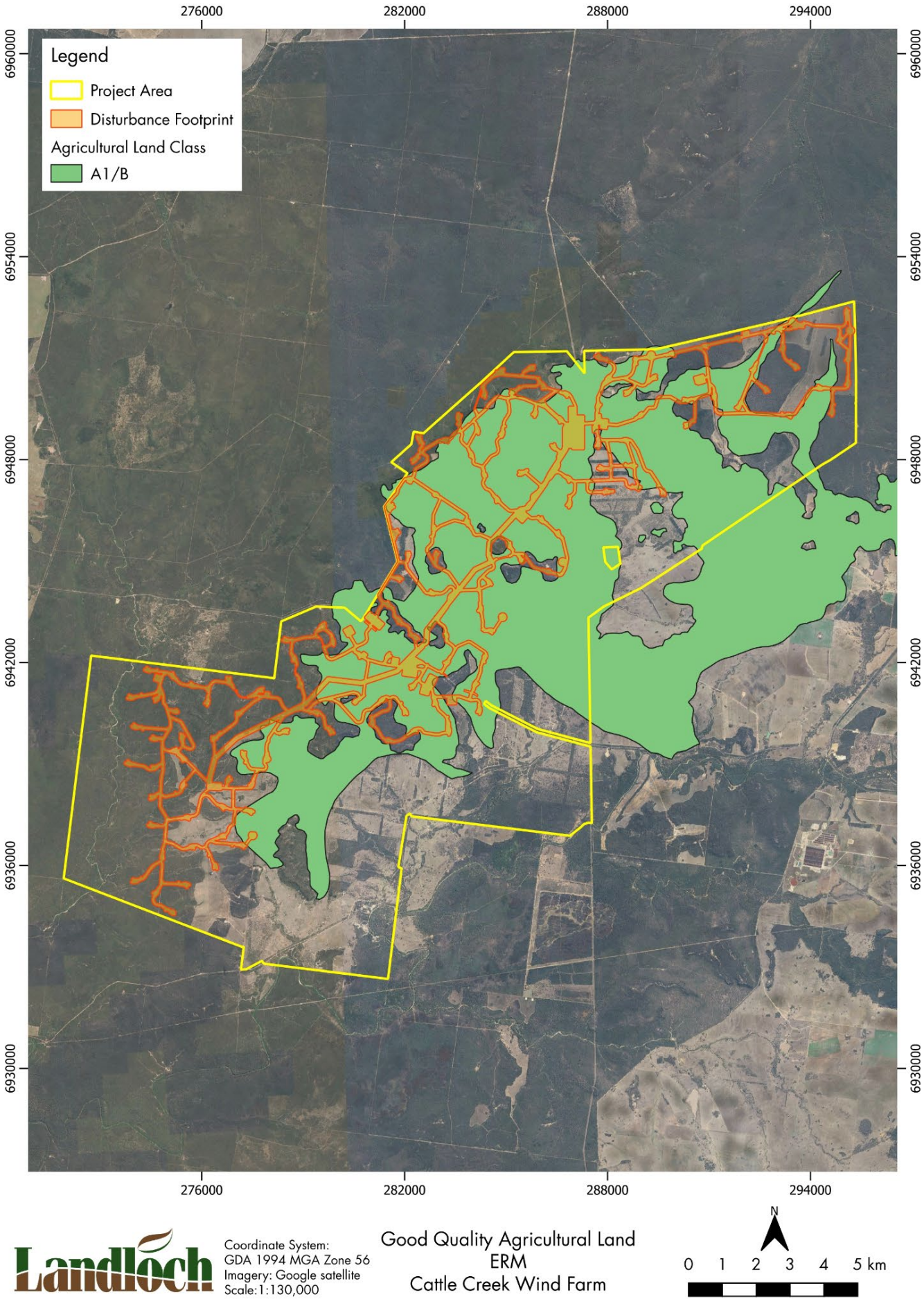


Figure 7: Good quality agricultural land (Class A and B) for the Project Area.

2.8 Strategic cropping land

The *Planning Act 2016* is a broad land-use framework aimed at achieving ecological sustainability for state significant development applications including a material change of use (MCU). Strategic Cropping Area (SCA) is a land area of regional interest governed by the *Regional Planning Interests Act 2014* (RPI Act). The RPI Act operates alongside the Planning Act 2016 and is designed to regulate resource activities strictly within areas of regional interest. Areas of regional interest such as Strategic Cropping Land (SCL) is identified on the SCL trigger map which is approved and published through the Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development. SCL is land that is, or is likely to be, highly suitable for cropping due to a combination of the land's soil, climate and landscape features.

The Project Area is located within the Western Cropping SCA. Currently, SCL trigger mapping overlies ~8,391 ha (~41%) of the Project Area and ~1,191 ha (~52%) of the Disturbance Footprint. The SCL trigger map is presented in Appendix A Figure A6. Landloch recommends a pre-lodgement meeting with SARA to understand any possible pathways to satisfy state government conditions regarding SCL.

2.9 Current land use

Catchment scale land use mapping, sourced through the Australian Collaborative Land Use Management Program (ACLUMP) (ABARES 2023) provides land use mapping for Australia at 1:250,000 scale. This mapping was utilised to assess current land use within the Project Area.

The current land uses within the Project Area are primarily grazing on native pastures and dryland cropping. The dryland cropping land use mapping polygon exists in two main areas, one within the central Project Area, and one within the eastern half of the Project Area. These mapping polygons are not whole, with fragments and isolated polygons existing.

Dryland cropping accounts for ~2,995 ha (~15%) of the Project Area with the remaining area mostly used for grazing land uses. The Disturbance Footprint overlies ~250 ha (~8%) of area mapped as dryland cropping.

Current land uses surrounding the Project Area include productive native forestry (state forests), grazing on improved pastures, and other low intensity land uses that may include watercourses and powerline right of ways.

Current land use mapping is provided in Appendix A Figure A7.

