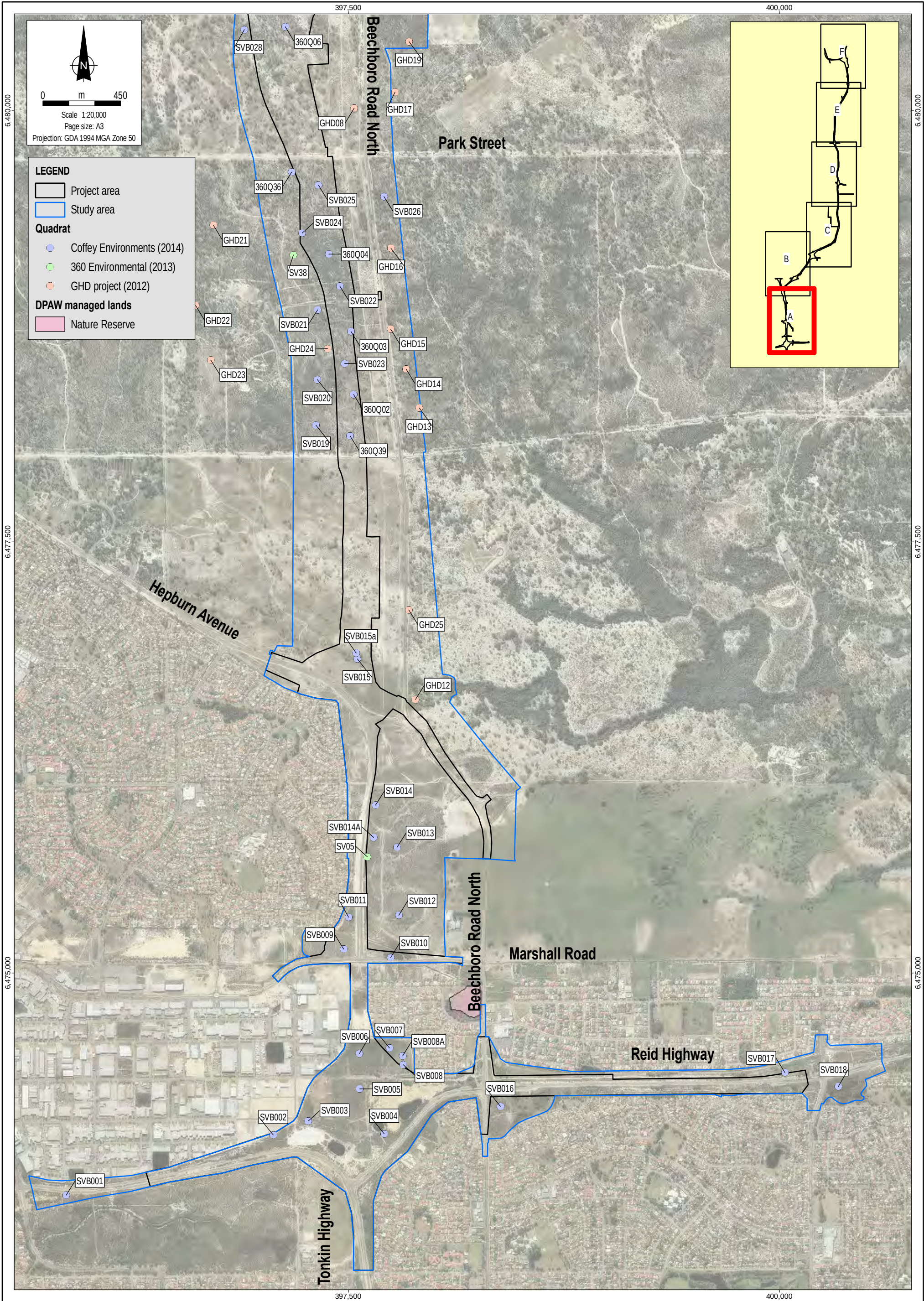




Source & Notes
Conservation significant flora from Coffey (2014).
Managed lands from DPAW (January 2015).
Aerial imagery from Landgate (August 2014).

NorthLinkWA

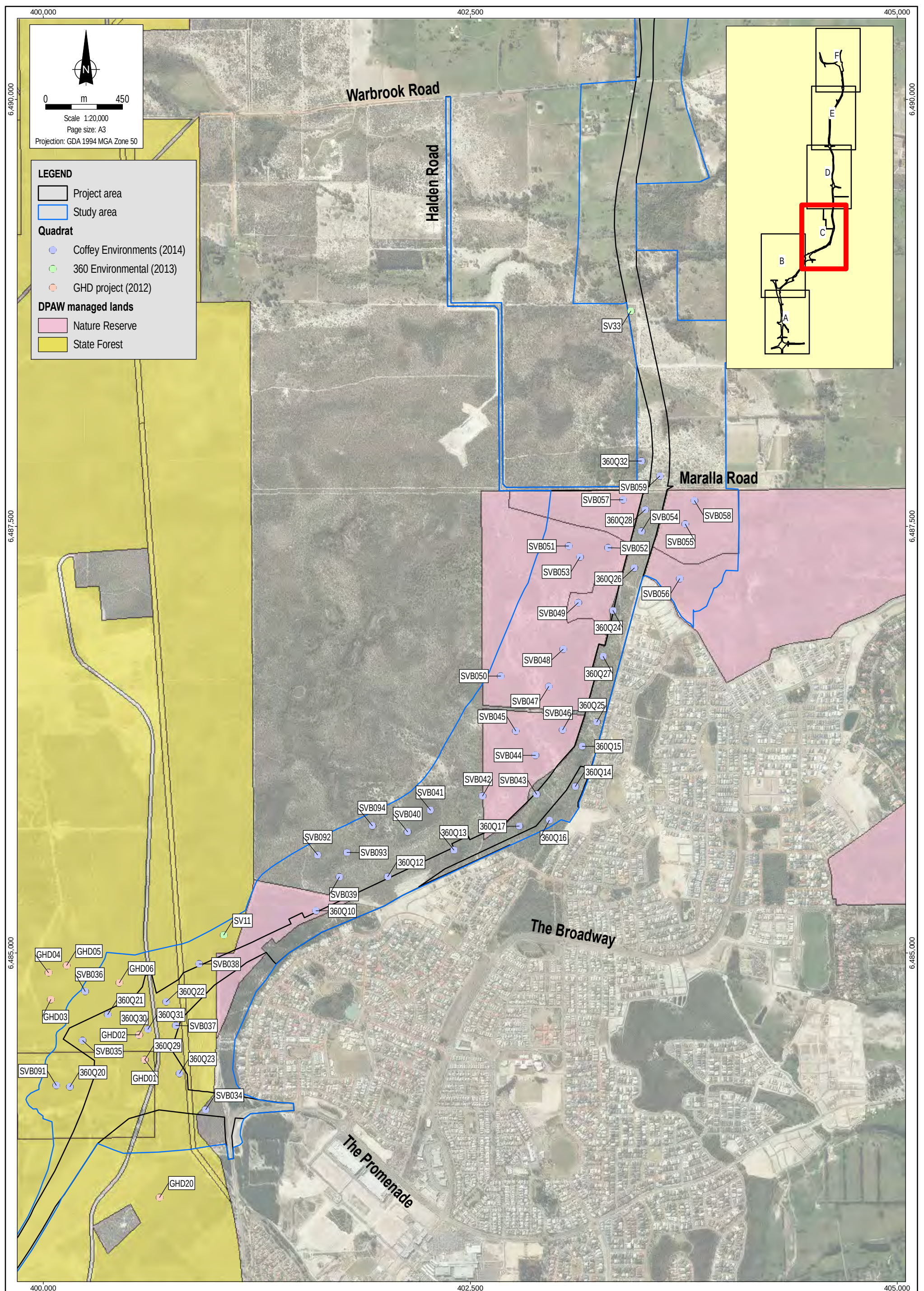
coffey

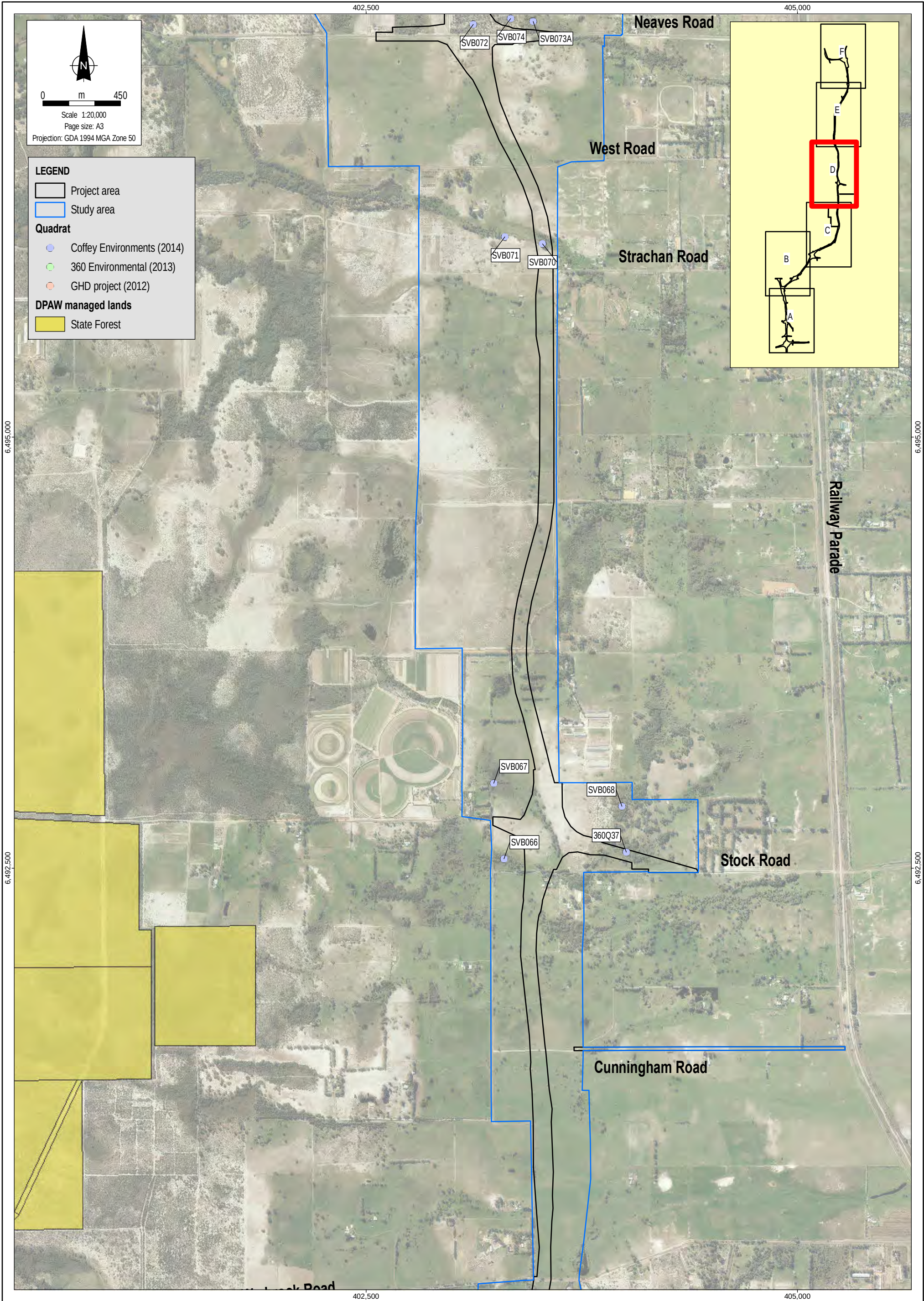
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27.03.2015
MXT:
4483AA_30 GIS013_1
File Name:
4483AA_30 F006A GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Flora sampling sites

Figure No:
6A





Source & Notes
Conservation significant flora from Coffey (2014).
Managed lands from DPAW (January 2015).
Aerial imagery from Landgate (August 2014).

NorthLinkWA

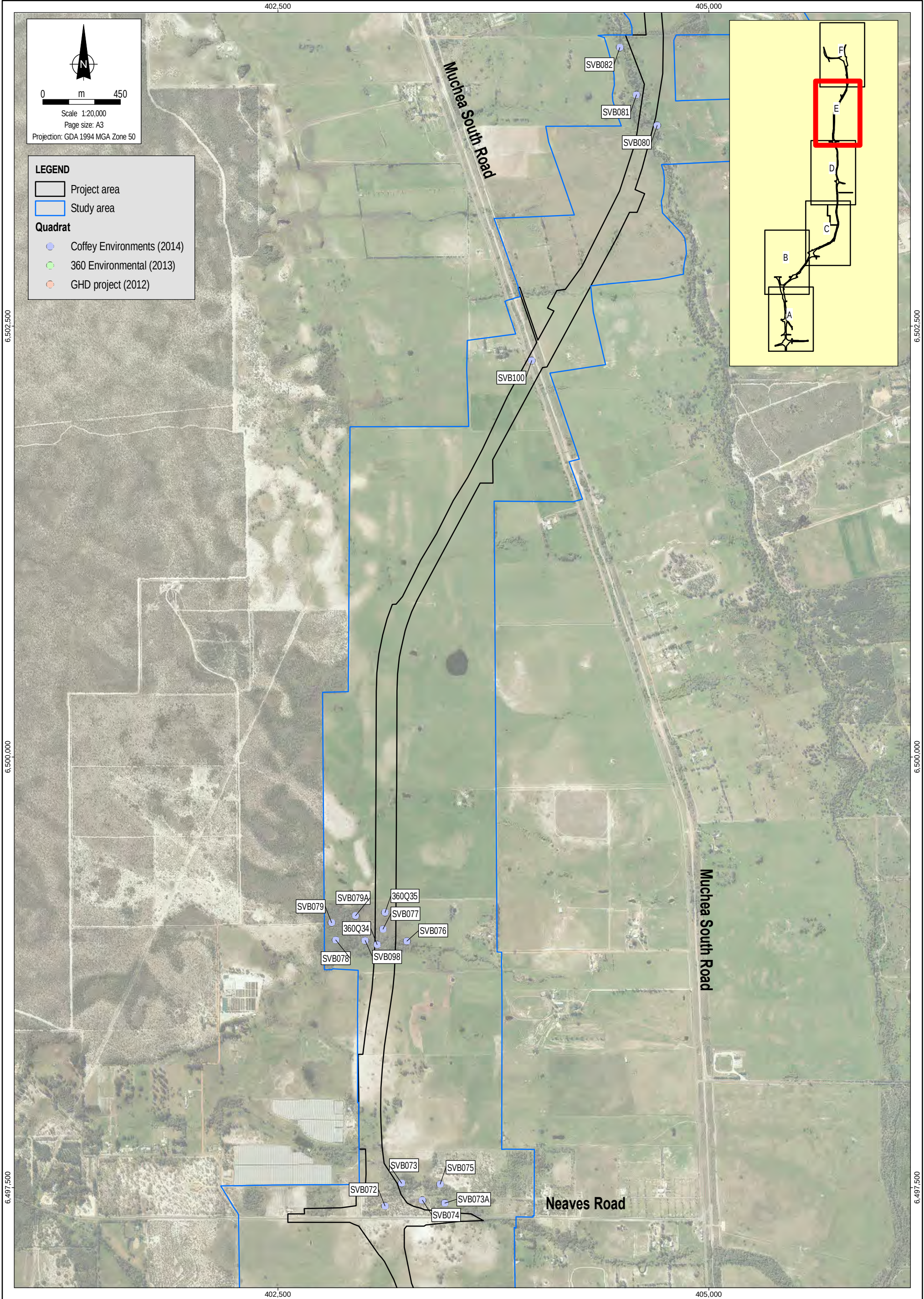
coffey

Date:
27.03.2015
MXF:
4483AA 30 GIS013 1
File Name:
4483AA 30 F006D GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Flora sampling sites

Figure No:
6D



Source & Notes
Conservation significant flora from Coffey (2014).
Managed lands from DPAW (January 2015).
Aerial imagery from Landgate (August 2014).

