



Desktop Ecological Assessment Murrarji Station **ENERGY NORTH**



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Author(s)	Tom Ewers-Reilly, Simon Aylott, Alice Nicholl

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2	Tom Reilly	Tom Reilly	Daniel Hunter	4/05/2026

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EcOz Pty Ltd.
 ABN: 81 143 989 039
 Level 1, 70 Cavenagh Street
 DARWIN NT 0800
 GPO Box 381, Darwin NT 0800

Telephone: +61 8 8981 1100
 Facsimile: +61 8 8981 1102
 Email: ecoz@ecoz.com.au
 Internet: www.ecoz.com.au



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EXECUTIVE SUMMARY

EcOz Environmental Consultants (EcOz) was engaged by Energy North to prepare a desktop Ecology Assessment Report to identify terrestrial ecological values and constraints contained within Murrarji Station. The results of this report will inform site selection, project design and referral of potential project opportunities on Murrarji Station under both the NT *Environment Protection Act 2019* (EP Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This report analysed existing data from recent previous surveys across the study area and other databases and did not include any field surveys.

Energy North have identified four areas within Murrarji Station where it is considered feasible for infrastructure to be located: Block A, Block B, Block C and Block D. Collectively, these blocks are referred to as the 'study area' throughout this report.

This report primarily used the publicly-available NT Government Strategic Regional Environmental and Baseline Assessment for the Beetaloo Sub-basin (SREBA) vegetation mapping (Young et al. 2022), which was undertaken at a scale of 1:100,000. The current level of available data is suitable to informing project design and future referrals.

The study area mainly consists of desert sandplains (Redsan land system) and lateritic plains and rises (Birimbah land system); and occurs within the Sturt Plateau bioregion. Existing vegetation mapping within the study area indicates that Acacia shrubland and hummock grasslands are dominant in the south (Blocks A, B and D) and Corymbia/Eucalyptus open woodland on sandy loam is dominant in the north (Block C). A relatively higher diversity of vegetation groups exists within the eastern and north-western portions of the study area.

A range of significant vegetation types are considered to potentially occur within the study area (including wetlands, floodplains, drainage depressions, run-on areas, endemic communities); however, none are considered to hold high ecological value, unless where they have been identified to support critical threatened species habitat. It is also unlikely that groundwater-dependent ecosystems (GDE) are present within the study area (based on a GDE Atlas data, SREBA data and depth of groundwater depth is greater than 80 m below ground level).

There are several threatening processes as a consequence of human presence in the region. Pastoralism (grazing cattle) is the primary land use within Murrarji Station. Fires have historically been recorded frequently within the region; however, a mosaic pattern of burning may have created different fire age vegetation that can be favourable to a range of native species. Several weeds were recorded within the region that are Weeds of National Significance and/or Declared weeds under the *NT Weeds Management Act 2001*.

Desktop research identified that the study area provides suitable habitat for three threatened species – Greater Bilby (*Macrotis lagotis*) (Vulnerable EPBC Act; Vulnerable TPWC Act), Northern Blue-tongued Skink (*Tiliqua scincoides scincoides*) (Critically Endangered EPBC Act; Data Deficient TPWC Act) and Yellow-spotted Monitor (*Varanus panoptes*) (Vulnerable TPWC Act).

The Greater Bilby is known to occur within the study area, which occurs on the northern edge of species' distribution. Recent field studies have confirmed the presence of Greater Bilby within the study area. They are considered to have potential to occur broadly within the Redsan land system; however, they have a higher likelihood of occurrence in areas dominated by Acacia shrubland and hummock grasslands.

The Northern Blue-tongued Skink is considered to have a moderate likelihood of occurrence within the study area, which occurs on the southern edge of the species' distribution. Five broad vegetation groups (BVGs) may support critical habitat for the species; the central part of Block A and northern part of Block C support a relatively high density of these BVGs, and only scattered patches occur within Block B and Block D. There have been no previous targeted field surveys for this species within the study area.

The Yellow-spotted Monitor is considered to have a moderate likelihood of occurrence within the study area. There are no existing records of the species within or adjacent to the study area. Habitat preference for this species is assumed to be alluvial-based habitat, and associated margins. This habitat is relatively common in the southern half of Block A, and has a scattered occurrence in Block B and Block C.

Some BVG's within the study area may temporarily support suitable foraging and roosting habitat for migratory wetland species; however, these features are not unique or considered to be important migratory habitat. It is concluded that the study area does not support important habitat for migratory species.

No Near Threatened, Data Deficient or endemic species that may be present within the study area have restricted ranges; and subsequently, the project is inherently unlikely to have significant impact on these species if they indeed occur within the study area. No further assessment is required.

The following key recommendations from assessment outcomes are:

- Use the results of this assessment to inform site selection, noting ecological values are understood to be one of several influences on decision-making (including potential impacts to other environmental values, land use and logistics/cost).
- Greater Bilby habitat is present across the entire study area; however, there are certain areas considered to have higher suitability and therefore higher likelihood of burrow occurrence. These higher suitability areas will require a higher level of survey effort to confirm species' occurrence and habitat quality. However, it is noted that Greater Bilby use and habitat quality are dynamic across the landscape between seasons, therefore occurrence can be unpredictable. Prior to any land clearing, it is likely that pre-clearance surveys will be required as a project condition (followed by regulator-approved actions if active burrows are detected), and ongoing management actions should be undertaken to preserve habitat quality in surrounds.
- Northern Blue-tongued Skink is considered to have a moderate likelihood of occurrence within parts of the study area that are potential refuge habitat. Because targeted surveys for this species have not previously occurred, it is expected that targeted surveys (as per current survey guidelines for the species) will be required if areas of potential critical habitat occur within the selected project footprint. If the species is detected in these areas, additional assessment will be required to determine potential for significant impact and to develop appropriate mitigation measures (in consultation with regulators).
- Yellow-spotted Monitor is considered to have a moderate likelihood of occurrence within alluvial-based habitat within the study area. Where feasible, suitable habitat should be avoided. If suitable habitat cannot be avoided, targeted surveys for this species would likely be required and would be conducted in conjunction with Greater Bilby surveys (similar survey techniques for burrow detection). Prior to any land clearing, it is likely that pre-clearance surveys will be required as a project condition (followed by regulator approved actions if active burrows are detected), and ongoing management actions should be undertaken to preserve habitat quality in surrounds.
- Where feasible, patches of mapped significant vegetation should be avoided and buffered in accordance with *NT Land Clearing Guidelines* (DEPWS 2024), particularly those that are considered as suitable for threatened species. If mapped areas significant vegetation cannot be avoided, those areas should ground-truthed to confirm presence and ecological value; this information will be used to inform appropriate mitigation measures.
- Consider flexibility in project design to allow for several smaller blocks or modules of infrastructure, together with incorporation of wildlife corridors/internal avoidance areas to maintain habitat connectivity for threatened fauna.
- Use the results of this assessment to inform future approvals' documentation, including referrals under the EP Act and EPBC Act.
- Project activities must account for key threatening processes known to occur in the region of the study area. Management plan(s) should be developed and implemented that prescribe effective methods to ensure threatening processes are not exacerbated. These plans will include best practice weed hygiene, waste management and fire / fuel load management.

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1 INTRODUCTION

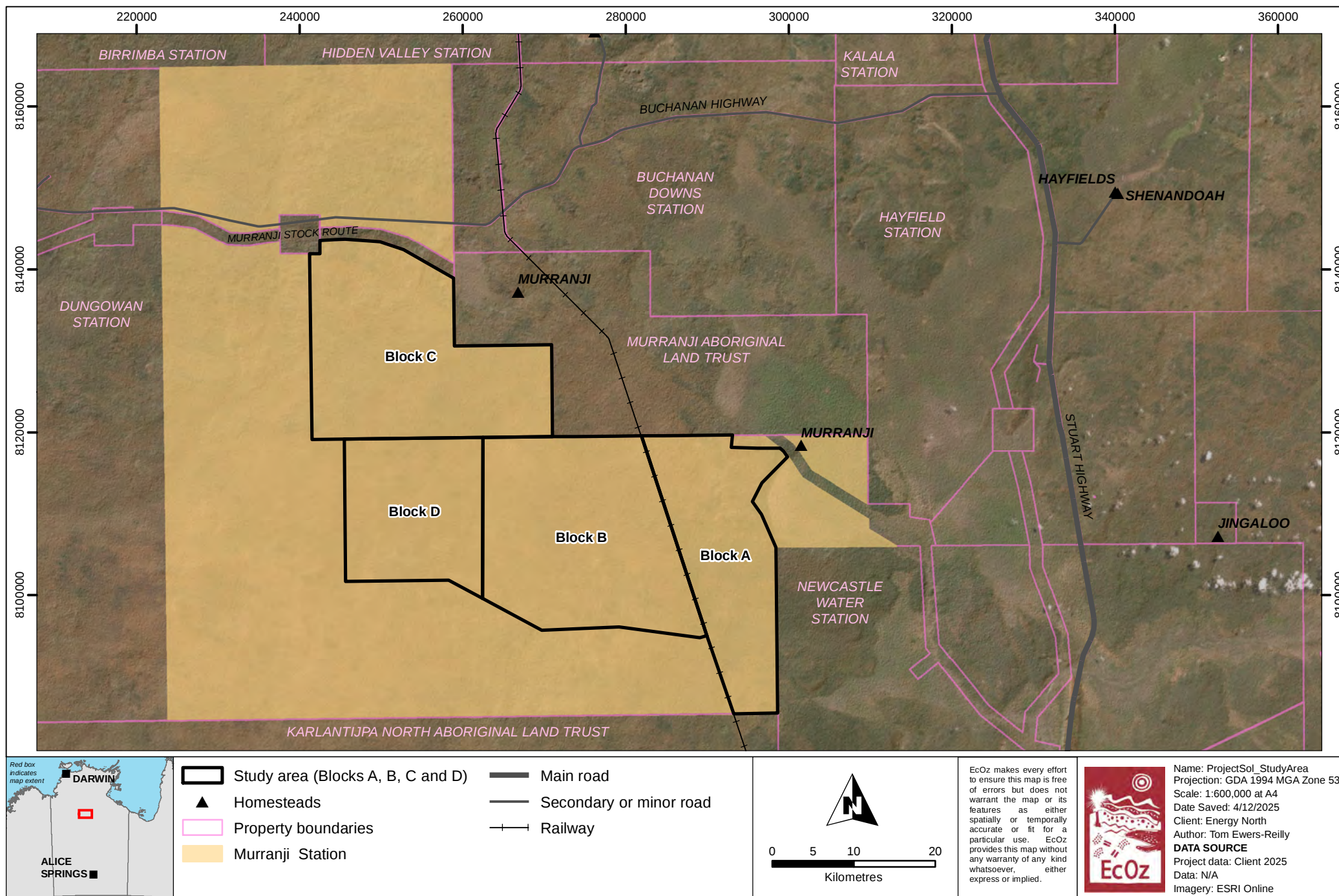
1.1 Overview

Energy North Pty Ltd (Energy North) is exploring project development opportunities on Murrarji Station, Northern Territory. EcOz Environmental Consultants (EcOz) was engaged by Energy North to prepare a desktop Ecology Assessment Report (this report) to identify terrestrial ecological values and constraints contained within Murrarji Station. The results of this report will inform site selection, project design and referral of potential future projects within Murrarji Station under both the Northern Territory (NT) *Environment Protection Act 2019* (EP Act) and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1.2 Study area

Energy North have identified four areas within Murrarji Station where it is considered feasible for infrastructure to be located: Block A, Block B, Block C and Block D (as shown on Figure 1-1). Collectively, these blocks are referred to as the 'study area' throughout this report.

This report describes the baseline terrestrial ecology across all four blocks, to inform Energy North's decision-making regarding selection of preferred infrastructure locations and to ensure alternatives have been considered where relevant. At this stage, Energy North has identified Blocks A and B as preferred locations owing to their proximity to the Adelaide to Darwin Railway Line, which would facilitate construction logistics, and to avoid impacting higher-quality grazing areas within Block C. Notwithstanding this preference, all four blocks remain under active consideration.



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Figure 1-1. Map of the study area on Murrnaji Station

1.3 Report scope

This report provides information that will underpin management decisions and assessment of potential project-related environmental impacts in subsequent referral and assessment documents. It consolidates all matters of conservation significance identified from a comprehensive desktop review. It also provides high-level guiding principles and recommendations for avoidance and mitigation measures to guide site selection and project design. This report does not assess the impact of the proposed project on ecological values.

It is noted that extensive ecological survey has been recently undertaken by the NT Government within the study area as part of the Strategic Regional Environmental and Baseline Assessment for the Beetaloo Sub-basin (SREBA) (Young et al. 2022). The SREBA dataset includes vegetation mapping, identification of significant vegetation and landform features, and targeted threatened species surveys (including species distribution modelling). In addition, EcOz conducted Greater Bilby aerial surveys throughout most of Block A (EcOz 2022), ground-truthing some of the vegetation mapping in the study area and providing information for threatened species' 'likelihood of occurrence' assessments. The results of existing surveys have been included in this assessment where relevant.

Given the large size of the study area (1,738 km² in total), the current level of existing data is considered sufficient to inform ecological aspects relevant to this stage of project design and approvals (such as guidance for infrastructure site selection, preliminary impact assessment, and preparation of referral documentation). Energy North understands that field survey(s) will be required as the project progresses, particularly for aspects such as vegetation clearing permits and threatened species' approvals requirements. Consultation with the NT Department of Lands, Planning and Environment (DLPE) Flora and Fauna Division was undertaken regarding this approach on 30 September 2025, during which they agreed the approach is acceptable.

As such, this report provides detail on the following aspects:

- Overview of the environmental context within the study area, including a detailed review of vegetation community mapping using the SREBA dataset (Young et al. 2022).
- Description and extent of significant vegetation and/or landform features – as defined by the NT *Land Clearing Guidelines* (DEPWS 2024) – that have the potential to occur within the study area.
- Description of priority weed species with potential to occur within the study area.
- Likelihood of occurrence assessment (within the study area) for significant species¹ listed under the NT *Territory Parks and Wildlife Conservation Act 1976* (TPWC Act) and the EPBC Act.
- Recommendations to avoid and minimise potential impacts on identified ecological values.

¹ For the purposes of this report, significant species are those listed as threatened under the TPWC Act or EPBC Act (Vulnerable, Endangered or Critically Endangered), migratory species listed under the EPBC Act, and species listed as Near Threatened / Data Deficient under the TPWC Act that have restricted ranges.

2 ENVIRONMENTAL CONTEXT

The existing environmental values within the study area are described in this section. The four blocks are described individually where values are inconsistent across the study area. Where values are consistent, the study area is described as a whole.

2.1 Climate

The closest long-term Bureau of Meteorology (BoM) weather station is Elliott (station number 015131) approximately 50 km southeast of the study area (BoM 2025). Based on data from the Elliott weather station, the region experiences an arid to semi-arid climate, which is characterised by hot dry summers and cool dry winters, with a low average annual rainfall. Temperatures align with the seasonal patterns typical of northern and central Australia, with the highest daily maximums occurring in January. The average annual rainfall is 585.4 mm; with higher rainfall volumes typically occurring in the summer months associated with the northern monsoon. However, annual rainfall in the region can be highly variable. For example, 2019 experienced 97.6 mm of rain, while 2020 experienced 797.9 mm of rain.

2.2 Land use

The study area occurs in Murrarji Station (NT Por 851) which is an operational cattle property. Neighbouring properties include Dungowan Station, Birrimba Station, Hidden Valley Station, Buchanan Downs Station, Sturt Plains, Newcastle Waters Station, Karantijpa North Aboriginal Land Trust and Murrarji Aboriginal Land Trust (see Figure 1-1). Other intersections include the Adelaide-Darwin railway, Buchanan Highway and the Murrarji Stock Route.

2.3 Bioregion

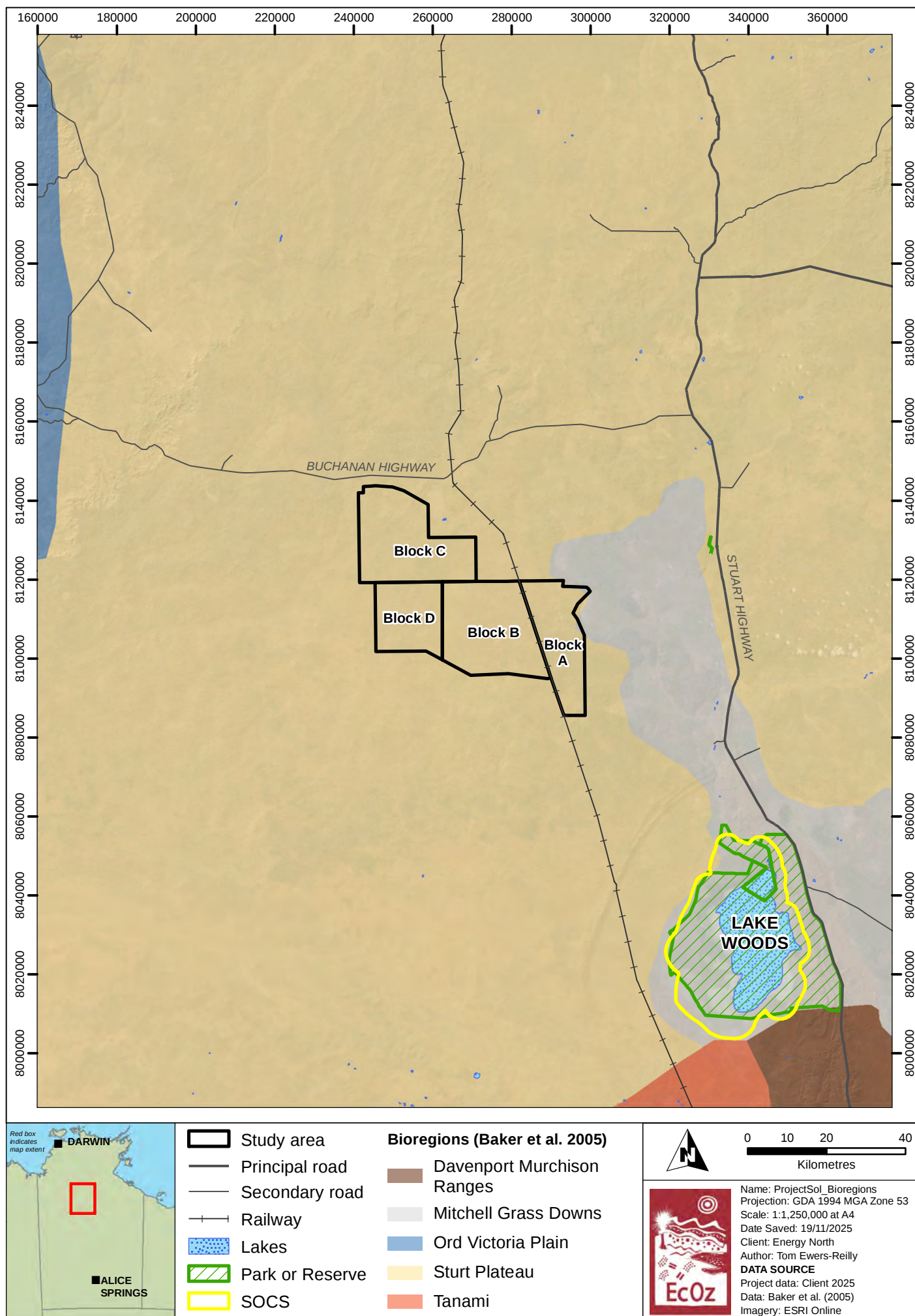
Bioregions are relatively large land areas characterised by broad, landscape-scale natural features and environmental processes that influence the functions of entire ecosystems. Because they divide Australia into similar areas of landform, geology and biodiversity, they provide a useful unit for natural resource management and planning. NT bioregions are described in Baker et al. (2005). The study area occurs within the Sturt Plateau bioregion; and adjacent to the Mitchell Grass Downs bioregion (which occurs to the east) – see Figure 2-1. The Sturt Plateau bioregion is divided into three sub-regions – Renehan, Newcastle and Birdum. The project is located almost entirely within the Newcastle sub-region.

The Sturt Plateau bioregion is comprised of flat to gently undulating plains of Eucalyptus woodlands or tall shrublands and woodlands of Bullwaddy (*Macropteranthes kekwickii*) and Lancewood (*Acacia shirleyi*) (Baker et al. 2005). In more open areas perennial grasses dominate. Soils are mainly lateritic, but deep sands occur in the south and cracking clays in the south-east.

The Mitchell Grass Downs bioregion consists largely of treeless plains with some occasional ridges, rivers and gorges (Baker et al. 2005). The dominant vegetation type is Mitchell Tussock grasslands plains on cracking clay soils, with some intermittent lakes. Lake Woods occurs within the Mitchell Grass Downs bioregion; however, does not occur near the study area.

2.4 Conservation areas

There are no national parks or conservation reserves, Sites of Conservation Significance and Sites of Botanical Significance within or adjacent to the study area. The closest reserve is Lake Woods and Longreach Waterhole approximately 50 km south-east (see Figure 2-1).



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Figure 2-1. Map showing bioregions and conservation areas within the region of the study area

2.5 Land systems

A land system is 'an area or group of areas throughout which there is a recurring pattern of topography, soils and vegetation' (Christian and Stewart 1968). These have been mapped by the NT Government across the NT at a scale that ranges from 1:250,000 (in the north) to 1:1,000,000 (in the south).

Land system mapping in the region of the study area was undertaken by Stewart et al. (1970) at a scale of 1:1,000,000. Three land systems occur within the study area – Redsan, Birrimbah and (to a minor extent) Atlas_II6 (described in Table 2-1; mapped in Figure 2-2). Redsan land system occurs within all four blocks, Birrimbah occurs within Block C and Block D and Atlas_II6 land system only occurs within the Block C.

Table 2-1. Summary of the land systems relevant to the study area

Land system name	Map unit label	Landform class	Description	Study area (coverage estimate)
Redsan	R(o)	Desert sandplains	Level to undulating sandplains with red sands	Block A (high) Block B (high) Block C (mod) Block D (high)
Birrimbah	B	Lateritic plains and rises	Plains and rises associated with deeply weathered profiles (laterite) including sand sheets and other depositional products; sandy and earth soils	Block C (mod) Block D (low)
Atlas_II6	II6	Clay plains	Level to gently undulating clay plains (black soil plains); cracking clay soils	Block C (low)

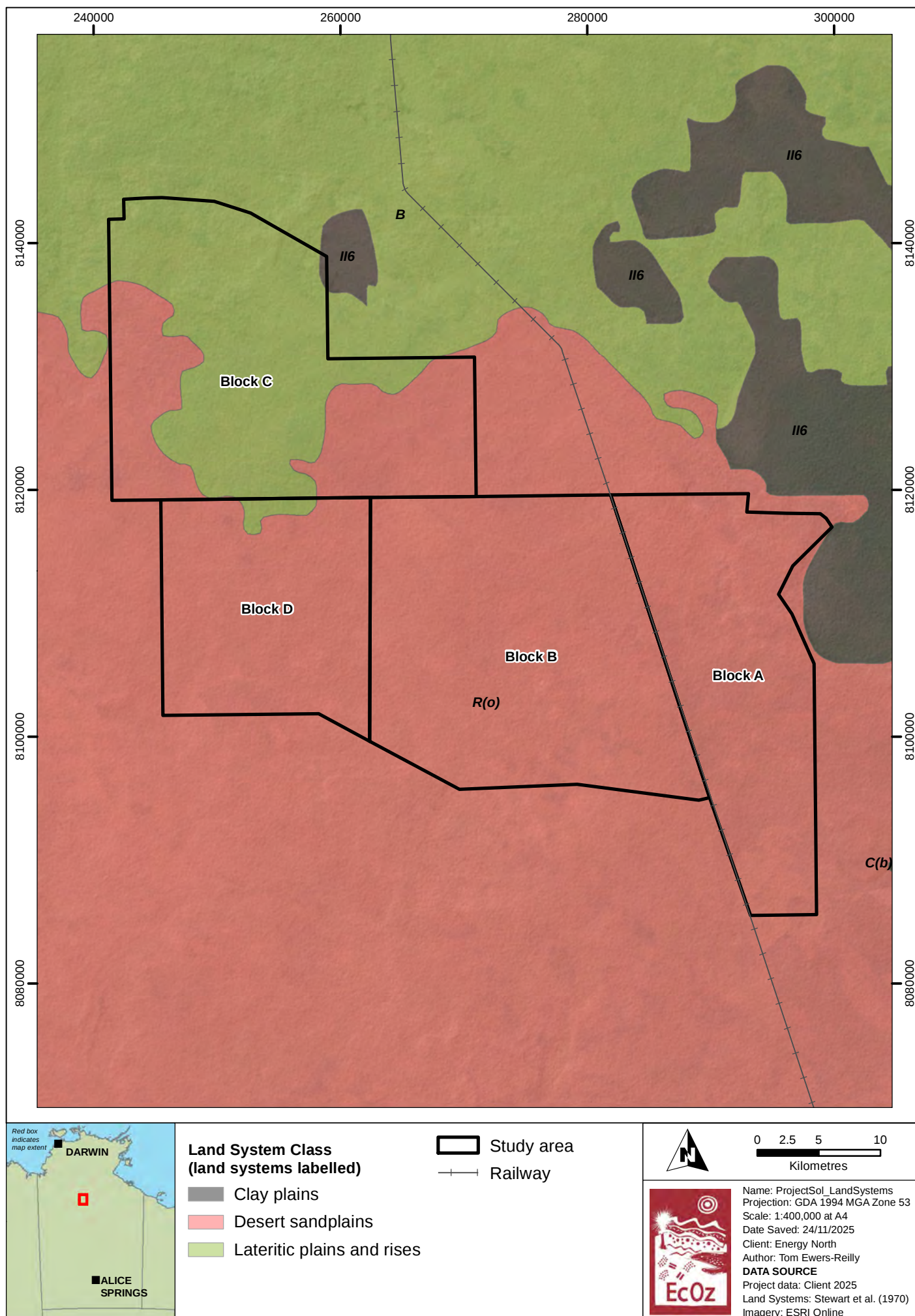


Figure 2-2. Map of land systems within and surrounding the study area

2.6 Vegetation communities

Vegetation communities have been described using two datasets to provide general environmental context, identify potential significant vegetation types, and assess the likely presence of suitable habitat for significant species. The two datasets are:

- National Vegetation Information System (NVIS) (Version 7) (NVIS Technical Working Group 2017), which is a nationally-consistent dataset that provides information on the extent and distribution of vegetation types in Australia.
- Strategic Regional Environmental and Baseline Assessment (SREBA) for the Beetaloo Sub-basin (Young et al. 2022), which is a recently-acquired dataset provided at high resolution by the NT Government.

2.6.1 NVIS vegetation types

The NVIS is a framework used to classify, map and describe vegetation types across Australia. NVIS organises vegetation data into hierarchical levels, ranging from broad national categories to highly-specific descriptions of plant communities, landforms and soils. These levels capture dominant species, the community structure and soil types.

The NVIS Version 7 dataset (NVIS Technical Working Group 2017) indicates that 20 vegetation types are present within the study area, using a combination of vegetation surveys undertaken at scales ranging from 1:100,000 to 1:1,000,000 (described in Table 2-2; mapped in Figure 2-3).

