

Check site	VS-169		Coordinates		-12.687556 131.14926		
Aspect	North		Land unit (nominal)		5b1	Land unit (adjusted)	-
Surface soils	Brown Organic		Landform		Plains/Flat Poorly drained (seasonally waterlogged most years)		
Ground cover (%)	Large rocks	Medium rocks	Small rocks	Bare ground	Leaf litter	Logs (m)	Rock Outcropping
	0	0	100	1	20	6	-
Habitat values (50x50)							
Fruiting / Flowering midstorey	Fruiting species diversity (count)		Fruiting species cover (%)		Flowering species diversity (count)		Flowering species cover (%)
	0		0		1		5
Tree hollows (count)	Small (< 5 cm)		Medium (5 - 20 cm)		Large (20+ cm)		Alive/Dead
	1		2		6		Alive
Large trees (count)	30-40cm		40-50cm		50+ cm		Trees >30m tall
	0		0		4		0
Other habitat values	Pandanus count (20x20)		Cycad count (20x20)		Mistletoe		Last fire
	13		0		Absent (0)		2+ years
Threatening processes	Feral animal damage		Weed density		Fire impacts		
	Very Low		Absent		No damage		
Vegetation (20x20)							
Upper stratum	Vegetation Structure		Dominant species			Height (m)	Cover (%)
	Woodland (21-50%)		<i>Corymbia alba</i>			10	14
			<i>Lophostemon lactifluus</i>			10	14
		<i>Melaleuca viridiflora</i>			8	2	
Mid stratum	Open Shrubland (21-50%)		<i>Pandanus spiralis</i>			3	20
			<i>Banksia dentata</i>			3	5
			Unknown Shrub			1.5	3
Ground stratum	Open Forbland (21-50%)		Unknown Grass			0	25
			Unknown Grass			0.1	10
			<i>Chrysopogon sp.</i>			0.3	8
Other notes	- Snake weed and side adjacent						



Check site	VS-170		Coordinates		-12.621911 131.208806		
Aspect	N/A		Land unit (nominal)		4b	Land unit (adjusted)	-
Surface soils	Grey Sand		Landform		Drainage (broad swamp/floodplain) Very poorly drained (Seasonal waterlogging / inundation expected)		
Ground cover (%)	Large rocks	Medium rocks	Small rocks	Bare ground	Leaf litter	Logs (m)	Rock Outcropping
	0	0	100	10	15	0	-
Habitat values (50x50)							
Fruiting / Flowering midstorey	Fruiting species diversity (count)		Fruiting species cover (%)		Flowering species diversity (count)		Flowering species cover (%)
	0		0		0		0
Tree hollows (count)	Small (< 5 cm)		Medium (5 - 20 cm)		Large (20+ cm)		Alive/Dead
	1		2		0		Alive
Large trees (count)	30-40cm		40-50cm		50+ cm		Trees >30m tall
	1		2		0		0
Other habitat values	Pandanus count (20x20)		Cycad count (20x20)		Mistletoe		Last fire
	2		0		Absent (0)		Last year
Threatening processes	Feral animal damage		Weed density		Fire impacts		
	Low		Absent		Minor impact scars on some trees/shrubs		
Vegetation (20x20)							
Upper stratum	Vegetation Structure		Dominant species		Height (m)		Cover (%)
	Isolated Trees (<5%)		<i>Corymbia polycarpa</i>		12		2
			N/A		0		0
		N/A		0		0	
Mid stratum	Open Shrubland (21-50%)		<i>Lophostemon lactiflorus</i>		1		20
			<i>Pandanus spiralis</i>		1		2
			<i>Melaleuca nervosa</i>		6		1
Ground stratum	Tussock Grassland (51-80%)		<i>Heteropogon triticeus</i>		0		30
			<i>Sorghum sp. (annual)</i>		0.1		20
			<i>Lophostemon lactiflorus</i>		0.2		10
Other notes	Old track						



Check site	VS-171		Coordinates		-12.765144 131.119659		
Aspect	South West		Land unit (nominal)		2b1	Land unit (adjusted)	-
Surface soils	Brown Other		Landform		Mid Slope Rapidly drained (deep slope / sandy soil)		
Ground cover (%)	Large rocks	Medium rocks	Small rocks	Bare ground	Leaf litter	Logs (m)	Rock Outcropping
	0	30	70	15	2	0	-
Habitat values (50x50)							
Fruiting / Flowering midstorey	Fruiting species diversity (count)		Fruiting species cover (%)		Flowering species diversity (count)		Flowering species cover (%)
	4		15		5		3
Tree hollows (count)	Small (< 5 cm)		Medium (5 - 20 cm)		Large (20+ cm)		Alive/Dead
	1		3		0		Alive
Large trees (count)	30-40cm		40-50cm		50+ cm		Trees >30m tall
	3		0		0		0
Other habitat values	Pandanus count (20x20)		Cycad count (20x20)		Mistletoe		Last fire
	0		39		Absent (0)		This year
Threatening processes	Feral animal damage		Weed density		Fire impacts		
	Absent		Absent		Minor impact scars on some trees/shrubs		
Vegetation (20x20)							
Upper stratum	Vegetation Structure		Dominant species			Height (m)	Cover (%)
	Open Woodland (5-20%)		<i>Corymbia polysciada</i>			8	5
			<i>Eucalyptus miniata</i>			10	2
			<i>Eucalyptus tetradonta</i>			10	1
Mid stratum	Sparse Shrubland (5-20%)		<i>Cycas armstrongii</i>			1	5
			<i>Terminalia ferdinandiana</i>			1	5
			<i>Buchanania obovata</i>			3	1
Ground stratum	Open Tussock Grassland (21-50%)		<i>Heteropogon triticeus</i>			0	15
			<i>Chrysopogon sp.</i>			0.1	2
			<i>Eriachne ciliata</i>			0.1	1
Other notes	-						



Check site	VS-172		Coordinates		-12.762778 131.1192		
Aspect	West		Land unit (nominal)		1c	Land unit (adjusted)	to 6a2
Surface soils	Brown Other		Landform		Drainage (broad swamp/floodplain) Very poorly drained (Seasonal waterlogging / inundation expected)		
Ground cover (%)	Large rocks	Medium rocks	Small rocks	Bare ground	Leaf litter	Logs (m)	Rock Outcropping
	0	0	100	35	35	8	-
Habitat values (50x50)							
Fruiting / Flowering midstorey	Fruiting species diversity (count)		Fruiting species cover (%)		Flowering species diversity (count)		Flowering species cover (%)
	3		5		1		5
Tree hollows (count)	Small (< 5 cm)		Medium (5 - 20 cm)		Large (20+ cm)		Alive/Dead
	13		17		1		Both
Large trees (count)	30-40cm		40-50cm		50+ cm		Trees >30m tall
	15		3		1		0
Other habitat values	Pandanus count (20x20)		Cycad count (20x20)		Mistletoe		Last fire
	0		0		Absent (0)		This year
Threatening processes	Feral animal damage		Weed density		Fire impacts		
	Absent		<1%		Minor impact scars on most trees/shrubs		
Vegetation (20x20)							
Upper stratum	Vegetation Structure		Dominant species		Height (m)		Cover (%)
	Woodland (21-50%)		<i>Lophostemon lactiflorus</i>		8		20
			<i>Corymbia polycarpa</i>		14		15
Mid stratum	Sparse Shrubland (5-20%)		<i>Corymbia polysciada</i>		8		2
			<i>Planchonia careya</i>		2		2
			<i>Livistona humilis</i>		1		2
Ground stratum	Open Tussock Grassland (21-50%)		<i>Corymbia polycarpa</i>		4		1
			<i>Unknown Grass (see notes)</i>		0		30
			<i>Mnesithea rottboellioides</i>		0.1		5
Other notes			<i>Heteropogon triticeus</i>		0.1		1
	Nil, firebreak adjacent site						



Check site	VS-173		Coordinates		-12.754255 131.120242		
Aspect	West		Land unit (nominal)		3b	Land unit (adjusted)	-
Surface soils	Red Other		Landform		Plains/Flat Moderately well drained (occasional seasonal waterlogging)		
Ground cover (%)	Large rocks	Medium rocks	Small rocks	Bare ground	Leaf litter	Logs (m)	Rock Outcropping
	0	0	100	40	30	0	-
Habitat values (50x50)							
Fruiting / Flowering midstorey	Fruiting species diversity (count)		Fruiting species cover (%)		Flowering species diversity (count)		Flowering species cover (%)
	3		5		2		3
Tree hollows (count)	Small (< 5 cm)		Medium (5 - 20 cm)		Large (20+ cm)		Alive/Dead
	10		27		6		Both
Large trees (count)	30-40cm		40-50cm		50+ cm		Trees >30m tall
	16		3		0		0
Other habitat values	Pandanus count (20x20)		Cycad count (20x20)		Mistletoe		Last fire
	0		28		Absent (0)		This year
Threatening processes	Feral animal damage		Weed density		Fire impacts		
	Absent		Absent		Minor impact scars on most trees/shrubs		
Vegetation (20x20)							
Upper stratum	Vegetation Structure		Dominant species		Height (m)		Cover (%)
	Woodland (21-50%)		Eucalyptus miniata		10		30
			N/A		0		0
Mid stratum		Sparse Shrubland (5-20%)		Cycas armstrongii		1	10
				Livistona humilis		1	2
				Terminalia ferdinandiana		5	2
Ground stratum	Open Tussock Grassland (21-50%)		Heteropogon triticeus		0		10
			Chrysopogon sp.		0.1		5
			Sorghum sp. (annual)		0.1		5
Other notes	-						





Check site	VS-174		Coordinates		-12.756041 131.119131		
Aspect	West		Land unit (nominal)		3d	Land unit (adjusted)	-
Surface soils	Brown Other		Landform		Plains/Flat Rapidly drained (deep slope / sandy soil)		
Ground cover (%)	Large rocks	Medium rocks	Small rocks	Bare ground	Leaf litter	Logs (m)	Rock Outcropping
	0	0	100	0	20	11	-
Habitat values (50x50)							
Fruiting / Flowering midstorey	Fruiting species diversity (count)		Fruiting species cover (%)		Flowering species diversity (count)		Flowering species cover (%)
	3		10		2		3
Tree hollows (count)	Small (< 5 cm)		Medium (5 - 20 cm)		Large (20+ cm)		Alive/Dead
	8		10		4		Both
Large trees (count)	30-40cm		40-50cm		50+ cm		Trees >30m tall
	4		0		0		0
Other habitat values	Pandanus count (20x20)		Cycad count (20x20)		Mistletoe		Last fire
	0		7		Common (6-10)		This year
Threatening processes	Feral animal damage		Weed density		Fire impacts		
	Absent		Absent		Minor impact scars on some trees/shrubs		
Vegetation (20x20)							
Upper stratum	Vegetation Structure		Dominant species		Height (m)		Cover (%)
	Open Woodland (5-20%)		<i>Corymbia bleeseri</i>		12		5
			<i>Eucalyptus miniata</i>		10		1
			<i>Eucalyptus tetradonta</i>		8		1
Mid stratum	Open Shrubland (21-50%)		<i>Acacia latescens</i>		2		10
			<i>Terminalia ferdinandiana</i>		1		10
			<i>Livistona humilis</i>		1		3
Ground stratum	Open Tussock Grassland (21-50%)		<i>Heteropogon triticeus</i>		0		10
			<i>Sorghum intrans</i>		0.1		5
			<i>Chrysopogon sp.</i>		0.1		3
Other notes	Plastic rubbish						



Check site	VS-175		Coordinates		-12.74996 131.121902		
Aspect	N/A		Land unit (nominal)		3c	Land unit (adjusted)	-
Surface soils	Brown Other		Landform		Plains/Flat Moderately well drained (occasional seasonal waterlogging)		
Ground cover (%)	Large rocks	Medium rocks	Small rocks	Bare ground	Leaf litter	Logs (m)	Rock Outcropping
	0	0	100	0	30	36	<1% Laterite
Habitat values (50x50)							
Fruiting / Flowering midstorey	Fruiting species diversity (count)		Fruiting species cover (%)		Flowering species diversity (count)		Flowering species cover (%)
	4		20		2		10
Tree hollows (count)	Small (< 5 cm)		Medium (5 - 20 cm)		Large (20+ cm)		Alive/Dead
	9		12		3		Both
Large trees (count)	30-40cm		40-50cm		50+ cm		Trees >30m tall
	14		0		0		0
Other habitat values	Pandanus count (20x20)		Cycad count (20x20)		Mistletoe		Last fire
	0		5		Absent (0)		This year
Threatening processes	Feral animal damage		Weed density		Fire impacts		
	Absent		Absent		Minor impact scars on most trees/shrubs		
Vegetation (20x20)							
Upper stratum	Vegetation Structure		Dominant species		Height (m)		Cover (%)
	Open Woodland (5-20%)		<i>Eucalyptus tetrodonta</i>		10		10
			<i>Erythrophleum chlorostachys</i>		8		5
			N/A		0		0
Mid stratum	Open Shrubland (21-50%)		<i>Terminalia ferdinandiana</i>		1		20
			<i>Brachychiton megaphyllus</i>		1		5
			<i>Coeliospermum reticulatum</i>		2		2
Ground stratum	Open Tussock Grassland (21-50%)		<i>Heteropogon triticeus</i>		0		15
			<i>Sorghum intrans</i>		0.1		5
			<i>Mnesithea rottboellioides</i>		0.2		2
Other notes	-						



Check site	VS-176		Coordinates		-12.741011 131.119242		
Aspect	N/A		Land unit (nominal)		3a	Land unit (adjusted)	-
Surface soils	Brown Other		Landform		Plains/Flat Moderately well drained (occasional seasonal waterlogging)		
Ground cover (%)	Large rocks	Medium rocks	Small rocks	Bare ground	Leaf litter	Logs (m)	Rock Outcropping
	0	6	94	20	15	6	<5% Laterite
Habitat values (50x50)							
Fruiting / Flowering midstorey	Fruiting species diversity (count)		Fruiting species cover (%)		Flowering species diversity (count)		Flowering species cover (%)
	3		10		2		5
Tree hollows (count)	Small (< 5 cm)		Medium (5 - 20 cm)		Large (20+ cm)		Alive/Dead
	6		16		1		Alive
Large trees (count)	30-40cm		40-50cm		50+ cm		Trees >30m tall
	7		2		0		0
Other habitat values	Pandanus count (20x20)		Cycad count (20x20)		Mistletoe		Last fire
	1		2		Absent (0)		This year
Threatening processes	Feral animal damage		Weed density		Fire impacts		
	Absent		Absent		Minor impact scars on some trees/shrubs		
Vegetation (20x20)							
Upper stratum	Vegetation Structure		Dominant species			Height (m)	Cover (%)
	Open Woodland (5-20%)		<i>Eucalyptus miniata</i>			10	10
			<i>Corymbia polysciada</i>			10	2
			<i>Erythrophleum chlorostachys</i>			12	2
Mid stratum	Open Shrubland (21-50%)		<i>Livistona humilis</i>			1	10
			<i>Cochlospermum fraseri</i>			1	3
			<i>Terminalia ferdinandiana</i>			1	3
Ground stratum	Open Tussock Grassland (21-50%)		<i>Chrysopogon sp.</i>			0	10
			<i>Heteropogon triticeus</i>			0.1	5
			<i>Themeda triandra</i>			0.2	5
Other notes	Minor disturbance close to site						
							

Check site	VS-177		Coordinates		-12.716239 131.161712		
Aspect	South West		Land unit (nominal)		2b1	Land unit (adjusted)	-
Surface soils	Brown Clay		Landform		Lower Slope Moderately well drained (occasional seasonal waterlogging)		
Ground cover (%)	Large rocks	Medium rocks	Small rocks	Bare ground	Leaf litter	Logs (m)	Rock Outcropping
	0	0	100	20	5	6	-
Habitat values (50x50)							
Fruiting / Flowering midstorey	Fruiting species diversity (count)		Fruiting species cover (%)		Flowering species diversity (count)		Flowering species cover (%)
	2		5		1		1
Tree hollows (count)	Small (< 5 cm)		Medium (5 - 20 cm)		Large (20+ cm)		Alive/Dead
	8		22		4		Alive
Large trees (count)	30-40cm		40-50cm		50+ cm		Trees >30m tall
	13		0		0		0
Other habitat values	Pandanus count (20x20)		Cycad count (20x20)		Mistletoe		Last fire
	0		8		Absent (0)		This year
Threatening processes	Feral animal damage		Weed density		Fire impacts		
	Absent		Absent		Minor impact scars on some trees/shrubs		
Vegetation (20x20)							
Upper stratum	Vegetation Structure		Dominant species		Height (m)		Cover (%)
	Open Woodland (5-20%)		<i>Eucalyptus miniata</i>		6		15
			N/A		0		0
N/A		0		0		0	
Mid stratum	Sparse Shrubland (5-20%)		<i>Corymbia foelscheana</i>		3		5
			<i>Buchanania obovata</i>		1		1
			<i>Cycas armstrongii</i>		1		1
Ground stratum	Open Tussock Grassland (21-50%)		<i>Heteropogon triticeus</i>		0		15
			<i>Themeda triandra</i>		0.5		15
			<i>Chrysopogon sp.</i>		0.2		5
Other notes	-						



Check site	VS-178		Coordinates		-12.720525 131.165978		
Aspect	South		Land unit (nominal)		5a	Land unit (adjusted)	-
Surface soils	Brown Loam		Landform		Drainage (broad swamp/floodplain) Very poorly drained (Seasonal waterlogging / inundation expected)		
Ground cover (%)	Large rocks	Medium rocks	Small rocks	Bare ground	Leaf litter	Logs (m)	Rock Outcropping
	28	7	65	30	15	4	<30% Laterite
Habitat values (50x50)							
Fruiting / Flowering midstorey	Fruiting species diversity (count)		Fruiting species cover (%)		Flowering species diversity (count)		Flowering species cover (%)
	4		15		3		5
Tree hollows (count)	Small (< 5 cm)		Medium (5 - 20 cm)		Large (20+ cm)		Alive/Dead
	0		1		0		Alive
Large trees (count)	30-40cm		40-50cm		50+ cm		Trees >30m tall
	0		0		0		0
Other habitat values	Pandanus count (20x20)		Cycad count (20x20)		Mistletoe		Last fire
	0		4		Absent (0)		This year
Threatening processes	Feral animal damage		Weed density		Fire impacts		
	Absent		Absent		Minor impact scars on some trees/shrubs		
Vegetation (20x20)							
Upper stratum	Vegetation Structure		Dominant species		Height (m)		Cover (%)
	Isolated Trees (<5%)		Eucalyptus tectifica		16		2
			Corymbia polycarpa		10		2
Mid stratum		Xanthostemon paradoxus		3		7	
Sparse Shrubland (5-20%)		Buchanania obovata		1		3	
		Syzygium eucalyptoides subsp. bleeseri		1		2	
Ground stratum	Open Tussock Grassland (21-50%)		Sorghum sp. (annual)		0		40
			Petalostigma quadriloculare		0.2		10
			Heteropogon contortus		0.2		5
Other notes	- Pandanus in ground. Boulder is laterite outcropping						





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APPENDIX B EPBC PROTECTED MATTERS SEARCH TOOL 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: 13-Dec-2023

[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:	40
Listed Migratory Species:	36

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:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	57
Whales and Other Cetaceans:	3
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:	5
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	7
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

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 ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Epthianura crocea tunneyi Alligator Rivers Yellow Chat, Yellow Chat (Alligator Rivers) [67089]	Endangered	Species or species habitat known 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
Erythrura gouldiae Gouldian Finch [413]	Endangered	Species or species habitat known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Geophaps smithii smithii Partridge Pigeon (eastern) [64441]	Vulnerable	Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Tyto novaehollandiae kimberli Masked Owl (northern) [26048]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FROG			
Uperoleia daviesae Howard River Toadlet, Davies's Toadlet [85375]	Vulnerable	Species or species habitat known to occur within area	In feature area
MAMMAL			
Antechinus bellus Fawn Antechinus [344]	Vulnerable	Species or species habitat known to occur within area	In feature area
Conilurus penicillatus Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma [132]	Vulnerable	Species or species habitat may occur within area	In feature area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area	In feature area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Mesembriomys gouldii gouldii Black-footed Tree-rat (Kimberley and mainland Northern Territory), Djintamoonga, Manbul [87618]	Endangered	Species or species habitat known to occur within area	In feature area
Petrogale concinna canescens Nabarlek (Top End) [87606]	Endangered	Species or species habitat likely to occur within area	In feature area
Phascogale pirata Northern Brush-tailed Phascogale [82954]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheath-tail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Trichosurus vulpecula arnhemensis Northern Brushtail Possum [83091]	Vulnerable	Species or species habitat known to occur within area	In feature area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area	In feature area
PLANT			
Atalaya brevialata [86125]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
Goodenia quadrifida [56035]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Helicteres macrothrix [86586]	Endangered	Species or species habitat may occur within area	In buffer area only
Stylidium ensatum a triggerplant [86366]	Endangered	Species or species habitat likely to occur within area	In feature area
Typhonium taylorii listed as Typhonium taylori [93459]	Endangered	Species or species habitat likely to occur within area	In feature area
Xylopia monosperma a shrub [82030]	Endangered	Species or species habitat may occur within area	In feature area
REPTILE			
Acanthopphis hawkei Plains Death Adder [83821]	Vulnerable	Species or species habitat known to occur within area	In feature area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

SHARK

Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat known to occur within area	In buffer area only
Glyphis glyphis Speartooth Shark [82453]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area	In buffer area only
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only