NorthLinkWA

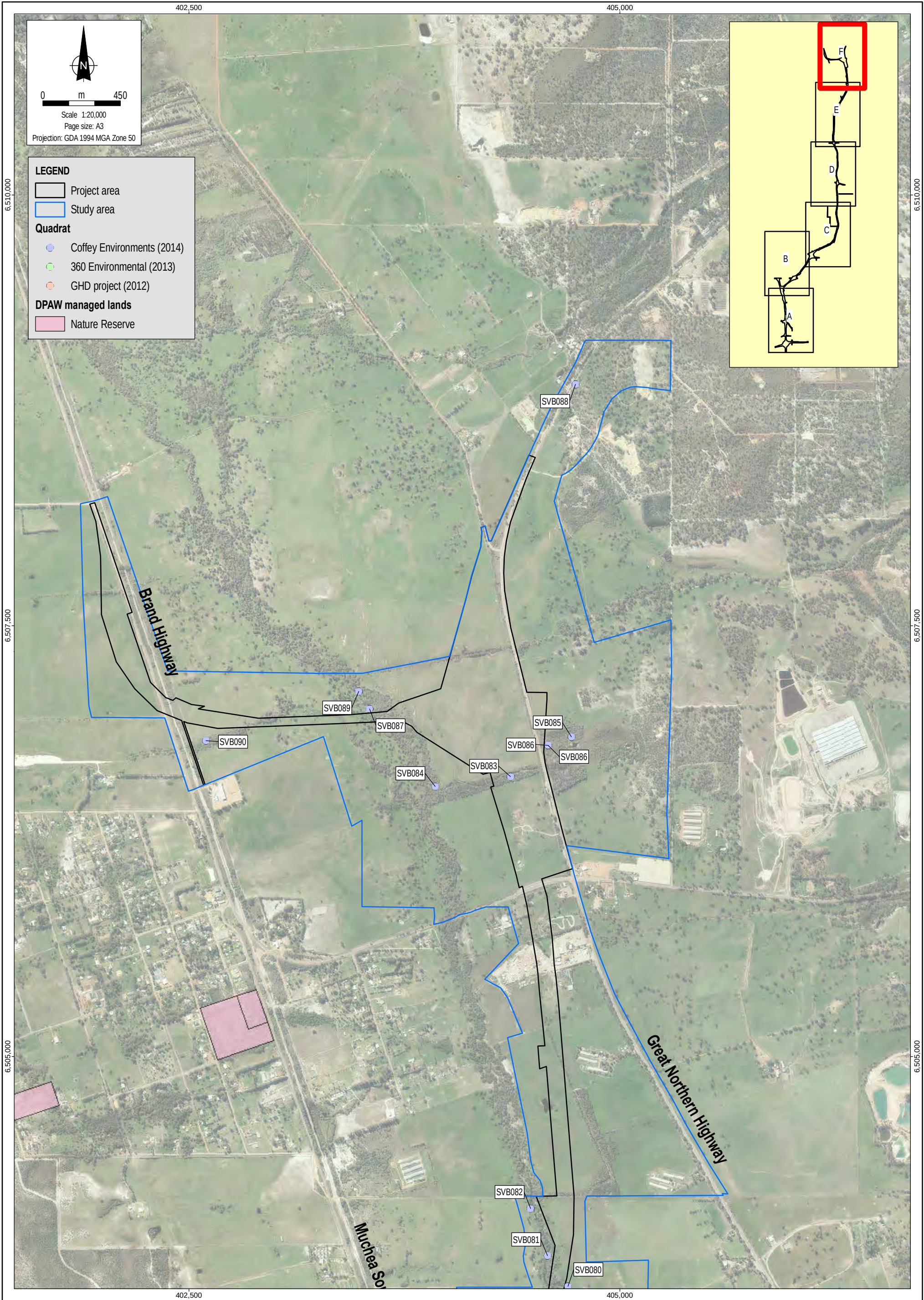
coffey

Date:
27.03.2015
MXF:
4483AA 30 GIS013 1
File Name:
4483AA 30 F006E GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Flora sampling sites

Figure No:
6E



Source & Notes
Conservation significant flora from Coffey (2014).
Managed lands from DPAW (January 2015).
Aerial imagery from Landgate (August 2014).

NorthLinkWA

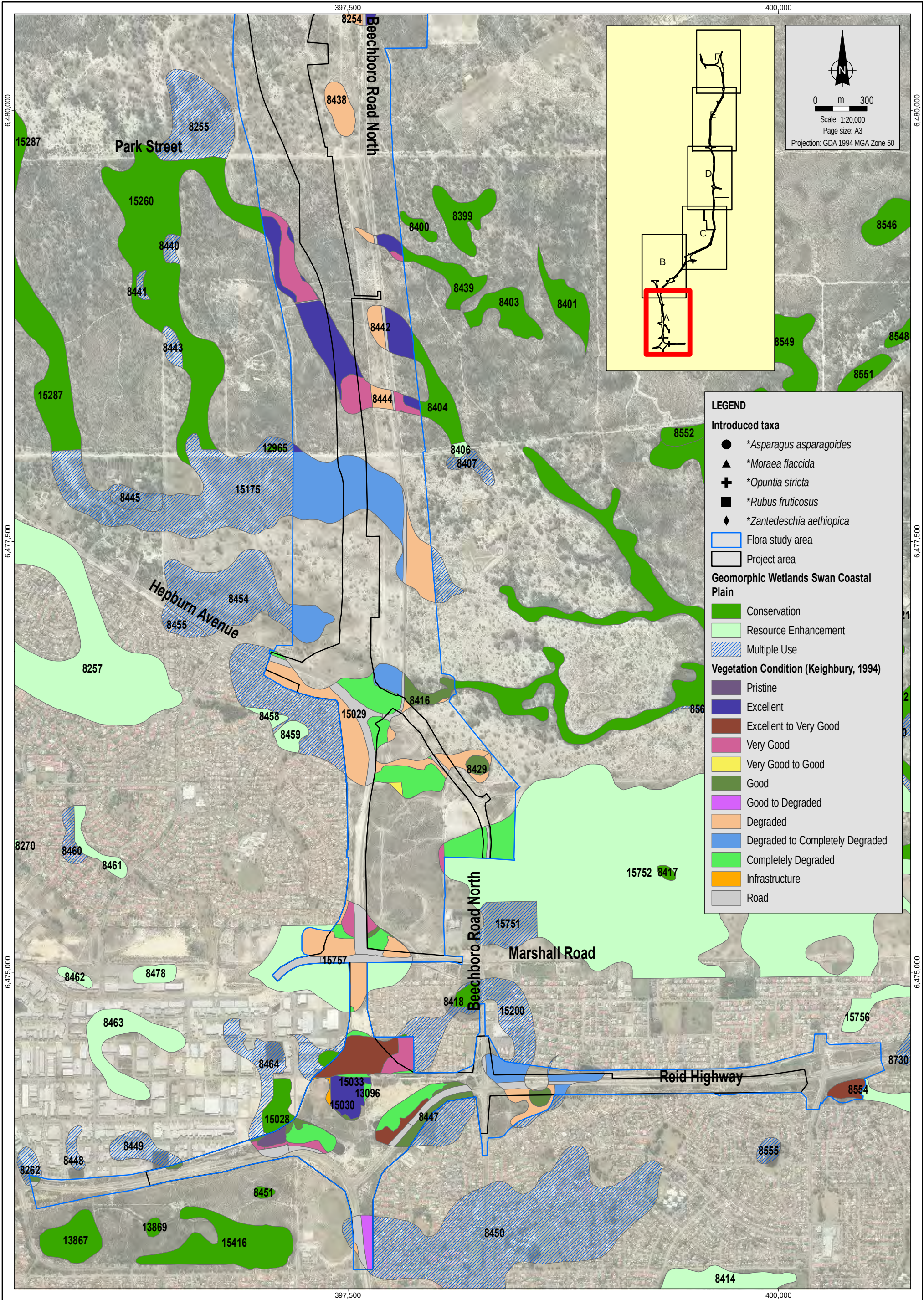
coffey

Date:
27.03.2015
MXF:
4483AA_30 GIS013_1
File Name:
4483AA_30 F006F GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Flora sampling sites

Figure No:
6F



Source & Notes
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Bush Forever sites from DoP (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

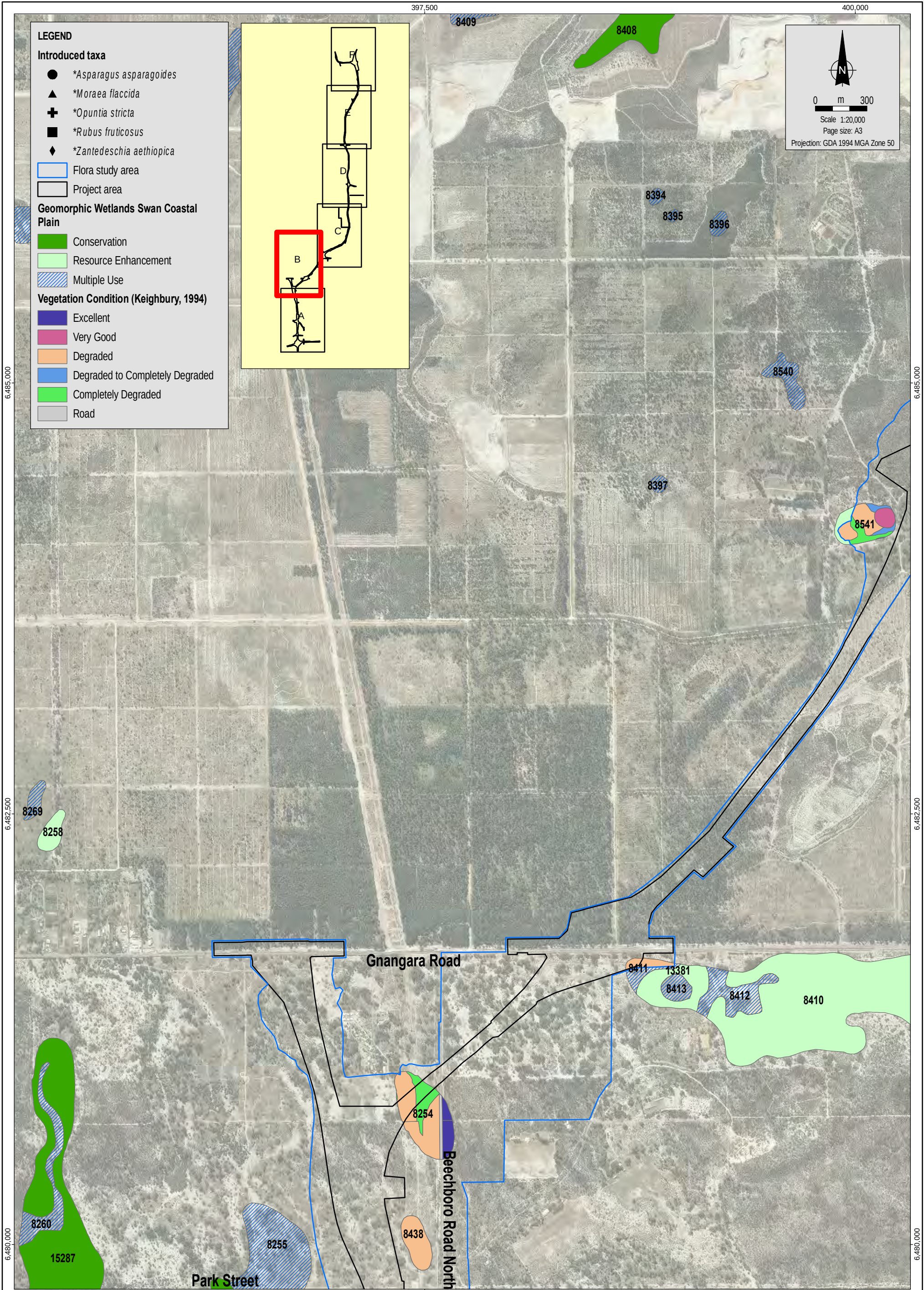
coffey

Date:
27.03.2015
MXT:
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File Name:
4483AA_30 F007A GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Vegetation condition and introduced taxa

Figure No:
7A



Source & Notes
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Bush Forever sites from DoP (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

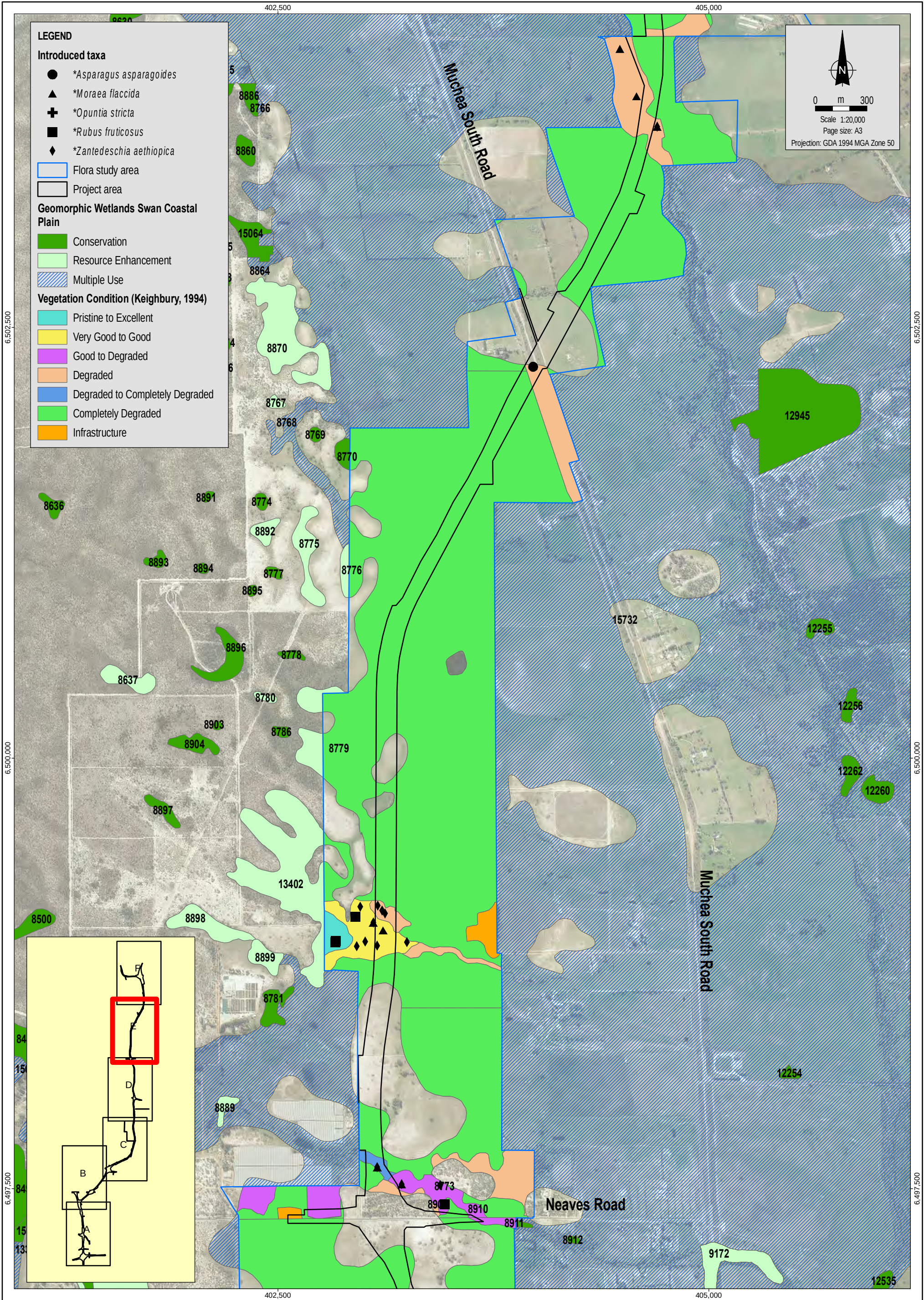
coffey

Date:
27.03.2015
MXF:
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File Name:
4483AA_30_F007B_GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Vegetation condition and introduced taxa

Figure No:
7B



Source & Notes
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Bush Forever sites from DoP (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

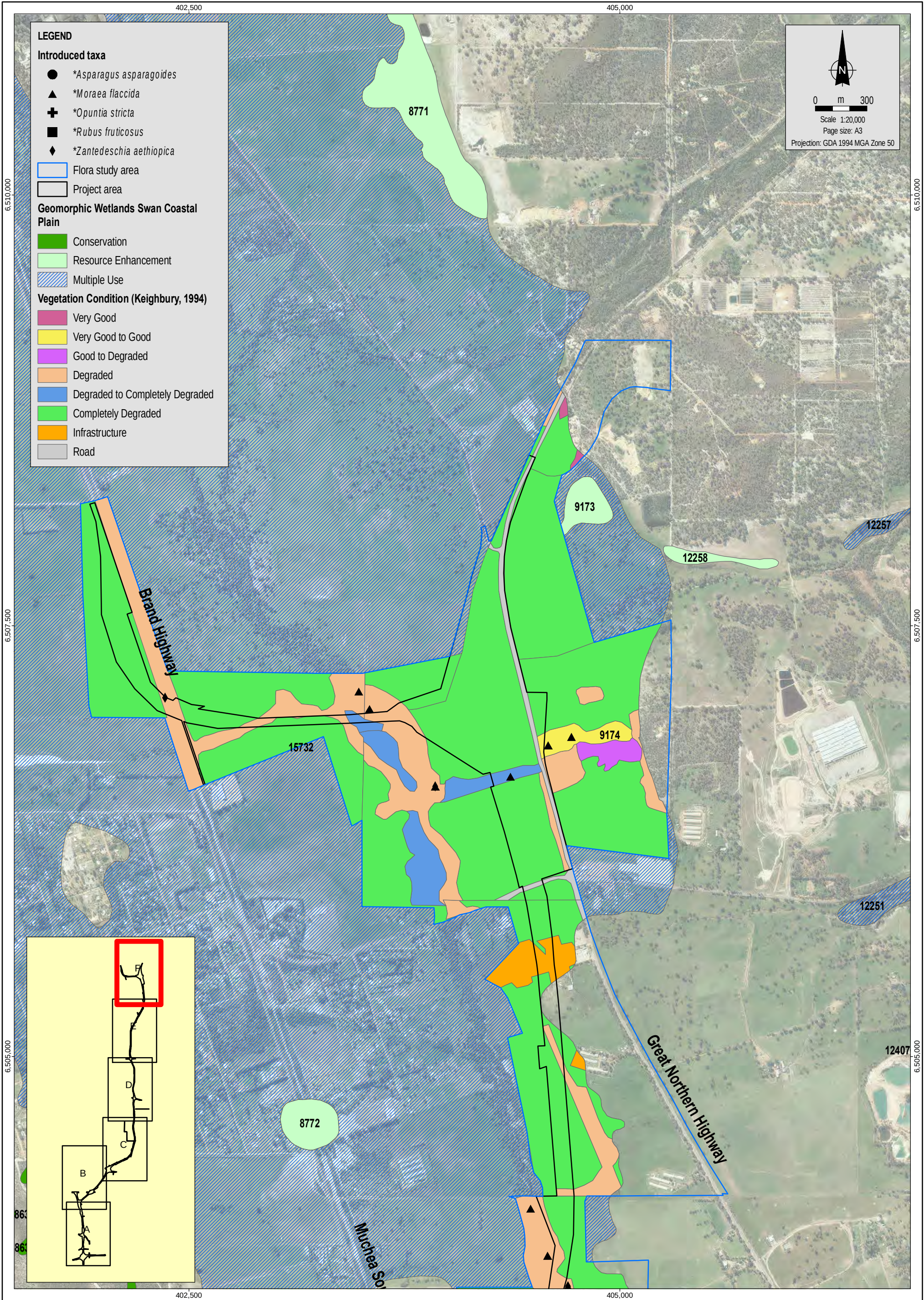
coffey

Date:
27.03.2015
MXF:
4483AA_30 GIS006_1
File Name:
4483AA_30 F007E GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Vegetation condition and introduced taxa

