Supporting Document

Native Vegetation Clearing Permit

Prepared for Ngarluma Green Energy Pty Ltd

October 2026

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Ngarluma Green Energy Pty Ltd

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October 2026

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Executive Summary

Ngarluma Green Energy Pty Ltd (NGE) is seeking a Native Vegetation Clearing Permit (NVCP) to allow the clearing of up to 500.73 hectares (ha) of native vegetation within a 1,084.73-ha application area to facilitate Phase 1 development of the Ngarluma Green Energy Park (GEP), located approximately 10 kilometres (km) south of Karratha in the Pilbara region of Western Australia. The proposed clearing will support renewable energy infrastructure, including solar photovoltaic arrays, battery energy storage systems, access roads, service corridors and associated infrastructure.

This assessment has been informed by flora, vegetation and fauna investigations undertaken between 2024 and 2026, including reconnaissance and targeted flora and vegetation surveys by Vicki Long and Associates (VLA) and a fauna assessment by Bamford Consulting Ecologists (BCE). The studies comprised desktop assessments, field surveys, targeted searches for conservation-significant flora and ecological communities, fauna habitat assessments, camera monitoring, acoustic monitoring and targeted fauna investigations.

The application area is characterised predominantly by tussock grasslands and shrublands typical of the Roebourne Plains. No threatened ecological communities (TECs) or threatened flora were recorded during the surveys; however, three Priority 3 flora taxa and three priority ecological communities (PECs) were identified within portions of the application area. These comprise the Priority 1 Roebourne Plains coastal grasslands with gilgai microrelief on cracking clays, the Priority 1 Chenopod vegetation associations of the Roebourne Plains, and the Priority 3 Horseflat land system of the Roebourne Plains. Conservation-significant fauna may occur within the broader area, although higher-value drainage and rocky habitats will largely be avoided through project design.

The proposed clearing will result in the removal (or disturbance) of approximately 242.58 ha of mapped PEC vegetation, while approximately 201.50 ha of PEC vegetation will be retained within the application sites. Avoidance and mitigation measures have been incorporated into project planning, including retention and buffering of key drainage features, establishment of exclusion areas and implementation of erosion, sediment and weed management measures.

Assessment of the proposal against the clearing principles indicates that the proposed clearing is not likely to be at variance with principles (a), (b), (c), (d), (e), (g), (h), (i), and (j). The proposal may be at variance with principles (f), due to the potential disturbance of vegetation associated with minor ephemeral drainage features. However, these impacts have been minimised through site selection, project design and proposed management measures. Overall, the proposed clearing is not expected to result in significant impacts to the environmental values of the application area.

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1 Introduction

Ngarluma Aboriginal Corporation RNTBC (NAC) is the Registered Native Title Body Corporate for the Ngarluma people, responsible for holding and managing Native Title rights and interests on their behalf and acting as the recognised landholder and cultural authority for Ngarluma Country. As part of its broader economic development strategy, NAC has established and leads renewable energy initiatives on its Native Title land, including through Ngarluma Green Energy Pty Ltd (NGE). NGE operates as a commercial project delivery vehicle for renewable energy developments, including the Ngarluma Green Energy Parks, which are 100 per cent Traditional Owner-owned and controlled. In this structure, NAC retains overarching governance, land access, and cultural authority, while NGE facilitates the development, partnership arrangements, and implementation of projects with industry and government stakeholders.

1.1 Project overview and location

The proposed clearing is required to facilitate the staged development of the Ngarluma Green Energy Park (GEP), a large-scale renewable energy and green industry precinct on Ngarluma Country near Karratha, Western Australia (WA). The GEP is intended to support utility-scale renewable energy generation and associated infrastructure, including solar photovoltaic (PV) facilities, battery energy storage systems (BESS), electricity transmission infrastructure, and supporting industrial uses.

The proposed development is structured as a multi-user precinct, with NGE acting as the head lessee and sub-leasing discrete development areas to proponents for individual energy projects. These future proponents will design their renewable energy projects according to future customer demand, commission relevant studies and reports (including civil and electrical design work), to inform their Development Applications (DAs) being submitted for approval.

The NGE business model involves providing shovel ready land for future proponents where land tenure, Native Title, heritage and environmental approvals are secured. These items are primary barriers to large scale renewable developments. The WA Government has provided funding to NAC to secure these approvals through a grant agreement dated 18 December 2025 and with the assistance of an intergovernmental steering committee led by the Department of Energy and Economic Diversification.

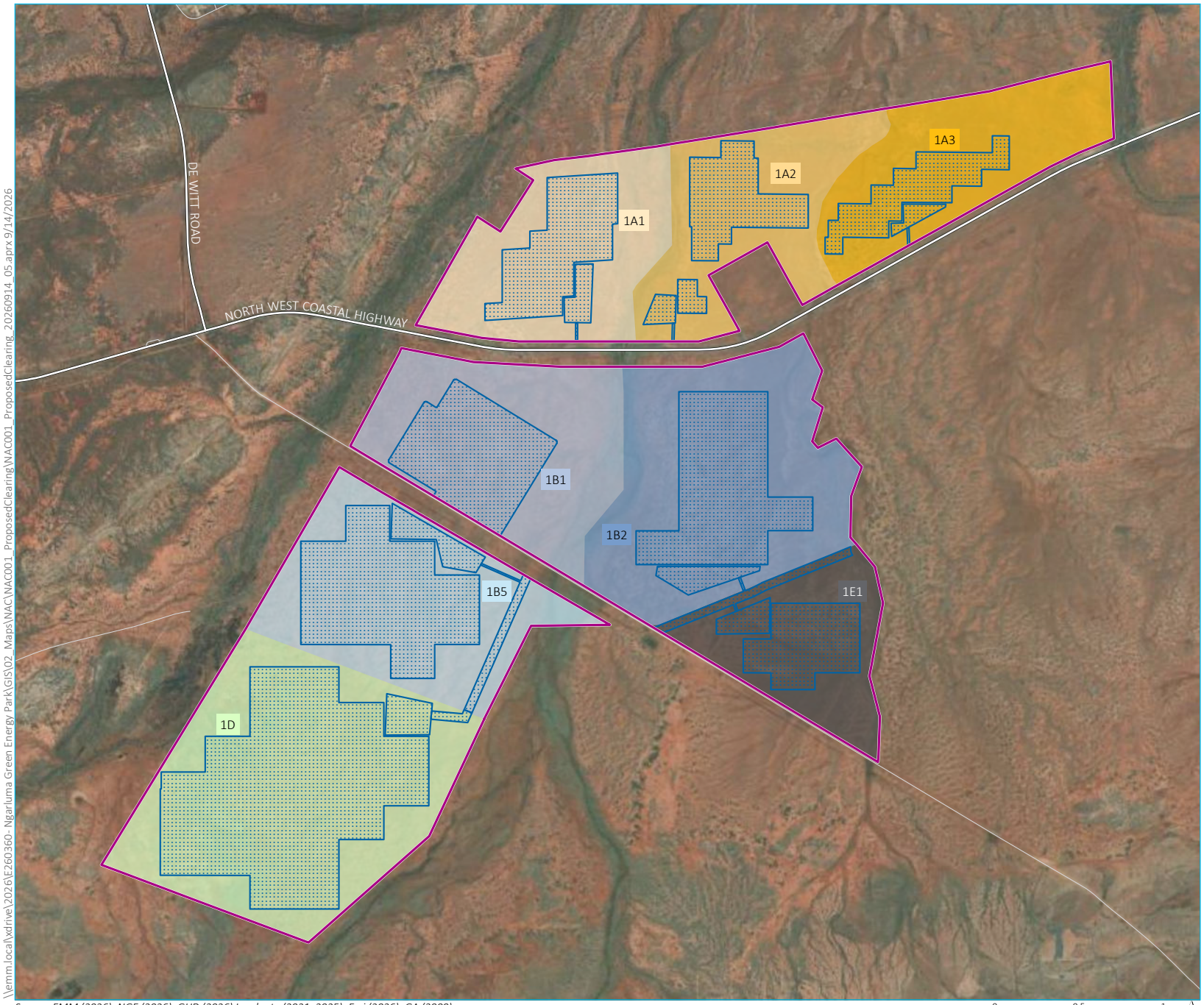
The Application area is located approximately 10 kilometres (km) south of Karratha within the City of Karratha, in the Pilbara region of WA (Figure 1.1) and on land zoned Rural under the Local Planning Scheme (LPS) No. 8. The proposal is broadly consistent with the Local Planning Strategy and does not appear inconsistent with the intent of the Rural zone given its strategic infrastructure focus and regional significance. LPS No.8 - Amendment 60 has also introduced a dedicated Renewable Energy Facility land use classification as an ‘A’ use in the Rural zone.

The application area (Figure 1.1) is located on Crown Land which is part of Pastoral Lease N050300 held by Hamersley Iron Pty Ltd, and sublease N173749 held by NAC. On 4 September 2026, Department of Planning, Lands and Heritage (DPLH) issued NGE with a draft s88 Option to Lease (OTL) and s79 (Lease) documents, under the *Land Administration Act 1997* for negotiation. It is expected that the OTL and draft Lease will be agreed in Q4 2026.

1.1.1 Proposed clearing

The proposed clearing under the native vegetation clearing permit (NVCP) relates to initial priority development areas required for Phase 1, including solar PV arrays, central hub infrastructure, and associated access, laydown and service corridors. Under Phase 1, the following blocks of land parcels will be cleared within the GEP, which include sites 1A1, 1A2, 1A3, 1B1,1B2, 1B5, 1E1 and 1D (Figure 1.1).

The proposal represents an important development for NGE and contributes to the strategic expansion of renewable energy infrastructure within the Pilbara region.





KEY

- Clearing footprint
- Proposed clearing area

Application site

- 1A1
- 1A2
- 1A3
- 1B1
- 1B2
- 1B5
- 1D
- 1E1

Existing environment

- Major road
- Minor road

INSET KEY

- Major road
- National Park
- Reserve
- Other conservation/management area

Proposed clearing area

Source: EMM (2026); NGE (2026); GHD (2026) Landgate (2021, 2025); Esri (2026); GA (2009)

0 0.5 1 km

GDA2020 MGA Zone 50

N

Ngarluma Green Energy Park
NAC NVCP Cover Letter
Figure 1.1

EMM creating opportunities

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1.2 Study area, site selection and general environmental information

1.2.1 Site selection

Site selection investigations included desktop analysis, consultation with NAC and surveying multiple areas in the vicinity of the proposed clearing area for conservation significant fauna values (shown in BCE 2026). NGE has selected the proposed clearing area for initial GEP development as it provides good access to existing infrastructure and avoids drainage lines identified as important for species of conservation significance (BCE 2026), areas prone to flooding, heritage sites and threatened ecological values.

Site selection commenced in 2022. The section 91 licence area (approximately 1,200 hectares (ha)) was chosen in consultation with NAC Elders (including the late Les Hicks) with a view to selecting a location in proximity to Karratha on the pastoral lease that avoided areas of high cultural significance to Ngarluma people. Feedback was also received from the station manager of Karratha station (sub-leased by NAC) in order to avoid areas of high pastoral value and from the pastoral lessee (RTIO). NAC then worked with engineering consultants from Engie (as part of a collaboration with Yara and Engie) to identify suitable sites within that area. Three sites were selected within the s 91 licence area as well as a fourth site which had previously been selected by Horizon opposite the Stovehill Road sub-station (Site C). There sites were named A, B, C, D. This naming convention does not correspond to the areas the subject of the current application.

NAC then commissioned flora and fauna studies of each of these areas. [VLA 2024, BCE 2026]. Following these studies the flora report identified two of the sites (A and B) as preferred over sites C and D (VLA 2026b; email V Long following site visits 21 December 2023). The non-preferred sites had more substantial and diverse vegetation, including wooded areas (shrubland and dense snakewood). Ngarluma Elders considered these vegetations types (which provide fauna habitat) to be of higher value to Ngarluma people and identified the rocky slopes in site C (Horizon site) as areas of cultural significance. Similarly, the fauna assessment identified Site C (Horizon site) as important habitat for threatened species including the Northern Quoll (which was photographed in the area by a camera trap set by the consultant (BCE 2026). Consultants identified Site C, which is now Site 1A, as suitable for development due to its low environmental values.

Heritage surveys were then conducted over what is Site 1A and part of the other preferred site (Site B). That survey identified exclusion zones within Site 1A (Figure 1.2) Consultation with DMPE through DPLH further identified a mineralized exclusion zone in the central part of the section 91 licence area which limited viability of Site B (the other preferred site) and favoured development around what is now Site 1A.

Heritage surveys (ethnographic and archaeological have also been carried out for sites 1B1, 1B2, 1B5, 1D and 1E1 (Nayimbi 2026; Coongan Everick 2026). These surveys have identified further exclusion zones in these areas and relevantly, Ngarluma elders required creeks and major drainage channels to be protected.

Detailed LIDAR and hydrological studies, including flood modelling, have been undertaken over the application area. This included modelling of 1 in 10 (10%), 1 in 100 (1%) and 1 in 500 (o.2%) flood events (GHD 2026). This study (along with the heritage surveys) informed the development of the master plan, which excludes all defined creeks and drainage lines as well as areas inundated in a 10% flood event from solar panel development and areas in the Hub (1B1) from a 1% flood event.

The survey results, together with relevant desktop information and broader regional and nearby survey data, have been used to characterise the existing environmental values of the proposed clearing area and inform the assessment of the proposed clearing.

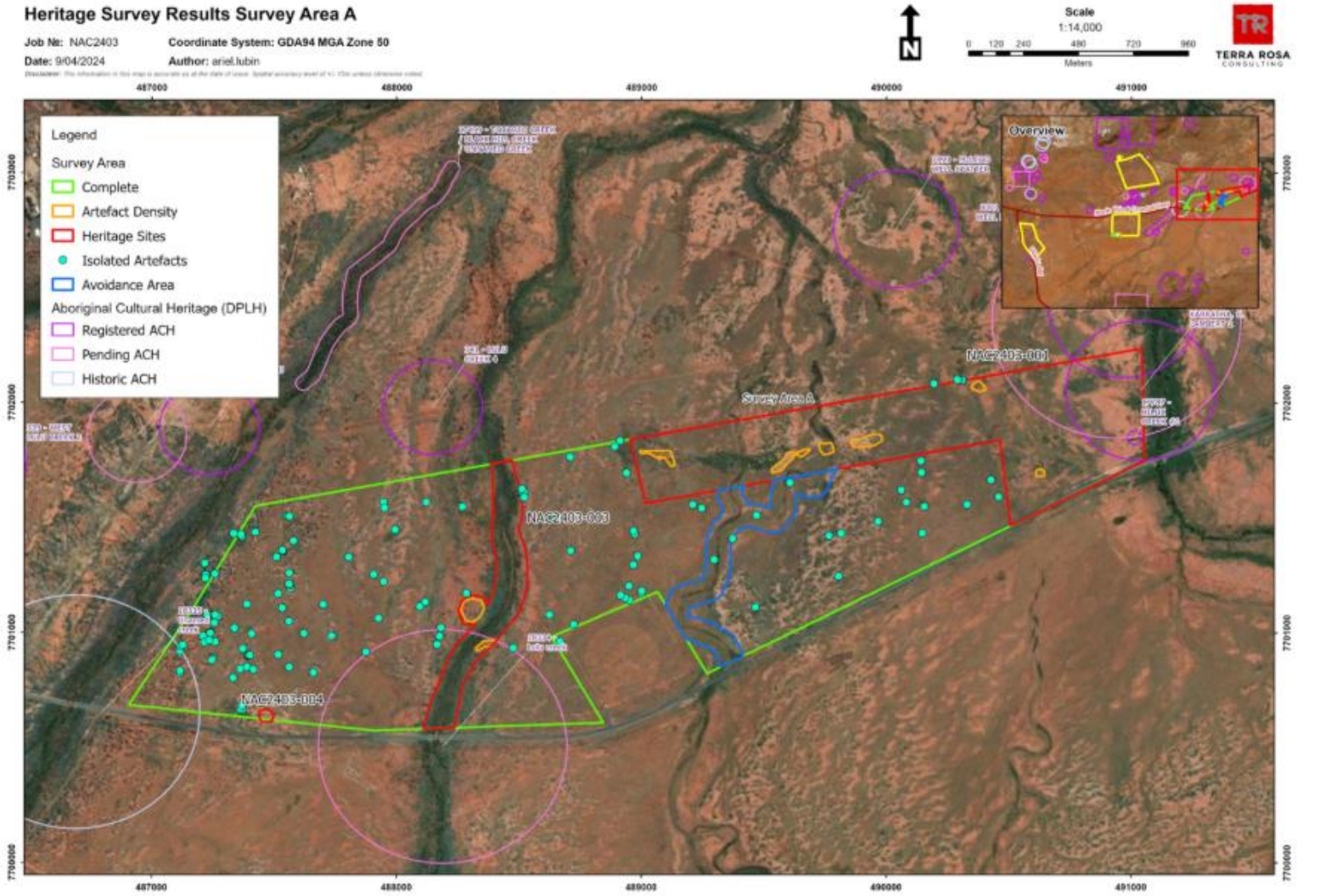


Figure 1.2 **Heritage survey Area A1**

1.2.2 Site background

The application area has been subject to historical disturbance associated predominantly with pastoral land use, including grazing and overgrazing, vehicle access and lightly borrowed for basic raw materials. The extent and influence of disturbance varies across the application area, with some areas showing evidence of grazing pressure, sheetwash and scouring, while other areas retain vegetation in good to excellent condition. Notably, Site 1D showed no evidence of scouring and was assessed as being entirely in Good to Excellent condition (VLA 2026b).

Weed occurrence was low and largely confined to drainage features and previously disturbed areas (VLA 2024, 2026a).

Overall, while historical disturbance has influenced the condition and composition of vegetation within parts of the application area, substantial areas of native vegetation remain in good to excellent condition, including areas supporting priority ecological communities (PECs).

The survey results are considered representative of the existing environment, and historical disturbance does not present a limitation to the assessment of flora and vegetation values.

1.2.3 Climate and weather

The application area is situated in the Pilbara region of WA, which experiences a semi-arid climate. Temperatures are warm to hot all year and rainfall is generally low, occurring in the late summer months.

The mean annual rainfall over the Pilbara region is low at 292.4 millimetres, but extremely variable (BoM 2026b); cyclonic events can yield large quantities of water over short periods of time. Rainfall is typically associated with cyclonic events, which can deliver intense, short-duration precipitation leading to sheet flow across clay-rich soils.