2.10 State Code 23: Wind farm development

State Code 23 consists of two components: a Purpose Statement, which outlines the three key objectives required to satisfy the code, and the Performance Outcomes (POs), which must be met for a Project to achieve compliance. Compliance with the Code will only be achieved where both the Purpose Statement and POs are complied with in full.

With respect to the Agricultural land assessment for the Project, PO5 is of most importance, stating *development is located and designed to ensure that there is no significant loss of high-quality agricultural land values.*

High quality agricultural land is defined under the Code as: *strategic cropping land, and priority living areas, or Agricultural Land Classification (ALC) Class A and Class B land identified on the SPP interactive mapping system, Development assessment mapping system (DAMs) or local planning instruments* (State code 23: Wind farm development v3.2). Section 2.9: Agricultural land classification defines the land types identified within the Project Area using available mapping.

To assess the Project against PO5, the ALC Class A and Class B, SCL, current land use and project layout are considered. The combined total area for ALC Class A and B, SCL and cropping areas, much of which overlaps, accounts for ~1,653 ha, or 74% of the total Disturbance Footprint.

The proposed disturbance of the Project will result in the inclusion of access roads, drains and fences connecting the turbines and may cause a degree of inconvenience for cropping and grazing land uses. However, there may not be a permanent impact on final land use if, for example, machinery or cattle can traverse unimpeded between paddocks. It is understood that RWE has worked with landowners to place infrastructure in areas to allow it to coexist with current land use operations.

Good-quality agricultural land is associated with the LRAs of Brigalow Uplands, Light Forests and Brigalow Rises. These LRAs include soils that have saline and sodic subsoils that are prone to erosion if disturbed or exposed to the surface. Civil works for the Project should consider best practice topsoil management to avoid impacts on soil quality.

Based on the collection of information presented in this desktop report, it is considered that the Project meets the requirements of PO9 by avoiding significant loss of high-quality agricultural land and working with land holders to maintain land use operations.

2.11 State Code 27: Battery storage facility development

An assessment against State Code 27 - *Battery storage facility development* is applicable to this project as it provides guidance when assessing agricultural land impacts for the purpose of a BESS under a Development Application (DA). A DA relating to a Material Change of Use (MCU) for the project will be assessed by the State Assessment Referral Agency (SARA).

The purpose of State Code 27 is to:

- ensure long-term safety and resilience for people, surrounding land uses and the environment;
- minimise the loss or fragmentation of high-quality agricultural land;
- ensure that there are no unacceptable adverse impacts on individuals, communities, the environment, adjacent sensitive land uses and sensitive receptors, landscape values and infrastructure and services;
- decommission facility in a timely and efficient manner that reuses, recycles, and/or repurposes materials to the greatest extent possible; and
- rehabilitates the environment.

To meet the performance outcomes of State Code 27 the Project must demonstrate the following:

- Avoids unacceptable loss of high-quality agricultural land (PO9);
- Avoids land fragmentation, ensuring land connectivity to support ongoing agricultural use (PO10);
- Will maintain soil fertility and productivity (avoiding irreversible impacts on soil quality) and will allow for restoration to pre-construction values after operations cease (PO11); and
- If on or near a stock route network, does not compromise its primary purpose for moving stock (PO12).

The location of the BESS within the disturbance footprint was unknown at the time of writing. The BESS will potentially have an impact on good-quality agricultural land considering that ~74% of the disturbance area lies within areas mapped as good-quality agricultural land (as identified in Section 2.10).

The Project may demonstrate compliance with PO9 if the BESS lies outside of good quality agricultural land. If the BESS lies within good quality agricultural land, the project must allow for restoration to pre-construction values after operations cease.

It is understood that currant land use has been taken into consideration in the Project layout. RWE has worked with landowners to place infrastructure in areas to allow it to coexist with current land use operations. Supporting current agricultural land uses will maintain connectivity and minimise fragmentation of agricultural land. Therefore, the Project is considered to satisfy the requirements of PO10.

To satisfy PO11 it must be demonstrated that the development of the BESS avoids irreversible impacts on soil quality. Through the desktop assessment, soils within the disturbance footprint have been identified to have complex soil variation of gilgai micro-relief, poor drainage, saline and sodic subsoils, with strong alkalinity and/or acidity at depth. Such soils are prone to erosion and have qualities that would exclude their use as a growth media. Best practice topsoil management is encouraged to avoid irreversible impacts on soil quality. To demonstrate how the Project will meet PO11, a soil management plan is recommended.

Stock routes exist within the Project Area and intersect the disturbance footprint (Appendix A Figure 8). It is unlikely that the development of the BESS will impact stock routes if their use remains accessible for livestock. If a temporary closure of a stock route is required, an application can be made to the local government under the Stock Route Management Act, 2002. From the information provided in this desktop review, the Project is considered to meet the requirements of PO12.

3 SOIL AND LANDSCAPE SUMMARY

The collation of a range of data sets allowed important soil and landscape attributes to be identified within the Project Area. A point of significance is the scale at which the information is provided, and as such, the variability which exists in it. This section highlights these areas of significance that may warrant further investigation.

The information presented in this report is limited to the mapping scale of the data available and collated. The existing information overlying the Project Area is generally broad and provides a level of detail that is useful for district level planning. At such scales, variation within each dataset is possible.

Each data set presented broad mapping units that were inclusive of a range of parameters. For example, vegetation mapping presents a mix of BVGs within each mapping unit and the LRAs have a variety of soils present within them. The radiometric imagery suggests a variety of soils present and the Kumbarilla Beds geological formation is variable in nature.

The variety of soils present may have implications for the agricultural land classes identified within the Project Area. Land mapped as Class A1/B is associated with the Brigalow Uplands LRA. This LRA has a variety of soils present, of which texture contrast soils (Kurumbul and Murra Cul Cul SPCs) make up 60% of the mapping polygon. These texture contrast soils have physical and chemical properties that are unfavourable for cropping land uses. The Brigalow Uplands LRA has the potential to be downgraded in classification if the SPCs are delineated through a field soil survey.