Figure No:
7E



Source & Notes
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Bush Forever sites from DoP (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

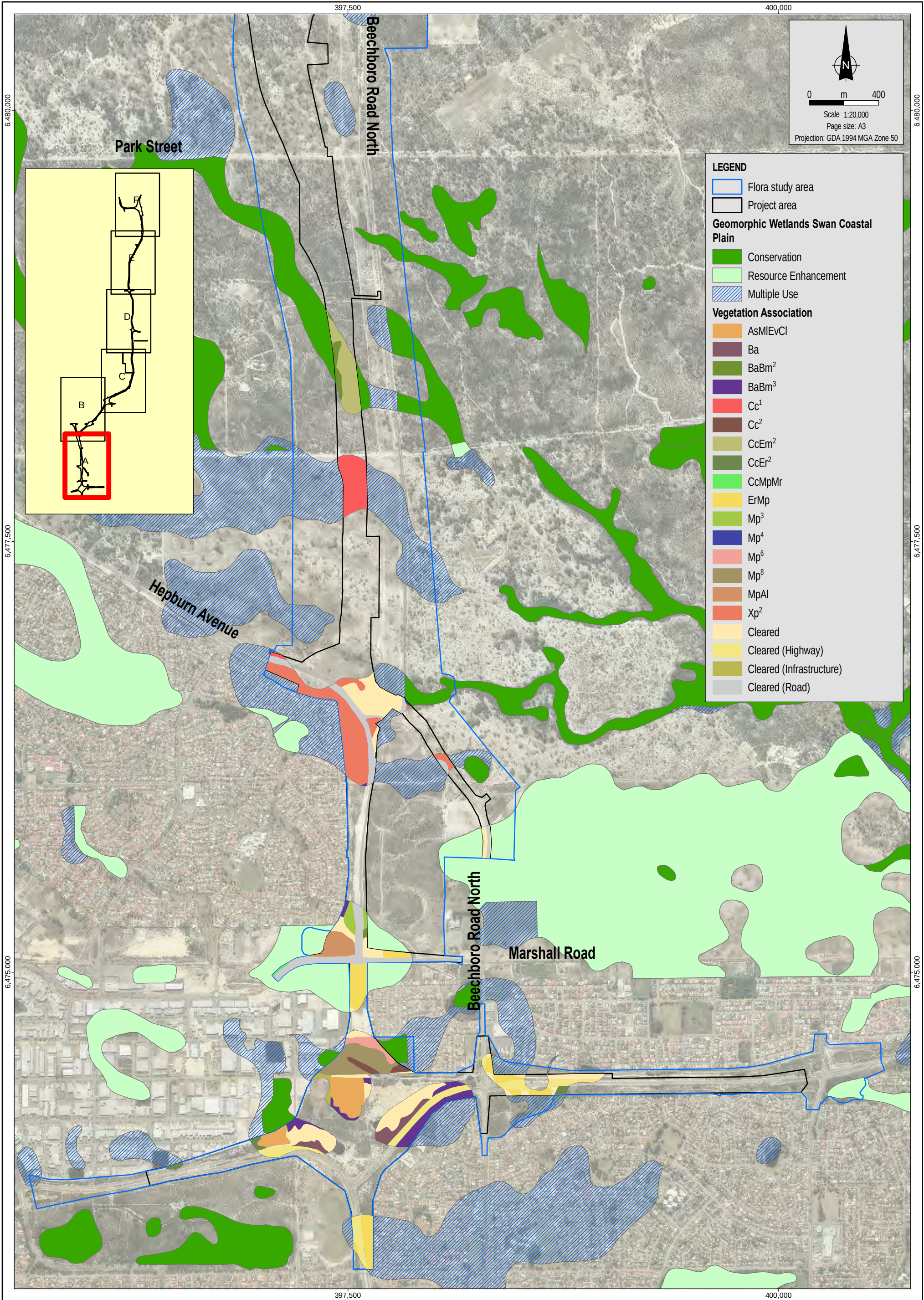
coffey

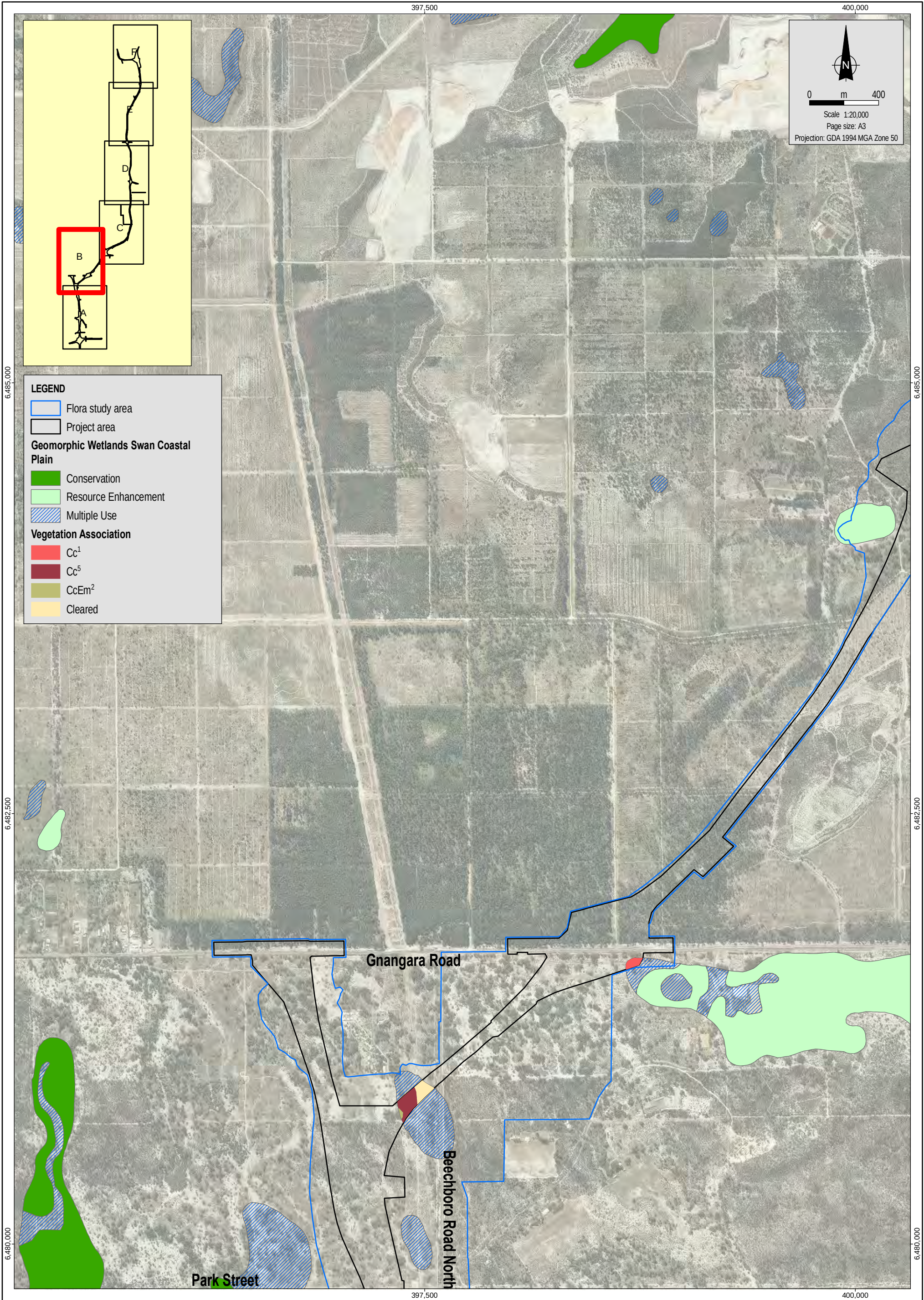
Date:
27.03.2015
MXF:
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File Name:
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Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Vegetation condition and introduced taxa

Figure No:
7F





Source & Notes
Vegetation association mapping from Coffey (February 2015)
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

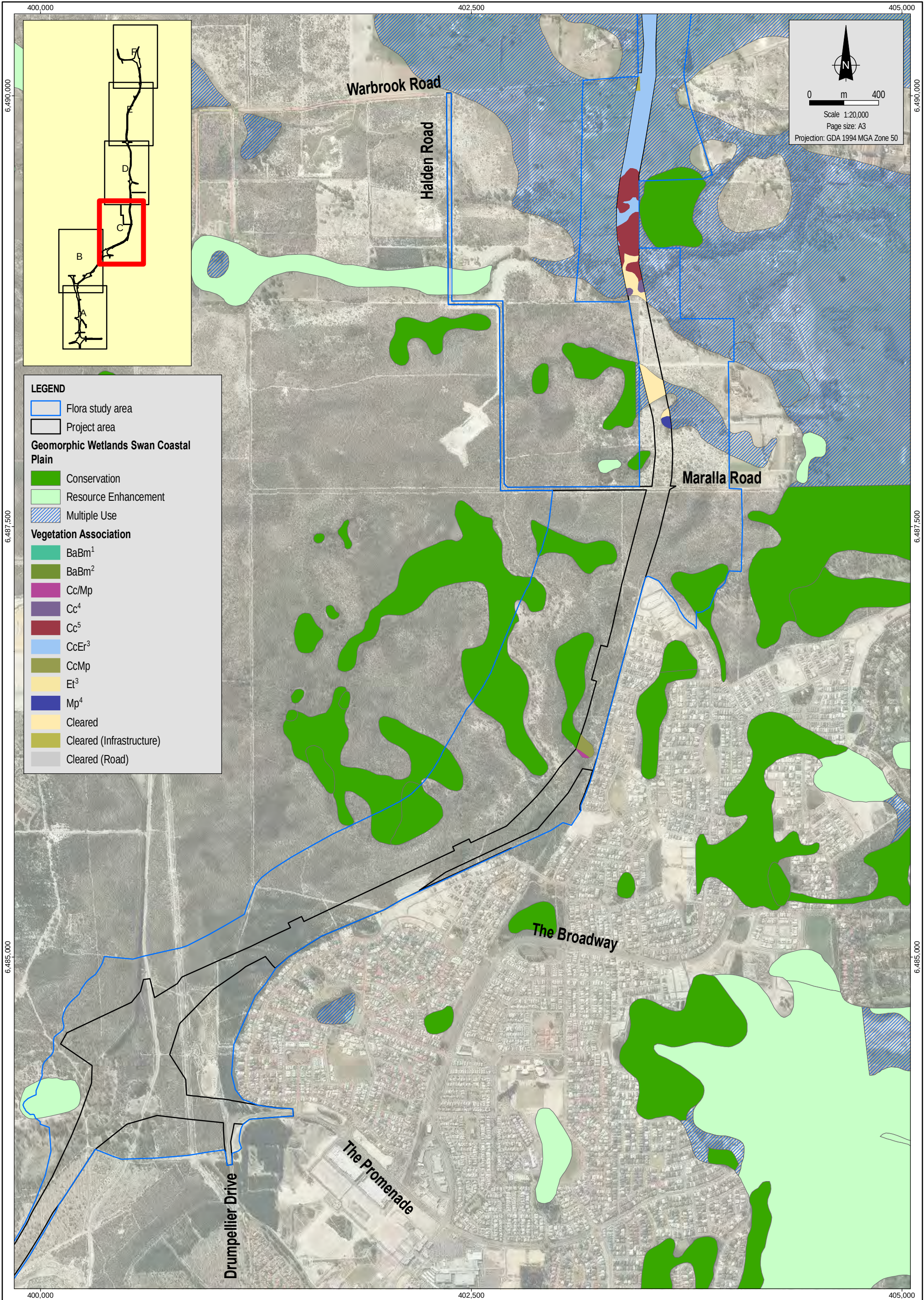
coffey

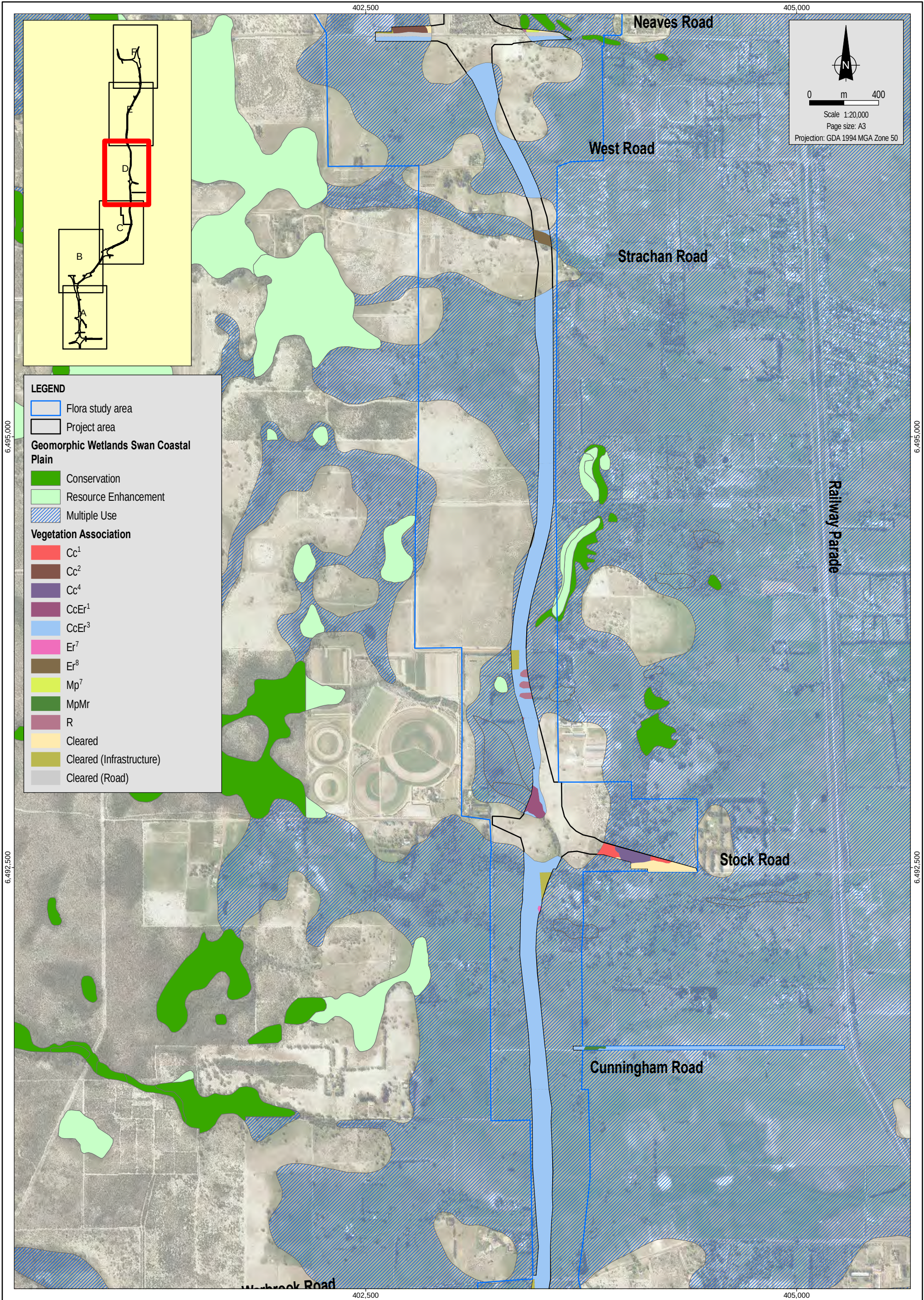
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29.03.2015
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File Name:
4483AA_30_F008B_GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Vegetation association

Figure No:
8B





Source & Notes
Vegetation association mapping from Coffey (February 2015)
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

