



GRANTS LITHIUM PROJECT

Environmental Impact Statement

Appendix P

Ecological assessment report

Prepared by EcOz

October 2018



Ecological assessment report

Grants Project

Core Exploration



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1 INTRODUCTION

Core Exploration (Core) is proposing to develop and operate Grants Project (the Project) as an open cut lithium mine at a site on the Cox Peninsula, approximately 32 km west of Darwin. The Project is an open pit mine targeting pegmatite; a type of granite rock with large crystals. The pegmatite at the Grants prospect contains the lithium rich mineral, spodumene, which is used as feedstock in the production of lithium.

The project is being referred to the Northern Territory Environmental Protection Authority (NT EPA) under the *Environmental Assessment Act (Northern Territory)* through a Notice of Intent (NOI). EcOz Environmental Consultants (EcOz) was engaged to assess and report on the ecological values within the Project area to inform assessment of potential impacts from the project.

The scope of the ecological assessment was to:

- Survey and map vegetation communities within the Project area.
- Assess the suitability of habitats for threatened species that area likely to occur in the region.
- Identify existing threats to biodiversity.

2 METHODS

A desktop assessment was conducted to determine the likelihood of occurrence of species listed as threatened under the *Environmental Project and Biodiversity Conservation Act (EPBC Act)* and/or the *Territory Parks and Wildlife Conservation Act (TPWC Act)*. Eleven threatened species were determined to be have a high or medium likelihood of occurrence within the region where the Project area is located.

To further refine whether these species are likely to occur within the Project area, vegetation communities and ecological conditions were assessed through field surveys. Site-based work was undertaken by Senior Botanical Consultant David van den Hoek and Environmental Consultant Aiden Campbell, both from EcOz Environmental Consultants. Surveys were undertaken on 10 and 11 October 2017.

2.1 Vegetation assessment

The *Land Units of the Greater Darwin Region 1:25,000* datasets were used as a basis to select sites for vegetation assessment. Land units are areas of comparatively similar landform, soils and vegetation; and are useful for identifying sensitive vegetation types and categorising the habitats of most flora and vertebrate fauna species in the NT. Field studies were conducted to map vegetation and also collected information on land form and soil type. Although field assessment did not map land units, the vegetation communities largely correspond to the mapped land units. Data collected at survey sites was based on methods used by Brocklehurst et al. (2007).

Two levels of survey sites were undertaken (within a 20 x 20 m quadrat):

- Vegetation sites (comprehensive assessment) – provides a detailed description of the landform, vegetation and soil. The information collected was: landform, soil type (surface examination only), vegetation structure, vegetation description, dominant flora species within each stratum (including height range, average height and percent cover) and all other flora species.
- Check sites (rapid assessment) – used to quickly record habitat unit details. These sites are important reference points for post-field trip revision of final land unit boundaries. The information collected was: landform, soil type (surface examination only), vegetation structure, vegetation description and dominant flora species within each stratum.

At least one vegetation site was selected within each mapped land unit. These were complimented with the use of check sites. In total 16 sites were assessed within the Project area; ten vegetation sites and six check sites. Representative site photographs were taken at each survey site. All mapping and editing was performed using GIS software (ArcGIS 10.2) in ESRI shape file format.

2.2 Threatened species assessment

Vegetation assessment was the primary method of assessing the quality of habitat in the Project area for threatened species. Vegetation community (including both dominant and sub-dominant species), along with fire history, land form, weed presence and soil type, were used to provide the input to assessing habitat suitability.

Surveys were also conducted for *Cycas armstrongii* (listed as vulnerable under the *TWPC Act*). Where *Cycas sp.* were found on site, voucher samples were taken to determine whether the species was *Cycas armstrongii* or *Cycas maconochiei*.

3 RESULTS

3.1 Vegetation assessment

There were five vegetation communities mapped within the Project area. Brief descriptions and areas of each of these communities are documented in Table 3-1, along with the corresponding land units from the *Land Units of the Greater Darwin Region 1:25,000* dataset. Mapped vegetation communities are shown in Figure 3-1.

Vegetation within the Project area was predominately *Eucalyptus miniata*, *E. tetradonta* and *Corymbia bleeseri* woodland, with a sparse shrubland mid-storey over open tussock grassland (355 ha or 47.3% of the Project area). There were also large areas of open woodland of *Grevillea pteridifolia* and *Melaleuca nervosa*, with open shrub layer over open tussock grassland (281 ha or 37.4 % of the Project area).