The relatively small area (88 ha) mapped as Class A2 agricultural land is associated with the Sandstone Forests LRA. Availability of irrigation water is a limiting factor to the agricultural potential for all the soils within this LRA. The dominant SPC of this LRA (Combidiban) is limited by the depth of topsoil for agricultural uses. If the topsoils within this soil are too shallow, their agricultural land class may potentially be downgraded.

The presence of SCL trigger mapping indicates that further investigation is required should the removal of the SCL classification from the Project area be sought. Approximately 8,391 ha (~41%) of the Project Area and ~1,191 ha (~52%) of the Disturbance Footprint is mapped under the SCL trigger mapping, with the majority of the area associated with the Brigalow Uplands LRA. This LRA includes texture contrast soils that have physical and chemical properties that may exclude their classification as SCL (Kurumbul and Murra Cul Cul SPCs). Potential limitations include soil drainage and salinity.

4 CONCLUDING REMARKS

A desktop assessment of agricultural land use for the Cattle Creek Wind Farm project was undertaken by Landloch in August 2025. The desktop assessment gathers information regarding the environmental setting of the Project Area. Such information collected includes; topography, hydrology, vegetation, geology, radiometric imagery, common soil types, agricultural land classes, and strategic cropping areas. From the information collected, an assessment of the Projects' impact on land is informed.

Seven (7) Land Resource Areas (LRAs) were identified for the Project Area. These LRAs were developed from the land resource study of the Central Darling Downs (Harris et al. 1999) and land resource study of the Murilla, Tara and Chinchilla Shires (Maher 1996), both published at scale of 1:250,000. The seven LRAs overlying the Project Area are:

- Brigalow Uplands;
- Poplar Box Sodosols;
- Light Forests;
- Sandstone Forests;
- Ironbark Bulloak Sodosols;
- Cypress Pine Sands; and
- Brigalow Rises.

Information from the land resource studies (Harris et al. 1999; Maher 1996) were used to assess the LRAs against suitability criteria for several cropping systems common for the region. The higher the number of crops an LRA is suited to, the higher the Agricultural Land Classification (ALC). Approximately 43% of the Project Area is suited for mixed or limited crop use (Class A1/B). Less than 1% is considered suitable for horticultural land use (Class A2). Approximately 8% is classed as a mix of pasture and cropping land (C2/A1). The remaining 48% of the Project Area is considered suitable for grazing only (Class C2/C3).

For the Disturbance Footprint, ~1,189 ha (~54% of the footprint) is considered suitable for cropping land uses (Class A1/B agricultural land). Approximately 214 ha (~10%) of the Disturbance Footprint is considered suitable as a mix of grazing and cropping land uses (Class C2/A1 agricultural land). The Disturbance Footprint will impact approximately 10% of the entire mapping polygon (beyond the Project Area) of Class A1/B agricultural land.

Limitations associated with ALC polygons identified as (A1/B) and (C2/A1) are due to the current mapping scale not allowing for clear delineation between areas that are unsuitable for cropping (i.e. C2) and high-quality agricultural land (A1). As a result, the extent of A1 land may be less than indicated by the existing mapping. Further, the identified LRAs have either dominant or sub-dominant Soil Profile Classes (SPCs) that have potential limitations relating to salinity and sodicity. These SPCs may have erosion issues and are likely to be susceptible to further structural stability issues when disturbed without amelioration.

Strategic Cropping Land (SCL) trigger mapping overlies ~8,391 ha (41%) of the Project Area and ~1,191 ha (54%) of the Disturbance Footprint. Landloch recommends a pre-lodgement meeting with SARA to understand any possible pathways to satisfy state government approval conditions regarding SCL.

The State Codes are assessed through the desktop review of available soil and land resource information. The information presented in the report is ultimately limited to the scale of the land resource assessment completed by the QLD Government (Harris et al, 1999) (1:250,000). From the information presented in this desktop report, the Project is considered to meet the requirements of PO5 for State Codes 23 and PO10 and PO12 of State Code 27.

The Project may demonstrate compliance with PO9 if the BESS lies outside of good quality agricultural land. If the BESS lies within good quality agricultural land mapping, the project must allow for restoration to pre-construction values after operations cease. To demonstrate compliance with PO11, a soil management plan is recommended.

Desktop assessments are based on information provided by public databases, mapping, and historical records. Landloch has not performed physical inspection or laboratory testing of the soil. As such, while the findings are based on reasonable skill and care, no liability is accepted for inaccuracies within the source data or for unforeseen site conditions that differ from those anticipated in this report.

5 REFERENCES

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APPENDIX A: MAPS AND FIGURES