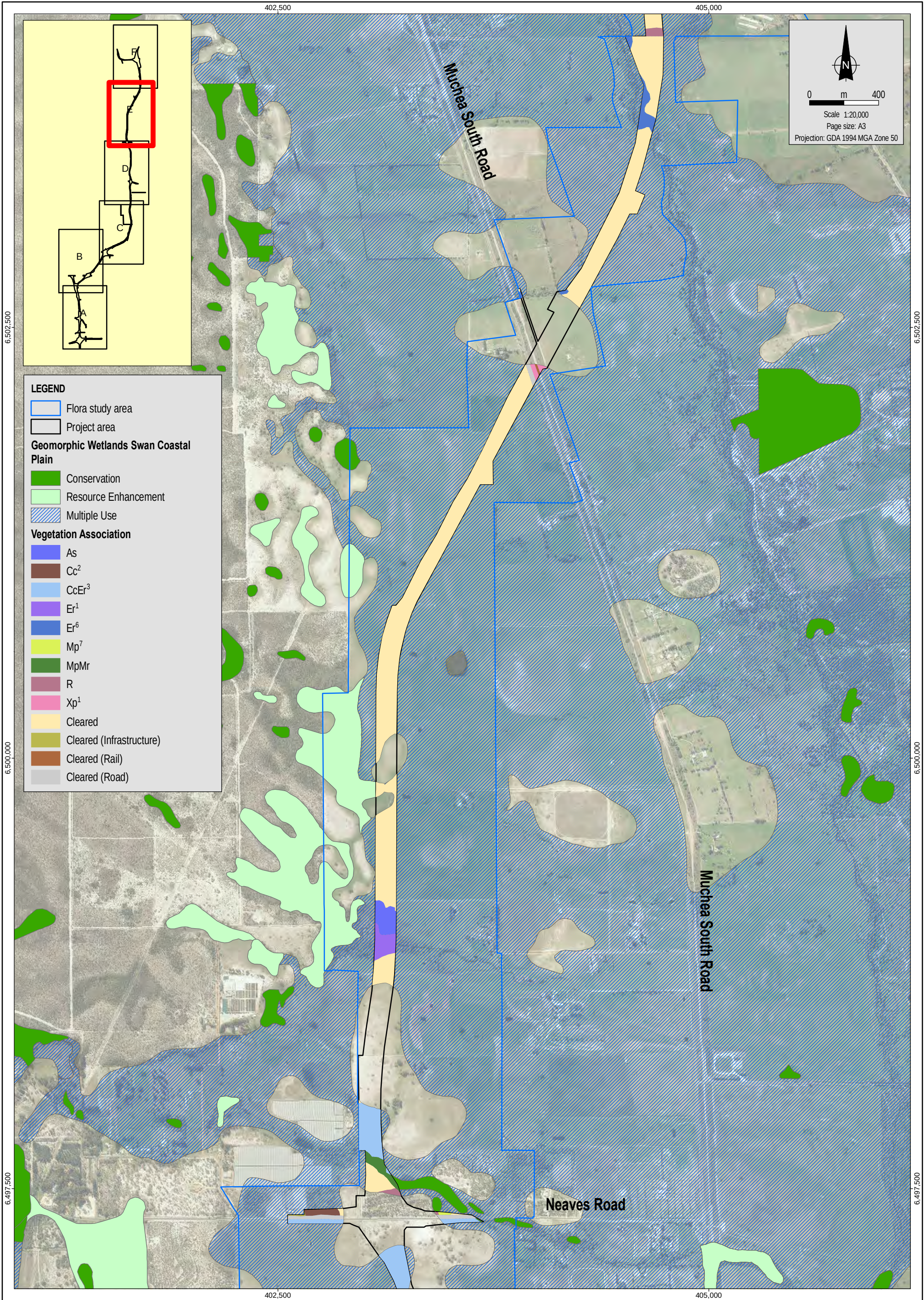
coffey

Date: 29.03.2015
MXI:
4483AA_30 GIS016_1
File Name:
4483AA_30 F008D GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Vegetation association

Figure No:
8D



Source & Notes
Vegetation association mapping from Coffey (February 2015)
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

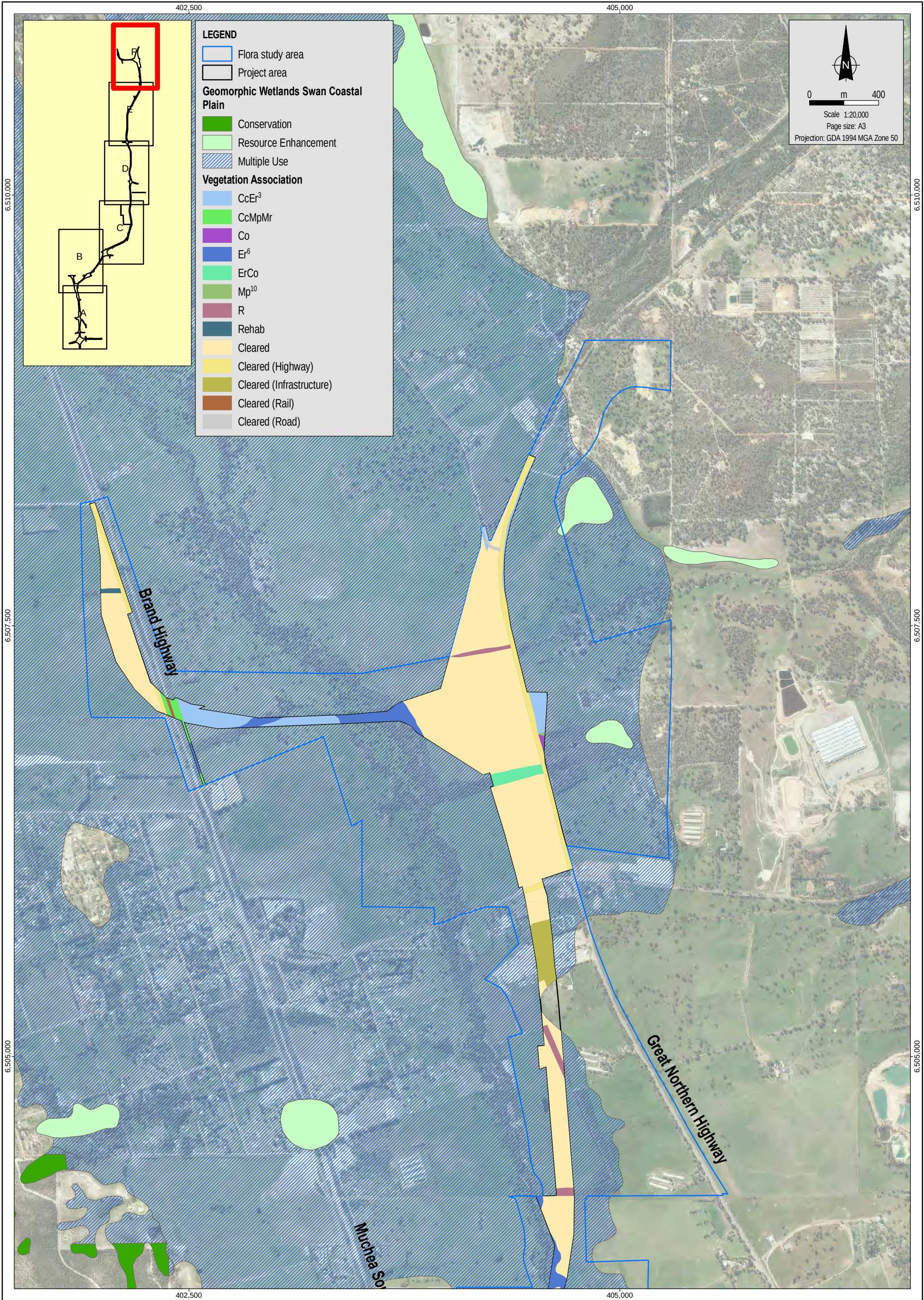
coffey

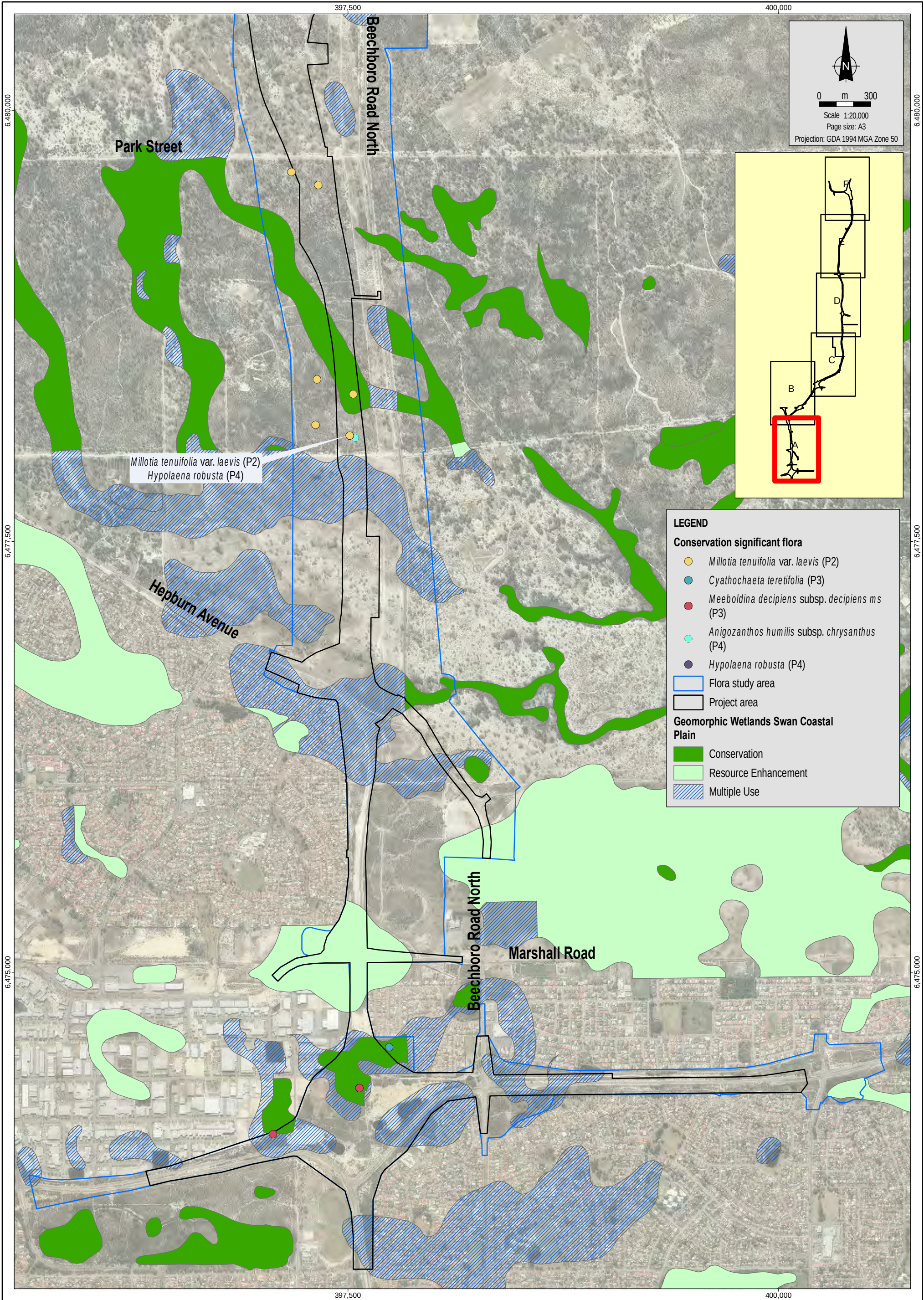
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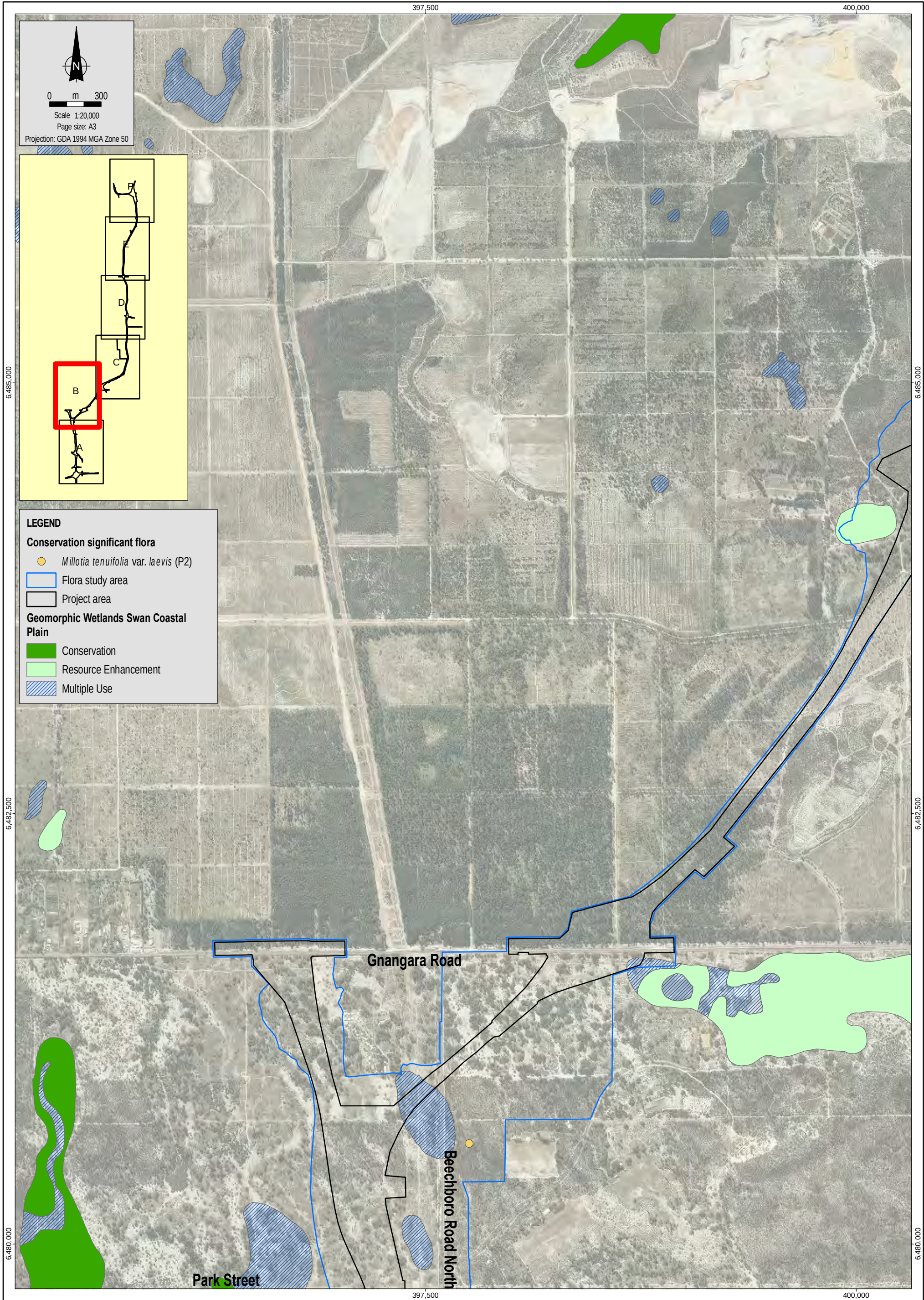
Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Vegetation association

Figure No:
8E







Source & Notes
Conservation significant flora from Coffey (January 2015).
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

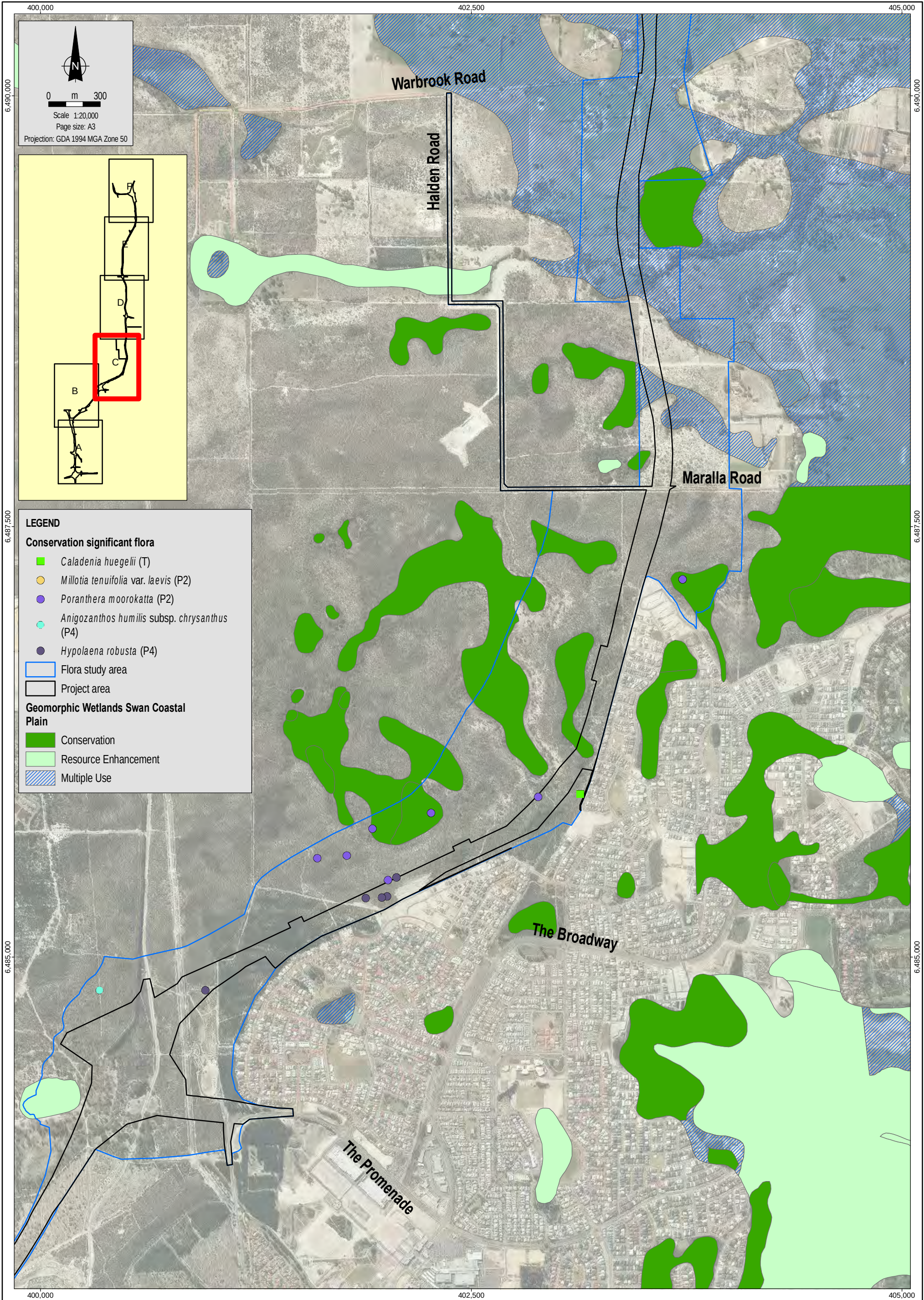
coffey

Date:
27.03.2015
MXT:
4483AA_30_GIS015_1
File Name:
4483AA_30_F009B_GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Threatened and Priority flora