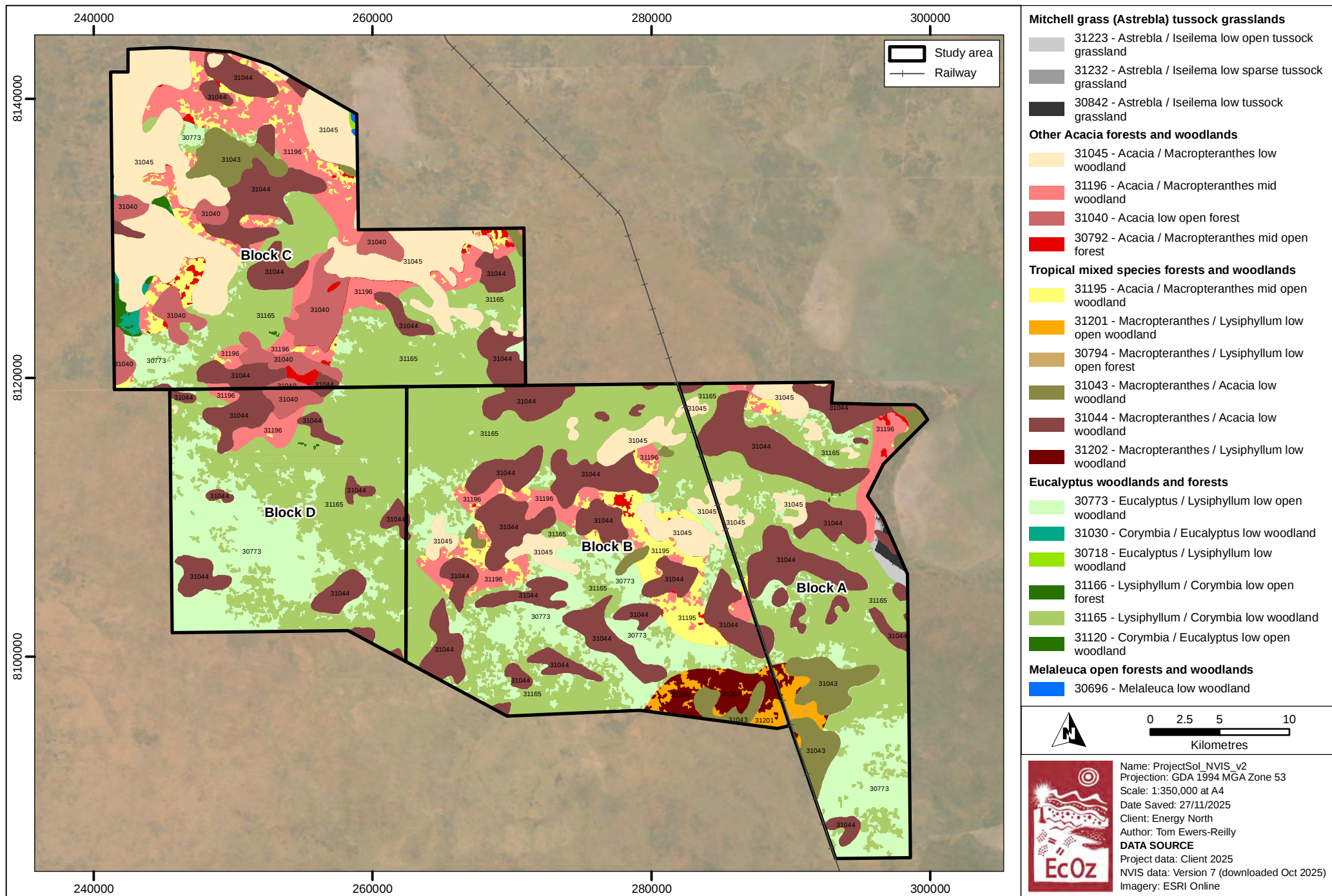
Table 2-2. Summary of NVIS (version 7) vegetation types within the study area

Group	NVIS ID	NVIS Level 3	Dominant species (based on NVIS Level 6 data)	Environs	Block (general coverage)
Mitchell grass (<i>Astrebla</i>) tussock grasslands	30842	<i>Astrebla</i> / <i>Iseilema</i> low tussock grassland	Upper: None. Mid: <i>Acacia victoriae</i> , <i>Acacia farnesiana</i> Ground: <i>Astrebla pectinata</i> , <i>Iseilema vaginiflorum</i> , +/- <i>Iseilema membranaceum</i> , +/- <i>Astrebla squarrosa</i> , +/- <i>Brachyachne convergens</i>	Plains, deep grey cracking clays over tertiary alluvium	A (low)
	31232	<i>Astrebla</i> / <i>Iseilema</i> low sparse tussock grassland	Upper: None. Mid: <i>Acacia victoriae</i> , <i>Acacia farnesiana</i> Ground: <i>Astrebla pectinata</i> , <i>Iseilema vaginiflorum</i> , +/- <i>Iseilema membranaceum</i>	Plains, deep grey cracking clays over tertiary alluvium	A (low)
	31233	<i>Astrebla</i> / <i>Iseilema</i> low open tussock grassland	Upper: None. Mid: <i>Acacia victoriae</i> , <i>Acacia farnesiana</i> Ground: <i>Astrebla pectinata</i> , <i>Iseilema vaginiflorum</i> , +/- <i>Iseilema membranaceum</i>	Plains, deep grey cracking clays over tertiary alluvium	A (low)
Other <i>Acacia</i> forests and woodlands	30792	<i>Acacia</i> / <i>Macropteranthes</i> mid open forest	Upper: <i>Acacia shirleyi</i> , +/- <i>Macropteranthes kekwickii</i> , +/- <i>Corymbia dichromophloia</i> , +/- <i>Ventilago viminalis</i> Mid: <i>Acacia shirleyi</i> , <i>Flueggea virosa</i> , <i>Acacia lysiphloia</i> , +/- <i>Gyrocarpus americanus</i>	Rises with rocky skeletal soils extending onto shallow gravelly sands in drier areas	A (low) B (low) C (low) D (low)

Group	NVIS ID	NVIS Level 3	Dominant species (based on NVIS Level 6 data)	Environs	Block (general coverage)
			Ground: <i>Chrysopogon fallax</i> , <i>Enneapogon oblongus</i> , <i>Aristida pruinosa</i>		
	31040	Acacia low open forest	Upper: <i>Acacia shirleyi</i> Mid: None Ground: <i>Eriachne ciliata</i> , <i>Schizachyrium fragile</i> , <i>Chrysopogon fallax</i> , <i>Scleria sphacelata</i> , <i>Paspalidium raram</i>	Lateritic sandstone rises and plains; gravelly lithosols, some shallow red, yellow and black earths; well drained	A (low) C (mod) D (low)
	31045	Acacia / Macropteranthes low woodland	Upper: <i>Acacia shirleyi</i> , <i>Macropteranthes kekwickii</i> Mid: None Ground: <i>Eragrostis cumingii</i> , <i>Mnesithea formosa</i> , <i>Paspalidium raram</i> +/- <i>Corchorus aestuans</i> +/- <i>Panicum mindanaense</i>	Lateritic sandstone rises and plains; gravelly lithosols, some shallow red, yellow and black earths; well drained	A (mod) B (mod) C (low) D (high)
	31196	Acacia / Macropteranthes mid woodland	Upper: <i>Acacia shirleyi</i> +/- <i>Macropteranthes kekwickii</i> +/- <i>Corymbia dichromophloia</i> Mid: <i>Acacia shirleyi</i> , <i>Flueggea virosa</i> , <i>Acacia lysiphloia</i> Ground: <i>Chrysopogon fallax</i> , <i>Enneapogon oblongus</i> , <i>Aristida pruinosa</i>	Lateritic sandstone rises and plains; gravelly lithosols, some shallow red, yellow and black earths; well drained	A (low) B (mod) C (high) D (low)
Tropical mixed species forests and woodlands	30794	Macropteranthes / Lysiphyllum low open forest	Upper: <i>Macropteranthes kekwickii</i> , <i>Lysiphyllum cunninghamii</i> , <i>Acacia shirleyi</i> +/- <i>Hakea macrocarpa</i> +/- <i>Gyrocarpus americanus</i> Mid: <i>Acacia lysiphloia</i> , <i>Acacia holosericea</i> , <i>Flueggea virosa</i> +/- <i>Macropteranthes kekwickii</i> Ground: <i>Aristida inaequiglumis</i> , <i>Setaria apiculata</i> , <i>Melhanian oblongifolia</i>	Undulating plains, sandy or gravelly lateritic soils, flanking shallow drainage floors	A (low) B (low)
	31043	Macropteranthes / Acacia low woodland	Upper: <i>Macropteranthes kekwickii</i> , <i>Acacia shirleyi</i> Mid: None Ground: <i>Panicum mindanaense</i> , <i>Evolvulus alsinoides</i>	Lateritic sandstone rises and plains; gravelly lithosols, some shallow red, yellow and black earths; well drained	A (mod) B (low) C (mod)
	31044	Macropteranthes / Acacia low woodland	Upper: <i>Macropteranthes kekwickii</i> , <i>Acacia shirleyi</i> Mid: None Ground: <i>Chrysopogon fallax</i> , <i>Paspalidium raram</i> , <i>Mnesithea formosa</i> +/- <i>Sorghum</i> spp. +/- <i>Sorghum timorensis</i>	Lateritic sandstone rises and plains; gravelly lithosols, some shallow red, yellow and black earths; well drained	A (high) B (high) C (high) D (mod)
	31195	Acacia / Macropteranthes	Upper: <i>Acacia shirleyi</i> +/- <i>Macropteranthes kekwickii</i> +/- <i>Corymbia dichromophloia</i>	Lateritic sandstone rises and plains; gravelly	A (low) B (mod) C (low)

Group	NVIS ID	NVIS Level 3	Dominant species (based on NVIS Level 6 data)	Environs	Block (general coverage)
		mid open woodland	Mid: <i>Acacia shirleyi</i> , <i>Flueggea virosa</i> , <i>Acacia lysiphloia</i> Ground: <i>Chrysopogon fallax</i> , <i>Enneapogon oblongus</i> , <i>Aristida pruinosa</i>	lithosols, some shallow red, yellow and black earths; well drained	D (low)
	31201	Macropteranthes / Lysiphyllum low open woodland	Upper: <i>Macropteranthes kekwickii</i> , <i>Lysiphyllum cunninghamii</i> , <i>Acacia shirleyi</i> Mid: None Ground: <i>Aristida inaequiglumis</i> , <i>Setaria apiculata</i> , <i>Melhanian oblongifolia</i>	Lateritic sandstone rises and plains; gravelly lithosols, some shallow red, yellow and black earths; well drained	A (low) B (low)
	31202	Macropteranthes / Lysiphyllum low woodland	Upper: <i>Macropteranthes kekwickii</i> , <i>Lysiphyllum cunninghamii</i> , <i>Acacia shirleyi</i> Mid: None Ground: <i>Aristida inaequiglumis</i> , <i>Setaria apiculata</i> , <i>Melhanian oblongifolia</i>	Lateritic sandstone rises and plains; gravelly lithosols, some shallow red, yellow and black earths; well drained	A (low) B (mod)
Eucalyptus woodlands and forests	30718	Eucalyptus / Lysiphyllum low woodland	Upper: <i>Eucalyptus pruinosa</i> +/- <i>Lysiphyllum cunninghamii</i> +/- <i>Eucalyptus terminalis</i> Mid: <i>Carissa lanceolata</i> Ground: <i>Chrysopogon fallax</i> , <i>Iseilema vaginiflorum</i> , <i>Dichanthium fecundum</i> , <i>Dichanthium sericeum</i>	Flat plains, heavy grey to black cracking clays	C (low)
	30773	Eucalyptus / Lysiphyllum low open woodland	Upper: <i>Eucalyptus pruinosa</i> , <i>Lysiphyllum cunninghamii</i> , <i>Corymbia opaca</i> +/- <i>Macropteranthes kekwickii</i> +/- <i>Gyrocarpus americanus</i> Mid: <i>Carissa lanceolata</i> , <i>Acacia lysiphloia</i> , <i>Atalaya hemiglaucula</i> +/- <i>Ehretia saligna</i> +/- <i>Lysiphyllum cunninghamii</i> Ground: <i>Triodia pungens</i> , <i>Chrysopogon fallax</i> , <i>Enneapogon polyphyllus</i>	Gentle undulating plains, deep sandy yellow earths, lateritic red earths, or deep sands	A (mod) B (mod) C (low) D (high)
	31030	Corymbia / Eucalyptus low woodland	Upper: <i>Corymbia dichromophloia</i> , <i>Eucalyptus leucophloia</i> +/- <i>Eucalyptus ferruginea</i> +/- <i>Erythrophleum chlorostachys</i> Mid: <i>Terminalia canescens</i> , <i>Petalostigma pubescens</i> , <i>Erythrophleum chlorostachys</i> +/- <i>Corymbia dichromophloia</i> +/- <i>Acacia shirleyi</i> Ground: <i>Chrysopogon fallax</i> , <i>Triodia bitextura</i> , <i>Grewia retusifolia</i>	Gently undulating plains, shallow red to yellow, gravelly, sandy earths or stoney sands	C (low)
	31120	Corymbia / Eucalyptus low open woodland	Upper: <i>Corymbia dichromophloia</i> , <i>Eucalyptus leucophloia</i> +/- <i>Eucalyptus ferruginea</i> Mid: <i>Terminalia canescens</i> , <i>Petalostigma pubescens</i> , <i>Erythrophleum chlorostachys</i>	Gently undulating plains, shallow red to yellow, gravelly, sandy earths or stoney sands	C (low)

Group	NVIS ID	NVIS Level 3	Dominant species (based on NVIS Level 6 data)	Environs	Block (general coverage)
			Ground: <i>Chrysopogon fallax</i> , <i>Triodia bitextura</i> , <i>Grewia retusifolia</i>		
	31165	Lysiphyllum / Corymbia low woodland	Upper: <i>Eucalyptus pruinosa</i> , <i>Lysiphyllum cunninghamii</i> , <i>Corymbia opaca</i> Mid: <i>Acacia lysiphloia</i> , <i>Carissa lanceolata</i> , <i>Atalaya hemiglauc</i> Ground: <i>Triodia pungens</i> , <i>Chrysopogon fallax</i> , <i>Enneapogon polyphyllus</i>	Gently undulating plains, shallow red to yellow, gravelly, sandy earths or stoney sands	A (high) B (high) C (high) D (high)
	31166	Lysiphyllum / Corymbia low open forest	Upper: <i>Eucalyptus pruinosa</i> , <i>Lysiphyllum cunninghamii</i> , <i>Corymbia opaca</i> Mid: <i>Acacia lysiphloia</i> , <i>Carissa lanceolata</i> , <i>Atalaya hemiglauc</i> Ground: <i>Triodia pungens</i> , <i>Chrysopogon fallax</i> , <i>Enneapogon polyphyllus</i>	Gently undulating plains, shallow red to yellow, gravelly, sandy earths or stoney sands	A (low) C (low) D (low)
Melaleuca open forests and woodlands	30696	Melaleuca low woodland	Upper: <i>Melaleuca citrolens</i> , <i>Melaleuca minutifolia</i> +/- <i>Eucalyptus pruinosa</i> +/- <i>Melaleuca stenostachya</i> Mid: <i>Carissa lanceolata</i> , <i>Melaleuca citrolens</i> , <i>Melaleuca stenostachya</i> , <i>Atalaya hemiglauc</i> , <i>Dodonaea physocarpa</i> Ground: <i>Eulalia aurea</i> , <i>Chrysopogon fallax</i> , <i>Triodia microstachya</i>	Plains / relict drainage fringe	C (low)



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Figure 2-3. Map showing NVIS vegetation types within and surrounding the study area

2.6.2 SREBA vegetation types

Vegetation mapping data has recently been collected within this region by the NT Government as part of the SREBA (Young et al. 2022). The vegetation survey followed methodology that complies with Brocklehurst et al. (2007) and the *NVIS standards for collection of floristic and structural attributes to support vegetation classification and mapping* (NVIS Technical Working Group 2017). SREBA vegetation mapping was undertaken at a scale of 1:100,000 (Young et al. 2022). This dataset provides a suitable level of baseline information for preliminary environmental assessment and identification of potential management implications.

The SREBA dataset indicates that 13 Broad Vegetation Groups (BVG) are likely to be present within the study area (see Table 2-3; shown on Figure 2-4). It is noted that some BVG's are comprised of several vegetation communities/units, and description summaries of vegetation communities and their likelihood of occurrence within the study area (based on SREBA distribution notes) are provided in Appendix A.

The SREBA dataset also indicates potential for significant vegetation and/or landform features, which are identified in Table 2-3 and discussed in Section 2.7.

The most common BVG's within the study area are BVG 1 (*Corymbia/Eucalyptus* open woodland on sandy loam) and BVG 21 (*Acacia* shrubland and hummock grassland on sandplains), which constitute approximately 75% of the total study area and occur across all blocks. It is noted that for the study area, five BVG's (BVG 3, 4, 5, 6 and 20) have been merged into another BVG because:

- Distribution comments within the SREBA assessment indicated that the BVG is unlikely to occur in the southern part of the SREBA study area (where the Murrniji study area is located); or
- The required landform for the BVG is unlikely to occur within the study area.

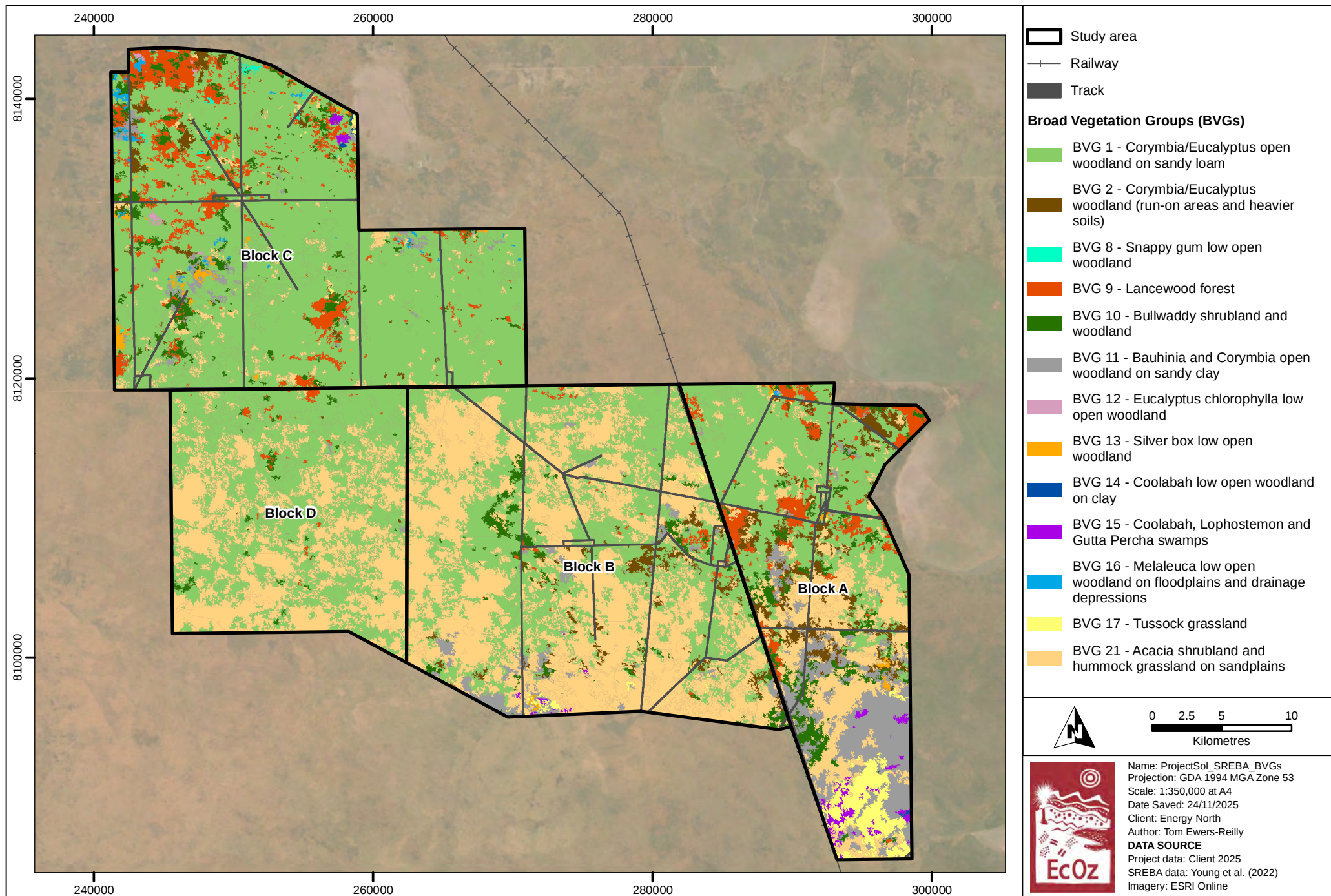
Justifications for merged BVGs are provided below:

- **BVG 3** (*Corymbia bella* woodland on alluvial plains) has been merged into **BVG 2** (*Corymbia/Eucalyptus* woodland on run-on areas and heavier soils). BVG 3 is only expected to occur in the northern part of the SREBA study area (Young et al. 2022) (outside the Murrniji study area). BVG 3 has been merged into BVG 2 because of landform similarities and similar vegetation patterns observed on aerial imagery.
- **BVG 4** (*Eucalyptus miniata* open woodland on loamy sand) has been merged into **BVG 1** (*Corymbia/Eucalyptus* open woodland on sandy loam). BVG 4 is only expected to occur in the northern part of the SREBA study area (outside the Murrniji study area). The SREBA report states that 'BVG 4 is often subsumed into more widespread BVGs, especially BVG 1'. As such, BVG 4 has been merged into BVG 1.
- **BVG 5** (Riparian woodland on ephemeral streams) has been merged into **BVG 2** (*Corymbia/Eucalyptus* woodland on run-on areas and heavier soils) or **BVG 11** (*Bauhinia* and *Corymbia* open woodland on sandy clay). BVG 5 is unlikely to be present within the study area because there are no waterways present. Aerial imagery clearly indicates that the mapped BVG 5 polygons do not represent riparian vegetation (or waterway) (examples shown in Figure 2-5). As such, BVG 5 has been merged into BVG 2 or BVG 11 due landform similarities and similar vegetation patterns observed on aerial imagery.
- **BVG 6** (*Melaleuca* forests associated with springs or river channels) has been merged into **BVG 9** (Lancewood forest). BVG 6 is only expected to occur near Mataranka (Young et al. 2022) (which is outside this study area); and there are no springs or waterways within the study area. BVG 6 has been merged into BVG 9 due to similar vegetation patterns observed on aerial imagery (Figure 2-5).
- **BVG 20** (*Corymbia/Eucalyptus* woodland on sandstone) has been merged into **BVG 21** (*Acacia* shrubland and hummock grassland on sandplains). BVG 20 is restricted to sandstone ranges and escarpments, which do not occur within the study area. The SREBA report states that BVG 20 and BVG 21 can be a source of confusion due to similarities in structure and composition, but one occurs on sandplains (BVG 21) and the other on sandstone ranges (BVG 20). Therefore, because sandstone ranges do not occur within the study area, all mapped occurrences of BVG 20 have been attributed to BVG 21 (which is known to be widespread in the area).

Table 2-3. Description and extent of SREBA Broad Vegetation Groups within the study area

BVG #	Broad Vegetation Group (BVG)	Significant vegetation	Groundwater Dependant Ecosystem				Ecological value	Extent within the study area (ha)			
			Yes/No	Nature	Type	Confidence		Block A	Block B	Block C	Block D
1	Corymbia/Eucalyptus open woodland on sandy loam	-	No	-	-	High	-	12,657	20,537	42,716	17,278
2	Corymbia/Eucalyptus woodland (run-on areas and heavier soils)	Run-on	No	-	-	High	Moderate	2,527	1,268	963	16
8	Snappy gum low open woodland	-	No	-	-	High	-	-	-	147	-
9	Lancewood forest	-	No	-	-	High	-	2,122	283	4,281	214
10	Bullwaddy shrubland and woodland	Endemic	No	-	-	High	Moderate	1,966	1,270	2,180	248
11	Bauhinia and Corymbia open woodland on sandy clay	-	No	-	-	High	-	5,418	1,447	800	39
12	Eucalyptus chlorophylla low open woodland	-	No	-	-	High	-	5	-	96	-
13	Silver box low open woodland	-	No	-	-	High	-	128	35	412	-
14	Coolabah low open woodland on clay	Floodplain Endemic	No	-	-	High	Moderate	16	-	31	-
15	Coolabah, Lophostemon and Gutta Percha swamps	Wetland / floodplain	No	-	-	Moderate	Moderate	497	64	96	-
16	Melaleuca low open woodland on floodplains and drainage depressions	Floodplain / drainage depression	No	-	-	High	Moderate	15	-	315	-
17	Tussock grassland	-	No	-	-	High	-	1,891	177	52	-
21	Acacia shrubland and hummock grassland on sandplains	-	No	-	-	High	-	7,661	28,757	1,566	12,142

**Refer to Appendix A for vegetation community description summaries*



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Figure 2-4. Map showing SREBA Broad Vegetation Groups within the study area

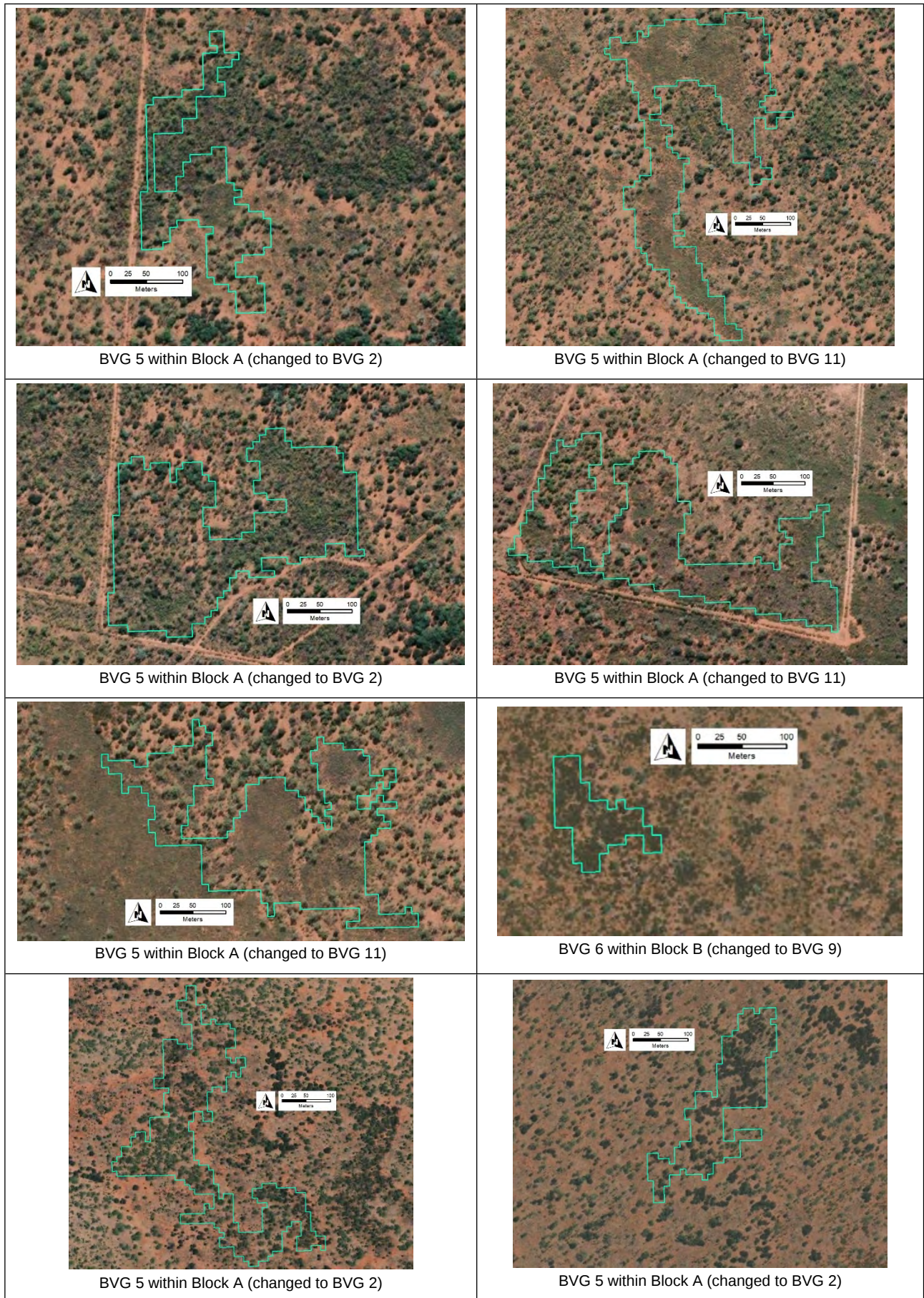


Figure 2-5. Examples of riparian areas (BVG 5 and BVG 6) that were merged into BVG 2 or BVG 11

2.7 Significant vegetation / land features

Significant vegetation is a term applied in the NT to spatially-restricted vegetation communities that are important to specialist wildlife (including threatened species) and provide valuable ecosystem services (such as riparian vegetation preventing erosion of watercourses). Determining the value of these vegetation types is discussed in the *NT Land Clearing Guidelines* (DEPWS 2024).

The SREBA dataset (Young et al. 2022) provided guidance on likely presence of significant vegetation within each BVG. This indicates that the following significant vegetation and/or land features may be present within the study area (discussed in the following sub-sections) (shown on Figure 2-6):

- Large trees with hollows suitable for fauna
- Wetlands
- Floodplains
- Drainage depressions
- Run-on areas
- Endemic vegetation communities (to the Northern Territory).

As discussed in Section 2.6.2, the SREBA vegetation dataset identifies several small patches of riparian vegetation within the study area (BVG 5 and BVG 6); however, close-up review of aerial imagery at these locations indicated (to a high level of certainty) that these ‘riparian’ BVG’s are not likely to be present within the study area, and therefore do not require further assessment. Nonetheless, field verification of vegetation types will occur when a project footprint is selected.

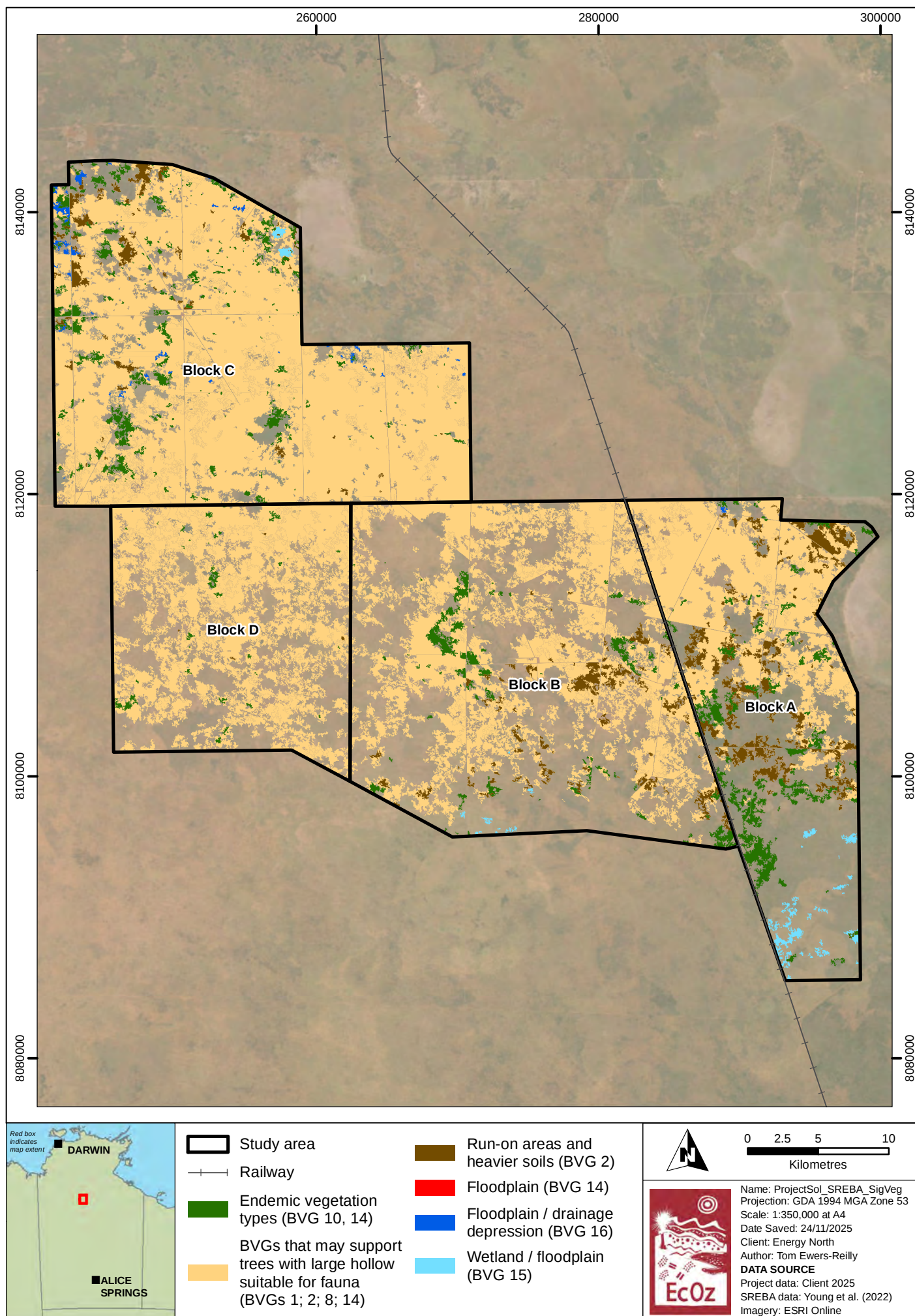
2.7.1 Large trees with hollows suitable for fauna

Trees that support large hollows suitable for fauna are considered as significant under the *NT Land Clearing Guidelines* (DEPWS 2024). They are essential refuge habitat for animals that depend on hollows for roosting and nesting habitat. The SREBA dataset (Young et al. 2022) indicates there is potential for ‘old growth’ vegetation containing large trees with hollows suitable for fauna within BVG 1, BVG 2, BVG 8, and BVG 14 (see Table 2-4; shown in Figure 2-6). These mapped areas can be used as a general guide for potential occurrence; however, they do not necessarily indicate that significant tree hollows persist. Based on existing desktop information, it is considered unlikely that significant tree hollows are present within the study area because there are no threatened flora or fauna species in the area that are known to depend on tree hollows, there is a high fire frequency (described in Section 2.11.2), deep groundwater (described in Section 2.8), and absence of water features such as rivers, swamps and lakes.