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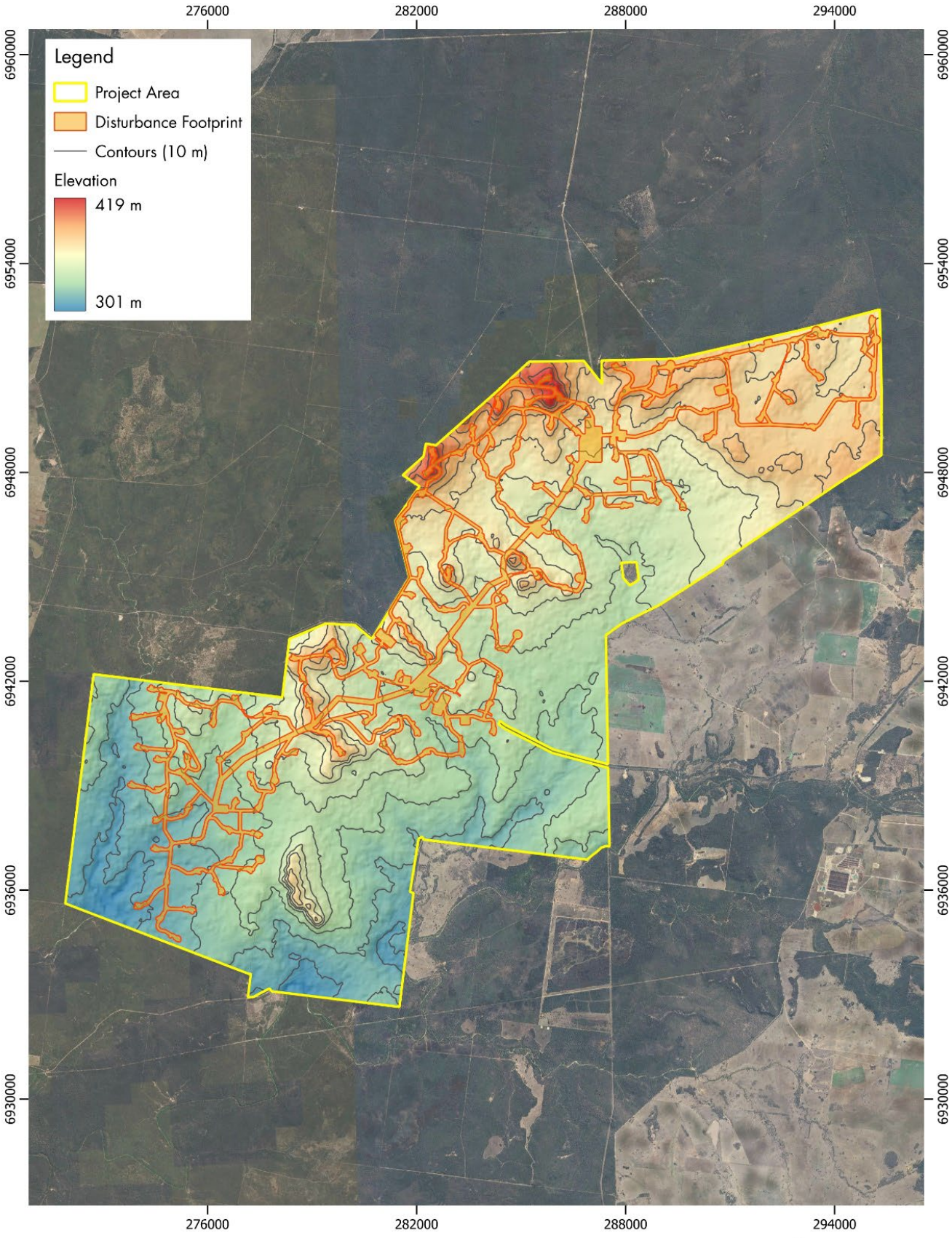


Figure A1: Elevation of the Project Area.

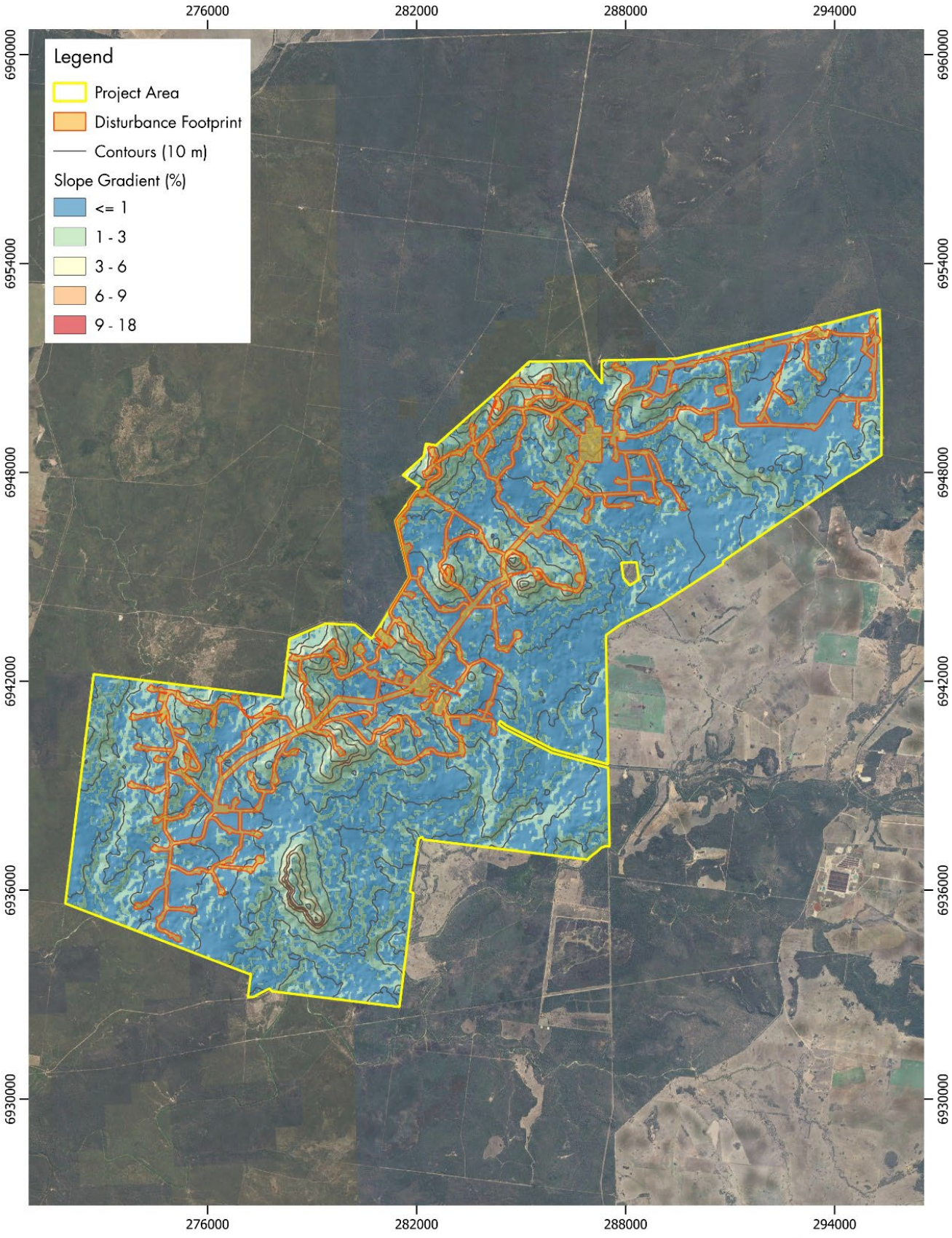


Figure A2: Gradient of the Project Area.