Figure No:
9B



Source & Notes
Conservation significant flora from Coffey (January 2015).
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

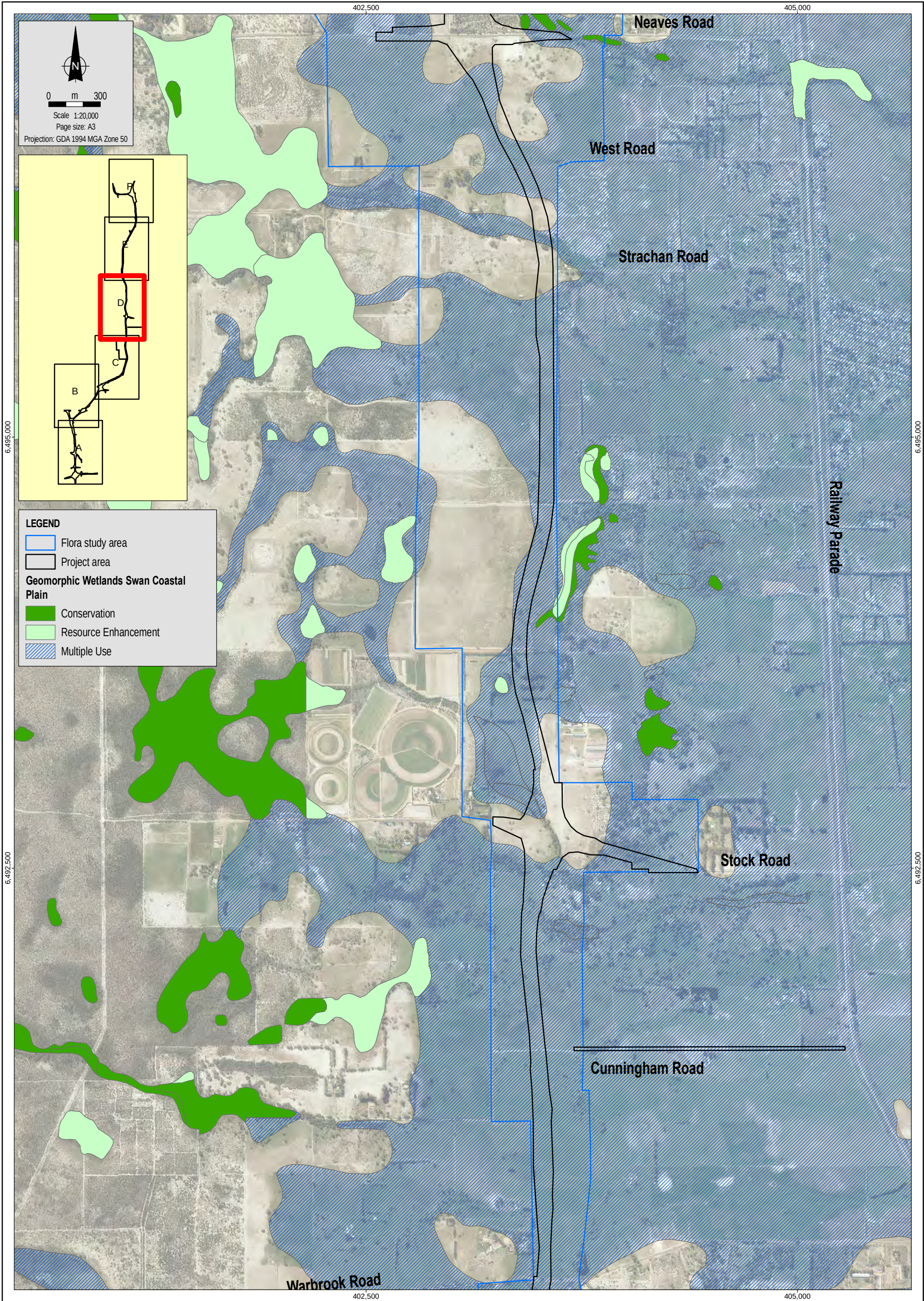
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Date:
27.03.2015
MXF:
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File Name:
4483AA_30 F009C GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Threatened and Priority flora

Figure No:
9C



Source & Notes
Conservation significant flora from Coffey (January 2015).
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

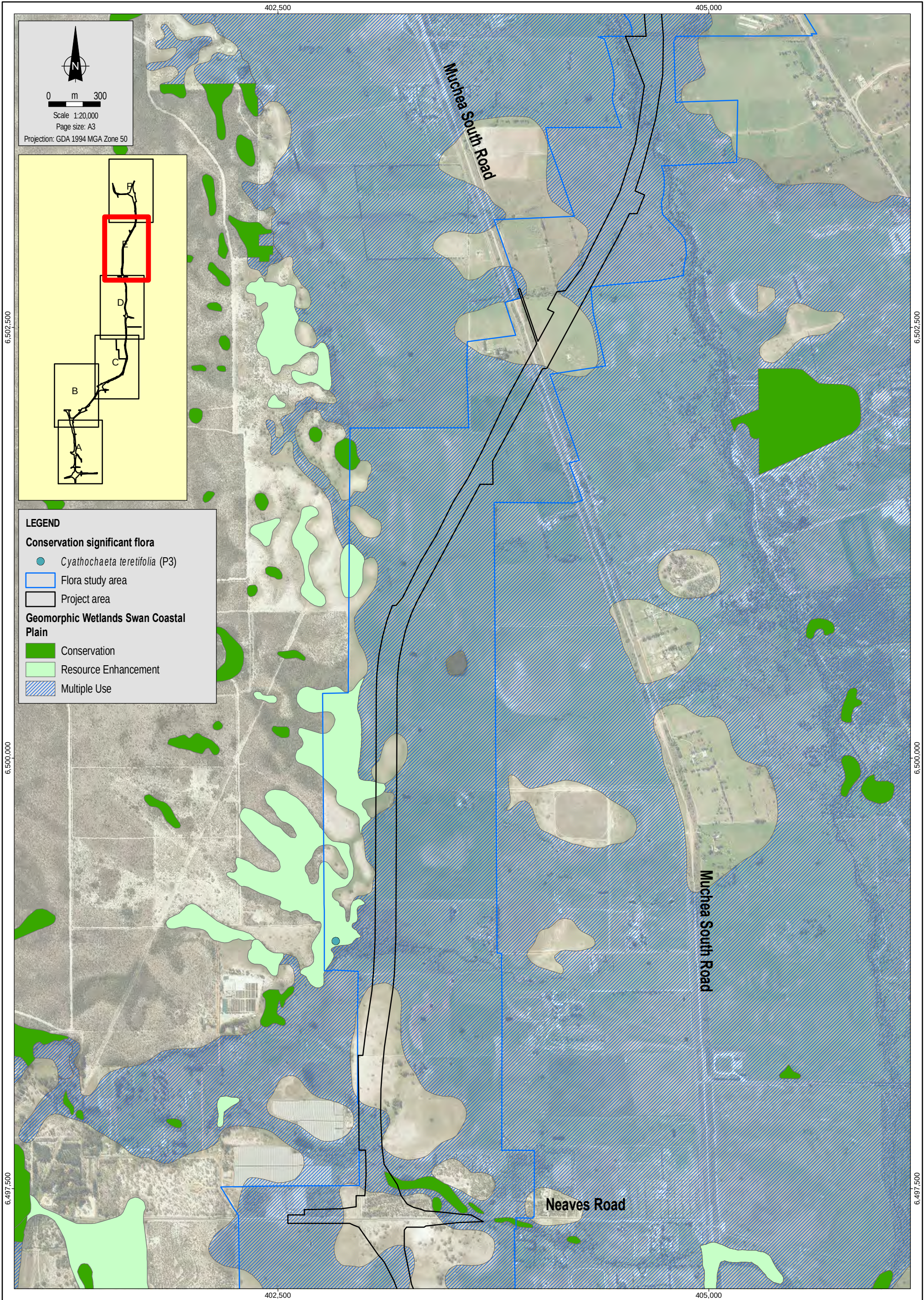
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Date:
27.03.2015
MXF:
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File Name:
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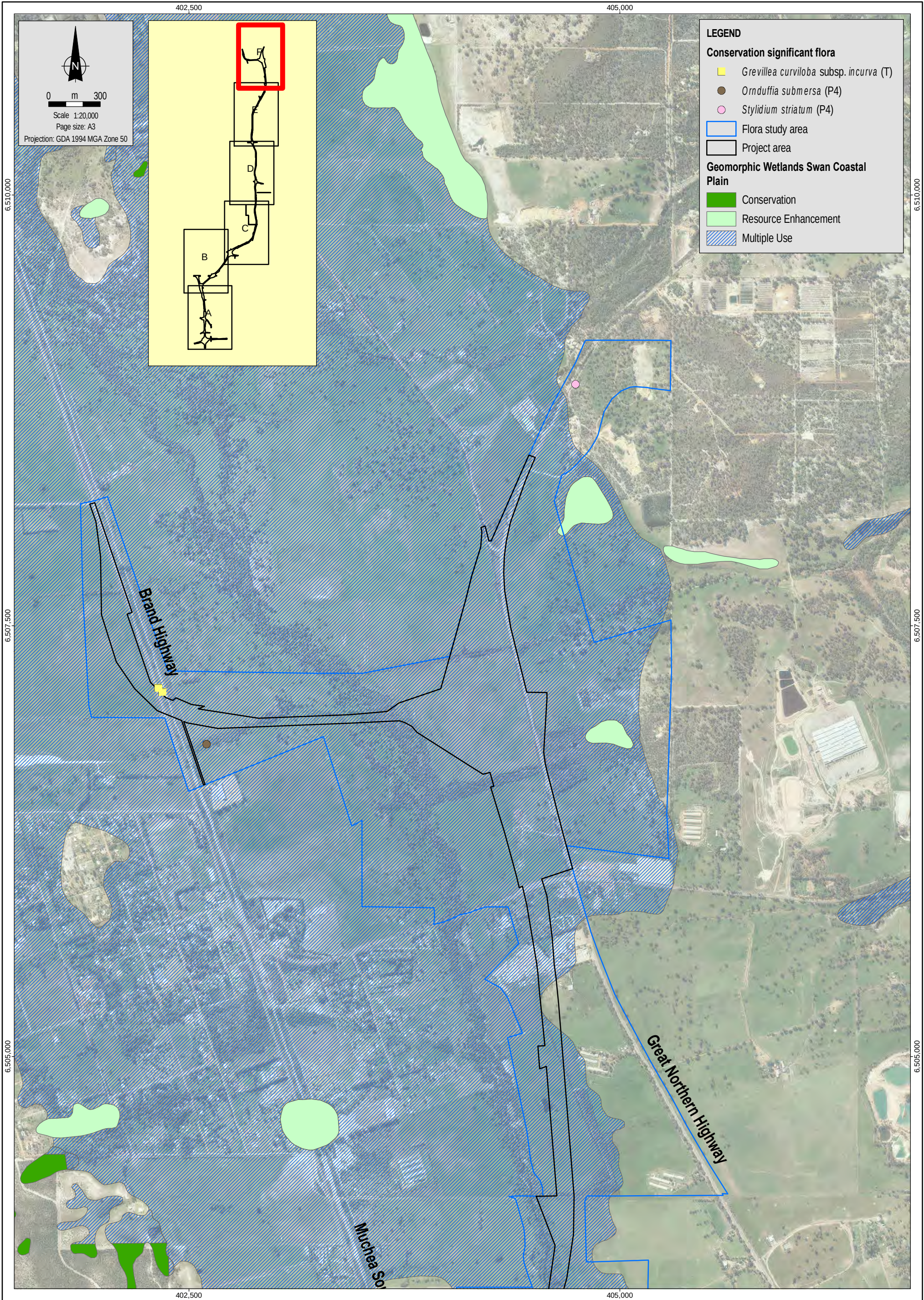
Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Threatened and Priority flora

Figure No:
9D



Source & Notes
Conservation significant flora from Coffey (January 2015).
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Aerial imagery from Landgate (August 2014)



Source & Notes
Conservation significant flora from Coffey (January 2015).
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

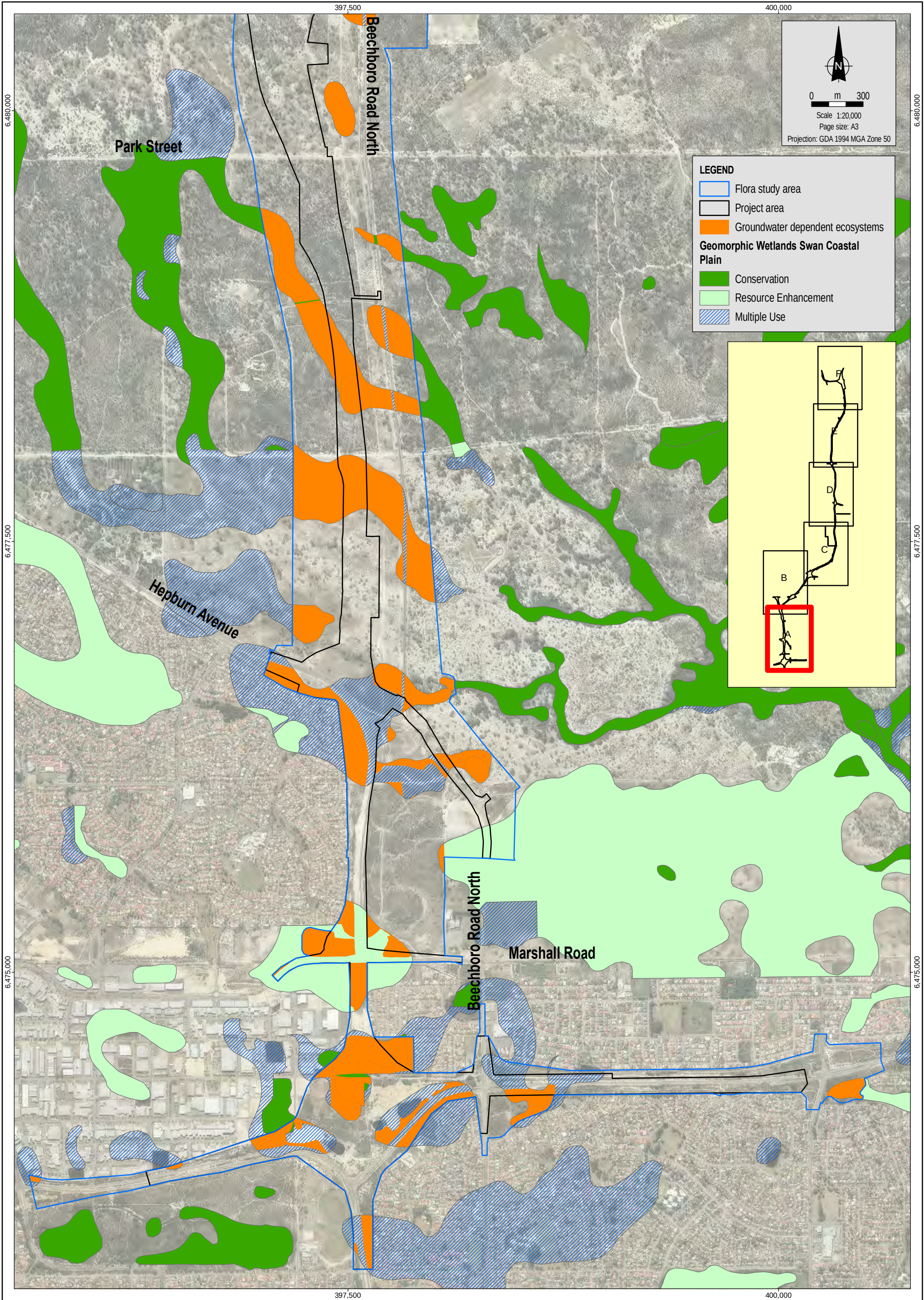
coffey

Date:
27.03.2015
MXF:
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File Name:
4483AA_30_F009F_GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Threatened and Priority flora