1.2.4 IBRA region

The application area lies within the Roebourne (PIL04) subregion of the Pilbara Bioregion, as defined by the Interim Biogeographic Regionalisation of Australia (IBRA) (DCCEEW, 2025a). This subregion is typified by extensive alluvial and colluvial plains of Quaternary age, interspersed with linear basalt ranges and occasional granite outcrops. Vegetation across the subregion generally comprises grass savanna dominated by a mix of bunch and hummock grasses, together with shrub steppe communities characterised by *Acacia translucens*, *A. pyrifolia* and *A. inaequilatera*.

Elevated areas support widespread Triodia hummock grasslands, while ephemeral drainage systems are typically lined with woodlands of *Eucalyptus victrix* and *Corymbia hamersleyana*. Coastal and low-lying depositional environments support samphire communities, Sporobolus grasslands and mangal on marine alluvial flats and deltaic systems. The climate is arid tropical, with rainfall that is highly seasonal and variable, occurring predominantly during the summer months and influenced by periodic cyclonic systems that affect both coastal and inland areas (Kendrick and Stanley, 2001). Vegetation within the Pilbara Bioregion remains largely intact, with approximately 99.57% of pre-European extent still present (Government of Western Australia, 2019) (Table 1.1).

1.2.5 Vegetation association

In accordance with Beard (1990), the Pilbara region is located in the Fortescue Botanical District within the Eremaean Province of WA.

One Beard vegetation association is mapped across the entire application area, which is:

- 589: Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex.

Approximately 99.44% of Beard vegetation association 589 remains within the Pilbara bioregion (Government of Western Australia 2019) (Table 1.1).

Areas retaining less than 30% of their pre-European vegetation extent generally experience exponentially accelerated species loss, while areas with less than 10% are considered “endangered” (EPA, 2000). Vegetation association 589 retains >99% of its pre-European extent, and development within the application area will not significantly reduce the current extent of this vegetation association (Table 1.1).

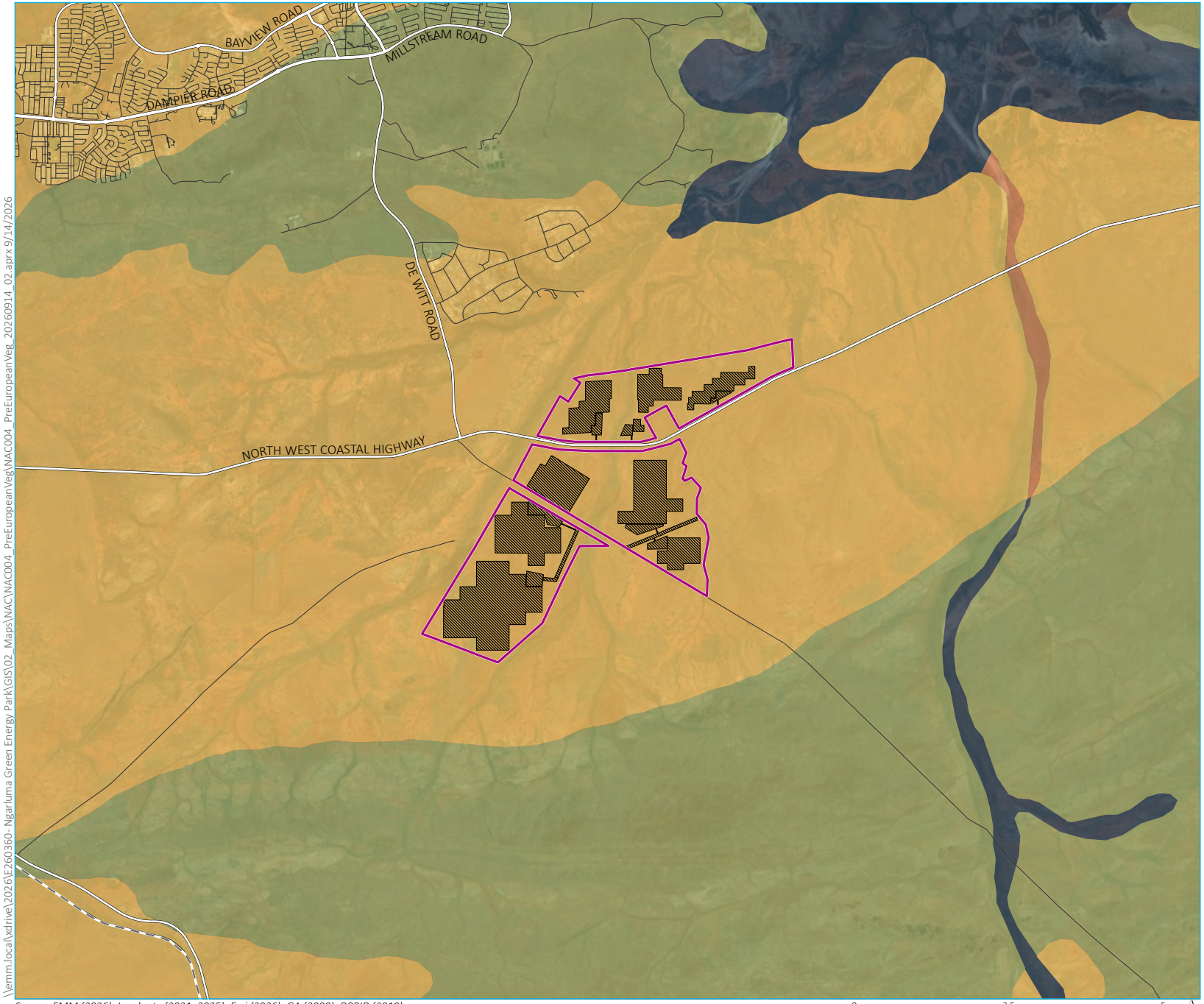
Table 1.1 Pre-European vegetation association extents for the bioregion

	Pre-European area	Current extent (ha)*	Remaining %*	Pre-European % in reserves
IBRA Bioregion -Pilbara	17,808,657	17,731765	~99.57	~6.36
Beard vegetation association – Bioregion 589	728,768	724,695	~99.44	~1.77

Note: * Government of Western Australia (2019) – this is the most current data available.

1.2.6 Conservation reserves

The application area does not fall within any gazetted or proposed conservation reserve. The closest reserve is the Pilbara System, located approximately 2.5 km to the north of the application area (VLA 2024).



KEY

- Site boundary
- Proposed clearing area

Vegetation association

- 127 | Tidal mud flat
- 157 | Hummock grassland Triodia spp.
- 589 | Short bunch-grass savanna / Grass-steppe
- 641 | Woodland

Existing environment

- Rail line
- Major road
- Minor road

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Source: EMM (2026); Landgate (2021, 2025); Esri (2026); GA (2009); DPRID (2019)

0 2.5 5 km

GDA2020 MGA Zone 50

N

Pre-European vegetation association within the site application area

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NAC NVCP Supporting Document
Figure 1.3

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1.2.7 Land systems, geomorphology and erosion potential

The (entire) application area is located within the Roebourne Plains District of the Fortescue soil-landscape province in the north-west Pilbara region, in the vicinity of Karratha (Tille, 2006). The Fortescue Province reflects the underlying geology of the Pilbara Craton and Hamersley Basin (Tyler and Hocking, 2001), together with the Fortescue Botanical District defined by Beard (1990).

Within this province, the application area occurs in the De Grey–Roebourne Lowlands Zone (281), which comprises broad alluvial and sandplain surfaces formed on alluvial and marine deposits. Soils in this zone are variable, commonly including red sandy duplexes, loamy earths, non-cracking clays and cracking clays. Along the coastal margins, river delta systems support mosaics of tussock grasslands with minor spinifex (VLA, 2024; VLA 2026).

Regional mapping further subdivides these zones into soil-landscape systems (Government of Western Australia, 2025a). The application area is almost within the Horseflat system (Figure 1.4) characterised by gilgaied clay plains supporting grasslands typical of the Roebourne Plains, with minor occurrences of shrubland. A very small section in the southeast corner (Site 1D) sits within the Ruth system. Characterised by hills and ridges of volcanic and other rocks supporting shrubby hard spinifex and occasionally soft spinifex grasslands (Eliot et al 2013).

At a finer scale, the broader survey area comprises a mosaic of micro-landforms across the clay plains. These include slightly elevated scalds with gibber or quartz lag, weakly cracking clay plains, and more deeply cracking alluvial clays associated with shallow drainage depressions. Non-gilgaied stony plains and minor low rises also occur. The deeply cracking clays typically occupy lower positions in the landscape and retain moisture for longer periods, whereas stony or scalded surfaces form slightly elevated areas. This results in a complex mosaic of gilgai and non-gilgai surfaces across the landscape.

Soils associated with the Horseflat land system is generally susceptible to erosion processes. Cracking clays develop deep fissures during dry periods, allowing initial infiltration following rainfall. However, shrink–swell behaviour can result in rapid surface sealing, reducing infiltration and promoting runoff. Under high-intensity rainfall events, including cyclonic conditions, this may result in sheet flow, localised rilling and erosion along drainage pathways. The micro-topographic variability across the site further influences water movement, with runoff concentrating in lower lying drainage features and around the margins of non-gilgaied areas.

Disturbance or clearing of vegetation increases the vulnerability of these soils to erosion, as exposed gilgai surfaces and scalded areas are more prone to runoff-driven degradation and sediment mobilisation (VLA, 2024; VLA 2026a).



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Source: EMM (2026); Landgate (2021, 2025); Esri (2026); GA (2009); DPRID (2022)

Soil landscape systems within the application area

Ngarluma Green Energy Park
NAC NVCP Supporting Document
Figure 1.4

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1.2.8 Surface and groundwater / wetlands and watercourses

Database searches indicate that the (entire) application area is not situated within a Public Drinking Water Source Area (PDWSA). The closest PDWSA is the Harding Dam Catchment Area, located approximately 28 km to the south-east of the application area (Government of Western Australia 2025b).

The application area occurs within the Pilbara Surface Water Proclamation Area, established under the Rights in *Water and Irrigation Act 1914* (RiWI Act), which extends across more than 500,000 km². Spatial data from Geoscience Australia (Dunn et al., 2024), shows no mapped permanent wetlands or ephemeral waterbodies within the application area. A number of minor ephemeral drainage lines are present, which convey surface flows in a northerly direction toward the Indian Ocean. Drainage lines will be avoided by the proposed clearing, with appropriate buffers maintained to protect these features and their associated vegetation.

The application area is also located within a Groundwater Proclamation Area, U1/44, under the RiWI Act.

1.2.9 Groundwater dependent ecosystems

Groundwater dependent ecosystems (GDEs) refer to ecological communities that rely on groundwater either opportunistically or as a primary water source. For the purposes of this report, GDEs are defined as vegetation communities that derive part of their water requirements from groundwater and therefore exhibit some level of dependency. Based on the Bureau of Meteorology Atlas of Groundwater Dependent Ecosystems (BoM, 2026b) the application area is mapped as having low potential for terrestrial GDEs, with no areas identified as supporting such ecosystems (Table 1.2; Figure 1.5).

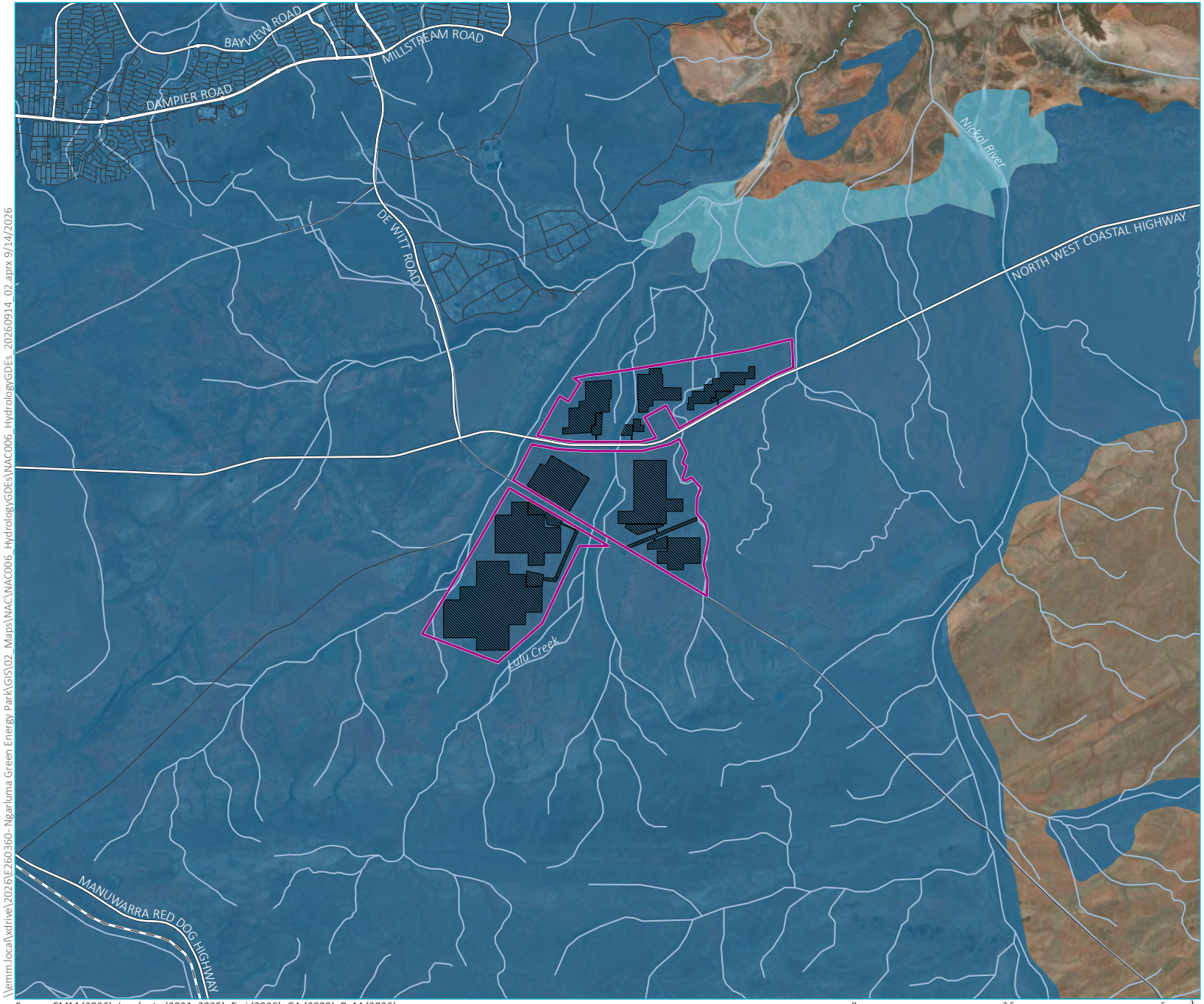
Table 1.2 Potential GDEs of the application area (BoM 2026b)

Geomorphology	Potential	Vegetation description
Floodplains and deltaic plains with stony plains and sandplains; tidal flats and some metamorphic, volcanic and granitic hills and islands.	Low	Gilgaied clay plains supporting tussock grasslands and minor grassy snakewood shrublands

Based on current groundwater conditions, the depth to the water table suggests that GDEs are unlikely to occur within or adjacent to the application area and are therefore not expected to be impacted by potential changes in hydrological processes.

Vegetation and flora surveys undertaken by VLA (2024) identified communities associated with broad and ephemeral drainage features. These communities, typically comprising Acacia tall shrubland over subordinate Acacia shrubland and mixed tussock and hummock grassland, are not considered groundwater dependent. Although some local variation is present, these vegetation types are widely distributed across the Pilbara bioregion (VLA, 2024). Subsequent surveys (VLA, 2024; VLA, 2026a) did not record any significant vegetation assemblages and assessed the likelihood of terrestrial GDEs in adjacent floodplain environments as low.

Rainfall is typically associated with cyclonic events, which can deliver intense, short-duration precipitation leading to sheet flow across clay-rich soils. These soils exhibit shrink–swell behaviour and may seal rapidly following wetting, limiting infiltration and promoting surface runoff. Proximity to the coastline also contributes to elevated salinity risk, with the northern extent of Site 1A occurring within a semi-saline environment, as indicated by the presence of the Priority 1 (P1) '*Chenopod vegetation associations of the Roebourne Plains*' PEC.



KEY

- Site boundary
- Proposed clearing area

Existing environment

- Rail line
- Major road
- Minor road
- Hydroline/drainage line

Potential terrestrial Groundwater Dependent Ecosystem (GDE) (from national assessment)

- Low potential GDE
- Moderate potential GDE

Source: EMM (2026); Landgate (2021, 2025); Esri (2026); GA (2009); BoM (2026)

0 2.5 5 km

GDA2020 MGA Zone 50

N

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Regional hydrology and potential GDEs within the application area

Ngarluma Green Energy Park
NAC NVCP Supporting Document
Figure 1.5

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2 Surveys and studies

The following studies and surveys were used to inform this clearing permit and Supporting Document (Table 2.1).