Ultimately, field assessment will be required to confirm presence/absence within the study area (to be undertaken once the project footprint has been determined). If present, habitat value will need to be assessed/measured to determine the significance of any occurrences.

Table 2-4. BVG (SREBA) within the study area with potential to support old growth vegetation

BVG	BVG Description	Area			
		Block A	Block B	Block C	Block D
1	Corymbia/Eucalyptus open woodland on sandy loam	12,657	20,537	42,716	17,278
2	Corymbia/Eucalyptus woodland (run-on areas, heavier soils)	2,527	1,268	963	16
8	Snappy gum low open woodland	-	-	147	-
14	Coolabah low open woodland on clay	16	-	31	-



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Figure 2-6. Map showing areas of potential significant vegetation and/or land features

2.7.2 Wetlands

Wetlands ‘encompass a wide range of habitats that permanently or intermittently support plants or animals dependent upon wet conditions to complete their life cycles’ (DEWPS 2024). This includes – but is not restricted to – swamps, marshes, billabongs, lakes, salt marshes, clay pan, salt lakes, mudflats and mangroves (DEWPS 2024). They are considered a significant vegetation type because they provide essential habitat for a diverse range of flora and fauna – including endemic, threatened and migratory species – and can be easily impacted upon by poor land management and planning (Duguid, et al., 2005).

The NT Land Clearing Guidelines (DEWPS 2024) state that valuing a wetland should consider:

- wetland type and complexity
- size – larger wetland systems are generally considered to support a more diverse range of habitats
- aggregation – the occurrence of a wetland within a discrete aggregation may increase its value
- known or likely presence of significant species, or key resources or habitat for such species
- permanence and context in landscape – especially in arid climate zones
- listed importance or recognised special value.

Based on this guidance, this report focuses on the types of wetlands that occur within the study area that are most likely to be considered significant – namely swamps.

The SREBA dataset (Young et al. 2022) indicates that BVG 15 (Coolabah, Lophostemon and Gutta Percha swamps) has potential to support wetland features, which comprises of a few, very small areas within Blocks A, B and C (see Table 2-5; shown on Figure 2-6). A review of aerial imagery indicates patches of BVG 15 within the study area may be subject to seasonal inundation; however, they are unlikely to qualify as significant wetland features such as swamps or lakes (see examples in Figure 2-7) because swamps typically have distinct edges and obvious waterlines when viewed on aerial imagery, and these do not. Nonetheless, if the final project footprint intersects these areas, field validation will be required to confirm desktop assessment outcomes.

In addition to the SREBA dataset, aerial and satellite imagery was reviewed specific to check for potential swamps or lakes (wetlands). No such features were recorded.

Table 2-5. BVG (SREBA) within the study area that may potentially contain wetlands

BVG	BVG Description	Block A	Block B	Block C	Block D
15	Coolabah, Lophostemon and Gutta Percha swamps	497	64	96	-

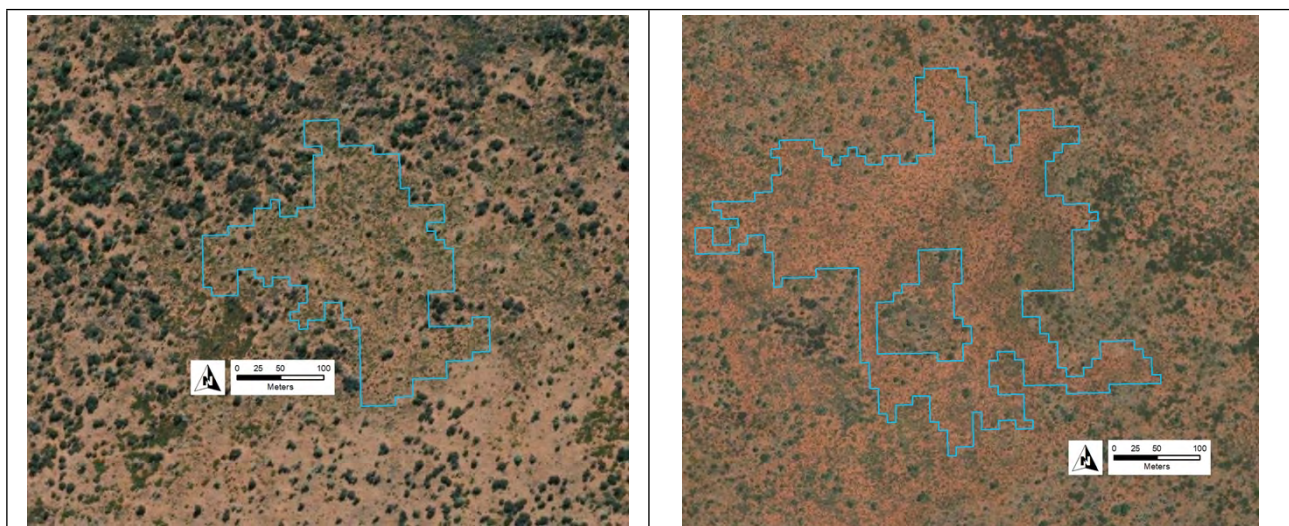


Figure 2-7. Aerial imagery clips showing potential (minor) wetland features within BVG 15

2.7.3 Floodplains, drainage depressions and run-ons

Floodplains, drainage depressions and run-on areas are considered ecologically-important habitat as per the *Land Clearing Guidelines* (DEPWS 2024). The SREBA dataset (Young et al. 2022) indicates floodplains and/or drainage depressions occur within areas mapped as BVG 14, BVG 15 and BVG 16; and run-on areas occur within BVG 2 (refer to Table 2-6; shown on Figure 2-6). A review of aerial imagery indicates that it is unlikely that these areas hold especial / high ecological significance (unless threatened species are found to be present within certain areas – such as the Yellow-spotted Monitor and the Northern Blue-Tongued Skink).

Table 2-6. BVG (SREBA) within the study area that potentially contain other drainage features

BVG	BVG Description	Significant Vegetation	Block A	Block B	Block C	Block D
2	Corymbia/Eucalyptus woodland (run-on areas and heavier soils)	Run-on area	2,527	1,268	963	16
14	Coolabah low open woodland on clay	Floodplain	16	-	31	-
15	Coolabah, Lophostemon and Gutta Percha swamps	Wetland / floodplain	497	64	96	-
16	Melaleuca low open woodland on floodplains and drainage depressions	Floodplain / drainage depression	15	-	315	-

2.7.4 Endemic vegetation communities

The SREBA dataset indicates that two vegetation communities endemic to the Northern Territory potentially occur within the study area (Table 2-7; extent shown on Figure 2-6). These two communities are not specifically protected or rare in this region of the NT; however, as they are unique, efforts to minimise disturbance should be sought where practicable.

Table 2-7. BVG (SREBA) within the study area that may be potential endemic vegetation

BVG	BVG Description	Block A	Block B	Block C	Block D
10	Bullwaddy shrubland and woodland	1,966	1,270	2,180	248
14	Coolabah low open woodland on clay	16	-	31	-

2.8 Groundwater-dependant ecosystems

Groundwater-dependent ecosystems (GDEs) refer to 'natural ecosystems that require access to groundwater to meet all or some of their water requirements on a permanent or intermittent basis, to maintain their communities of plants and animals, ecosystem processes and ecosystem services' (Richardson et al 2011). According to the *NT Land Clearing Guidelines* (DEPWS 2024), GDEs include native vegetation growing where groundwater is within 20 m of the land surface.

The [Atlas of Groundwater Dependent Ecosystems](#) indicates no potential for aquatic GDEs; and that terrestrial and sub-terranean GDE's have not been analysed in the region of the study area.

The SREBA dataset (Young et al. 2022) indicates that GDEs could occur within BVG 3 (*Corymbia bella* woodland on alluvial plains), BVG 5 (Riparian woodland on ephemeral streams) and BVG 6 (Melaleuca forests within springs, river channels). However, as these BVG's are considered unlikely to occur within the study area and are assumed to be mapping inaccuracies associated with the SREBA assessment (as explained in Section 2.6.2).

Furthermore, a desktop groundwater assessment for the study area indicates that groundwater depth in the vicinity of the study area is expected to be greater than 80 m below ground level (bgl) (Eco Logical 2025); as such, it is unlikely that significant GDEs are present within the extent of the study area because vegetation typically cannot access groundwater reserves at aquifer depth greater than 20 m.

2.9 Threatened ecological communities

The Commonwealth EPBC Act allows for the listing of Threatened Ecological Communities (TEC). Only one TEC is listed in the NT – the Arnhem Plateau Sandstone Shrubland Complex – which is restricted to the massive sandstone environments of the Arnhem Plateau and outliers. This TEC is located over 200 km to the north-east of the study area and, as such, it is not relevant to the project.

2.10 Native flora and fauna records

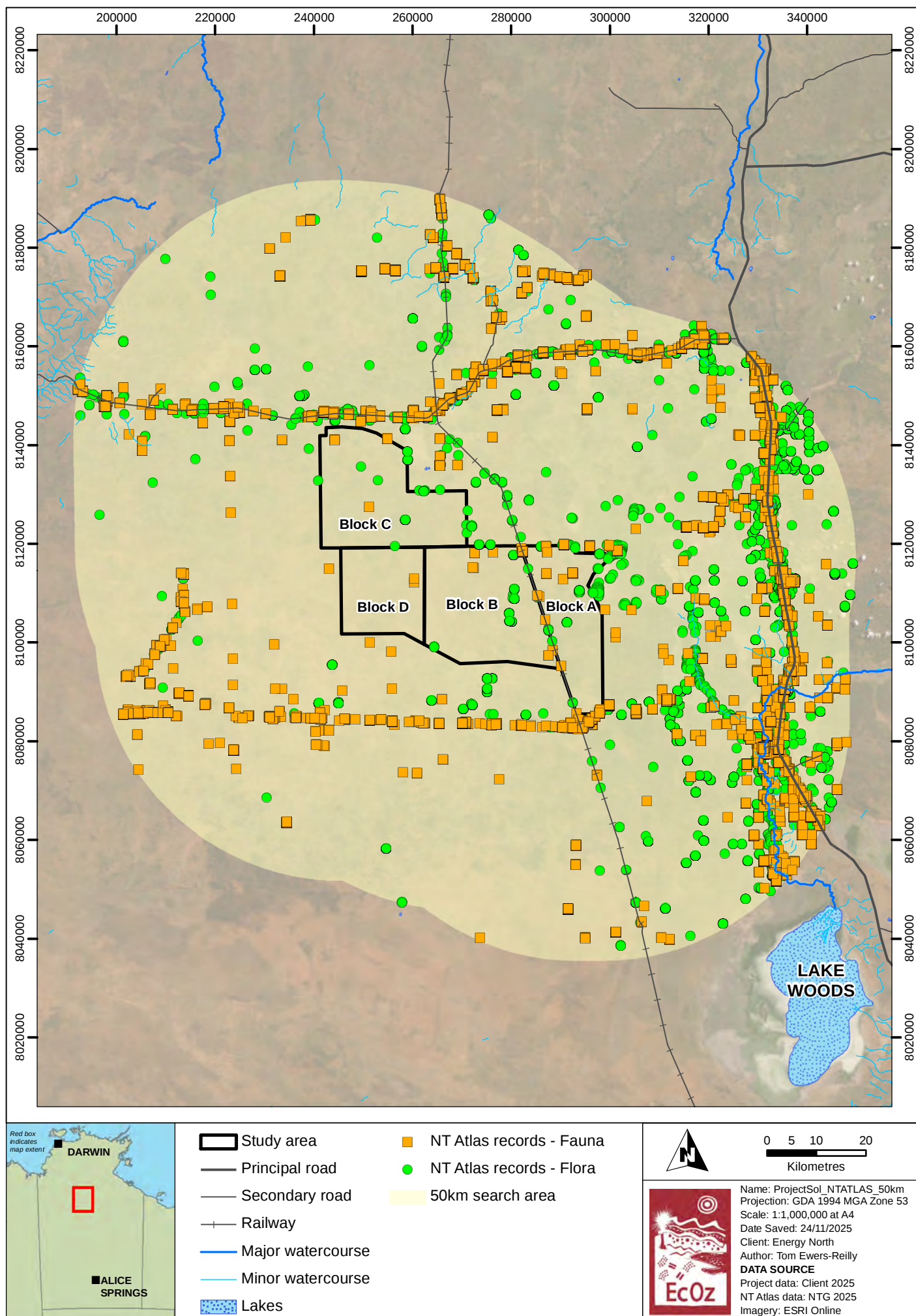
The NT Atlas dataset (downloaded 21 October 2025) was used to generate a list of native species within a 50 km radius of the study area. This resulted in a total of 25,389 fauna records of 367 species; and 11,486 flora records of 841 species. A summary of records per group and according to their status under the TPWC Act is provided in Table 2-8. Flora and fauna record are presented on Figure 2-8.

Significant species with potential to occur within the study area are addressed in Section 3.

Table 2-8. NT Atlas records within 50 km of the study area (extracted October 2025)

Group	Other species			Significant species					Total
	LC	NE / NL	INFRA	DD	NT	VU	EN	CR	
Amphibians	17	0	0	0	0	0	0	0	17
Birds	201	4	0	1	11	5	1	0	223
Reptiles	79	3	0	0	1	2	0	0	84
Mammals	22	0	0	0	5	1	1	1	29
Fish	5	1	0	1	0	0	0	0	7
Flora	724	46	16	21	9	1	0	0	841
Total	1,048	54	16	23	26	9	2	1	1,201

Status key (TPWC Act): LC – Least Concern; DD – Data Deficient; NT – Near Threatened; VU – Vulnerable; EN – Endangered; CR – Critically Endangered; NE – Not evaluated; NL – Not Listed; INFRA – Intraspecific species (no status, not considered as significant)



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Figure 2-8. Map of NT Atlas flora and fauna records within 50 km of the study area

2.11 Threatening processes

There are several threatening processes to biodiversity because of human presence in the region of the study area, which may influence ecological factors such as threatened species' presence. These are discussed in the subsections below.

2.11.1 Pastoralism

Pastoral activities are the current main land use of the study area (Murrarji Station). Consequently, environmental impacts typically associated with pastoralism are expected to occur within the study area – such as increased weeds, erosion, degradation of wetlands and riparian habitats (if present), changes to soil surface structure/infiltration, water source degradation and altered fire regimes (NRMCC 2009). Cumulatively, these impacts can have a negative influence on biodiversity. Pastoralism is implicated in the decline of some vertebrate species, as well as changes in plant species composition in the Australian rangelands (Fisher et al. 2002). Pastoral impacts have particularly affected mammals – especially larger dasyurids and rodents, bandicoots and smaller macropods (Woinarski and Ash 2002; DEWHA 2009).

The level of impacts from pastoral activities on biodiversity values will be dependent on the management of station (that is, stocking rates, provision of artificial water points and prescribed burns), and also the sensitivity of vegetation communities to grazing. As this is a desktop report, a direct assessment on land condition impacts from pastoral activities has not been undertaken.

The property is currently used for breeding operations, over 19,000 head of cattle were run on the property during 2023/24 production year. Impacts from grazing are obvious throughout the station, particularly within 5 km of existing watering points (pers. comm. Daniel Hunter, Energy North 2025) (refer to Figure 2-9).

Block A, Block C, and eastern part of Block B, have reasonably high number of cattle watering points, and this reflective by grazing impacts on vegetation communities and soil condition in those areas (pers. comm. Daniel Hunter, Energy North 2025).

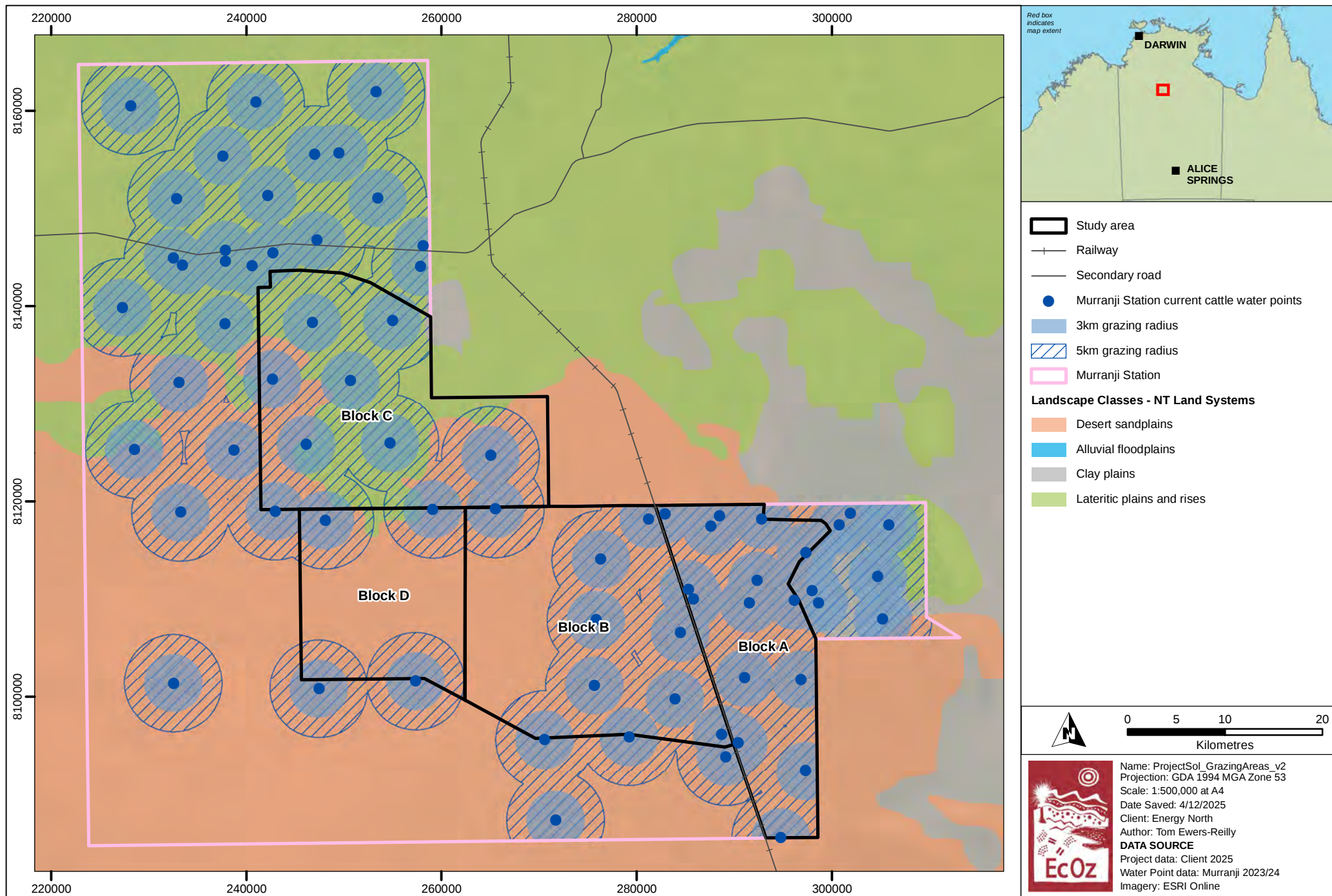
2.11.2 Fire

Regular fires have always been a natural part of the environment in the region. However, frequent fires can result in fewer flora species and reduced structural complexity (McKay 2017), both of which can also significantly diminish the habitat quality for fauna and facilitate weed invasion.

Fire frequency and fire scar mapping was obtained through the [Northern Australia and Rangelands Fire Information](#) (NAFI) website. The fire frequency (that is, number of burns) within the study area is presented in Figure 2-10, along with the fire history 'years since last burn' (using NAFI fire scar data).

Most of the study area has burnt between 6 and 15 times since the year 2000, and most areas have burnt within the last 5 years (Figure 2-10). This is regarded as a relatively high fire frequency for the region.

A review of annual fire scars within the past 10 years indicates that a mosaic pattern of different fire age vegetation has occurred within some parts of the study area. Different fire age vegetation can be favourable to a range of native species, including threatened species such as the Greater Bilby.



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Figure 2-9. Map of existing cattle watering points and estimate grazing radius

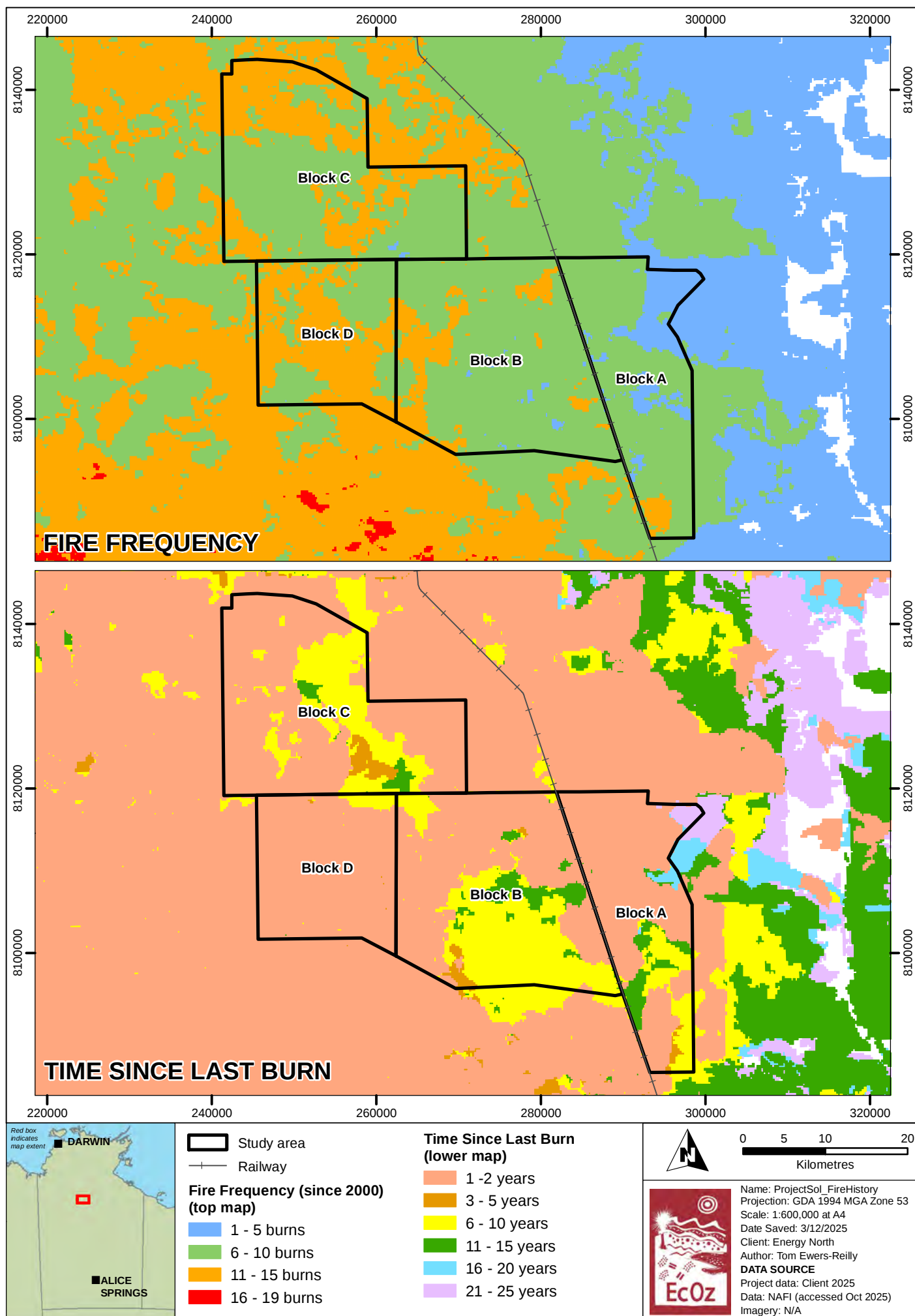


Figure 2-10. Map of fire frequency and time since last burn within the region of the study area

2.11.3 Weeds

Some species of introduced flora are declared to be weeds under the NT *Weeds Management Act 2001* because of the environmental and/or economic harm they can cause. Class A weeds are to be eradicated by landowners and occupiers. Class B weeds must have their growth and spread controlled by landowners and occupiers. The remaining introduced flora species are referred to as *environmental weeds*. The Commonwealth Government has also categorised some species as Weeds of National Significance (WoNS).

Weed distribution is often related to environmental disturbances caused by the construction of roads and tracks, cattle grazing and feral animals. Weeds are most prevalent on land under pastoral lease, with infestations generally concentrated around infrastructure such as water points, fence lines and tracks, and along the banks of watercourses where cattle and feral animals tend to congregate.

The study area falls within the scope of the *Tennant Creek Regional Weeds Strategy 2021-2026* (DEPWS 2021a), which prioritises the management of key weed species for the region.

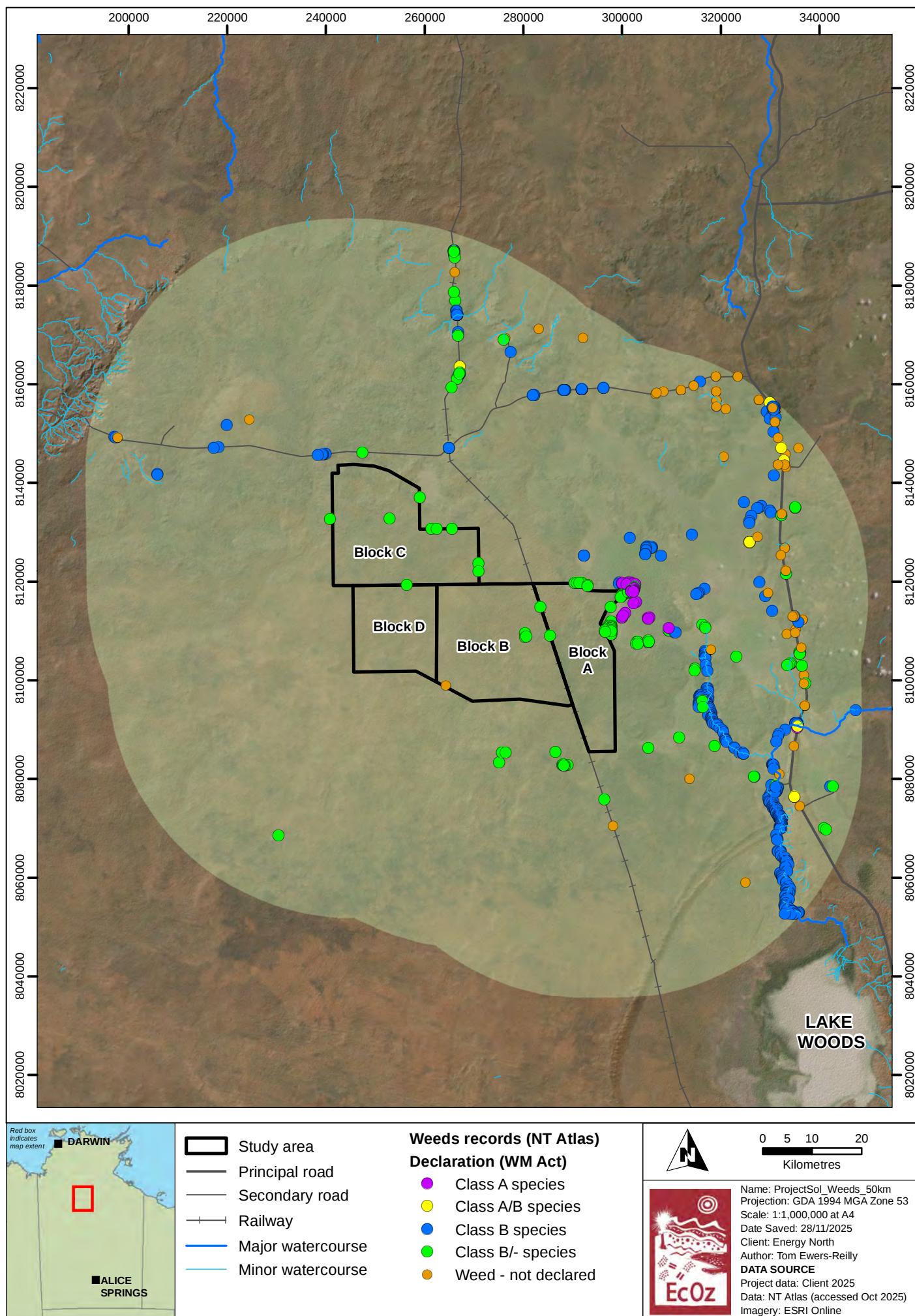
The NT Flora Atlas dataset indicates 802 weed records within 50 km of the study area (see Figure 2-11), including six WoNS (see Table 2-9). Weed records are predominantly restricted to occurring around bores, main roads, and alluvial landforms. Within the study area, there are only 17 existing weed records, predominantly Rubber Bush (Class B) with constitutes 16 of those records. The only other weed recorded within the study area is Paddymelon (*Citrullus colocynthis*), which is a low-risk environmental weed.