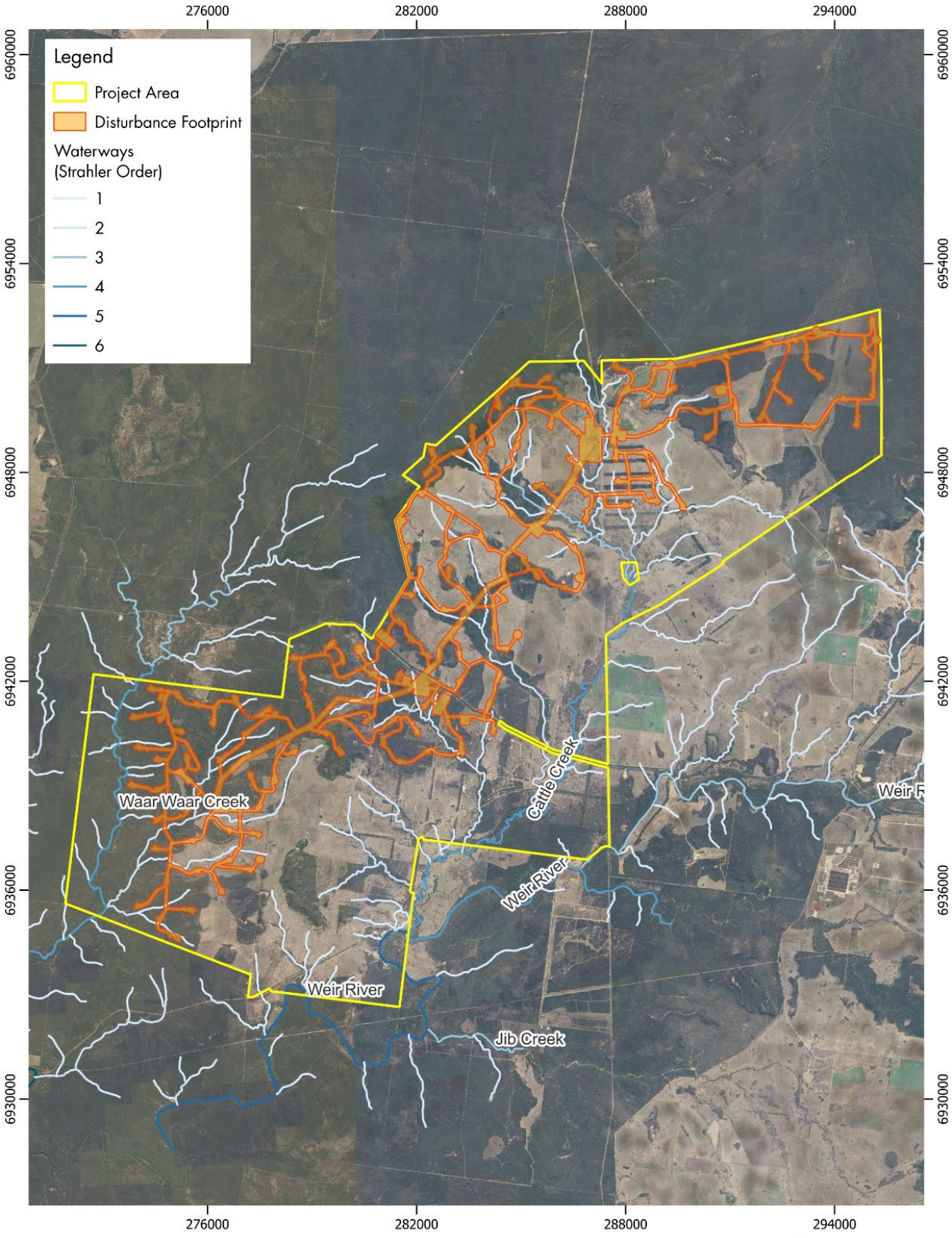
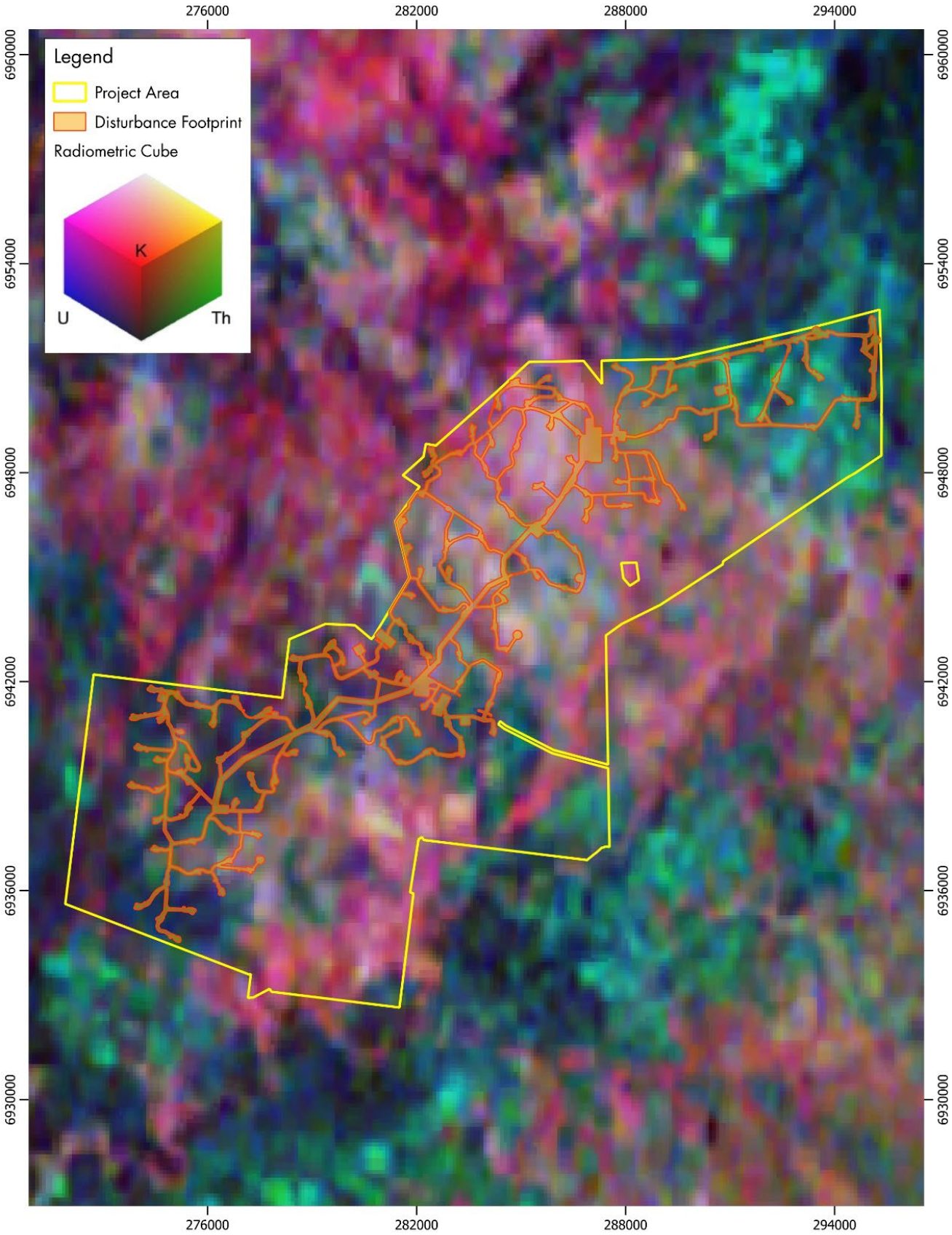