Table 2.1 Surveys and studies

Information	Description
Various previous surveys undertaken, based on information available from 1975 to 2020.	Previous biological surveys have been undertaken across the wider region, with broad scale information available from Beard (1975) and Payne et al. (1980). In addition, Vicki Long, through VLA and previously Astron Environmental Services, has completed multiple vegetation and flora surveys in comparable habitats within the area, including VLA (2008, 2011, 2013, 2014, 2020). Accordingly, existing knowledge of the locality and its context was considered sufficient and did not present a limitation.
Reconnaissance flora and vegetation survey across four sites (including site 1A), Vicki Long and Associates, 2024	A reconnaissance flora and vegetation survey was undertaken by Vicki Long and Associates (VLA) (2024) in May 2024 across Site 1A to characterise vegetation types, flora assemblages and potential conservation values within the area. The survey included a desktop assessment and field investigations to identify any threatened or priority flora, PECs, and other vegetation of conservation significance, and to verify habitat suitability across the site. Targeted searches for PEC grassland vegetation were also completed to determine the presence, extent and condition of any Priority communities, particularly those associated with the Roebourne Plains. The survey was designed to support site selection and inform potential clearing permit requirements, with sufficient coverage of vegetation types and habitats to provide a representative understanding of flora and vegetation values within the survey area.
Targeted flora and vegetation survey across site 1A, addendum report, Vicki Long and Associates, 2026a	A targeted field survey was completed by VLA in March 2026 across Site 1A to confirm the presence or absence of Priority flora and to refine the extent and condition of vegetation of conservation significance. The survey followed a period of above average rainfall during 2025 and additional summer rainfall in early 2026, which resulted in increased vegetation cover and improved condition across the site compared to that observed during the 2024 reconnaissance survey. The improved seasonal conditions allowed for clearer identification and delineation of PECs, particularly the P1 'Roebourne Plains coastal grasslands with gilgai microrelief on cracking clays' and the Priority 3 (P3) 'Horseflat land system of the Roebourne Plains'. These communities can be difficult to distinguish under drier conditions due to similar dominance by *Eragrostis xerophila* and reduced expression of associated species. The targeted survey also enabled verification of PEC condition, confirmation of areas not meeting PEC threshold due to degradation, and assessment of recovery following recent rainfall. No Priority flora were identified during the survey, noting that historical grazing and site disturbance may influence species presence and diversity. The survey recorded an increase in species richness relative to 2024, reflecting favourable seasonal conditions and improved detectability. Overall, the survey provided an updated and more robust understanding of vegetation composition, condition and conservation significance within Site 1A to support the clearing permit application.
Targeted survey for Priority Ecological Community grasslands – Sites 1B1, 1B2, 1B5, 1D and 1E1, Vicki Long and Associates, 2026b	Following completion of the 2026 targeted survey and subsequent hydrological investigations at Site 1A, it was determined that additional land would be required to accommodate Phase 1 of the GEP. Sites 1B1, 1B2, 1B5, 1D and 1E1, located south of the North West Coastal Highway, were subsequently identified as potential development areas. Following an initial site inspection, the landforms, soil types and vegetation present within these sites were considered to be an extension of, and generally consistent with, those previously surveyed within Site 1A. On this basis, a targeted PEC survey was considered appropriate to further assess the presence, extent and condition of PEC vegetation across the additional sites. VLA subsequently undertook the targeted PEC survey across Sites 1B1, 1B2, 1B5, 1D and 1E1 in March and April 2026, including opportunistic recording of priority flora species where encountered. The survey targeted the P1 Roebourne Plains coastal grasslands with gilgai microrelief on cracking clays and P3 Horseflat land system of the Roebourne Plains PECs.

Information	Description
Fauna site visit memo, Bamford Consulting Ecologists (BCE), 2026a	A fauna site visit was undertaken by Bamford Consulting Ecologists (BCE) on 29 April and 1 May 2026 across Sites 1B, 1C, 1D and 1E to characterise the broad habitat types and support ongoing fauna investigations. The visit involved reconnaissance-level field observations across each development area, supplemented by the deployment of motion-sensitive cameras and autonomous recording units for bats and birds. The purpose of the site visit was to describe the general environmental features and habitat characteristics of the area, record opportunistic fauna observations, and inform the design of subsequent targeted survey work. The memo provides a high-level description of vegetation and landform types across the sites, primarily to support fauna habitat assessment rather than detailed flora and vegetation mapping.
NAC solar lease renewable energy project, fauna assessment report, Bamford Consulting Ecologists (BCE), 2026b	BCE undertook a Basic fauna assessment of the Application Area, with field investigations conducted between December 2023 and July 2026. Surveys included site reconnaissance and fauna habitat assessment, deployment of autonomous recording units (ARUs) and motion-sensitive cameras, targeted searches for conservation-significant reptiles, opportunistic fauna observations and systematic bird census transects. Field investigations were undertaken in December 2023, July–August 2024, December 2025–February 2026, April–May 2026 and July 2026.

3 Discussion of findings

3.1 Flora

3.1.1 Flora within site 1A

In 2024, 95 plant taxa from 23 families were recorded within and adjacent to the application area (VLA 2024). The 2026 targeted survey added 33 species and three families, bringing the total to 128 species across 26 families at Site 1A (VLA 2026a). Fabaceae (peas) and Poaceae (grasses) were the dominant families, represented by 29 and 25 species, respectively. It is estimated that around 90% of the expected flora for this habitat was recorded.

3.1.2 Flora within sites 1B1, 1B2, 1B5, 1D and 1E1

The 2026 targeted PEC survey recorded a total of 140 flora species from 29 families across Sites 1B1, 1B2, 1B5, 1D and 1E1. Fabaceae and Poaceae were the dominant plant families, while *Ptilotus* was the most frequently recorded genus across the surveyed sites.

The survey area was characterised by a mosaic of gilgai and non-gilgai clay plains dominated by tussock grasslands, with localised scalds and stony areas.

The micro-landforms and vegetation types recorded were considered consistent and comparable with those previously described for Site 1A (VLA 2026b).

3.1.3 Conservation significant flora

i Site 1A

Database searches of the Department of Biodiversity, Conservation and Attractions (DBCA) Threatened and Priority flora listings (DBCA 2024) and the Atlas of Living Australia, together with relevant literature, identified 22 significant flora taxa within 40 km of the survey area (VLA 2024; VLA 2026a).

An assessment of known distributions and habitat requirements was undertaken to determine the likelihood of these taxa occurring within the Application area. Based on the availability of suitable habitat, six P3 taxa were initially considered likely to occur, however, no Threatened or Priority flora species were recorded within the application area during the VLA (2024) or VLA (2026a) surveys.

ii Sites 1B1, 1B2, 1B5, 1D and 1E1

Three Priority flora taxa were recorded during the 2026 targeted PEC survey: *Dolichocarpa* sp. Hamersley Station (A.A. Mitchell PRP 1479) (P3), *Glycine falcata* (P3) and *Neptunia longipila* (P3). No threatened flora were recorded during the relevant survey (VLA 2026b)

Dolichocarpa sp. Hamersley Station was recorded within Sites 1B1, 1B2 and 1D; *Glycine falcata* was recorded within Site 1D; and *Neptunia longipila* was recorded within Sites 1B5 and 1D. No Priority flora were recorded within Site 1E1; however, *Dolichocarpa* sp. Hamersley Station was considered to have high potential to occur within Site 1B5.

Priority flora were recorded opportunistically where encountered, however, due to the excellent conditions and in the opinion of the experienced consultant, the surveys undertaken provide a good representation of the species expected to occur (VLA 2026b). The Priority flora recorded during the survey appeared to primarily be associated with gilgai clay habitat and the PEC 1 and PEC 3 vegetation types.

There are significant practical difficulties in undertaking more targeted searches for priority flora due to the methodology required (VLA 2026b). Further, *Glycine falcata* and *Dolichocarpa* sp. Hamersley Station are both very small annual herbs and *Neptunia longipila* is difficult to distinguish from *Neptunia dimorphantha* in the field.

3.2 Vegetation

3.2.1 Vegetation types and condition within the Application Area

Vegetation within the application area predominantly comprises tussock grasslands on clay plains, including *Eragrostis xerophila*-dominated grasslands associated with the Horseflat land system and mixed tussock grasslands on deeper cracking clays. Smaller areas of Acacia shrubland, hummock grassland and vegetation associated with drainage features and stony rises also occur (VLA 2024; 2026a; 2026b).

Vegetation composition and condition vary in response to soil characteristics, micro-landform and disturbance. Condition ranges from Partially Degraded to Excellent, with historical grazing, access tracks, scouring and sheetwash contributing to poorer condition in some areas. Vegetation corresponding to the P1 'Roebourne Plains coastal grasslands with gilgai microrelief on cracking clays' and P3 'Horseflat land system of the Roebourne Plains' PECs occurs within the application area, while the P1 'Chenopod vegetation associations of the Roebourne Plains' PEC is restricted to Site 1A (VLA 2026a; 2026b). Vegetation condition was assessed by VLA using an adapted Keighery (1994) condition scale and Kaesehagen (1995) (VLA 2026a).

VLA (2026b) reported estimated proportional cover of broad vegetation groupings for Sites 1B1, 1B2, 1B5, 1D and 1E1, and these percentages are presented in the site-specific summaries in the following sections. Equivalent percentage estimates were not reported for Site 1A, which is therefore described using the mapped vegetation types and condition reported by VLA (2024; 2026a). Detailed vegetation association descriptions, mapping and representative photographs are provided in the flora and vegetation survey reports (VLA 2024; 2026a; 2026b).

Vegetation types and conditions are shown in Figure 3.1 to Figure 3.12, and described further below.

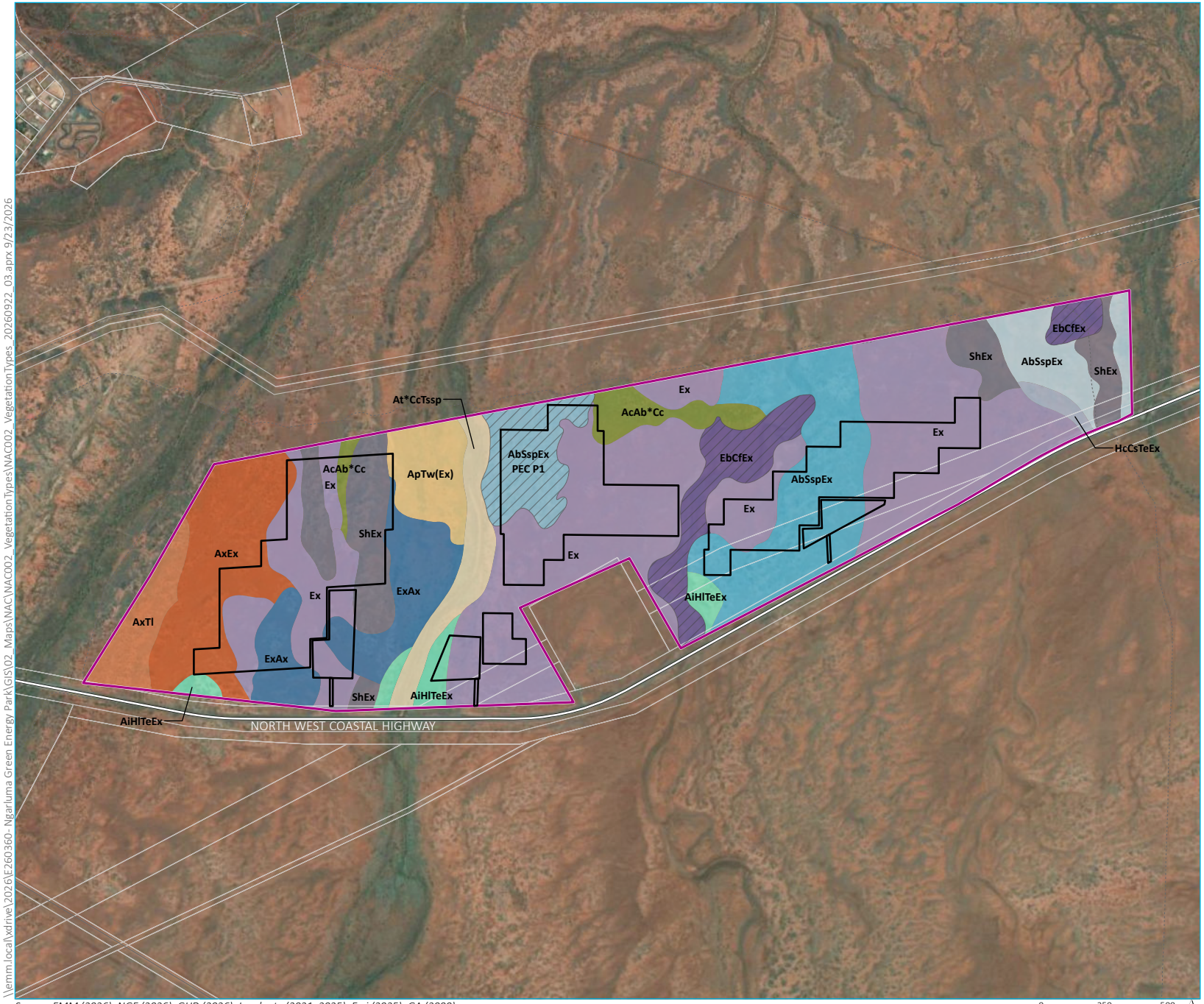
i Site 1A (Includes 1A1, 1A2 and 1A3)

VLA (2024) identified three broad vegetation types within Site 1A, comprising 11 vegetation associations. Vegetation is predominantly characterised by *Eragrostis xerophila* tussock grassland on clay plains, with smaller areas of mixed tussock grassland, Acacia shrubland, hummock grassland and vegetation associated with drainage features. A further two vegetation associations were recorded during the 2026 survey, bringing the total recorded within Site 1A to 13 (VLA 2026a).

Vegetation corresponding to the P1 'Roebourne Plains coastal grasslands with gilgai microrelief on cracking clays' and P1 'Chenopod vegetation associations of the Roebourne Plains' PECs was recorded within Site 1A. *E. xerophila* tussock grassland associated with the P3 'Horseflat land system of the Roebourne Plains' was also recorded; however, this vegetation was considered too disturbed to retain P3 PEC status (VLA 2026a).

Vegetation condition ranges from Fair to Excellent. Historical pastoral activities, including grazing and access tracks, have contributed to disturbance across parts of the site, particularly within the *E. xerophila* tussock grasslands. Following improved seasonal conditions, vegetation showed evidence of recovery during the 2026 survey, although the effects of historical overgrazing remain evident in some areas. Broad low drainage areas generally support vegetation in Excellent condition (VLA 2026a).

Vegetation types and condition within Site 1A are shown in Figure 3.1 and Figure 3.2.



KEY

Site boundary

Proposed clearing area

Priority ecological community

Priority 1

Vegetation type

AbSspEx PEC P1 | *Sclerolaena hostilis, S. bicornis, Atriplex bunburyana* low shrubland, sometimes closed low shrubland over *Eragrostis xerophila* tussock (or open tussock) grassland. Small intrusions of *Eriachne benthamii* mixed grassland on deep cracking clays.

AbSspEx | Mosaic of *Atriplex bunburyana, Sclerolaena hostilis, Sclerolaena bicornis* open shrubland over open annual *Xerochloa barbata* open grassland on stony scalds with *Sclerolaena hostilis, Atriplex bunburyana, Sclerolaena bicornis, S. glabra* scattered to open shrubs over *Eragrostis xerophila* on self-mulching gilgai soils with surface veneer of stones.

AcAb*Cc | *Acacia coriacea* tall shrubland, occasional *Ehretia saligna* over *Acacia bivenosa, A. pyrifolia, Senna oligophylla* open shrubland over **Cenchrus ciliaris, **Cenchrus setiger* tussock grassland with patchy *Triodia epactia*.

ApTw(Ex) | Mosaic of *Acacia pyrifolia* tall shrubland over *Triodia wiseana* with *Triodia epactia* on areas of stony gibber with open *Eragrostis xerophila* tussock grassland on scalds.

At*CcTssp | *Acacia trachycarpa* tall shrubland with *Acacia coriacea* over *Acacia trachycarpa shrubland* over mixed **Cenchrus ciliaris, *Cenchrus setiger, Eriachne flaccida, Bothriochloa ewartiana*, tussock grassland and *Triodia epactia, Triodia longiceps* hummock grassland. Scattered *Corymbia hamersleyana* trees.

AxEx | *Acacia xiphophylla* scattered to open shrubland over *Eragrostis xerophila* tussock grassland.

AxTl | *Acacia xiphophylla* shrubland over mosaic of *Triodia longiceps* on stony silts and *Eragrostis xerophila* on silty loams.

EbCfEx | *Eriachne benthamii, Chrysopogon fallax, Eragrostis xerophila* mixed tussock grassland over mixed vine and herbland.

Ex | *Eragrostis xerophila* open tussock grassland over open herbland of *Sida fibulifera, Streptoglossa bubakii, Euploca cunninghamii*

ExAx | *Eragrostis xerophila* open tussock grassland. Very scattered *Acacia xiphophylla, Acacia bivenosa* shrubs.

HcCsTeEx | *Hakea chordophylla* open low woodland with *Ehretia saligna* over *Capparis spinosa, Acacia pyrifolia* scattered to open shrubland over mixed open *Triodia epactia* hummock and *Eragrostis xerophila* tussock grassland.

ShEx | *Sclerolaena hostilis* open low shrubland, scattered *Sclerolaena bicornis* over *Eragrostis xerophila* open tussock grassland.