Listed Migratory Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area	In buffer area only
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area	In buffer area only
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat likely to 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 known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
Acrocephalus orientalis Oriental Reed-Warbler [59570]		Species or species habitat may occur within area	In feature area
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within 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	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Defence		
Defence - HUMPTY DOO TRANSMITTING STATION [70039]	NT	In buffer area only
Defence - HUMPTY DOO TRANSMITTING STATION [70040]	NT	In buffer area only

Listed Marine Species [\[Resource Information \]](#)

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Acrocephalus orientalis Oriental Reed-Warbler [59570]		Species or species habitat may occur within area overfly marine area	In feature area
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

Scientific Name	Threatened Category	Presence Text	Buffer Status
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]		Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to 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
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area	In buffer area only
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 leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within 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 known to 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 likely to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area	In feature area
Fish			
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area	In buffer area only
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area	In buffer area only
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area	In buffer area only
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area	In buffer area only
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area	In buffer area only
Corythoichthys haematopterus Reef-top Pipefish [66201]		Species or species habitat may occur within area	In buffer area only
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area	In buffer area only
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area	In buffer area only
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area	In buffer area only
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area	In buffer area only
Halicampus spinostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area	In buffer area only
Haliichthys taeniophorus Ribbioned Pipehorse, Ribbioned Seadragon [66226]		Species or species habitat may occur within area	In buffer area only
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area	In buffer area only
Hippichthys parvicarinatus Short-keel Pipefish, Short-keeled Pipefish [66230]		Species or species habitat may occur within area	In buffer area only
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area	In buffer area only
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area	In buffer area only
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area	In buffer area only
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Micrognathus micronotus Tidepool Pipefish [66255]		Species or species habitat may occur within area	In buffer area only
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area	In buffer area only
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area	In feature area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Whales and Other Cetaceans [\[Resource Information \]](#)

Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area	In buffer area only
Sousa sahalensis Australian Humpback Dolphin [87942]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat likely to occur within area	In buffer area only

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Protected Area Name	Reserve Type	State	Buffer Status
Black Jungle / Lambells Lagoon Conservation Reserve	Other Conservation Area	NT	In buffer area only
Djukbinj	National Park	NT	In buffer area only
Fogg Dam	Conservation Reserve	NT	In buffer area only
Harrison Dam	Conservation Reserve	NT	In buffer area only
Manton Dam Recreation Area	Other Conservation Area	NT	In buffer area only

Nationally Important Wetlands [\[Resource Information \]](#)

Wetland Name	State	Buffer Status
Adelaide River Floodplain System	NT	In feature area

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
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Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Proposed City of Weddell	2011/6090		Assessment	In buffer area only
Controlled action				
Darwin to Moomba Gas Pipeline	2001/213	Controlled Action	Completed	In feature area
Glyde Point and Middle Arm Peninsula Infrastructure Support	2001/334	Controlled Action	Completed	In feature area
Glyde Point Industrial Estate and Associated Infrastructure	2004/1506	Controlled Action	Completed	In feature area
Noonamah Ridge Residential Estate, Lloyd Creek, NT	2014/7269	Controlled Action	Further Information Request	In feature area
Not controlled action				
Field trials for cultivation of microalga (Botryococcus braunii) to produce hydr	2007/3277	Not Controlled Action	Completed	In buffer area only
Pilot Power Station to Utilise Fuel Gas from Mimosa Pigra	2002/841	Not Controlled Action	Completed	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 are 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

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

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

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
- 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](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-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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APPENDIX C THREATENED SPECIES LIKELIHOOD OF OCCURRENCE ASSESSMENT

The following procedure was used to determine which threatened species have the potential to occur in the study area:

- 1) Collate a list of threatened flora and fauna records for the Darwin Coastal bioregion using the latest NT Flora and Fauna Atlas data. Bioregions give a broad area with largely similar habitat characteristics and species assemblages. Clipping data to them ensures all potential species are captured – especially in areas that have been poorly surveyed – in order to undertake a project-specific 'likelihood of occurrence' assessment.
- 2) Use the [Protected Matters Search Tool](#) (PMST) to determine species listed as threatened under the *EPBC Act* (undertaken in December 2023). A 10 km buffer was applied.
- 3) Combine the results of steps 2 and 3 to generate a list of threatened species that may occur within the bioregion.
- 4) For each threatened 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 (obtained from NT Atlas), and the ecological information from surveys within the study area. Likelihood ratings are defined in the table below.

Note: There is no marine, coastal or floodplain habitat within the study area.

Ratings for the desktop threatened species likelihood of occurrence assessment

Rating	Definition
HIGH	It is expected that this species occurs within the study area because there is core habitat and recent (post-2010) proximate records or knowledge that the species occurs in the local area.
MEDIUM	Species may occur within the study area because there is suitable habitat; however, there is evidence that lowers its likelihood of occurrence (known range contraction of the species in the region, no recent records within the study area, substantial loss of habitat within the study area since previous records, species is naturally-rare or occurs at a low density etc.).
LOW	Species may occur, as a vagrant or during an irruption, within the study area; only marginally-suitable habitat is present. No records from recent targeted surveys within the study area.
NONE	There is strong evidence that this species will not occur within the project footprint (i.e. there is no suitable habitat and/or the species is considered to be regionally-extinct).

Note: Statuses used are CR – Critically Endangered; DD – Data Deficient, EN – Endangered; NE – Not Evaluated; NT – Near Threatened; VU – Vulnerable.

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
BIRDS				
White-throated Grasswren <i>Amytornis woodwardi</i>	VU	VU	Habitat: Confined to hummock grasslands, sometimes with open shrubland or woodland overstorey, mixed among dense boulder fields or sandstone pavements (Schodde 1982; Noske 1992) and escarpment drainage lines. Distribution: NT only – patchily distributed and restricted to rugged sandstone massif of west Arnhem Land, Nitmiluk National Park and Mann River (Noske 1992).	NONE No suitable habitat within the study area. No proximate records and outside known distribution.
	Noske, R. (1992). The status and ecology of the white-throated grass-wren <i>Amytornis woodwardi</i> . <i>Emu</i> , Vol. 92, pp. 39-51. Schodde, R. (1982). <i>The fairy-wrens - A monograph of the Maluridae</i> . Landsdowne Editions, Melbourne.			
Yellow Chat (Alligator River subspecies) <i>Epthianura crocea tunneyi</i>	EN	EN	Habitat: Grassy floodplain depressions and channels, concentrating around refugial waterholes at the end of the dry season (Armstrong 2004). Distribution: Top End of the NT, where restricted to a small number of sites in the floodplains from the Adelaide River to the East Alligator River (Woinarski & Armstrong 2006).	NONE No suitable habitat within the study area. No proximate records and outside known distribution.
	Armstrong, M. (2004). <i>The yellow chat Epthianura crocea tunneyi in Kakadu National Park</i> . Report to Parks Australia (North), NT Department of Infrastructure Planning and Environment, Darwin. Woinarski, J. and Armstrong, M. (2006). <i>Threatened Species of the Northern Territory - Yellow Chat (Alligator River subspecies) - Epthianura crocea tunneyi</i> . Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0019/206344/yellow-chat.PDF			
Red Goshawk <i>Erythroriorchis radiatus</i>	VU	VU	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). Home range of up to 200 km ² (Czechura & Hobson 2000). Distribution: Solitary and secretive hawk that is sparsely distributed across much of northern Australia, from the Kimberley in WA to south-eastern Qld. 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 (Woinarski 2006).	LOW Suitable foraging habitat within the study area; no suitable nesting habitat. No proximate records within the study area. The few records for the greater Darwin region are vagrants.
	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 Erythroriorchis radiatus in northern Queensland: status and distribution</i> . Report to Queensland Parks and Wildlife Service. Debus, S. and Czechura, G. (1988). Field identification of the Red Goshawk <i>Erythroriorchis 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. Woinarski, J. (2006). <i>Threatened Species of the Northern Territory - Red Goshawk - Erythroriorchis radiatus</i> . Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0018/206352/red-goshawk.pdf			
Gouldian Finch <i>Erythrura gouldiae</i>	EN	VU	Habitat: Prefers areas with an adequate supply of seed from annual and perennial grasses (especially <i>Sorghum</i>), a nearby source of surface water and – in the breeding season – unburnt, hollow-bearing Eucalyptus trees	LOW

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			<p>(especially <i>E. tintinnans</i>, <i>E. brevifolia</i> and <i>E. leucophloia</i>) (Tidemann 1996; O'Malley 2006).</p> <p>Distribution: Patchily distributed across northern Australia from the Kimberley to north-central Qld (Dostine 1998; Franklin et al. 1999; Barrett et al. 2003; Franklin et al. 2005). 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.</p> <p>There is a Recovery Plan for this species.</p>	<p>Suitable foraging habitat within the study area; marginally-suitable nesting habitat (i.e. trees with suitable hollows, but not in preferred species).</p> <p>On the edge of the species' usual range. The few records for the greater Darwin region are vagrants – temporary irruptions after a good breeding season.</p>
			<p>Barrett, G., Silcocks, A., Barry, S., Cunningham, R. and Poulter, R. (2003). <i>The New Atlas of Australian Birds</i>. Royal Australian Ornithologists Union, Melbourne, Victoria.</p> <p>Dostine, P. (1998). <i>Gouldian Finch Recovery Plan Erythrura gouldiae</i>. Gouldian Finch Recovery Team and Parks & Wildlife Commission NT, Darwin.</p> <p>Franklin, D.C., Burbidge, A.H. and Dostine, P.L. (1999). The harvest of wild birds for aviculture: an historical perspective on finch trapping in the Kimberley with special emphasis on the Gouldian Finch. <i>Australian Zoologist</i>, Vol. 31, pp. 92-109.</p> <p>Franklin, D.C., Whitehead, P.J., Pardon, G., Matthews, J., McMahon, P. and McIntyre, D. (2005). Geographic patterns and correlates of the decline of granivorous birds in northern Australia. <i>Wildlife Research</i>, Vol. 32, pp. 399-408.</p> <p>Garnett, S.T., Szabo, J.K. and Dutton, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. CSIRO Publishing, Collingwood, Australia.</p> <p>O'Malley, C. (2006). <i>National Recovery Plan for the Gouldian Finch (Erythrura gouldiae)</i>. WWF-Australia, Sydney and Parks and Wildlife NT, Department of Natural Resources, Environment and the Arts, NT Government, Palmerston.</p> <p>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.</p>	
Grey Falcon <i>Falco hypoleucos</i>	-	VU	<p>Habitat: A generally solitary desert falcon that occurs in areas of lightly-timbered lowland plains, typically on inland drainage systems, where the average annual rainfall is less than 500 mm (DEPWS 2021).</p> <p>Distribution: Sparsely distributed through much of the arid and semi-arid regions of Australia but has been recorded from all mainland states and territories. In the NT, the majority of records are from the southern half, but there are records all the way up to Darwin (DEPWS 2021). A study of breeding records from 2003 to 2011 documented 38 breeding events – all within the hottest climate classes of Australia – with the northern-most record occurring south of Daly Waters (Schoenjahn 2013).</p>	<p>LOW</p> <p>Suitable foraging habitat within the study area; no suitable nesting habitat.</p> <p>Outside the species' usual range. The few records for the greater Darwin region are vagrants – temporary irruptions after a good breeding season</p>
			<p>Schoenjahn, J. (2013), A hot environment and one type of prey: investigating why the Grey Falcon (<i>Falco hypoleucos</i>) is Australia's rarest falcon, <i>Emu</i>, Vol. 113, pp. 19-25.</p> <p>Department of Environment, Parks and Water Security (2021). <i>Threatened Species of the Northern Territory - Grey Falcon - Falco hypoleucos</i>. Northern Territory Government. https://nt.gov.au/_data/assets/pdf_file/0020/206354/grey-falcon.pdf</p>	
Crested Shrike-tit (northern) <i>Falcunculus frontatus whitei</i>	VU	-	<p>Habitat: Recorded in eight different woodland types in northern Australia, mainly those dominated by <i>Eucalyptus miniata</i>, <i>E. tetradonta</i> or <i>C. bleeseri</i> (DSEWPaC 2013). Nests have been found in the canopy of <i>E. tectifica</i>, <i>C. grandifolia</i> and <i>C. latifolia</i> at >12 m above the ground in open woodland habitat (Ward et al. 2009).</p> <p>Distribution: North-western Australia from the Kimberley in WA, across the Top End of the NT to Borroloola (TSSC 2016). 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.</p>	<p>LOW</p> <p>Outside species' distribution – no records north of Pine Creek.</p>

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			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).	
			<p>Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC). (2013). <i>Falcunculus frontatus whitei</i> in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. http://www.environment.gov.au/sprat.</p> <p>Garnett, S.T. and Crowley, G.M. (2000). <i>The Action Plan for Australian Birds 2000</i>. Environment Australia and Birds Australia, Canberra, ACT.</p> <p>Robinson, D. and Woinarski, J.C.Z. (1992). 'A review of records of the Northern Shrike-tit <i>Falcunculus frontatus whitei</i> in north-western Australia'. <i>South Australian Ornithologist</i>, Vol. 31, pp. 111-117.</p> <p>Threatened Species Scientific Committee (TSSC) (2016). <i>Approved Conservation Advice for Falcunculus frontatus whitei - crested shrike-tit (northern)</i>. Canberra: Department of the Environment. 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].</p> <p>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.</p> <p>Woinarski, J.C.Z. (2004). National multi-species Recovery Plan for the Partridge Pigeon [eastern subspecies] <i>Geophaps smithii smithii</i>; crested shrike-tit [northern (sub)-species] <i>Falcunculus (frontatus) whitei</i>; masked owl [north Australian mainland subspecies] <i>Tyto novaehollandiae kimberli</i>; and masked owl [Tiwi Islands subspecies] <i>Tyto novaehollandiae melvillensis</i>, 2004-2008. NT Department of Infrastructure Planning and Environment, Darwin.</p>	
Partridge Pigeon (eastern subspecies) <i>Geophaps smithii smithii</i>	VU	VU	<p>Habitat: Open forests and woodlands with an understorey of grasses (Woinarski 2006). Prefers woodland dominated by <i>Eucalyptus tetradonta</i> and <i>E. miniata</i> (Braithwaite 1985; Garnett et al. 2011; Higgins & Davies 1996). According to Fraser (2001), favour a structurally-patchy savanna understorey at a relatively intricate scale. In all seasons, prefer to feed in areas that have an open ground layer (e.g. following fire); however, more likely to nest where there is dense vegetation cover. Require the seeds of certain perennial grasses and sedges that are available early in the wet season when seed is otherwise scarce, particular the perennial grass species <i>Alloteropsis semialata</i> and <i>Chrysopogon</i>. The presence of these grasses may be crucial for survival at this time (Fraser 2001). Largely sedentary; however, can travel distances of 5 to 10 km in the wet season on search of food and water resources (Fraser 2001). Home ranges vary seasonally between 8 – 31 hectares Fraser (2001).</p> <p>Distribution: Historically, across the Top End (from Kununurra in WA to Borrooloola in the NT). Since early 20th century a severe range contraction from the western, eastern and southern parts of the former distribution (Higgins & Davies 1996; Woinarski et al. 2007). Currently, distribution is limited to sub-coastal NT from Yinberrie Hill in the south, Litchfield NP in the west and (western) Arnhem Land in the east (Garnett et al. 2011).</p>	HIGH Suitable habitat within the study area. Multiple records from surveys in 2023 within the study area.
			<p>Braithwaite, R.W. (1985). <i>The Kakadu fauna survey: an ecological survey of Kakadu National Park</i>. Australian National Parks & Wildlife Service, Canberra.</p> <p>Fraser, F. (2000). Species profile: Partridge Pigeon <i>Geophaps smithii</i>. <i>Northern Territory Naturalist</i> 16, 38-39.</p> <p>Fraser, F., Lawson V., Morrison S., Christophersen P., McGregor S. and Rawlinson M. (2003). Fire management experiment for the declining partridge pigeon, Kakadu National Park. <i>Ecological Management and Restoration</i> 4, 94–102.</p> <p>Garnett, S.T., Szabo, J.K. and Dutson, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. Birds Australia, CSIRO Publishing, Melbourne.</p> <p>Higgins, P.J. and Davies S.J.J.F. (eds) (1996). <i>Handbook of Australian, New Zealand and Antarctic Birds. Volume Three: Snipe to Pigeons</i>. Oxford University Press. Melbourne, Victoria.</p>	

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			<p>Department of Environment, Parks and Water Security (2021). <i>Threatened Species of the Northern Territory - Partridge Pigeon (eastern subspecies) - Geophaps smithii smithii</i> Northern Territory Government https://nt.gov.au/_data/assets/pdf_file/0003/206355/partridge-pigeon.pdf</p> <p>Woinarski, J., Pavey, C., Kerrigan, R., Cowie, I. and Ward, S. (Eds) (2007). <i>Lost from Our Landscape: Threatened Species of the Northern Territory</i>. Northern Territory Government, Darwin.</p>	
<p>Painted Honeyeater <i>Grantiella picta</i></p>	VU	VU	<p>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).</p> <p>Distribution: Across eastern and northern parts of the country – but nowhere very numerous (Ward 2012). 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 (Ward 2012).</p>	<p>LOW Outside species' distribution – nearest records are from Nitmiluk NP and Kakadu NP.</p>
			<p>Garnett, S.T., Szabo, J.K. and Dutton, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. CSIRO Publishing, Collingwood, Australia.</p> <p>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 1 May 2018].</p> <p>Ward, S. (2012). <i>Threatened Species of the Northern Territory – Painted Honeyeater - Grantiella picta</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0009/373554/painted-honeyeater.pdf [Accessed 1 May 2018].</p>	
<p>Masked Owl (northern subspecies) <i>Tyto novaehollandiae kimberli</i></p>	VU	VU	<p>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 (Woinarski & Ward 2012). 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).</p> <p>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 (Woinarski & Ward 2012).</p>	<p>LOW Suitable habitat within the study area. Few records in the greater Darwin region. No detections during targeted call playback or from analysis of acoustic records captured within the study area.</p>
			<p>Garnett, S.T., Szabo, J.K. and Dutton, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. CSIRO Publishing, Collingwood, Australia.</p> <p>Debus, S.J.S. (2009) <i>The owls of australia: A field guide to australian night birds</i>. Canterbury, N.S.W.: Envirobook.</p> <p>Woinarski, J.C.Z. and Ward, S. (2012). <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). https://nt.gov.au/_data/assets/pdf_file/0019/206362/masked-owl-northern-mainland.pdf</p> <p>Department of the Environment, Water, Heritage and the Arts (DEWHA) (2010). <i>Survey Guidelines for Australia's Threatened Birds. EPBC Act survey guidelines 6.2</i>. Canberra, ACT: DEWHA. http://www.environment.gov.au/epbc/publications/threatened-birds.html. [Accessed March 24 2023]</p>	

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
Red Knot <i>Calidris canutus</i>	EN	EN	<p>Habitat: Coasts and estuaries with tidal mudflats – rarely away from coast. May roost during high tide on nearby beaches (Geering et al. 2007).</p> <p>Distribution: A summer migrant from the northern hemisphere; some birds remain in Australia during the winter. Widespread around the northern Australian coast, less common in the south, with few inland records (Garnett et al. 2011).</p>	NONE No suitable habitat within the study area.
<p>Geering, A., Agnew, L. and Harding, S. (2007). <i>Shorebirds of Australia</i>. CSIRO Publishing, Collingwood, Australia.</p> <p>Garnett, S.T., Szabo, J.K. and Dutton, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. CSIRO Publishing, Collingwood, Australia.</p>				
Curlew Sandpiper <i>Calidris ferruginea</i>	CR	CR	<p>Habitat: Mostly coasts and estuaries, less frequently inland freshwater wetlands (Geering et al. 2007).</p> <p>Distribution: A summer migrant from the northern hemisphere; some birds remain in Australia during the winter. Mostly widespread around the northern Australian coast, less common in the south, with few inland records (Garnett et al. 2011). Has declined due to habitat loss at migratory stop-over grounds along the flyway (Ward 2012).</p>	NONE No suitable habitat within the study area.
<p>Geering, A., Agnew, L. and Harding, S. (2007). <i>Shorebirds of Australia</i>. CSIRO Publishing, Collingwood, Australia.</p> <p>Garnett, S.T., Szabo, J.K. and Dutton, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. CSIRO Publishing, Collingwood, Australia.</p> <p>Ward, S. (2012). <i>Threatened Species of the Northern Territory – Curlew Sandpiper - Calidris ferruginea</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/word_doc/0009/373545/curlew-sandpiper.docx [Accessed 29 August 2018].</p>				
Great Knot <i>Calidris tenuirostris</i>	CR	CR	<p>Habitat: Coasts and estuaries with tidal mudflats – rarely away from coast. May roost during high tide on nearby beaches (Geering et al. 2007).</p> <p>Distribution: A summer migrant from the northern hemisphere; some birds remain in Australia during the winter. Mostly widespread around the northern Australian coast, less common in the south, with few inland records, centred around Alice Springs (Garnett et al. 2011).</p>	NONE No suitable habitat within the study area.
<p>Geering, A., Agnew, L. and Harding, S. (2007). <i>Shorebirds of Australia</i>. CSIRO Publishing, Collingwood, Australia.</p> <p>Garnett, S.T., Szabo, J.K. and Dutton, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. CSIRO Publishing, Collingwood, Australia.</p>				
Greater Sand Plover <i>Charadrius leschenaultii</i>	VU	VU	<p>Habitat: Mostly coasts and estuaries with intertidal sand and mudflats – roosting on nearby beaches and rocky shores. Occasionally salt lakes, brackish swamps and shallow freshwater wetlands (DoE 2017).</p> <p>Distribution: A summer migrant from the northern hemisphere; some birds remain in Australia during the winter. Widespread around the Australian coast, less common in the south and inland. In the NT, recorded from most of the coastline (Garnett et al. 2011).</p>	NONE No suitable habitat within the study area.
<p>Department of the Environment (2017). <i>Charadrius leschenaultii</i> — Greater Sand Plover, Large Sand Plover. Species Profile and Threats Database, Department of the Environment, Canberra. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=877</p> <p>Garnett, S.T., Szabo, J.K. and Dutton, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. CSIRO Publishing, Collingwood, Australia.</p>				