Priority weeds within 50 km of the study area are listed in Table 2-9, which includes declared species (under the *Weeds Management Act 2001*) and/or category 1 to 5 species within the *Tennant Creek Regional Weeds Strategy 2021-2026* (DEPWS 2021a).

Table 2-9. Key weed species identified within 50 km of the study area

Common name	Scientific name	Class*	WoNS**	Category in TCRWS***	# of records within 50 km
Parkinsonia	<i>Parkinsonia aculeata</i>	B	Yes	2	393
Rubber Bush	<i>Calotropis procera</i>	B	-	2	168
Prickly Acacia	<i>Vachellia nilotica</i>	A	Yes	1	49
Knob Weed	<i>Hyptis capitata</i>	B	-	-	28
Hyptis	<i>Mesosphaerum suaveolens</i>	B	-	-	27
Neem Tree	<i>Azadirachta indica</i>	B	-	2	14
Bellyache Bush	<i>Jatropha gossypifolia</i>	A/B	Yes	1	9
Gamba Grass	<i>Andropogon gayanus</i>	A/B	Yes	1	7
Grader Grass	<i>Themeda quadrivalvis</i>	B	-	5	6
Spinyhead Sida	<i>Sida acuta</i>	B	-	-	5
Buffel Grass	<i>Cenchrus ciliaris</i>	Yes	-	3	4
Flannel Weed	<i>Sida cordifolia</i>	B	-	-	3
Athel Pine	<i>Tamarix aphylla</i>	A/B	Yes	2	3
Noogoora Burr	<i>Xanthium strumarium</i>	B	-	3	2
Star Burr	<i>Acanthospermum hispidum</i>	B	-	-	1
Mossman River Grass	<i>Cenchrus echinatus</i>	B	-	3	1
Coral Cactus	<i>Cylindropuntia fulgida</i>	B	-	1	1
Mesquite	<i>Prosopis pallida</i>	A	Yes	1	1

* As per the NT *Weeds Management Act*. Class A – to be eradicated by landowners and occupiers. Class B – growth and spread controlled by landowners and occupiers. ** WoNS – Weeds of National Significance (Commonwealth listing). *** TCRWS – Tennant Creek Regional Weeds Strategy 2021-2026 (DEPWS 2021a). Category 1 – Priority weeds for eradication; Category 2 – Priority weeds for strategic control (including eradication of outliers); Category 3 – Weeds of concern – prevent spread; Category 5 – Alert weeds - eradication on detection.



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Figure 2-11. Map of weed records (and status under the WMA) within 50 km of the study area

2.11.4 Pest animals

Records from the NT Fauna Atlas within 50 km of the study area suggest the introduced fauna species listed in Table 2-10 are present within the region, and hence are likely to occur within the study area. The Cane Toad and Feral Cat are each listed as a Key Threatening Process under the EPBC Act.

Table 2-10. Pest species known to occur within 50 km of the study area

Common name	Scientific name	Comment
Cane Toad	<i>Rhinella marina</i>	Cane Toads are widespread across tropical Queensland and the Northern Territory in a wide variety of habitats, moving westward at an estimated 40 to 60 km per year (DEWHA 2010). The species needs constant access to moisture to survive (which can be water, dew or moist sand). Cane Toads are listed as a 'key threatening process' under the EPBC Act because they are lethal to carnivorous native animals if consumed. Cane Toads are known to be a key factor in the decline of a number of native predatory fauna – including monitors and Northern Quoll – and are poisonous to a wide range of snakes (Phillips et al. 2003). The study area occurs at southern limit of species' distribution.
Feral Cat	<i>Felis catus</i>	Occur throughout the Australian mainland in a wide variety of different habitats – including deserts, forests and grasslands. The species is considered a 'key threatening process' under the EPBC Act. Feral Cats play a significant role in the decline of native fauna (AWC 2012) and have been recognised as contributing to the decline of several ground-nesting birds and small to medium-sized mammals (Dickman 1996).
House Mouse	<i>Mus musculus</i>	Competes with native species. May impact upon native vegetation via seed predation. Generally considered to have low impacts to native biodiversity but is known to be a nuisance species and breed in high numbers around human dwellings.
Feral Horse	<i>Equus caballus</i>	Occur across the Australian mainland in a wide variety of different habitats. The species prefers grassland and shrubland with plentiful water and pasture (DSEWPAC 2011). The Feral Horse population is highest in the cattle-raising districts of Queensland and the NT (CISS 2016). The species causes erosion of soil and watercourses, weed spread, trampling and consumption of native flora, and sedimentation and increased nutrient levels in watercourses (DSEWPAC 2011).
Domestic Cattle	<i>Bos taurus</i>	Cattle production is one of the primary economic drivers of the region and so cattle are common throughout pastoral properties intersected by the project area. Domestic Cattle can cause land degradation through trampling, soil compaction, erosion, weed spread and decreases in water quality (DLPE 2016). Addition information on pastoralism is provided in Section 2.11.1.

*NT Atlas records within 50 km (data accessed October 2025)

3 SIGNIFICANT SPECIES ASSESSMENT

This section assesses which significant species have potential to occur with the study area and therefore need consideration for project design and environmental approvals. This is not a project-specific risk assessment as it does not take into account project activities and their potential impacts.

3.1 Species categories

The International Union for the Conservation of Nature (IUCN 2001) nominates a set of criteria used to identify species at risk of extinction. These criteria are used to define categories of risk (see Figure 3-1) which are used by the NT Government to determine which threatened species are listed under the TPWC Act, and by the Commonwealth Government to determine which threatened species are listed under the EPBC Act.

Threatened species are those listed as Vulnerable, Endangered or Critically Endangered under either Act – collectively referred to as threatened species in this report ². Other significant species include Data Deficient and Near Threatened species listed under the TPWC Act; and those listed as migratory under the EPBC Act.

Some species may also be considered culturally-significant (by Traditional Owners); however, this report does not assess those species because no consultation has occurred with Traditional Owners to inform this report.

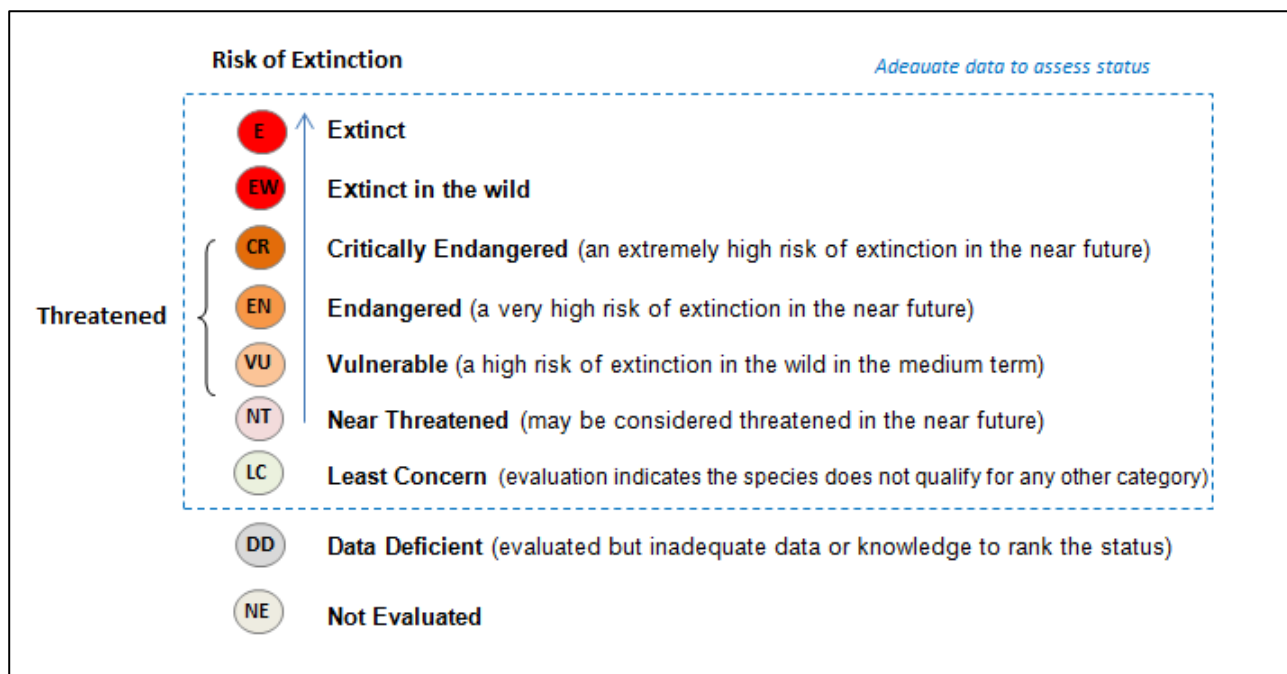


Figure 3-1. The IUCN categories of risk for species

² Species nominated for listing under the EPBC Act, or for which a change in the current listing is proposed, are listed in the Commonwealth Government's Finalised Priority Assessment List (FPAL). At the time of writing, there are no terrestrial species in the FPAL that are relevant to this project.

3.2 Threatened species

This section outlines the procedure and results of the threatened species 'likelihood of occurrence' assessment for the study area. The purpose of this assessment is to identify which threatened species have potential to occur within the study area. The assessment was undertaken using existing desktop information and database records, with the key dataset being SREBA (Young et al. 2022). Species identified to have the potential to occur within the project area (that is, high or medium likelihoods) are further investigated.

3.2.1 Assessment procedure

The assessment uses a broad-scale approach as recommended by the (draft) *Guidelines for assessment of impacts on terrestrial biodiversity* (DLPE 2025). This aims to ensure that all relevant species are properly interrogated. The following procedure was used to undertake the likelihood of occurrence assessment:

1. Threatened species records from the latest version of the [NT Atlas](#) were clipped to within 50 km of the study area (as per search radius recommendation in DLPE 2025 for areas where few field studies have been undertaken). Records from [Atlas of Living Australia](#) were also interrogated.
2. [EPBC Protected Matters Search Tool](#) (PMST) was used to generate a report of nationally-listed threatened species using a 50 km buffer from the study area. The PMST is an online enquiry tool managed by the Commonwealth (currently Department of Climate Change, Energy, the Environment and Water, DCCEEW). The PMST report was generated in October 2025 (Appendix B).
3. The results of NT Atlas and PMST were combined to generate a list of significant species that may occur within the area intersected by the study area.
4. For each species, the likelihood of it occurring within the study area was then assessed based on desktop information that relates to habitat requirements, distribution, number and dates of proximate records, and environmental context. For this report, the SREBA dataset was also used as a key resource for assessing potential habitat and species probability of occurrence modelling (Young et al. 2022). Likelihood ratings are defined in Table 3-1.

Table 3-1. Ratings for the desktop threatened species likelihood of occurrence assessment

Rating	Definition
HIGH	It is expected that this species occurs in areas of suitable habitat within study area because there are recent (post-2010) proximate records or evidence that the species occurs in the local area.
MODERATE	Species may occur within the study area because there is suitable habitat; however, there is evidence that lowers its likelihood of occurrence (for example, no recent records within or close to the study area, species is naturally-rare or occurs at a low density etc.).
LOW	Species may occur, as a vagrant, within the study area; only marginally-suitable habitat is expected.
NONE	There is strong / definitive evidence that this species will not occur within the study area.

3.2.2 Likelihood of occurrence results

A total of 26 threatened species were considered in the 'likelihood of occurrence' assessment (results are summarised in Table 3-2; detailed assessment provided in Appendix C).

Three species are considered to have a reasonable chance of occurring within the study area, because they were assessed to either have a high or moderate likelihood of occurrence rating – Greater Bilby, Yellow-spotted Monitor and Northern Blue-Tongue Lizard. These species will require assessment as part of environmental approvals for the project and are discussed in the following sub-sections. NT Atlas records for these species are presented in Figure 3-2.

The remaining species were assessed as 'low' or 'none'. These species, and associated critical habitat, are considered unlikely to occur within the study area and are not expected to require assessment as part of environmental approvals for the project.

Table 3-2. Threatened species 'likelihood of occurrence' assessment summary

Common name	Scientific name	Status		Study area			
		EPBC	TPWC	Block A	Block B	Block C	Block D
Birds							
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	VU	LC	Low	Low	Low	Low
Curlew Sandpiper	<i>Calidris ferruginea</i>	CR	CR	Low	Low	Low	Low
Red Goshawk	<i>Erythrotriorchis radiatus</i>	EN	VU	Low	Low	Low	Low
Gouldian Finch	<i>Erythrura gouldiae</i>	EN	VU	Low	Low	Low	Low
Grey Falcon	<i>Falco hypoleucos</i>	VU	VU	Low	Low	Low	Low
Crested Shrike-tit (north)	<i>Falcunculus frontatus whitei</i>	VU	NT	Low	Low	Low	Low
Painted Honeyeater	<i>Grantiella picta</i>	VU	VU	Low	Low	Low	Low
Night Parrot	<i>Pezoporus occidentalis</i>	EN	EN	Low	Low	Low	Low
Princess Parrot	<i>Polytelis alexandrae</i>	VU	VU	Low	Low	Low	Low
Australian Painted Snipe	<i>Rostratula australis</i>	EN	EN	Low	Low	Low	Low
Common Greenshank	<i>Tringa nebularia</i>	EN	LC	Low	Low	Low	Low
Masked Owl (north)	<i>Tyto novaehollandiae kimberli</i>	VU	VU	None	None	None	None
Mammals							
Northern Quoll	<i>Dasyurus hallucatus</i>	EN	CR	None	None	None	None
Ghost Bat	<i>Macroderma gigas</i>	VU	NT	None	None	None	None
Greater Bilby	<i>Macrotis lagotis</i>	VU	VU	High	High	Mod	High
Bare-rumped Sheath-tailed Bat	<i>Saccolaimus saccolaimus nudicluniatus</i>	VU	NT	None	None	None	None
Northern Brushtail Possum	<i>Trichosurus vulpecula arnhemensis</i>	VU	NT	None	None	None	None
Common Brushtail Possum (Central Australia)	<i>Trichosurus vulpecula vulpecula</i>	-	EN	None	None	None	None
Reptiles							
Plains Death Adder	<i>Acanthophis hawkei</i>	VU	VU	Low	None	Low	None
Gulf Snapping Turtle	<i>Elseya lavarackorum</i>	EN	LC	None	None	None	None
Northern Blue-tongued Skink	<i>Tiliqua scincoides intermedia</i>	CR	DD	Mod	Mod	Mod	Low
Mertens' Water Monitor	<i>Varanus mertensi</i>	EN	VU	None	None	None	None
Mitchell's Water Monitor	<i>Varanus mitchelli</i>	CR	VU	None	None	None	None
Yellow-spotted Monitor	<i>Varanus panoptes</i>	-	VU	Mod	Mod	Mod	Low
Fish							
Freshwater Sawfish	<i>Pristis pristis</i>	VU	VU	None	None	None	None
Plants							
Tassel Sedge	<i>Carex fascicularis</i>	-	VU	None	None	None	None

Status: CR – Critically Endangered; EN – Endangered; VU – Vulnerable; ER – Extinct Regionally; NT – Near Threatened.

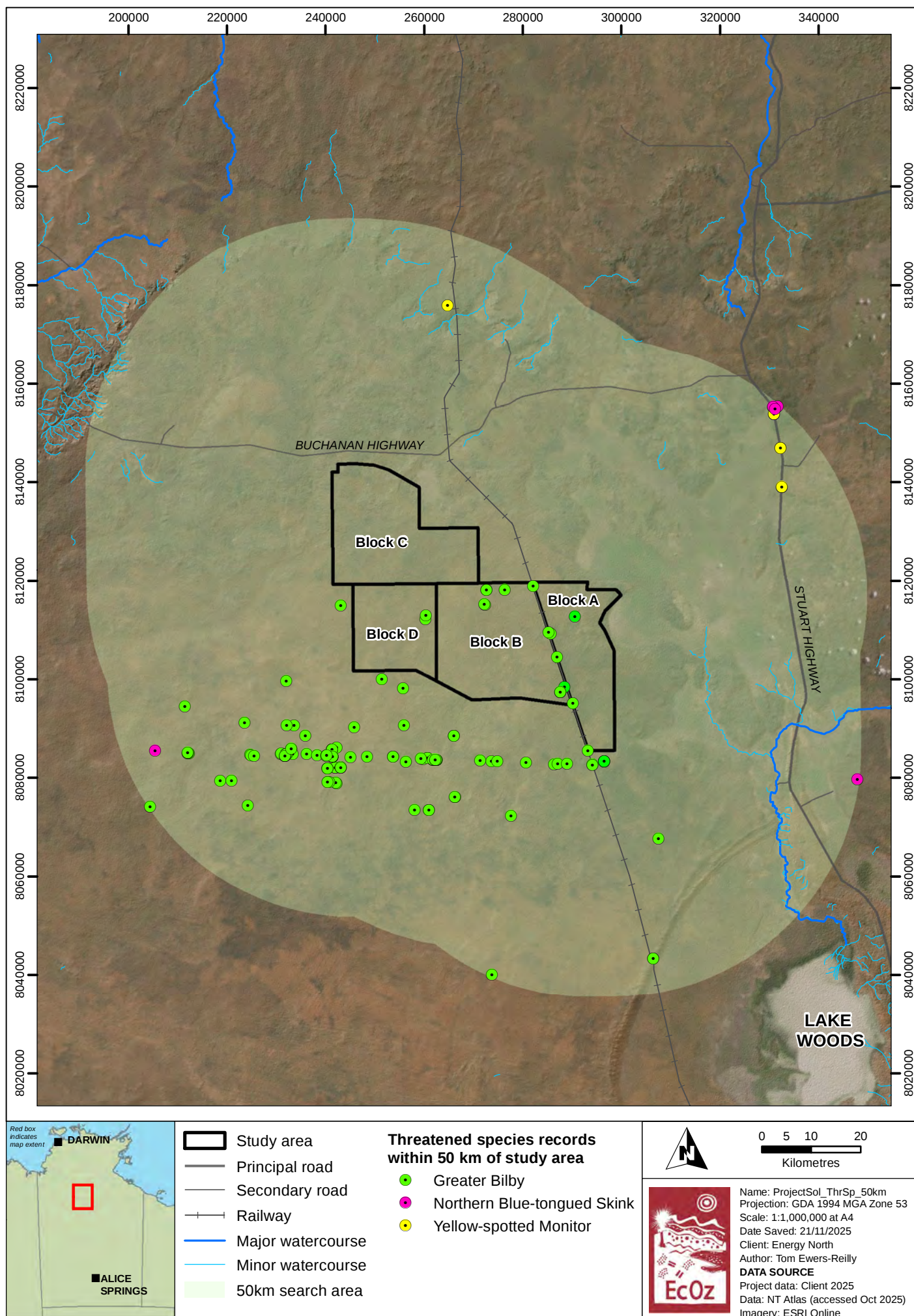


Figure 3-2. Map showing relevant threatened species records within 50 km of the study area

3.2.3 Greater Bilby (*Macrotis lagotis*)

The Greater Bilby is listed as Vulnerable under both the EPBC Act and TPWC Act. The species also has cultural significance in the NT (Paltridge 2016; Walsh and the Custodians of the Bilby 2016).

Species background

The Greater Bilby is a rabbit-sized, omnivorous, burrowing marsupial. In the NT, they can occur in a relatively wide range of habitats – including stony uplands, lateritic areas, hummock grassland, sandplains, mulga scrub and woodlands, drainage depressions and palaeo-drainage systems (Southgate 1987; Southgate 1990). Vegetation within these areas predominantly consists of spinifex shrublands and open woodlands. Typical habitat consists of sandy soils dominated by hummock grasslands predominantly of three species of spinifex – *Triodia basedowii*, *T. pungens* and *T. schinzii* (Pavey 2006). Surveys in the Tanami Desert indicate spinifex-dominated laterite rises, and drainage lines are occupied more frequently than sand plains and dune fields (Southgate et al. 2018; Southgate et al. 2005).

The species prefers a mosaic of different post-fire ages (Southgate & Carthew 2007). Fire seems to maintain the sparse vegetation the species favours, and promotes ephemeral plants used as primary and secondary food sources (Southgate & Carthew 2006; Southgate & Carthew 2007; Johnson 1989). However, large-scale burns may restrict breeding, impede dispersal and reduce food options/availability (Southgate & Carthew 2006).

The Greater Bilby is nocturnal and lives in deep burrows excavated in sand that are 2 to 3 metres long, and 100 to 150 mm in diameter, with a circular entrance. An individual may regularly utilise over a dozen burrows within its home range, and multiple burrows may be visited in a single night (Pavey 2006). Foraging distance from a burrow can range between 200 to 600 m (Johnston 1989).

Greater Bilby move over a wide area according to available food and vegetation cover conditions (associated with seasons and fires) (Southgate & Carthew 2006; Southgate & Carthew 2007; Southgate 1987; Johnson 1989), and the long-term seasonal home range may be hundreds of square kilometres (Southgate 1987).

The species feeds on plant material (seeds and bulbs) and invertebrates such as beetles, termites and root dwelling larvae (Pavey 2006; Southgate & Carthew 2006). Food is either excavated from the soil (referred to as diggings or scratchings to a depth of 250 mm), live prey captured on the surface, or seeds eaten directly from the soil surface. Invertebrates tend to be foraged when seed and bulb food plants become scarce (Southgate & Carthew 2006).

Diggings for root-dwelling larvae (RDL) at the base of shrubs or forbs are unique to the Greater Bilby and are considered as a key identification characteristic (Southgate et al. 2018). Plants that are known to be targeted by Greater Bilby for root-dwelling larvae (in the NT) include *Acacia hilliana*, *A. lysiphloia*, *A. monticola*, *A. acradenia*, *A. melleodora*, *A. bivenosa*, *Senna notabilis* and *Indigofera georgei* (Southgate et al. 2018). These diggings can remain evident for months to years (Southgate 2017 pers. comm.); making surveys for occupancy or recent occupancy possible.

Before European settlement the Greater Bilby occurred over 70% of the Australian mainland. Since the late 1800s, Greater Bilbies have disappeared from at least 80% of their former range (DEPWS 2021b). The species is currently confined to arid WA, the Tanami Desert in the NT and south-western Queensland, with an estimated population size of fewer than 10,000 individuals (DEPWS 2021b).

Predation is a major threat, with the European Red Fox (*Vulpes vulpes*) and Feral Cat (*Felis catus*) being key predators (Pavey 2006; Southgate et al. 2007). Other threats include competition with European Rabbit (*Oryctolagus cuniculus*), pastoralism (Woinarski et al. 2014), and inappropriate fire regimes (described above).

Likelihood of occurrence assessment

The Redsan land system is broadly considered as suitable habitat for Greater Bilby. This land system covers the majority of Block A, Block B and Block D, and approximately half of Block C (see Figure 3-3). It is comprised of level to undulating sandplains with red sands and open Eucalyptus woodland over spinifex (mainly *Triodia pungens*), interspersed with areas of tussock grasses.

The study area and the surrounding region has also been subject to targeted Greater Bilby surveys which were conducted for SREBA between 2020 and 2022 (Young et al. 2022). All surveys included comprehensive aerial and on-ground tracking surveys and were designed to detect Greater Bilby sign (such as, burrows, scats, tracks and/or diggings) rather than the animals themselves, as this has been shown to be the most effective way of detecting the species (Southgate et al. 2005). The SREBA survey methodology is summarised in paragraph below (refer to Young et al. 2022 for full description of methodology). Smaller-scale aerial transect surveys for the species were conducted by EcOz in 2020 and 2021 within the area known as Block A and one transect through Block B (for unrelated projects, EcOz 2021, EcOz 2022). The EcOz surveys in 2021 and 2022 followed the same method, but with transects spaced at 500 m (see Figure 3-3).

The aerial survey component was undertaken using a helicopter that was flown along transects oriented east-west at 3 km spacing over potentially suitable habitat (transects within and surrounding the study area are shown on Figure 3-3). Potential signs observed during aerial survey were assessed via ground checks or while hovering if landing was not possible due to conditions or dense vegetation. Ground-based surveys were undertaken using 2 ha (200 m x 100 m) plot-based tracking surveys, similar to those described by Moseby et al. (2022) and Southgate et al. (2018). These were undertaken at 26 locations on Murrarji Station, nine locations on Newcastle Waters and four locations on Karantijpa North ALT (shown on Figure 3-3). Two observers each spent 25 min surveying half of the plot for any sign of Greater Bilby (such as, tracks, scats, burrows, diggings), plus collection of various other data.

The SREBA aerial survey detected Greater Bilby sign at 31 locations (shown on Figure 3-3); which included active burrows (that is, tracks, scats, fresh spoil, fresh diggings in area) and inactive burrows (that is, collapsed, no other sign) within and surrounding the study area (representative habitat photographs provided in Table 3-3; example burrow photographs provided in Table 3-4). Greater Bilby sign recorded within the study area is at relatively low densities when compared to clusters of records to the south west of the study area on Murrarji Station (shown on Figure 3-3); however, this may be a result of survey effort (that is, 3 km transect intervals). No sign was detected during on-ground track-plot surveys.

Results from previous surveys indicate that Greater Bilby sign was not detected within Block A during SREBA aerial surveys, but was detected at low densities during a survey in 2022, however, no burrows or diggings were recorded (old scat only) (EcOz 2022). Block A has also been subject to a higher level of survey effort (from surveys associated with EcOz 2022) compared to the other blocks (refer to Figure 3-3); therefore, likelihood of occurrence assessment can be made with a higher level of certainty (in surveyed areas) for Block A. Greater Bilby burrows and other definitive sign have been recorded in Blocks B and D. No Greater Bilby burrows and other definitive sign have been recorded in Area C.

The SREBA assessment also generated a species' distribution model for Greater Bilby. The model used several data criteria – including survey records, post-1970 NT Atlas records, median Normalized Difference Vegetation Index (NDVI), temperature, rainfall, topography, fire frequency and sand content in the top 15 cm (refer to Young et al. 2022 for more detail). The model indicates that Greater Bilby generally have a high probability of occurrence within Block B, Block D and the southern part of Block C; and have a low to moderate probability of occurrence within Block A (refer to Figure 3-4).

The SREBA assessment concluded that five³ BVG's have the potential to support suitable habitat for Greater Bilby (BVG 1, BVG 10, BVG 11, BVG 21). EcOz reviewed vegetation community descriptions within these BVG's to check for record of plant species that are known to be (or provide) key food resources for Greater Bilby. A higher-likelihood ranking was given to BVG's that indicated presence of known food plants⁴; and lower-likelihood ranking was given for BVG's that did not record presence of known food plants in the region. This aimed to generally quantify the extent of higher-likelihood habitat within the study area based on presence of food plants. It is assumed these areas may be indicative of higher quality foraging habitat and higher likelihood

³ BVG 4 and BVG 21 were also identified in the SREBA report as being suitable for Greater Bilby; however, these BVG's are unlikely to occur within the study area and mapped occurrences are related to uncertainties in the mapping process – i.e. it is assumed that the mapped extent of BVG 4 within the study area is attributed to BVG 1; and that mapped extent of BVG 21 within the study area is attributed to BVG 20 (refer to Section 2.6.2 for reasoning / justifications).

⁴ Known food plants in the region are *Acacia acradenia*, *Acacia bivenosa*, *Acacia coleii*, *Acacia dictyophleba*, *Acacia hilliana*, *Acacia lysiphloia*, *Acacia melleodora*, *Acacia monticola*, *Acacia tumida*, *Cyperus bulbosus*, *Indigofera georgei*, *Scaevola parviflora*, *Senna notabilis* and *Yakirra australiensis* (Southgate 2018).

of burrow establishment. The outcome of this review indicated that BVG 21 can be considered as higher-likelihood habitat (due to presence of *Acacia lysiphloia* which is known to support root-dwelling larvae foraged by Greater Bilby) and BVG 1, BVG 10 and BVG 11 are considered as lower-likelihood habitat (because potential food plants were not recorded) (presented Figure 3-5). This indicates that Blocks B and D, and the central part of Block A, have relatively high proportion of higher-likelihood habitat, and that Block C and the northern and southern parts of Block A mostly support lower-likelihood habitat (refer to Figure 3-5).

Pastoral impacts are also a potential threatening process for Greater Bilby within the study area, and the level of grazing activity may influence habitat quality and therefore species presence in an area. Impacts from grazing are obvious throughout the station, particularly within 3 km to 5 km of existing watering points (pers. comm. Daniel Hunter, Energy North 2025) (refer to Figure 2-9). Block A, Block C, and eastern part of Block B, have reasonably high number of cattle watering points, and this reflective by grazing impacts on vegetation communities and soil condition in those areas (pers. comm. Daniel Hunter, Energy North 2025). Only one active Greater Bilby sign was detected within a 3 km radius from a water point (in the far western area where it is assumed that lower numbers of cattle occur) (Figure 3-3). The low level of Greater Bilby activity in the vicinity of water points may be a result of grazing activities an associated impacts.