AiHlTeEx

<all other values>

Existing environment

Major road

Minor road

Vehicular track

Cadastral boundary

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Source: EMM (2026); NGE (2026); GHD (2026); Landgate (2021, 2025); Esri (2025); GA (2009)

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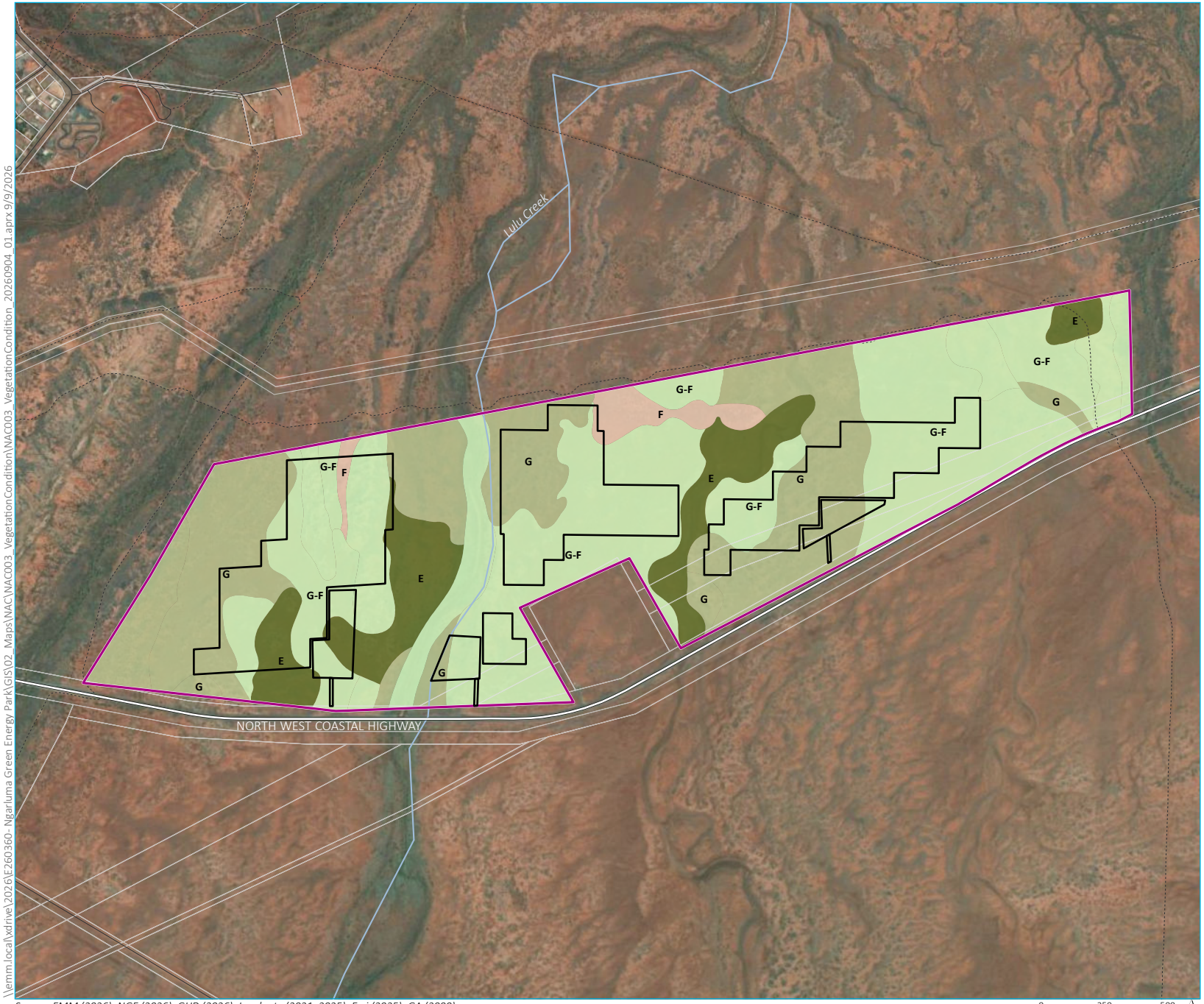
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Site 1A- vegetation types

Ngarluma Green Energy Park
NAC NVCP Supporting Document
Figure 3.1

EMM
creating opportunities



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Source: EMM (2026); NGE (2026); GHD (2026); Landgate (2021, 2025); Esri (2025); GA (2009)

Site 1A- vegetation condition

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NAC NVCP Supporting Document
Figure 3.2

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creating opportunities

ii Site 1B1

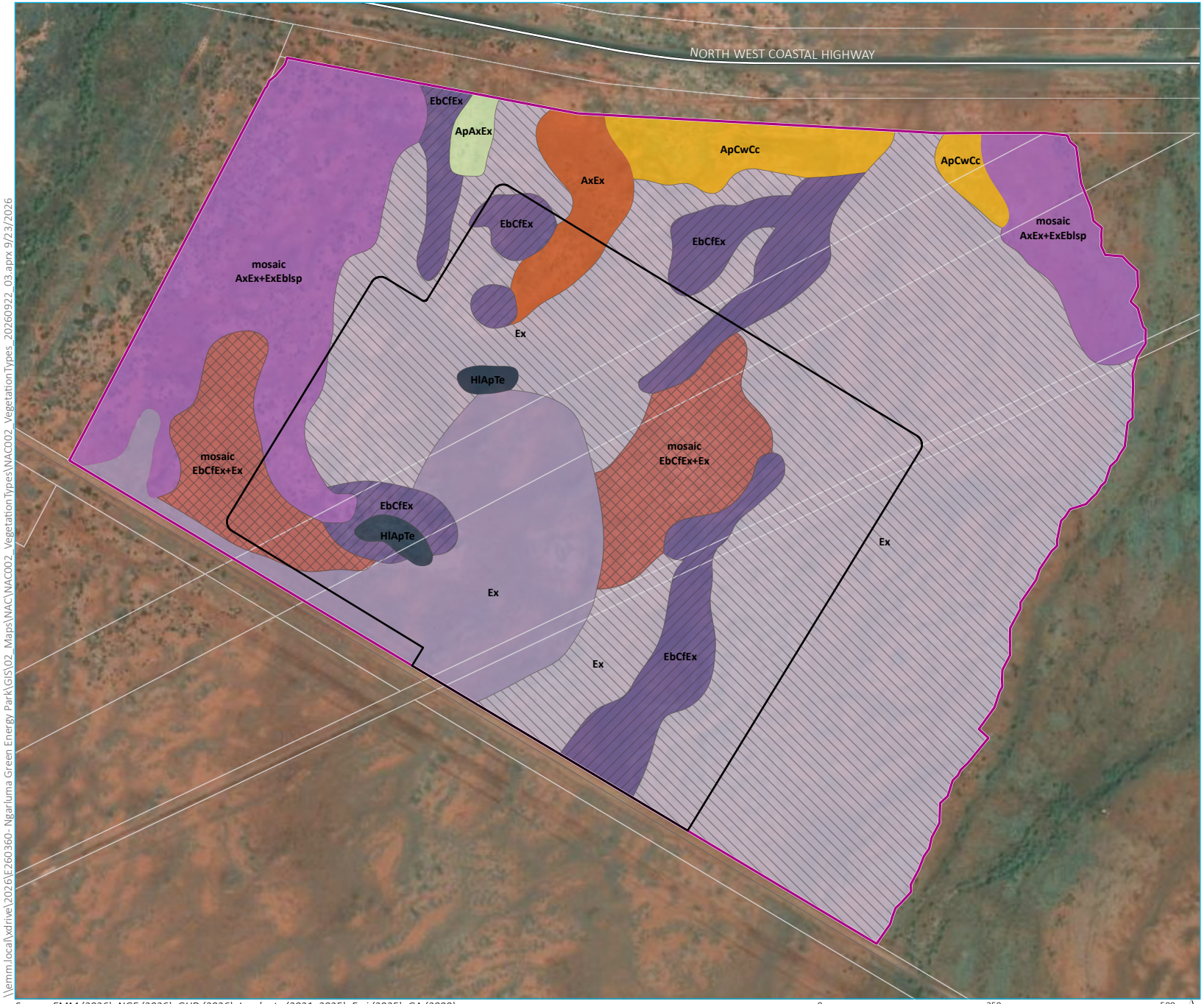
Vegetation within Site 1B1 predominantly comprises tussock grassland, including vegetation corresponding to the P1 'Roebourne Plains coastal grasslands with gilgai microrelief on cracking clays' and P3 'Horseflat land system of the Roebourne Plains' PECs. The P1 PEC occurs in close mosaic with P3 PEC tussock grassland and quartz-scatter scalds. Other vegetation comprises shrubland over mixed tussock and hummock grasslands (VLA 2026b).

Vegetation condition ranges from Fair to Excellent. P1 and P3 PEC vegetation occurs in Good to Excellent condition, while approximately 15% of the site comprises *Eragrostis xerophila* tussock grassland in Fair condition that no longer retains P3 PEC status due to historical grazing. Disturbance across the site is otherwise limited, with minimal tracks and weed cover below 2%, comprising buffel grass (*Cenchrus ciliaris*) (VLA 2026b).

Vegetation types and condition are shown in Figure 3.3 and Figure 3.4.

Table 3.1 Vegetation types and condition within Site 1B1

Vegetation type	Vegetation code	Condition	PEC status	Estimated cover
Tussock grassland (includes P1 PEC in mosaics)	ExEbIsp; EbCfEx	Good–Excellent	P1 PEC	20%
Tussock grassland	Ex	Good–Excellent	P3 PEC	45%
Tussock grassland	Ex (degraded)	Fair	No longer P3 PEC	15%
Shrubland / tussock / hummock grassland	AxEx; ApCw*Cc; HlAxTe; ApAxEx; ApCwEx	Good–Fair	Non-PEC	20%



KEY

- Site boundary
- Proposed clearing area

Priority ecological community

- Priority 1
- Priority 3

Vegetation type

- **ApAxEx** | *Acacia pyrifolia* tall shrubland with *Acacia xiphophylla* over open *Eragrostis xerophila* open tussock grassland with some **Cenchrus ciliaris*. – scattered low shrubs of *Senna oligophylla* and mixed herbs.
- **ApCwCc** | *Acacia pyrifolia* closed shrubland over *Corchorus walcottii* low open low shrubland over mixed **Cenchrus ciliaris*, with *Eragrostis xerophila, Dichanthium sericeum humilis* on disturbed site.
- **AxEx** | *Acacia xiphophylla* scattered to open shrubland over *Eragrostis xerophila* tussock grassland.
- **EbCfEx** | *Eriachne benthamii, Chrysopogon fallax, Eragrostis xerophila* mixed tussock grassland over mixed vine and herbland.
- **Ex** | *Eragrostis xerophila* open tussock grassland over open herbland of *Sida fibulifera, Streptoglossa bubakii, Euploca cunninghamii*
- **Ex** | *Eragrostis xerophila* tussock grassland over open herbland of *Sida fibulifera, Streptoglossa bubakii, Euploca cunninghamii*
- **HlApTe** | *Hakea lorea* open tall shrubland over *Acacia pyrifolia* open shrubland over *Triodia epactia* open hummock grassland over mixed herbland
- **mosaic AxEx+ExEblsp**
- **mosaic EbCfEx+Ex**

Existing environment

- Major road
- Minor road
- Vehicular track
- Cadastral boundary

Site 1B1- vegetation types

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NAC NVCP Supporting Document
Figure 3.3

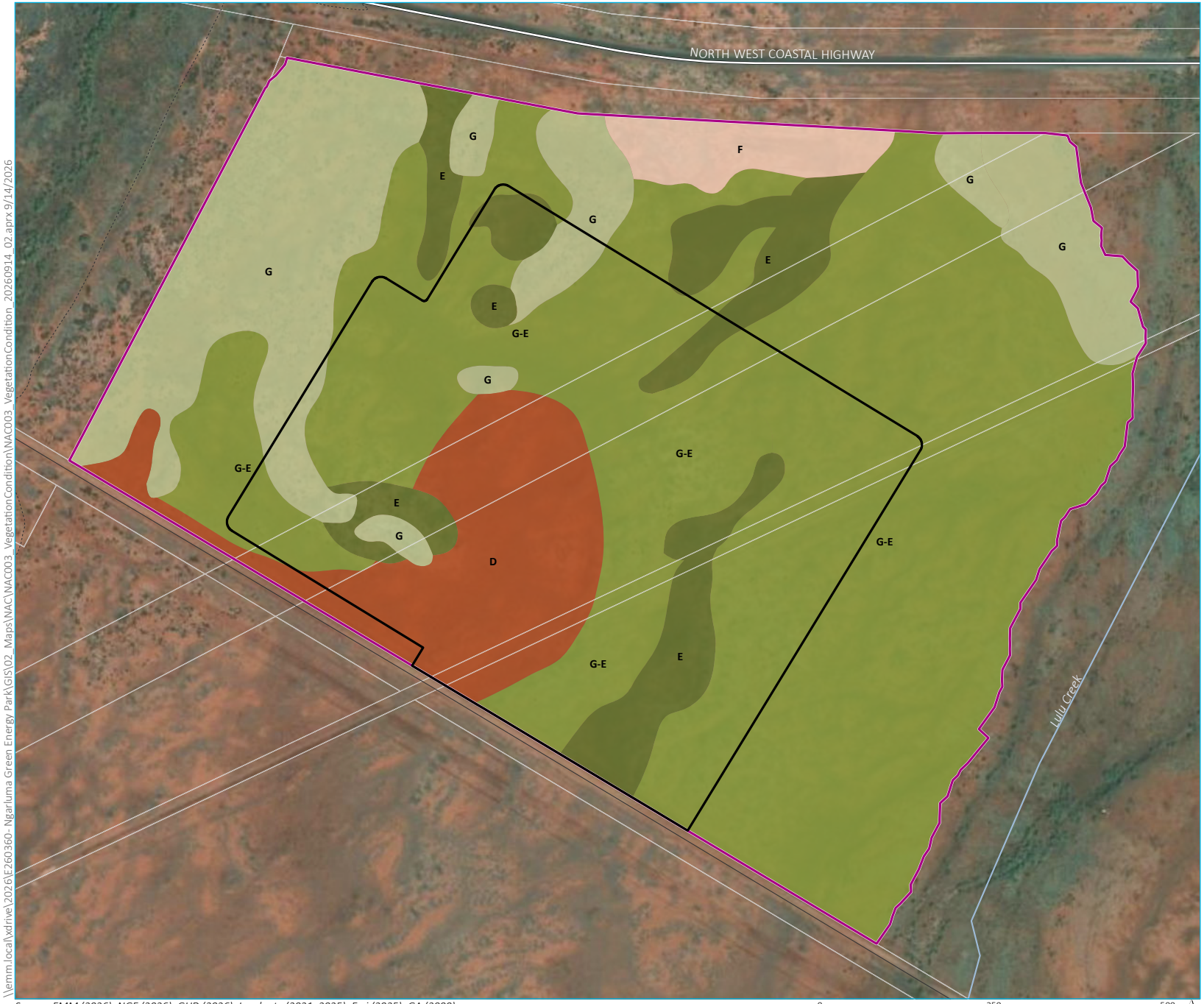
Source: EMM (2026); NGE (2026); GHD (2026); Landgate (2021, 2025); Esri (2025); GA (2009)

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creating opportunities



KEY

- Site boundary

Vegetation condition

- Excellent (E)
- Varies good to excellent (G-E)
- Good (G)
- Fair (F)
- Degraded (D)

Existing environment

- Major road
- Minor road
- Vehicular track
- Named watercourse
- Cadastral boundary
- Proposed clearing area

Source: EMM (2026); NGE (2026); GHD (2026); Landgate (2021, 2025); Esri (2025); GA (2009)

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Site 1B1- vegetation condition

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NAC NVCP Supporting Document
Figure 3.4

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creating opportunities

iii Site 1B2

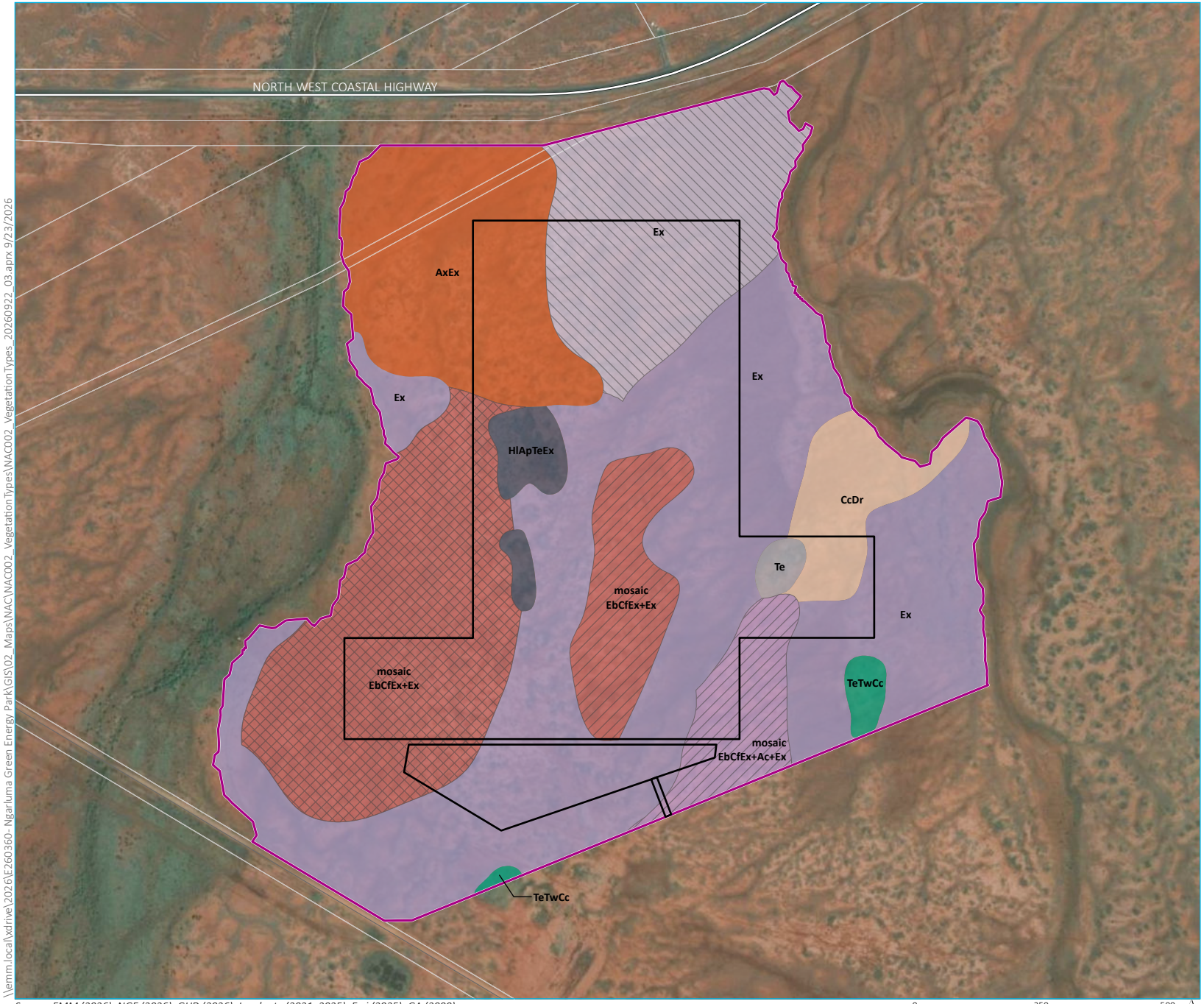
Vegetation within Site 1B2 predominantly comprises tussock grassland, including vegetation corresponding to the P1 'Roebourne Plains coastal grasslands with gilgai microrelief on cracking clays' and P3 'Horseflat land system of the Roebourne Plains' PECs. P1 PEC vegetation occurs as numerous small patches in mosaic with P3 PEC vegetation and scalded areas, particularly across the clay plains (VLA 2026b).

Vegetation condition ranges from Partially Degraded to Excellent, with P1 and P3 PEC vegetation generally occurring in Good to Excellent condition. Approximately 45% of the site comprises *Eragrostis xerophila* tussock grassland in Fair to Partially Degraded condition that no longer retains P3 PEC status, reflecting sparse tussock cover and evidence of sheetwash and historical grazing. These areas are particularly evident in the northern and north-eastern portions of the site. Weed cover was recorded at less than 2%, with no dissecting tracks evident (VLA 2026b).

Vegetation types, condition and estimated proportional cover within Site 1B2 are summarised in Table 3.2 and shown in Figure 3.5 and Figure 3.6.

