

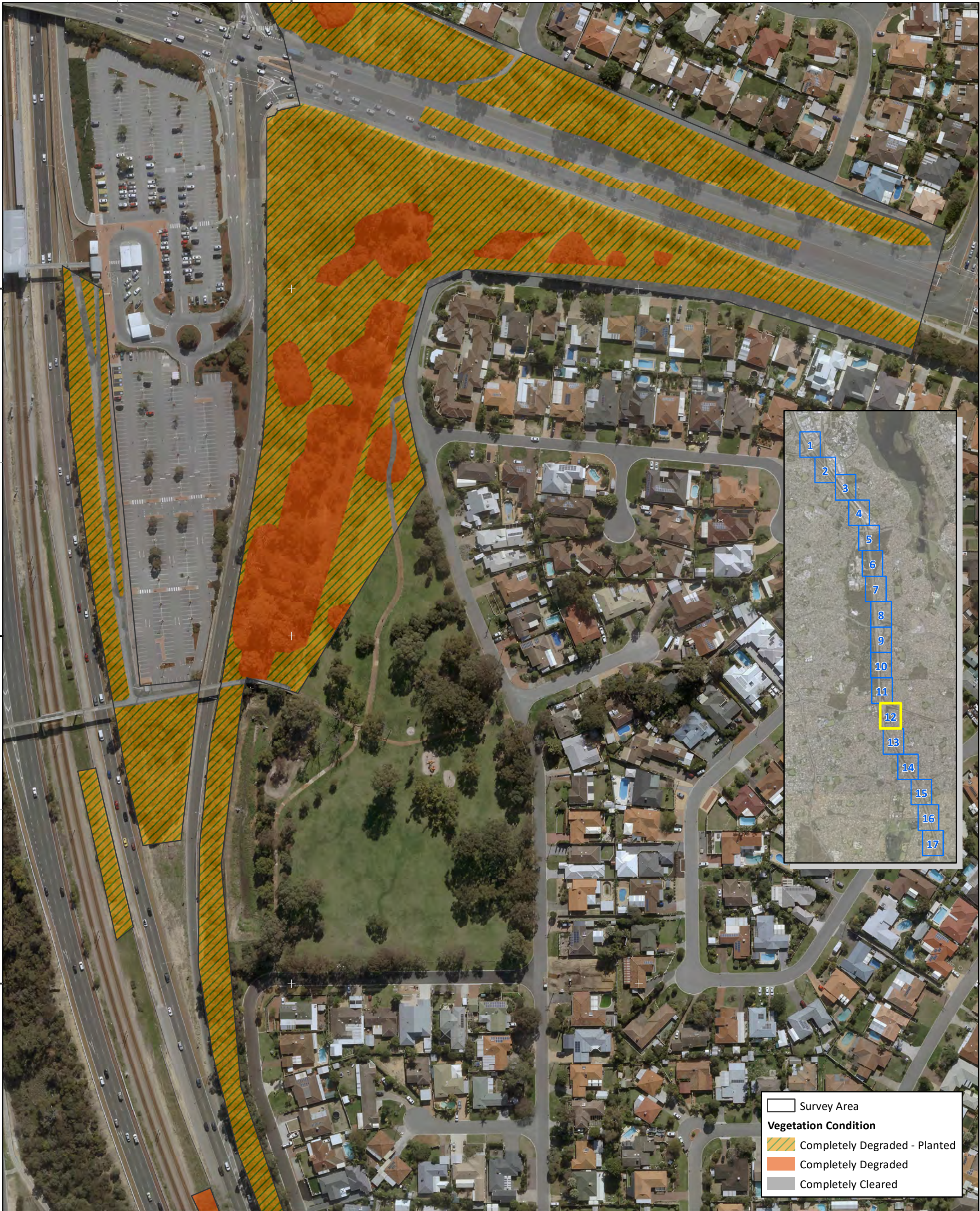
385000

385200

6479000

6478800

6478600



Survey Area
Vegetation Condition
 Completely Degraded - Planted
 Completely Degraded
 Completely Cleared

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



Figure J.12: Vegetation condition

Author: C. Dyde	Date: 18-05-2020
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200518_VegCond_FigJ