Figure No:
9F



Source & Notes
vegetation condition mapping from Coffey (February 2015)
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

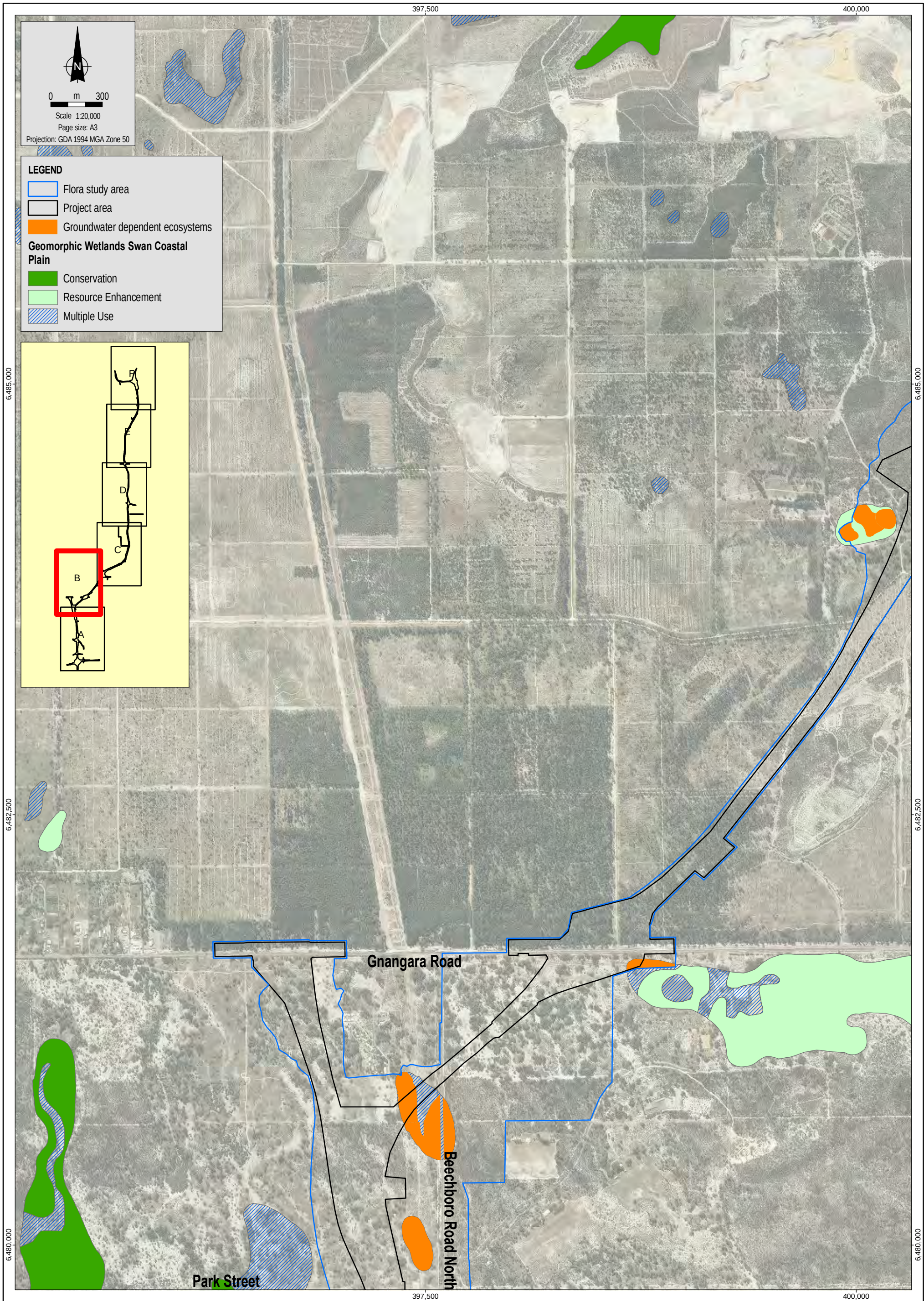
coffey

Date:
27.03.2015
MXF:
4483AA_30 GIS014_1
File Name:
4483AA_30 F010A GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Groundwater dependent ecosystems

Figure No:
10A



Source & Notes
vegetation condition mapping from Coffey (February 2015)
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

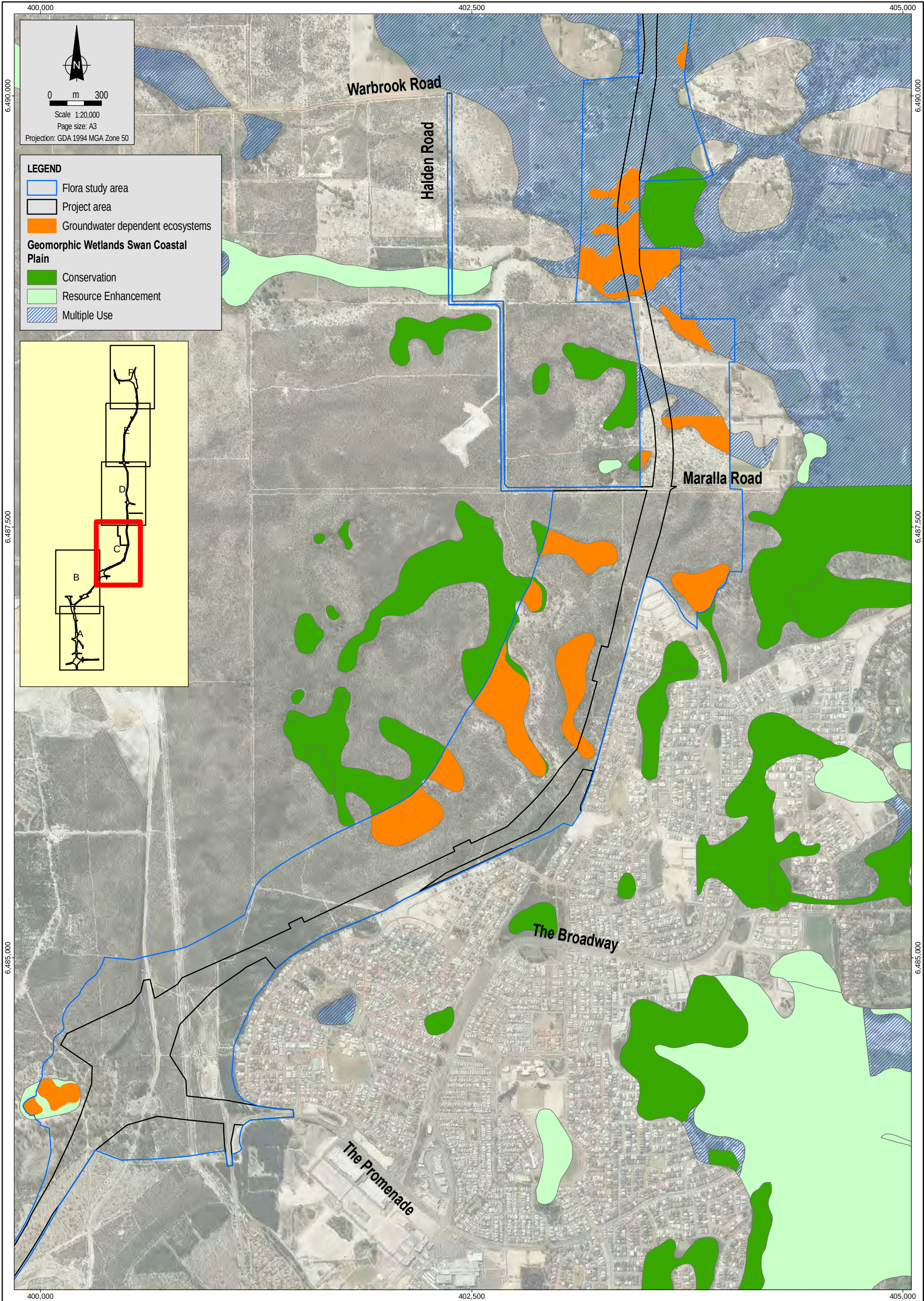
coffey

Date:
27.03.2015
MXF:
4483AA_30 GIS014_1
File Name:
4483AA_30 F010B GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Groundwater dependent ecosystems

Figure No:
10B



Source & Notes
vegetation condition mapping from Coffey (February 2015)
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

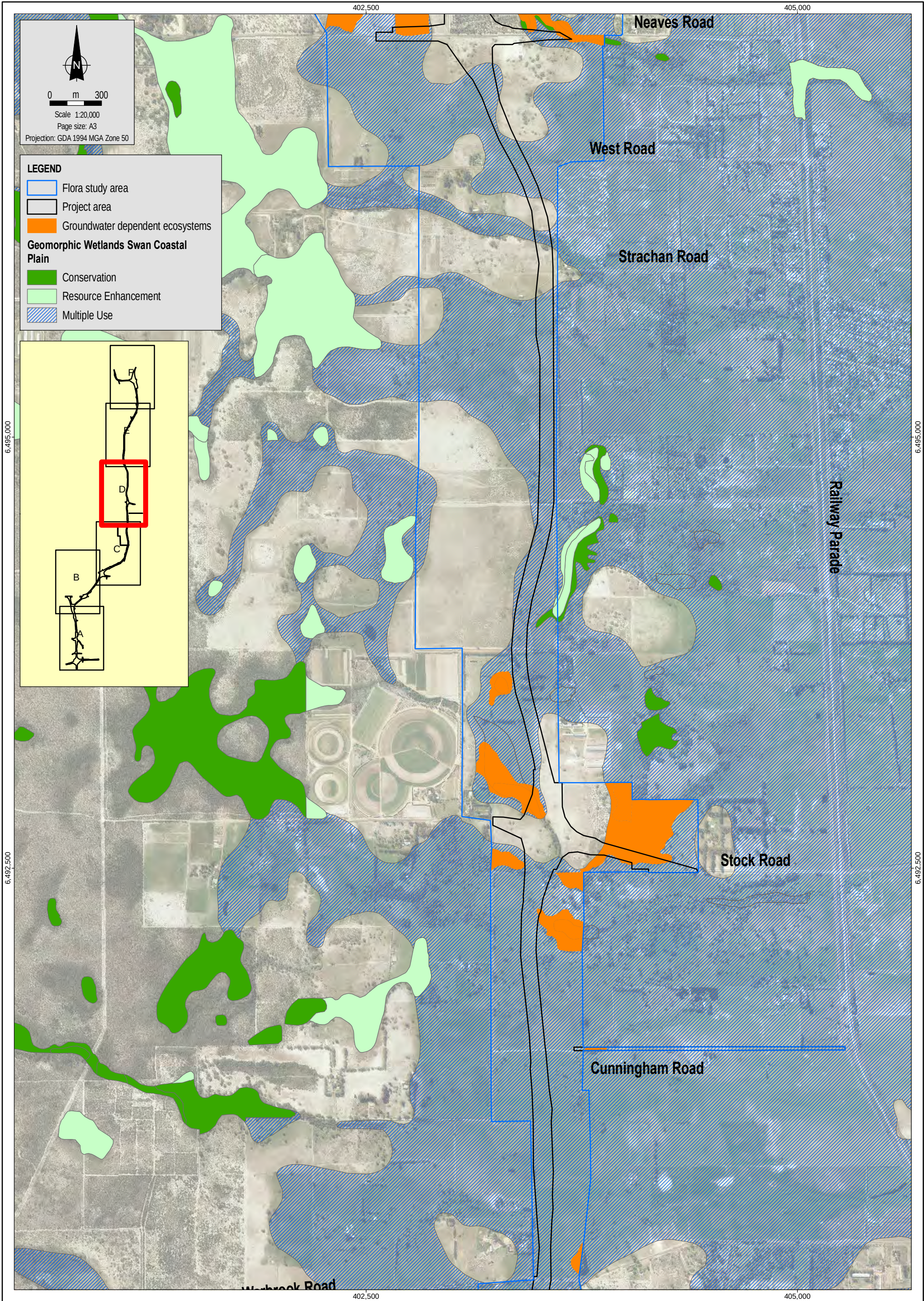
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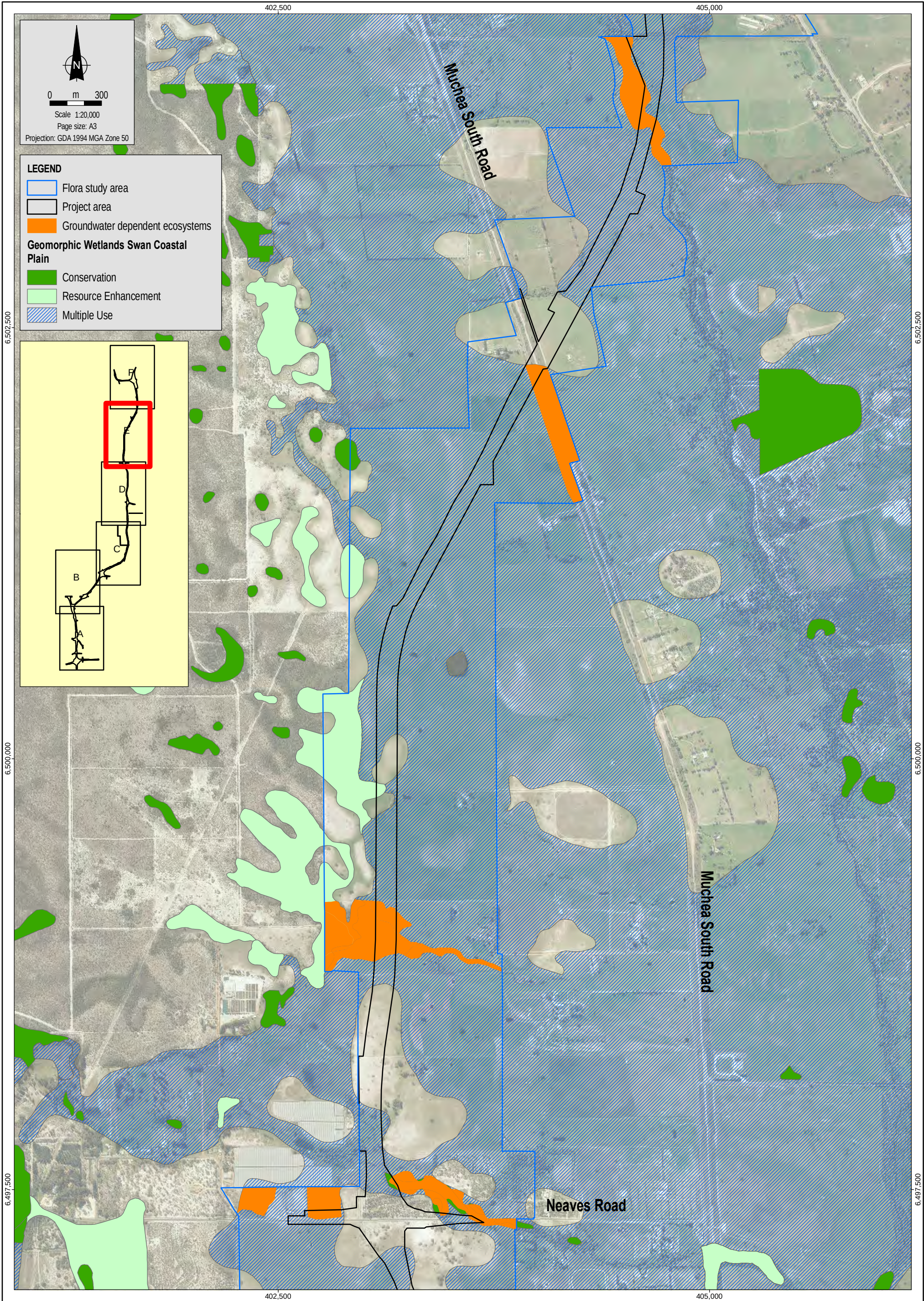
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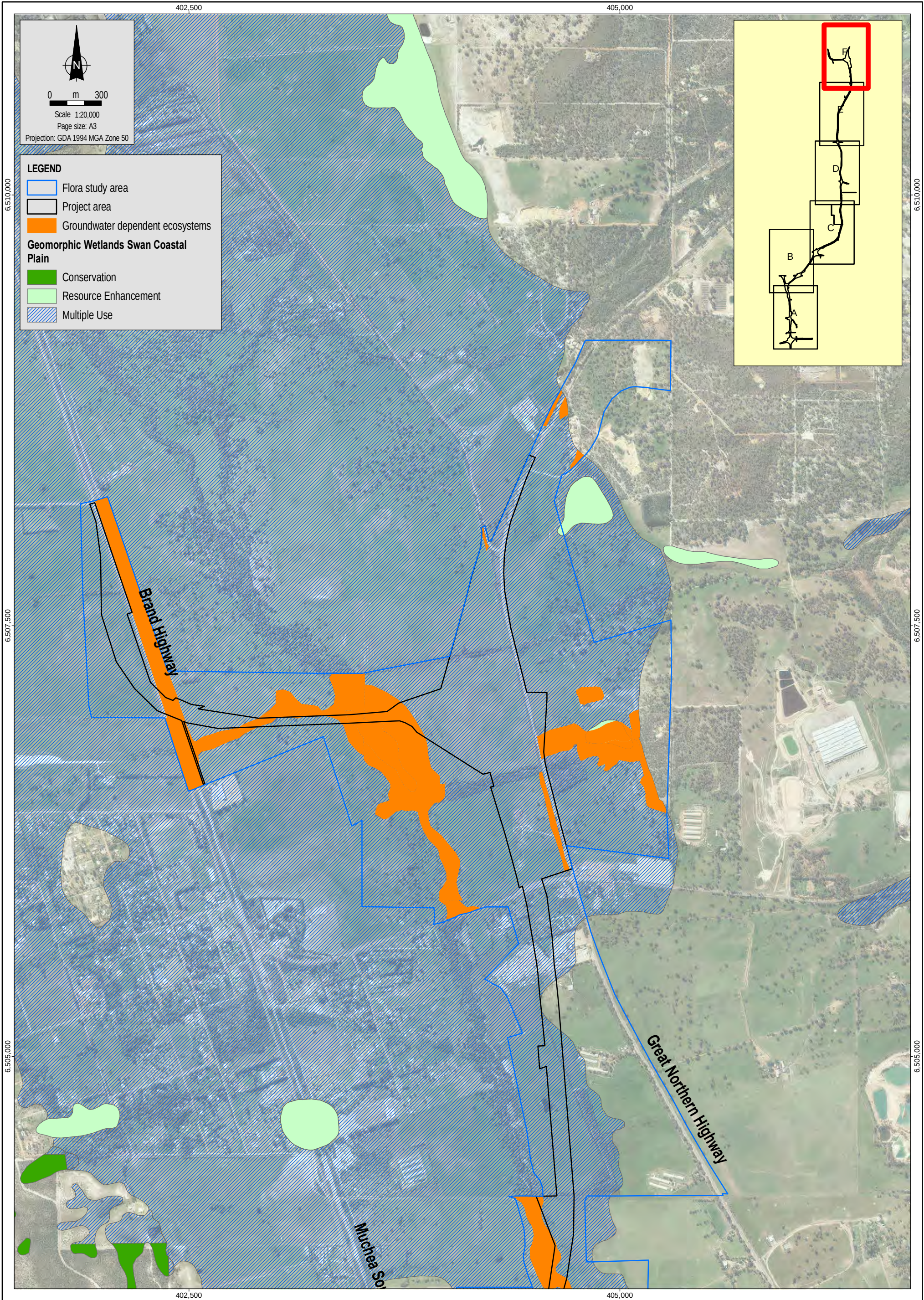
Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Groundwater dependent ecosystems