Drainage lines with *Pandanus spiralis*, *Lophostemon lactifluus* and *Livistona humilis* isolated trees over tussock understorey comprised 97 ha (13% of project area).

Representative photos of each vegetation community are shown in Appendix A.

Table 3-1. Vegetation communities within the project area

Vegetation description	Corresponding land unit	Drainage	Soil	Area (ha)
Rises				
Open woodland of <i>Eucalyptus miniata</i> , <i>E. tetradonta</i> and <i>Corymbia bleeseri</i> over <i>Livistona humilis</i> , <i>Xanthostemon paradoxus</i> and <i>Erythrophleum</i> over open tussock grassland <i>Heteropogon triticeus</i> , <i>Sorghum intrans</i> and <i>Eriachne obtusa</i>	2a1	Nil to low level of seasonal waterlogging	Leptic rudosols	355
Drainage systems				
Low open woodland of <i>Grevillea pteridifolia</i> , <i>Melaleuca nervosa</i> +/- <i>Syzygium eucalyptoides</i> subsp. <i>Bleeseri</i> over open shrubland of <i>Petalostigma pubescens</i> , <i>Livistona humilis</i> , <i>Banksia dentata</i> over open tussock grassland of <i>Themeda triandra</i> , <i>Eriachne obtusa</i> , <i>Heteropogon triticeus</i> .	6b	Severe level of seasonal soil waterlogging or inundation for extended periods	Tenosolic Oxyaquic Hydrosol	281
Alluvial plains				
Low isolated trees of <i>Pandanus spiralis</i> , <i>Lophostemon lactifluus</i> , <i>Livistona humilis</i> over sparse shrubland of <i>Pandanus spiralis</i> , <i>Lophostemon lactifluus</i> , <i>Livistona humilis</i> over tussock grassland of <i>Sorghum stipoides</i> , <i>Eriocaulon spectabile</i> , <i>Melaleuca nervosa</i> .	5a	Severe level of seasonal soil waterlogging or inundation for extended periods	Chromosolic Redoxic Hydrosols	103
Woodland of <i>Eucalyptus alba</i> over a sparse shrubland of <i>Eucalyptus alba</i> , <i>Lophostemon lactifluus</i> , <i>Pandanus spiralis</i> over tussock grassland of <i>Sorghum plumosum</i> , <i>Germania grandifolia</i> , <i>Lophostemon lactifluus</i> .				
Open forest of <i>Leptospermum madidum</i> , <i>Melaleuca viridiflora</i> and <i>Lophostemon lactifluus</i> over open shrubland with <i>Cyclophyllum schultzei</i> , <i>Helicia australasica</i> , <i>Syzygium armstrongii</i> , over tussock grassland of <i>Fimbristylis</i> sp. and <i>Eriachne avenacea</i> .	7a	Severe level of seasonal soil waterlogging or inundation for extended periods	Chromosolic Redoxic Hydrosols	10