Scale: 1:2,000 at A3
 Coordinate System: GDA 1994 MGA Zone 50

 0 20 40 60 80 100 Metres



Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



Figure J.13: Vegetation condition

Author: C. Dyde

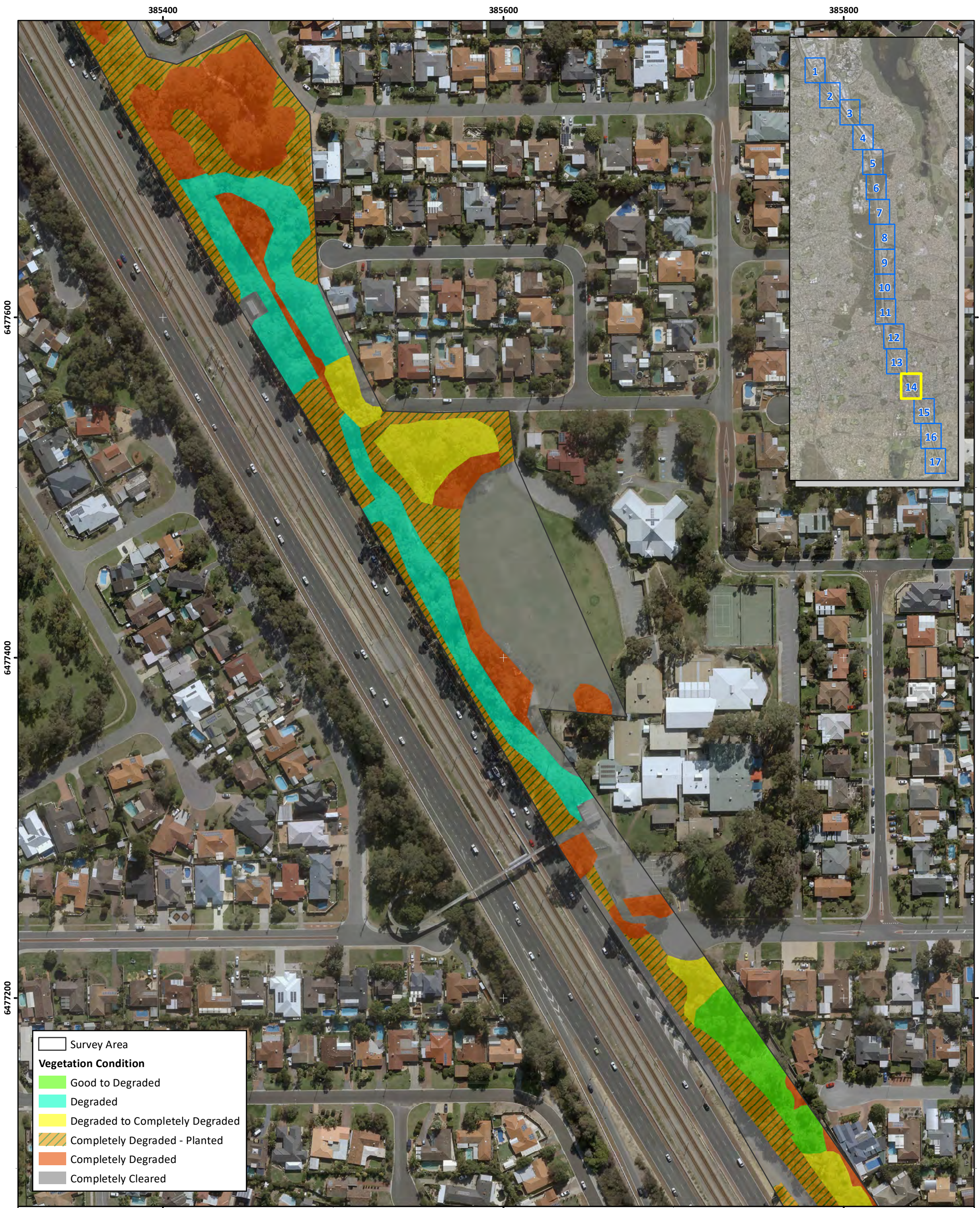
Date: 18-05-2020

Drawn: A. Sleep

Figure Ref: 8612-19-BIDR-1RevB_200518_VegCond_FigJ

Scale: 1:2,000 at A3
 Coordinate System: GDA 1994 MGA Zone 50
 0 20 40 60 80 100 Metres