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
Lesser Sand Plover <i>Charadrius mongolus</i>	EN	EN	<p>Habitat: Mostly coasts and estuaries with intertidal sand and mudflats – roosting on nearby beaches and rocky shores. Occasionally salt lakes, brackish swamps and shallow freshwater wetlands (DoE 2017).</p> <p>Distribution: A summer migrant from the northern hemisphere; some birds remain in Australia during the winter. Widespread around the northern Australian coast, less common in the south and inland (Garnett al. 2011).</p>	<p>NONE No suitable habitat within the study area.</p>
	<p>Department of the Environment (2017). <i>Charadrius mongolus</i> — Lesser Sand Plover, Mongolian Plover. Species Profile and Threats Database, Department of the Environment, Canberra. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=879 [Accessed 1 May 2018].</p> <p>Garnett, S.T., Szabo, J.K. and Dutton, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. CSIRO Publishing. Collingwood, Australia.</p>			
Far Eastern Curlew <i>Numenius madagascariensis</i>	CR	CR	<p>Habitat: Inter-tidal mudflats, salt lakes and brackish wetlands near coasts (Geering et al. 2007). May roost during high tide on nearby beaches.</p> <p>Distribution: A summer migrant from the northern hemisphere; some birds remain in Australia during the winter. Widespread in small numbers around the Australian coast (Garnett et al. 2011). Chatto (2003) considered the more important areas in the NT to be along the coast either side of Darwin, the Millingimbi to Buckingham Bay area, the Roper and Limmen Bight River mouths, and the Port McArthur area.</p>	<p>NONE No suitable habitat within the study area.</p>
	<p>Chatto, R. (2003). <i>The distribution and status of shorebirds around the coast and coastal wetlands of the Northern Territory</i>. Technical Report 73, Parks and Wildlife Commission of the Northern Territory, Darwin. https://dnc.nt.gov.au/_data/assets/pdf_file/0008/279917/2003_shorebirds_rpt76.pdf [Accessed 1 May 2018].</p> <p>Garnett, S.T., Szabo, J.K. and Dutton, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. CSIRO Publishing. Collingwood, Australia.</p> <p>Geering, A., Agnew, L. and Harding, S. (2007). <i>Shorebirds of Australia</i>. CSIRO Publishing, Collingwood, Australia.</p>			
Australian Painted-snipe <i>Rostratula australis</i>	EN	EN	<p>Habitat: Fringes of permanent and temporary wetlands, swamps and inundated grasslands (Taylor et al. 2013).</p> <p>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).</p>	<p>LOW Small areas of marginally-suitable habitat within the study area The few records for the greater Darwin region are vagrants.</p>
	<p>Garnett, S.T., Szabo, J.K. and Dutton, G. (2011). <i>The Action Plan for Australian Birds 2010</i>. CSIRO Publishing. Collingwood, Australia.</p> <p>Rogers, D. (2001). Painted Snipe. <i>Wingspan</i>, Vol. 11 (No. 4), pp. 6-7.</p> <p>Taylor, R., Chatto, R. and Woinarski, J.C.Z. (2013). <i>Threatened Species of the Northern Territory - Australian painted snipe - Rostratula australis</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0018/206361/australian-painted-snipe.pdf [Accessed 1 May 2018].</p>			
MAMMALS (TERRESTRIAL)				
Fawn Antechinus <i>Antechinus bellus</i>	VU	EN	<p>Habitat: Mostly in open forests and woodlands dominated by <i>Eucalyptus miniata</i> and/or <i>E. tetradonta</i>, particularly where these forests have a relatively dense shrubby understorey (Friend 1985; Friend & Taylor 1985). Declines in areas with frequent intense fires (Corbett et al. 2003) but not necessarily common in areas where fire has been excluded for long periods</p>	<p>MEDIUM Suitable habitat. Potential distribution range overlaps the study area. Few recent records in the greater Darwin area.</p>

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			(>20 years; Woinarski et al. 2004). Breeding occurs mid-June to late August, after which a synchronous male die-off occurs (TSSC 2015). Distribution: Restricted to the Top End of the NT (Watson & Calaby 2008), with one record from Melville Island. Recent surveys have failed to record it across central and eastern Arnhem Land (TSSC 2015).	Potential (unconfirmable) records from camera trapping for this project.
<p>Corbett L. K., Andersen, A.N. and Muller, W.J. (2003). Terrestrial vertebrates. In: Andersen, A.N., Cook, G.D. and Williams, R.J. (eds.). <i>Fire in Tropical Savannas: The Kapalga Experiment</i>. Springer-Verlag, New York: pp. 126–152.</p> <p>Friend, G.R. and Taylor, J.A. (1985). Habitat preferences of small mammals in tropical open-forest of the Northern Territory. <i>Australian Journal of Ecology</i>, Vol. 10, pp. 173-185.</p> <p>Friend, G.R. (1985). Ecological studies of a population of <i>Antechinus bellus</i> (Marsupialia: Dasyuridae) in tropical Australia. <i>Australian Wildlife Research</i>, Vol. 12 (No. 2), pp. 151-162.</p> <p>Threatened Species Scientific Committee (2015). <i>Approved Conservation Advice for Antechinus bellus – Fawn Antechinus</i>. Canberra: Department of the Environment. In effect under the <i>EPBC Act</i> from 03-Dec-2015. Available at: http://www.environment.gov.au/biodiversity/threatened/species/pubs/344-conservation-advice-2015123.pdf.</p> <p>Watson, M.L. and Calaby, J.H. (2008). Fawn Antechinus: <i>Antechinus bellus</i>. In: Van Dyck, S. and Strahan, R. (eds.). <i>The Mammals of Australia: 3rd Edition</i>. Reed New Holland, Sydney.</p> <p>Woinarski, J.C.Z., Risler, J. and Kean, L. (2004). The response of vegetation and vertebrate fauna to 23 years of fire exclusion in a tropical Eucalyptus open forest, Northern Territory, Australia. <i>Austral Ecology</i>, Vol. 29, pp. 156–176.</p>				
Northern Quoll <i>Dasyurus hallucatus</i>	EN	CR	Habitat: Wide range of habitats, but since the arrival of Cane Toads generally restricted to the most suitable habitats which are 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). Home range varies from 35 to 100 ha (Oakwood 2002). Breeding occurs in May and June, with male die-off occurring shortly afterwards (Oakwood 2000). 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.	LOW Suitable habitat, but no rocky areas of the sort that provide preferred refugia. Not detected during camera trapping in 2023 within the study area. Very few recent records from the greater Darwin area. Significant decline across their range due to Cane Toads.
<p>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.</p> <p>Oakwood, M. (2000). Reproduction and demography of the northern quoll, <i>Dasyurus hallucatus</i>, in the lowland savanna of northern Australia. <i>Australian Journal of Zoology</i>. 48:519-539.</p> <p>Oakwood, M. (2002). Spatial and social organization of a carnivorous marsupial, <i>Dasyurus hallucatus</i>. <i>Journal of Zoology</i>, London. 257:237-248.</p> <p>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.</p> <p>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.</p>				
Northern Brush-tailed Phascogale <i>Phascogale pirata</i>	VU	EN	Habitat: No detailed studies, but ecology is probably similar to that reported for phascogales in southern Australia (Rhind 1998). Most records are from tall open forests dominated by <i>Eucalyptus miniata</i> and <i>E. tetradonta</i> (Rhind et al. 2008). Brush-tailed Phascogales are primarily arboreal and seldom feed on the ground. Geyle et al (2020) detected <i>P. pirata</i> using camera traps	LOW Suitable habitat within the study area. No recent records from the greater Darwin area. Not detected during camera trapping in 2023 within the study area.

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			<p>on Melville Island and found detection is most likely on large (DBH >41.5cm) <i>Eucalyptus tetrodonta</i> trees during the wet season.</p> <p>Distribution: Probably occurs naturally in low densities (Woinarski et al. 2014). Very few records exist; reported from West Island, east Arnhem Land, Coburg Peninsula, Kakadu, Litchfield and the Tiwi Islands. In the last 10 years only recorded from Kakadu, Coburg Peninsula and the Tiwi Islands, despite many extensive wildlife surveys across regions of the Top End during that time (Woinarski et al. 2014).</p>	Significant decline across the range of this species due to numerous threatening processes.
			<p>Geyle, H.M., Woolley, L.A., Davies, H.F., Woinarski, J.C.Z. and Murphy, B.P. (2020). Targeted sampling successfully detects the cryptic and declining arboreal marsupial (<i>Phascogale pirata</i>) in northern Australia. <i>Pacific Conservation Biology</i>. DOI: 10.1071/PC20008.</p> <p>Rhind, S.G. (1998). <i>Ecology of the brush-tailed phascogale in jarrah forest of south-western Australia</i>. PhD thesis, Murdoch University, Perth, Western Australia.</p> <p>Rhind, S.G., Woinarski, J. and Aplin, K.P. (2008). Brush-tailed Phascogale. In: Van Dyck, S. and Strahan, R. (eds). <i>The Mammals of Australia</i>. Reed New Holland, Chatswood, NSW.</p> <p>Woinarski, J., Burbidge, A. and Harrison, P. (2014). <i>The Action Plan for Australian Mammals 2012</i>. CSIRO Publishing: pp. 125-127.</p>	
Arnhem Leaf-nosed Bat <i>Hipposideros inornatus</i>	EN	VU	<p>Habitat: Caves or abandoned mine sites in cool draughty areas, close to water (Churchill 1998; Corbett & Richards 2002). Reported as foraging in riparian areas and in Eucalypt tall open forests (Woinarski & Milne 2015).</p> <p>Distribution: Restricted to the NT and only known to occur on the western Arnhem Land sandstone massif (Deaf Adder Gorge and upper South Alligator River area) and from one site – Tolmer Falls – in Litchfield National Park (McKean & Hertog 1979) where population appears to be disappearing (Woinarski & Milne 2015).</p>	<p>NONE</p> <p>No suitable habitat within the study area. No proximate records and outside known distribution.</p>
			<p>Churchill, S. (1998). <i>Australian Bats</i>. Reed New Holland, Sydney.</p> <p>Corbett, L. and Richards, G. (2002). <i>Bat survey: Gunlom land trust area</i>. Report to Parks Australia North, EWL Sciences, Darwin.</p> <p>McKean, J.L. and Hertog, A.L. (1979). Extension of range in the horseshoe bat. <i>Northern Territory Naturalist</i>, Vol. 1, p. 5.</p> <p>Woinarski, D. and Milne, D. (2015). <i>Threatened Species of the Northern Territory – Arnhem Leaf-nosed Bat – Hipposideros inornata</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0018/205524/arnhem-leaf-nosed-bat.pdf [Accessed 1 May 2018].</p>	
Ghost Bat <i>Macroderma gigas</i>	VU	-	<p>Habitat: Ranging from the arid Pilbara of WA to tropical savanna woodlands and north Qld. rainforests (TSSC 2016). Permanent roost sites are generally deep natural caves or disused mines (TSSC 2016).</p> <p>Move between a number of caves seasonally or as dictated by weather conditions, and require a range of cave sites (Hutson et al. 2001). Most breeding sites are caves with multiple entrances (TSSC 2016).</p> <p>Distribution: Geographically-disjunct colonies occur in the Pilbara and Kimberley in WA, NT north of approximately 17° latitude (including Elcho Island and Groote Eylandt), the Gulf of Carpentaria, eastern Qld from Cape York to near Rockhampton, and western Qld (including Riversleigh and Camooweal districts) (TSSC 2016). Distribution likely influenced by the availability of suitable caves and mines for roost sites (Ward & Milne 2016).</p>	<p>LOW</p> <p>No caves, rock crevices or abandoned mines suitable for permanent breeding/roost sites known within the study area. Suitable foraging habitat within the study area. Outside the species' usual range. The few records for the greater Darwin region are vagrants. The closest known permanent roost site is near Adelaide River Pine Creek, ~100 km south-east No records during recent targeted bat acoustic surveys.</p>

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			<p>Only 14 breeding sites known (Worthington Wilmer 2012). Disperse widely when not breeding (TSSC 2016). In arid Australia, including southern NT until the early 1960's (Ward & Milne 2016).</p> <p>Hutson, A. M., Mickleburgh, S. P. & Racey, P. A. (2001) Microchiropteran Bats - Global Status Survey and Conservation Action Plan. IUCN/SSC Chiroptera Specialist Group, Gland, Switzerland and Cambridge, U.K.</p> <p>Milne, D. and Ward, S. (2016). <i>Threatened Species of the Northern Territory – Ghost Bat - Macroderma gigas</i>. Northern Territory Department of Environment and Natural Resource. https://nt.gov.au/_data/assets/pdf_file/0010/376138/ghost-bat.pdf.</p> <p>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.</p> <p>Worthington Wilmer, J. (2012). Ghost Bat <i>Macroderma gigas</i>. In: Curtis et al. (eds.). <i>Queensland's Threatened Animals</i>. CSIRO, Canberra: pp. 382-383.</p>	
<p>Bare-rumped Sheath-tailed Bat <i>Saccolaimus saccolaimus nudicluniatus</i></p>	VU	-	<p>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) with more recent records from Howard Springs (Milne et al 2009). Most records occur within near-coastal habitats with one recent exception (Jasper Gorge) 150 km inland (Woinarski et al. 2014).</p> <p>Distribution: Widely distributed from India through south-east Asia to the Solomon Islands, with few records across north-eastern Qld and the NT, suggesting a fragmented distribution. The north-eastern Australian population is described as the subspecies <i>S. s. nudicluniatus</i>, although it is not clear whether this should be applied to NT populations (Milne & Woinarski 2006).</p> <p>Churchill, S. (1998). <i>Australian Bats</i>. Reed New Holland, Sydney.</p> <p>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.</p> <p>Milne, D.J., Jackling, F.C., Sidhu, M., and Appleton, B.R. (2009). Shedding new light on old species identifications: morphological and genetic evidence suggest a need for conservation status review of the critically endangered bat, <i>Saccolaimus saccolaimus</i>. <i>Wildlife Research</i> 36: 496–508.</p> <p>Milne, D. and Woinarski, J. (2006). <i>Threatened Species of the Northern Territory - Bare-rumped Sheath-tailed Bat - Saccolaimus saccolaimus</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0007/376117/bare-rumped-sheath-tail-bat.pdf.</p> <p>Woinarski, J., Burbidge, A. and Harrison, P. (2014). <i>The Action Plan for Australian Mammals 2012</i>. CSIRO Publishing: pp. 511-514.</p>	<p>HIGH</p> <p>Suitable habitat within the study area. Records within the study area from targeted survey for this project.</p>
<p>Brush-tailed Rabbit-Rat <i>Conilurus penicillatus</i></p>	VU	EN	<p>Habitat: Largely restricted to mixed <i>Eucalypt</i> open forest and woodland, or on dunes with <i>Casuarina</i> – 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; Firth 2007; Kemper & Firth 2008).</p> <p>Distribution: Formerly widespread across northern Australia, but has declined extensively from Qld and lower rainfall areas of the Kimberley in WA and the Top End in the NT. No recent records from much of the historically-recorded NT range between near the mouth of Victoria River (in the west) and Sir Edward Pellew island group (in east). Most recently known</p>	<p>NONE</p> <p>Marginally-suitable habitat within the study area. No recent records from much of the historically-recorded NT range. The species is considered locally extinct in the Darwin region.</p>

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			from Cobourg Peninsula, Tiwi Islands, Groote Eylandt and a small area within Kakadu National Park (DEPWS 2021).	
			<p>Firth, R.S.C. (2007). <i>Ecology and conservation status of the brush-tailed rabbit-rat Conilurus penicillatus</i>. PhD thesis, Charles Darwin University, Darwin, Northern Territory.</p> <p>Firth, R.S.C., Woinarski, J.C.Z. and Noske, R.A. (2006). Home range and den characteristics of the brush-tailed rabbit-rat <i>Conilurus penicillatus</i> in the monsoonal tropics of the Northern Territory, Australia. <i>Wildlife Research</i>, Vol. 33, pp. 397-408.</p> <p>Kemper, C.M. and Firth, R.S.C. (2008). Brush-tailed Rabbit-rat. In: Van Dyck, S. and Strahan, R. (eds). <i>The Mammals of Australia</i>. Reed New Holland, Chatswood, NSW.</p> <p>Department of Environment, Parks and Water Security (2021). <i>Threatened Species of the Northern Territory - Brush-tailed rabbit-rat</i>. Northern Territory Government https://nt.gov.au/_data/assets/pdf_file/0016/205504/brush-tailed-rabbit-rat.pdf.</p>	
Black-footed Tree-rat (Kimberley and mainland NT subspecies) <i>Mesembriomys gouldii gouldii</i>	EN	EN	<p>Habitat: Woodlands and open forests with large trees and a moderately diverse mid-storey in near-coastal areas. Generally, require fruit and seed resources including <i>Pandanus</i> fruits, and fruiting trees and shrubs (Rankmore 2006). Shelters in tree hollows and occasionally <i>Pandanus</i> (Hill 2012). Thought to be more prevalent in woodlands with infrequent and low intensity fires (Price et al. 2005).</p> <p>Distribution: Top End of NT, Kimberley region of WA and Cape York Peninsula south to Townsville in Qld. (Hill 2012). Has remained relatively abundant in the Darwin rural area and there are some recent records from Gunn Point (Price et al. 2005), the Lee Point Area and Middle Arm.</p>	HIGH Suitable habitat within the study area. One record from targeted survey in 2023 within the study area.
			<p>Department of Environment, Parks and Water Security (2021) <i>Threatened Species of the Northern Territory – Black-footed Tree-rat (Kimberley and mainland Northern Territory)</i>. Northern Territory Government. https://nt.gov.au/_data/assets/pdf_file/0018/205515/black-footed-tree-rat-kimberley-mainland-nt.pdf [Accessed 31 Jan 2022]</p> <p>Price, O., Rankmore, B., Milne, D.J., Brock, C., Tynan, C., Kean, L. and Roger, L. (2005). Regional patterns of mammal abundance and their relationships to landscape variables in eucalypt woodlands near Darwin, northern Australia. <i>Wildlife Research</i>, Vol. 32, pp. 435-446.</p> <p>Rankmore, B.R. 2006. <i>Impacts of Habitat Fragmentation on the Vertebrate Fauna of the Tropical Savannas of Northern Australia; with Special Reference to Medium-sized Mammals</i>. PhD Thesis, Charles Darwin University, Darwin.</p>	
Nabarlek (Top End subspecies) <i>Petrogale concinna canescens</i>	EN	EN	<p>Habitat: Isolated and rocky areas consisting of both sandstone and granite escarpments (Churchill 1997; Telfer et al. 2008). Shelters in caves and crevices during the day (Churchill 1997) and may move from these to forage in adjacent flat areas (Sanson et al. 1985).</p> <p>Distribution: Restricted to the monsoonal tropics in the Top End of the NT in scattered populations from sandstone cliffs bordering the Arafura Swamp (Arnhem Land) in the east, to the Daly River catchment in the west (TSSC 2015; Ward & Woinarski 2012).</p>	NONE No suitable habitat within the study area. No proximate records.
			<p>Churchill, S. (1997). Habitat use, distribution and conservation status of the Nabarlek, <i>Petrogale concinna</i>, and sympatric rock-dwelling mammals, in the Northern Territory. <i>Australian Mammalogy</i>, Vol. 19, pp. 297-308.</p> <p>Sanson, G.D., Nelson, J. and Fell, P. (1985). Ecology of <i>Peradorcas concinna</i> in Arnhem Land in a wet and a dry season. <i>Proceedings of the Ecological Society of Australia</i>, Vol. 13, pp. 65-72.</p> <p>Telfer, W.R., Griffiths, A.D. and Bowman, D.M.J.S. (2008). The habitat requirements of four sympatric rock-dwelling macropods of the Australian monsoon tropics. <i>Austral Ecology</i>, Vol. 33, pp. 1033-1044.</p> <p>Threatened Species Scientific Committee (TSSC) (2015). Conservation Advice <i>Petrogale concinna canescens</i> nabarlek (Top End). Canberra: Department of the Environment and Energy. http://www.environment.gov.au/biodiversity/threatened/species/pubs/87606-conservation-advice-2015123.pdf In effect under the <i>EPBC Act</i> from 03-Dec-2015.</p>	