Table 3.2 Vegetation types and condition within Site 1B2

Vegetation type	Vegetation code	Condition	Status	Estimated cover
Tussock grassland (includes P1 PEC in mosaics)	EbCfEx	Good–Excellent	P1 PEC	20%
Tussock grassland	Ex	Good–Excellent	P3 PEC	25%
Tussock grassland	Ex (degraded)	Fair–Partially Degraded	No longer P3 PEC	45%
Shrubland / tussock / hummock grassland	AiApDr*Cc; AiEsTeTw; HlApTe; ApCw*Cc; *CcDr; TeTw*Cc; Te; AxEx; Ac	Good–Fair	N/A	10%



KEY

Site boundary

Proposed clearing area

Priority ecological community

Priority 1

Priority 3

Vegetation type

AxEx | *Acacia xiphophylla* scattered to open shrubland over *Eragrostis xerophila* tussock grassland.

CcDr | *Cenchrus ciliaris, Dactyloctenium radulans* tussock grassland over closed annual herbland (*Euploca cunninghamii, Rhynchosia minima, Neptunia dimorphantha*)

Ex | *Eragrostis xerophila* open tussock grassland over open herbland of *Sida fibulifera, Streptoglossa bubakii, Euploca cunninghamii*

Ex | *Eragrostis xerophila* tussock grassland over open herbland of *Sida fibulifera, Streptoglossa bubakii, Euploca cunninghamii*

HlApTeEx | *Hakea lorea* open tall shrubland over *Acacia pyrifolia* open shrubland over *Triodia epactia* open hummock with some *Eragrostis xerophila* grassland over mixed herbland

Te | Remnant scattered *Triodia epactia* hummock grassland – degraded area with *Aristida contorta, Corchorus walcottii*

TeTwCc | *Triodia epactia* with *Triodia wiseana* hummock grassland and scattered **Cenchrus ciliaris* over closed annual herbland

mosaic EbCfEx+Ac+Ex

mosaic EbCfEx+Ex

Existing environment

Major road

Minor road

Cadastral boundary

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Source: EMM (2026); NGE (2026); GHD (2026); Landgate (2021, 2025); Esri (2025); GA (2009)

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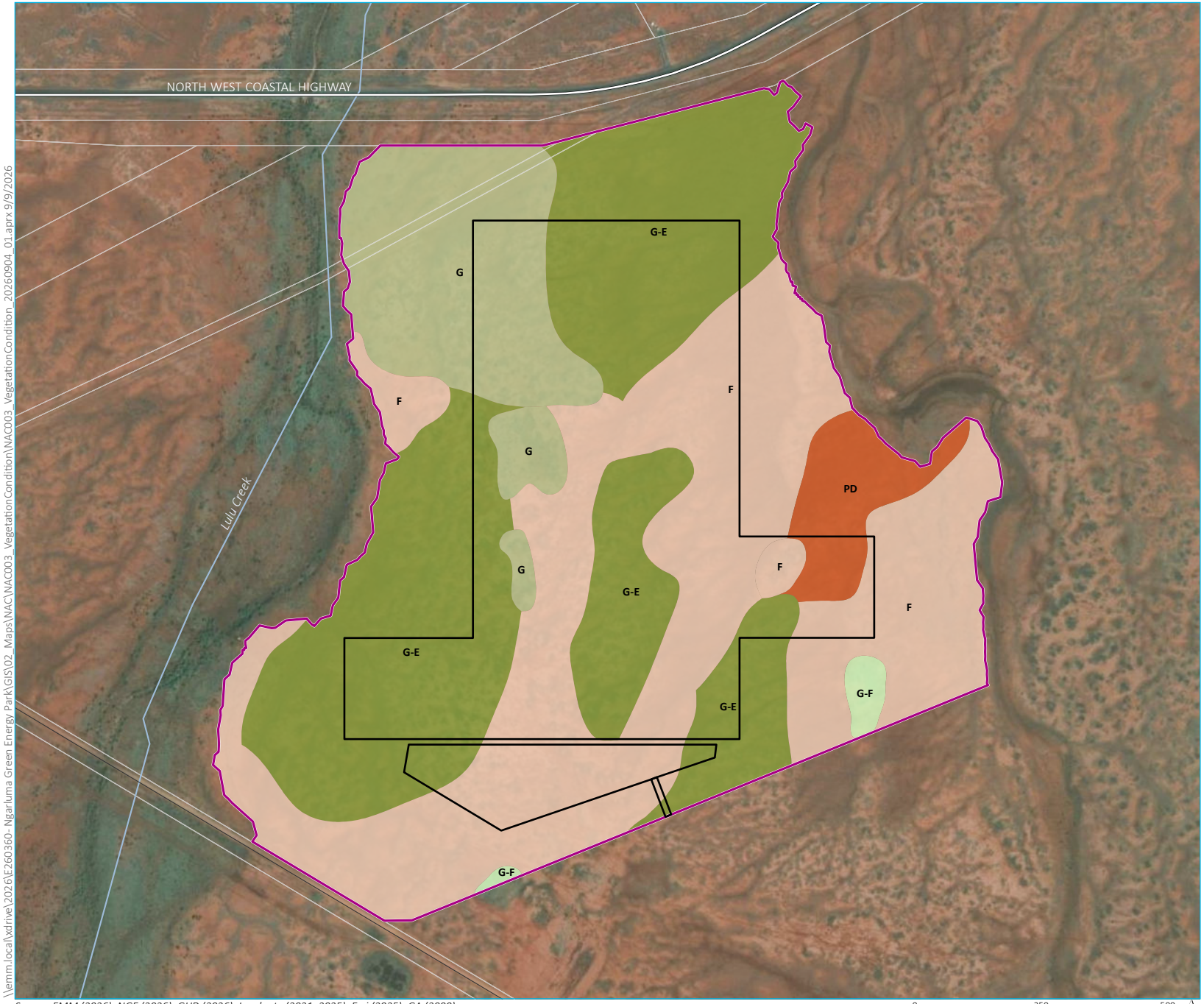
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Site 1B2- vegetation types

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Figure 3.5

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Source: EMM (2026); NGE (2026); GHD (2026); Landgate (2021, 2025); Esri (2025); GA (2009)

Site 1B2- vegetation condition

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Figure 3.6

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iv Site 1B5

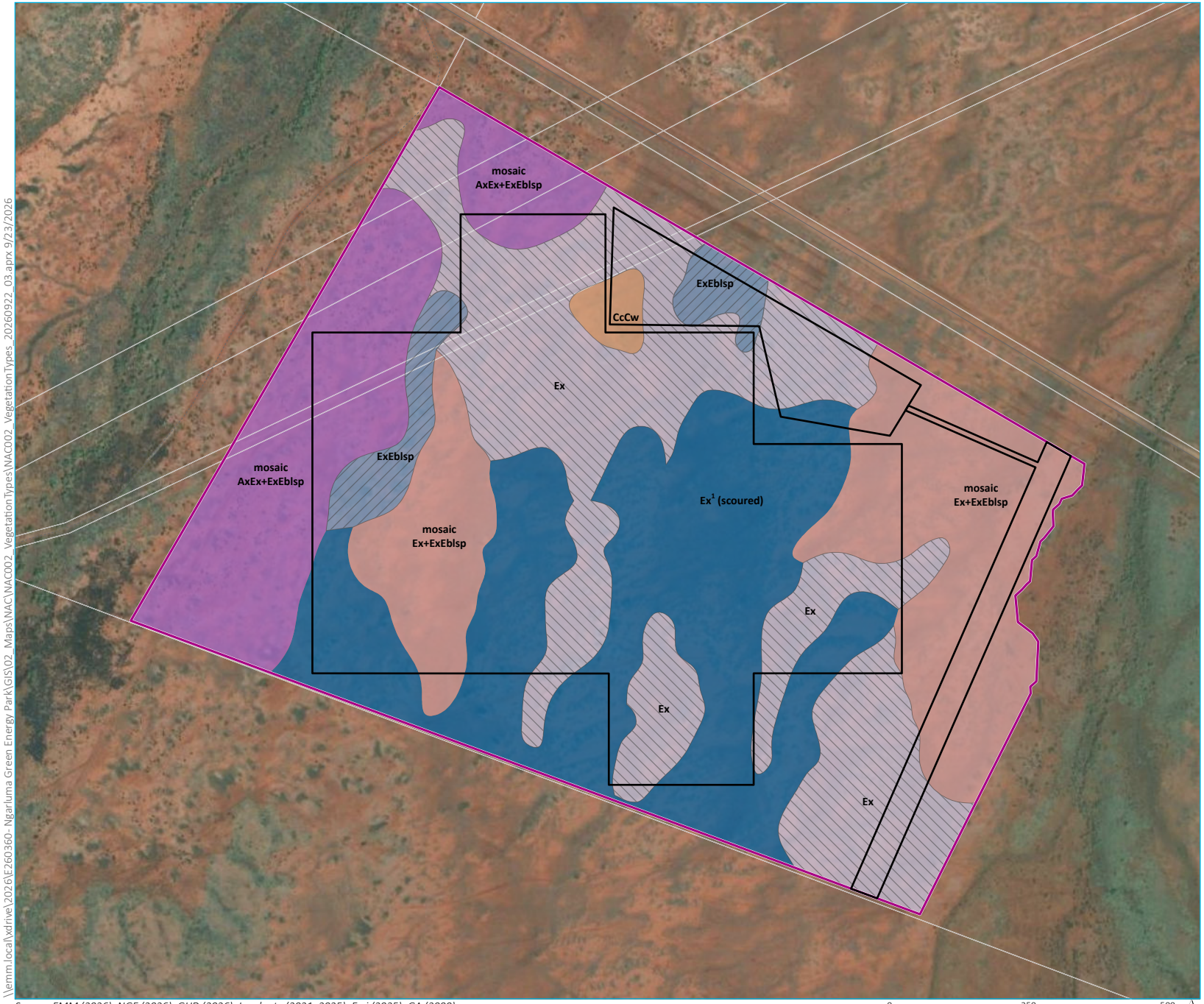
Vegetation within Site 1B5 predominantly comprises tussock grassland, including vegetation corresponding to the P1 'Roebourne Plains coastal grasslands with gilgai microrelief on cracking clays' and P3 'Horseflat land system of the Roebourne Plains' PECs. P1 PEC vegetation occurs primarily in the western portion of the site, in mosaic with *Acacia xiphophylla* (snakewood) shrubland and P3 PEC vegetation. Areas of P1 PEC-like vegetation also occur on scoured alluvial deposits that are not deeply cracking and were classified by VLA (2026b) as P3 PEC vegetation.

Vegetation condition ranges from Poor to Excellent, with P1 and P3 PEC vegetation generally occurring in Good to Excellent condition. Approximately 45% of the site comprises *Eragrostis xerophila* tussock grassland in Fair condition that no longer retains P3 PEC status. Buffel grass (*Cenchrus ciliaris*) was recorded at less than 2% cover across the site, primarily within snakewood vegetation near the eastern boundary track (VLA 2026b).

Vegetation types, condition and estimated proportional cover within Site 1B5 are summarised in Table 3.3 and shown in Figure 3.7 and Figure 3.8.

Table 3.3 Vegetation types and condition within site 1B5

Vegetation type	Vegetation code	Condition	Status	Estimated cover
Tussock grassland (includes P1 PEC in mosaics)	ExEbIsp	Good–Excellent	P1 PEC	15%
Tussock grassland	Ex	Good–Excellent	P3 PEC	30%
Tussock grassland	Ex	Fair	No longer P3 PEC	45%
Shrubland / tussock / hummock grassland	AxEx; *CcCw	Good–Poor	N/A	10%



KEY

- Site boundary
- Proposed clearing area

Priority ecological community

- Priority 1
- Priority 3

Vegetation type

- **CcCw** | *Cenchrus ciliaris* open tussock grassland over *Corchorus walcottii* open shrubland over annual *Aristida contorta* grassland.
- **Ex** | *Eragrostis xerophila* tussock grassland over open herbland of *Sida fibulifera, Streptoglossa bubakii, Euploca cunninghamii*
- **Ex[1] (scoured)** | *Eragrostis xerophila* open tussock grassland over open herbland of *Sida fibulifera, Streptoglossa bubakii, Euploca cunninghamii*
- **ExEblsp** | *Stemodia kingii* open low shrubland over *Eragrostis xerophila/Eriachne benthamii/Iseilema spp/Sorghum plumosum* tussock grassland over vineland of *Operculina aequisepala* and mixed dense herbland.
- **mosaic AxEx+ExEblsp**
- **mosaic Ex+ExEblsp**

Existing environment

- Minor road
- Vehicular track
- Cadastral boundary

Site 1B5- vegetation types

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Figure 3.7

EMM
creating opportunities

Source: EMM (2026); NGE (2026); GHD (2026); Landgate (2021, 2025); Esri (2025); GA (2009)

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KEY

- Site boundary
- Proposed clearing area

Vegetation condition

- Varies good to excellent (G-E)
- Good (G)
- Fair (F)
- Poor (P)

Existing environment

- Minor road
- Vehicular track
- Named watercourse
- Cadastral boundary

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Source: EMM (2026); NGE (2026); GHD (2026); Landgate (2021, 2025); Esri (2025); GA (2009)

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N

Site 1B5- vegetation condition

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Figure 3.8

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v Site 1D

Site 1D supports a more varied range of landforms and vegetation than the Site 1B areas. Tussock grasslands occur on gilgai and non-gilgai clay plains and include vegetation associated with the P1 'Roebourne Plains coastal grasslands with gilgai microrelief on cracking clays' and P3 'Horseflat land system of the Roebourne Plains' PECs. The site also contains low outer creek flats and a relatively large area of low hills and associated quartz rises. Vegetation associated with the hill and quartz rises was not considered to be of conservation significance (VLA 2026b).

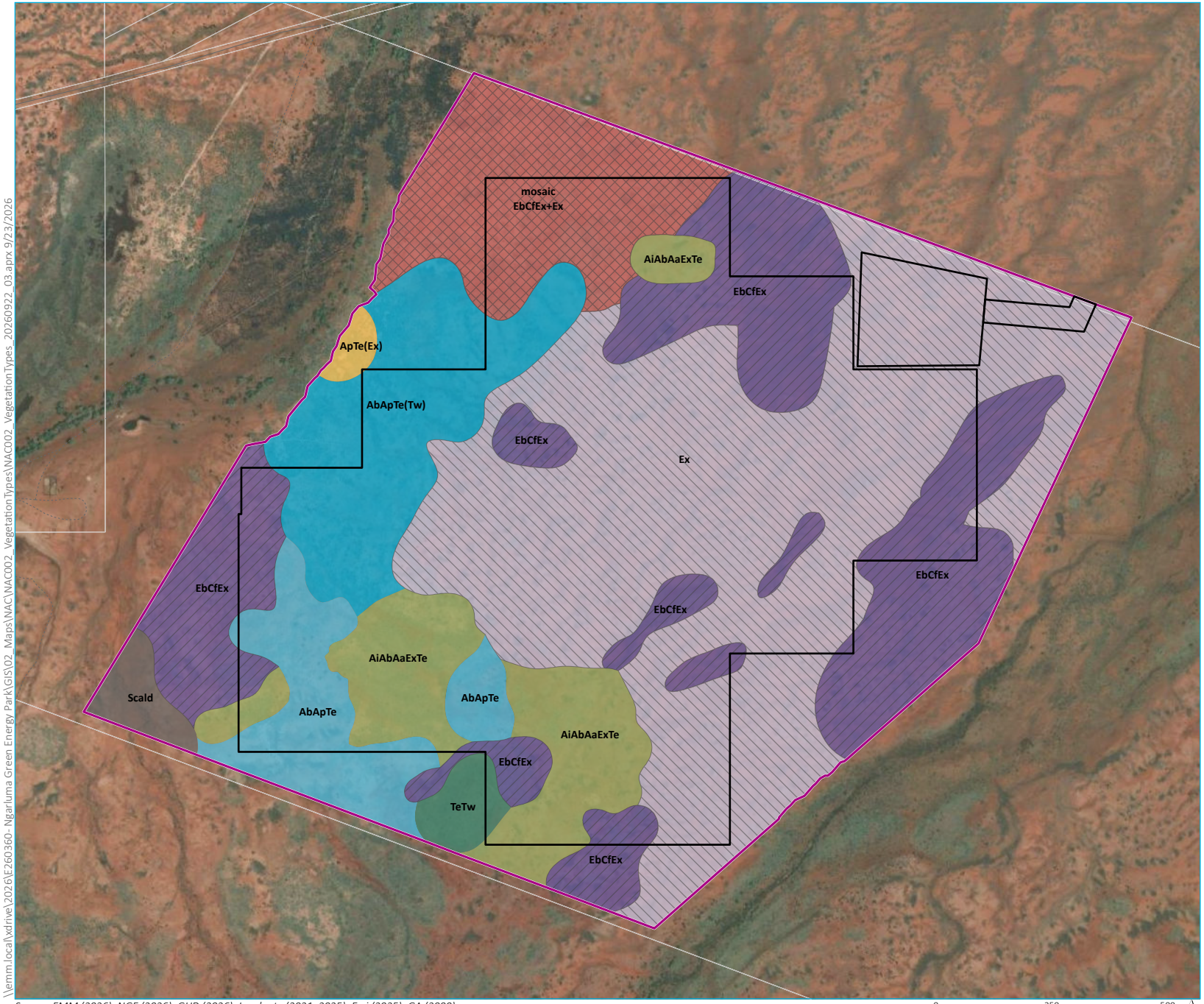
Low drainage areas occur within the south-eastern portion of the site, while some P1 PEC areas support wetter vegetation, including nardoo (*Marsilea hirsuta*) and sedges. A large low caprock dome also occurs along the western boundary of Site 1D (VLA 2026b).

Vegetation is predominantly in Good to Excellent condition, including the P1 and P3 PEC vegetation. A small degraded drainage area occurs in the south-east, where cattle access to a dam has resulted in grazing and disturbance; however, this accounts for less than 0.1% of the site. Site 1D has comparatively little scouring and the highest estimated proportion of P1 PEC vegetation of the sites surveyed by VLA (2026b).

Vegetation types, condition and estimated proportional cover within Site 1D are summarised in Table 3.4 and shown in Figure 3.9 and Figure 3.10.