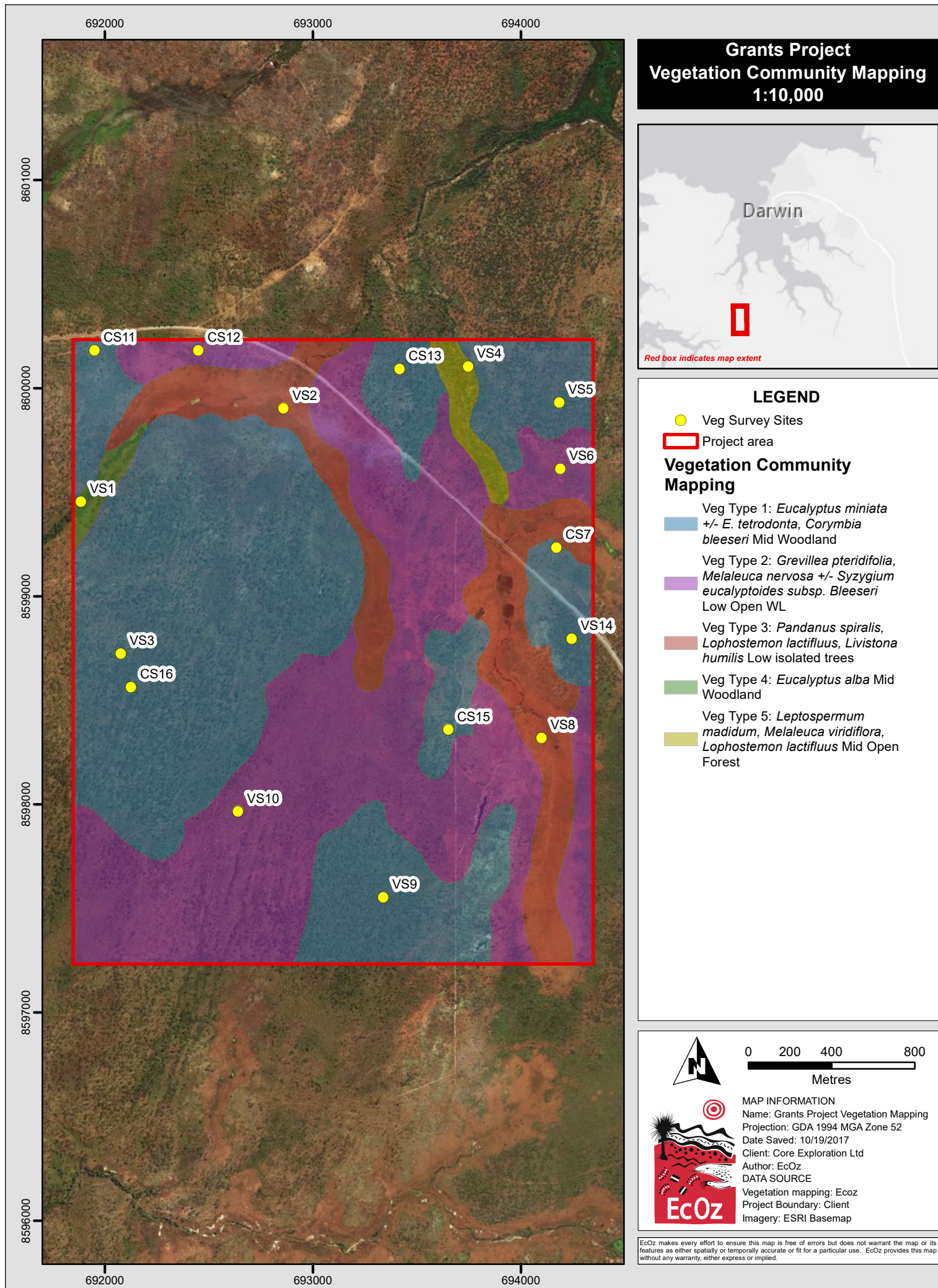


Figure 3-1. Map of ground-truthed vegetation communities within the project area

3.2 Habitat quality assessment

Two threatened fauna species were determined to have a high likelihood of occurrence from the desktop assessment (see Grants Project NOI); Black-footed Tree-rat and Partridge Pigeon. Habitat values within the Project area for these two species are assessed below. Additionally, two flora species were determined to have a medium likelihood of occurrence within the Project area from the desktop assessment; *Typhonium praetermissum* and *Stylidium ensatum*. Further assessment of habitat suitability has been made within this report for these two species.

3.2.1 Black-footed tree-rat

This species is largely restricted to mixed *Eucalyptus* open forest and woodland, or on dunes with *Casuarina* – seeming to prefer habitats that are not burnt annually, that have an understorey of predominantly perennial grasses and a sparse-to-moderate middle storey (Firth et al. 2006; Kemper & Firth 2008). Within the Project area, there are large areas of *Eucalyptus miniata* and *E. tetradonta* woodland which is potential habitat for Black-footed Tree-rat; particularly land unit 2a1.

The high fire frequency within the project area (between 87 % and 100 % of sites had recently been burnt) has reduced the suitability of habitat for the species. Frequent fire appears to have reduced the density of large hollow bearing trees, which provide shelter habitat for the species. There are areas where *Eucalyptus* trees are taller and larger; however, these are relatively small patches, interspersed by larger areas of frequently burnt vegetation. The *Eucalyptus* woodland vegetation communities contained low densities of *Pandanus* species which provide sheltering habitat during the day (Hill 2012). *Pandanus* sp. were present within the Project area, but mostly as isolated trees in the otherwise open grassland of the drainage systems – not considered core habitat for the Black-footed Tree-rat.

3.2.2 Partridge Pigeon

Partridge Pigeon nests in relatively dense ground cover, whereas it feeds in open areas that have typically been recently burnt. These areas are principally in lowland *Eucalyptus* forests and woodlands. There are large areas of *Eucalyptus* woodland habitat within the project area. Most of these areas contained sparse to open tussock grass understorey and between 87 % and 100 % (depending on vegetation type) were burnt within the last year (Figure 3-2). This indicates that the Project area could provide feeding habitat for the species; however, it is unlikely to support breeding habitat.