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			Ward, S. and Woinarski, J. (2012). <i>Threatened Species of the Northern Territory - Naborlek - Petrogale concinna</i> . Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0017/205523/nabarlek.pdf .	
Pale Field-rat <i>Rattus tunneyi</i>	-	VU	<p>Habitat: Historically occurred in a wide range of habitats, but now primarily in dense vegetation along creeks (Aplin et al. 2008). Fire regime seems to have little effect on population numbers; instead, the level of groundwater irrigating the riparian system and, to a lesser extent, current rainfall have a much stronger influence (Braithwaite & Griffiths 1996).</p> <p>Distribution: Higher rainfall areas of northern Australia, extending from Kimberley in WA to south-eastern Qld, including the Top End of the NT (Cole & Woinarski 2002, Braithwaite & Griffiths 1996). Previously widespread and patchily abundant, particularly in the north-west of the Top End, the Pale Field-rat appears to have declined in lower rainfall areas (Woinarski 2000).</p>	<p>MEDIUM</p> <p>Occurs in a wide range of habitats, and distribution likely overlaps study area.</p> <p>Few recent records in the greater Darwin area.</p> <p>Historic records from the study area.</p> <p>Single possible record during targeted survey for this project.</p>
			<p>Aplin, K., Braithwaite, R. and Baverstock, P. (2008). Pale Field-rat: <i>Rattus tunneyi</i>. In: Van Dyck, S. and Strahan, R. (eds.). <i>The Mammals of Australia (3rd Edition)</i>. Reed New Holland, Sydney, NSW.</p> <p>Braithwaite, R. and Griffiths, A. (1996). The paradox of <i>Rattus tunneyi</i>: endangerment of a native pest. <i>Wildlife Research</i>, Vol. 23, pp. 1-21.</p> <p>Cole, J. and Woinarski, J. (2002). <i>Field Guide to the Rodents and Dasyurids of the Northern Territory</i>. Surrey Beatty & Sons, Chipping Norton, NSW.</p> <p>Woinarski, J.C.Z. (2000). The conservation status of rodents in the monsoonal tropics of the Northern Territory. <i>Wildlife Research</i>, Vol. 27, pp. 421-435.</p>	
Northern Brushtail Possum <i>Trichosurus vulpecula arnhemensis</i>	VU	NT	<p>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).</p> <p>Distribution: Occurs from the Gulf of Carpentaria, NT to the Kimberley, WA. Also occurs on many NT islands, but not on any WA islands. Within its range, distribution is patchy (TSSC 2021). Recently, there have been broad-scale losses and reduction in extensive areas of the NT range (Woinarski 2004; Woinarski et al. 2011; Gibson & McKenzie 2012; Ziembicki et al. 2013; Stobo-Wilson et al. 2019).</p>	<p>HIGH</p> <p>Suitable habitat within the study area.</p> <p>Records from targeted survey in 2023 within the study area.</p>
			<p>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.</p> <p>Gibson L & McKenzie N (2012) Occurrence of non-volant mammals on islands along the Kimberley coast of Western Australia. <i>Records of the Western Australian Museum supplement</i> 81, 15-39</p> <p>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.</p> <p>Kerle, J., Foulkes, J., Kimber, R. and Papenfus, D. (1992). The decline of the brushtail possum, <i>Trichosurus vulpecula</i> (Kerr 1798), in arid Australia. <i>Rangelands Journal</i>, Vol. 14, pp. 107-127.</p> <p>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</p> <p>Threatened Species Scientific Committee (2021). Conservation Advice Trichosurus vulpecula arnhemensis 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</p> <p>Woinarski, J.C.Z. (2004). In a land with few possums, even the common are rare: ecology, conservation and management of possums in the Northern Territory. In: Goldingay, R. and Jackson, S. (eds.). <i>The biology of Australian possums and gliding possums</i>. Surrey Beatty & Sons, Sydney: pp.51- 62.</p> <p>Woinarski J, Ward S, Mahney T, Bradley J, Brennan K, Ziembicki M & Fisher A (2011) The mammal fauna of the Sir Edward Pellew Islands, Northern Territory: refuge and death-trap. <i>Wildlife Research</i> 38, 307-322.</p>	

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			Ziembicki M, Woinarski J & Mackey B (2013) Evaluating the status of species using Indigenous knowledge: novel evidence for major native mammal declines in northern Australia. <i>Biological Conservation</i> 157, 78-92.	
False Water Rat <i>Xeromys myoides</i>	VU	-	<p>Habitat: Utilises both intertidal and freshwater habitats, with most records from mangrove forests, saltmarsh, sedgeland, clay pans and freshwater <i>Melaleuca</i> wetlands (DAWE 2021).</p> <p>Distribution: Three regions of coastal Australia: the NT, central south Qld and south-east Qld (DAWE 2021). In the NT, known only from coastal Top End with ten records at six sites – South Alligator River in 1903, Daly River floodplain in 1972, two sites on the Tomkinson River in 1975, Melville Island in 1975 and Glyde River floodplain in 1998 and 1999 (Cole & Woinarski 2002, Woinarski 2006).</p> <p>There is a Draft Recovery Plan for this species.</p>	<p>NONE</p> <p>No suitable habitat within the study area. No proximate records.</p>
			<p>Cole, J. and Woinarski, J. (2002). <i>Field Guide to the Rodents and Dasyurids of the Northern Territory</i>. Surrey Beatty & Sons, Chipping Norton, NSW.</p> <p>Department of Agriculture, Water and the Environment (2021). <i>Xeromys myoides</i> - Water Mouse, False Water Rat, Yirrkoo. Species Profile and Threats Database, Canberra. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=66 [Accessed 16 June 2022].</p> <p>Woinarski, J. (2006). <i>Threatened Species of the Northern Territory - False water-rat, Water mouse - Xeromys myoides</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0008/376136/false-water-rat.pdf.</p>	
Arnhem Rock-rat <i>Zyzomys maini</i>	VU	VU	<p>Habitat: Rugged sandstone environments, typically where there are many caves, crevices or boulders. Occupies environments in association with monsoonal rainforest, typically those areas which are floristically-rich and provide the fleshy fruits and seeds that form its principal food item (Begg et al. 1980).</p> <p>Distribution: Endemic to the sandstone massif of western Arnhem Land in the NT (Woinarski 2004). Commonly found throughout parts of Kakadu National Park and Warddeken Indigenous protected area (Woinarski et al. 2014).</p>	<p>NONE</p> <p>No suitable habitat within the study area. No proximate records and outside known distribution.</p>
			<p>Begg, R.J. and Dunlop, C.R. (1980). Security eating, and diet in the large rock-rat, <i>Zyzomys 121oodwardia</i> (Rodentia: Muridae). <i>Australian Wildlife Research</i>, Vol. 7, pp. 63-70.</p> <p>Woinarski, J., Burbidge, A. and Harrison, P. (2014). <i>The Action Plan for Australian Mammals 2012</i>. CSIRO Publishing: pp. 652-654.</p> <p>Woinarski, J.C.Z. (2004). <i>Threatened plants and animals in Kakadu National Park: a review and recommendations for management</i>. Darwin, Northern Territory DIPE.</p>	
REPTILES (TERRESTRIAL)				
Plains Death Adder <i>Acanthophis hawkei</i>	VU	VU	<p>Habitat: Floodplains in the Top End and cracking soil plains inland (Webb et al. 2002).</p> <p>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).</p>	<p>NONE</p> <p>No suitable habitat within the study area. No proximate records and outside known distribution.</p>

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			<p>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.</p> <p>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.</p> <p>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.</p> <p>Threatened Species Scientific Committee (2015). <i>Approved Conservation Advice – Acanthophis hawkei – Plains Death Adder</i>. Canberra: Department of the Environment. http://www.environment.gov.au/biodiversity/threatened/species/pubs/83821-conservation-advice.pdf.</p>	
Arnhem Land Skink <i>Bellatorias obiri</i>	EN	EN	<p>Habitat: Prefers sandstone outcrops, typically with extensive fissures and cave systems (Sadlier 1990).</p> <p>Distribution: Restricted to the Western Arnhem Land plateau and outliers (e.g. Jabiluka), where patchily distributed (Armstrong & Dudley 2004).</p>	NONE No suitable habitat within the study area. No proximate records and outside known distribution.
			<p>Armstrong, M. and Dudley, A. (2004). <i>The Arnhem Land Egernia Egernia obiri in Kakadu National Park</i>. Report to Parks Australia North, NT Department of Infrastructure Planning and Environment, Darwin.</p> <p>Sadlier, R.A. (1990). A new species of scincid lizard from western Arnhem Land, Northern Territory. <i>The Beagle</i>, Vol. 7, pp. 29-33.</p>	
Yellow-snouted Gecko <i>Lucasium occultum</i>	EN	VU	<p>Habitat: Prefers areas with well-developed leaf litter and grasses (King et al. 1982; Johansen 2006) in open forests dominated by <i>Eucalyptus miniata</i> and <i>E. tetradonta</i>. Commonly found in sandy red-loam substrates. Has been recorded in areas consisting of moderate to sparse Gamba grass (Beggs et al. 2012).</p> <p>Distribution: Endemic to the NT with known populations from north-west of Kakadu National Park and Wildman Reserve (King et al. 1982).</p>	NONE No suitable habitat within the study area. No proximate records and outside known distribution.
			<p>Beggs, K., Armstrong, M., Woinarski, J. and Ward, S. (2012). <i>Threatened Species of the Northern Territory - Yellow-Snouted Gecko - Lucasium occultum</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0007/206458/yellow-snouted-gecko.pdf [Accessed 1 May 2018].</p> <p>Johansen, T. (2006). <i>The yellow-snouted gecko (Diplodactylus occultus), a little known endemic species of northern Australia</i>. Report to NT Department of Natural Resources Environment and the Arts.</p> <p>King, M., Braithwaite, R.W. and Wombey, J.C. (1982). A new species of <i>Diplodactylus</i> (Reptilia: Gekkonidae) from the Alligator Rivers region - Northern Territory. <i>Transactions of the Royal Society of South Australia</i>, Vol. 106, pp. 15-18.</p>	
Oenpelli Python <i>Simalia (Morelia) oenpelliensis</i>	-	VU	<p>Habitat: Shelters in cracks, caves and crevices of rugged sandstone escarpments and gorges; or in large shady trees. Within this environment, reported from monsoon rainforest patches, riparian areas, woodlands, open heathlands and bare rock pavements (Woinarski & Ward 2012).</p> <p>Distribution: Restricted to the sandstone massif of Western Arnhem Land in the NT. Within this area, is it reported in the upper catchments of the Cadell, also in the South and East Alligator River systems (Woinarski & Ward 2012).</p>	NONE No suitable habitat within the study area. No proximate records and outside known distribution.
			<p>Woinarski, J. and Ward, S. (2012). <i>Threatened Species of the Northern Territory - Oenpelli Python - Morelia oenpelliensis</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0008/206459/oenpelli-python.pdf [Accessed 22 June 2022].</p>	
Northern Blue-tongued Skink <i>Tiliqua scincoides intermedia</i>	CE	-	<p>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).</p> <p>Distribution: Throughout the Top End, south to about Elliott, including islands off the Top End coast (DCCEEW). Once common in suburban</p>	HIGH Suitable habitat within study area. Camera trapping and incidental records from 2023-24 surveys within the study area.
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Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			<p>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</p> <p>Jolly, C., Schembri, B., Macdonald, S. (2023), Field Guide to the Reptiles of the Northern Territory. CSIRO Publishing, Collingwood, Victoria.</p>	
<p>Mertens' Water Monitor <i>Varanus mertensi</i></p>	EN	VU	<p>Habitat: Semi-aquatic, occupying edges of freshwater watercourses and lagoons, but seldom seen far from water (Christian 2004).</p> <p>Distribution: Across far northern Australia from the western Cape York Peninsula in Qld to the Kimberley in WA (Christian 2004). Widespread in the NT, occupying all of the Top End river systems (Ward et al. 2006). The more common water monitor in greater Darwin (outside of Darwin suburbs and coastal area). Susceptible to ingesting toxic Cane Toads resulting in reduced abundance (Griffiths & McKay 2007).</p>	<p>HIGH</p> <p>Suitable habitat within study area. Incidental records from 2023-24 surveys within the study area.</p>
			<p>Christian, K. (2004). <i>Varanus mertensi</i>. In: Pianka et al. (eds.). <i>Varanoid lizards of the world</i>. Indiana University Press, Bloomington, Indianapolis.</p> <p>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.</p> <p>Ward, S., Woinarski, J., Griffiths, T. and McKay, L. (2006). <i>Threatened Species of the Northern Territory - Mertens Water Monitor - Varanus mertensi</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0018/206460/mertens-water-monitor.pdf.</p>	
<p>Mitchell's Water Monitor <i>Varanus mitchelli</i></p>	CE	VU	<p>Habitat: Semi-aquatic and often arboreal, inhabiting margins of freshwater watercourses, swamps and lagoons (Shine 1986).</p> <p>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 (Ward 2012). The more common water monitor in Darwin suburbs and coastal area. Susceptible to ingesting toxic Cane Toads resulting in reduced abundance (Doody et al. 2009).</p>	<p>HIGH</p> <p>Suitable habitat within study area. Incidental records from 2023-24 surveys within the study area.</p>
			<p>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.</p> <p>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.</p> <p>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.</p> <p>Ward, S. (2012). <i>Threatened Species of the Northern Territory - Mitchell's Water Monitor - Varanus mitchelli</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0019/206461/mitchells-water-monitor.pdf.</p>	

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
Floodplain Monitor <i>Varanus panoptes</i>	-	VU	<p>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).</p> <p>Distribution: Across northern Australia from the Kimberley in WA to Cape York Peninsula, and southwards through most of Qld. 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 (Doody et al. 2009).</p>	<p>MEDIUM</p> <ul style="list-style-type: none"> • Suitable habitat within the study area. • Not detected during camera trapping in 2023 within the study area. • Significant decline across their range due to Cane Toads.
	<p>Christian, K. (2004). <i>Varanus panoptes</i>. In: Pianka et al. (eds). <i>Varanoid lizards of the world</i>. Indiana University Press, Bloomington, Indianapolis.</p> <p>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.</p> <p>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.</p> <p>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. https://nt.gov.au/_data/assets/pdf_file/0006/206466/floodplain-monitor.pdf.</p>			
AMPHIBIANS				
Howard River Toadlet <i>Uperoleia daviesae</i>	VU	VU	<p>Habitat: Appears to be confined to seasonally inundated, low relief sandsheet heathland associated with drainage systems. Suitable habitat consists of shallowly inundated seepage areas with sedges and herbs on sandy substrates (Ward et al. 2012). Habitat may be reliant on a perched aquifer overlying a lateritic or clay layer, which is influenced by rainfall inputs and localised drainage.</p> <p>Distribution: Endemic to the Darwin region in the northern NT. Confined to sandsheet heathlands in the Howard, Elizabeth, Adelaide, and Blackmore River catchments (TSSC 2021; Ward et al. 2012).</p>	<p>HIGH</p> <p>Suitable habitat within the study area.</p> <p>Records from targeted surveys in 2022, 2023 and 2024 within the study area.</p>
	<p>Threatened Species Scientific Committee (2021). <i>Conservation Advice Uperoleia daviesae (Howard River Toadlet)</i>. Canberra: Department of Agriculture, Water and the Environment. http://www.environment.gov.au/biodiversity/threatened/species/pubs/85375-conservation-advice-13112021.pdf. In effect under the EPBC Act from 13-Nov-2021.</p> <p>Ward, S., Young, S. and Hill, B. (2012). <i>Threatened Species of the Northern Territory - Howard River Toadlet – Uperoleia daviesae</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0003/205527/howard-river-toadlet.PDF</p>			
INVERTEBRATE				
Victoria River Squat Snail <i>Trachiopsis victoriana</i>	-	VU	<p>Habitat: Found in leaf litter at the base of large limestone boulders in a marshy sink. Also recorded buried in soil in open Eucalyptus woodlands (Solem 1985).</p> <p>Distribution: Reported in and around limestone sinkholes in Katherine region. Possibly naturally extremely restricted in range.</p>	<p>NONE</p> <ul style="list-style-type: none"> • No suitable habitat. • Outside species' distribution.

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			<p>Solem, A. (1985). Camaenid land snails from Western and central Australia (Mollusca: Pulmonata: Camaenidae) - V Remaining Kimberley genera and addenda to the Kimberley. Records of the Western Australian Museum Supplement 20, pp. 707-981.</p> <p>Wilson, C., Woinarski, J., Kessner, V. and Braby, M. (2006). Threatened Species of the Northern Territory - Victoria's Land Snail - <i>Setobaudinia victoriana</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0007/206539/setobaudinia-victoriana.pdf [Accessed 1 May 2018].</p>	
FISH				
Northern River Shark <i>Glyphis garricki</i>	EN	EN	<p>Habitat: Little is known of the ecology, probably restricted to shallow, brackish reaches of large rivers (Ward & Larson 2012).</p> <p>Distribution: In Australia, there are few records, including in the NT from the Adelaide, East and South Alligator River systems. Also known from the Kimberley coast and King Sound in WA (Thorburn & Morgan 2004; Compagno et al. 2008). NT distribution does not extend into the Gulf of Carpentaria.</p>	<p>NONE</p> <p>No suitable habitat within the study area.</p> <p>No proximate records and outside known distribution.</p>
			<p>Compagno, L.J.V., White, W.T. and Last, P.R. (2008). <i>Glyphis garricki</i> sp. nov., a new species of river shark (Carcharhiniformes: Carcharhinidae) from northern Australia and Papua New Guinea, with a redescription of <i>Glyphis glyphis</i> (Müller & Henle, 1839). In: Last et al. (eds.). <i>Descriptions of New Australian Chondrichthyans</i>. CSIRO Marine and Atmospheric Research Paper, 022: pp. 203-226.</p> <p>Thorburn, D.C. and Morgan, D.L. (2004). The northern river shark, <i>Glyphis</i> sp. C (Carcharhinidae) discovered in Western Australia. <i>Zootaxa</i>, Vol. 685, pp. 1-8.</p> <p>Ward, S. and Larson, H. (2012). <i>Threatened Species of the Northern Territory – Northern River Shark – Glyphis garricki</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0005/206384/northernr-river-shark.pdf.</p>	
Speartooth Shark <i>Glyphis glyphis</i>	CR	VU	<p>Habitat: Tropical fresh water and marine environments (Bradshaw et al. 2008). May be restricted to low salinity environments such as freshwater or brackish areas of rivers (DoE 2017).</p> <p>Distribution: Papua New Guinea and Northern Australia. Considered to be very rare in Australia as few specimens have been collected (Cavanagh et al. 2003). Three distinct geographical locations in the NT and northern Qld (DoE 2017). In the NT, recorded in the Alligator River region across to Adelaide River, and the Bizant River (Ward and Larson 2012).</p>	<p>NONE</p> <p>No suitable habitat within the study area.</p> <p>No proximate records and outside known distribution.</p>
			<p>Bradshaw, C.J.A., Fitzpatrick, B.M., Steinberg, C.C., Brook, B.W. and Meekan, M.G. (2008). Decline in whale shark size and abundance at Ningaloo Reef over the past decade: the world's largest fish is getting smaller. <i>Biological Conservation</i>, Vol. 141, pp. 1894–1905.</p> <p>Cavanagh, R., Kyne, P., Fowler, S., Musick, J. and Bennett, M. (eds.) (2003). <i>The Conservation Status of Australian Chondrichthyans</i>. Report of the IUCN Shark Specialist Group Australia and Oceania Red List Workshop. The University of Queensland, School of Biomedical Sciences, Brisbane, Australia.</p> <p>Department of the Environment (2017). <i>Glyphis glyphis</i> - <i>Speartooth Shark</i>. Species Profile and Threats Database, Department of the Environment, Canberra. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=82453.</p> <p>Ward, S. and Larson, H. (2012). <i>Threatened Species of the Northern Territory - Speartooth Shark - Glyphis glyphis</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0009/206388/speartooth-shark.pdf.</p>	
Freshwater or Largetooth Sawfish <i>Pristis pristis</i>	VU	VU	<p>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 (Peeverell 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).</p> <p>Distribution: Circumtropical, with distinct populations in the eastern Atlantic, western Atlantic, eastern Pacific and Indo-West Pacific including northern Australia (TSSC 2014). 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</p>	<p>NONE</p> <p>No suitable habitat within the study area.</p> <p>No proximate records and outside known distribution.</p>
TEH2 Australia Pty Ltd Ecology survey report – Wak Wak Solar Farm				