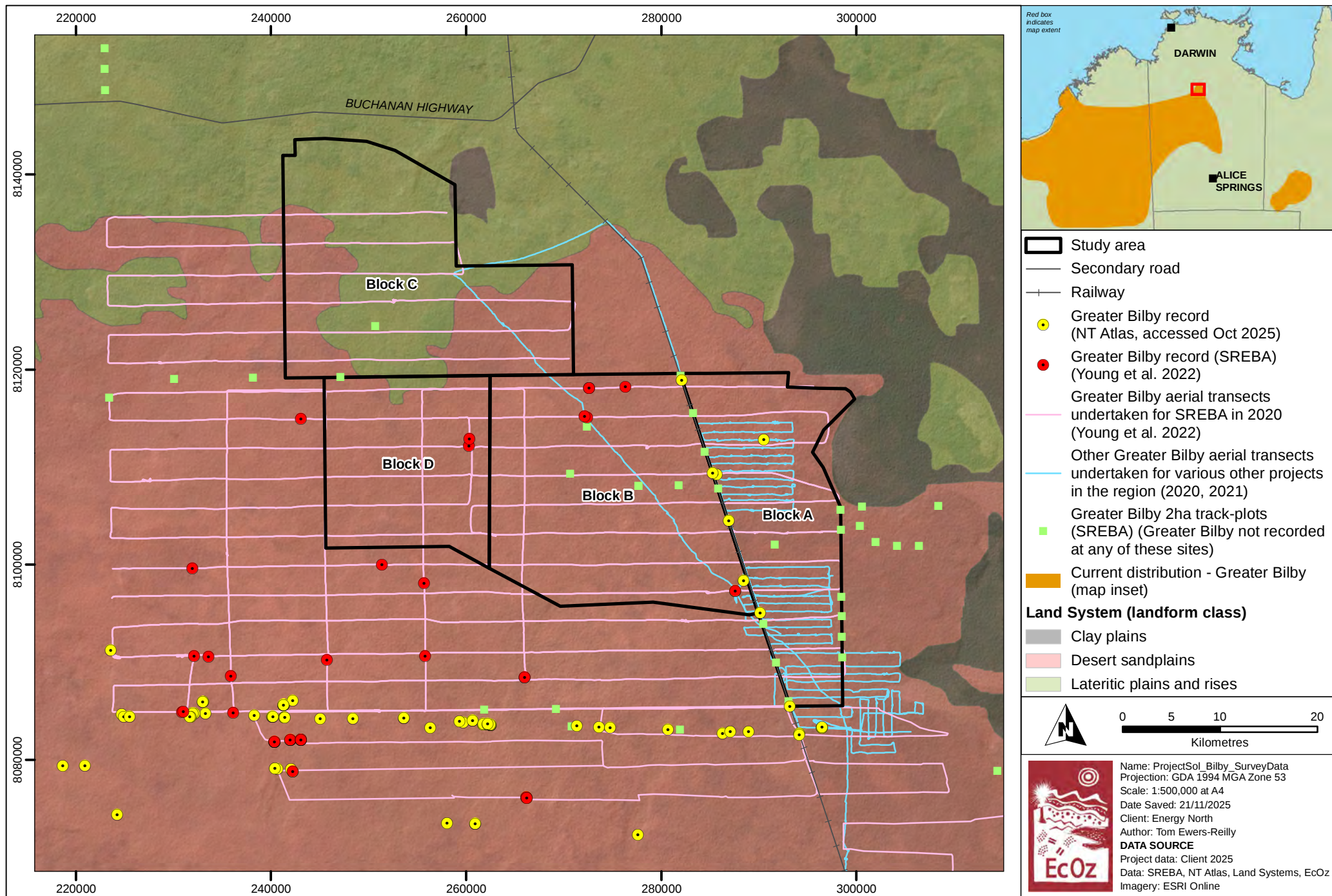
In conclusion, existing data indicates that the study area is highly likely to support Greater Bilby within Blocks B and D, has a moderate likelihood within Block A and southern part of Block C, and low likelihood within northern part of Block C.

Table 3-3. Photographs of habitat at Greater Bilby burrow sites recorded on Murrnaji Station in 2021

Description	Photograph
Corymbia/Eucalyptus open woodland on sandy loam	
Acacia shrubland and hummock grassland on sandplains	
Acacia shrubland and hummock grassland on sandplains	

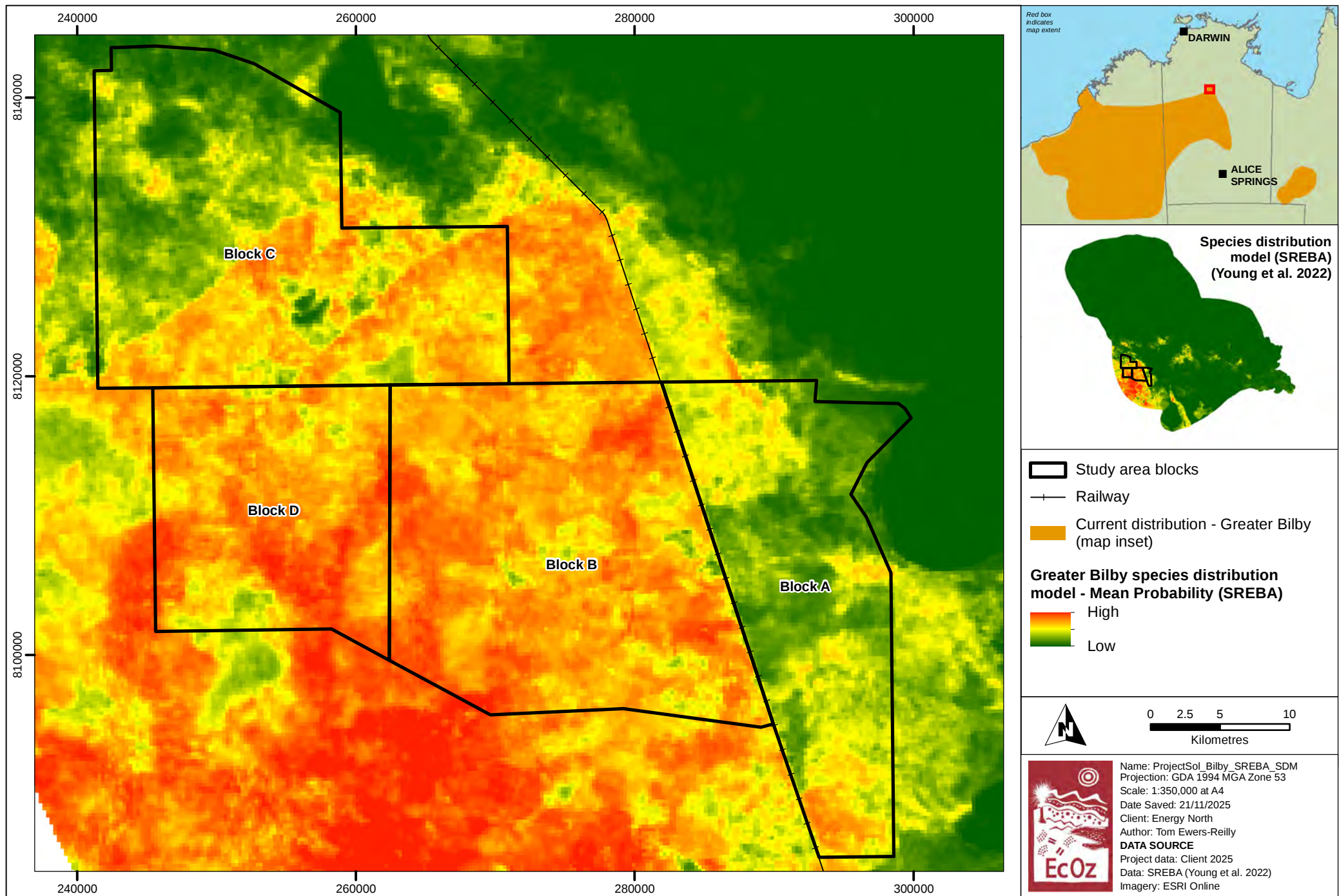
Table 3-4. Photographs of Greater Bilby burrows identified on Murrnji Station in 2021 (EcOz 2021)

Description	Photograph
Greater Bilby burrow observed (recently active, no indication of occupation at time of survey (EcOz 2021) (Block B)	
Greater Bilby burrow observed (recently active, no indication of occupation at time of survey (EcOz 2021) (Block B)	
Greater Bilby burrow observed (recently active, no indication of occupation at time of survey (EcOz 2021) (Block B)	



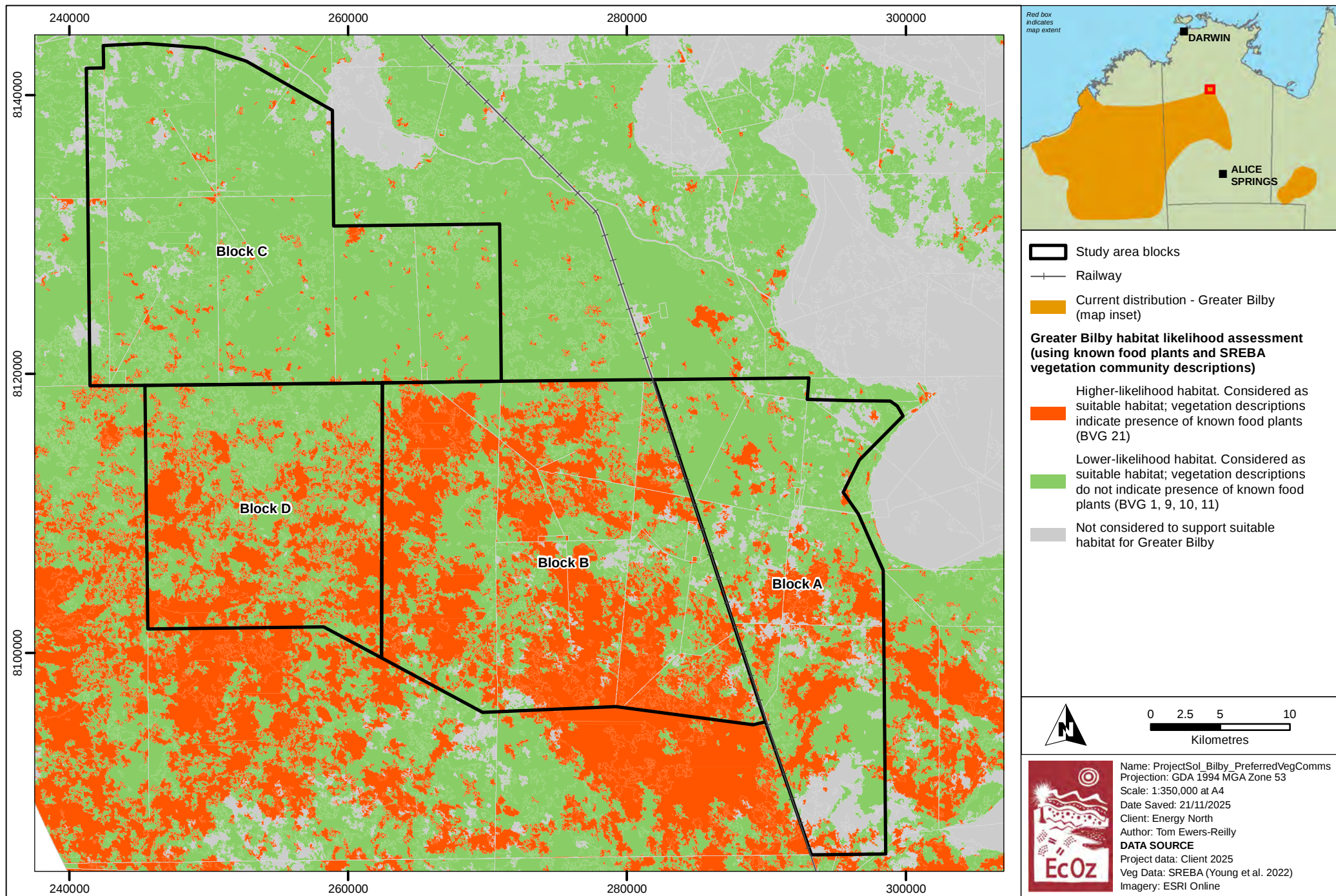
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Figure 3-3. Map of existing Greater Bilby survey effort and results within the region of the study area



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Figure 3-4. Map showing the SREBA Greater Bilby species distribution model within the region of the study area



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Figure 3-5. Map of Greater Bilby habitat likelihood assessment

3.2.4 Yellow-spotted Monitor (*Varanus panoptes*)

The Yellow-spotted Monitor is listed as Vulnerable under the TPWC Act and is not listed under the EPBC Act.

Species background

The Yellow-spotted Monitor is a large ground-dwelling monitor occupying a variety of habitats, including coastal beaches, floodplains, grasslands and woodlands. It feeds primarily on small terrestrial vertebrates and insects, and lays a clutch of eggs in a burrow, usually in the wet season (Ward et al. 2012). The species can occur in a variety of habitats, including coastal beaches, floodplains, grasslands and woodlands, across the extent of northern Australia; their preference for habitats near water sources is a key ecological factor for the species. However, its propensity to eat Cane Toads and die from the ingested toxins has caused a significant decline in the population (Ward et al. 2012).

Likelihood of occurrence assessment

The Yellow-spotted Monitor is known to occur in the wider region; however, there are no existing records within or adjacent to the study area, with the closest record approximately 35 km to the north (see Figure 3-6).

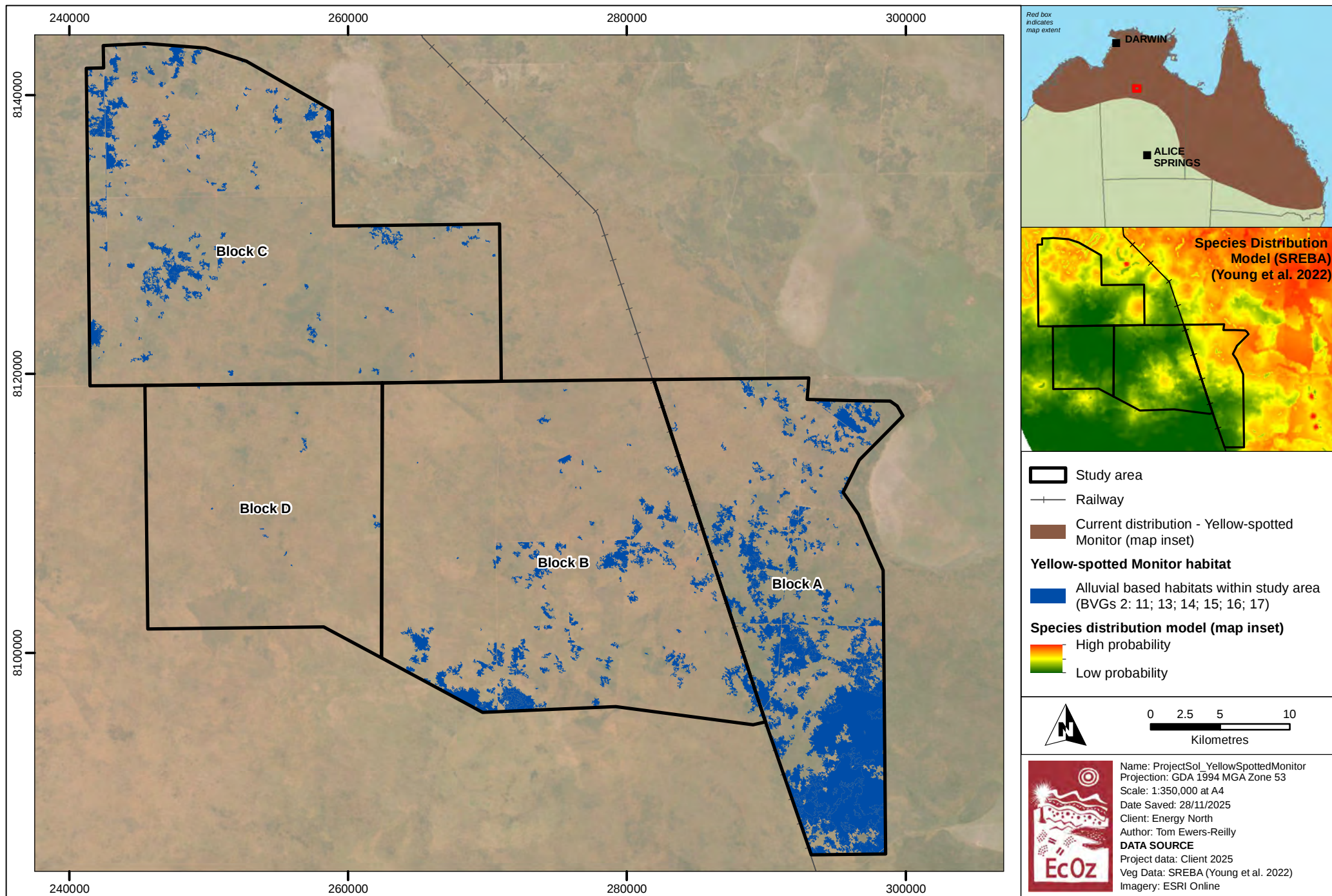
The SREBA assessment generated a species distribution model for Yellow-spotted Monitor (Young et al. 2022) (refer to Figure 3-6). The model indicates that:

- Block A – moderate to high probability of occurrence within the northern half, low elsewhere.
- Block B – low to moderate probability of occurrence.
- Block C – moderate to high probability of occurrence within the northern half, low elsewhere.
- Block D – low probability of occurrence.

Habitat preference for this species is assumed to be alluvial-based habitat, and associated margins. The following BVG's are considered to have these characteristics: BVG 2⁵, 11, 13, 14, 15, 16 and 17 (presented on Figure 3-6). It is noted that the habitat-based selection does not correlate closely with the SREBA species' distribution model for Yellow-spotted Monitor (see Figure 3-6), particularly in the southern part of Block A which is clearly an alluvial-based habitat type that is considered to be suitable habitat for the species. However, it is noted that the SREBA report does indicate a high level of model uncertainty in the south-west part of the SREBA study area. Therefore, determination of potential species occurrence should use the habitat-based assessment in conjunction with the SREBA species' distribution model.

In conclusion, the Yellow-spotted Monitor is considered to have a moderate likelihood of occurrence within most of Block A, scattered areas within Block B, and the northern part of Block C – due to presence of suitable habitat and SREBA predictive modelling indicating moderate probability of occurrence in some areas. Yellow-spotted Monitor is considered to have a low likelihood of occurrence within Block D – due to low occurrences of suitable habitat and SREBA predictive modelling indicating low probability of occurrence. If present within the study area, the species would only be expected to occur within or near alluvial-based vegetation types.

⁵ BVG 5 and BVG 6 have been merged into BVG 2; refer to Section 2.6.2 for reasoning.



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Figure 3-6. Map of Yellow-spotted Monitor probability of occurrence model (SREBA) and alluvial-based vegetation types (SREBA)

3.2.5 Northern Blue-tongued Skink (*Tiliqua scincoides intermedia*)

The Northern Blue-tongued Skink is listed as Critically Endangered under the EPBC Act and Data Deficient under the TPWC Act.

Species background

Northern Blue-tongue Skink is a large, robust, short-limbed skink (DCCEEW 2023). They are primarily nocturnal, active year-round, and consume a wide range of plant and animal food. Home ranges average 4 ha (range 2–12 ha), but only about two-thirds of that range are used intensively (Price-Rees et al., 2013). They are known to prey on Cane Toad (*Rhinella marina*) which is the greatest threat to the species as they are high susceptible to Cane Toad toxin.

Northern Blue-tongue Skink can occur in a wide variety of ecosystems (DCCEEW 2023); however, most – but not all – detections have occurred near seasonal or permanent water (Shea 1992). The species spends most of its time in small, fragmented patches of habitat that offer cooler moister conditions, with higher grass and more leaf-litter cover (DCCEEW 2023). Current conservation advice for the species states that habitat critical to the survival of Northern Blue-tongue Skink are areas of dense vegetation that provide cool and moist conditions (DCCEEW 2023). These areas provide the species with the resources it requires for persistence – i.e. food, water and protection from environmental exposure and predation (DCCEEW 2023).

Likelihood of occurrence

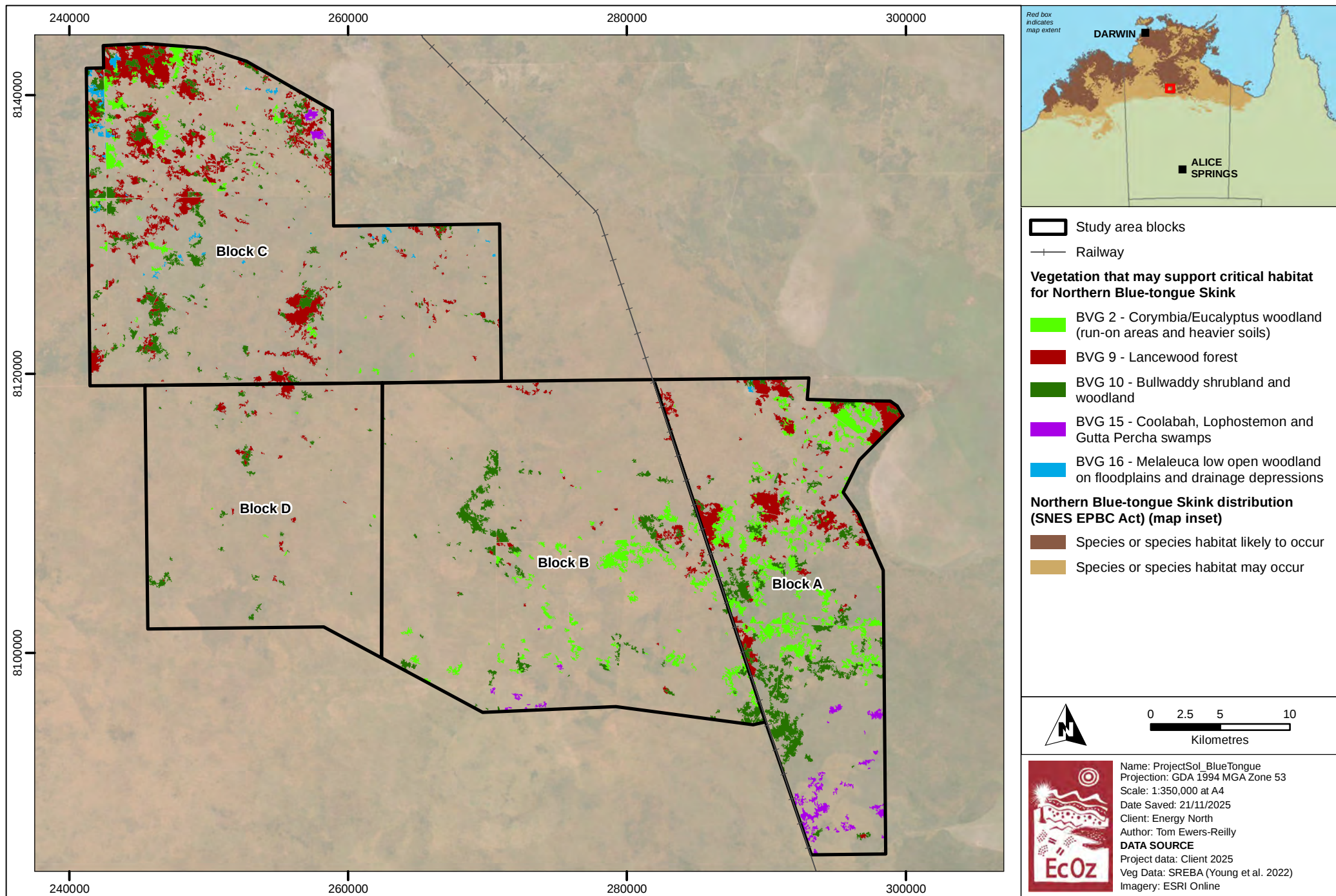
The study area occurs on the southern edge of the Northern Blue-tongue Skink distribution (see map inset in Figure 3-7). The species has not been previously recorded within or adjacent to the study area or Murrarji Station; however, there are a few records in the surrounding region (see Figure 3-7) (including recent records from 2021).

A review of SREBA vegetation communities within the study area indicates that five BVG's may support critical habitat for the species, because these areas can produce dense vegetation/canopies that provides cool and/or moist conditions (see Figure 3-7):

- BVG 2: Corymbia/Eucalyptus woodland (run-on areas and heavier soils).
- BVG 9: Lancewood forest.
- BVG 10: Bullwaddy shrubland and woodland.
- BVG 15: Coolabah, Lophostemon and Gutta Percha swamps.
- BVG 16: Melaleuca low open woodland on floodplains and drainage depressions.

SREBA mapping indicates that the central part of Block A and northern part of Block C support a relatively high density of these BVG's, and only scattered patches occur within Block B and Block D.

It should be assumed that these BVG's (and any other unmapped patches of dense vegetation) could potentially support critical habitat for the species and consequently, if disturbance is proposed in those areas, additional investigation will be required (including targeted field surveys to assess habitat quality and camera trapping to check for species presence/absence).



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Figure 3-7. Map showing (potential) critical habitat areas for Northern Blue-tongue Skink within the study area

3.3 Migratory species

Australia is a signatory to three bilateral migratory bird agreements with Japan, China and the Republic of Korea, as well as the Bonn Convention. These agreements provide a basis for cooperation on activities for the conservation of migratory animals that move between each country. Species listed on the annexes of these agreements are a Matter of National Environmental Significance (MNES) under the EPBC Act as listed migratory species. The EPBC [Protected Matters Search Tool](#) report (see Appendix B) identified the possibility of migratory species protected under international agreements occurring within the region. Migratory species records within 50 km of the study area are shown on Figure 3-8.

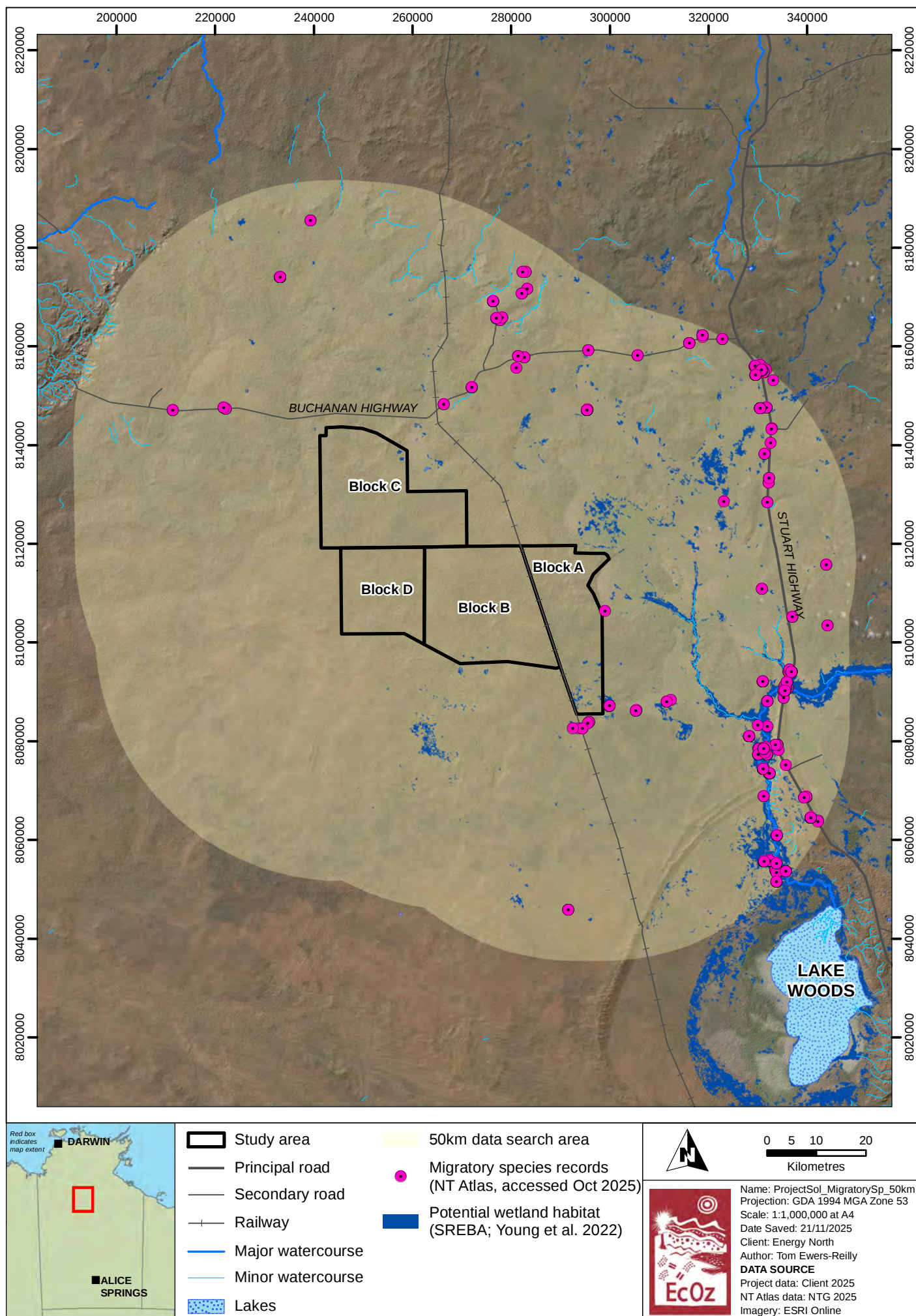
Generally, a project will not have a significant impact on migratory species unless there is important habitat for, and/or significant occurrences of, migratory species. A review of existing vegetation mapping, topographic data and aerial imagery indicates that significant wetland features are not expected to occur within the study area. However, the study area is expected to support minor wetland habitat that are subject to seasonal inundation (these areas are mapped as part of the SREBA, shown on Figure 3-8); these may temporarily support suitable foraging and roosting habitat for migratory wetland species; however, these features are not unique or considered to be important migratory habitat. It is concluded that the study area does not support important habitat for migratory species.

Most records of migratory shorebirds relevant to the study area are based in, and around, Lake Woods, which is located approximately 60 km to the south-east.