Table 3.4 Vegetation types and condition within Site 1D

Vegetation type	Vegetation code	Condition	Status	Estimated cover
Tussock grassland (includes P1 PEC in mosaics)	EbCfEx; ExEbIsp	Good–Excellent	P1 PEC	35%
Tussock grassland	Ex	Good–Excellent	P3 PEC	45%
Shrubland / tussock / hummock grassland	AxEx; AiAbAaExTe; AbAp(Tw)Te; ApTe(Ex)	Good	N/A	20%



KEY

Site boundary

Proposed clearing area

Priority ecological community

Priority 1

Priority 3

Vegetation type

AbApTe(Tw) | Mixed tall open *Acacia bivenosa, Acacia pyrifolia, Acacia ancistrocarpa* over open *Corchorus walcottii* low shrubland over *Triodia epactia/T.wiseana* hummock grassland over closed herbland

AbApTe | Mixed tall open *Acacia bivenosa, Acacia pyrifolia, Acacia ancistrocarpa* over open *Corchorus walcottii* low shrubland over *Triodia epactia/T.wiseana* hummock grassland over closed herbland

AiAbAaExTe | Open tall mixed shrubland (*Acacia inaequilatera, A. bivenosa, A. ancistrocarpa*) over mixed *Eragrostis xerophila* and *Triodia epactia* grassland over annual herbland and annual *Aristida contorta*.

ApTe(Ex) | *Acacia pyrifolia* open shrubland over *Triodia epactia* with scattered *T. longiceps / Eragrostis xerophila*

EbCfEx | *Eriachne benthamii, Chrysopogon fallax, Eragrostis xerophila* mixed tussock grassland over mixed vine and herbland.

Ex | *Eragrostis xerophila* tussock grassland over open herbland of *Sida fibulifera, Streptoglossa bubakii, Euploca cunninghamii*

TeTw | *Triodia epactia* hummock grassland with *T. wiseana* and very scattered *Acacia inaequilatera*

Scald

mosaic EbCfEx+Ex

Existing environment

Minor road

Vehicular track

Cadastral boundary

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Source: EMM (2026); NGE (2026); GHD (2026); Landgate (2021, 2025); Esri (2025); GA (2009)

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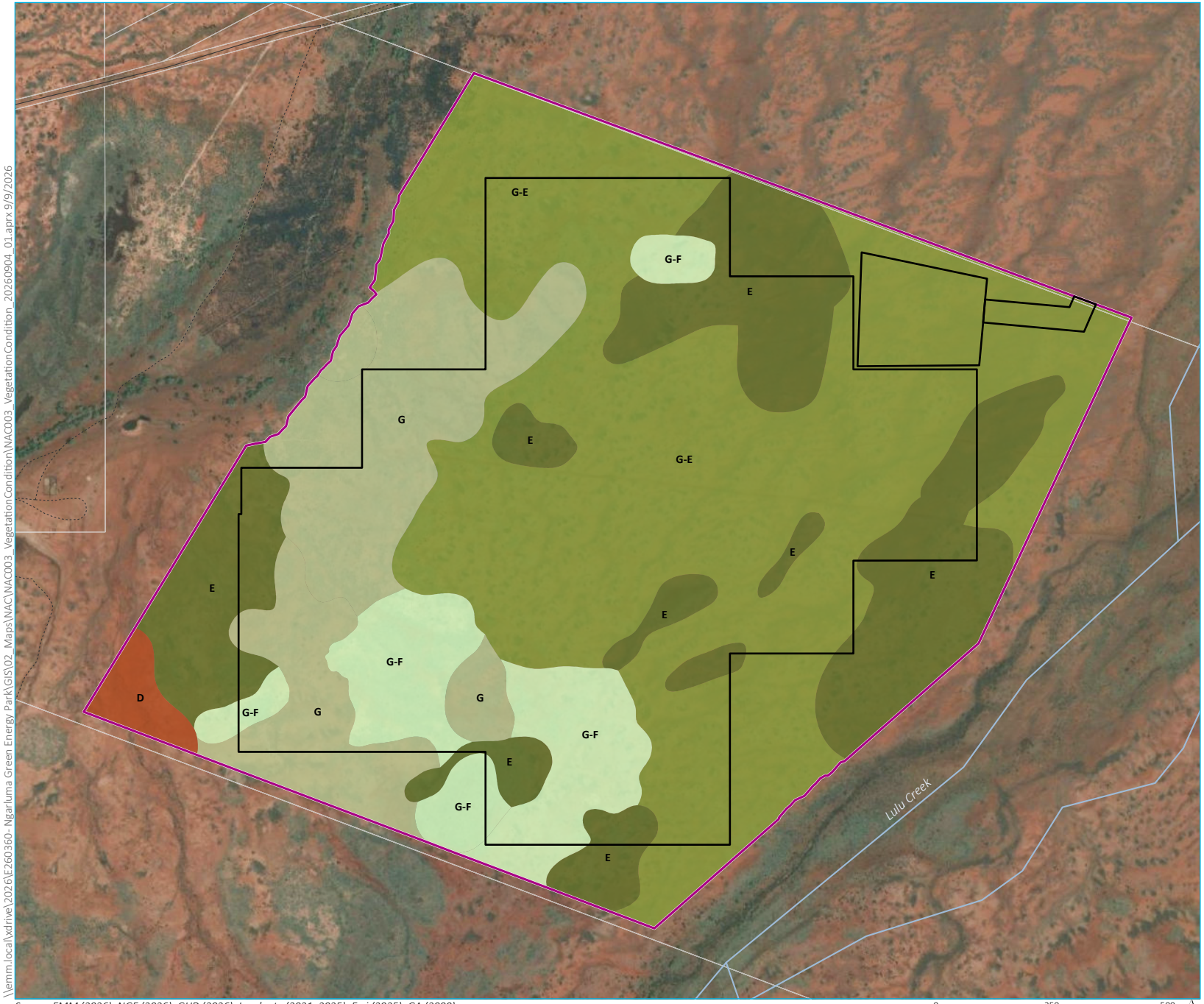
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Site 1D- vegetation types

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Figure 3.9

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KEY

- Site boundary
- Proposed clearing area

Vegetation condition

- Excellent (E)
- Varies good to excellent (G-E)
- Good (G)
- Good to fair (G-F)
- Degraded (D)

Existing environment

- Minor road
- Vehicular track
- Named watercourse
- Cadastral boundary

Source: EMM (2026); NGE (2026); GHD (2026); Landgate (2021, 2025); Esri (2025); GA (2009)

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Site 1D- vegetation condition

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NAC NVCP Supporting Document
Figure 3.10

EMM
creating opportunities

vi Site 1E1

Vegetation within Site 1E1 comprises mixed grassland communities across plains, together with localised areas of rocky upland terrain. The plains support grassland communities on loam to clayey loam soils, while localised basalt hills form low, stony rises (BCE 2026).

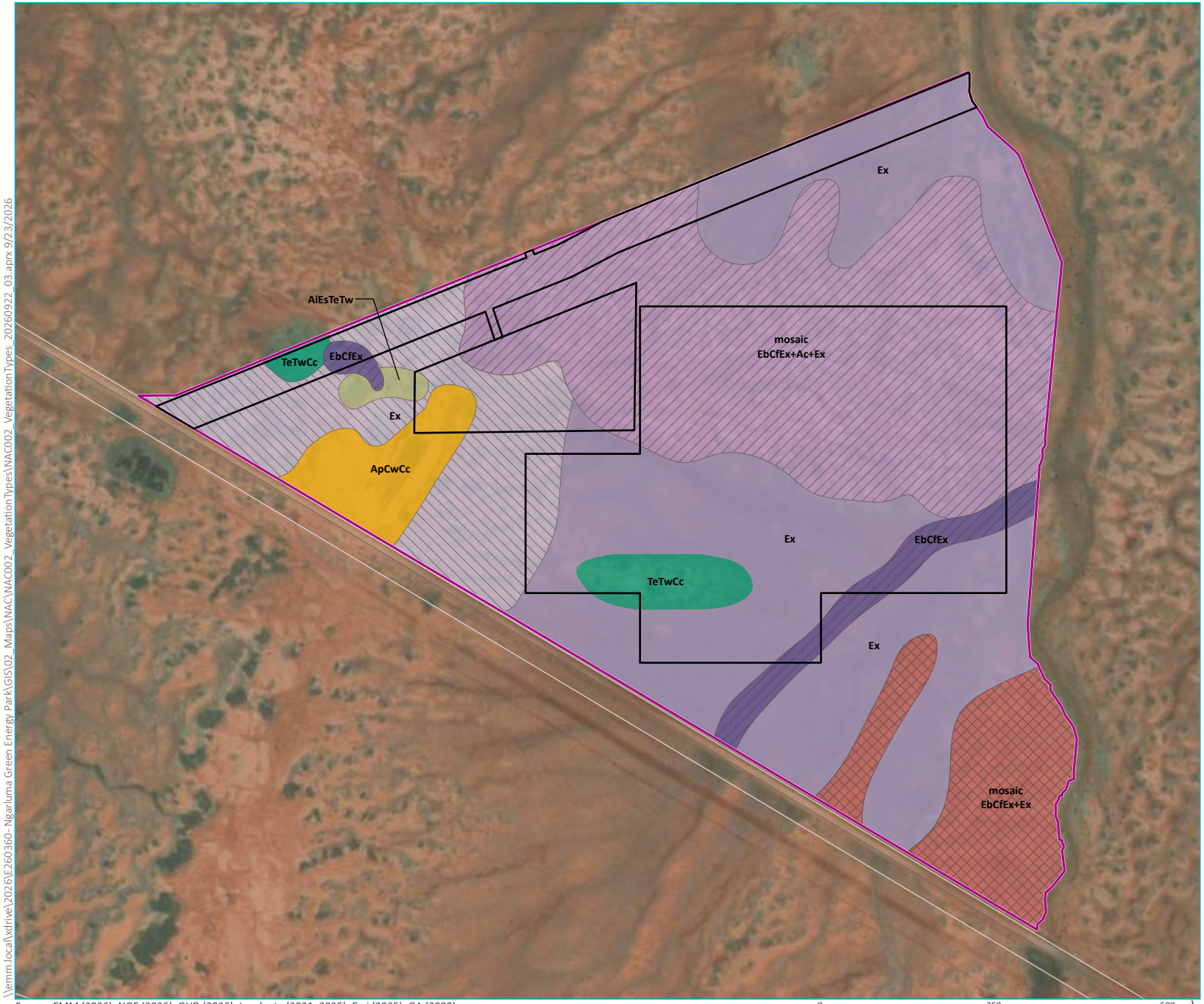
Targeted survey by VLA (2026b) identified tussock grasslands corresponding to the P1 'Roebourne Plains coastal grasslands with gilgai microrelief on cracking clays' and P3 'Horseflat land system of the Roebourne Plains' PECs, which occur in mosaic within the site. A small basalt hillock associated with a grove of *Acacia inaequilatera* and a small scatter of basalt rocks along the northern boundary were also recorded.

Vegetation condition ranges from Fair to Excellent, with P1 PEC and identified P3 vegetation occurring in Good to Excellent condition. Approximately 60% of Site 1E1 comprises *Eragrostis xerophila* tussock grassland in Fair condition that no longer retains P3 PEC status, associated with scouring and potential historical overgrazing (VLA 2026b).

Vegetation types, condition and estimated proportional cover within Site 1E1 are summarised in Table 3.5 and shown Figure 3.11 and Figure 3.12.

Table 3.5 Vegetation types and condition within Site 1E1

Vegetation type	Vegetation code	Condition	Status	Estimated cover
Tussock grassland (includes P1 PEC in mosaics)	EbCfEx (in mosaic)	Good–Excellent	P1 PEC	20%
Tussock grassland	Ex	Good–Excellent	P3 PEC	10%
Tussock grassland	Ex	Fair	No longer P3 PEC	60%
Shrubland / tussock / hummock grassland	AiEsTeTw; TeTw*Cc; ApCw*Cc	Good–Fair	N/A	10%



KEY

Site boundary

Proposed clearing area

Priority ecological community

Priority 1

Priority 3

Vegetation type

AiEsTeTw | *Acacia inaequilatera, Ehretia saligna* some *Hakea lorea* over open *Triodia epactia, T. wiseana, Eragrostis xerophila* grassland

ApCwCc | *Acacia pyrifolia* closed shrubland over *Corchorus walcottii* low open low shrubland over mixed **Cenchrus ciliaris*, with *Eragrostis xerophila, Dichanthium sericeum humilis* on disturbed site.

EbCfEx | *Eriachne benthamii, Chrysopogon fallax, Eragrostis xerophila* mixed tussock grassland over mixed vine and herbland.

Ex | *Eragrostis xerophila* open tussock grassland over open herbland of *Sida fibulifera, Streptoglossa bubakii, Euploca cunninghamii*

Ex | *Eragrostis xerophila* tussock grassland over open herbland of *Sida fibulifera, Streptoglossa bubakii, Euploca cunninghamii*

TeTwCc | *Triodia epactia* with *Triodia wiseana* hummock grassland and scattered **Cenchrus ciliaris* over closed annual herbland

mosaic EbCfEx+Ac+Ex

mosaic EbCfEx+Ex

Existing environment

Minor road

Cadastral boundary

Site 1E1- vegetation types

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NAC NVCP Supporting Document
Figure 3.11

Source: EMM (2026); NGE (2026); GHD (2026); Landgate (2021, 2025); Esri (2025); GA (2009)

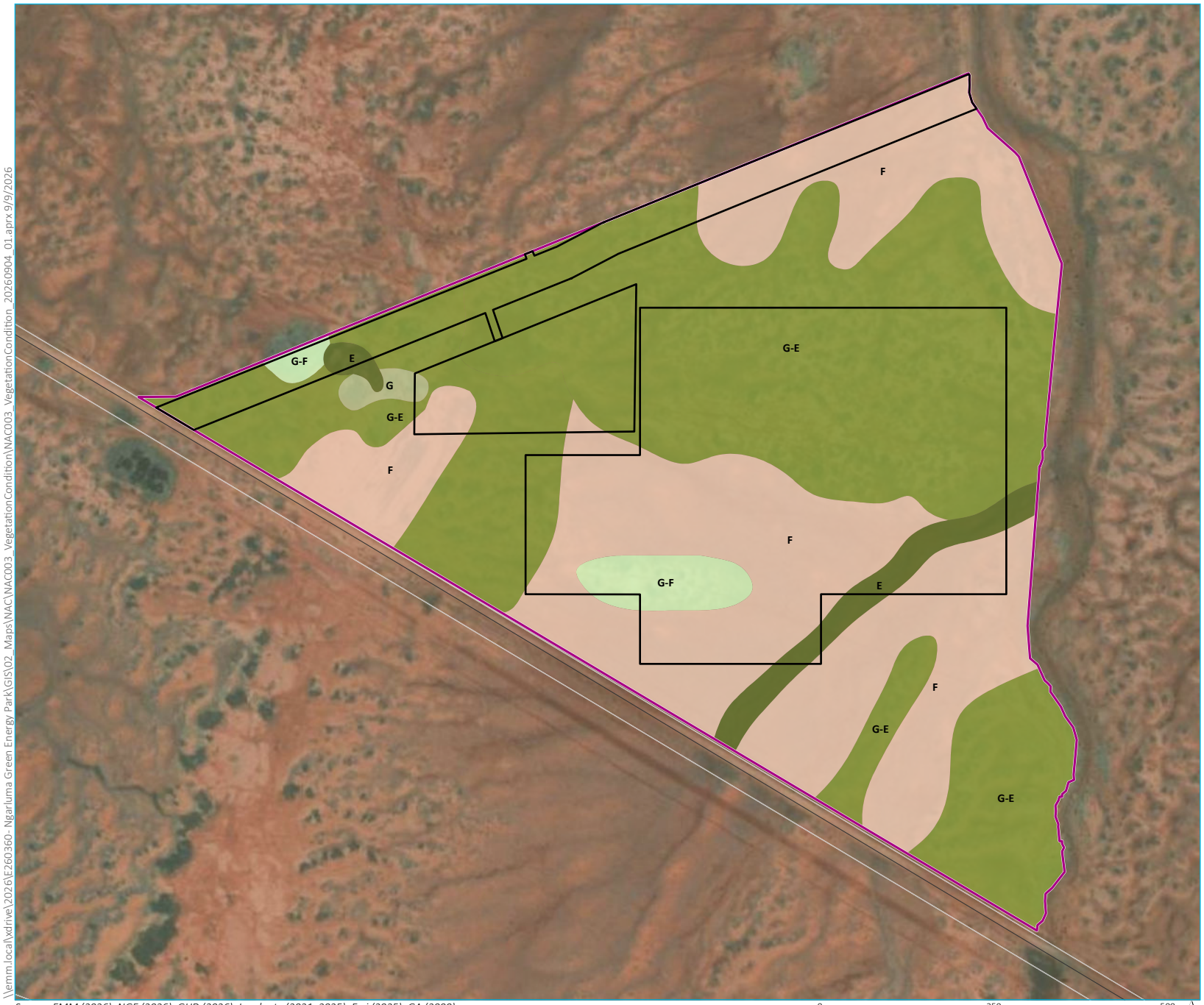
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creating opportunities



KEY

- Site boundary
- Proposed clearing area

Vegetation condition

- Excellent (E)
- Varies good to excellent (G-E)
- Good (G)
- Good to fair (G-F)
- Fair (F)

Existing environment

- Minor road
- Cadastral boundary

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Source: EMM (2026); NGE (2026); GHD (2026); Landgate (2021, 2025); Esri (2025); GA (2009)

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Site 1E1- vegetation condition

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NAC NVCP Supporting Document
Figure 3.12

EMM
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3.2.2 Vegetation clearing

The application area totals 1084.73 ha, with 500.72 ha proposed to be cleared and 584 ha of vegetation retained. Clearing extent per site is shown in Table 3.6.

Table 3.6 Vegetation clearing

Site	Total area (ha)	Clearing (ha)	Vegetation retained (ha)
1A1, 1A2, 1A3	345.92	104.83	241.09
1B1	120.7	50.02	70.68
1B2	159.01	70.83	88.18
1B5	140.65	82.68	57.97
1D	236.83	153.74	83.09
1E1	81.62	38.63	42.99
Total (ha)	**1084.73**	**500.73**	**584**

3.2.3 Conservation significant vegetation

Desktop assessment and field surveys did not identify any TECs within the application area, however, three PECs were identified as relevant to the application area (VLA 2024; 2026a; 2026b), described in Section 3.2.1

Within Sites 1B1, 1B2, 1B5, 1D and 1E1, P1 PEC vegetation frequently occurs in small, closely associated mosaics with P3 PEC vegetation and other vegetation types. As individual P1 occurrences could not practicably be mapped, VLA (2026b) (Section 3.2.1) estimated P1 PEC cover using field observations and transect counts.