6477600

6477400

6477200

385400

385600

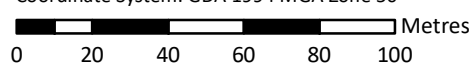
385800

Survey Area
Vegetation Condition
 Good to Degraded
 Degraded
 Degraded to Completely Degraded
 Completely Degraded - Planted
 Completely Degraded
 Completely Cleared

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



Figure J.14: Vegetation condition

Author: C. Dyde	Date: 18-05-2020	Scale: 1:2,000 at A3 Coordinate System: GDA 1994 MGA Zone 50 
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200518_VegCond_FigJ	



385800

386000

386200

6477000

6476800

6476600

6476400



Survey Area

Vegetation Condition

- Degraded
- Degraded to Completely Degraded
- Completely Degraded - Planted
- Completely Degraded
- Completely Cleared

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



Figure J.15: Vegetation condition

Author: C. Dyde	Date: 09-07-2020	Scale: 1:2,000 at A3
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevC_200709_VegCond_FigJ	Coordinate System: GDA 1994 MGA Zone 50

386000

386200

386400

6476200

6476000

6475800



Survey Area
Vegetation Condition
 Completely Degraded - Planted
 Completely Degraded
 Completely Cleared

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



Figure J.16: Vegetation condition

Author: C. Dyde

Date: 09-07-2020

Drawn: A. Sleep

Figure Ref: 8612-19-BIDR-1RevC_200709_VegCond_FigJ

Scale: 1:2,000 at A3
 Coordinate System: GDA 1994 MGA Zone 50



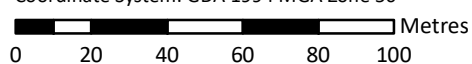


Survey Area
Vegetation Condition
 Completely Degraded - Planted
 Completely Cleared

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



Figure J.17: Vegetation condition

Author: C. Dyde	Date: 18-05-2020	Scale: 1:2,000 at A3 Coordinate System: GDA 1994 MGA Zone 50 
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200518_VegCond_FigJ	



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Appendix K: Results of FCT Analysis

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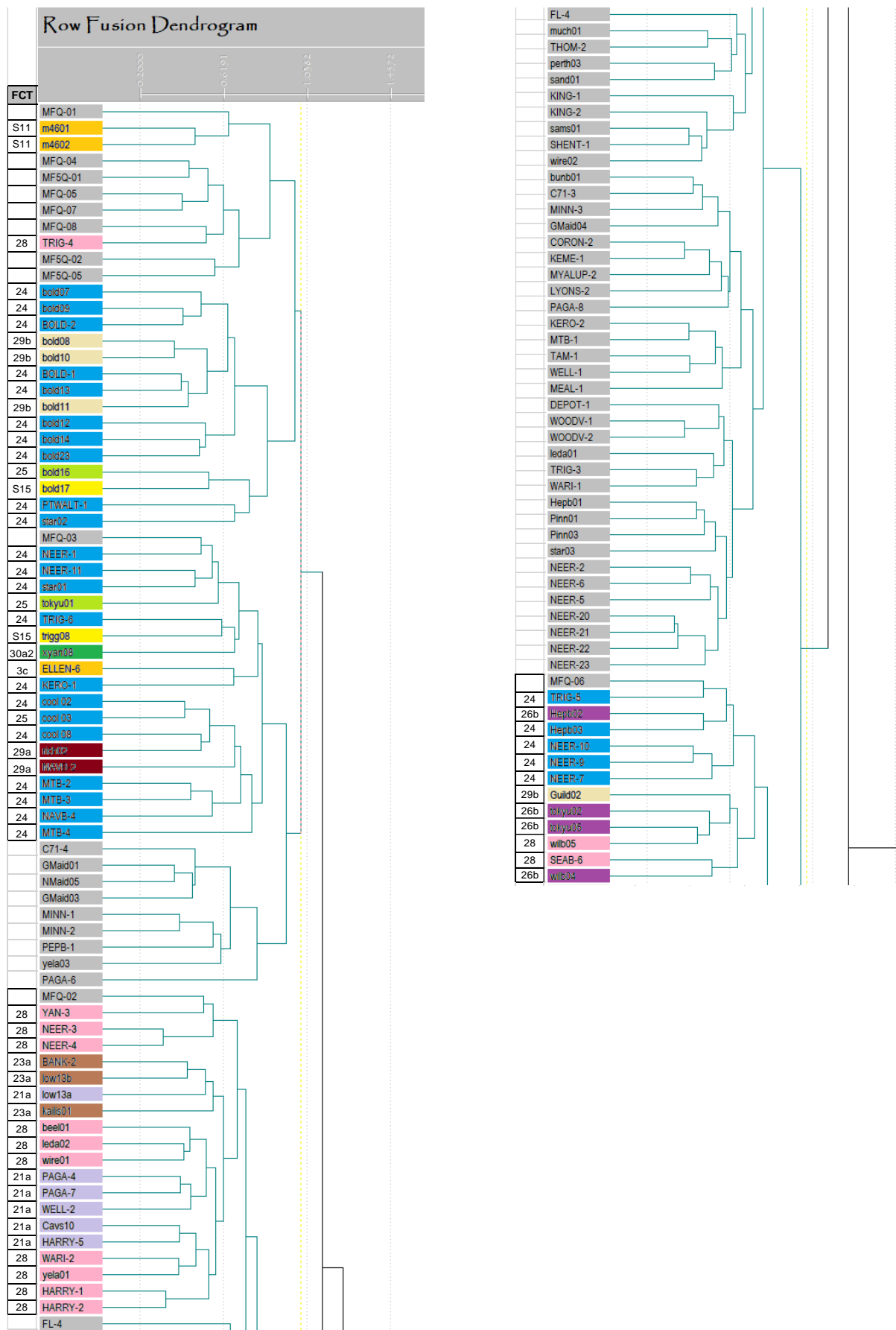