Figure 3-2. Photos showing typically occurring *Eucalyptus* woodlands with sparse understorey

3.2.3 *Typhonium praetermissum*

This species occurs in open woodland and favours relatively unshaded areas in red brown clay and shallow or gravelly lateritic soil (Cowie & Westaway 2012). Previous surveys in other areas have recorded the species in four land units; 3b, 3c, 2a1 and 1c (Green & Cuff 2016). Within the Project area, land unit 2a1 potentially provides suitable habitat for the species. The species is most likely to occur along the margin of land units where the eroding low rise of one land unit creates a gravelly surface adjacent to a low lying wetter area. This type of habitat was observed during the field surveys (Figure 3-3).



Figure 3-3. Photos of potential *Typhonium praetermissum* habitat within project area

3.2.4 *Stylidium ensatum*

Stylidium ensatum inhabits margins of drainage areas in damp heavy clay or peaty soil (Cowie & Westaway 2012b). These drainage margins are required to stay wet well into the dry season (Nick Cuff pers. comm 2017). Field surveys were undertaken during October, so the presence of mid dry season water (June-July) could not be determined. However, within the Project area, the broad drainage areas which experience more severe waterlogging for extended periods, could be expected to be the most suitable habitat. This corresponds to areas within land unit 5a, 6b and 7a on alluvial plains or drainage systems. These areas of potential habitat are shown in Figure 3-1 (veg type 2, veg type 3, veg type 4 and veg type 5).

3.2.5 *Cycas* sp.

Few cycads were observed within the Project area. Individual cycads were found predominately in areas of denser *Eucalyptus* woodland on low rises. Where present, multiple individuals were found.

Field observations indicated that the species was *Cycas maconochiei*, which was confirmed by identification of voucher specimens. This result is supported by genetic analysis of *Cycas* spp. within the region (Clugston & Nagalingum 2016).



Figure 3-4. Photos showing *Cycas maconochiei* within the project area

3.3 Biodiversity threats

This section summarises the existing conditions within the Project area that could act as threatening processes to biodiversity values.

3.3.1 Weeds

No listed weed species were observed within the Project area during field surveys. Two introduced flora species were observed along the access track from the Cox Peninsula road; Annual Mission Grass (*Cenchrus pedicellatus*) and Red Natal Grass (*Melinis repens*). Annual Mission Grass was also observed along the Cox Peninsula Road outside the Project area. No other introduced flora was detected within the project area.

3.3.2 Pests

Cane Toads (*Rhinella marina*) and Feral Cats (*Felis catus*) were observed during field surveys. Signs of Pig (*Sus scrofa*) were observed in drainage depression where there was likely to be water for the longest period.

3.3.3 Erosion

There was limited erosion present on site. Some erosion was present at waterholes along the ephemeral watercourses, which showed bank undercutting and minor gully erosion. The flat profile of the site and the relatively limited disturbance has not presented conditions which favour severe or large scale erosion.



Figure 3-5. Photos showing typical conditions at ephemeral watercourses within project area

4 DISCUSSION & CONCLUSIONS

The majority of the Project area consists of *Eucalyptus miniata* and *E. tetradonta* woodland and *Grevillea pteridifolia* and *Melaleuca nervosa* open woodland.

These vegetation communities are potential habitat for two fauna species – Black-footed Tree-rat and Partridge Pigeon: however, the condition of the habitat is considered sub-optimal. This reduced habitat suitability is due to few large old trees being present and low diversity of mid storey species (Black-footed Tree-rat) and a low density of ground cover at most locations (Partridge Pigeon).

The Project area also provides potential habitat for two flora species – *Typhonium praetermissum* and *Stylidium ensatum*. Surveys during October were not able to determine the presence of these species as individuals are only emergent during the late wet and early dry. Habitat assessment identified areas where *T. praetermissum* could occur. Further assessment of late wet – early dry season conditions within the broad drainage floors would be required to confirm the suitability of the area for *S. ensatum*.