Figure No:
10C







Source & Notes
vegetation condition mapping from Coffey (February 2015)
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

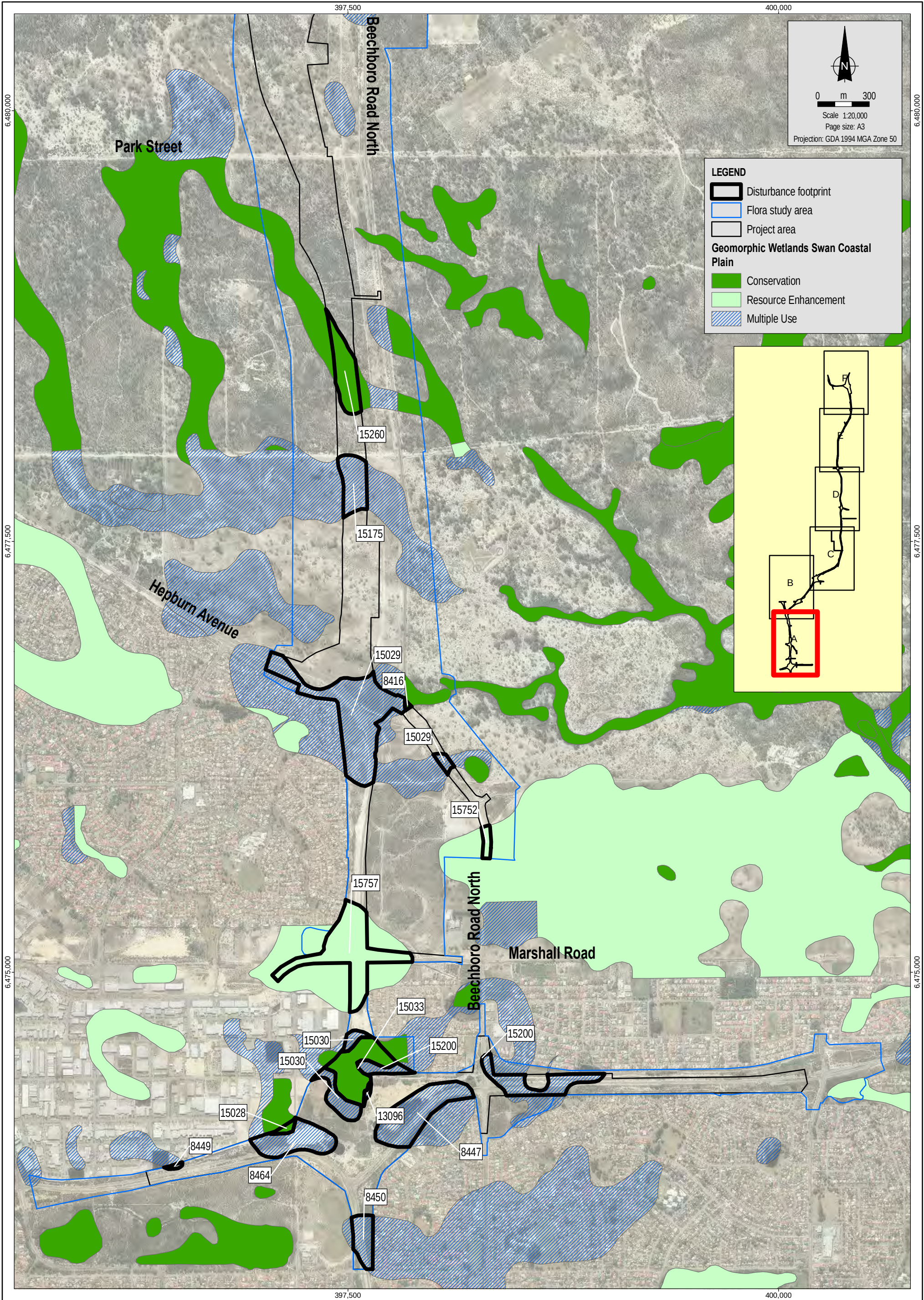
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Date:
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MXF:
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File Name:
4483AA_30 F010F GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Groundwater dependent ecosystems

Figure No:
10F



Source & Notes
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Bush Forever sites from DoP (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

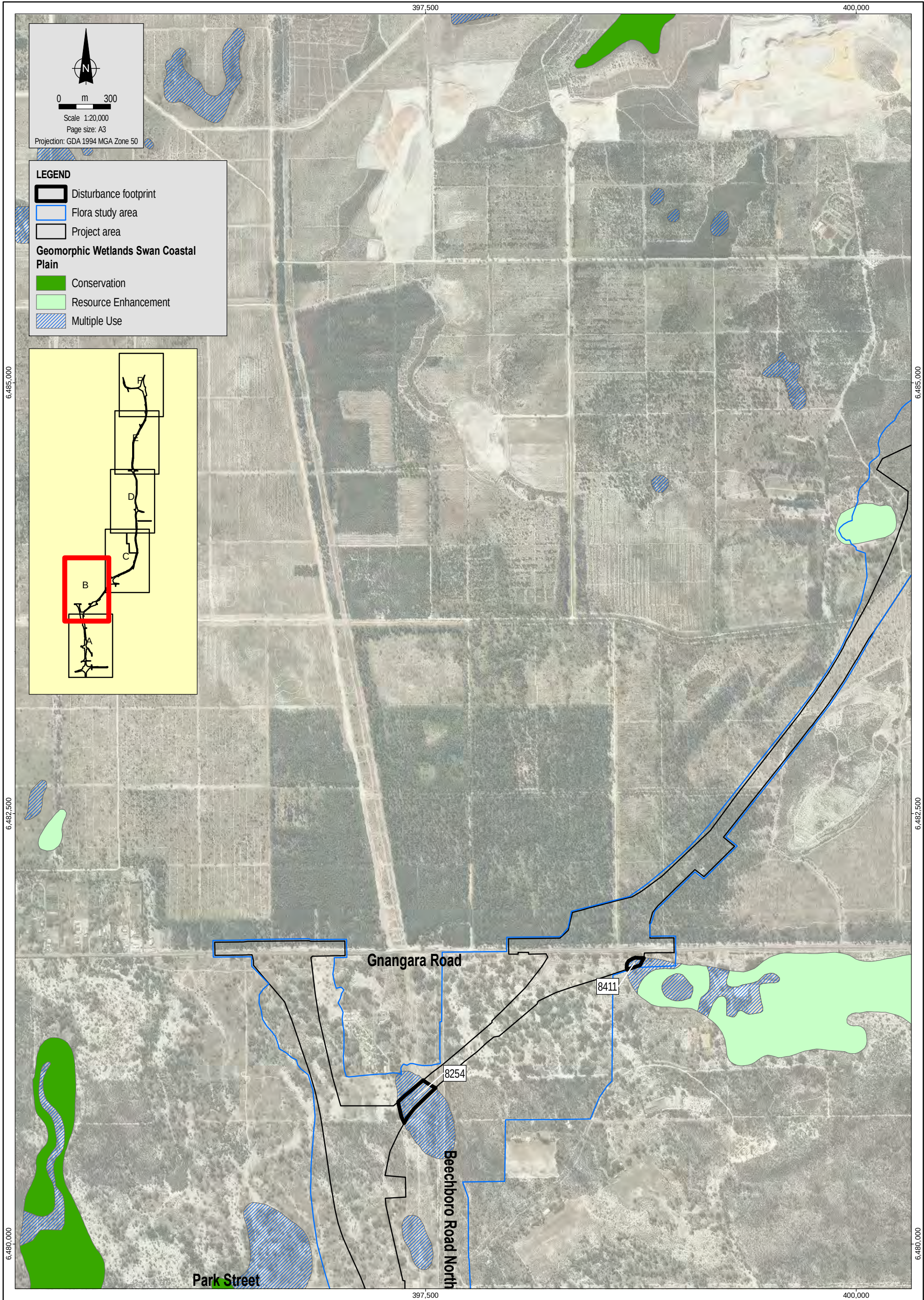
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Date:
27.03.2015
MXF:
4483AA_30 GIS014_1
File Name:
4483AA_30 F011A GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Disturbance footprint

Figure No:
11A



Source & Notes
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Bush Forever sites from DoP (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

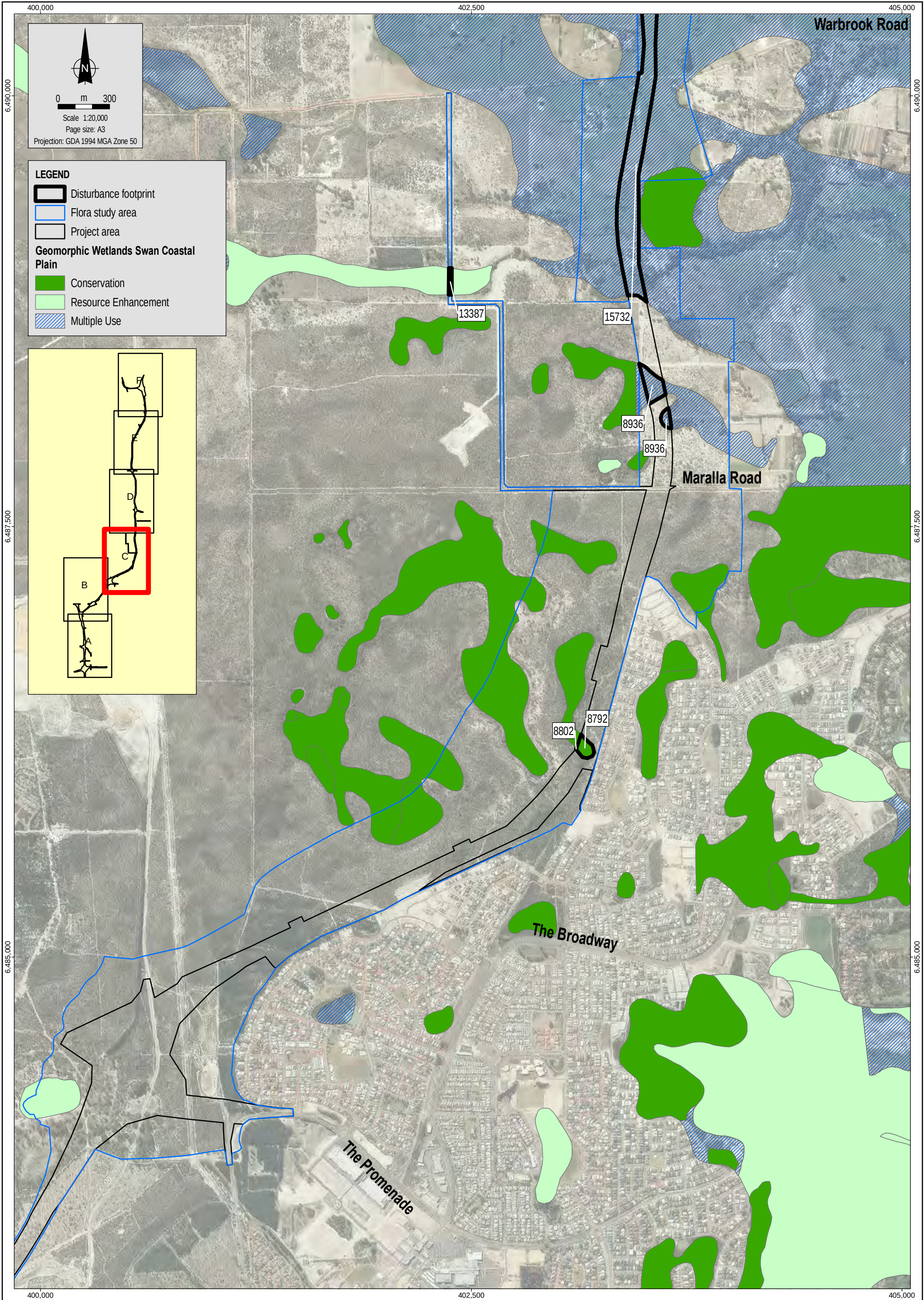
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Date:
27.03.2015
MXF:
4483AA_30_GIS014_1
File Name:
4483AA_30_F011B_GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Disturbance footprint

Figure No:
11B



Source & Notes
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Bush Forever sites from DoP (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

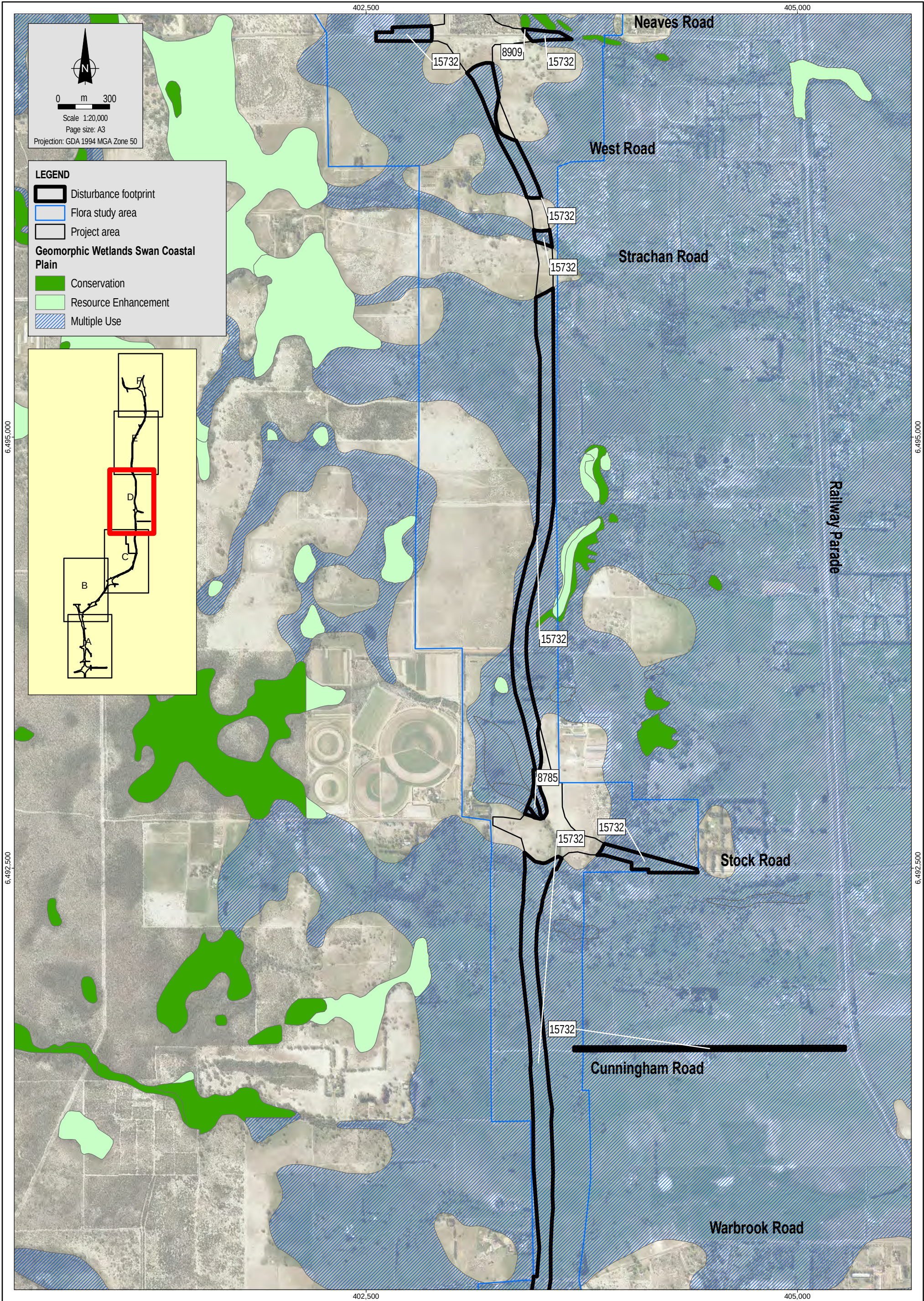
coffey

Date:
27.03.2015
MXF:
4483AA_30 GIS014_1
File Name:
4483AA_30 F011C GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Disturbance footprint