Figure A3: Waterways associated with the Project Area.



Landloch

Coordinate System:
GDA 1994 MGA Zone 56
Imagery: Google satellite
Scale:1:130,000

Figure A4
Radiometric Imagery
ERM
Cattle Creek Wind Farm

N
0 1 2 3 4 5 km

Figure A4: Radiometric imagery of the Project Area.

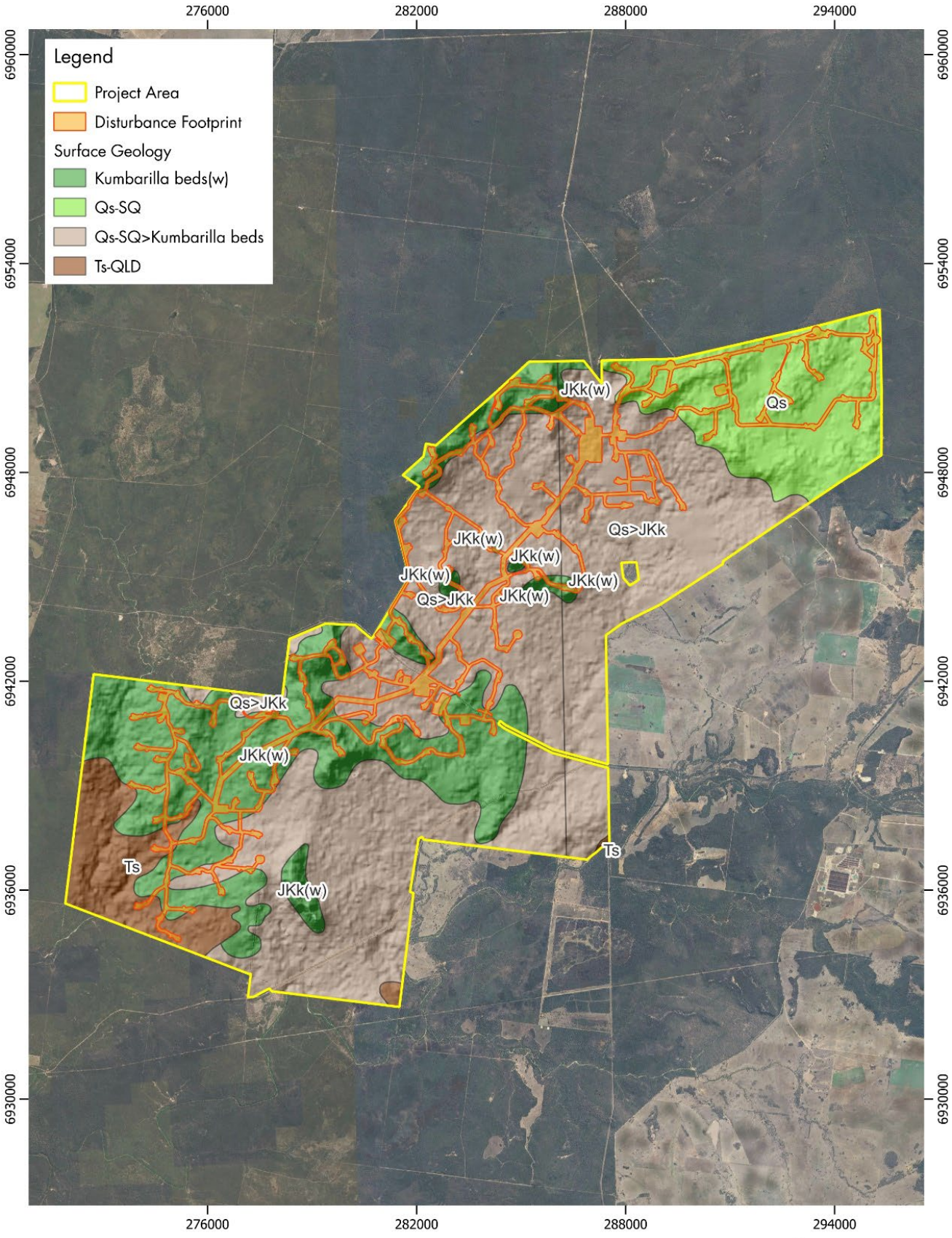


Figure A5: Surface geology of the Project Area.