5 REFERENCES

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APPENDIX A VEGETATION COMMUNITY DESCRIPTIONS

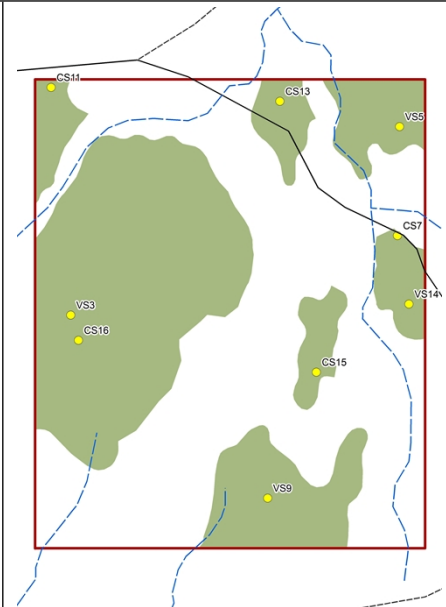
Community 1 – *Eucalyptus miniata* +/- *E. tetradonta*, *Corymbia bleeseri* Mid Woodland over *Livistona humilis*, *Xanthostemon paradoxus*, *Erythrophleum chlorostachys* Mid Sparse Shrubland over *Heteropogon triticeus*, *Sorghum intrans*, *Eriachne obtusa* Mid Open Tussock Grassland

Vegetation Description: *Eucalyptus miniata* +/- *Eucalyptus tetradonta*, *Corymbia bleeseri* Mid Woodland over *Livistona humilis*, *Xanthostemon paradoxus*, *Erythrophleum chlorostachys* Mid Sparse Shrubland over *Heteropogon triticeus*, *Sorghum intrans*, *Eriachne obtusa* Mid Open Tussock Grassland

Upper 1: Mid woodland dominated by *Eucalyptus miniata* (fq 100.0%), *Eucalyptus tetradonta* (fq 37.5%), *Corymbia bleeseri* (fq 37.5%) and *Erythrophleum chlorostachys* (fq 25.0%)

Mid 1: Mid sparse shrubland dominated by *Livistona humilis* (fq 100.0%), *Xanthostemon paradoxus* (fq 75.0%), *Erythrophleum chlorostachys* (fq 50.0%), *Corymbia bleeseri* (fq 12.5%), *Cycas maconochiei* (fq 12.5%) *Lophostemon lactifluus* (fq 12.5%) and *Syzygium eucalyptoides* subsp. *bleeseri* (fq 12.5%)

Ground 1: Mid open tussock grassland dominated by *Heteropogon triticeus* (fq 87.5%), *Sorghum intrans* (fq 75.0%), *Eriachne obtusa* (fq 37.5%), *Distichostemon hispidulus* (fq 25.0%), *Eucalyptus miniata* (fq 25.0%), *Petalostigma quadriloculare* (fq 25.0%), *Corymbia foelscheana* (fq 12.5%), *Grevillea pluricaulis* (fq 12.5%), *Lophostemon lactifluus* (fq 12.5%), *Sorghum plumosum* (fq 12.5%) and *Themeda triandra* (fq 12.5%)



No. of sites: 8

Full vegetation sites: (4) 3, 5, 9, 14

Check sites: (4) 7, 11, 13, 15

Fire impact: 87.5% of the vegetation sites were burnt

Other common species

Upper stratum (U1): None.

Mid stratum (M1): *Eucalyptus miniata* (fq 50.0%), *Acacia lamprocarpa* (fq 25.0%), *Gardenia megasperma* (fq 25.0%), *Buchanania obovata* (fq 12.5%), *Corymbia foelscheana* (fq 12.5%) and *Terminalia ferdinandiana* (fq 12.5%)

Ground stratum (G1): *Erythrophleum chlorostachys* (fq 37.5%), *Hibbertia dilatata* (fq 37.5%), *Persoonia falcata* (fq 37.5%), *Planchonia careya* (fq 25.0%), VS14-1 *Gardenia* (fq 25.0%), *Galactia megalophylla* (fq 25.0%), *Xanthostemon paradoxus* (fq 25.0%), *Brachychiton paradoxus* (fq 12.5%), *Clerodendrum floribundum* (fq 12.5%), *Eulalia mackinlayi* (fq 12.5%), *Helicteres darwinensis* (fq 12.5%), *Livistona humilis* (fq 12.5%), *Melaleuca nervosa* (fq 12.5%), *Mnesithea rottboelliioides* (fq 12.5%), *Syzygium eucalyptoides* subsp. *bleeseri* (fq 12.5%), *Sauropus glaucus* (fq 12.5%), *Euphorbia muelleri* (fq 12.5%), *Haemodorum parviflorum* (fq 12.5%) and *Hibbertia caudice* (fq 12.5%)

Land units – Greater Darwin 25K: 2a1 – Low rises and associated upper slopes

Soils: Leptic Rudosols

Total area of project area: 355 ha (47.3%)

Community 1 structural summary:

Strata	Modal growth form	Mean cover %	Mean height (m)
Upper U1	Tree	33.8 (15 – 70)	16.5 (16 – 18)
Mid M1	Shrub	9.4 (5 – 15)	7.4 (6 – 10)
Ground G1	Tussock grass	30.6 (10 – 55)	0.8 (0.5 – 1)

Note: Vegetation Community 1 is interspersed with small patches of Vegetation Community 2 (CS16 on map). These patches are too small to map at 1:25000 scale so have been included within the boundary of Vegetation Community 1.