Equivalent percentage cover estimates were not reported for Site 1A (Section 3.2.1)

3.2.4 Clearing extent within representative PEC vegetation

Areas of P1 and P3 PEC are proposed to be cleared under this application. The calculated extent proposed clearing and retention of PEC are presented in Table 3.7. Due to the mosaic nature of some P1 and P3 PEC (see Section 3.2.3), Mosaic PEC have been conservatively classified as P1 PEC.

Table 3.7 Extent, clearing and retention of PEC vegetation

Site	PEC vegetation	PEC extent (ha)	PEC clearing (ha)	PEC retained (ha)
1A1, 1A2, 1A3	P1 Roebourne Plains coastal grasslands	18.06	0.1	18.05
	P1 Chenopod vegetation association	14.83	9.87	4.96
1B1	P1 Roebourne Plains coastal grasslands	19.92	12.79	7.13
	P3 Horseflat land system PEC vegetation	62.78	24.13	38.65
1B2	P1 Roebourne Plains coastal grasslands	42.13	20.8	21.33
	P3 Horseflat land system PEC vegetation	20.74	9.8	10.94
1B5	P1 Roebourne Plains coastal grasslands	5.09	4.15	0.94
	P3 Horseflat land system PEC vegetation	43.03	28.79	14.24
1D	P1 Roebourne Plains coastal grasslands	76.09	35.15	40.94
	P3 Horseflat land system PEC vegetation	94.7	73.88	20.82
1E1	P1 Roebourne Plains coastal grasslands	36.46	19.24	17.22
	P3 Horseflat land system PEC vegetation	10.25	3.97	6.28
Total P1 PEC (ha)		212.58	102.01	110.57
Total P3 PEC (ha)		231.5	140.57	90.93
Total (ha)		**444.08**	**242.58**	**201.50**

Note: Where P1 and P3 PEC vegetation occurs as a mapped mosaic, the mosaic has been conservatively classified as P1, as the relative proportions of P1 and P3 within individual mosaics were not quantified (VLA 2026b).

The proposed clearing will result in the removal of approximately 242.58 ha of mapped PEC vegetation, with approximately 201.50 ha retained within the application sites. PEC vegetation will therefore remain across the application area following clearing, including areas of both P1 and P3 PEC vegetation.

VLA (2024) considered the vegetation types recorded within the survey area to be broadly represented in the local area. Further, the P3 'Horseflat land system of the Roebourne Plains' PEC is characterised by extensive, weakly gilgaied clay plains dominated by tussock grasslands and is known to occur more broadly across the Roebourne Plains (VLA 2019).

Considering the broader representation of vegetation within the local area, the wider occurrence of the P3 PEC and the extent of P1 and P3 PEC vegetation retained within the application sites, the proposed clearing is not expected to result in significant impacts to PEC vegetation locally.

3.3 Biosecurity

3.3.1 Introduced weeds

Introduced flora were recorded within the application area during the flora and vegetation surveys (VLA 2024; 2026a; 2026b). Six weed species have been recorded within Site 1A: buffel grass (*Cenchrus ciliaris*), birdwood grass (*Cenchrus setiger*), bitter melon (*Citrullus colocynthis*), awnless barnyard grass (*Echinochloa colona*), stinking passionflower (*Passiflora foetida*) and mimosa bush (*Vachellia farnesiana*) (VLA 2026a).

Weed occurrence within Site 1A is generally associated with disturbed areas and drainage features, with buffel and birdwood grass recorded primarily within wooded creeklines and other disturbed vegetation. The majority of Site 1A was considered weed-free, particularly the gilgai clay areas (VLA 2026a).

Weed occurrence within Sites 1B1, 1B2, 1B5, 1D and 1E1 was generally low, with buffel grass (*Cenchrus ciliaris*) the most widespread introduced species recorded. Birdwood grass (*Cenchrus setiger*) was also recorded within Sites 1B2 and 1D, while mimosa bush (*Vachellia farnesiana*) and American malvastrum (*Malvastrum americanum*) were recorded within Site 1D (VLA 2026b). Weed cover was generally low across the additional sites, with VLA (2026b) reporting less than 2% weed cover across most sites

None of the recorded weed species were identified by VLA as Declared Pests or Weeds of National Significance. Potential introduction or spread of weeds associated with the proposed clearing will be managed through appropriate weed hygiene and management measures.

3.4 Fauna

3.4.1 Fauna survey and assessment

Bamford Consulting Ecologists (BCE 2026) undertook a Basic fauna assessment for the Application Area, comprising a desktop review, fauna habitat assessment and field investigations undertaken between December 2023 and July 2026. Field investigations included site reconnaissance, motion-sensitive cameras, autonomous recording units (ARUs), targeted searches for conservation-significant reptiles and systematic bird census transects.

Across the field investigations, approximately 12 person-days of opportunistic observations, 70 recorder nights of ARU monitoring, 380 camera nights, 30 person-hours of targeted reptile searching and 18 bird census transects were completed (BCE 2026).

The desktop assessment identified 281 vertebrate fauna species potentially occurring within the broader project area, comprising eight frogs, 92 reptiles, 141 birds, 34 native mammals and six introduced mammals. Field investigations recorded one frog, 11 reptiles, 41 birds and eight mammals. BCE (2026) considered the expected fauna assemblage to be typical of the region and moderately rich in a regional context, reflecting the relatively limited diversity of environments represented within the project area. The assemblage is expected to be widely represented in the surrounding landscape, which retains extensive areas of native vegetation.

3.4.2 Fauna habitats

BCE (2026) identified five broad vegetation and substrate associations (VSAs) providing fauna habitat within and surrounding the application area: seasonal drainage lines; Acacia thickets; sparse grasslands on clay, loam and gilgai flats; Acacia shrublands, generally with spinifex, on gravelly rises; and rocky hills. These habitats occur in varying proportions across the areas investigated by BCE, including Sites 1A (1A1, 1A2, 1A3), 1B (1B2, 1B2, 1B5), 1D and 1E (1E1). The distribution and fauna values of these habitats are summarised in Table 3.8.

Table 3.8 Identified fauna habitat

Fauna habitat	Description of fauna value
Seasonal drainage lines	Drainage features support comparatively dense vegetation, including Acacia thickets and spinifex and, along larger drainage lines, *Eucalyptus victrix* woodland. Bird surveys recorded greater species richness and abundance along drainage lines than in open grasslands, and these features potentially provide dispersal corridors for fauna.
Acacia thickets	Occur principally in association with drainage features and adjacent plains and often dense but patchy thickets of Snakewood *Acacia xiphophylla,* also open ground and spinifex (*Triodia* sp.). Typically, on gravelly loam soils.
Sparse grasslands on clay, loam and gilgai flats	Extensive flats supporting sparse grasses and annual herbs, on clay-loam and even gilgai soils. Provide potentially suitable habitat for the Priority 4 Lakeland Downs Mouse, which BCE (2026) considers likely to occur as a resident.
Acacia shrublands on gravelly rises	Occur on slightly elevated gravelly areas and commonly include spinifex, contributing additional vegetation structure and habitat diversity.
Rocky hills	Generally, support spinifex (*Triodia* spp.) and scattered shrubs. Most rocky hills occur outside the project area but are sufficiently close to influence the fauna assemblage, including species associated with rocky habitats such as the Northern Quoll and Pilbara Olive Python.

Potential fauna habitat within the Application Area is predominately associated with seasonal drainage lines that are expected to provide habitat for a variety of birds and some reptile species, as well as providing dispersal pathways for fauna (BCE 2026). Major drainage lines suitable for fauna dispersal and habitat, will not be impacted under the proposed clearing, with these values to be retained.

Rocky areas that provide suitable habitat to at least one common bat species and significant species such as the EPBC listed Northern Quoll (*Dasyurus hallucatus*) and Pilbara Olive Python (*Liasis olivaceus barroni)*, largely occur outside the proposed clearing area (BCE 2026).

The majority of the Application Area is situated on structurally simple grassland flats that coincide with the Horseflat land system, which is broadly represented in the surrounding area (BCE 2026). This habitat is potentially suitable for the Priority 4 Lakeland Downs Mouse (*Leggadina lakedownensis)*, and foraging opportunities by the migratory Oriental Pratincole (*Glareola maldivarum)*, although neither species was located during survey effort (BCE 2026).

Given that species rich seasonal drainage lines will be largely avoided in the proposed clearing, rocky areas representing suitable habitat occur outside the proposed clearing area, and the horseflat land system and associated grassland flats are widely represented outside the Application Area (Figure 1.4), significant impacts to identified fauna habitat values are not expected.

3.4.3 Conservation significant fauna species

BCE (2026) identified 21 vertebrate fauna species of conservation significance as potentially occurring within the project area, comprising 12 species listed under State and/or Commonwealth legislation, five DBCA Priority species and four species considered by BCE to be locally significant. These comprised three reptiles, 12 birds and six mammals.

i Reptiles

Three conservation-significant reptile species were identified as potentially occurring within the project area, one as a regular visitor and 2 as resident or potential residents, as shown in Table 3.9.

Table 3.9 Reptile occurrence

Species	Conservation status	Potential occurrence
Pilbara Olive Python (*Liasis olivaceus barroni*)	Vulnerable (EPBC Act); listed under the BC Act	Regular visitor
Four-lined Slider (*Lerista quadrivincula*)	Priority 1 - DBCA	Potential resident
Lined Soil-crevice Skink (*Notoscincus butleri*)	Priority 4 - DBCA	Resident

The Pilbara Olive Python (*Liasis olivaceus barroni*) is considered a regular visitor to the project area. Preferred habitat comprises rocky environments, particularly deep gorges associated with permanent pools, which are not present within the development sites. Individuals may move through the application area, including along drainage features.

The Four-lined Slider (*Lerista quadrivincula*) was not recorded despite more than 30 person-hours of targeted searching undertaken in 2024 and 2026. BCE (2026) considered its occurrence unlikely but retained the species as a potential resident on a precautionary basis, with loose soils near drainage features considered potentially suitable habitat.

The Lined Soil-crevice Skink (*Notoscincus butleri)* was also not recorded during targeted searches but is considered potentially resident, with suitable sand and loam substrates occurring near drainage features.

ii Birds

Twelve conservation-significant bird species were identified as potentially occurring within the project area, six of which were listed as regular visitors, as shown in Table 3.10. None were considered residents.

Table 3.10 Bird occurrence

Species	Conservation status	Potential occurrence
Fork-tailed Swift (*Apus pacificus*)	Migratory (EPBC Act); listed under the BC Act	Regular visitor
Oriental Cuckoo (*Cuculus optatus*)	Migratory (EPBC Act); listed under the BC Act	Vagrant
Oriental Pratincole (*Glareola maldivarum*)	Migratory (EPBC Act); listed under the BC Act	Regular visitor
Letter-winged Kite (*Elanus scriptus*)	Priority 4 - DBCA	Vagrant
Red Goshawk (*Erythrotriorchis radiatus*)	Endangered (EPBC Act); listed under the BC Act	Vagrant
Grey Falcon (*Falco hypoleucos*)	Vulnerable (EPBC Act); listed under the BC Act	Regular visitor
Peregrine Falcon (*Falco peregrinus*)	Specially Protected - BC Act	Regular visitor
Night Parrot (*Pezoporus occidentalis*)	Critically Endangered (EPBC Act); listed under the BC Act	Vagrant
Rufous Grasswren (*Amytornis whitei*)	BCE CS3 - locally significant	Regular visitor
Rufous-crowned Emu-wren (*Stipiturus ruficeps*)	BCE CS3 - locally significant	Regular visitor
Barn Swallow (*Hirundo rustica*)	Migratory (EPBC Act); listed under the BC Act	Vagrant
Star Finch (*Neochmia ruficauda*)	BCE CS3 - locally significant	Regular visitor

The Grey Falcon (*Falco hypoleucos*) is considered a regular visitor, particularly along drainage lines containing mature trees. BCE (2026) identified the larger creekline east of Site 1B as containing trees of the type potentially used by the species for breeding. These drainage lines will be largely undisturbed under the proposed clearing and significant impacts are not expected.

Fork-tailed Swift (*Apus pacificus)* is considered a regular visitor; individuals have the potential to fly over the proposed clearing area but are unlikely to utilise it as the species is an aerial forager.

The Oriental Pratincole (*Glareola maldivarum*) is considered a regular visitor and may intermittently use open grasslands within the project area, potentially occurring in moderate numbers when present.

The Night Parrot (*Pezoporus occidentalis*) was assessed as a vagrant. No records were identified within 50 km of the project area and BCE (2026) considered that the project area does not appear to contain the chenopod shrublands identified as preferred foraging habitat for the species.

iii Mammals

Six conservation-significant mammal species were identified as potentially occurring within the project area, one of which is considered a likely resident and four regular visitors, as shown in Table 3.11.

Table 3.11 Mammal occurrence

Species	Conservation status	Potential occurrence
Northern Quoll (*Dasyurus hallucatus*)	Endangered (EPBC Act); listed under the BC Act	Regular visitor
Common Brushtail Possum (*Trichosurus vulpecula*)	BCE CS3 – locally significant	Irregular visitor
Lakeland Downs Mouse (*Leggadina lakedownensis*)	Priority 4 – DBCA	Resident
Western Pebble-mound Mouse (*Pseudomys chapmani*)	Priority 4 – DBCA	Regular visitor
Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*)	Vulnerable (EPBC Act); listed under the BC Act	Regular visitor
Ghost Bat (*Macroderma gigas*)	Vulnerable (EPBC Act); listed under the BC Act	Regular visitor

The Northern Quoll (*Dasyurus hallucatus*) was recorded by motion-sensitive cameras in rocky habitat adjacent to the development sites. BCE (2026) considered the species likely to be resident within rocky hills surrounding the project area (which were excluded from consideration as development sites) and a regular visitor to the development sites, where individuals may forage or disperse, including along drainage lines. The development sites themselves lack the rocky hills considered suitable for habitat and the species is not considered to be a permanent resident in the proposed clearing areas.

The Lakeland Downs Mouse (*Leggadina lakedownensis*) is considered likely to occur as a resident within the project area. Nearby records tend to coincide with the Horseflat land system, and the extensive clay flats provide potentially suitable habitat. BCE (2026) noted that abundance of the species may vary substantially in response to environmental conditions. Extensive habitat exists outside the proposed clearing areas and significant impacts on the species is not expected.

The Western Pebble-mound Mouse (*Pseudomys chapmani*) is considered a regular visitor, with suitable habitat more extensively represented in nearby stony plains and lower slopes. No individuals or pebble mounds were recorded during the field investigations.

The Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) and Ghost Bat (*Macroderma gigas*) are considered regular visitors to the project area. Neither species was detected during acoustic surveys undertaken between 2024 and 2026, and BCE (2026) considered the project area unlikely to contain caves or other structures required to support resident populations. Significant impacts to either species are therefore not expected.

iv Invertebrate fauna

BCE (2026) identified four conservation-significant invertebrate taxa that may occur within the project area: the Pilbara Dragonfly (*Antipodogomphus hodgkini*), Pilbara Threadtail (*Nososticta pilbara*), Bond's Antichiropus Millipede (*Antichiropus* sp. 'DIP007') and Flinder's Antichiropus Millipede (*Antichiropus* sp. 'DIP008'). No conservation-significant invertebrate fauna were recorded during field investigations, and no records were identified within the 50 km DBCA database search area.

Table 3.12 Invertebrate fauna occurrence

Species	Potential occurrence
Pilbara Dragonfly (*Antipodogomphus hodgkini*)	Irregular visitor / possible vagrant
Pilbara Threadtail (*Nososticta pilbara*)	Irregular visitor / possible vagrant
Bond's Antichiropus Millipede *(Antichiropus sp*. 'DIP007')	Potentially present
Flinder's Antichiropus Millipede (*Antichiropus sp*. 'DIP008')	Potentially present

The Pilbara Dragonfly and Pilbara Threadtail may occur as irregular visitors or vagrants along minor drainage lines within the project area. Suitable habitat is considered limited, as these drainage features are unlikely to support the long-lasting pools potentially required by these species.

The distribution and habitat preferences of the two *Antichiropus* millipedes are poorly known. BCE (2026) considered that either or both species may occur within the project area, particularly in mesic habitats associated with drainage lines and the lower slopes of rocky hills. These habitat types will be largely avoided, and significant impacts are not expected.

v Short range endemics

Several *Buddelundia* species that may represent short-range endemic (SRE) taxa were identified during the broader desktop review; however, none had previously been recorded within or near the project area based on a subsequent database search within 10 km.

During the July 2026 survey, several small *Buddelundia* specimens were collected from dense leaf litter along a creekline in Site 1B. The specimens were damaged in transit and could not be identified to species. BCE (2026) noted that the ecology and distribution of SRE invertebrates are often poorly understood and that the presence of undetected SRE taxa within the project area cannot be excluded.

Shells of a *Bothriembryon* land snail were also recorded around the base of rocky hills during earlier investigations and along creeklines in July 2026. No live individuals were recorded. While land snails can exhibit short-range endemism, no members of the genus were returned from database searches and BCE (2026) noted that rocky environments are not limited in extent within the region.

4 Avoidance and mitigation measures

Whiles the purpose NVCP seeks approval for a maximum clearing extent within the application area, avoidance and mitigation/minimisation measures have been incorporated into the initial site investigations and master planning of the GEP with the proposed clearing footprint selected to reduce impacts to native vegetation, conservation-significant flora and vegetation, fauna habitat, drainage features and other environmental values.

4.1 Avoidance

Exclusion areas have been incorporated into the GEP master planning based on heritage, hydrological and environmental constraints:

- Creek and drainage lines have been avoided through site design, retaining associated vegetation and higher-value fauna habitat and maintaining connectivity through the development areas (BCE 2026). In the most part they constitute heritage exclusion areas and it will be a condition of any sub-lease that they be protected. Further it will be a condition of any sub-lease that areas inundated by 10% flood events will be excluded from any solar panel and battery development and in the Hub Area (1B1) hub infrastructure (sub-station, power station) will not be constructed in any areas inundated by a 0.2% flood event.
- At Site 1A, the P1 'Roebourne Plains coastal grasslands with gilgai microrelief on cracking clays' PEC occurring along a broad, low drainage feature has been incorporated within an exclusion area and is not proposed to be cleared (VLA 2026a), as shown in Figure 1.5.
- All heritage sites identified in the survey reports will be protected (and no s 18 applications will be permitted by NAC).
- Rocky habitat of relevance to conservation-significant fauna, including the Northern Quoll, also occurs predominantly outside the development sites (BCE 2026).