Table 3-5. Migratory species recorded within 50 km of the study area and PMST report

Migratory type	Common name	Scientific name	NT Atlas records within 50 km
Marine	Fork-tailed Swift	<i>Apus pacificus</i>	20
	White-winged Black Tern	<i>Chlidonias leucopterus</i>	2
	White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	23
	Caspian Tern	<i>Hydroprogne caspia</i>	27
	Eastern Osprey	<i>Pandion cristatus</i>	2
	Freshwater Sawfish	<i>Pristis pristis</i>	0*
Terrestrial	Red-rumped Swallow	<i>Cecropis daurica</i>	0*
	Oriental Cuckoo	<i>Cuculus optatus</i>	0*
	Barn Swallow	<i>Hirundo rustica</i>	0*
	Rainbow Bee-eater	<i>Merops ornatus</i>	291
	Grey Wagtail	<i>Motacilla cinerea</i>	0*
	Yellow Wagtail	<i>Motacilla flava</i>	0*
Wetlands	Common Sandpiper	<i>Actitis hypoleucos</i>	19
	Great Egret	<i>Ardea alba</i>	228
	Cattle Egret	<i>Bubulcus ibis</i>	35
	Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	24
	Oriental Plover	<i>Charadrius veredus</i>	4
	Oriental Pratincole	<i>Glareola maldivarum</i>	15
	Little Curlew	<i>Numenius minutus</i>	6
	Glossy Ibis	<i>Plegadis falcinellus</i>	123
	Wood Sandpiper	<i>Tringa glareola</i>	7
	Common Greenshank	<i>Tringa nebularia</i>	12
	Marsh Sandpiper	<i>Tringa stagnatilis</i>	5

*No records within 50 km of study area; species included from PMST report (Appendix B).



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Figure 3-8. Map of migratory species records within 50 km of study area and wetland habitat in the region

3.4 Endemic, Near Threatened and Data Deficient species

Endemic⁶, Near Threatened⁷ or Data Deficient⁸ species are known to occur in the region of the study area. Such species are typically only included in risk assessments for project approvals if they have a restricted range (because such species have a much higher potential to be significantly impacted if a project footprint overlaps a population or occurrence). Subsequently, only species that have restricted ranges require consideration for project approvals.

NT Atlas records indicate that 17 endemic flora species have been recorded within 50 km of the study area, of these, only one species – *Spermacoce reticulata* – is considered to have a restricted range in the Northern Territory (see Table 3-6). There is only 1 record of this species within 50 km of the study, which is located adjacent to Stuart Highway approximately 32 km to the east of the Block A. Records of this species are typically found amongst sandstone landforms; a habitat type that does not occur within the study area. As such, it is considered unlikely that *Spermacoce reticulata* occurs within the study area. No further assessment is required.

NT Atlas records indicate there are 26 Near Threatened species (see Table 3-7) and 23 Data Deficient species within 50 km of the study area (see Table 3-8). None of these species are considered to have restricted ranges; subsequently, the project is inherently unlikely to have significant impact on Near Threatened and Data Deficient species if they occur within the study area. No further assessment is required.

Table 3-6. Endemic species recorded within 50 km of the study area

Group	Scientific name	Restricted range
Plant	<i>Acacia sp. Lake Woods</i>	No
	<i>Brachychiton megaphyllus</i>	No
	<i>Brachychiton multicaulis</i>	No
	<i>Eriachne schultzi</i>	No
	<i>Eucalyptus cyanoclada</i>	No
	<i>Eucalyptus patellaris</i>	No
	<i>Glycine gracei</i>	No
	<i>Goodenia hispida</i>	No
	<i>Goodenia leiosperma</i>	No
	<i>Heliotropium bracteatum</i>	No
	<i>Macropteranthus kekwickii</i>	No
	<i>Polygala integra</i>	No
	<i>Ptilotus dissitiflorus</i>	No
	<i>Sesbania muelleri</i>	No
	<i>Sorghum matarankense</i>	No
	<i>Spermacoce reticulata</i>	Yes
	<i>Whiteochloa multiciliata</i>	No

⁶ Species that is unique to a specific geographical area and found nowhere else in the world (in this case, endemic to the Northern Territory).

⁷ A Near Threatened species when it is not classified in one of the above threatened categories, but it is close or likely to be in a threatened category soon.

⁸ A Data Deficient (DD) species is when there is not enough information to make a direct, or indirect, assessment of its risk of extinction based on distribution and/or population. DD is not a category of threatened species, but DD species should not be assumed to be safe. A species in this category may be well studied and well known, but there is not enough specific data on numbers and distribution. Species in this category need more information and future research may show that they need to be classified as threatened.

Table 3-7. Near Threatened species recorded within 50 km of the study area

Group	Scientific name	Restricted range
Bird	Australian Bustard (<i>Ardeotis australis</i>)	No
	Australian Reed-Warbler (<i>Acrocephalus australis</i>)	No
	Bush Stone-curlew (<i>Burhinus grallarius</i>)	No
	Crested Shrike-tit (northern) (<i>Falcunculus frontatus whitei</i>)	No
	Emu (<i>Dromaius novaehollandiae</i>)	No
	Flock Bronzewing (<i>Phaps histrionica</i>)	No
	Freckled Duck (<i>Stictonetta naevosa</i>)	No
	Pictorella Mannikin (<i>Heteromunia pectoralis</i>)	No
	Square-tailed Kite (<i>Lophoictinia isura</i>)	No
	White-quilled Rock-Pigeon (<i>Petrophassa albipennis</i>)	No
Mammal	Spectacled Hare-wallaby (<i>Lagorchestes conspicillatus</i>)	No
	Long-haired Rat (<i>Rattus villosissimus</i>)	No
	Northern Nailtail Wallaby (<i>Onychogalea unguifera</i>)	No
	Central Pebble-mouse (<i>Pseudomys johnsoni</i>)	No
	Western Chestnut Mouse (<i>Pseudomys nanus</i>)	No
Reptile	Mulga Snake (<i>Pseudechis australis</i>)	No
Plant	<i>Caesia chlorantha</i>	No
	<i>Cleome uncifera</i>	No
	<i>Dentella minutissima</i>	No
	<i>Fatoua villosa</i>	No
	<i>Hibiscus brachychlaenus</i>	No
	<i>Ipomoea argillicola</i>	No
	<i>Najas marina</i>	No
	<i>Riccia discolor</i>	No
	<i>Stuckenia pectinata</i>	No

Table 3-8. Data Deficient species recorded within 50 km of the study area

Group	Scientific name	Restricted range
Plant	<i>Acrachne racemosa</i>	No
	<i>Astrebla lappacea</i>	No
	<i>Bonamia alatisemina</i>	No
	<i>Cenchrus basedowii</i>	No
	<i>Eucalyptus</i> sp. Killarney	No
	<i>Evolvulus alsinoides</i> var. <i>alsinoides</i>	No
	<i>Fimbristylis bisumbellata</i>	No
	<i>Glycine gracei</i>	No
	<i>Goodenia malvina</i>	No
	<i>Heliotropium consimile</i>	No
	<i>Heliotropium fasciculatum</i>	No
	<i>Heliotropium geocharis</i>	No
	<i>Lepturus xerophilus</i>	No
	<i>Phyllanthus</i> sp. narrow tuberculate seeds	No
	<i>Portulaca</i> sp. finely echinate	No
	<i>Ptilotus dissitiflorus</i>	No
	<i>Sida echinocarpa</i>	No
	<i>Sida rohlenae</i> subsp. <i>occidentalis</i>	No
	<i>Sida</i> sp. <i>excedentifolia</i>	No
	<i>Spermacoce brachystema</i>	No
	<i>Synostemon trachyspermus</i>	No
Bird	Australian Spotted Crake (<i>Porzana fluminea</i>)	No
Fish	Silver Catfish (<i>Porochilus argenteus</i>)	No

4 CONCLUSION AND RECOMMENDATIONS

This desktop ecological assessment identifies terrestrial ecological values and constraints relevant to the study area (Blocks A, B, C and D) on Murrarji Station.

Given the large size of the study area (1,738 km² in total), the current level of existing data (notably the recent SREBA surveys, Young et al. 2022) is considered sufficient to inform ecological aspects relevant to this stage of project design and approvals (such as guidance for infrastructure site selection, preliminary impact assessment, and preparation of referral documentation).

The assessment identified the following key ecological values have potential to occur within the study area:

- Greater Bilby (*Macrotis lagotis*) (Vulnerable EPBC Act; Vulnerable TPWC Act)
- Northern Blue-tongue Lizard (*Tiliqua scincoides intermedia*) (Critically Endangered EPBC Act)
- Yellow-spotted Monitor (*Varanus panoptes*) (Vulnerable TPWC Act)
- Large trees with hollows suitable for fauna (significant under *Land Clearing Guidelines* DEPWS 2024)
- Wetlands (significant under *Land Clearing Guidelines* DEPWS 2024)
- Floodplains (significant under *Land Clearing Guidelines* DEPWS 2024)
- Drainage depressions (significant under *Land Clearing Guidelines* DEPWS 2024)
- Run-on areas (significant under *Land Clearing Guidelines* DEPWS 2024)
- Endemic vegetation communities (significant under *Land Clearing Guidelines* DEPWS 2024).

A summary of potential key ecological values within each block is provided in Table 4-1.

Table 4-1. Summary of key ecological values within each block

Study area block	Key ecological values	
	Significant vegetation	Threatened species
Block A	The northern half of the block largely contains mapped BVG's that may contain large trees with hollows, with some patches of endemic vegetation and run-on areas. The central part of the block has large areas without mapped significant vegetation, with larger areas of endemic vegetation and run-on areas. The southern section of the block again has large areas without mapped significant vegetation, and patches of wetland/floodplain and endemic vegetation.	• Greater Bilby – considered to have a moderate likelihood of occurrence in areas of suitable habitat. There has been a higher level of targeted survey effort within this Block; of which results did not detect any Greater Bilby burrows (however old scats were detected which indicates visitation and potential burrows in the area). However, there are some relatively large patches of higher likelihood habitat through the central portion of the block which have not been subject to targeted survey. There are also areas of unsuitable habitat throughout, largely concentrated in the south. The SREBA modelling indicates a low probability of occurrence throughout most of the block. There is a high level of grazing activity within this block that will likely impact habitat quality and therefore lower occurrence. • Northern Blue-tongue Skink – considered to have a moderate likelihood of occurrence in areas of suitable habitat. The central part of the block contains patchy but connected areas of vegetation that may support critical habitat for the species, with fewer and smaller patches in the south, and more larger patches in the north-east. The species has not been previously recorded within this block. • Yellow-spotted Monitor – considered to have a moderate likelihood of occurrence in areas of suitable habitat. Large areas of vegetation that are considered preferred habitat by the species in the south, becoming more patchy in the central and north-eastern areas. SREBA modelling indicates a high-likelihood of occurrence in the north and low likelihood in the south. The species has not been previously recorded within this block.
Block B	About half the block contains mapped BVG's that may contain large trees	• Greater Bilby – considered to have a high likelihood of supporting Greater Bilby. There are large, connected patches

Study area block	Key ecological values	
	Significant vegetation	Threatened species
	with hollows distributed throughout. The central section of the block contains mapped areas of endemic vegetation and run-on areas, with a few smaller mapped patches of wetland/floodplain in the south. There are large areas without mapped significant vegetation throughout.	of higher likelihood habitat throughout most of the block, and the SREBA modelling indicates a high likelihood of occurrence within much of the block. Greater Bilby burrows and definitive sign have been recently recorded within this block. There is a high level of grazing activity within the eastern part of this block that will likely impact habitat quality and therefore may lower likelihood of occurrence in that area. • Northern Blue-tongue Skink – considered to have a moderate likelihood of occurrence in areas of suitable habitat. There are some patches of vegetation that may support critical habitat for the species, with the patches in the east connecting to the larger areas within Block A. The species has not been previously recorded within this block. • Yellow-spotted Monitor – some larger patches of vegetation that are considered preferred habitat by the species in the south and east of the block, with the SREBA high-likelihood modelling following a similar pattern. This block is considered to have a moderate likelihood of supporting the species in areas of potential habitat and a low likelihood elsewhere. The species has not been previously recorded within this block.
Block C	Majority of the block contains mapped BVG's that may contain large trees with hollows, with scattered areas of endemic vegetation and run-on areas. The north-west and north-east of the block also have few patches of floodplain and wetland/floodplain areas mapped.	• Greater Bilby – considered to have a low (northern part of block) to moderate (southern part of block) likelihood of supporting Greater Bilby. There are several small patches of higher-likelihood habitat throughout. There are no recent or historic records of Greater Bilby within this block. There is a high level of grazing activity within this block that will likely impact habitat quality and therefore lower likelihood of occurrence. • Northern Blue-tongue Skink – considered to have a moderate likelihood of occurrence in areas of suitable habitat. The northern part of the block contains a high density of patches of vegetation that may support critical habitat for the species, with fewer and smaller patches in the south and east. The species has not been previously recorded within this block. • Yellow-spotted Monitor – considered to have a moderate likelihood of supporting the species, with a low likelihood elsewhere. Some larger patches of vegetation that are considered preferred habitat by the species mostly in the north and west, and the SREBA modelling suggests a high likelihood of occurrence in the north and low in the south.
Block D	Majority of the block contains mapped BVGs that may contain large trees with hollows, with patches without any mapped significant vegetation (largely in the southern half of the block) and some small patches of endemic vegetation scattered throughout.	• Greater Bilby – considered to have a high likelihood of supporting Greater Bilby. Approximately half the block contains higher-likelihood habitat patchily distributed throughout, and the SREBA modelling indicates a high likelihood of occurrence within much of the block. Greater Bilby burrows and definitive sign have been recently recorded within this block. There is a relatively low level of pastoral activity within this block. • Northern Blue-tongue Skink – considered to have a low likelihood of supporting the species. Very few small patches of vegetation that may support critical habitat for the species. The species has not been previously recorded within this block. • Yellow-spotted Monitor – considered to have a low likelihood of supporting the species. Very few small patches of vegetation that are considered preferred habitat by the species. The species has not been previously recorded within this block.

While several ecological values are expected to exist within the study area, not all values are afforded the same level of statutory protection, are of the same quality or hold a high level of ecological significance.

Vegetation mapping shows significant vegetation may occur across majority of the study area; however, based on this desktop assessment it is possible these are not considered high-value examples of such vegetation, because:

- Large trees with hollows suitable for fauna – mapped areas can be used as a general guide for potential occurrence; however, they do not necessarily indicate that significant tree hollows persist. Based on existing desktop information, it is considered unlikely that significant tree hollows are present within the study area.
- Wetlands, floodplains, drainage depressions, run-on areas, endemic vegetation – again, mapped areas can be used as a guide; however, assessment of aerial imagery suggests they are unlikely to qualify as high value wetland features such as swamps or lakes.

The study area potentially supports three threatened species: Greater Bilby, Yellow-spotted Monitor and Northern Blue-tongued Skink. Potential habitat areas for these species are considered of high-value because all three species are protected under either the TPWC Act, the EPBC Act, or both.

Based on the assessment of likely ecological values present within the study area, it is recommended that Energy North implement the following:

The following key recommendations from assessment outcomes are:

- Use the results of this assessment to inform site selection, noting ecological values are understood to be one of several influences on decision-making (including potential impacts to other environmental values, land use and logistics/cost).
- Greater Bilby habitat is present across the entire study area; however, there are certain areas considered to have higher suitability and therefore higher likelihood of burrow occurrence. These higher suitability areas will require a higher level of survey effort to confirm species' occurrence and habitat quality. However, it is noted that Greater Bilby use and habitat quality are dynamic across the landscape between seasons (and pastoral activities), therefore occurrence can be unpredictable. Prior to any land clearing, it is likely that pre-clearance surveys will be required as a project condition (followed by regulator-approved actions if active burrows are detected), and ongoing management actions should be undertaken to preserve habitat quality in surrounds.
- Northern Blue-tongued Skink is considered to have a moderate likelihood of occurrence within parts of the study area that are potential refuge habitat. Because targeted surveys for this species have not previously occurred, it is expected that targeted surveys (as per current survey guidelines for the species) will be required if areas of potential critical habitat occur within the selected project footprint. If the species is detected in these areas, additional assessment will be required to determine potential for significant impact and to develop appropriate mitigation measures (in consultation with regulators).
- Yellow-spotted Monitor is considered to have a moderate likelihood of occurrence within alluvial-based habitat within the study area. Where feasible, suitable habitat should be avoided. If suitable habitat cannot be avoided, targeted surveys for this species would likely be required and would be conducted in conjunction with Greater Bilby surveys (similar survey techniques for burrow detection). Prior to any land clearing, it is likely that pre-clearance surveys will be required as a project condition (followed by regulator approved actions if active burrows are detected), and ongoing management actions should be undertaken to preserve habitat quality in surrounds.
- Where feasible, patches of mapped significant vegetation should be avoided and buffered in accordance with *NT Land Clearing Guidelines* (DEPWS 2024), particularly those that are considered as suitable for threatened species. If mapped areas significant vegetation cannot be avoided, those areas should ground-truthed to confirm presence and ecological value; this information will be used to inform appropriate mitigation measures.
- Consider flexibility in project design to allow for several smaller blocks or modules of infrastructure, together with incorporation of wildlife corridors/internal avoidance areas to maintain habitat connectivity for threatened fauna.

- Use the results of this assessment to inform future approvals' documentation, including referrals under the EP Act and EPBC Act.
- Project activities must account for key threatening processes known to occur in the region of the study area. Management plan(s) should be developed and implemented that prescribe effective methods to ensure threatening processes are not exacerbated. These plans will include best practice weed hygiene, waste management and fire / fuel load management.

5 REFERENCES

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APPENDIX A VEGETATION COMMUNITY DESCRIPTIONS

Note: Occurrence with study area was determined by reviewing distribution notes of each vegetation community description (Appendix 3E in Young et al. 2022)

BVG	BVG description	Vegetation communities (SREBA)	Occurrence within study area
1	Corymbia / Eucalyptus open woodland on sandy loam	<i>Corymbia dichromophloia</i> low open woodland to mid woodland (+/- <i>C. ferruginea</i> , <i>Erythrophleum chlorostachys</i> , <i>Eucalyptus miniata</i> and/or <i>E. tetradonta</i>), with a variable low sparse shrubland to tall open shrubland, and a mid-open tussock grassland typically including <i>Chrysopogon fallax</i> , <i>Triodia bitextura</i> , <i>Aristida hygrometrica</i> , <i>Sorghum plumosum</i> , <i>Eulalia aurea</i> and <i>Schizachyrium fragile</i> .	Potential to occur within study area
		<i>Corymbia dichromophloia</i> and <i>Bauhinia cunninghamii</i> (+/- <i>Eucalyptus pruinosa</i> , <i>Macropteranthes kekwickii</i>) low open woodland to mid woodland, with a mid-sparse shrubland, and a low open tussock grassland typically including <i>Aristida holathera</i> , <i>Aristida latifolia</i> , <i>Chrysopogon fallax</i> and <i>Eriachne obtusa</i> .	Potential to occur within study area
		<i>Eucalyptus tectifica</i> low open woodland to mid woodland (+/- <i>Erythrophleum chlorostachys</i> and scattered <i>Corymbia</i> and <i>Eucalyptus</i> spp.), with a variable mid sparse shrubland, and a mid-tussock grassland of <i>Heteropogon contortus</i> , <i>Chrysopogon fallax</i> , <i>Themeda triandra</i> and <i>Sehima nervosum</i> .	Unlikely to occur within study area
		<i>Eucalyptus tetradonta</i> and <i>Corymbia dichromophloia</i> low open woodland to mid woodland (+/- <i>C. ferruginea</i> , <i>Erythrophleum chlorostachys</i> , <i>Eucalyptus miniata</i>) with a mid-sparse shrubland and a mid-open tussock grassland typically including <i>Chrysopogon fallax</i> , <i>Triodia bitextura</i> , <i>Themeda triandra</i> , <i>Sorghum plumosum</i> , <i>Eriachne ciliata</i> and <i>Mnesithea formosa</i> .	Unlikely to occur within study area
		<i>Eucalyptus tetradonta</i> (and/or <i>Corymbia greeniana</i>), <i>C. ferruginea</i> and <i>Erythrophleum chlorostachys</i> mid woodland to open forest (+/- <i>C. polycarpa</i> and/or <i>E. bigalerita</i>) with a variable mid sparse shrubland and a mid-tussock grassland typically including <i>Aristida inaequiglumis</i> , <i>Chrysopogon fallax</i> , <i>Sehima nervosum</i> and <i>Sorghum plumosum</i> .	Unlikely to occur within study area
		<i>Petalostigma pubescens</i> , <i>Erythrophleum chlorostachys</i> and <i>Terminalia canescens</i> low open woodland to low woodland with a sparse mid shrubland and a mid open tussock grassland of <i>Chrysopogon fallax</i> , <i>Galactia tenuiflora</i> and other grasses and forbs.	Potential to occur within study area
2	Corymbia / Eucalyptus woodland (run-on areas and heavier soils)	<i>Corymbia polycarpa</i> low open woodland to mid woodland (+/- <i>C. confertiflora</i> , <i>C. grandifolia</i> , <i>Erythrophleum chlorostachys</i> , <i>Eucalyptus patellaris</i> , <i>E. bigalerita</i>) with a mid open shrubland and a mid open tussock grassland to tall tussock grassland typically including <i>Chrysopogon fallax</i> , <i>Themeda triandra</i> , <i>Aristida holathera</i> , <i>Sehima nervosum</i> , <i>Eulalia aurea</i> , <i>Panicum effusum</i> and <i>Eriachne obtusa</i> .	Potential to occur within study area. Run-on features
		<i>Eucalyptus patellaris</i> variable mixed open woodland to woodland typically including <i>Erythrophleum chlorostachys</i> (+/- <i>Corymbia confertiflora</i> , <i>Corymbia polycarpa</i> and <i>Corymbia foelscheana</i> or <i>Corymbia latifolia</i> in northern areas) and a tall open shrub layer typically including <i>Croton arnhemicus</i> , <i>Alphitonia excelsa</i> (+/- <i>Bauhinia cunninghamii</i>), a mid open shrubland, and a variable mixed mid tussock grassland including species such as <i>Heteropogon contortus</i> , <i>Themeda triandra</i> , <i>Sorghum plumosum</i> , <i>Chrysopogon fallax</i> and <i>Sehima nervosum</i> .	Unlikely to occur within study area Run-on features Endemic
3	<i>Corymbia bella</i> woodland on alluvial plains	<i>Corymbia bella</i> mixed woodlands to low open woodlands (+/- <i>C. polycarpa</i> , <i>Terminalia platyphylla</i>) with a mixed shrubland typically including <i>Acacia</i> species over tussock grassland dominated by <i>Heteropogon contortus</i> .	Unlikely to occur within study area Floodplain GDE Seasonal

BVG	BVG description	Vegetation communities (SREBA)	Occurrence within study area
4	Eucalyptus miniata open woodland on loamy sand	<i>Corymbia ferruginea</i> and <i>Eucalyptus miniata</i> and low open woodland to mid woodland (+/- <i>C. dichromophloia</i> , <i>E. tetradonta</i>), with a sparse mid shrubland and a low open hummock grassland typically including <i>Triodia bitextura</i> , <i>Aristida holathera</i> , <i>A. hygrometrica</i> , <i>Chrysopogon fallax</i> , <i>Eriachne ciliata</i> and <i>Schizachyrium fragile</i> .	Unlikely to occur within study area
5	Riparian woodland (ephemeral streams)	<i>Corymbia ptychocarpa</i> subsp. <i>ptychocarpa</i> low open woodland (+/- <i>Buchanania obovata</i> , <i>Erythrophleum chlorostachys</i> and/or <i>Eucalyptus miniata</i>) with a tall, open shrubland of <i>Grevillea pteridifolia</i> (+/- <i>Pandanus spiralis</i>) over a mid-open shrubland typically including <i>Acacia</i> spp. and <i>Melaleuca viridiflora</i> , and a low open tussock grassland/sedgeland typically including <i>Ischaemum australe</i> , <i>Scleria rugosa</i> and other Cyperaceae.	Unlikely to occur within study area Riparian GDE Seasonal
		<i>Eucalyptus camaldulensis</i> low open woodland to mid woodland +/- <i>Casuarina cunninghamiana</i> , <i>Terminalia platyphylla</i> , with a variable mid open shrubland of mixed broad-leaved species and a low, open tussock grassland typically including grasses such as <i>Echinochloa colona</i> , <i>Mnesithea rottboellioides</i> , <i>Ophiuros exaltatus</i> , vines such as <i>Rhynchosia minima</i> and <i>Vigna</i> spp., and Cyperaceae sedges.	Potential to occur within study area. Riparian GDE Seasonal
6	Melaleuca forests (springs, river channels)	<i>Melaleuca cajuputi</i> open forest with <i>Barringtonia acutangula</i> and <i>Livistona mariae</i> subsp. <i>rigida</i> , with sparse mid and ground strata.	Unlikely to occur within study area Riparian GDE Permanent
		<i>Melaleuca dealbata</i> and <i>Melaleuca acacioides</i> low open forest with sparse mid and ground strata.	Unlikely to occur within study area Riparian GDE Permanent
		<i>Melaleuca leucadendra</i> tall open forest +/- <i>Corymbia ptychocarpa</i> , <i>Barringtonia acutangula</i> and <i>Livistona mariae</i> subsp. <i>rigida</i> , with sparse mid and ground strata.	Unlikely to occur within study area Riparian GDE Permanent
8	Snappy gum low open woodland	<i>Eucalyptus leucophloia</i> low open woodland to mid woodland, with a sparse to open shrubland typically including <i>Acacia</i> spp., and a low open hummock grassland of <i>Triodia</i> spp.	Potential to occur within study area
		<i>Eucalyptus umbrawarrensensis</i> low open woodland to mid woodland with a sparse to open shrubland typically including <i>Terminalia canescens</i> , and a low open hummock grassland of <i>Triodia bitextura</i> and <i>Chrysopogon fallax</i> .	Unlikely to occur within study area
9	Lancewood forest	<i>Acacia shirleyi</i> low open woodland to mid open forest with a low, sparse malvaceous shrubland that may include <i>Corchorus</i> spp., <i>Hibiscus</i> spp., <i>Sida</i> spp. or <i>Melhanian oblongifolia</i> , with a low, sparse to open tussock grassland typically including <i>Aristida holathera</i> / <i>Aristida</i> spp., <i>Eriachne ciliata</i> and <i>Schizachyrium fragile</i> .	Potential to occur within study area
		<i>Acacia shirleyi</i> mid open forest, with an open shrubland to closed shrubland of <i>Macropteranthes kekwickii</i> and <i>Terminalia volucris</i> , and a low sedgeland to open sedgeland of <i>Scleria brownii</i> , <i>Scleria</i> spp. and other grasses and herbs.	Unlikely to occur within study area
10	Bullwaddy shrubland and woodland	<i>Macropteranthes kekwickii</i> and <i>Acacia shirleyi</i> low open woodland to mid open woodland, with a low sparse to mid open shrubland, and a tussock grassland typically including <i>Chrysopogon fallax</i> , <i>Eulalia aurea</i> , <i>Mnesithea formosa</i> , <i>Panicum decompositum</i> and <i>Schizachyrium fragile</i> .	Potential to occur within study area Endemic
		<i>Macropteranthes kekwickii</i> tall closed shrubland to low woodland and <i>Eucalyptus chlorophylla</i> and/or <i>E. pruinosa</i> and/or <i>E. polycarpa</i> as isolated trees to isolated clumps of trees (+/- occasional isolated <i>Acacia shirleyi</i>), with a low to mid sparse shrubland, and a low to mid tussock grassland to open tussock	Unlikely to occur within study area Endemic