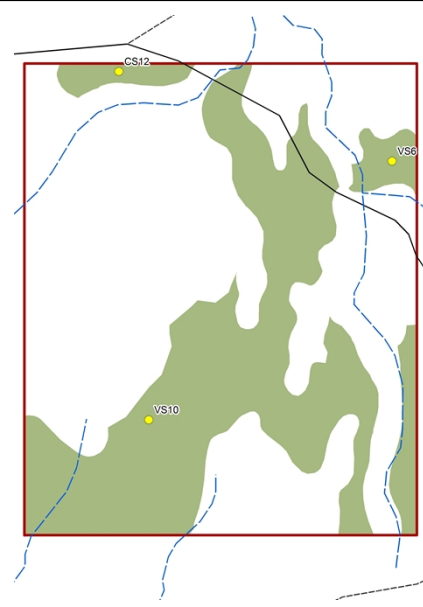
Community 2 – *Grevillea pteridifolia*, *Melaleuca nervosa* +/- *Syzygium eucalyptoides* subsp. *Bleeseri* Low Open Woodland over *Petalostigma pubescens*, *Livistona humilis*, *Banksia dentata* Mid Open Shrubland over *Themeda triandra*, *Eriachne obtusa*, *Heteropogon triticeus* Mid Open Tussock Grassland

Vegetation Description: *Grevillea pteridifolia*, *Melaleuca nervosa* +/- *Syzygium eucalyptoides* subsp. *Bleeseri* Low Open Woodland over *Petalostigma pubescens*, *Livistona humilis*, *Banksia dentata* Mid Open Shrubland over *Themeda triandra*, *Eriachne obtusa*, *Heteropogon triticeus* Mid Open Tussock Grassland

Upper 1: Low open woodland dominated by *Grevillea pteridifolia* (fq 75.0%), *Melaleuca nervosa* (fq 50.0%), *Syzygium eucalyptoides* subsp. *bleeseri* (fq 25.0%), *Corymbia confertiflora* (fq 25.0%), *Corymbia polycarpa* (fq 25.0%) and *Erythrophleum chlorostachys* (fq 25.0%)

Mid 1: Mid open shrubland dominated by *Petalostigma pubescens* (fq 75.0%), *Livistona humilis* (fq 50.0%), *Banksia dentata* (fq 50.0%), *Melaleuca viridiflora* (fq 50.0%), *Acacia latescens* (fq 25.0%) and *Xanthostemon paradoxus* (fq 25.0%)

Ground 1: Mid open tussock grassland dominated by *Themeda triandra* (fq 100.0%), *Eriachne obtusa* (fq 75.0%), *Heteropogon triticeus* (fq 75.0%), *Lophostemon lactifluus* (fq 50.0%), *Pandanus spiralis* (fq 25.0%), *Sorghum intrans* (fq 25.0%) and *Sorghum plumosum* (fq 25.0%)



No. of sites: 4

Full vegetation sites: (2) 6, 10

Check sites: (2) 12, 16

Fire impact: 100% of the vegetation sites were burnt

Other common species

Upper stratum (U1): None.

Mid stratum (M1): *Grevillea pteridifolia* (fq 50.0%), *Grevillea pteridifolia* (fq 25.0%), *Corymbia confertiflora* (fq 25.0%), *Corymbia polycarpa* (fq 25.0%), *Lophostemon lactifluus* (fq 25.0%), *Terminalia pterocarya* (fq 25.0%) and *Verticordia cunninghamii* (fq 25.0%)

Ground stratum (G1): *Melaleuca nervosa* (fq 50.0%), *Xyris complanata* (fq 25.0%), *Drosera petiolaris* (fq 25.0%), *Osbeckia australiana* (fq 25.0%), *Haemodorum parviflorum* (fq 25.0%), *Blumea integrifolia* (fq 25.0%), *Wrightia saligna* (fq 25.0%) and *Xanthostemon paradoxus* (fq 25.0%)