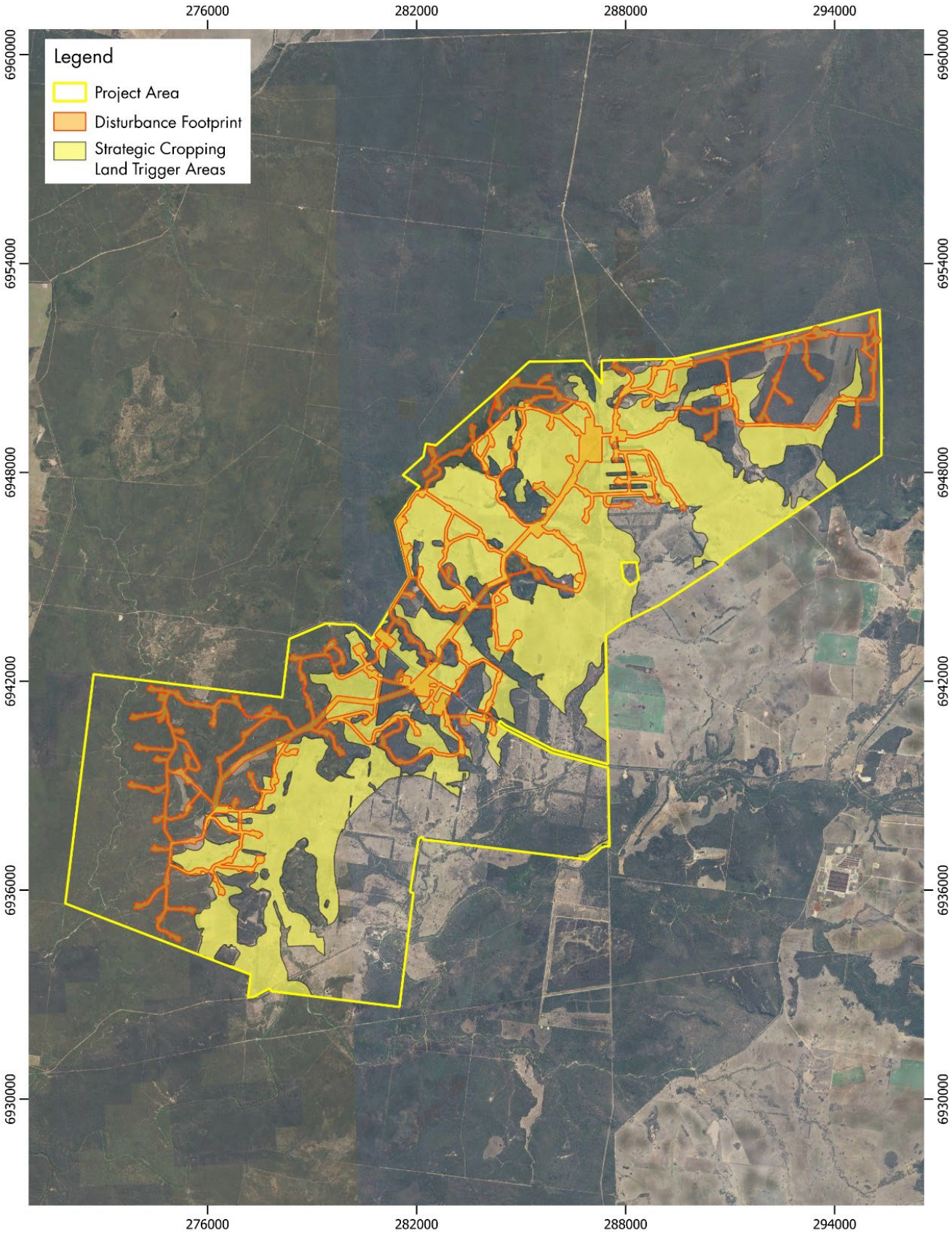


Figure A6: Strategic cropping land within the Project Area.