BVG	BVG description	Vegetation communities (SREBA)	Occurrence within study area
		grassland typically including <i>Chrysopogon fallax</i> and <i>Eulalia aurea</i> , or <i>Melhanhia oblongifolia</i> and <i>Scleria brownii</i> .	
11	Bauhinia and Corymbia open woodland on sandy clay	<i>Bauhinia cunninghamii</i> low open woodland to mid woodland with variable mixed <i>Corymbia/Eucalyptus</i> species including scattered <i>Corymbia flavescens</i> , or <i>C. terminalis</i> or <i>C. polycarpa</i> and/or <i>Eucalyptus pruinosa</i> , with a variable mid sparse to open shrubland typically including species such as <i>Carissa lanceolata</i> , <i>Terminalia volucris</i> , <i>Hakea arborescens</i> , and/or <i>Vachellia farnesiana</i> . The ground layer is a mid high tussock grassland typically including <i>Aristida</i> spp., <i>Brachyachne convergens</i> , <i>Chrysopogon fallax</i> and <i>Eulalia aurea</i> .	Potential to occur within study area
		<i>Terminalia arostrata</i> and/or <i>T. volucris</i> tall sparse shrubland to low open woodland with or without isolated low trees to low open woodland of <i>Corymbia flavescens</i> and/or <i>C. terminalis</i> , with a mid sparse shrubland typically including <i>Hakea arborescens</i> and <i>Carissa lanceolata</i> , and a mid tussock grassland typically including <i>Chrysopogon fallax</i> , <i>Eulalia aurea</i> , <i>Aristida latifolia</i> , <i>Sehima nervosum</i> and <i>Dichanthium sericeum</i> .	Potential to occur within study area
12	Eucalyptus chlorophylla low open woodland	<i>Eucalyptus chlorophylla</i> subsp. <i>chlorophylla</i> (+/- <i>Corymbia polycarpa</i> or <i>C. terminalis</i>) low open woodland to mid woodland, with a mid sparse shrubland typically including <i>Flueggea virosa</i> subsp. <i>melanthesoides</i> and <i>Grewia savannicola</i> , and a mid open grassland to grassland typically including <i>Chrysopogon fallax</i> , <i>Eulalia aurea</i> , <i>Sehima nervosum</i> and <i>Themeda triandra</i> .	Potential to occur within study area
		<i>Eucalyptus distans</i> low open woodland with a mid sparse shrubland and a mid tussock grassland of <i>Chrysopogon fallax</i> , <i>Schizachyrium fragile</i> , <i>Eriachne obtusa</i> +/- <i>Triodia bitextura</i> .	Unlikely to occur within study area Endemic
13	Silver box low open woodland	<i>Eucalyptus pruinosa</i> low open woodland with sparse <i>Corymbia flavescens</i> and/or <i>C. polycarpa</i> (+/- sparse <i>E. chlorophylla</i> and/or <i>Bauhinia cunninghamii</i>), with a mid sparse shrubland and a mid open tussock grassland typically including <i>Chrysopogon fallax</i> , <i>Dichanthium fecundum</i> , <i>Eulalia aurea</i> and <i>Sehima nervosum</i> .	Potential to occur within study area
14	Coolabah low open woodland on clay	<i>Eucalyptus microtheca</i> or <i>E. cyanoclada</i> low open woodland +/- scattered <i>Corymbia polycarpa</i> , <i>C. flavescens</i> , with a sparse mid shrubland of mixed shrubs and a mid tussock grassland of <i>Chrysopogon fallax</i> , <i>Eulalia aurea</i> and <i>Dichanthium fecundum</i> .	Potential to occur within study area Floodplain Endemic
15	Coolabah, Lophostemon and Gutta Percha swamps	<i>Eucalyptus camaldulensis</i> low open woodland to woodland (+/- <i>Corymbia polycarpa</i> , <i>Terminalia platyphylla</i>) with a sparse to open mid shrubland (where present) typically including <i>Acacia holosericea</i> and <i>Melaleuca viridiflora</i> , and a low sparse to open tussock grassland / forbland of <i>Pseudoraphis spinescens</i> , <i>Eragrostis cumingii</i> , <i>Oldenlandia galioides</i> , <i>Centipeda minima</i> and <i>Coldenia procumbens</i> .	Potential to occur within study area Wetland
		<i>Eucalyptus microtheca</i> or <i>E. cyanoclada</i> and <i>Excoecaria parvifolia</i> low open woodland, with a sparse low shrubland and a mid tussock grassland typically including <i>Brachyachne convergens</i> , <i>Pseudoraphis spinescens</i> , <i>Iseilema vaginiflorum</i> and <i>Eragrostis tenellula</i> , and forbs such as <i>Alternanthera nodiflora</i> , <i>Ammannia multiflora</i> and <i>Phyllanthus maderaspatensis</i> .	Potential to occur within study area Floodplain
		<i>Eucalyptus microtheca</i> or <i>E. cyanoclada</i> and <i>Lophostemon grandiflora</i> low open woodland (+/- <i>Eucalyptus camaldulensis</i>) with a sparse mid shrubland (if present), and a low, closed grassland/forbland including <i>Pseudoraphis spinescens</i> and <i>Echinochloa colona</i> or a mid open tussock grassland typically including <i>Eulalia aurea</i> and <i>Eriachne obtusa</i> .	Potential to occur within study area Wetland
		<i>Excoecaria parvifolia</i> low open woodland to woodland (+/- <i>Melaleuca citrolens</i>), with or without a sparse shrubland, and a mid open tussock grassland typically including <i>Panicum laevinode</i> , <i>Aristida latifolia</i> , <i>Paspalidium rarum</i> , <i>Dichanthium fecundum</i> and <i>Brachyachne convergens</i> .	Potential to occur within study area Floodplain

BVG	BVG description	Vegetation communities (SREBA)	Occurrence within study area
		<i>Lophostemon grandiflorus</i> low open woodland to low open forest, with a mid sparse shrubland and a low to mid tussock grassland typically including <i>Aristida holathera</i> , <i>Panicum laevinode</i> , <i>Eragrostis cumingii</i> and, in wetter situations, <i>Pseudoraphis spinescens</i> and <i>Echinochloa colona</i> , and sedges such as <i>Cyperus holoschoenus</i> .	Potential to occur within study area Wetland
16	Melaleuca low open woodland on floodplains and drainage depressions	<i>Melaleuca citrolens</i> , <i>Terminalia volucris</i> and <i>Melaleuca minutifolia</i> tall open shrubland, with a sparse low tussock grassland, and <i>Cynanchum viminalis</i> isolated vines.	Potential to occur within study area Floodplain
		<i>Melaleuca citrolens</i> and <i>Terminalia volucris</i> low woodland to mid open low woodland, with emergent isolated <i>Corymbia/Eucalyptus</i> spp. and an open tussock grassland of <i>Dichanthium fecundum</i> , <i>Eulalia aurea</i> and <i>Chrysopogon fallax</i> .	Potential to occur within study area Floodplain
		<i>Melaleuca minutifolia</i> low open woodland to mid woodland (+/- <i>Corymbia confertiflora</i> , <i>C. grandifolia</i> , and/or <i>C. terminalis</i>), with a sparse to open mid shrubland and a mid tussock grassland of <i>Chrysopogon fallax</i> , <i>Eulalia aurea</i> , <i>Sehima nervosum</i> and <i>Themeda triandra</i> .	Unlikely to occur within study area Floodplain
		<i>Melaleuca nervosa</i> low to mid open woodland (+/- <i>M. viridiflora</i> , <i>Grevillea pteridifolia</i>), with a low open hummock grassland of <i>Triodia bitextura</i> .	Potential to occur within study area Drainage depression
		Isolated trees including <i>Brachychiton paradoxus</i> and <i>Gardenia</i> spp. over a <i>Melaleuca viridiflora</i> sparse to open mid shrubland with sparse <i>Acacia</i> species and <i>Melaleuca citrolens</i> , and an open hummock grassland of <i>Triodia bitextura</i> , <i>Eriachne</i> species and mixed forbs and sedges.	Potential to occur within study area Drainage depression
		<i>Melaleuca viridiflora</i> sparse to low open woodland with isolated trees to low open woodland of <i>Corymbia flavescens</i> and/or <i>C. polycarpa</i> and/or <i>Eucalyptus chlorophylla</i> , and an open to closed mid tussock grassland of <i>Eriachne</i> spp., <i>Chrysopogon fallax</i> and cyperaceous sedges.	Potential to occur within study area Drainage depression
17	Tussock grassland	Mid to tall closed tussock grassland of <i>Astrebla squarrosa</i> , <i>Sorghum timorense</i> , <i>Astrebla elymoides</i> and/or <i>Astrebla pectinata</i> , and typically including <i>Panicum decompositum</i> and <i>Chrysopogon fallax</i> , over a low sparse forbland typically including <i>Neptunia dimorphantha</i> , <i>Operculina aequiseipala</i> and/or <i>Rhynchosia minima</i> .	Potential to occur within study area
		Variable mid open to closed tussock grassland of <i>Chrysopogon fallax</i> , and typically including <i>Eulalia aurea</i> , <i>Schizachyrium fragile</i> , <i>Iseilema vaginiflorum</i> , <i>Panicum decompositum</i> , <i>Sporobolus australasicus</i> , <i>Aristida</i> spp. and a mix of forbs, +/- a sparse variable shrub layer typically including <i>Atalaya hemiglaucula</i> , <i>Dolichandrone heterophylla</i> and/or <i>Ventilago viminalis</i> , and +/- low isolated trees of <i>Corymbia</i> and/or <i>Eucalyptus</i> .	Unlikely to occur within study area
		Variable mid tussock grassland typically including <i>Brachyachne</i> spp., <i>Dichanthium sericeum</i> , <i>Iseilema fragile</i> and <i>Urochloa gilesii</i> over a low sparse forbland typically including <i>Desmodium muelleri</i> , <i>Flemingia pauciflora</i> and/or <i>Goodenia strangfordii</i> , +/- low isolated trees including <i>Corymbia flavescens</i> , <i>C. grandifolia</i> and/or <i>Eucalyptus pruinosa</i> .	Potential to occur within study area
20	Corymbia / Eucalyptus woodland on sandstone	<i>Eucalyptus miniata</i> and <i>Corymbia dichromophloia</i> low open woodland to mid woodland (+/- <i>Eucalyptus phoenicea</i> , <i>Corymbia setosa</i>) with an <i>Acacia</i> spp. and <i>Grevillea</i> spp. mid sparse to open shrubland, and mid open hummock grassland of <i>Triodia microstachya</i> and <i>Triodia bitextura</i> .	Unlikely to occur within study area
		<i>Triodia</i> spp. mid open hummock grassland with a mid to tall sparse shrubland of <i>Acacia</i> spp. and <i>Grevillea</i> spp. +/- low sparse to open woodland of <i>Corymbia aspera</i> and/or <i>C. dichromophloia</i> .	Unlikely to occur within study area

BVG	BVG description	Vegetation communities (SREBA)	Occurrence within study area
21	Acacia shrubland and hummock grassland on sandplains	<i>Acacia lysiphloia</i> tall open to closed shrubland with a low, sparse tussock grassland.	Potential to occur within study area
		<i>Corymbia opaca</i> low open woodland with a mid sparse shrubland and a mid open tussock grassland typically including <i>Aristida</i> spp. and <i>Chrysopogon fallax</i> .	Potential to occur within study area
		<i>Triodia pungens</i> mid open hummock grassland with a sparse to open <i>Acacia</i> and/or <i>Grevillea</i> shrubland, +/- an isolated to low open woodland of <i>Corymbia setosa</i> .	Potential to occur within study area

APPENDIX B PROTECT MATTERS SEARCH TOOL (PMST) REPORT



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 23-Oct-2025

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	23
Listed Migratory Species:	15

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	20
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	2
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	2
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	1

Details

Matters of National Environmental Significance

Listed Threatened Species

[Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Chloebia gouldiae listed as Erythrura gouldiae Gouldian Finch [90091]	Endangered	Species or species habitat likely to occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area	In feature area
Falcunculus frontatus whitei Crested Shrike-tit (northern), Northern Shrike-tit [26013]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pezoporus occidentalis Night Parrot [59350]	Critically Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Polytelis alexandrae Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Tyto novaehollandiae kimberli Masked Owl (northern) [26048]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area	In buffer area only
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat known to occur within area	In feature area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Trichosurus vulpecula arnhemensis Northern Brushtail Possum [83091]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			
Acanthophis hawkei Plains Death Adder [83821]	Vulnerable	Species or species habitat known to occur within area	In feature area
Elseya lavarackorum Gulf Snapping Turtle [67197]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tiliqua scincoides intermedia Northern Blue-tongued Skink [89838]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Varanus mertensi Mertens' Water Monitor [1568]	Endangered	Species or species habitat may occur within area	In feature area
Varanus mitchelli Mitchell's Water Monitor [1569]	Critically Endangered	Species or species habitat may occur within area	In feature area

SHARK

Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area	In buffer area only
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Listed Migratory Species	[Resource Information]		
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			

Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
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Migratory Marine Species			
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area	In buffer area only

Migratory Terrestrial Species			
Cecropis daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area	In feature area
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area	In feature area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species	[Resource Information]		
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area	In feature area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area	In buffer area only
Reptile			
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Lake Woods Wetlands	Conservation Covenant	NT	In buffer area only
Longreach Waterhole	Conservation Covenant	NT	In buffer area only

EPBC Act Referrals					[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status	
Sturt Plateau Pipeline	2024/10027		Completed	In buffer area only	

Not controlled action					
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area	

Geological and Bioregional Assessments			[Resource Information]
Name	State	Website	Buffer Status
Beetaloo GBA region	NT	GBA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
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- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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Department of Climate Change, Energy, the Environment and Water

GPO Box 3090

Canberra ACT 2601 Australia

+61 2 6274 1111

APPENDIX C THREATENED SPECIES 'LIKELIHOOD OF OCCURRENCE' ASSESSMENT

Species name	Status		Species background information	Likelihood of occurrence within study area
	Cth	NT		
BIRDS				
Red Goshawk <i>Erythrotriorchis radiatus</i>	EN	VU	Distribution: Solitary and secretive hawk that is sparsely distributed across much of northern Australia. Within this range, generally confined to taller forests characteristic of higher rainfall coastal and sub-coastal areas (Debus 1998), but there are some isolated records of wandering birds from central Australia (DOE 2022). Habitat: Prefers tall, open Eucalypt forest and riparian areas. Nests in large trees, frequently the tallest and most massive in a tall stand, nest trees are invariably within 1 km of permanent water (Debus & Czechura 1988; Aumann & Baker-Gabb 1991). Rarely breeds in areas with fragmented native vegetation (Aumann & Baker-Gabb 1991; Czechura 2001). Large home range of up to 200 km² (Czechura & Hobson 2000). NT Atlas records: 2 Pre-2000 (both undated records) / Nil Post-2000 EPBC PMST: KNOWN TO OCCUR in feature area.	LOW (Blocks A, B, C, D) - Study area is outside species' known distribution. - If present in study area, likely to be a vagrant rather than resident or nest site. - The study area does not support preferred breeding or foraging habitat.
			Aumann, T. and Baker-Gabb, D. (1991). <i>A Management Plan for the Red Goshawk</i>. RAOU Report 75, Royal Australasian Ornithologists Union, Melbourne. Czechura G.V. and Hobson R.G. (2000). <i>The Red Goshawk Erythrotriorchis radiatus in northern Queensland: status and distribution</i>. Report to Queensland Parks and Wildlife Service. Czechura G.V. (2001). <i>The status and distribution of the Red Goshawk Erythrotriorchis radiatus on Cape York Peninsula, Queensland</i>. Unpublished report to Birds Australia. Debus, S. and Czechura, G. (1988). Field identification of the Red Goshawk <i>Erythrotriorchis radiatus</i>. <i>Australian Bird Watcher</i>, Vol. 12, pp. 154-159. Debus, S. (1998). <i>The Birds of Prey of Australia</i>. Oxford University Press, Melbourne. DOE (2022). <i>Erythrotriorchis radiatus</i> in Species Profile and Threats Database, Department of the Environment (DOE), Canberra. Available at: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=942	
Gouldian Finch <i>Erythrura gouldiae</i>	EN	VU	Distribution: In the NT, most known breeding populations occur in the Top End. Non-breeding birds disperse widely (Garnett et al. 2011), greatly increasing the possible range of this species. Habitat: Prefers areas with an adequate supply of seed from annual and perennial grasses (especially <i>Sorghum</i>), a nearby source of water and (in the breeding season) unburnt, hollow-bearing Eucalypt trees (<i>E. tintinnans</i>, <i>E. brevifolia</i> and <i>E. leucophloia</i>) (Tidemann 1996; O'Malley 2006). NT Atlas records: 3 Pre-2000 (includes 2 undated records) / 2 Post-2000 EPBC PMST: LIKELY TO OCCUR in feature area	LOW (Blocks A, B, C, D) - Study area is not considered to support suitable nesting habitat for the species, as such, unlikely the species will be present. - SREBA species distribution modelling indicates low probability of occurrence (Young et al. 2022).
			Garnett, S.T., Szabo, J.K. and Dutson, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. CSIRO Publishing. Collingwood, Australia. O'Malley, C. (2006). <i>National Recovery Plan for the Gouldian Finch (Erythrura gouldiae)</i>. WWF-Australia, Sydney and Parks and Wildlife NT, DNRETA, NT Government, Palmerston. Tidemann, S.C. (1996). Causes of the decline of the Gouldian Finch <i>Erythrura gouldiae</i>. <i>Biological Conservation International</i>, Vol. 6, pp. 49-61. Young L, Patykowski J, Leiper I, Nano C, Fisher A, Gillespie G, Barnett G, Buckley K, Hanrahan N, McDonald P, Miller A, Ribot R, Ruykys L, Stewart A, Zimny A (2022). <i>Terrestrial Ecosystems Baseline Report: Strategic Regional Environmental and Baseline Assessment for the Beetaloo Sub-basin</i>. DEPWS Technical Report 36/2022. Flora and Fauna Division, Northern Territory Department of Environment, Parks and Water Security, Darwin.	

Species name	Status		Species background information	Likelihood of occurrence within study area
	Cth	NT		
Grey Falcon <i>Falco hypoleucos</i>	VU	VU	Distribution: Sparse through much of the arid and semi-arid regions of Australia. In the NT, most records are from the southern half (DEPWS 2021). The northernmost record of (known) breeding occurs near Daly Waters (Schoenjahn 2013). Habitat: Occurs in lightly-timbered lowland plains, particularly Acacia shrublands that are crossed by tree-lined water courses (DoE 2020). Has been observed hunting in treeless areas and frequents grassland and open woodland (Schoenjahn 2018). They feed almost exclusively on birds such as doves, pigeons, small parrots and cockatoos, and finches (Schoenjahn 2013). As such, habitat that produce high numbers of bird prey are attractive for Grey Falcon. Nesting is usually in the tallest trees along watercourses, particularly River Red Gum (<i>Eucalyptus camaldulensis</i>) and Coolibah (<i>Eucalyptus coolabah</i>), and telecom towers (Falkenberg 2011). NT Atlas records: 23 Pre-2000 (includes 21 undated records) / Nil Post-2000 EPBC PMST: KNOWN TO OCCUR in feature area.	LOW (Blocks A, B, C, D) - Single records in Block A and Block C (unknown dates; as such, records are assumed as old because recent records typically require date to be included in attribute data). - The most recent record in the surrounding region is from 1991. - Study area occurs within species' breeding distribution; however, a review of vegetation types and aerial imagery within the study area indicates it is unlikely that preferred nesting habitat is present due to the absence of major watercourses or other alluvial habitat types that can support tall emergent tree species. As such, absence of nesting habitat reduces likelihood of occurrence of the species. - General foraging habitat is present within the study area (and widespread in surrounding region); however, there are no habitat types that are expected to provide abundance / aggregation of potential prey species. - As such, study area may be occasionally used for foraging / hunting (by an individual or pair).
			DoE (2020). Consultation Document on Listing Eligibility and Conservation Actions – Falco hypoleucos (Grey Falcon). https://www.environment.gov.au/system/files/consultations/ad34afee-a901-4c94-8e71-654e9f15f29c/files/consultation-document-falco-hypoleucos.pdf Falkenberg, I. D. 2011. Aspects of the ecology of the Grey Falcon Falco hypoleucos in the South Australian arid zone. Corella 35: 23–28. Schoenjahn, J. (2013). A hot environment and one type of prey: investigating why the Grey Falcon (Falco hypoleucos) is Australia's rarest falcon, <i>Emu</i>, Vol. 113, pp. 19-25. Schoenjahn, J. (2018). Adaptations of the rare endemic Grey Falcon Falco hypoleucos that enable its permanent residence in the arid zone of Australia. PhD Thesis. University of Queensland DEPWS (2021) <i>Threatened Species of the Northern Territory - Grey Falcon - Falco hypoleucos</i>. Northern Territory Department of Environment, Parks and Water Security (DEPWS). [online] Available at: https://nt.gov.au/media/docs/environment/animals/threatened-animals/current/grey-falcon.pdf	
Crested Shrike-tit (northern subspecies) <i>Falcunculus frontatus whitei</i>	VU	NT	Distribution: In the NT, recorded in very low densities in many isolated sub-populations (Garnett & Crowley 2000) between north-east Arnhem Land and semi-arid Victoria River District. Scarcity of records suggests that populations are at very low density (Woinarski 2004). Not known to have disappeared from any area where recorded historically (TSSC 2016). Habitat: Recorded in eight different woodland types in northern Australia, mainly those dominated by <i>Eucalyptus miniata</i>, <i>E. tetrodonta</i> or <i>C. bleeseri</i> (DSEWPac 2013). Nests have been found in the canopy of <i>E. tectifera</i>, <i>C. grandifolia</i> and <i>C. latifolia</i> at >12 m above the ground in open woodland (Ward et al. 2009).	LOW (Blocks A, B, C, D) - Study area is outside species' known distribution. - SREBA species distribution modelling indicates low probability of occurrence (Young et al. 2022). - Vegetation types typically used by the species are not present within the study area.

Species name	Status		Species background information	Likelihood of occurrence within study area
	Cth	NT		
			NT Atlas records: Nil Pre-2000 / 1 Post-2000 EPBC PMST: KNOWN TO OCCUR in buffer area only.	No records within or adjacent to the study area.
			DSEWPac (2013). <i>Falcunculus frontatus whitei</i> in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. [online] Available from: http://www.environment.gov.au/sprat. Garnett, S.T. and Crowley, G.M. (2000). <i>The Action Plan for Australian Birds 2000</i>. Environment Australia and Birds Australia, Canberra, ACT. TSSC (2016). <i>Approved Conservation Advice for Falcunculus frontatus whitei - crested shrike-tit (northern)</i>. Canberra: Department of the Environment Threatened Species Scientific Committee(TSSC). In effect under the EPBC Act from 02-May-2016. Available at: http://www.environment.gov.au/biodiversity/threatened/species/pubs/26013-conservation-advice-05052016.pdf [Accessed 1 May 2018]. Ward, S.J., Berghout, M. & Baker, B. (2009). Notes on the form and habitat of nests of the Northern Shrike-tit. <i>Northern Territory Naturalist</i>, Vol. 21, pp. 54-60. Woinarski, J.C.Z. (2004). <i>National multi-species Recovery Plan for the Partridge Pigeon [eastern subspecies] Geophaps smithii smithii; crested shrike-tit [northern (sub)-species] Falcunculus (frontatus) whitei; masked owl [north Australian mainland subspecies] Tyto novaehollandiae kimberli; and masked owl [Tiwi Islands subspecies] Tyto novaehollandiae melvillensis, 2004-2008</i>. NT Department of Infrastructure Planning and Environment, Darwin. Young L, Patykowski J, Leiper I, Nano C, Fisher A, Gillespie G, Barnett G, Buckley K, Hanrahan N, McDonald P, Miller A, Ribot R, Ruykys L, Stewart A, Zimny A (2022). Terrestrial Ecosystems Baseline Report: Strategic Regional Environmental and Baseline Assessment for the Beetaloo Sub-basin. DEPWS Technical Report 36/2022. Flora and Fauna Division, Northern Territory Department of Environment, Parks and Water Security, Darwin.	
Painted Honeyeater <i>Grantiella picta</i>	VU	VU	Distribution: Across eastern and northern parts of the country – but nowhere very numerous (DEPWS 2021). Many birds move after breeding to semi-arid regions such as north-eastern SA, central and western Qld, and central NT (TSSC 2015). Few NT records – most from the Barkly Tablelands – but no evidence of a breeding population in the NT, and the records are likely irregular visitors from south-eastern Australia (DEPWS 2021). Habitat: Acacia and Eucalyptus-dominated woodlands and open forest, preferring habitats with more mature trees that host more mistletoe. Breeding times and seasonal movements (south to north) likely governed by the fruiting of mistletoe (Garnett et al. 2011). NT Atlas records: 3 Pre-2000 (all undated records) / 2 Post-2000 EPBC PMST: KNOWN TO OCCUR in feature area.	LOW (Blocks A, B, C, D) - The species is occasionally observed in the region, with records at Three Ways (2011), Tennant Creek Wastewater Treatment Plant (2016) and near Newcastle Waters homestead (2000). - Considered an irregular visitor in the NT. - Considered unlikely that the study area supports critical breeding habitat for the species.
			Garnett, S.T., Szabo, J.K. and Dutson, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. CSIRO Publishing, Collingwood, Australia. Threatened Species Scientific Committee (TSSC) (2015). <i>Approved Conservation Advice for Grantiella picta (Painted Honeyeater)</i>. Canberra: Department of the Environment. Available at: http://www.environment.gov.au/biodiversity/threatened/species/pubs/470-conservation-advice.pdf [Accessed 22 April 2024]. DEPWS (2021). <i>Threatened Species of the Northern Territory – Painted Honeyeater - Grantiella picta</i>. Northern Territory Department of Environment, Parks and Water Security (DEPWS). [online] Available at: https://nt.gov.au/media/docs/environment/animals/threatened-animals/current/painted-honeyeater.pdf	
Night Parrot <i>Pezoporus occidentalis</i>	EN	EN	Distribution: Extremely sparsely distributed through central arid regions. In the NT sightings were made up to 1923 in the Alice Springs region (Whitlock 1924). Species was presumed extinct until recently rediscovered in western Qld and north-western WA. Habitat: Flat spinifex (<i>Triodia</i> spp.) grasslands in stony or sandy environments; and samphire and chenopod shrublands – including genera such as <i>Atriplex</i>, <i>Bassia</i> and <i>Maireana</i> – on floodplains and claypans, and on the margins of salt lakes, creeks or other sources of water (from a variety of sources cited in DoE 2017).	LOW (Blocks A, B, C, D) - No records within 50 km of study area. - Available datasets indicate that spinifex grasslands are present within the study area. However, fire history in the area indicates that the majority of the study area has burnt at least 3 times in the past 20 years.

Species name	Status		Species background information	Likelihood of occurrence within study area
	Cth	NT		
			NT Atlas records: None EPBC PMST: MAY OCCUR in buffer area only	Consequently, it is unlikely that suitable habitat for the species is present (as they require long unburnt patches of spinifex). Additionally, the key spinifex species (Bull Spinifex <i>Triodia longiceps</i>) is not known to occur within the study area.
Department of the Environment (2017). <i>Pezoporos occidentalis</i> . Species Profile and Threats Database. Department of the Environment, Canberra. [online] Available at: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=59350 [Accessed 24 September 2024] Whitlock, F. (1924). Journey to central Australia in search of the night parrot. <i>Emu</i> , Vol. 23, pp. 248-281.				
Princess Parrot <i>Polytelis alexandrae</i>	VU	VU	Distribution: Confined to arid regions of WA, the NT and SA (Barrett et al. 2003; Blakers et al. 1984; Higgins 1999). Highly nomadic and, as noted in DoE (2016), 'an irregular visitor (sometimes at intervals of more than 20 years) to most sites in its range and its movements are largely unknown.' Habitat: Usually occurs in swales between dunes and occasional on dune slopes and crests that support shrubs typically Eremophila, Grevillea, Hakea and scattered trees (DEPWS 2021). Use hollows in large trees for breeding, in particular Marble Gum, River Red Gum and Desert Oak (DEPWS 2021). NT Atlas records: 30 Pre-2000 (28 undated records) / Nil Post-2000 EPBC PMST: MAY OCCUR in buffer area only	LOW (Blocks A, B, C, D) - Preferred habitat for nesting or feeding is not present within the study area. - There are no recent records in the region. - Species is highly nomadic and could occasionally pass through the study area as a vagrant; but is not expected to specifically utilise (or depend on) habitat in the area.
Barrett, G. Silcocks, A. Barry, S. Cunningham, R. and Poulter, R. (2003). <i>The New Atlas of Australian Birds</i> , Birds Australia, Melbourne, Victoria. Blakers, M. Davies S.J.J.F. and Reilly P.N. (1984). <i>The Atlas of Australian Birds</i> . Melbourne, Victoria: Melbourne University Press. Britton, P.L. (1992). The Queensland Ornithological Society Bird Report, <i>Sunbird</i> , 22:51-83. Department of the Environment (2017). <i>Polytelis alexandrae</i> . Species Profile and Threats Database. Department of the Environment, Canberra. [online] Available at: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=758 [Accessed 1 May 2018]. Higgins, P.J. (ed.) (1999). <i>Handbook of Australian, New Zealand and Antarctic Birds</i> . Volume 4: Parrots to Dollarbird, Oxford University Press, Melbourne, Victoria. DEPWS (2021). <i>Threatened Species of the Northern Territory - Princess Parrot - Polytelis alexandrae</i> . Northern Territory Department of Environment, Parks and Water Security (DEPWS). [online] Available at: https://nt.gov.au/media/docs/environment/animals/threatened-animals/current/princess-parrot.pdf				
Sharp-tailed Sandpiper <i>Calidris acuminata</i>	VU MIG	-	Distribution: A summer migrant from the northern hemisphere; some over-winter in Australia. In the NT, mostly occur in the north coastal regions. Widely but sparsely scattered inland records occur south to northern Tanami Desert, and in south NT, from Alice Springs, north to Napabie Lakes and south to Uluru National Park (Higgins & Davies 1996). Habitat: Prefer muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. Also occur in saltworks and sewage farms, as well as flooded paddocks, sedgeland and other ephemeral wetlands, but leave when they dry. Occur in intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and also swamps and creeks lined with mangroves (Higgins & Davies 1996). NT Atlas records: 17 Pre-2000 (12 undated records) / 7 Post-2000 EPBC PMST: LIKELY TO OCCUR within feature area	LOW (Blocks A, B, C, D) - No records within the study area. - Several records to east of study area associated with wetland habitats. - Preferred habitat does not occur within the study area. - Only expected to be observed as a flyover.

Species name	Status		Species background information	Likelihood of occurrence within study area
	Cth	NT		
			Higgins, P.J. & S.J.J.F. Davies, eds (1996). <i>Handbook of Australian, New Zealand and Antarctic Birds. Volume Three - Snipe to Pigeons</i> . Melbourne, Victoria: Oxford University Press.	
Curlew Sandpiper <i>Calidris ferruginea</i>	CR MIG	CR	Distribution: A summer migrant from the northern hemisphere; some over-winter in Australia. Mostly widespread around the northern Australian coast, less common in the south, with only a few inland records (Garnett et al. 2011), associated with wetlands or waterbodies. Habitat: Mostly occurs on coasts and estuaries, less frequently inland freshwater wetlands (Geering et al. 2007). NT Atlas records: None EPBC PMST: MAY OCCUR within feature area	LOW (Blocks A, B, C, D) - No records in the region, only one previous record from Lake Woods (1993). As such, Lake Woods is considered as a suitable/potential stopover location for the species. - Preferred habitat does not occur within the study area. - Only expected to be observed as a flyover.
			Geering, A., Agnew, L. and Harding, S. (2007). <i>Shorebirds of Australia</i> . CSIRO Publishing, Collingwood, Australia. Garnett, S.T., Szabo, J.K. and Dutson, G. (2011). <i>The Action Plan for Australian Birds 2010</i> . CSIRO Publishing, Collingwood, Australia.	
Common Greenshank <i>Tringa nebularia</i>	EN MIG	LC	Distribution: A summer migrant from the northern hemisphere. Sparsely scattered through most of the NT, including occasional records in the Tanami Desert and records from Birrindudu Waterhole in the north-east to Lake Woods, Lake Sylvester and the Barkly Tableland in central NT (Higgins & Davies 1996). Habitat: Found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. Use both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats. Will also use artificial wetlands, including sewage farms and saltworks dams, inundated rice crops and bores. NT Atlas records: 7 Pre-2000 (including 4 undated records) / 5 Post-2000 EPBC PMST: LIKELY TO OCCUR within buffer area only	LOW (Blocks A, B, C, D) - Several records to east of study area associated with wetland habitats. - Preferred habitat does not occur within the study area. - Only expected to be observed as a flyover.
			Higgins, P.J. & S.J.J.F. Davies, eds (1996). <i>Handbook of Australian, New Zealand and Antarctic Birds. Volume Three - Snipe to Pigeons</i> . Melbourne, Victoria: Oxford University Press.	
Masked Owl (northern subspecies) <i>Tyto novaehollandiae kimberli</i>	VU	VU	Distribution: Poorly known, with few records from across a broad range in northern Australia. In the NT, records from the Top End, Kakadu, Coburg Peninsula (majority of records) and south-west Gulf country (DEPWS 2021). *Groote Eylandt Habitat: Mainly in <i>Eucalyptus</i> tall open forests (especially those dominated by <i>Eucalyptus miniata</i> and <i>E. tetradonta</i>), but also roosts in monsoon rainforests and forages in more open vegetation types, including grasslands (DEPWS 2021). Usually nests in tree hollows, within patches of closed forest (Garnett et al. 2011). Little else known about the subspecies, but the species in general is resident in pairs within a territory up to 3,000 hectares (Debus 2009). Nest in large hollows with an entrance more than 20 cm wide and that is greater than 10 m above the ground (Debus 2009). Breeding poorly known, but thought to occur between March and October (DEWHA 2010). NT Atlas records: None EPBC PMST: MAY OCCUR within feature area	NONE (Blocks A, B, C, D) - No records within 50 km. - The study area falls outside of the species' currently known distribution. - Preferred nesting habitat does not occur within study area.
			Garnett, S.T., Szabo, J.K. and Dutson, G. (2011). <i>The Action Plan for Australian Birds 2010</i> . CSIRO Publishing. Collingwood, Australia. Debus, S.J.S. (2009) <i>The owls of australia: A field guide to australian night birds</i> . Canterbury, N.S.W.: Envirobook.	