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			<p>Department of the Environment (DoE) (2018). <i>Pristis pristis in Species Profile and Threats Database</i>, Department of the Environment, Canberra. http://www.environment.gov.au/sprat. [Accessed 1 May 2018].</p> <p>Peeverell, 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.</p> <p>Threatened Species Scientific Committee (2014). <i>Approved Conservation Advice - Pristis pristis (largetooth sawfish)</i>. Canberra: Department of the Environment. In effect under the <i>EPBC Act</i> from 11-April-2014. http://www.environment.gov.au/biodiversity/threatened/species/pubs/60756-conservation-advice.pdf.</p>	
FLORA				
<p>a shrub <i>Atalaya brevialata</i></p>	CR	CR	<p>Habitat: Restricted to foot-slope sites with more open vegetation on deeper, coarser sandy soils, mostly along a specific, distinct geological boundary (Cowie 2014).</p> <p>Distribution: Endemic to the NT; found south of Darwin, near Elizabeth River at Virginia, and its tributary – Amy’s Creek (Cowie 2014). Few targeted surveys and uncertainty as to the taxonomic distinctness of the species. Extent of occurrence is 7.6 km², with a high degree of confidence as it occurs within one of the most heavily surveyed areas in the NT (Cowie 2014).</p>	<p>NONE No suitable habitat within the study area. No proximate records and outside known distribution.</p>
<p>Cowie, I. (2014). <i>Threatened Species of the Northern Territory - Atalaya brevialata</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0008/376262/atalaya-brevialata.pdf.</p>				
<p>a shrub <i>Acacia praetermissa</i></p>	VU	VU	<p>Habitat: Upper to lower slopes with various aspects in stony, skeletal or sandy soils on sandstone or laterite substrates with <i>Eucalyptus miniata</i> and <i>E. tetradonta</i> (NTH 2020). Several sites are on the slopes of a tertiary plateau remnant; others are on ridge slopes (Cowie & Kerrigan 2012). Flowers recorded between Jan-Sept, and fruits from Jan-Mar and Jul-Oct (Holmes et al. 2007).</p> <p>Distribution: Endemic to the NT, collected from two roadside localities along 25 km of the Stuart Highway; near Emerald Springs and Hayes Creek (Dunlop et al. 1995). Some targeted searches have been conducted and considerable survey has been conducted in the wider region, suggesting that existing records reflect this species’ restricted distribution and abundance (Cowie & Kerrigan 2012).</p>	<p>NONE No suitable habitat within the study area. No proximate records and outside known distribution.</p>
<p>Cowie, I. and Kerrigan, R. (2012). <i>Threatened Species of the Northern Territory - Acacia praetermissa</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0018/208404/acacia-praetermissa.pdf.</p> <p>Dunlop, CR., Leach, GJ. and Cowie, ID. (1995). <i>Flora of the Darwin Region</i>. Vol 2. Conservation Commission of the Northern Territory, Darwin.</p> <p>Holmes, J., Bisa, D., Hill, A. and Crase, B. (2007). <i>A Guide to the Threatened, Near Threatened and Data Deficient Plants in the Litchfield Shire of the Northern Territory</i>. WWF-Australia, Ultimo, NSW.</p> <p>Northern Territory Herbarium (NTH). (2020). FloraNT - Northern Territory flora online. Department of Land Resource Management.</p>				

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
a herb <i>Cleome insolata</i>	-	VU	<p>Habitat: Inundated sedge land growing on silty loam with coverage of laterite gravels in close proximity to a river catchment (Short 2010). Low open woodlands with <i>Grevillea pteridifolia</i>, <i>Melaleuca viridiflora</i>, <i>M. nervosa</i>, <i>Verticordia cunninghamii</i> and <i>Pandanus</i> over <i>Dapsilanthus</i>, <i>Eriachne burkittii</i>; <i>Sorghum</i> and <i>Alloteropsis</i>; on seasonally waterlogged sandy soils. Flowering Jan-Apr (NTH 2020).</p> <p>Distribution: Endemic to the NT, known from a population located near Humpty Doo, three populations in Lloyd Creek; from the Noonamah - Amys Creek area; Wishart Rd; near Shoal Bay and in the Darwin rural area (Westaway & Cowie 2012; EcOz records). A species-specific survey has not been carried out (Westaway & Cowie 2012).</p>	<p>HIGH</p> <p>Suitable habitat within the study area. Multiple records from targeted surveys in 2023 within the study area.</p>
<p>Short, P.S. (2010). New species of <i>Cleome</i> L. (Cleomaceae) from the Northern Territory, Australia. <i>The Beagle</i>, Records of the Museum and Art Galleries of the Northern Territory, 2010, Vol. 26, pp. 1–12. https://dtc.nt.gov.au/_data/assets/pdf_file/0011/254954/Short.pdf.</p> <p>Northern Territory Herbarium (NTH). (2020). FloraNT - Northern Territory flora online. Department of Land Resource Management.</p> <p>Westaway, J. and Cowie, I. (2012). Threatened Species of the Northern Territory - <i>Cleome insolata</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0006/208428/cleome-insolata.pdf.</p>				
Darwin Cycad <i>Cycas armstrongii</i>	-	VU	<p>Habitat: Open grassy woodland where adequate drainage appears to be a limiting factor (Kerrigan et al. 2006). Prime habitat has deep loamy soil (Liddle 2009). Separate male and female plants, with males flowering in August, and females from March-Nov (Holmes et al. 2007)</p> <p>Distribution: Restricted to the Top End of the NT – from Gunn Point to Hayes Creek, west to within 50km of the coastline and east to the Wildman River catchment (Kerrigan et al. 2006). Also on the Tiwi Islands and Cobourg Peninsula.</p>	<p>HIGH</p> <p>Suitable habitat within the study area. Recent records within the study area during 2023-24 field surveys.</p>
<p>Holmes, J., Bisa, D., Hill, A. and Crase, B. (2007). <i>A Guide to the Threatened, Near Threatened and Data Deficient Plants in the Litchfield Shire of the Northern Territory</i>. WWF-Australia, Darwin.</p> <p>Kerrigan, R., Cowie, I. and Liddle, D. (2006). <i>Threatened Species of the Northern Territory - Cycas armstrongii</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0017/208430/cycas-armstrongii.pdf.</p> <p>Liddle, D.T. (2009). Management Program for Cycads in the Northern Territory of Australia 2009-2014. Northern Territory Department of Natural Resources, Environment, the Arts and Sport, Darwin. http://www.territorystories.nt.gov.au/jspui/bitstream/10070/265358/1/Management%20program%20for%20cycads%20in%20the%20Northern%20Territory%20of%20Australia%202009%20to%202014.pdf.</p>				
a ground orchid <i>Dienia montana</i>	-	VU	<p>Habitat: Wet (spring-fed) rainforest (Kerrigan et al. 2013).</p> <p>Distribution: Northern Qld, and one population in the NT, near Munmarlary in Kakadu National Park. A targeted search in 2003 failed to record any plants at this locality (Kerrigan et al. 2013).</p>	<p>NONE</p> <p>No suitable habitat within the study area. No proximate records and outside known distribution.</p>

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			Kerrigan, R., Cowie, I. and Ward S. (2013). <i>Threatened Species of the Northern Territory - Dienia montana</i> . Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0007/208474/dienia-montana-malaxis-latifolia.pdf	
a sedge <i>Eleocharis retroflexa</i>	VU	-	Habitat: On plateaux, in the margins of seasonal swamps and watercourses with <i>Melaleuca</i> , <i>Eucalyptus</i> and <i>Corymbia</i> species and grasses (Cowie & Kerrigan 2006). Distribution: Northern Qld near Cairns and in the NT in Nitmiluk National Park near Katherine (TSSC 2008).	NONE No suitable habitat within the study area. No proximate records and outside known distribution.
			Cowie, I. and Kerrigan, R. (2006). <i>Threatened Species of the Northern Territory - Eleocharis retroflexa</i> . Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0010/376264/eleocharis-retroflexa.pdf . Threatened Species Scientific Committee (2008). Commonwealth Conservation Advice on <i>Eleocharis retroflexa</i> . Department of the Environment, Water, Heritage and the Arts. http://www.environment.gov.au/biodiversity/threatened/species/pubs/23672-conservation-advice.pdf .	
a herb <i>Goodenia quadrifida</i>	VU	-	Habitat: Ecology not well known. Recorded growing in grassland on the upper parts of estuarine floodplains on poorly-drained grey clays or silty soils (Cowie & Kerrigan 2006). Grows on cracking clay soils on plains (NTH 2020). Flowering and fruiting from March to May (Cowie & Kerrigan 2006). Distribution: Endemic to the Top End of the NT. Rare. Known from the upper Adelaide River and Hardies Creek (a tributary of the Mary River) (Cowie & Kerrigan 2006).	NONE No suitable habitat within the study area. No proximate records and outside known distribution.
			Cowie, I. and Kerrigan, R. (2006). <i>Threatened Species of the Northern Territory - Goodenia quadrifida</i> . Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0006/376269/goodenia-quadrifida.pdf . Northern Territory Herbarium (NTH). (2020). FloraNT - Northern Territory flora online. Department of Land Resource Management.	
a shrub <i>Helicteres macrothrix</i>	EN	EN	Habitat: Woodland dominated by <i>Eucalyptus tectifera</i> , <i>E. tetradonta</i> and <i>E. miniata</i> on sandy loam and rocky siltstone slopes or granitic rocks (Cowie et al. 2012). Absent from the laterite country predominant in the region (DoE 2017). Distribution: Restricted to the Top End of the NT where only three populations known – Mt Bundey, Batchelor/Glenluckie Creek and Lake Bennett (DoE 2017). While it is possible that extensive targeted searches may uncover additional subpopulations, there is a high degree of confidence in the broader distributional data (Cowie et al. 2012).	LOW Suitable habitat within the study area. Not found during 2023 targeted surveys within modelled high-likelihood habitat.
			Cowie, I., Kerrigan, R. and Stuckey, B. (2012). <i>Threatened species of the Northern Territory - Helicteres Sp. Glenluckie Creek</i> . Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0005/208445/helicteres-macrothrix.pdf Department of the Environment (2017). <i>Helicteres macrothrix</i> . Species Profile and Threats Database, Department of the Environment, Australian Government, Canberra. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=86586 .	
a sub-shrub <i>Hibbertia tricornis</i>	-	VU	Habitat: Sandy scree among sandstone escarpments (Westaway & Cowie 2012). Distribution: Known only from one location at Mount Brockman on the central western escarpment on the Arnhem land plateau. This population is located within the Kakadu National Park south of Jabiru (Westaway & Cowie 2012). High level of general survey in the area suggests that substantial increases are unlikely (Westaway & Cowie 2012).	NONE No suitable habitat within the study area. No proximate records and outside known distribution.
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Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			Westaway, J. and Cowie, I. (2012). <i>Threatened Species of the Northern Territory - Hibbertia tricornis</i> . Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0019/208450/hibbertia-tricornis.pdf .	
a shrub <i>Hibiscus brennanii</i>	VU	VU	Habitat: Sandstone cliffs, in gullies and on broken sandstone (Kerrigan & Cowie 2006). Distribution: Endemic to the NT, with restricted population in the Mt Brockman area to the west of Arnhem Land (Kerrigan & Cowie 2006). Considered adequately surveyed (Kerrigan & Cowie 2006).	NONE No suitable habitat within the study area. No proximate records and outside known distribution.
			Kerrigan, R. and Cowie, I. (2006). <i>Threatened Species of the Northern Territory - Hibiscus brennanii</i> . Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0003/208452/hibiscus-brennanii.pdf .	
a shrub <i>Jacksonia divisa</i>	-	VU	Habitat: Associated with shrubland on sandy kaolinite clay on ledges around the escarpment of a tertiary plateau (Cowie & Westaway 2012). Distribution: Endemic to the NT; found on the edges of a gorge on the eroding western margin of the Marrawal Plateau at Bloomfield Springs in southern Kakadu National Park (Cowie & Westaway 2012). An intensive survey of adjoining Nitmiluk National Park in 1999- 2001 failed to find additional subpopulations (Cowie & Westaway 2012).	NONE No suitable habitat within the study area. No proximate records and outside known distribution.
			Cowie, I. and Westaway, J. (2012). <i>Threatened Species of the Northern Territory - Jacksonia divisa</i> . Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0011/208469/jacksonia-divisa.pdf .	
Pink Myrtle <i>Lithomyrtus linariifolia</i>	-	VU	Habitat: Heaths or eucalypt woodlands on sandstone, in sandy or skeletal soils, often along the margins of <i>Allosyncarpia ternata</i> forest and almost always growing amongst <i>Triodia microstachya</i> (Kerrigan & Cowie 2006). Distribution: Endemic to the NT; found within Kakadu National Park and Arnhem Land (Kerrigan & Cowie 2006). Considered adequately surveyed.	NONE No suitable habitat within the study area. No proximate records and outside known distribution.
			Kerrigan, R. (2004). <i>Kakadu Threatened Flora Report</i> . Volume 2. Results of a threatened flora survey 2004. NT Department of Infrastructure Planning and Environment, Darwin. Kerrigan, R. and Cowie, I. (2006). <i>Threatened Species of the Northern Territory - Lithomyrtus linariifolia</i> . Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0003/208470/lithomyrtus-linariifolia.pdf .	
a shrub / tree <i>Schoutenia ovata</i>	-	EN	Habitat: Monsoonal vine thicket on both granite and limestone outcrops. Predominant on south-facing slopes within the Mt Bunday region (Cowie & Kerrigan 2012). Distribution: Occurs in three disjunct populations in the NT – two located at Mt Bunday and Mt Goyder and one near Tipperary Station (Liddle et al. 1994). The general habitat has been sufficiently well sampled across the Top End to indicate that its apparently highly restricted distribution in the NT is accurate (Cowie & Kerrigan 2012).	NONE No suitable habitat within the study area. No proximate records and outside known distribution.

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			<p>Cowie, I. and Kerrigan, R. (2012). <i>Threatened Species of the Northern Territory - Schoutenia ovata</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0006/208491/schoutenia-ovata.pdf.</p> <p>Liddle, D.T., Russell-Smith, J., Brock, J., Leach, G.J. and Connors, G.T. (1994). <i>Atlas of the vascular rainforest plants of the Northern Territory</i>. Flora of Australia Supplementary Series No. 3, ABRS, Canberra.</p>	
a trigger plant <i>Stylidium ensatum</i>	EN	EN	<p>Habitat: Margins of drainage areas in damp heavy clay or peaty soil (Cowie & Westaway 2012). Occurs with sedges (e.g. <i>Fimbristylis furva</i>), perennial grasses such as <i>Eriachne burkittii</i>, herbs such as <i>Burmannia</i> spp. and shrubs such as <i>Osbeckia</i> spp. and scattered <i>Banksia dentata</i> (TSSC 2016). Associated with <i>Melaleuca viridiflora</i> and <i>Lophostemon lactifluus</i> (Holmes et al. 2007). Sites occupied are poorly drained sandy or loamy flats that are seasonally inundated and are damp well into the Dry season (June-Aug) (TSSC 2016). Flowering and fruiting June and July (Holmes et al. 2007; Cowie & Westaway 2012).</p> <p>Distribution: Endemic to the NT. Known from Shoal Bay, Gunn Point, Girraween Rd, Weddell and Hayes Creek. Recorded subpopulation at Lee Point considered likely to be extinct (DLRM 2016). There are substantial areas of potentially-suitable habitat south from Darwin towards Hayes Creek that are relatively poorly surveyed, and it is likely that additional subpopulations exist (Cowie & Westaway 2012). Other historical collections recorded; however, the exact locality for these collections is unknown (Cowie & Westaway 2012).</p>	LOW Suitable habitat within the study area. Not found during 2023 targeted surveys within modelled high-likelihood habitat.
			<p>Cowie, I. and Westaway, J. (2012). <i>Threatened species of the Northern Territory - Stylidium ensatum</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0009/208494/stylidium-ensatum.pdf.</p> <p>Holmes, J., Bisa, D., Hill, A. and Crase, B. (2007). <i>A Guide to Threatened, Near Threatened and Data Deficient Plants in the Litchfield Shire of the Northern Territory</i>. WWF-Australia, Darwin. Threatened Species Scientific Committee. 2016. Conservation Advice. <i>Stylidium ensatum</i>. Department of the Environment, Canberra.</p>	
a herb <i>Typhonium praetermissum</i>	-	VU	<p>Habitat: Open woodland including relatively unshaded areas in red brown clay and shallow or gravelly lateritic soil (Cowie & Westaway 2012).</p> <p>Distribution: Endemic to the NT. Previous recorded at six locations in the Darwin/Litchfield area – Virginia, Karama, the Palmerston escarpment, Mandorah and Humpty Doo (Cowie & Westaway 2012). Two new subpopulations recorded in Lloyd Creek (EcOz records). Low number of fertile collections thought to be due to the species seasonality rather than its abundance. Targeted survey have been undertaken in the Darwin region in 2016 and additional sub-populations have been identified at both Gunn Point and the southern extent of Cox Peninsular (Cuff and Green 2019)</p>	HIGH Suitable habitat within the study area. Multiple records from targeted surveys in 2023 within the study area.
			<p>Cowie, I. and Westaway, J. (2012). <i>Threatened species of the Northern Territory - Typhonium praetermissum</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0017/208502/typhonium-praetermissum.pdf.</p> <p>Cuff, N. and Green, C. (2019) Threatened Species Distribution in the Greater Darwin Region – <i>Typhonium praetermissum</i>. Version 3.2. Department of Environment and Natural Resources. http://www.ntlis.nt.gov.au/metadata/export_data?type=html&metadata_id=35A8F264A830E4BCE050CD9B214471C4.</p>	

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
a herb <i>Typhonium taylorii</i>	EN	EN	<p>Habitat: Seasonally-saturated sandy substrate in nutrient-deficient grass/sedge land (Kerrigan & Cowie 2006). High quality habitat consists of sandsheet wetland systems and the margins of these systems (Hill 2020).</p> <p>Distribution: Endemic to the NT, with the only known population from the edge of the Howard River floodplain (Kerrigan & Cowie 2006). Targeted survey for this species in the Howard River Floodplain as part of a biodiversity assessment survey (Cowie 2002) did not relocate or uncover any additional populations of this species. Considered adequately surveyed, based on the strong survey effort in the area and the high profile of this genus amongst collectors. While more populations may exist, the paucity of collections of this species is considered to accurately reflect its very restricted distribution and abundance (Kerrigan & Cowie 2006).</p>	<p>LOW</p> <p>Potentially-suitable habitat within the study area. No records from targeted surveys within the study area. Outside known distribution.</p>
<p>Cowie, I. D. (2002). <i>Preliminary report on a survey of Utricularia (Lentibulariaceae) in the Howard River – Shoal Bay area</i>. NT Department of Infrastructure Planning and Environment, Darwin.</p> <p>Kerrigan, R. and Cowie, I. (2006). <i>Threatened species of the Northern Territory - Typhonium taylori</i>. Northern Territory Department of Environment and Natural Resources.</p>				
a bladderwort <i>Utricularia dunstaniae</i>	-	VU	<p>Habitat: 'Sandsheet heath' type habitats with wet sand, often in shallow water, in paperbark (<i>Melaleuca nervosa</i>) woodland or Feather-flower (<i>Verticordia</i>) shrub land. Occurs in slightly wetter micro-habitats than other sympatric <i>Utricularia</i> species, frequently where water is percolating from the ground (Kerrigan & Cowie 2015).</p> <p>Distribution: Endemic to Australia, known from WA and the NT – where known from nine locations. Locations near Darwin are Noonamah, Howard Springs and the Howard River floodplain. Other sub-populations on the Cobourg Peninsula, near Murgellenella and near Finnis River (Kerrigan & Cowie 2015). As apparently suitable habitat within the extent of occurrence remains unsurveyed, it is likely that additional, undiscovered subpopulations exist (Kerrigan & Cowie 2015).</p>	<p>HIGH</p> <p>Suitable habitat within the study area. Multiple records from targeted surveys in 2023 within the study area.</p>
<p>Kerrigan, R. and Cowie, I. (2015). <i>Threatened Species of the Northern Territory - Utricularia dunstaniae</i>. Northern Territory Department of Environment and Natural Resources.</p> <p>https://nt.gov.au/_data/assets/pdf_file/0020/208505/utricularia-dunstaniae.pdf.</p>				
a bladderwort <i>Utricularia singeriana</i>	-	VU	<p>Habitat: Borders of seasonally-inundated grassland (Cowie & Kerrigan 2012) and low open woodland (Holmes et al. 2005). Dominant associated plants include <i>Eriachne burkittii</i>, <i>Sorghum</i> spp., <i>Pseudopogonatherum</i> spp. and sedges (Cowie & Kerrigan 2012). Also recorded growing near granite outcrops (Holmes et al. 2005). Often in shallow water (to 2 cm deep) on moist sandy or sandy loamy substrates (Holmes et al. 2005). Flowering between March and May, and fruiting begin in May (Cowie & Kerrigan 2012).</p> <p>Distribution: Endemic to the NT with known populations from five locations between Darwin and Katherine – the nearest to Darwin being Finn Rd in Weddell. Other sites are the Edith River area, near the Finnis River, and the Marrawal Plateau east of Pine Creek. Port Darwin population (early</p>	<p>LOW</p> <p>Potentially-suitable habitat may be present seasonally, but patchy. No records within the study area. The nearest recent record is approximately 17 km north-west of the study area near Finn Road.</p>

Name	Status		Summary	Likelihood of occurrence
	Cth	NT		
			1900's record) no longer in existence (Cowie & Kerrigan 2012). As much apparently suitable habitat within the extent of occurrence remains unsurveyed, it is likely that additional undiscovered sub-populations exist (Kerrigan & Cowie 2012).	
<p>Cowie, I. and Kerrigan, R. (2012). <i>Threatened Species of the Northern Territory - Utricularia singeriana</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0003/208506/utricularia-singeriana.pdf.</p> <p>Holmes, J., Bisa, D., Hill, A. and Crase, B. (2005). <i>A Guide to Threatened, Near Threatened and Data Deficient Plants in the Litchfield Shire of the Northern Territory</i>. WWF-Australia, Sydney.</p>				
a ground orchid <i>Zeuxine oblonga</i>	-	VU	<p>Habitat: Grows in clusters in dark and moist situations in wet rainforest or in wet peaty areas near streams (Jones 1988).</p> <p>Distribution: Qld, NSW and in the NT, where known from five widely-spaced locations south and south-west of Darwin, from Keep River near the WA border to south-west of Adelaide River (Liddle et al. 1994). Not collected since 1992, despite efforts to relocate the Keep River population in 2000 and 2001 (Kerrigan & Cowie 2006). There is a negative collection bias associated with this species due to its ephemeral nature.</p>	<p>LOW</p> <p>Suitable habitat may be present within the study area. No proximate records and outside known distribution.</p>
<p>Jones, D.L. (1988). <i>Native Orchids of Australia</i>. Reed, Sydney.</p> <p>Kerrigan, R. and Cowie, I. (2006). <i>Threatened Species of the Northern Territory – Zeuxine oblonga</i>. Northern Territory Department of Environment and Natural Resources. https://nt.gov.au/_data/assets/pdf_file/0008/208691/zeuxine-oblonga.pdf.</p> <p>Liddle, D.T., Russell-Smith, J., Brock, J., Leach, G.J. and Connors, G.T. (1994). Atlas of the vascular rainforest plants of the Northern Territory. <i>Flora of Australia Supplementary Series No. 3</i>, Australian Biological Resources Study, Canberra.</p>				