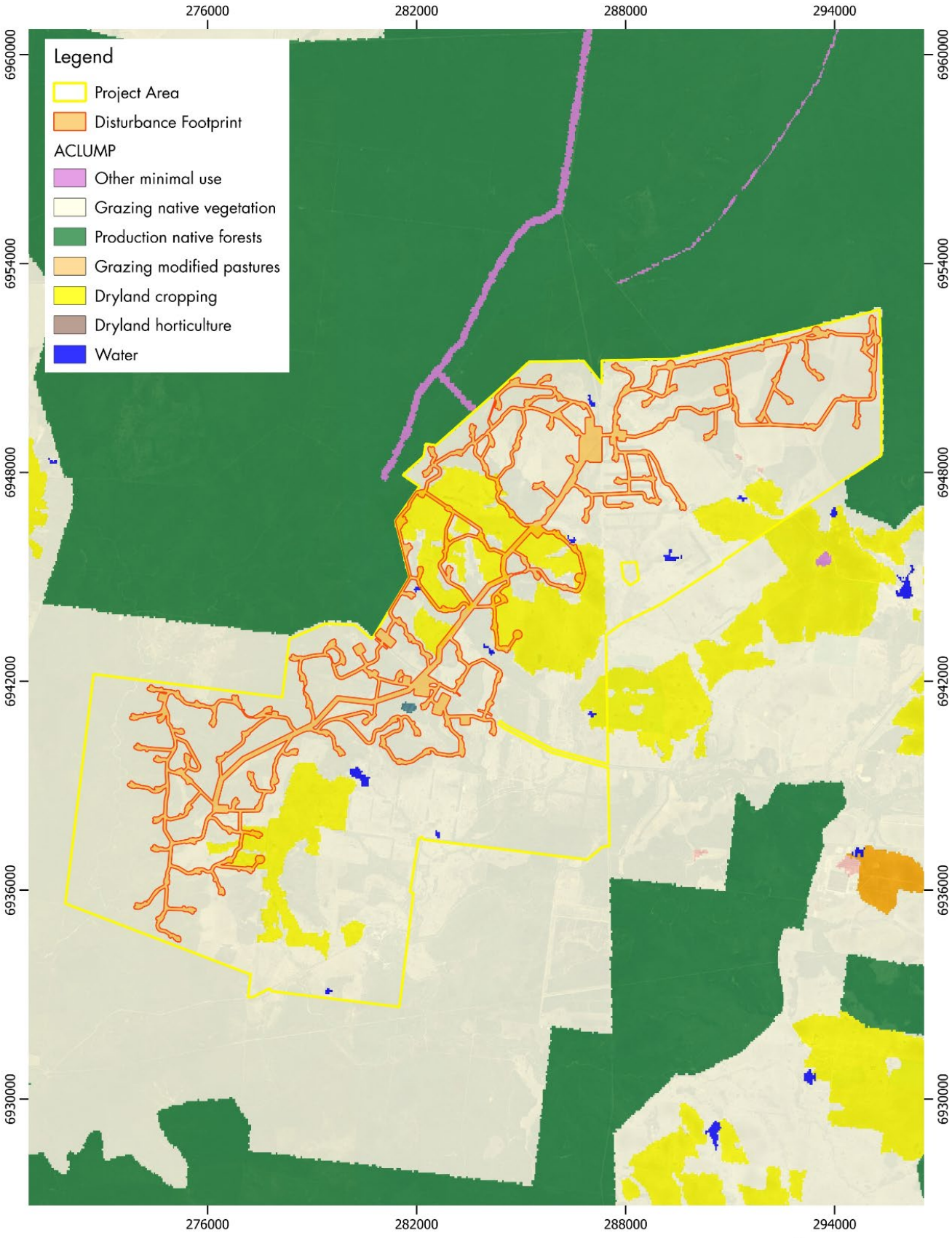


Figure A7: Land use within and surrounding the Project Area.

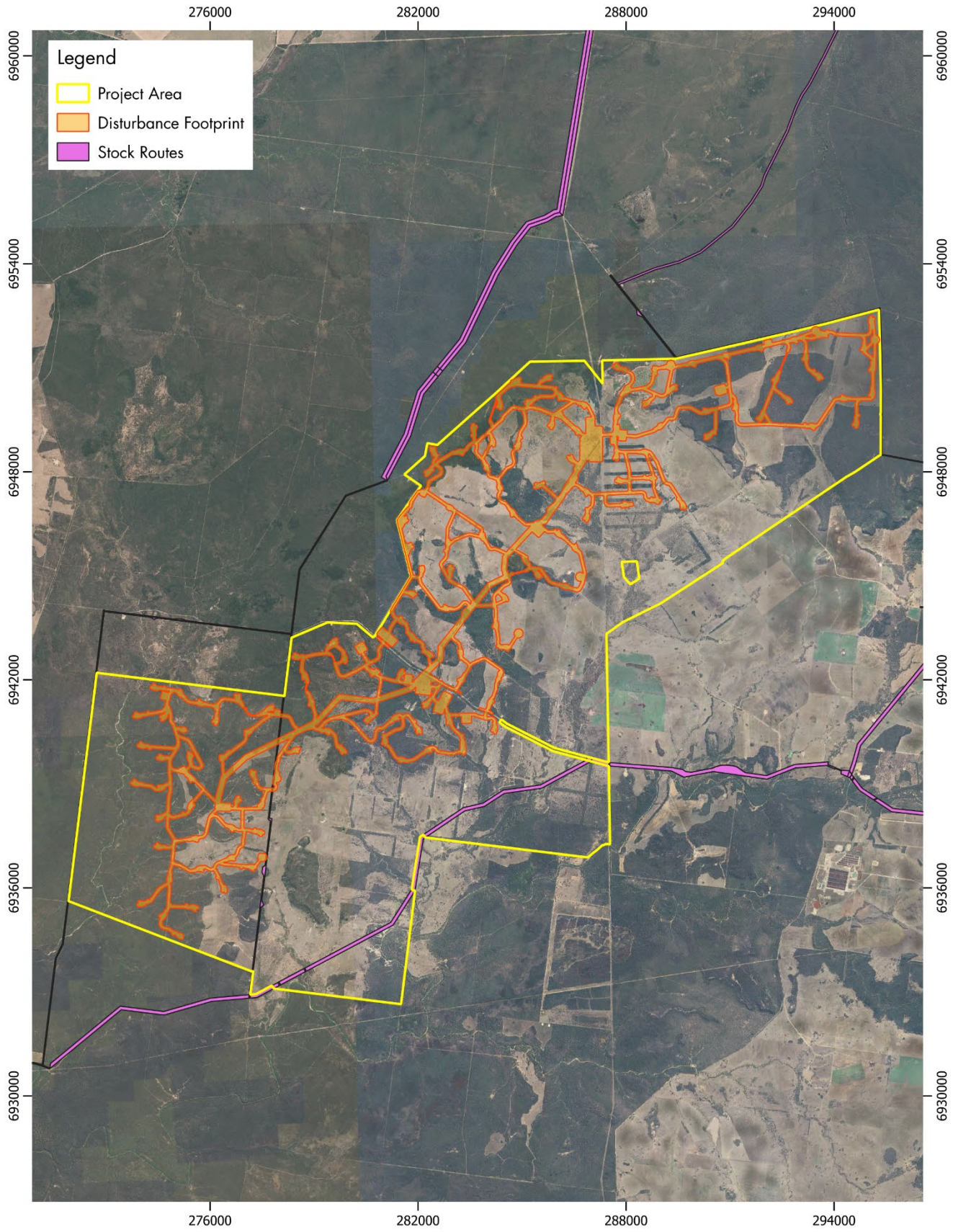


Figure A9: Stock routes within and surrounding the Project Area.