Figure No:
11C



Source & Notes
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Bush Forever sites from DoP (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

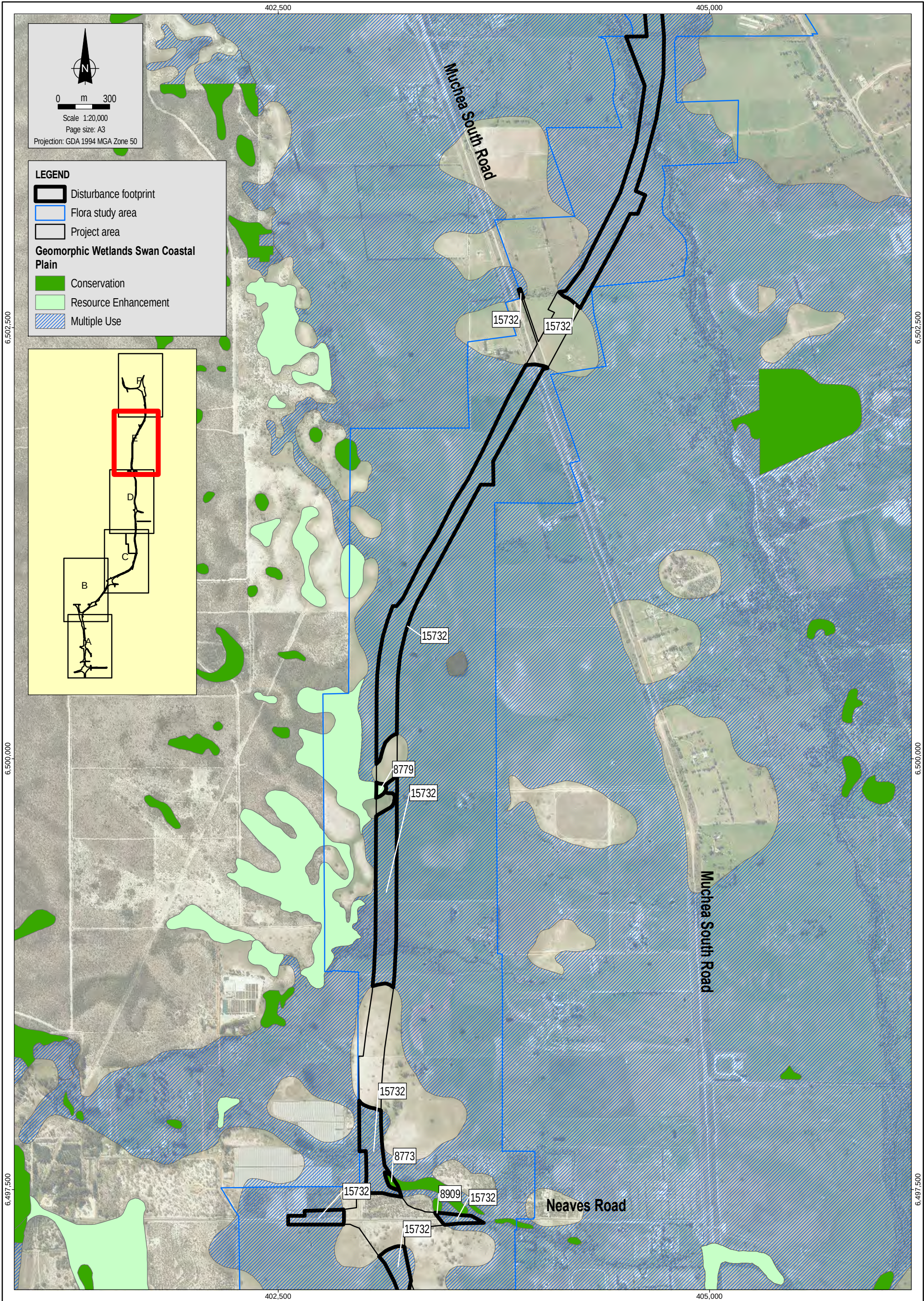
coffey

Date:
27.03.2015
MXF:
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File Name:
4483AA_30 F011D GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Disturbance footprint

Figure No:
11D



Source & Notes
Geomorphic Wetlands Swan Coastal Plain mapping from DPAW (January 2015)
Bush Forever sites from DoP (January 2015)
Aerial imagery from Landgate (August 2014)

NorthLinkWA

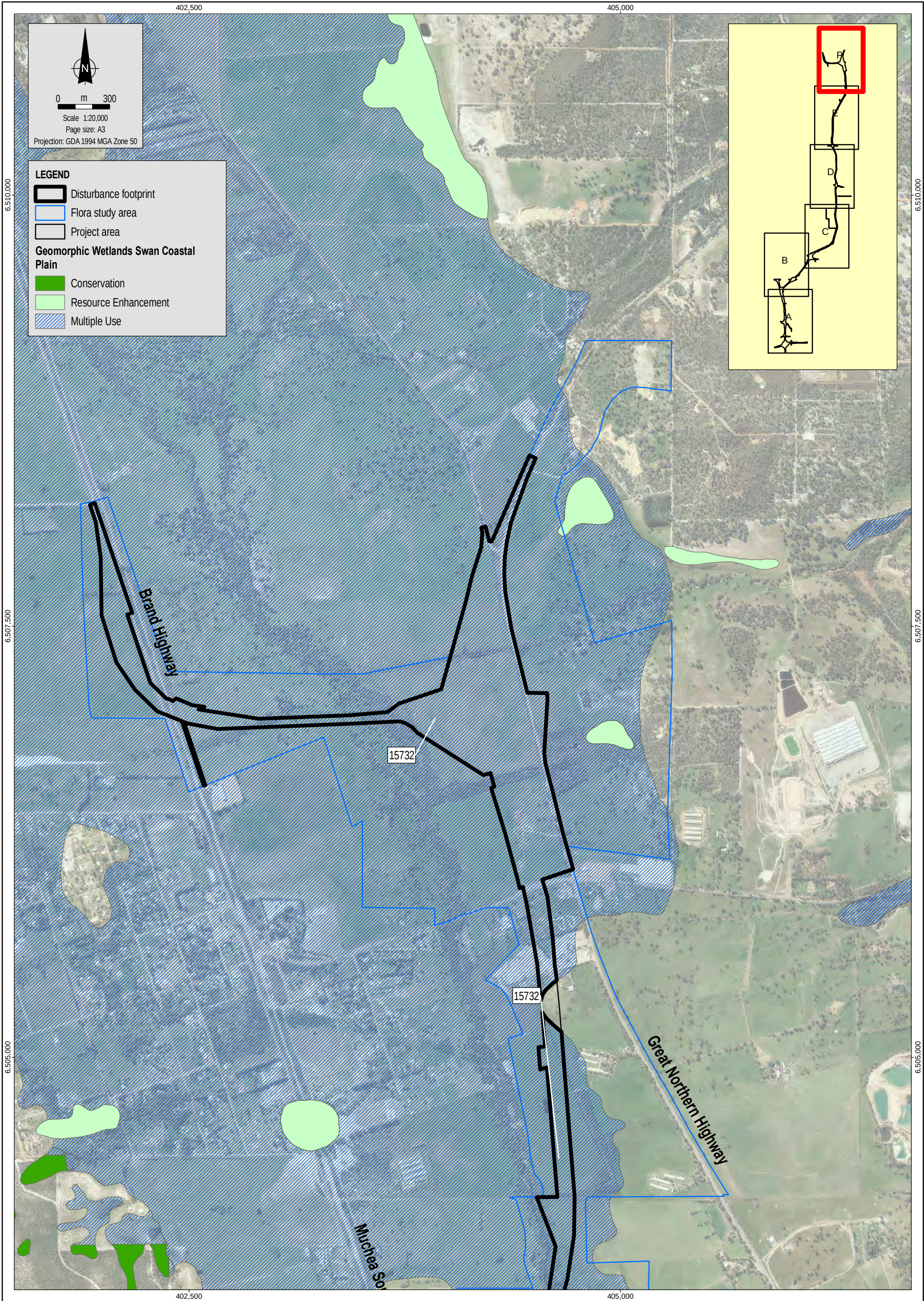
coffey

Date:
27.03.2015
MX1:
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File Name:
4483AA_30 F011E GIS

Main Roads WA
Wetland Assessment
Perth-Darwin National Highway

Disturbance footprint

Figure No:
11E





APPENDIX A

Wetlands occurring within the study area

Wetlands occurring within the study area

Unique feature identifier	Wetland type	Management category	Consanguineous suite	Location within project area (inside/outside)	GDE type
8416	Palusplain	Conservation Category	Bennett Brook	Inside	2
8429	Sumpland	Conservation Category	Bennett Brook	Outside	2
8661	Dampland	Conservation Category	Jandakot	Outside	3
8664	Sumpland	Conservation Category	Jandakot	Outside	2
8773	Palusplain	Conservation Category	Ellenbrook	Inside	2
8792	Dampland	Conservation Category	Jandakot	Inside	3
8793	Sumpland	Conservation Category	Jandakot	Outside	2
8800	Sumpland	Conservation Category	Muchea	Outside	2
8802	Dampland	Conservation Category	Jandakot	Outside	3
8812	Dampland	Conservation Category	Jandakot	Outside	3
8909	Palusplain	Conservation Category	Ellen Brook	Inside	2
8910	Palusplain	Conservation Category	Jandakot	Outside	2
8911	Palusplain	Conservation Category	Jandakot	Outside	2
8914	Palusplain	Conservation Category	Ellenbrook	Outside	2
15028	Sumpland	Conservation Category	Jandakot	Inside	2
15033	Sumpland	Conservation Category	Jandakot	Inside	2
15260	Palusplain	Conservation Category	Bennett Brook	Inside	2
8541	Dampland	Resource Enhancement	Jandakot	Outside	3
8554	Sumpland	Resource Enhancement	Jandakot	Outside	2
8779	Sumpland	Resource Enhancement	Muchea	Outside	2
8783	Sumpland	Resource Enhancement	Ellenbrook	Outside	2
13387	Floodplain	Resource Enhancement	Muchea	Inside	2
13402	Sumpland	Resource Enhancement	Ellenbrook	Outside	2
15752	Palusplain	Resource Enhancement	Bennett Brook	Inside	2
15757	Sumpland	Resource Enhancement	Jandakot	Inside	2
8254	Dampland	Multiple Use	Bennett Brook	Outside	3
8411	Dampland	Multiple Use	Bennett Brook	Inside	3
8438	Dampland	Multiple Use	Bennett Brook	Outside	3
8447	Dampland	Multiple Use	Jandakot	Inside	3
8449	Dampland	Multiple Use	Jandakot	Inside	3
8450	Dampland	Multiple Use	Jandakot	Inside	3
8454	Palusplain	Multiple Use	Bennett Brook	Outside	2
8464	Sumpland	Multiple Use	Jandakot	Inside	2
8730	Dampland	Multiple Use	Jandakot	Outside	3
8784	Floodplain	Multiple Use	Ellenbrook	Outside	2

Unique feature identifier	Wetland type	Management category	Consanguineous suite	Location within project area (inside/outside)	GDE type
8785	Floodplain	Multiple Use	Ellenbrook	Inside	2
8936	Sumpland	Multiple Use	Muchea	Inside	2
13096	Sumpland	Multiple Use	Jandakot	Inside	2
15029	Palusplain	Multiple Use	Bennett Brook	Inside	2
15030	Sumpland	Multiple Use	Jandakot	Inside	2
15175	Palusplain	Multiple Use	Bennett Brook	Inside	2
15200	Sumpland	Multiple Use	Jandakot	Inside	2
15732	Palusplain	Multiple Use	Muchea/Ellenbrook	Inside	2



APPENDIX B

NVIS vegetation structure definition

NVIS vegetation structure definition

NVIS hierarchical structure

Hierarchical level	Description	NVIS structural/floristic component required
I	Class	Dominant growth form for the ecologically or structurally dominant stratum
II	Structural Formation	Dominant growth form, cover and height for the ecologically or structurally dominant stratum
III	Broad Floristic Formation	Dominant growth form, cover, height and dominant land cover genus for the upper most or the ecologically or structurally dominant stratum
IV	Sub-formation	Dominant growth form, cover, height and dominant genus for each of the three traditional strata (i.e. Upper, Mid and Ground)
V	Association	Dominant growth form, height, cover and species (3 species) for each of the three traditional strata (i.e. Upper, Mid, Ground)
VI	Sub-association	Dominant growth form, height, cover and species (5 species) for all layers/sub-strata

Source Table 1 from ESCAVI (2003).

NVIS structural terminology

Stratum	Growth form	Height ranges (m) ¹	Structural formation classes (% cover)					
			80–100	50–80	20–50	0.25–20	0–0.25	Unknown
U	Tree, palm	Low; Mid; Tall	Closed forest	Open forest	Woodland	Sparse woodland	Isolated trees	Isolated clumps of trees
	Tree mallee	Low; Mid; Tall	Closed mallee forest	Open mallee forest	Mallee woodland	Sparse mallee woodland	Isolated mallee trees	Isolated clumps of mallee trees
M	Shrub, cycad	Low; Mid; Tall	Closed shrubland	Shrubland	Open shrubland	Sparse shrubland	Isolated shrubs	Isolated clumps of shrubs
	Mallee shrub	Low; Mid; Tall	Closed mallee shrubland	Mallee shrubland	Open mallee shrubland	Sparse mallee shrubland	Isolated mallee shrubs	Isolated clumps of mallee shrubs
	Heath shrub	Low; Mid; Tall	Closed heath shrubland	Heath shrubland	Open heath shrubland	Sparse heath shrubland	Isolated heath shrubs	Isolated clumps of heath shrubs
	Chenopod shrub	Low; Mid; Tall	Closed chenopod shrubland	Chenopod shrubland	Open chenopod shrubland	Sparse chenopod shrubland	Isolated chenopod shrubs	Isolated clumps of chenopod shrubs
	Samphire shrub	Low; Mid	Closed samphire shrubland	Samphire shrubland	Open samphire shrubland	Sparse samphire shrubland	Isolated samphire shrubs	Isolated clumps of samphire shrubs
G	Hummock grass	Low; Mid	Closed hummock grassland	Hummock grassland	Open hummock grassland	Sparse hummock grassland	Isolated hummock grasses	Isolated clumps of hummock grasses
	Tussock grass	Low; Mid	Closed tussock grasslands	Tussock grassland	Open tussock grassland	Sparse tussock grassland	Isolated tussock grasses	Isolated clumps of tussock grasses
	Other grass	Low; Mid	Closed grassland	Grassland	Open grassland	Sparse grassland	Isolated grasses	Isolated clumps of grasses
	Sedge	Low; Mid	Closed Sedgeland	Sedgeland	Open sedgeland	Sparse sedgeland	Isolated sedges	Isolated clumps of sedges
G	Rush	Low; Mid	Closed rushland	Rushland	Open rushland	Sparse rushland	Isolated rushes	Isolated clumps of rushes
	Herb	Low; Mid	Closed herbland	Herbland	Open herbland	Sparse herbland	Isolated herbs	Isolated clumps of herbs

Source Table 4 from ESCAVI (2003).

Note Growth forms that do not occur or were not sampled within the study area were omitted (i.e. seagrass bed).

1 Refer to Table 5 for height range information.

NVIS height class definition

Height class	Height range (m)	Growth forms			
		Tree, palm	Shrub (all forms), cycad	Tree mallee, mallee shrub	Hummock grass, tussock grass, other grass, sedge, rush, herb
8	>30	Tall			
7	10–30	Mid		Tall	
6	<10	Low		Mid	
5	<3			Low	
4	>2		Tall		Tall
3	1–2		Mid		Tall
2	0.5–1		Low		Mid
1	<0.5		Low		Low

Source Table 3 from ESCAVI (2003).

APPENDIX C

Vegetation condition rating scale

Vegetation condition rating scale

Vegetation condition rating scale

Condition code	Definition
P Pristine	Pristine or nearly so, no obvious signs of disturbance.
E Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
VG Very Good	Vegetation structure altered obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
G Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
D Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
CD Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often referred to as parkland cleared with the flora composing weed or crop species with isolated native trees or shrubs.

Source Bush Forever (Government of Western Australia, 2000b), originally developed by Keighery (1994).

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