APPENDIX D SANDSHEET HEATH FLORISTIC SITE DATA

Vegetation site	SS01 – Patch 5		Map unit	3b		
Vegetation type	Sandsheet heath, low open woodland					
Landform	Gently sloping plains, aspect north <1% slope					
Surface soils	Sandy, some clay/organics, mounds present					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	40	10	5	0	0	45
Threatening processes	Recent fire likely, weeds not observed, disturbance to west – old sand mine					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca nervosa</i>		6-10		20	
	<i>Grevillea pteridifolia</i>		4-6		5	
Mid stratum	<i>Melaleuca nervosa</i>		2-4		5	
	<i>Verticordia cunninghamii</i>		1-2		5	
	<i>Banksia dentata</i>		1-3		<1	
Ground stratum	<i>Dapsilanthus spathaceus</i>		<1		25	
	Annual <i>Sorghum</i> sp.		1-2		5	
	<i>Drosera</i> spp.		<0.5		<10	
Other species	<i>Spermacoce calliantha</i> , <i>Cartonema trigonospermum</i> , <i>Xyris complanata</i> (5% cover)					
Utricularia spp.	<i>Utricularia lasiocaulis</i> , <i>U. capilliflora</i> , <i>U. kamienskii</i>					



Vegetation site	SS02 – Patch 5			Map unit	3b	
Vegetation type	Sandsheet heath, low open woodland					
Landform	Gently sloping plains <1% slope					
Surface soils	Sandy, some clay/organics present					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	45	20	5	0	0	30
Threatening processes	Recent fire likely, weeds not observed, occasional old test pit observed throughout patch					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Melaleuca nervosa</i>			6-8		10
	<i>Grevillea pteridifolia</i>			8		<5
Mid stratum	<i>Verticordia cunninghamii</i>			1-2		10
	<i>Acacia dimidiata</i>			1-3		5
	<i>Grevillea pteridifolia</i>			1-3		<1
Ground stratum	<i>Dapsilanthus spathaceus</i>			<1		35
	<i>Annual Sorghum sp.</i>			1-2		<5
	<i>Alloteropsis semialata</i>			<1		1
Other species	<i>Xyris complanata</i> , <i>Drosera</i> spp., <i>Spermacoce calliantha</i> (<5 % cover)					
Utricularia spp.	<i>Utricularia capilliflora</i> , <i>U. kamienskii</i>					



Vegetation site	SS03 – Patch 8			Map unit	4b	
Vegetation type	Sandsheet heath, tall shrubland/low open woodland					
Landform	Gently sloping plains, aspect north <1% slope					
Surface soils	Sandy, with patchy areas containing more clay/organics					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	40	20	5	0	0	35
Threatening processes	Recent fire likely, weeds not observed, test pit to south of site					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Grevillea pteridifolia</i>			4-8		10
	<i>Melaleuca nervosa</i>			4-5		<5
	<i>Eucalyptus alba</i>			4-5		<1
Mid stratum	<i>Banksia dentata</i>			1-3		5
	<i>Xanthostemon eucalyptoides</i>			3-4		<1
Ground stratum	<i>Dapsilanthus spathaceus</i>			<1		10
	<i>Xyris complanata</i>			<1		10
	Sedge sp. #1			<1		10
Other species	Ground: <i>Melaleuca nervosa</i> , <i>Eriachne burkittii</i> (10% cover)					
Utricularia spp.	<i>Utricularia subulata</i> , <i>U. capilliflora</i> , <i>U. kamienskii</i> , <i>U. hamiltonii</i> , <i>U. lasiocaulis</i> , <i>U. leptoplectra</i>					



Vegetation site	SS04 – Patch 8			Map unit	4b	
Vegetation type	Sandsheet heath, tall shrubland/low open woodland					
Landform	Gently sloping plains, aspect south <1% slope					
Surface soils	Sandy, with patchy areas containing more clay/organics					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	35	35	5	0	0	25
Threatening processes	Recent fire likely, weeds not observed, no other disturbance noted					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Grevillea pteridifolia</i>			4-8		15
Mid stratum	<i>Banksia dentata</i>			1-3		15
Ground stratum	<i>Dapsilanthus spathaceus</i>			<1		10
	<i>Xyris complanata</i>			<1		10
	Sedge #1			<1		10
Other species	Other ground species ~5% cover					
Utricularia spp.	<i>Utricularia subulata</i> , <i>U. capilliflora</i> , <i>U. kamienskii</i> , <i>U. hamiltonii</i> , <i>U. lasiocaulis</i> , <i>U. leptoplectra</i>					





Vegetation site	SS05 – Patch 10			Map unit	3b	
Vegetation type	Sandsheet heath, tall shrubland/low open woodland					
Landform	Gently sloping plains, aspect south <1% slope					
Surface soils	Sandy, moderate clay/organics					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	40	35	5	0	0	20
Threatening processes	Recent fire likely, weeds not observed, pig damage noted within sandsheet patch					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Melaleuca nervosa</i>			5-8		10
	<i>Grevillea pteridifolia</i>			5-8		5
Mid stratum	<i>Pandanus spiralis</i>			1-4		<5
	<i>Grevillea pteridifolia</i>			2-5		<1
	<i>Melaleuca viridiflora</i>			2-5		5
Ground stratum	<i>Dapsilanthus spathaceus</i>			<1		15
	Annual <i>Sorghum</i> sp.			<1		5
	Sedge #1			<1		5
Other species	Other mid species: <i>Verticordia cunninghamii</i> (<1% cover) Other ground species: <i>Drosera</i> spp., <i>Xyris complanata</i> (15% cover)					
Utricularia spp.	<i>Utricularia odorata</i> , <i>U. capilliflora</i> , <i>U. leptorhyncha</i> , <i>U. nivea</i> , <i>U. limosa</i>					




Vegetation site	SS06 – Patch 10		Land unit	3a		
Vegetation type	Sandsheet heath, low open woodland					
Landform	Gently sloping plains, aspect west <1% slope					
Surface soils	Clayey sand, mounds present					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	40	20	5	0	0	35
Threatening processes	Recent fire likely, weeds not observed, pig damage noted within sandsheet patch					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca nervosa</i>		6-8		10	
	<i>Grevillea pteridifolia</i>		6-8		<1	
Mid stratum	<i>Pandanus spiralis</i>		1-2		2	
Ground stratum	<i>Fimbristylis</i> spp.		<1		15	
	Annual <i>Sorghum</i> sp.		1-2		15	
	Other species		<1		10	
Other species	Other ground species: <i>Pandanus spiralis</i> , <i>Buchnera</i> sp., mixed sedges Patchy <i>Dapsilanthus spathaceus</i> observed east of plot					
Utricularia spp.	<i>Utricularia leptorhyncha</i> , <i>U. odorata</i> (outside plot)					



Vegetation site	SS07 – Patch 11			Map unit	2a - margin	
Vegetation type	Sandsheet heath, sparse, low-mid open woodland					
Landform	Broad, gently sloping plains <1% slope, alluvial drainage line, sandy patches upslope					
Surface soils	Grey-brown loamy sands, mounds present					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	75	15	0	0	0	10
Threatening processes	Recent fire likely, weeds not observed, no other disturbance noted.					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Eucalyptus alba</i>			6-12		<5
Mid stratum	<i>Pandanus spiralis</i>			-		-
	<i>Grevillea pteridifolia</i>			-		-
	<i>Planchonia careya</i>			-		-
Ground stratum	<i>Germania grandiflora</i>			<1		15
	<i>Fimbristylis</i> spp.			<1		40
	Annual <i>Sorghum</i> sp.			<2		10
Other species	Other ground species: <i>Spermacoce calliantha</i> , <i>Cartonema trigonospermum</i> (10% cover)					
Utricularia spp.	<i>Utricularia leptorhyncha</i> , <i>U. leptoplectra</i>					



Vegetation site	SS08 – Patch 11		Map unit	3a		
Vegetation type	Sandsheet heath, sparse low open woodland					
Landform	Gently sloping plains, aspect north <1% slope					
Surface soils	Loamy sands					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	30	25	5	0	0	40
Threatening processes	Recent fire likely, weeds not observed, no other disturbance noted.					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca nervosa</i>		6-8		<5	
Mid stratum	<i>Pandanus spiralis</i>		1-4		<5	
	<i>Grevillea pteridifolia</i> <i>Planchonia careya</i>		3-5		<5	
Ground stratum	<i>Annual Sorghum</i> sp.		<2		10	
	<i>Fimbristylis</i> spp.		<1		10	
	<i>Xyris complanata</i>		<1		5	
Other species	Other ground species: <i>Drosera</i> spp., <i>Cartonema trigonospermum</i> (<5% cover)					
Utricularia spp.	<i>Utricularia leptorhyncha</i> , <i>U. leptoplectra</i>					



Vegetation site	SS09 – Patch 12	Map unit	3a			
Vegetation type	Sandsheet heath, sparse, low open woodland					
Landform	Gently sloping plains, aspect south east <1% slope					
Surface soils	Brown sandy soils, some clay/organics					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	45	20	5	0	0	40
Threatening processes	Recent fire likely, weeds not observed, no other disturbance noted.					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca nervosa</i>		4-8		5-10	
Mid stratum	<i>Pandanus spiralis</i>		1-4		5	
	<i>Hakea arborescens</i>		2-4		5	
	<i>Planchonia careya</i>		1-2		<1	
Ground stratum	<i>Annual Sorghum sp.</i>		<2		15	
	<i>Fimbristylis spp.</i>		<1		15	
	<i>Other species</i>		<1		15	
Other species	Other ground species: <i>Rhynchospora longisetis</i> , <i>Cartonema trigonospermum</i> , <i>Buchnera sp.</i> , <i>Xyris complanata</i>					
Utricularia spp.	<i>Utricularia leptorhyncha</i> , <i>U. leptoplectra</i> , <i>U. aurea</i>					



Vegetation site	SS10 – Patch 12	Land unit	3a			
Vegetation type	Sandsheet heath, low open woodland					
Landform	Gently sloping plains, <1% slope					
Surface soils	Brown-grey sandy soils, some clay/organics					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	35	20	5	0	0	40
Threatening processes	Recent fire likely, weeds not observed, Pig damage noted within SSH patch.					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca nervosa</i>		5-8		10	
	<i>Grevillea pteridifolia</i>		2-6		<1	
Mid stratum	<i>Pandanus spiralis</i>		1-5		5	
	<i>Hakea arborescens</i>		2-4		<5	
	<i>Planchonia careya</i>		3-4		<5	
Ground stratum	Annual <i>Sorghum</i> sp.		<2		5	
	<i>Eriachne burkittii</i>		<1		15	
	<i>Fimbristylis</i> spp.		<1		10	
Other species	Other ground species: <i>Rhynchospora longisetis</i> , <i>Cartonema trigonospermum</i> , <i>Drosera</i> spp., <i>Goodenia purpurea</i> , <i>Spermacoce calliantha</i> , <i>Buchnera</i> sp. (5% cover). <i>Dapsilanthus spathaceus</i> patchy, increases towards north of patch					
Utricularia spp.	<i>Utricularia leptoplectra</i> , <i>U. capilliflora</i> , <i>U. nivea</i> , <i>U. leptorhyncha</i> (<i>U. odorata</i> , <i>U. hamiltonii</i> and <i>U. kamienskii</i> in north of patch)					





Vegetation site	SS11 – Patch 13		Land unit	3b		
Vegetation type	Sandsheet heath, low open woodland					
Landform	Gently sloping plains, aspect east <1% slope					
Surface soils	Loamy sands					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	30	25	5	0	0	40
Threatening processes	Recent fire likely, weeds not observed, pig damage noted within SSH patch.					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca nervosa</i>		6-8		20	
	<i>Grevillea pteridifolia</i>		4-6		<5	
Mid stratum	Upper species		1-4		<5	
Ground stratum	<i>Dapsilanthus spathaceus</i>		<1		15	
	<i>Fimbristylis</i> spp.		<1		5	
	Annual <i>Sorghum</i> sp.		<1		5	
Other species	Other ground species: <i>Buchnera</i> sp., <i>Xyris complanata</i> (5% cover)					
Utricularia spp.	<i>Utricularia limosa</i> , <i>U. nivea</i> , <i>U. hamiltonii</i> , <i>U. capilliflora</i>					




Vegetation site/patch	SS12 – Patch 9		Map unit	3b		
Vegetation type	Sandsheet heath, low open woodland					
Landform	Gently sloping plains, <1% slope					
Surface soils	Grey clayey sand, saturated soils					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	55	20	5	0	0	20
Threatening processes	Recent fire likely, weeds not observed, Cleared woodland to south, pig damage to SW, test pit to west					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca nervosa</i>		6-8		30	
Mid stratum	<i>Verticordia cunninghamii</i>		1-3		<1	
	<i>Grevillea pteridifolia</i>		1-3		<1	
	<i>Banksia dentata</i>		1-3		<1	
Ground stratum	<i>Dapsilanthus spathaceus</i>		<1		10	
	<i>Fimbristylis</i> spp.		<1		5	
	<i>Xyris complanata</i>		<1		5	
Other species	Other ground species: <i>Drosera</i> spp., <i>Buchnera</i> sp., <i>Cartonema trigonospermum</i> , <i>Sowerbaea alliacea</i> (5% cover)					
Utricularia spp.	<i>Utricularia capilliflora</i> , <i>U. leptorhyncha</i> , <i>U. nivea</i>					



Vegetation site/patch	SS13 – Patch 4			Map unit	6	
Vegetation type	Low open woodland with minor sandsheet along northern edge of patch					
Landform	Gently sloping plains, aspect east <1% slope					
Surface soils	Grey clayey sand, saturated soils					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	55	20	5	0	0	20
Threatening processes	Recent fire likely, weeds not observed, no other disturbance noted.					
Vegetation	Dominant species			Height range (m)	Cover (%)	
Upper stratum	<i>Eucalyptus alba</i>			6-10	5	
	<i>Lophostemon lactifluus</i>			4-6	5	
	<i>Grevillea pteridifolia</i>			5-8	<1	
Mid stratum	<i>Lophostemon lactifluus</i>			2-4	<1	
Ground stratum	<i>Annual Sorghum</i> sp.			<2	35	
	<i>Dapsilanthus spathaceus</i>			<1	10	
	Sedge #1			<1	5	
Other species	Other ground species - 5% cover					
Utricularia spp.	<i>Utricularia leptorhyncha</i> , <i>U. lasiocaulis</i> (sparse)					

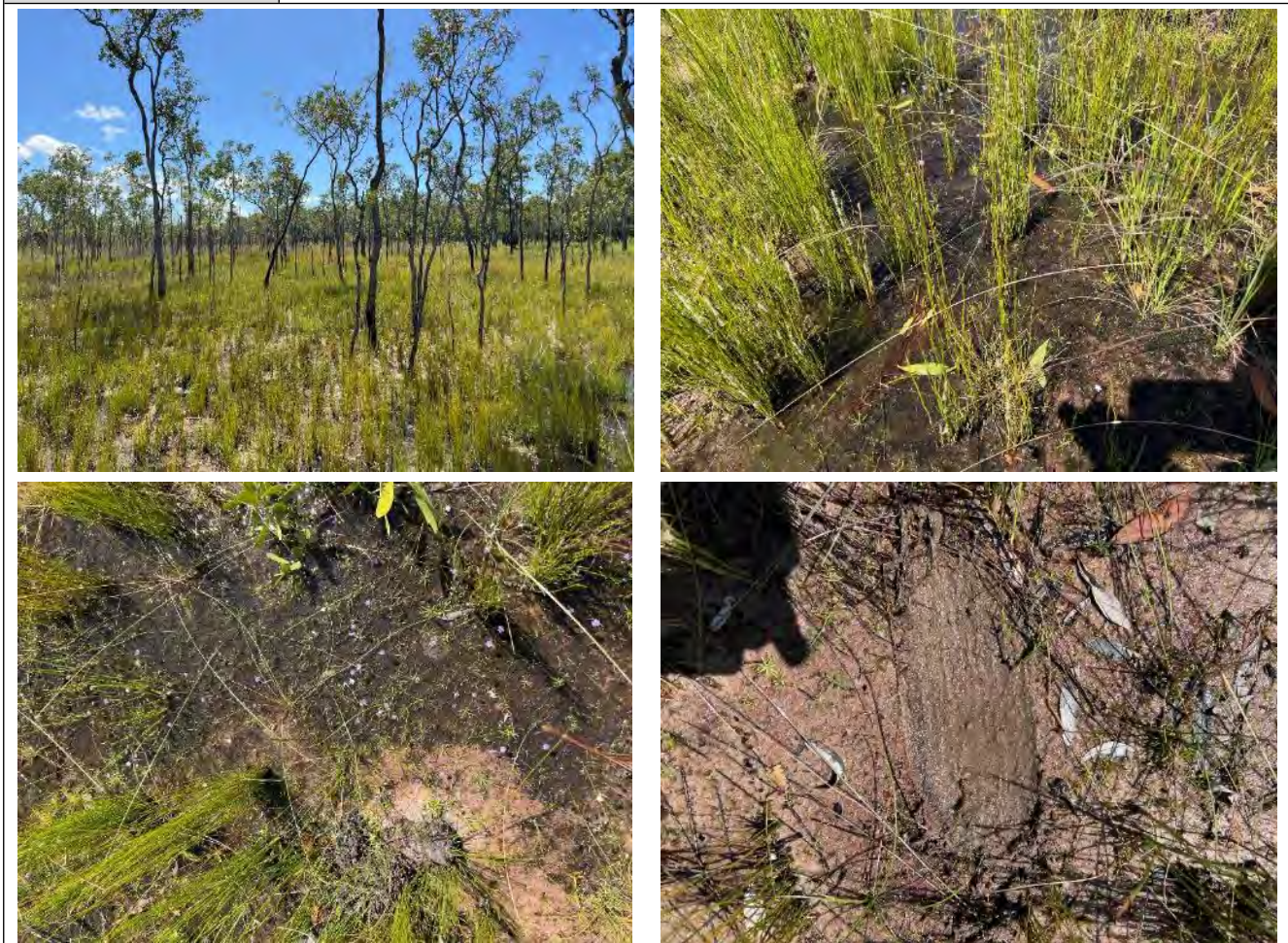





Vegetation site	SS14 – Patch 5			Map unit	3a	
Vegetation type	Sandsheet heath, tall shrubland/low open woodland					
Landform	Gently sloping plains, aspect south <1% slope					
Surface soils	Grey-brown clayey sand, saturated					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	45	15	5	0	0	35
Threatening processes	Recent fire likely, weeds not observed, test pit, mining to west					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Grevillea pteridifolia</i>			6-8		5
	<i>Melaleuca nervosa</i>			5-8		2
Mid stratum	<i>Xanthostemon eucalyptoides</i>			2-4		<5
	<i>Melaleuca viridiflora</i>			3-5		<1
Ground stratum	<i>Eriachne burkittii</i>			<1		15
	<i>Fimbristylis</i> spp.			<1		2
	Sedge #1			<1		<5
	Other ground species: <i>Dapsilanthus spathaceus</i> (<1%), <i>Xyris complanata</i> , <i>X. cheumatophila</i> , <i>Buchnera</i> sp., <i>Lophostemon lactifluus</i> (5% cover)					
Utricularia spp.	<i>Utricularia leptoplectra</i> , <i>U. kamienskii</i>					



Vegetation site	SS15 – Patch 6			Map unit	3b	
Vegetation type	Sandsheet heath, Low open woodland					
Landform	Gently sloping plains, aspect south <1% slope					
Surface soils	Sandy soils with minor clay/loam, mounds					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	25	50	5	0	0	20
Threatening processes	Recent fire likely, weeds not observed, disturbance to east (not visible from site)					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Melaleuca nervosa</i>			5-8		10
	<i>Grevillea pteridifolia</i>			5-8		<5
Mid stratum	<i>Melaleuca nervosa</i>			2-5		<5
	<i>Grevillea pteridifolia</i>			3-5		<5
Ground stratum	<i>Dapsilanthus spathaceus</i>			<1		15
	<i>Annual Sorghum sp.</i>			<2		2
	Sedge #1			<1		<5
Other species	Other ground species: <i>Buchnera sp.</i> , <i>Cartonema trigonospermum</i> , <i>Eriocaulon sp.</i> , <i>Xyris complanata</i> (<5% cover)					
Utricularia spp.	<i>Utricularia hamiltonii</i> , <i>U. capilliflora</i> , <i>U. kamienskii</i> , <i>U. lasiocaulis</i> , <i>U. leptoplectra</i> , <i>U. subulata</i>					