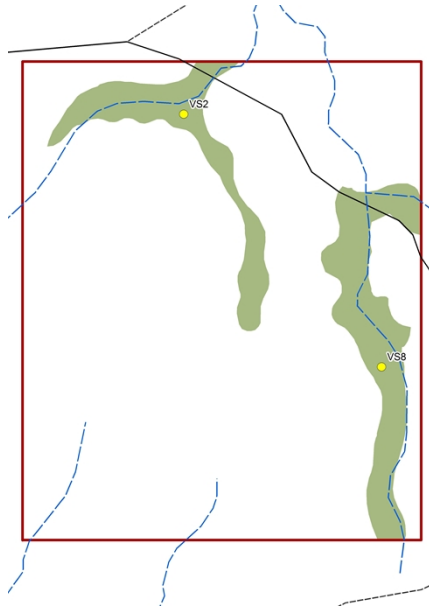
Land units – Greater Darwin 25K: 6b – Broad drainage floors and creek margins

Soils: Tenosolic Oxyaquic Hydrosol

Total area of project area: 281 ha (37.4%)

Community 2 structural summary:

Strata	Modal growth form	Mean cover %	Mean height (m)
Upper U1	Tree	5.0 (3 – 6)	9.5 (8 – 12)
Mid M1	Shrub	10.3 (4 – 15)	6.5 (5 – 8)
Ground G1	Tussock grass	21.0 (4 – 30)	1.8 (0.5 – 1)

Community 3 – <i>Pandanus spiralis</i>, <i>Lophostemon lactifluus</i>, <i>Livistona humilis</i> Low isolated trees over <i>P. spiralis</i>, <i>L. lactifluus</i>, <i>L. humilis</i> Low Sparse Shrubland over <i>Sorghum stipoideum</i>, <i>Eriocaulon spectabile</i>, <i>Melaleuca nervosa</i> Mid Tussock Grassland			
Vegetation Description: <i>Pandanus spiralis</i> , <i>Lophostemon lactifluus</i> , <i>Livistona humilis</i> Low isolated trees over <i>Pandanus spiralis</i> , <i>Lophostemon lactifluus</i> , <i>Livistona humilis</i> Low Sparse Shrubland over <i>Sorghum stipoideum</i> , <i>Eriocaulon spectabile</i> , <i>Melaleuca nervosa</i> Mid Tussock Grassland			
Upper 1: Low isolated trees dominated by <i>Pandanus spiralis</i> (fq 100.0%) and <i>Livistona humilis</i> (fq 50.0%)			
Mid 1: Low sparse shrubland dominated by <i>Pandanus spiralis</i> (fq 100.0%), <i>Lophostemon lactifluus</i> (fq 50.0%) and <i>Livistona humilis</i> (fq 50.0%)			
Ground 1: Mid tussock grassland dominated by <i>Sorghum stipoideum</i> (fq 100.0%), <i>Eriocaulon spectabile</i> (fq 100.0%) and <i>Melaleuca nervosa</i> (fq 100.0%)			
			
No. of sites: 2 Full vegetation sites: (2) 2, 8 Check sites: (0)			
Fire impact: 100% of the vegetation sites were burnt			
Other common species			
Upper stratum (U1): None.			
Mid stratum (M1): <i>Verticordia cunninghamii</i> (fq 50.0%)			
Ground stratum (G1): <i>Xyris complanata</i> (fq 100.0%), <i>Lophostemon lactifluus</i> (fq 50.0%), <i>Syzygium eucalyptoides subsp. bleeseri</i> (fq 50.0%), , <i>Germainia grandiflora</i> (fq 50.0%), , <i>Dapsilanthus spathaceus</i> (fq 50.0%), <i>Ectrosia leporina</i> (fq 50.0%) and <i>Drosera petiolaris</i> (fq 50.0%)			
Land units – Greater Darwin 25K: 5a – Narrow alluvial plains within upland terrain.			
Soils: Chromosolic Redoxic Hydrosols			
Total area of project area: 97 ha (13 %)			
Community 3 structural summary:			
Strata	Modal growth form	Mean cover %	Mean height (m)
Upper U1	Tree	2.5 (2 – 3)	4.5 (4 – 5)
Mid M1	Shrub	8.5 (2 – 15)	3.5 (3 – 4)
Ground G1	Tussock grass	45.0 (40 – 50)	0.8 (0.5 – 1)