Species name	Status		Species background information	Likelihood of occurrence within study area
	Cth	NT		
	DEPWS (2021). <i>Threatened Species of the Northern Territory - Masked Owl (north Australian mainland subspecies) - Tyto novaehollandiae kimberli</i> . Northern Territory Department of Environment, Parks and Water Security (DEPWS). [online] Available at: https://nt.gov.au/_media/docs/environment/animals/threatened-animals/current/masked-owl-northern-mainland.pdf			
	Department of the Environment, Water, Heritage and the Arts (DEWHA) (2010). Survey Guidelines for Australia's Threatened Birds. EPBC Act survey guidelines 6.2. Canberra, ACT: DEWHA. Available from: http://www.environment.gov.au/epbc/publications/threatened-birds.html . [Accessed 29 September 2024]			
Australian Painted Snipe <i>Rostratula australis</i>	EN	EN	Distribution: Nomadic and scattered across Australia with no predictable occurrence (Rogers 2001), but could occur at any wetland or inundated grassland across its distribution, including nearly all of the NT and Qld (Garnett et al. 2011).	LOW (Blocks A, B, C, D) - No records within the study area. - Three historic records in the surrounding region, all associated with wetland habitats. - Preferred habitat for the species does not occur within the study area.
			Habitat: Fringes of permanent and temporary wetlands, swamps and inundated grasslands (DLPE 2025).	
			NT Atlas records: 3 Pre-2000 (including 2 undated records) / Nil Post-2000	
			EPBC PMST: MAY OCCUR within feature area	
Garnett, S.T., Szabo, J.K. and Dutson, G. (2011). <i>The Action Plan for Australian Birds 2010</i> . CSIRO Publishing. Collingwood, Australia.				
Rogers, D. (2001). Painted Snipe. <i>Wingspan</i> , Vol. 11 (No. 4), pp. 6-7.				
DLPE (2025). <i>Threatened Species of the Northern Territory - Australian painted snipe - Rostratula australis</i> . Northern Territory Department of Lands, Planning and the Environment (DLPE). [online] Available at: https://nt.gov.au/_media/docs/environment/animals/threatened-animals/current/australian-painted-snipe.pdf				
MAMMALS				
Northern Quoll <i>Dasyurus hallucatus</i>	EN	CR	Distribution: Historically occurred in the NT from Borroloola in the south-east as far west as the NT/WA border (Woinarski et al. 2007), extending into the Kimberley and Pilbara regions of WA. Dramatic range contraction and population crash associated with Cane Toad invasion. Now occurs across northern Australia in five regional populations – including the Top End in the NT.	NONE (Blocks A, B, C, D) - The species is not known to occur in the region (historic records only). - Suitable habitat for the species does not occur within the study area.
			Habitat: Can occupy a wide range of habitats, but since the arrival of Cane Toads, the species is generally restricted to rocky upland areas with numerous crevices and rock piles (Van Dam et al. 2002). Prime habitat in the NT consists of rocky sandstone escarpments and outliers (Braithwaite & Griffiths 1994).	
			NT Atlas records: 3 Pre-2000 (all undated records) / Nil Post-2000	
			EPBC PMST: MAY OCCUR in buffer area only	
Braithwaite, R.W. and Griffiths, A.D. (1994). Demographic variation and range contraction in the Northern Quoll, <i>Dasyurus hallucatus</i> (Marsupialia: Dasyuridae). <i>Wildlife Research</i> , Vol. 21, pp. 203-218.				
Van Dam, R.A., Walden, D.J. and Begg, G.W. (2002). <i>A preliminary risk assessment of cane toads in Kakadu National Park</i> . Supervising Scientist Report 164, Darwin, Northern Territory.				
Woinarski, J.C.Z., Rankmore, B.R., Fisher, A. and Milne, D. (2007). <i>The natural occurrence of northern quolls Dasyurus hallucatus on islands of the Northern Territory: assessment of refuges from the threat posed by cane toads Bufo marinus</i> . Report to Natural Heritage Trust.				
Greater Bilby <i>Macrotis lagotis</i>	VU	VU	Distribution: Historically widespread in arid Australia. Currently confined to arid WA, the Tanami Desert in the NT and south-western Qld (Woinarski et al. 2014).	HIGH (Blocks A, B, D) MOD (Block C) - Has been recently recorded within the study area as part of SREBA surveys (Young et al 2022). - Suitable habitat is present within all blocks; however Block C is considered less
			Habitat: In the NT, can occur in a relatively wide range of habitats – including stony uplands, lateritic areas, hummock grassland, sandplains, mulga scrub and woodlands, drainage depressions and palaeo-drainage systems (Southgate 1990). Vegetation within these areas predominantly consists of spinifex shrublands and open woodlands. Typical habitat consists of sandy soils dominated by hummock grasslands predominantly of three species of	

Species name	Status		Species background information	Likelihood of occurrence within study area
	Cth	NT		
			spinifex – <i>Triodia basedowii</i>, <i>T. pungens</i> and <i>T. schinzii</i>). Surveys in the Tanami Desert indicate spinifex-dominated laterite rises, and drainage lines are occupied more frequently than sand plains and dune fields (Southgate et al. 2018; Southgate et al. 2005). NT Atlas records: 12 Pre-2000 / 88 Post-2000 EPBC PMST: KNOWN TO OCCUR in feature area	suitable because vegetation data indicates low densities of preferred food plants. SREBA species distribution modelling indicates moderate to high probability of occurrence in some areas (Young et al. 2022). With slightly lower probability of occurrence in Block A and Block C.
			Johnson, K. (2008). Bilby <i>Macrotis lagotis</i>. In: Van Dyck, S. and Strahan, R. (eds.). <i>Mammals of Australia</i>. Third Edition. Reed New Holland, Queensland Government, Queensland Museum: pp. 191-193. Southgate, R. (1990). Habitat and diet of the greater bilby <i>Macrotis lagotis</i> Reid (Marsupalia: Peramelidae). In: Seebeck et al. (eds.). <i>Bandicoots and Bilbies</i>. Surrey Beatty & Sons, Sydney, NSW. Southgate, R., Paltridge, R., Masters, P. and Nano, T. (2005). An evaluation of transect, plot and aerial survey techniques to monitor the spatial pattern and status of the bilby (<i>Macrotis lagotis</i>) in the Tanami Desert. <i>Wildlife Research</i>, Vol. 32, pg 43-52, CSIRO Publishing Southgate R, Dziminski MA, Paltridge R, Schubert A, and Gaikhorst G. (2018). Verifying bilby presence and the systematic sampling of wild populations using sign-based protocols – with notes on aerial and ground survey techniques and asserting absence. <i>Australian Mammalogy</i>. https://doi.org/10.1071/AM17028 CSIRO Publishing. Shine, R 1986, Food habit, habitats and reproductive biology of four sympatric species of Varanid lizards in tropical Australia, <i>Herpetologica</i>, 42(3):346-360. Woinarski, J., Burbidge, A. and Harrison, P. (2014). <i>The Action Plan for Australian Mammals 2012</i>. CSIRO Publishing: pp. 203-205. Young L, Patykowski J, Leiper I, Nano C, Fisher A, Gillespie G, Barnett G, Buckley K, Hanrahan N, McDonald P, Miller A, Ribot R, Ruykys L, Stewart A, Zimny A (2022). <i>Terrestrial Ecosystems Baseline Report: Strategic Regional Environmental and Baseline Assessment for the Beetaloo Sub-basin</i>. DEPWS Technical Report 36/2022. Flora and Fauna Division, Northern Territory Department of Environment, Parks and Water Security, Darwin.	
Northern Brushtail Possum <i>Trichosurus vulpecula arnhemensis</i>	VU	NT	Distribution: Occurs from the Gulf of Carpentaria, NT to the Kimberley, WA. Within its range, distribution is patchy (TSSC 2021). Recently, there have been broad-scale losses and reduction in extensive areas of the NT range (TSSC 2021). Habitat: In Northern Australia, mainly tall Eucalypt open forests with large, hollow-bearing trees, some mangrove communities, rainforests and semi-urban areas (TSSC 2001). Found in higher abundance when shrub density is high, particularly shrubs that bear large, fleshy fruits (Stobo-Wilson 2019, Kerle 1985, Friend et al 1985). NT Atlas records: Nil Pre-2000 / Nil Post-2000 EPBC PMST: LIKELY TO OCCUR in feature area	NONE (Blocks A, B, C, D) - The species is not known to occur in the region. - Historic records in the region only. In the Northern Territory, this species is now only known to occur in Top End.
			Friend G & Taylor J (1985) Habitat preferences of small mammals in tropical open-forest of the Northern Territory. <i>Australian Journal of Ecology</i> 10, 173-185. Kerle J (1985) Habitat preference and diet of the northern brushtail possum <i>Trichosurus arnhemensis</i> in the Alligator Rivers Region, N.T. <i>Proceedings of the Ecological Society of Australia</i> 13, 161-176. Stobo-Wilson A, Murphy B, & Cremona T (2019) Contrasting patterns of decline in two arboreal marsupials from Northern Australia. <i>Biodiversity Conservation</i> 28, 2951 Threatened Species Scientific Committee (2021). <i>Conservation Advice Trichosurus vulpecula arnhemensis Northern Brushtail Possum</i>. Canberra: Department of Agriculture, Water and the Environment.	
Common Brushtail Possum (Central Australian subspecies) <i>Trichosurus vulpecula vulpecula</i>	-	EN	Distribution: Occurs in isolated populations in southern NT. Most common in the southern NT within the MacDonal Ranges (TSSC, 2021). Formerly had a much more extensive distribution in the NT (TSSC, 2021). Habitat: Riverine habitat that is close to rocky outcrops and moist gullies within the ranges or rocky slopes (TSSC, 2021). Habitat occurs on various geological substrates but is characterised by a diverse association of fire-sensitive plant species (TSSC, 2021).	NONE (Blocks A, B, C, D) - No records within or adjacent to the study area. - Not known to currently occur in the wider region. - The study area does not support refugia habitat essential for this species.

Species name	Status		Species background information	Likelihood of occurrence within study area
	Cth	NT		
			NT Atlas records: 2 Post-2000 EPBC PMST: N/A	
	Threatened Species Scientific Committee (2021). Conservation Advice <i>Trichosurus vulpecula arnhemensis</i> Northern Brushtail Possum. Canberra: Department of Agriculture, Water and the Environment. Available from http://www.environment.gov.au/biodiversity/threatened/species/pubs/83091-conservation-advice-11052021.pdf			
Ghost Bat <i>Macroderma gigas</i>	VU	NT	Distribution: Geographically-disjunct colonies occur across Northern Australia (TSSC 2016). Distribution likely influenced by the availability of suitable caves and mines for roost sites (TSSC 2016). Habitat: Nocturnal, roosts in caves in tropical savanna woodlands and (TSSC 2016). Permanent roost sites are generally deep natural caves or disused mines (TSSC 2016). Move between a number of caves seasonally or as dictated by weather conditions, and require a range of cave sites (TSSC 2016). NT Atlas records: None EPBC PMST: MAY OCCUR in buffer area only	NONE (Blocks A, B, C, D) • Not known to occur in the region. • Not recorded in the southern NT since the early 1960's (Ward & Milne 2016) and is presumed to be regionally extinct. • The study area does not support refugia habitat essential for this species.
	Threatened Species Scientific Committee (2016). <i>Approved Conservation Advice for Macroderma gigas (ghost bat)</i> . Canberra: Department of the Environment. Available at: http://www.environment.gov.au/biodiversity/threatened/species/pubs/174-conservation-advice-05052016.pdf [Accessed 1 May 2018].			
Bare-rumped Sheath-tailed Bat <i>Saccolaimus saccolaimus nudiclunatus</i>	VU	NT	Distribution: In the NT, infrequently recorded and sparsely scattered across the Top End (DLPE 2025). Habitat: In the NT, specimens have been collected from Pandanus woodland fringing the sedgelands of the South Alligator River, and Eucalypt tall open forests (Friend & Braithwaite 1986; Churchill 1998). Most records occur within near-coastal habitats with one recent exception (Jasper Gorge) 150 km inland (Woinarski et al. 2014). Rests colonially in tree hollows (DLPE 2025). NT Atlas records: None EPBC PMST: MAY OCCUR in buffer area only	NONE (Blocks A, B, C, D) • Not known to occur in the region. • Only historic records in the wider region (more than 150 km to the north) • Vegetation types within and surrounding the study area are not known to support suitable roost habitat for the species.
	Churchill, S. (1998). <i>Australian Bats</i> . Reed New Holland, Sydney. DLPE (2025). <i>Threatened Species of the Northern Territory - Bare-rumped Sheath-tail Bat - Saccolaimus saccolaimus</i> . Northern Territory Department of Lands, Planning and Environment. [Available online] at: https://nt.gov.au/_media/docs/environment/animals/threatened-animals/current/bare-rumped-sheath-tailed-bat.pdf Friend, G.R. and Braithwaite, R.W. (1986). Bat fauna of Kakadu National Park, Northern Territory. <i>Australian Mammalogy</i> , Vol. 9, pp. 43-52. Woinarski, J., Burbidge, A. and Harrison, P. (2014). <i>The Action Plan for Australian Mammals 2012</i> . CSIRO Publishing: pp. 511-514.			
REPTILES				
Plains Death Adder <i>Acanthophis hawkei</i>	VU	VU	Distribution: Habitat mapping suggests the potential geographic range extends from western Qld, across the sub-coastal north of the NT to the north-eastern Kimberley of WA. Fragmented populations occur in the Mitchell Grass Downs of western Qld, the Barkly Tablelands on the NT/Qld border and east of Darwin (Fogg Dam) in the NT (TSSC 2012; Wuster et al. 2005). Susceptible to ingesting toxic Cane Toads (Phillips et al. 2009). Habitat: Cracking soil floodplains in the Top End and cracking black soil plains inland (DEPWS 2021, Webb et al. 2002). NT Atlas records: None EPBC PMST: KNOWN TO OCCUR within feature area	LOW (Blocks A, C) NONE (Blocks B, D) • No records within 50 km of the study area. • Suitable habitat only occurs in small areas within Blocks A and C (western edge of black soil plains). • Extensive areas of suitable habitat to west of study area.

Species name	Status		Species background information	Likelihood of occurrence within study area
	Cth	NT		
			Department of Environment, Parks and Water Security (DEPWS) (2021). <i>Threatened species of the Northern Territory – Plains death adder Acanthophis hawkei</i>. Northern Territory Department of Environment, Parks and Water Security. https://nt.gov.au/_data/assets/pdf_file/0014/206402/plains-death-adder.pdf Phillips, B.L., Greenlees, M.J., Brown, G.P. and Shine R (2010). Predator behaviour and morphology mediates the impact of an invasive species: cane toads and death adders in Australia. <i>Animal Conservation</i>, Vol. 13, pp. 53-59. Webb, J.K., Christian, K.A. and Fisher, P. (2002). Fast growth and early maturation in a viviparous sit-and-wait predator, the northern death adder (<i>Acanthophis praelongus</i>) from tropical Australia. <i>Journal of Herpetology</i>, Vol. 36, no. 3, pp. 505-509. Wuster, W., Dumbrell, A.J., Hay, C., Pook, C.E., Williams, D.J. and Fry, B.G. (2005). Snakes across the Strait: trans-Torresian phylogeographic relationships in three genera of Australasian snakes (Serpentes: Elapidae: <i>Acanthophis</i>, <i>Oxyuranus</i>, and <i>Pseudechis</i>). <i>Molecular Phylogenetics and Evolution</i>, Vol. 34, pp. 1-14. Threatened Species Scientific Committee (2015). <i>Approved Conservation Advice – Acanthophis hawkei – Plains Death Adder</i>. Canberra: Department of the Environment. [online] Available at: http://www.environment.gov.au/biodiversity/threatened/species/pubs/83821-conservation-advice.pdf [Accessed 23 September 2024].	
Northern Blue-tongued Skink <i>Tiliqua scincoides intermedia</i>	CR	DD	Distribution: Throughout the Top End, south to about Elliott (DCCEEW 2023). Cane Toads have caused significant declines across northern Australia (Jolly et al. 2023). Habitat: Occurs in many varied ecosystems and vegetation types, though tends to avoid closed-canopy forest (Jolly et al. 2023). Most – but not all – detections have occurred near seasonal or permanent water (DCCEEW 2023). Although wide ranging, individuals typically spend 95% of their time in small patches of dense vegetation that provide cool, shaded and damp conditions within an otherwise inhospitable landscape (DCCEEW 2023). NT Atlas records: 4 Pre-2000 (including 1 undated record) / 2 Post-2000 EPBC PMST: KNOWN TO OCCUR within feature area	MOD (Blocks A, B, C) LOW (Block D) - No records within the study area. - Scattered records in the surrounds. - If present within the study area, they are more likely to occur in wetter, moist areas or areas of dense vegetation – SREBA vegetation mapping this occurs within Blocks A, B and C; and does not occur within Block D.
			Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2023). <i>Conservation Advice for Tiliqua scincoides intermedia (northern blue-tongue skink)</i>. Australian Government Department of Climate Change, Energy, the Environment and Water. Available online: https://www.environment.gov.au/biodiversity/threatened/species/pubs/89838-conservation-advice-21122023.pdf Jolly, C., Schembri, B., Macdonald, S. (2023), <i>Field Guide to the Reptiles of the Northern Territory</i>. CSIRO Publishing, Collingwood, Victoria.	
Yellow-spotted (or Floodplain) Monitor <i>Varanus panoptes</i>	-	VU	Distribution: In the NT, recorded across most of the Top End and the Gulf Region (Christian 2004). Highly susceptible to Cane Toad poisoning (Ujvari & Madsen 2009) and has experienced significant declines as a result (Doody et al. 2009). Habitat: Broad range of habitats from coastal beaches to savannah woodlands (Christian 2004). Also common throughout floodplains grasslands and a variety of native woodlands (Ward et al. 2012). NT Atlas records: Nil Pre-2000 / 7 Post-2000 EPBC PMST: N/A. Not a federally listed threatened species.	MOD (Blocks A, B C) LOW (Block D) - This species is known to occur in the region; however, there are no records within the study area. - The study area is considered to support suitable habitat for the species where alluvial areas are present. - SREBA species distribution modelling indicates moderate to high probability of occurrence in Blocks A and C (Young et al. 2022). With low probability of occurrence in Block B and Block D.

Species name	Status		Species background information	Likelihood of occurrence within study area
	Cth	NT		
			Christian, K. (2004). <i>Varanus panoptes</i>. In: Pianka et al. (eds). <i>Varanoid lizards of the world</i>. Indiana University Press, Bloomington, Indianapolis. Doody, J.S., Green, B., Rhind, D., Castellano, C., Sims, R. and Robinson, T. (2009). Population-level declines in Australian predators caused by an invasive species. <i>Animal Conservation</i>, Vol. 12, pp. 46-53. Ujvari, B. & Madsen, T. (2009). Increased mortality of naïve varanid lizards after the invasion of non-native cane toads (<i>Bufo marinus</i>). <i>Herpetological Conservation and Biology</i>, Vol. 4, pp. 248-251. Ward, S., Woinarski, J., Griffiths, T. & McKay, L. (2012). <i>Threatened Species of the Northern Territory - Yellow Spotted Monitor, Northern Sand Goanna, Floodplain Monitor - Varanus panoptes</i>. Northern Territory Department of Environment and Natural Resources. [online] Available at: https://nt.gov.au/_data/assets/pdf_file/0006/206466/floodplain-monitor.pdf Young L, Patykowski J, Leiper I, Nano C, Fisher A, Gillespie G, Barnett G, Buckley K, Hanrahan N, McDonald P, Miller A, Ribot R, Ruykys L, Stewart A, Zimny A (2022). Terrestrial Ecosystems Baseline Report: Strategic Regional Environmental and Baseline Assessment for the Beetaloo Sub-basin. DEPWS Technical Report 36/2022. Flora and Fauna Division, Northern Territory Department of Environment, Parks and Water Security, Darwin.	
Mertens' Water Monitor <i>Varanus mertensi</i>	EN	VU	Distribution: In the NT, recorded across most of the Top End and Gulf region (DEPWS 2024). Susceptible to ingesting toxic Cane Toads resulting in reduced abundance (Griffiths & McKay 2007). Habitat: Semi-aquatic, occupying edges of coastal, freshwater watercourses and lagoons, but seldom seen far from water (Christian 2004). NT Atlas records: None EPBC PMST: MAY OCCUR within feature area	NONE (Blocks A, B, C, D) - Suitable habitat is not present within the study area. - There are no NT Atlas records within 50 km of the study area.
			Christian, K. (2004). <i>Varanus mertensi</i>. In: Pianka et al. (eds.). <i>Varanoid lizards of the world</i>. Indiana University Press, Bloomington, Indianapolis. DEPWS (2024). <i>Threatened Species of the Northern Territory - Mertens Water Monitor - Varanus mertensi</i>. Northern Territory Department of Environment, Parks and Water Security (DEPWS): https://nt.gov.au/_data/assets/pdf_file/0018/206460/mertens-water-monitor.pdf Griffiths, A.D. and McKay (2007). Cane toads reduce the abundance and site occupancy of Merten's water monitor (<i>Varanus mertensi</i>). <i>Wildlife Research</i>, Vol. 34, pp. 609-615.	
Mitchell's Water Monitor <i>Varanus mitchelli</i>	CR	VU	Distribution: Top End of the NT and Kimberley in WA (Schultz & Doody 2004). In the NT, recorded in most catchments flowing into the Timor Sea, Arafura Sea and the Gulf of Carpentaria (DEPWS 2024). Susceptible to ingesting toxic Cane Toads resulting in reduced abundance (Doody et al. 2009). Habitat: Semi-aquatic and often arboreal, inhabiting margins of freshwater watercourses, swamps and lagoons (Shine 1986). Saline and brackish habitats (i.e. mangrove) (Laive, A. da et al, 2021). NT Atlas records: None EPBC PMST: MAY OCCUR within feature area	NONE (Blocks A, B, C, D) - Suitable habitat is not present within the study area. - There are no NT Atlas records within 50 km of the study area.
			(DEPWS (2024). <i>Threatened Species of the Northern Territory - Mitchell's Water Monitor - Varanus mitchelli</i>. Northern Territory Department of Environment, Parks and Water Security (DEPWS): https://nt.gov.au/_data/assets/pdf_file/0019/206461/mitchells-water-monitor.pdf Doody, J.S., Green, B., Rhind, D., Castellano, C., Sims, R. and Robinson, T. (2009). Population-level declines in Australian predators caused by an invasive species. <i>Animal Conservation</i>, Vol. 12, pp. 46-53. Laive, de A., Schembri, B., & Jolly, C. J. (2021). Novel habitat associations and seasonality in threatened Mitchell's water monitors (<i>Varanus mitchelli</i>): Implications for conservation. <i>Austral Ecology</i>, 46, 871–875. Schultz, T. and Doody, S. (2004). <i>Varanus mitchelli</i>. In: Pianka et al. (eds.). <i>Varanoid lizards of the world</i>. Indiana University Press, Bloomington, Indianapolis. Shine, R. 1986. Food habits, habitats and reproductive biology of four sympatric species of varanid lizards in tropical Australia. <i>Herpetologica</i>, Vol. 42, pp. 346-360.	
Gulf Snapping Turtle	EN	LC	Distribution: Rivers in far eastern NT and far western Qld which discharge into the south of the Gulf of Carpentaria	NONE (Blocks A, B, C, D)

Species name	Status		Species background information	Likelihood of occurrence within study area
	Cth	NT		
<i>Eiseya lavarackorum</i>			(DCCEEW 2023). The species is unlikely to occur further west than the Roper River due to the Arnhem Land Plateau (Georges et al. 2021). Habitat: Large rivers and their associated overflow lagoons and oxbow lakes (DCCEEW 2023). Found in deeper permanent pools most often with muddy, sandy or rocky bottoms. Steep rocky gorges, and river reaches with intact riverbanks seem to be preferred habitats (Thomson et al. 1997). NT Atlas records: None EPBC PMST: MAY OCCUR within buffer area only	- Suitable habitat is not present within the study area. - There are no records within 50 km of the study area.
Department of the Climate Change, Energy, the Environment and Water (DCCEEW 2023). <i>Eiseya lavarackorum</i> - Gulf Snapping Turtle. Species Profile and Threats Database, Department of the Environment, Canberra. Available at: https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=67197 [Accessed 14 November 2025]. Georges, A., Wedd D and Dostine, P. (2021) Genetic analysis of species identity of turtles from the Roper River collected as part of the Beetaloo Basin Geological and Bioregional Assessment (GBA). Report to the Research Institute for the Environment and Livelihoods (RIEL), Charles Darwin University, in support of the Beetaloo GBA Program. Thomson, S., White, A. and Georges, A. (1997). Re-evaluation of <i>Emydura lavarackorum</i>: identification of a living fossil. <i>Memoirs of the Queensland Museum</i>, Vol. 42 (No. 1), pp. 327-336.				
FISH				
Freshwater or Largetooth Sawfish <i>Pristis pristis</i>	EN	VU	Distribution: In the NT, reported in Adelaide, Victoria, Daly, East and South Alligator, Goomadeer, Roper, McArthur, Wearyan and Robinson Rivers (TSSC 2014). May potentially occur in all large rivers of northern Australia from the Fitzroy River, WA, to the western side of Cape York Peninsula, Qld (DoE 2018). Habitat: Tropical marine and estuarine habitats, entering estuarine or fresh waters to breed during the wet season and moving into marine waters following the wet season (Peverell 2005). Of the four <i>Pristis</i> species reported to occur in Australia, is the one most often associated with freshwater, and has been recorded several hundred kilometres upstream (Thorburn et al. 2003). NT Atlas records: None EPBC PMST: MAY OCCUR within buffer area only	NONE (Blocks A, B, C, D) - Suitable habitat is not present within the study area. - There are no records within 50 km of the study area.
Department of the Environment (DoE) (2018). <i>Pristis pristis</i> in Species Profile and Threats Database, Department of the Environment, Canberra. http://www.environment.gov.au/sprat. [Accessed 1 May 2018]. Peverell, S.C. (2005). Distribution of sawfishes (Pristidae) in the Queensland Gulf of Carpentaria, Australia, with notes on their ecology. <i>Environmental Biology of Fishes</i>, Vol. 73, pp. 391-402. Threatened Species Scientific Committee (2014). Approved Conservation Advice - <i>Pristis pristis</i> (largetooth sawfish). Canberra: Department of the Environment. In effect under the EPBC Act from 11-April-2014. : http://www.environment.gov.au/biodiversity/threatened/species/pubs/60756-conservation-advice.pdf [Accessed 1 May 2018].				
FLORA				
Tassel Sedge <i>Carex fascicularis</i>	-	VU	Distribution: In the NT, confirmed specimens known from a single population located at Giles Yard Spring in the West MacDonnell Ranges (DEPWS 2021). One additional observation recorded in 2022 approximately 750 km north at Hayfield Station in Birdum (NTH 2024) has significantly expanded the potential range of the species in the NT. Habitat: Wet habitats such and swamps, stream banks, margins of lakes and dams (DEPWS 2021). Very little is known about the ecology of the NT population (DEPWS 2021). NT Atlas records: 0 Pre-2000 / 1 Post-2000 EPBC PMST: N/A. Not a federally listed threatened species.	NONE (Blocks A, B, C, D) - Only one record in the region. - Suitable habitat is not present within study area.

Species name	Status		Species background information	Likelihood of occurrence within study area
	Cth	NT		
			Department of Environment, Parks and Water Security (DEPWS). (2021). Threatened Species of the Northern Territory - Carex fascicularis. Northern Territory Department of Environment, Parks and Water Security https://nt.gov.au/__data/assets/pdf_file/0020/208424/carex-fascicularis.pdf Northern Territory Herbarium (NTH). (2024). Carex fascicularis factsheet. FloraNT - Northern Territory flora online. Department of Environment, Parks and Water Security. https://eflora.nt.gov.au/factsheet?id=1532	



EcOz Environmental Consultants

EcOz Pty Ltd.

ABN 81 143 989 039

Level 1, 70 Cavenagh St,
GPO Box 381,
Darwin NT 0801

T: +61 8 8981 1100
E: ecoz@ecoz.com.au



www.ecoz.com.au