Vegetation site	SS16 – Patch 7			Map unit	4b	
Vegetation type	Sandsheet heath, tall open shrubland					
Landform	Gently sloping plains <1% slope					
Surface soils	Pink-white sandy soils, saturated					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	30	45	5	0	0	20
Threatening processes	Recent fire likely, weeds not observed, mine to east, no disturbance observed on site					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Grevillea pteridifolia</i>			5-8		<5
Mid stratum	<i>Xanthostemon eucalyptoides</i>			2-4		<1
	<i>Banksia dentata</i>			2-3		<1
Ground stratum	<i>Dapsilanthus spathaceus</i>			<1		10
	<i>Eriachne burkittii</i>			<1		10
	<i>Xyris complanata</i>			<1		-
Other species	Other ground species: Sedge #1, <i>Fimbristylis</i> spp., <i>Drosera</i> spp. (10% cover)					
Utricularia spp.	<i>Utricularia dunstaniae</i> , <i>U. capilliflora</i> , <i>U. subulata</i> , <i>U. kamienskii</i> , <i>U. hamiltonii</i> , <i>U. lasiocaulis</i> , <i>U. odorata</i>					



Vegetation site	SS17 – Patch 3			Map unit	3a	
Vegetation type	Sandsheet heath, low open woodland					
Landform	Gently sloping plains <1% slope					
Surface soils	Light brown clayey sands, saturated					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	25	50	5	0	0	20
Threatening processes	Recent fire likely, weeds not observed, test pit nearby, old mining to west					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Melaleuca nervosa</i>			4-6		5
	<i>Melaleuca viridiflora</i>			4-5		<5
Mid stratum	<i>Hakea arborescens</i>			2-4		15
	<i>Verticordia cunninghamii</i>			1-3		5
	<i>Pandanus spiralis</i>			1-3		1
Ground stratum	<i>Dapsilanthus spathaceus</i>			<1		10
	<i>Fimbristylis spp.</i>			<1		10
	<i>Other species</i>			<1		5
Other species	Other ground species: <i>Rhynchospora longisetis</i> , <i>Buchnera sp.</i> , <i>Drosera spp.</i>					
Utricularia spp.	<i>Utricularia hamiltonii</i> , <i>U. chrysantha</i> , <i>U. capilliflora</i> , <i>U. leptoplectra</i> (outside plot), <i>U. leptorhyncha</i> (outside plot)					



Vegetation site	SS18 – Patch 14			Map unit	3b	
Vegetation type	Sandsheet heath, tall open shrubland/low open woodland, patchy overstorey cover					
Landform	Gently sloping plains <1% slope					
Surface soils	Light brown clayey sands, saturated					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	30	15	5	0	0	50
Threatening processes	Recent fire likely, weeds not observed, pig damage noted within sandsheet patch					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Melaleuca nervosa</i>			4-6		5
	<i>Grevillea pteridifolia</i>			3-8		5
Mid stratum	<i>Pandanus spiralis</i>			1-3		<1
	<i>Syzygium eucalyptoides</i> ssp. <i>bleeseri</i>			2		<1
Ground stratum	<i>Dapsilanthus spathaceus</i>			<1		10
	<i>Eriachne burkittii</i>			<1		10
	Annual <i>Sorghum</i> sp.			1-2		5
Other species	Other ground species: <i>Fimbristylis</i> spp., <i>Cartonema trigonospermum</i> , <i>Buchnera</i> sp., <i>Drosera</i> spp.					
Utricularia spp.	<i>Utricularia odorata</i> , <i>U. limosa</i> , <i>U. capilliflora</i> , <i>U. hamiltonii</i>					



Vegetation site	SS19 – Patch 14		Map unit	3a		
Vegetation type	Sandsheet heath, tall open shrubland/low open woodland					
Landform	Drainage line/gently sloping plains, aspect west <1% slope, sandsheet patchy throughout					
Surface soils	Loamy sands, saturated					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	40	15	5	5	0	35
Threatening processes	Recent fire likely, weeds not observed, pig damage noted within sandsheet patch					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca nervosa</i>		4-6		5	
Mid stratum	<i>Melaleuca viridiflora</i>		1-4		5	
	<i>Planchonia careya</i>		1-4		5	
	<i>Pandanus spiralis</i>		1-4		10	
Ground stratum	<i>Eriachne burkittii</i>		<1		15	
	Annual <i>Sorghum</i> sp.		1-2		10	
	<i>Fimbristylis</i> spp.		<1		10	
Other species	Other ground species: <i>Cartonema trigonospermum</i> , <i>Buchnera</i> sp. (5% cover)					
Utricularia spp.	<i>Utricularia leptorhyncha</i> , <i>U. leptoplectra</i> (both at plot); <i>U. hamiltonii</i> , <i>U. capilliflora</i> , <i>U. chrysantha</i> (incidental)					





Vegetation site	SS20 – Patch 15			Map unit	4c	
Vegetation type	Sandsheet heath, tall open shrubland/low open woodland					
Landform	Drainage line/gently sloping plains, aspect east <1% slope					
Surface soils	Light brown-grey loamy sand, saturated					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	35	35	5	0	0	25
Threatening processes	Recent fire likely, weeds not observed, minor pig damage observed					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Grevillea pteridifolia</i>			5-8		10
	<i>Melaleuca nervosa</i>			5-8		5
Mid stratum	<i>Verticordia cunninghamii</i>			1-3		<5
	<i>Banksia dentata</i>			1-4		1
	<i>Pandanus spiralis</i>			1-4		1
Ground stratum	<i>Dapsilanthus spathaceus</i>			<1		15
	<i>Eriachne burkittii</i>			<1		10
	<i>Fimbristylis</i> spp.			<1		5
Other species	Other ground species: <i>Buchnera</i> sp., <i>Drosera</i> spp.					
Utricularia spp.	<i>Utricularia hamiltonii</i> , <i>U. odorata</i> , <i>U. leptoplectra</i> , <i>U. nivea</i> , <i>U. capilliflora</i>					




Vegetation site	SS21 – Patch 16		Map unit	3b		
Vegetation type	Sandsheet heath, low open woodland					
Landform	Gently sloping plains <1% slope					
Surface soils	Light brown sandy soils with minor clay/loam, saturated					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	20	20	5	0	0	55
Threatening processes	Recent fire likely, weeds not observed, pig damage noted upslope within patch					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca nervosa</i>		5-8		10	
	<i>Grevillea pteridifolia</i>		5-8		5	
Mid stratum	<i>Verticordia cunninghamii</i>		1-3		<5	
	<i>Syzygium eucalyptoides</i> ssp. <i>bleeseri</i>		1-5		<1	
Ground stratum	<i>Dapsilanthus spathaceus</i>		<1		15	
	<i>Xyris complanata</i>		<1		<2	
	Annual <i>Sorghum</i> sp.		1-2		<2	
Other species	Other ground species: <i>Sowerbaea alliacea</i> , <i>Drosera</i> spp. (<2)					
Utricularia spp.	<i>Utricularia odorata</i> , <i>U. leptoplectra</i> , <i>U. kamienskii</i> , <i>U. hamiltonii</i> , <i>U. capilliflora</i> ; <i>U. limosa</i> and <i>U. minutissima</i> (both upslope)					



Vegetation site	SS22 – new patch			Map unit	3b	
Vegetation type	Sandsheet heath, open woodland over shrubland					
Landform	Gently sloping plains, aspect south <1% slope					
Surface soils	Sandy clay soils, with patchy clayey sands, saturated					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	40	20	5	0	0	35
Threatening processes	Recent fire likely, weeds not observed, minor pig damage observed					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Grevillea pteridifolia</i>			5-8		<5
	<i>Melaleuca nervosa</i>			4-6		<5
Mid stratum	<i>Verticordia cunninghamii</i>			1-3		30
	<i>Syzygium eucalyptoides</i> ssp. <i>bleeseri</i>			3		<5
	<i>Pandanus spiralis</i>			2-3		<5
Ground stratum	Annual <i>Sorghum</i> sp.			1-2		20
	<i>Xyris complanata</i>			<1		5
	<i>Dapsilanthus spathaceus</i>			<1		5
	Other ground species: <i>Fimbristylis</i> spp., <i>Drosera</i> spp. (10% cover)					
Utricularia spp.	<i>Utricularia capilliflora</i> , <i>U. limosa</i> , <i>U. leptoplectra</i> , <i>U. chrysantha</i> , <i>U. kamienskii</i>					



Vegetation site	SS23 – Patch 17		Map unit	4c		
Vegetation type	Sandsheet heath, tall shrubland/low open woodland					
Landform	Gently sloping plains <1% slope					
Surface soils	Coarse sandy soils with sandy clay on outer edge of patch, saturated					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	20	25	10	0	0	45
Threatening processes	Recent fire likely, weeds not observed, no other disturbance noted					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca nervosa</i>		2-6		5	
	<i>Melaleuca viridiflora</i>		2-8		5	
	<i>Acacia latescens</i>		1-6		5	
Mid stratum	<i>Verticordia cunninghamii</i>		1-4		25	
	<i>Grevillea pteridifolia</i>		1-5		<1	
Ground stratum	<i>Fimbristylis</i> spp.		<1		5	
	<i>Xyris complanata</i>		<1		5	
	<i>Rhynchospora longisetis</i>		<1		5	
Other species	Other ground species: <i>Cartonema trigonospermum</i> , <i>Eriocaulon</i> sp., <i>Goodenia purpurea</i> , <i>Dapsilanthus spathaceus</i> (5% cover)					
Utricularia spp.	<i>Utricularia leptoplectra</i> , <i>U. chrysantha</i> , <i>U. capilliflora</i> , <i>U. limosa</i>					



Vegetation site	SS24 – Patch 19		Map unit	4c		
Vegetation type	Sandsheet heath, low open woodland					
Landform	Gently sloping plains <1% slope					
Surface soils	Coarse clayey sands, with scattered laterite gravel and rock outcropping, saturated					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	30	20	5	0	5	40
Threatening processes	Recent fire likely, weeds not observed, moderate pig damage observed					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca viridiflora</i>		4-6		5	
	<i>Grevillea pteridifolia</i>		4-6		5	
Mid stratum	<i>Melaleuca viridiflora</i>		1-3		5	
	<i>Grevillea pteridifolia</i>		1-3		5	
	<i>Pandanus spiralis</i>		1-2		5	
Ground stratum	<i>Dapsilanthus spathaceus</i>		<1		10	
	<i>Xyris complanata</i>		<1		5	
	Rush sp.		<1		5	
Other species	Other ground species: <i>Fimbristylis</i> spp., <i>Eriachne burkittii</i> , <i>Rhynchospora longisetis</i> (10% cover)					
Utricularia spp.	<i>Utricularia leptoplectra</i> , <i>U. chrysantha</i> , <i>U. odorata</i> , <i>U. capilliflora</i> , <i>U. hamiltonii</i> , <i>U. nivea</i> , <i>U. leptorhyncha</i>					



Vegetation site	SS25 – Patch 20			Map unit	4c	
Vegetation type	Sandsheet heath, low open woodland					
Landform	Gently sloping plains, aspect northeast <1% slope					
Surface soils	Clayey sand, mounds present, saturated					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	80	5	5	0	0	10
Threatening processes	Recent fire likely, Tully Grass (<i>Urochloa humidicola</i>) present along tracks and within patch, clearing to north, nearby access track/road to south, pig damage and cattle observed					
Vegetation	Dominant species			Height range (m)		Cover (%)
Upper stratum	<i>Grevillea pteridifolia</i>			2-8		10
Mid stratum	<i>Melaleuca</i> spp.			1-3		10
	<i>Pandanus spiralis</i>			1-5		<1
	<i>Lophostemon lactifluus</i>			1-3		<1
Ground stratum	<i>Dapsilanthus spathaceus</i>			<1		60
	<i>Eriachne burkittii</i>			<1		5
	<i>Xyris complanata</i>			<1		5
Other species	Other mid species: <i>Banksia dentata</i> (<1% cover) Other ground species: <i>Sowerbaea alliacea</i> , <i>Eriocaulon</i> sp., <i>Fimbristylis</i> spp., <i>Goodenia purpurea</i> (10% cover)					
Utricularia spp.	<i>Utricularia leptoplectra</i> , <i>U. hamiltonii</i>					



Vegetation site	SS26 – Patch 21		Map unit	3b		
Vegetation type	Sandsheet heath, low open woodland					
Landform	Gently sloping plains <1% slope					
Surface soils	Fine clayey sand, saturated					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	85	5	5	0	0	5
Threatening processes	Recent fire unlikely, Hyptis (<i>Mesosphaerum suaveolens</i>) and Tully Grass (<i>Urochloa humidicola</i>) present along nearby access track/road to south, clearing to north, pig damage and cattle observed					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca nervosa</i>		6-10		10	
	<i>Grevillea pteridifolia</i>		6-10		10	
Mid stratum	<i>Acacia</i> sp.		1-5		5	
	<i>Grevillea pteridifolia</i>		1-6		5	
	<i>Petalostigma pubescens</i>		2-4		<2	
Ground stratum	<i>Dapsilanthus spathaceus</i>		<1		65	
	<i>Panicum</i> sp.		<1		10	
	Other species		<1		5	
Other species	Other mid species: <i>Pandanus spiralis</i> (<1% cover) Other ground species: <i>Goodenia purpurea</i> , <i>Phyllanthus</i> sp.					
Utricularia spp.	No <i>Utricularia</i> spp. observed					



Vegetation site	SS27 – Patch 18		Map unit	-		
Vegetation type	Low open woodland on					
Landform	Gently sloping plains, drainage line					
Surface soils	Light grey-brown clayey sand. Inundated.					
Ground cover (%)	Vegetation	Bare soil	Leaf litter	Rock	Gravel	Water
	60	10	10	0	0	20
Threatening processes	High levels of pig damage noted throughout patch					
Vegetation	Dominant species		Height range (m)		Cover (%)	
Upper stratum	<i>Melaleuca viridiflora</i> <i>Melaleuca nervosa</i>		4-8		10-15	
Mid stratum	<i>Pandanus spiralis</i>		1-3		<1	
Ground stratum	<i>Eriachne</i> spp.		<1		20	
	Annual <i>Sorghum</i> sp.		1-2		25	
Other species	Other ground species (15% cover): <i>Eriocaulon</i> sp., <i>Xyris</i> sp., <i>Fimbristylis</i> spp., <i>Nymphoides</i> sp.					
Utricularia spp.	<i>Utricularia leptoplectra</i>					



APPENDIX E *STYLIDIUM ENSATUM* SITE DATA

STYLIDIUM ENSATUM

Habitat assessment	S01	Date	4 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	2a1 (mapped)
Coordinates	-12.671469, 131.172749	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> woodland with <i>Lophostemon lactifluus</i> occurring along the outer edges of swamp. <i>Pseudoraphis spinescens</i> low grassland.		
Landform and surface soil	Swamp. Grey-brown sandy soils, soils damp.		
Other site notes	High levels of damage along track to south side of swamp from recreational activities.		



Habitat assessment	S02	Date	4 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.672382, 131.172962	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> woodland with <i>Lophostemon lactifluus</i> occurring along the outer edges of swamp. <i>Pseudoraphis spinescens</i> low grassland.		
Landform and surface soil	Swamp. Grey-brown sandy soils, soils damp.		
Other site notes	Located in the same swamp system as S01.		



Habitat assessment	S03	Date	4 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	4b / 8b (mapped)
Coordinates	-12.665752, 131.176851	CRS	GDA 2020
Vegetation structure	<i>Melaleuca cajuputi</i> open forest		
Landform and surface soil	Swamp. Soils grey sandy clay.		
Other site notes	Soils very dry. Habitat unsuitable.		



S03 - habitat



S03 - soils

Habitat assessment	S04	Date	4 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	4b / 8b (mapped)
Coordinates	-12.668283, 131.173966	CRS	GDA 2020
Vegetation structure	<i>Melaleuca cajuputi</i> open forest		
Landform and surface soil	Swamp. Soils grey sandy clay.		
Other site notes	Located in the same swamp system as S03.		



S04 - habitat



S04 - soils

Habitat assessment	S05	Date	4 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.670752, 131.188557	CRS	GDA 2020
Vegetation structure	<i>Melaleuca cajuputi</i> open forest		
Landform and surface soil	Swamp. Soils grey sandy clay.		
Other site notes	Soils very dry. Habitat unsuitable.		



S05 - habitat



S05 - soils

Habitat assessment	S06	Date	4 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.668421, 131.185861	CRS	GDA 2020
Vegetation structure	<i>Melaleuca cajuputi</i> open forest		
Landform and surface soil	Swamp. Soils grey sandy clay.		
Other site notes	Located in the same swamp system as S05. Soils very dry. Habitat unsuitable.		



S06 - habitat



S06 - soils

Habitat assessment	S07	Date	4 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	6b (mapped)
Coordinates	-12.679148, 131.221567	CRS	GDA 2020
Vegetation structure	<i>Melaleuca nervosa</i> and <i>Grevillea pteridifolia</i> low open woodland or tall shrubland.		
Landform and surface soil	Gently sloping plains within drainage systems. Light brown-grey sandy clay soils.		
Other site notes	-		



S07 - habitat



S07 - soils

Habitat assessment	S08	Date	20 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	6b (mapped)
Coordinates	-12.631111, 131.181165	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> and <i>Pandanus spiralis</i> open forest. Ground cover very dense.		
Landform and surface soil	Drainage line/swamp. Brown loamy clay soils.		
Other site notes	Minor watercourse present.		



S08 - habitat



S08 - soils

Habitat assessment	S09	Date	22 August 2023
Target species	<i>Styliidium ensatum</i>	Land unit	6b (mapped)
Coordinates	-12.629972, 131.182215	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> woodland with <i>Pandanus spiralis</i> mid stratum. Mixed grassland on edge of swamp section with <i>Eriachne</i> sp., <i>Germania grandiflora</i> and various forbs.		
Landform and surface soil	Drainage line/swamp. Brown loamy clay soils, still damp.		
Other site notes	Located in the same swamp system as S08.		



S09 - habitat



S09 - soils

Habitat assessment	S10	Date	22 August 2023
Target species	<i>Styliidium ensatum</i>	Land unit	3b (mapped)
Coordinates	-12.627690, 131.182798	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> regrowth, with mixed grasses and sedges with various forbs.		
Landform and surface soil	Highly modified swamp-like habitat. Orange-brown clay soils, damp.		
Other site notes	-		



S10 - habitat



S10 - soils

Habitat assessment	S11	Date	22 August 2023
Target species	<i>Stylidium ensatum</i>	Land unit	6b (mapped)
Coordinates	-12.627267, 131.181599	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> regrowth, with mixed grasses and sedges with various forbs.		
Landform and surface soil	Highly modified habitat. Brown sandy clay soils, dry.		
Other site notes	Nearby billabong, likely resulting from habitat modification. Habitat unsuitable.		



S11 - habitat



S11 - soils

Habitat assessment	S12	Date	22 August 2023
Target species	<i>Stylidium ensatum</i>	Land unit	6b (mapped)
Coordinates	-12.630827, 131.181124	CRS	GDA 2020
Vegetation	<i>Melaleuca viridiflora</i> woodland with <i>Pandanus spiralis</i> mid stratum. Mixed grassland on edge of swamp section with <i>Eriachne</i> sp., <i>Germania grandiflora</i> and various forbs.		
Landform and surface soil	Drainage line/swamp. Brown loamy clay soils, still damp.		
Other site notes	Located in the same swamp system as S08.		



S12 - habitat



S12 - soils

Habitat assessment	S13	Date	20 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	2b2 (mapped)
Coordinates	-12.642046, 131.183766	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> and <i>Eucalyptus alba</i> woodland over <i>Pandanus spiralis</i> and <i>Lophostemon lactifluus</i> open shrubland. <i>Eriachne</i> spp. and <i>Germania grandiflora</i> grassland.		
Landform and surface soil	Dry, stony creek bed with yellow-brown sandy soils.		
Other site notes	Ephemeral watercourse		



S13 - habitat



S13 - soils

Habitat assessment	S14	Date	20 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	2a1 (mapped)
Coordinates	-12.652844, 131.196207	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> and <i>Eucalyptus alba</i> woodland over <i>Pandanus spiralis</i> and <i>Banksia dentata</i> open shrubland. <i>Eriachne</i> spp. and <i>Germania grandiflora</i> grassland.		
Landform and surface soil	Drainage line/swamp. Grey-brown sandy clay soils.		
Other site notes	Minor watercourse present.		



S14 - habitat



S14 - soils

Habitat assessment	S15	Date	12 July 2023
Target species	<i>Styliidium ensatum</i>	Land unit	6b (mapped)
Coordinates	-12.660177, 131.205393	CRS	GDA 2020
Vegetation structure	<i>Melaleuca nervosa</i> and <i>Grevillea pteridifolia</i> low open woodland or tall shrubland over <i>Dapsilanthus spathaceus</i> sedgeland.		
Landform and surface soil	Light grey-brown sandy clay soils. Very dry.		
Other site notes	-		



S15 - habitat



S15 - soils

Habitat assessment	S16	Date	11 July 2023
Target species	<i>Styliidium ensatum</i>	Land unit	6b (mapped)
Coordinates	-12.658216, 131.220241	CRS	GDA 2020
Vegetation structure	<i>Grevillea pteridifolia</i> and <i>Melaleuca nervosa</i> (minor <i>Eucalyptus alba</i>) low open woodland or tall shrubland. <i>Dapsilanthus spathaceus</i> sedgeland.		
Landform and surface soil	Gently sloping plains within drainage systems. Light grey-brown clayey sand soils.		
Other site notes	Soils with moderate moisture levels.		



S16 - habitat



S16 - soils

Habitat assessment	S17	Date	11 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	6a2 (mapped)
Coordinates	-12.661256, 131.221992	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> woodland to open forest with <i>Lophostemon lactifluus</i> occurring along the outer edges. Patchy grassland with mixed species.		
Landform and surface soil	Narrow drainage line with small stream. Grey-brown sandy clay soils.		
Other site notes	Soils with moderate to high moisture content. Moderate levels of feral animal damage on edges.		