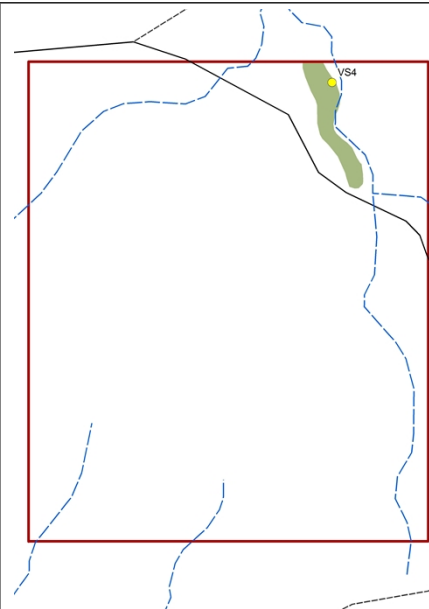
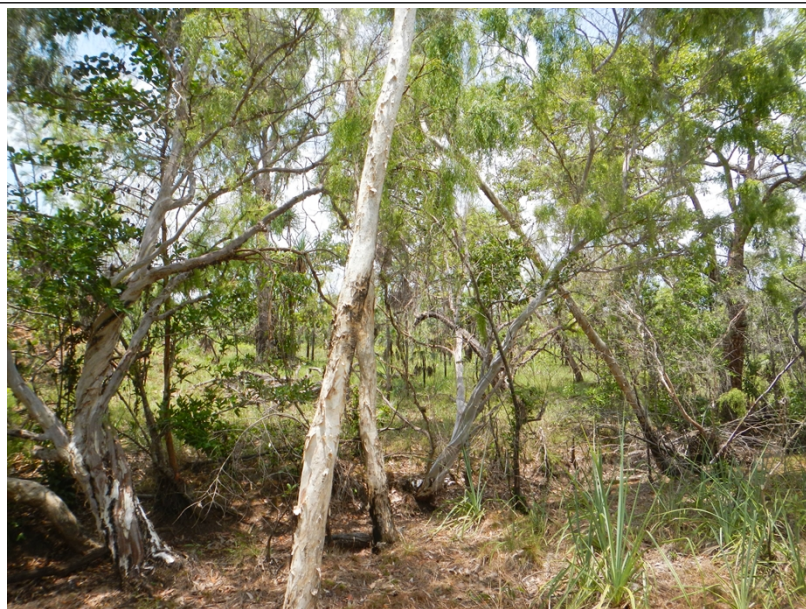
Community 5 – *Leptospermum madidum*, *Melaleuca viridiflora*, *Lophostemon lactifluus* Mid Open Forest over *Cyclophyllum schultzei*, *Helicia australasica*, *Syzygium armstrongii* Mid Open Shrubland over *Fimbristylis* sp., *Eriachne avenacea* Mid Tussock Grassland

Vegetation Description: *Leptospermum madidum*, *Melaleuca viridiflora*, *Lophostemon lactifluus* Mid Open Forest over *Cyclophyllum schultzei*, *Helicia australasica*, *Syzygium armstrongii* Mid Open Shrubland over *Fimbristylis* sp., *Eriachne avenacea* Mid Tussock Grassland

Upper 1: Mid open forest dominated by *Leptospermum madidum* (fq 100.0%), *Melaleuca viridiflora* (fq 100.0%) and *Lophostemon lactifluus* (fq 100.0%)

Mid 1: Mid open shrubland dominated by *Cyclophyllum schultzei* (fq 100.0%), *Helicia australasica* (fq 100.0%) and *Syzygium armstrongii* (fq 100.0%)

Ground 1: Mid tussock grassland dominated by *Fimbristylis* sp. (fq 100.0%) and *Eriachne avenacea* (fq 100.0%)



No. of sites: 1

Full vegetation sites: (1) 4

Check sites: (0)

Fire impact: 0% of the vegetation sites were burnt

Other common species

Upper stratum (U1): None.

Mid stratum (M1): *Pandanus spiralis* (fq 100.0%)

Ground stratum (G1): *Eriocaulon fistulosum* (fq 100.0%), *Eragrostis* sp. (fq 100.0%), *Staurogyne leptocaulis* (fq 100.0%), *Osbeckia australiana* (fq 100.0%) and *Dianella odorata* (fq 100.0%)

Land units – Greater Darwin 25K: 7a – Fringes and levees of major channels.

Soils: Brown Kandosols

Total area of project area: 10 ha (1.3%)

Community 5 structural summary:

Strata	Modal growth form	Mean cover %	Mean height (m)
Upper U1	Tree	75.0	12.0
Mid M1	Shrub	25.0	6.0
Ground G1	Tussock grass	40.0	0.5



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