4.2 Minimisation

Future energy proponents will undertake further site investigations and detailed design prior to development, which may result in refinement of development footprints and a reduction in the ultimate extent of clearing:

- It will be a requirement of any sub-lease that any clearing of vegetation in areas containing PEC 1 mosaic will be minimised where possible. Further, it is anticipated that broad acre style clearing of vegetation types will not be undertaken in solar development sites, as solar panels will be installed either by driving piles or constructing footings with some informal access tracks required. However, the NVCP is intentionally conservative in relation to clearing area required.
- Where avoidance is not practicable, disturbance will be minimised where possible, including through retention and buffering of drainage features and opportunities to further reduce impacts to conservation-significant vegetation and fauna habitat during detailed design.
- Following establishment of the GEP leases, cattle grazing will cease within leased areas through fence installation, reducing an existing source of disturbance to retained native vegetation and fauna habitat.

- NGE will retain access to the areas for the purpose of environmental management and studies. NGE through Ngarluma cultural knowledge holders, will undertake longitudinal studies of the impact of the project on vegetation and fauna, including PEC 1 areas. There will be a particular focus the regeneration of areas around creek and drainage lines and encouraging visitation of these areas by a variety of fauna. Undeveloped GEP land will be managed by NGE utilising Ngarluma cultural knowledge holders, providing for ongoing management of retained environmental values.

- Future development will be subject to applicable NVCP conditions and environmental management requirements, including weed hygiene, erosion and sediment control, surface-water management and protection of retained vegetation and exclusion areas.

5 Stakeholder consultation

NGE has undertaken consultation with key stakeholders regarding the GEP and associated approvals, including (but not limited to):

- NAC, Ngarluma People and Ngarluma Elders.

  NGE as wholly owned subsidiary of NAC run by Ngarluma directors has been guided by Ngarluma People and Ngarluma Elders from the inception of the project. Ngarluma Elders identified the section 91 Licence Area and subsequently the application area as the priority development area.

  NGE has met on site with Ngarluma Elders and NGE directors actively participated in the heritage surveys. The application area is presently of low cultural value to Ngarluma People due to pastoral activity and the scarcity of high value fauna (Kangaroo and other food sources) and flora. Elders have identified drainage lines and creeks as being of higher value and they will be protected in the development. Ngarluma People consider that removing pastoral activity from the development area will allow the areas along the drainage lines and creeks to regenerate and potentially create habitat for and attract larger fauna.

- Department of Water and Environmental Regulation (DWER).

  NGE has liaised with DWER on the NVCP and its relationship to tenure and planning approval processes.

- Department of Planning Lands and Heritage (DPLH).

  NGE has been working with DPLH for several years on appropriate tenure for the application area. DPLH has been supporting the development and the OTL will contain conditions necessary to protect the environmental values of the application area.

- Department of Energy and Economic Diversification (DEED).

  DEED is the lead agency for the Green Energy Park Development and coordinates an inter-Departmental working group.

- City of Karratha.

  The City of Karratha is strongly supportive of the development and NGE has presented to the Council.

- Hamersley Iron Pty Ltd, as the relevant pastoral lessee.

  Consultation has supported ongoing project planning and consideration of relevant environmental, heritage, land tenure and development matters.

6 Assessment against the clearing principals

Table 6.1 Assessment against the clearing principles

Clearing principle	Variance level	Description
Environmental value: biological values		
(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.	**Not likely to be at variance**	Vegetation within the Application Area predominantly comprises tussock grasslands and shrublands characteristic of the Roebourne Plains, ranging from Partially Degraded to Excellent condition, with some evidence of degradation from scouring and historic grazing activity (VLA 2026a; 2026b). No TECs or Threatened flora were recorded, although three P3 flora taxa and P1 and broadly represented P3 PEC vegetation occur within the application area (VLA 2024; 2026a; 2026b). BCE 2026 determined that the expected fauna assemblage of the Application Area is likely to only be moderately rich in a regional context, due to the limited variety of environments represented (BCE 2026). Given the lack of suitable fauna habitat, impacts to vegetation from historic grazing activity, proximity to existing development and limited environments represented in the application area, high levels of biodiversity are not expected. **Based on the above, the proposed clearing is therefore not likely to be at variance with clearing principle (a).**
(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	**Not likely to be at variance**	BCE (2026) identified several fauna habitats within and surrounding the application area, with drainage lines considered to provide comparatively higher fauna value, including greater species richness and potential movement corridors. Clay flats may also provide habitat for conservation-significant fauna, including the Lakeland Downs Mouse. Although conservation-significant fauna may use habitats within the application area, the majority of habitats proposed to be cleared comprise extensive tussock grasslands that are well represented within the surrounding Roebourne Plains landscape, and BCE (2026) did not identify any habitat features within the proposed clearing areas that are considered critical to the persistence of conservation-significant fauna, such as permanent water sources, denning habitat, roosting habitat or extensive rocky refuge. Higher-value habitats associated with drainage features and rocky landforms, which provide important refuge, movement and foraging opportunities for fauna including the Northern Quoll, are largely avoided through project design and remain available in the surrounding area. Accordingly, while the application area contains habitat that may be utilised by conservation-significant fauna, the habitat proposed to be cleared is not considered necessary for the maintenance of significant fauna populations at a local or regional scale. **Based on the above, the proposed clearing is not likely to be at variance with clearing principle (b).**
(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.	**Not likely to be at variance**	No vascular flora recorded during field surveys within the application area are listed as Threatened under State or Commonwealth legislation. No Threatened flora species are documented for the Roebourne (PIL04) subregion. Given the habitat characteristics within the application area and results of the field surveys, the occurrence of Threatened flora is considered unlikely. **Based on the above, the proposed clearing is not likely to be a variance with clearing principle (c).**

Clearing principle	Variance level	Description
(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	**Not likely to be at variance**	No TECs were identified within or adjacent to the application area during desktop assessment or field surveys, and vegetation recorded within the application area was not considered representative of any listed TEC (VLA 2024; 2026a; 2026b). P1 and P3 PEC vegetation occurs within the application area; however, these communities are not listed as TECs. **Based on the above, the proposed clearing is not likely to be a variance with clearing principle (d).**
Environmental value: significant remnant vegetation and conservation areas		
(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	**Not likely to be at variance**	The application area is located within the Pilbara Bioregion as defined by the Interim Biogeographic Regionalisation for Australia (IBRA). At a regional scale, it is mapped as Beard vegetation association 589, described as a mosaic of short bunch grassland, savanna and grass plains, together with hummock grassland and soft spinifex. Within the Pilbara Bioregion, Beard vegetation association 589 is well represented, with approximately 99.44% of its original extent remaining (Government of Western Australia 2019). On this basis, the vegetation within the application area is considered to be regionally extensive and does not constitute a significant remnant within an extensively cleared landscape. **Based on the above, the proposed clearing is not likely to be a variance with clearing principle (e).**
(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland	**May be at variance**	There are no permanent watercourses or wetlands within the application area. Several minor ephemeral drainage channels occur across the application area and generally convey surface flows following significant rainfall events. These features are typically dry for much of the year. Flora and vegetation surveys identified vegetation associated with ephemeral drainage features, including *Acacia* shrublands over mixed tussock and hummock grasslands (VLA 2024; 2026a; 2026b). Defined water courses (including creeklines and drainage channels) will be excluded from development envelopes (save as required for transmission and connectivity between the solar areas). Some clearing of vegetation associated with minor ephemeral drainage features associated with a flood event of less than 10% probability may be required. Exclusion areas have been incorporated to avoid and minimise impacts to key drainage features and associated vegetation. Within Site 1A, the broad drainage feature supporting the P1 'Roebourne Plains coastal grasslands with gilgai microrelief on cracking clays' PEC is contained within an exclusion zone and will not be disturbed (VLA 2026a) **On this basis, the proposed clearing may be at variance with Clearing Principle (f), however impacts to vegetation associated with drainage features have been minimised through site design and are not considered significant.**

Clearing principle	Variance level	Description
Environmental value: land and water resources		
(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation	**Not likely to be at variance**	The application area predominantly occurs within the Horseflat Land System, with a small area in the south-east intersecting the Ruth Land System. The Horseflat Land System comprises gilgaied clay plains supporting tussock grasslands and minor grassy snakewood shrublands, while the Ruth Land System comprises hills and ridges of volcanic and other rocks supporting predominantly spinifex grasslands (Eliot et al. 2013). The clay plains of the Horseflat Land System may be susceptible to erosion following vegetation removal, particularly where surface runoff is concentrated following rainfall. Evidence of sheetwash and localised erosion was recorded within parts of the application area during vegetation surveys (VLA 2026b), indicating that disturbance of these areas has the potential to contribute to further soil erosion. The risk of land degradation will be minimised through appropriate design and construction controls, including minimising the extent and duration of disturbance and implementing erosion and sediment controls. **Based on the above, the proposed clearing is not likely to be at variance with principal (G).**
(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	**Not likely to be at variance**	No conservation reserves occur within or immediately surrounding the application area. The closest conservation area is the Pilbara system, located along the coastline approximately 2.5 km to the north. Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of conservation areas mapped within the local area. **Based on the above, the proposed clearing is not likely to be a variance with clearing principle (h).**
(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	**Not likely to be at variance**	There are no PDWSAs within or in the vicinity of the application area, with the nearest being the Harding Dam Catchment Area approximately 28 km to the south-east. No permanent watercourses or wetlands occur within the application area, although several minor ephemeral drainage features convey surface flows following significant rainfall events. Clearing has the potential to result in localised sediment mobilisation and increased turbidity during rainfall events. However, drainage features will be avoided where practicable and appropriate erosion and sediment controls will be implemented to minimise sediment entering surface-water flows. Given the ephemeral nature of drainage and distance from sensitive water resources, the proposed clearing is not expected to result in measurable or lasting deterioration of surface or groundwater quality. **Based on the above, the proposed clearing is not likely to be at variance with clearing principle (i).**

Clearing principle	Variance level	Description
(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.	**Not likely to be at variance**	The application area is located within the Pilbara Bioregion, where surface water flows are generally episodic and associated with significant rainfall events. No permanent watercourses or waterbodies occur within the application area; however, several minor ephemeral drainage features are present and may convey surface flows following rainfall. Localised ponding or inundation may also occur across the clay plains as part of the natural hydrological regime. Clearing of vegetation may result in localised changes to surface runoff during rainfall events. However, drainage features will be avoided where practicable, reducing the potential for clearing to alter existing flow paths or impede the conveyance of surface water. Any changes to runoff associated with vegetation clearing are expected to be localised and are not anticipated to materially alter the existing hydrological regime. Accordingly, the proposed clearing is not expected to increase the frequency, extent or intensity of flooding within or beyond the application area. **Based on the above, the proposed clearing is not likely to be a variance with clearing principle (j).**

7 Summary and conclusion

The purpose of this NVCP application is to allow the clearing of up to 500.73 ha of native vegetation within a 1,148.16-ha purpose permit area to facilitate development of the Ngarluma Green Energy Project (GEP).

Environmental investigations identified a predominantly grassland landscape subject to varying levels of historical pastoral disturbance. Conservation-significant values include P1 and P3 PEC vegetation, three P3 flora taxa and habitat suitable for conservation-significant fauna. No TECs or Threatened flora were recorded within the application area.

The proposed clearing will remove approximately 102.01 ha of mapped P1 PEC vegetation and 140.57 ha of mapped P3 PEC vegetation, within the application sites. VLA (2024) considered the vegetation types recorded within the survey area to be broadly represented in the local area. Considering this broader representation and the extent of PEC vegetation retained, significant impacts to localised PEC vegetation are not expected.

Three Priority 3 flora taxa were recorded opportunistically within the additional application sites. While clearing may affect Priority flora, similar habitats occur extensively within the surrounding landscape and significant impacts to these values are not expected.

BCE (2026) identified 21 conservation-significant vertebrate fauna species as potentially occurring within the project area, comprising potential residents, visitors and vagrants. The Northern Quoll was recorded in rocky habitat adjacent to the development sites, while the Lakeland Downs Mouse and two conservation-significant skinks may occur as residents within suitable habitat. Higher-value drainage and rocky habitat will be avoided, and suitable fauna habitat remains extensive within the surrounding landscape; therefore, significant impacts are not expected.

Potential impacts will be minimised through project design and management measures, including avoidance and buffering of creek and drainage lines, retention of heritage and environmental exclusion areas, destocking of cattle, management of undeveloped GEP land by NAC Rangers, and implementation of applicable environmental management requirements and NVCP conditions.

Assessment against the ten clearing principles indicates that the proposed clearing may be at variance with principle (f) due to potential impacts to vegetation associated with minor ephemeral drainage features. The majority of creek and drainage lines have been avoided through site design and retained drainage features will be buffered, with erosion, surface-water and land-management measures implemented to further minimise impacts.

On the above basis, the proposed clearing is not expected to result in significant impacts to the environmental values of the application area, subject to implementation of the proposed avoidance, mitigation and management measures.

References

Bamford, M, E-J. Mellersh, A. Reaverly and A. Kristancic (2026b), *NAC Solar Lease Renewable Energy Project Fauna Assessment Report,* Western Australia.

Bamford, M.J and Bamford, A.R. (2026a) *Fauna Site Visit Memo*, 22 May 2026.

Beard, J.S., (1990). Plant Life of Western Australia, Kangaroo Press Pty Ltd, NSW.

Bureau of Meteorology (BoM) (2026a). *Groundwater Dependent Ecosystems Atlas*. Bureau of Meteorology. Available: http://www.bom.gov.au/water/groundwater/gde/map.shtml

Bureau of Meteorology. (2026b). *Climate Data*. Bureau of Meteorology, available: http://www.bom.gov.au/climate

Coongan Everick (2026). *Report on an archaeological Aboriginal heritage site avoidance survey for Ngarluma Green Energy Park Project Area, Karratha, Western Australia.*

Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.

Department of Biodiversity, Conservation and Attractions (DBCA) (2024). *Threatened and Priority Flora Database Search*. Obtained from Department of Biodiversity, Conservation and Attractions [Accessed 27 May 2026]

Department of Climate Change, Energy, Environment and Water (DCCEEW) (2025a). *Interim Biogeographic Regionalisation for Australia (IBRA), Version 7.1*.

DCCEEW (2025b). *Protected Matters Search Tool, Environment Protection and Biodiversity Conservation Act 1999 (Cth)*, Obtained from Protected Matters Search Tool - DCCEEW [Accessed 27 May 2026]

Department of Water and Environmental Regulation (DWER) (2019). *Procedure: Native vegetation clearing permits*. Joondalup. Available from: Procedure: Native vegetation clearing permits

Dunn, B., Krause, C., Newey, V., Lymburner, L., Alger, M.J., Adams, C., Yuan, F., Ma, S., Barzinpour, A., Ayers, D., McKenna, C., Schenk, L. 2024. *Digital Earth Australia Waterbodies v3.0*. Geoscience Australia, Canberra. https://dx.doi.org/10.26186/148920 [Accessed 28 May 2026]

Eliot, I., Gozzard, J.R., Eliot, M., Stul, T. & McCormack, G. (2013), *Geology, Geomorphology and Vulnerability of the Pilbara Coast, in the Shires of Ashburton, East Pilbara and Roebourne, and the Town of Port Hedland, Western Australia*, Damara WA Pty Ltd and Geological Survey of Western Australia

Environmental Protection Authority (EPA) (2016a). *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*. Available from: http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf

EPA (2016b) *Technical Guidance – Terrestrial Fauna Surveys*. Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.pdf

EPA (2000). *Position Statement No. 2 Environmental Protection of Native Vegetation in Western Australia*, Environmental Protection Authority.

GHD (2026). *Karratha Green Energy park Hydrology Assessment.* Perth, Western Australia.

Government of Western Australia. (2019) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report).* Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions. Available from https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics

Government of Western Australia, (2025a). *Soil Landscape Mapping – Systems (DPIRD-064*), mapping shapefiles obtained from data.wa.gov.au [Accessed 27 May 2026]

Government of Western Australia (2025b). *Public Drinking Water Source Areas (PDWSA) (DWER-033*), mapping shapefiles obtained from data.wa.gov.au. [Accessed 27 May 2026]

Kendrick P and Stanley F (2001) *A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002 - Pilbara 4 (PIL4 – Roebourne Synopsis).* edited by N.L. McKenzie, J.E. May and S. McKenna. Department of Conservation and Land Management Western Australia.

Long, Vicki (2019). *City of Karatha Local Biodiversity Strategy Field Survey Results,* Vicki Long and Associates.

Long, Vicki (2023). Email debrief following site assessment on December 15 and December 16, 2023. Recived December 21, 2023.

Long, Vicki (2024). *Ngarluma Solar Sites A And B Reconnaissance Flora And Vegetation Survey May 2024,* Western Australia.

Long, Vicki (2026a). *Ngarluma Green Energy Project targeted Priority Flora And vegetation Report Site 1A Ngarluma Solar Sites A And B Reconnaissance Flora And Vegetation Survey (VLA 2024),* Western Australia.

Long, Vicki (2026b). *Targeted Survey For Priority Ecological Community Grasslands – Sites 1B1, 1B2, 1B5, 1D, 1E1 Ngarluma Green energy Project,* Western Australia.

Nayimbi (2026). *Report: Outcomes of the ethnographic site avoidance survey of theNgarluma Green Energy Park project area, undertaken in consultation with Ngarluma Knowledge Holders(WCD2005/001).*

Tille, P. (2006). *Soil Landscapes of Western Australia's Rangelands and Arid Interior*, Department of Agriculture and Food Western Australia.

Trudgen, M.E. (1991) *Vegetation condition scale in National Trust (WA) 1993 Urban Bushland Policy*. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Tyler IM and Hocking RM (2001). *A revision of the tectonic units of Western Australia: Western Australian Geological Survey, Annual Review 2000-2001*, p 33-44.

Western Australian Herbarium (1998-). *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. Available from https://florabase.dpaw.wa.gov.au/ [Accessed 28 May 2026].

Wilson, S and Swan, G. (2021). *A Complete Guide to Reptiles of Australia* (Sixth Edition). New Holland

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