S17 - habitat



S17 - soils

Habitat assessment	S18	Date	11 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	6a2 (mapped)
Coordinates	-12.665618, 131.222724	CRS	GDA 2020
Vegetation structure	<i>Bambusa arnhemica</i> and <i>Melaleuca cajuputi</i> open forest.		
Landform and surface soil	Edge of swamp system. Grey-brown sandy soils.		
Other site notes	Soils very dry. Unsuitable.		



S18 - habitat



S18 - soils

Habitat assessment	S19	Date	12 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	6b (mapped)
Coordinates	-12.652948, 131.230222	CRS	GDA 2020
Vegetation structure	<i>Melaleuca nervosa</i> and <i>Grevillea pteridifolia</i> low open woodland or tall shrubland.		
Landform and surface soil	Light grey-brown clayey sand soils.		
Other site notes	-		



S19 - habitat



S19 - soils

Habitat assessment	S20	Date	12 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.652303, 131.230739	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> open woodland to woodland with <i>Lophostemon lactifluus</i> occurring along the outer edges of swamp. <i>Pseudoraphis spinescens</i> and <i>Chrysopogon</i> sp. grassland.		
Landform and surface soil	Swamp system. Dark grey-brown loamy clay soils, moisture in soils present.		
Other site notes	Moderate-high levels of feral animal damage along edges.		



S20 - habitat



S20 - soils

Habitat assessment	S21	Date	12 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.651424 131.231695	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> open woodland to woodland with <i>Lophostemon lactifluus</i> occurring along the outer edges of swamp. <i>Pseudoraphis spinescens</i> and <i>Chrysopogon</i> sp. grassland.		
Landform and surface soil	Swamp system. Dark grey-brown loamy clay soils, moisture in soils present.		
Other site notes	Moderate-high levels of feral animal damage along edges. Similar to S20 but with patchy open forest and exposed outer edges.		



S21 - habitat



S21 - soils

Habitat assessment	S22	Date	12 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.648762, 131.236733	CRS	GDA 2020
Vegetation structure	<i>Lophostemon lactifluus</i> low open forest with sparse understory.		
Landform and surface soil	Grey sandy clay soils.		
Other site notes	Soils dry at time of survey - unsuitable.		



S22 - habitat



S22 - soils

Habitat assessment	S23	Date	12 July 2023
Target species	<i>Styliidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.655173, 131.233555	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> woodland with <i>Lophostemon lactifluus</i> occurring along the outer edges of swamp. <i>Chrysopogon</i> sp. grassland.		
Landform and surface soil	Swamp system. Grey-brown sandy soils, inundated.		
Other site notes	High levels of feral animal damage on edges and weeds (Mimosa and Olive Hymenachne) widespread throughout swamp.		



S23 - habitat



S23 - soils

Habitat assessment	S24	Date	12 July 2023
Target species	<i>Styliidium ensatum</i>	Land unit	4e1 (mapped)
Coordinates	-12.656811, 131.234881	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> woodland with <i>Lophostemon lactifluus</i> occurring along the outer edges of swamp. <i>Chrysopogon</i> sp. grassland.		
Landform and surface soil	Swamp system. Grey-brown sandy soils, inundated.		
Other site notes	Located in the same swamp system as S23. Highly degraded.		



S24 - habitat



S24 - soils

Habitat assessment	S25	Date	12 July 2023
Target species	<i>Styliidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.654168, 131.234949	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> woodland with <i>Lophostemon lactifluus</i> occurring along the outer edges of swamp. <i>Chrysopogon</i> sp. grassland.		
Landform and surface soil	Swamp system. Grey-brown sandy soils, inundated.		
Other site notes	Located in the same swamp system as S23.		



S25 - habitat



S25 - soils

Habitat assessment	S26	Date	12 July 2023
Target species	<i>Styliidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.659403, 131.234356	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> woodland with <i>Lophostemon lactifluus</i> occurring along the outer edges of swamp. <i>Pseudoraphis spinescens</i> and <i>Chrysopogon</i> sp. grassland.		
Landform and surface soil	Swamp system. Grey-brown sandy loam soils, inundated.		
Other site notes	High levels of feral animal damage on edges and weeds (Mimosa and Olive Hymenachne) widespread throughout swamp.		



S26 - habitat



S26 - soils

Habitat assessment	S27	Date	12 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.658486, 131.233866	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> woodland with <i>Lophostemon lactifluus</i> occurring along the outer edges of swamp. <i>Pseudoraphis spinescens</i> and <i>Chrysopogon</i> sp. grassland.		
Landform and surface soil	Swamp system. Grey-brown sandy loam soils, inundated.		
Other site notes	Located in the same swamp system as S26. High levels of feral animal damage on edges and weeds (Mimosa and Olive Hymenachne) widespread throughout swamp.		



S27 - habitat



S27 - soils

Habitat assessment	S28	Date	12 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.651458, 131.224097	CRS	GDA 2020
Vegetation structure	<i>Corymbia polycarpa</i> and <i>Lophostemon lactifluus</i> open woodland.		
Landform and surface soil	Minor swamp system. Brown-grey sandy clay soils.		
Other site notes	Soils very dry. Unsuitable habitat.		



S28 - habitat



S28 - soils

Habitat assessment	S29	Date	12 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.648480, 131.224365	CRS	GDA 2020
Vegetation structure	<i>Corymbia polycarpa</i> open woodland over mixed spp. grassland.		
Landform and surface soil	Minor swamp system. Light brown sandy clay soils.		
Other site notes	Soils very dry. Unsuitable habitat.		



S29 - habitat



S29 - soils

Habitat assessment	S30	Date	12 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.646948, 131.224842	CRS	GDA 2020
Vegetation structure	<i>Corymbia polycarpa</i> open woodland over <i>Eriachne</i> spp. grassland.		
Landform and surface soil	Minor swamp system. Light brown-grey sandy clay soils.		
Other site notes	Soils very dry. Unsuitable habitat.		



S30 - habitat



S30 - soils

Habitat assessment	S31	Date	10 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	6a2 (mapped)
Coordinates	-12.673587, 131.237659	CRS	GDA 2020
Vegetation structure	<i>Melaleuca cajuputi</i> open forest over mixed spp. grassland. Recruitment of juvenile monsoon species.		
Landform and surface soil	Gently sloping plains. Dark grey-brown loamy clay soils, moderate soil moisture.		
Other site notes	-		



S31 - habitat



S31 - soils

Habitat assessment	S32	Date	10 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	6b (mapped)
Coordinates	-12.669743, 131.236028	CRS	GDA 2020
Vegetation structure	<i>Melaleuca nervosa</i> and <i>Grevillea pteridifolia</i> low open woodland or tall shrubland.		
Landform and surface soil	Light grey-brown sandy clay soils.		
Other site notes	-		



S32 - habitat



S32 - soils

Habitat assessment	S33	Date	10 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	6b (mapped)
Coordinates	-12.668828, 131.235179	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> open forest with <i>Eucalyptus alba</i> and <i>Lophostemon lactifluus</i> occurring along edge of swamp. <i>Eriachne</i> spp. grassland.		
Landform and surface soil	Swamp system. Dark grey loamy clay soils.		
Other site notes	-		



S33 - habitat



S33 - soils

Habitat assessment	S34	Date	10 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	8b (mapped)
Coordinates	-12.668679, 131.233133	CRS	GDA 2020
Vegetation structure	<i>Bambusa arnhemica</i> and <i>Melaleuca cajuputi</i> open forest.		
Landform and surface soil	Grey-brown sandy clay soils		
Other site notes	Soils very dry. Unsuitable.		



S34 - habitat



S34 - soils

Habitat assessment	S35	Date	10 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	6a1 / 8b (mapped)
Coordinates	-12.670621, 131.231194	CRS	GDA 2020
Vegetation structure	<i>Melaleuca cajuputi</i> open forest over mixed spp. grassland.		
Landform and surface soil	Grey-brown sandy clay soils.		
Other site notes	Soils very dry. Unsuitable.		



S35 - habitat



S35 - soils

Habitat assessment	S36	Date	11 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	6a2 (mapped)
Coordinates	-12.659067, 131.192953	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> , <i>Eucalyptus alba</i> and <i>Lophostemon lactifluus</i> mid woodland (minor open forest) over <i>Pandanus spiralis</i> shrubland and <i>Germania grandiflora</i> and <i>Eriachne</i> spp. grassland.		
Landform and surface soil	Grey-brown sandy clay soils.		
Other site notes	-		



S36 - habitat



S36 - soils

Habitat assessment	S37	Date	28 June 2023
Target species	<i>Stylidium ensatum</i>	Land unit	5b2 (mapped)
Coordinates	-12.765864, 131.143841	CRS	GDA 2020
Vegetation structure	<i>Lophostemon grandiflora</i> low open woodland. Dense grassy understory along creek banks.		
Landform and surface soil	Insised drainage line		
Other site notes	Gamba Grass present. Habitat unsuitable.		



S37 - habitat



S37 - soils

Habitat assessment	S38	Date	28 June 2023
Target species	<i>Stylidium ensatum</i>	Land unit	5b2 (mapped)
Coordinates	-12.748827, 131.144467	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> open woodland with <i>Pandanus spiralis</i> . <i>Nyphaea</i> sp. present in waterbody.		
Landform and surface soil	Insised drainage line (Acacia Creek) with open waterbody.		
Other site notes	-		



S38 - habitat



S38 - soils

Habitat assessment	S39	Date	29 June 2023
Target species	<i>Styliidium ensatum</i>	Land unit	5b2 (mapped)
Coordinates	-12.742239, 131.144724	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> open forest with <i>Eucalyptus alba</i> and <i>Lophostemon lactifluus</i> occurring along creek edge. <i>Eriachne</i> spp. and <i>Germania grandiflora</i> grassland.		
Landform and surface soil	Insised drainage line (Acacia Creek). Dark grey loamy clay soils.		
Other site notes	-		



S39 - habitat



S39 - soils

Habitat assessment	S40	Date	29 June 2023
Target species	<i>Styliidium ensatum</i>	Land unit	5b2 (mapped)
Coordinates	-12.738943, 131.143805	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> open forest with <i>Eucalyptus alba</i> and <i>Lophostemon lactifluus</i> occurring along creek edge. <i>Eriachne</i> spp. and <i>Germania grandiflora</i> grassland.		
Landform and surface soil	Insised drainage line (Acacia Creek). Dark grey loamy clay soils.		
Other site notes	Similar to S39.		



S40 - habitat



S40 - soils

Habitat assessment	S41	Date	4 July 2023
Target species	<i>Stylidium ensatum</i>	Land unit	5b2 (mapped)
Coordinates	-12.674880, 131.175549	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> open forest with <i>Pandanus spiralis</i> and <i>Lophostemon lactifluus</i> . <i>Eriachne</i> spp. grassland.		
Landform and surface soil	Drainage line. Dark grey-brown loamy clay soils.		
Other site notes	-		



S41 - habitat



S41 - soils

Habitat assessment	S42	Date	21 August 2023
Target species	<i>Stylidium ensatum</i>	Land unit	5b2 (mapped)
Coordinates	-12.675927 131.180823	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> and <i>Lophostemon lactifluus</i> open forest with occasional <i>Corymbia bella</i> . Mixed grassland adjacent creek banks with <i>Mnesithea</i> sp., <i>Germania grandiflora</i> and various forbs.		
Landform and surface soil	Habitat situated along narrow riparian corridor associated with insised creek/drainage line. Brown sandy clay soils.		
Other site notes	-		



S42 - habitat



S42 - soils

Habitat assessment	S43	Date	21 August 2023
Target species	<i>Stylidium ensatum</i>	Land unit	5b2 (mapped)
Coordinates	-12.675868, 131.173600	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> open forest. Mixed grassland on creek banks with <i>Eriachne</i> sp., <i>Germania grandiflora</i> and various forbs.		
Landform and surface soil	Insised creek/drainage line. Brown sandy loam soils.		
Other site notes	-		



S43 - habitat



S43 - soils

Habitat assessment	S44	Date	21 August 2023
Target species	<i>Stylidium ensatum</i>	Land unit	3b (mapped)
Coordinates	-12.684233 131.180997	CRS	GDA 2020
Vegetation structure	<i>Melaleuca viridiflora</i> woodland with <i>Pandanus spiralis</i> and <i>Lophostemon lactifluus</i> mid stratum. Mixed grassland with <i>Eriachne</i> sp. and various forbs.		
Landform and surface soil	Drainage systems. Brown sandy clay soils.		
Other site notes	Soils too dry.		



S44 - habitat



S44 - soils

Habitat assessment	S45	Date	21 August 2023
Target species	<i>Stylidium ensatum</i>	Land unit	4e2 (mapped)
Coordinates	-12.686077, 131.184347	CRS	GDA 2020
Vegetation structure	<i>Lophostemon lactifluus</i> woodland interspersed with mixed species. Mixed grassland with <i>Eriachne</i> sp. and various forbs.		
Landform and surface soil	Drainage systems. Brown sandy clay soils.		
Other site notes	Soils too dry, habitat unsuitable.		



S45 - habitat



S45 - soils

Habitat assessment	S46	Date	21 August 2023
Target species	<i>Stylidium ensatum</i>	Land unit	4e2 (mapped)
Coordinates	-12.687255, 131.185553	CRS	GDA 2020
Vegetation structure	<i>Lophostemon lactifluus</i> and <i>Eucalyptus alba</i> open forest interspersed with mixed species. Mixed grassland with <i>Eriachne</i> sp. and various forbs.		
Landform and surface soil	Drainage systems. Brown sandy clay soils.		
Other site notes	Soils too dry, habitat unsuitable.		



S46 - habitat



S46 - soils

APPENDIX F *HELICTERES MACROTHRIX* SITE DATA

HELICTERES MACROTHRIX

Habitat assessment	H01	Date	5 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	4a (mapped)
Coordinates	-12.698869, 131.157200	CRS	GDA 2020
Vegetation structure	Open woodland with <i>Eucalyptus polysiada</i> .		
Landform and surface soil	Brown sandy clay loam soils with sparse rock cover.		
Other site notes	<i>Helicteres darwinensis</i> observed.		



H01 - habitat



H01 - soils

Habitat assessment	H02	Date	5 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	4e2 (mapped)
Coordinates	-12.701593, 131.178783	CRS	GDA 2020
Vegetation structure	Mixed eucalypt open woodland.		
Landform and surface soil	Light brown sandy clay soils, with moderate surface gravel.		
Other site notes	Recently burnt. <i>Helicteres darwinensis</i> observed at site.		



H02 - habitat



H02 - soils

Habitat assessment	H03	Date	5 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	2b1 (mapped)
Coordinates	-12.705469, 131.179876	CRS	GDA 2020
Vegetation structure	Sparse <i>Corymbia</i> spp. open woodland.		
Landform and surface soil	Low lying drainage line. Light grey-brown sandy clay soils, with debil debils present.		
Other site notes	Recently burnt.		



H03 - habitat



H03 - soils

Habitat assessment	H04	Date	5 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	2b1 (mapped)
Coordinates	-12.704404, 131.174832	CRS	GDA 2020
Vegetation structure	<i>Eucalyptus miniata</i> and <i>Erythrophleum chlorostachys</i> open woodland.		
Landform and surface soil	Adjacent dry, incised creek line. Brown sandy clay soils, with moderate surface gravel and laterite outcropping.		
Other site notes	Recently burnt.		



H04 - habitat



H04 - soils

Habitat assessment	H05	Date	6 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	2a1 (mapped)
Coordinates	-12.703365, 131.193121	CRS	GDA 2020
Vegetation structure	<i>Eucalyptus miniata</i> , <i>Eucalyptus tectifica</i> and <i>Erythrophleum chlorostachys</i> open woodland.		
Landform and surface soil	Light brown-grey sandy clay soils, gravelly.		
Other site notes	Recently burnt.		



H05 - habitat



H05 - soils

Habitat assessment	H06	Date	6 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	2a1 (mapped)
Coordinates	-12.706419, 131.195847	CRS	GDA 2020
Vegetation structure	<i>Erythrophleum chlorostachys</i> and <i>Eucalyptus tectifica</i> low open woodland.		
Landform and surface soil	Light brown sandy clay soils, moderate to high surface gravel.		
Other site notes	Recently burnt.		



H06 - habitat



H06 - soils

Habitat assessment	H07	Date	6 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	2a1 (mapped)
Coordinates	-12.697247, 131.199166	CRS	GDA 2020
Vegetation structure	<i>Eucalyptus miniata</i> and <i>Eucalyptus tectifica</i> open woodland.		
Landform and surface soil	Light brown sandy clay soils, moderate-high surface gravel.		
Other site notes	Recently burnt.		



H07 - habitat



H07 - soils

Habitat assessment	H08	Date	6 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	4b (mapped)
Coordinates	-12.693740, 131.196447	CRS	GDA 2020
Vegetation structure	<i>Corymbia</i> spp. low open woodland.		
Landform and surface soil	Light grey-brown sandy clay soils, gravelly.		
Other site notes	Recently burnt.		



H08 - habitat



H08 - soils

Habitat assessment	H09	Date	6 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	4e2 (mapped)
Coordinates	-12.714121, 131.191678	CRS	GDA 2020
Vegetation structure	<i>Corymbia</i> spp. open woodland.		
Landform and surface soil	Low lying drainage line. Light grey sandy clay soils, with debil debils present.		
Other site notes	Recently burnt.		



H09 - habitat



H09 - soils

Habitat assessment	H10	Date	6 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	2b1 (mapped)
Coordinates	-12.711429, 131.189674	CRS	GDA 2020
Vegetation structure	<i>Eucalyptus miniata</i> and <i>Erythrophleum chlorostachys</i> open woodland.		
Landform and surface soil	Light grey-brown sandy clay soils, with moderate-high surface gravel.		
Other site notes	Recently burnt. Moderate to high <i>Cycas armstrongii</i> population.		



H10 - habitat



H10 - soils

Habitat assessment	H11	Date	5 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	2b1 (mapped)
Coordinates	-12.723090, 131.180355	CRS	GDA 2020
Vegetation structure	Sparse <i>Corymbia</i> spp. open woodland.		
Landform and surface soil	Low lying drainage line. Light grey-brown sandy clay soils, with debil debils present.		
Other site notes	Recently burnt.		



H11 - habitat



H11 - soils

Habitat assessment	H12	Date	5 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	2a1 (mapped)
Coordinates	-12.717800, 131.181296	CRS	GDA 2020
Vegetation structure	<i>Corymbia foelscheana</i> , <i>Eucalyptus tectifica</i> and <i>Erythrophleum chlorostachys</i> low open woodland.		
Landform and surface soil	Light grey-brown sandy clay soils.		
Other site notes	Recently burnt.		



H12 - habitat



H12 - soils

Habitat assessment	H13	Date	5 July 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	2b1 (mapped)
Coordinates	-12.714105, 131.177501	CRS	GDA 2020
Vegetation structure	<i>Eucalyptus polysciada</i> , <i>Eucalyptus tectifera</i> and <i>Erythrophleum chlorostachys</i> open woodland.		
Landform and surface soil	Light grey-brown sandy clay soils with moderate to high surface gravel.		
Other site notes	Recently burnt.		

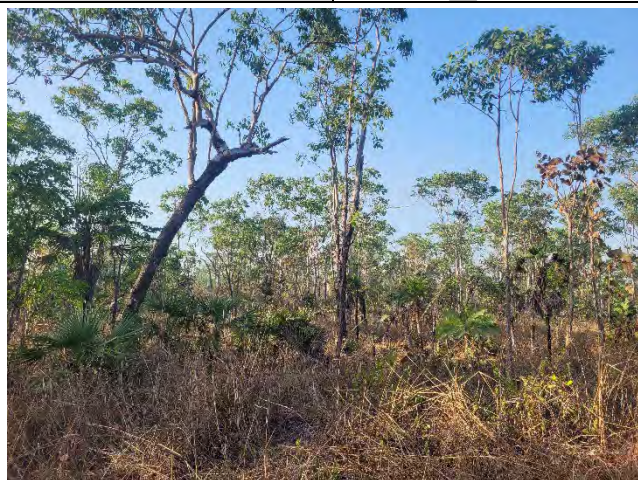


H13 - habitat



H13 - soils

Habitat assessment	H14	Date	28 June 2023
Target species	<i>Helicteres macrothrix</i>	Land unit	2a1 (mapped)
Coordinates	-12.746314, 131.157406	CRS	GDA 2020
Vegetation structure	<i>Eucalyptus miniata</i> open woodland.		
Landform and surface soil	Grey sandy clay soils, gravelly.		
Other site notes	Unburnt, Gamba Grass widespread throughout patch.		



H14 - habitat



H14 - soils

Habitat assessment	H15	Date	
Target species	<i>Helicteres macrothrix</i>	Land unit	1b (mapped)
Coordinates	-12.637766, 131.165287	CRS	GDA 2020
Vegetation structure	Regrowth.		
Landform and surface soil	Satellite imagery indicates site disturbance.		
Other site notes	Active mining nearby, site observations made adjacent modelled patch. Unlikely to support the species.		



H15 - habitat



H15 - soils

Habitat assessment	H16	Date	
Target species	<i>Helicteres macrothrix</i>	Land unit	1b (mapped)
Coordinates	-12.657019, 131.174039	CRS	GDA 2020
Vegetation structure	<i>Eucalyptus miniata</i> and <i>Erythrophleum chlorostachys</i> woodland.		
Landform and surface soil	Light brown sandy clay soils, with moderate-high surface gravel.		
Other site notes	Recently burnt.		



H16 - habitat



H16 - soils