Figure K.1: Extract of dendrogram showing Astron quadrats within Swan Coastal Plain floristic dataset.

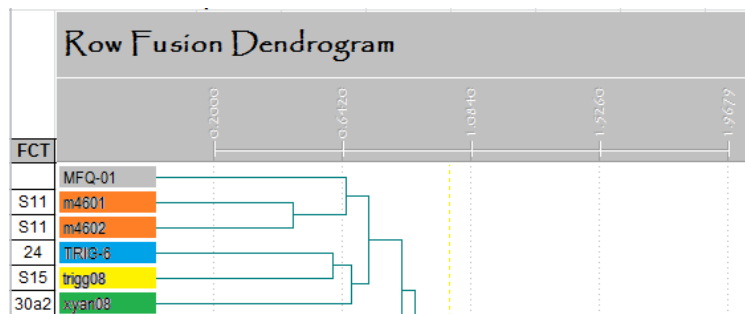


Figure K.2: Single insertion of Quadrat MFQ-01 in the Swan Coastal Plain floristic dataset (extract of dendrogram).

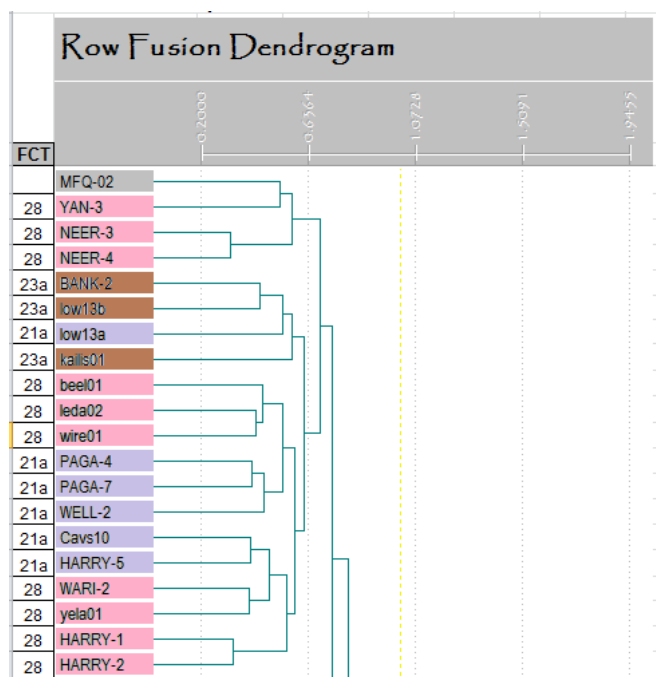


Figure K.3: Single insertion of Quadrat MFQ-02 in the Swan Coastal Plain floristic dataset (extract of dendrogram)

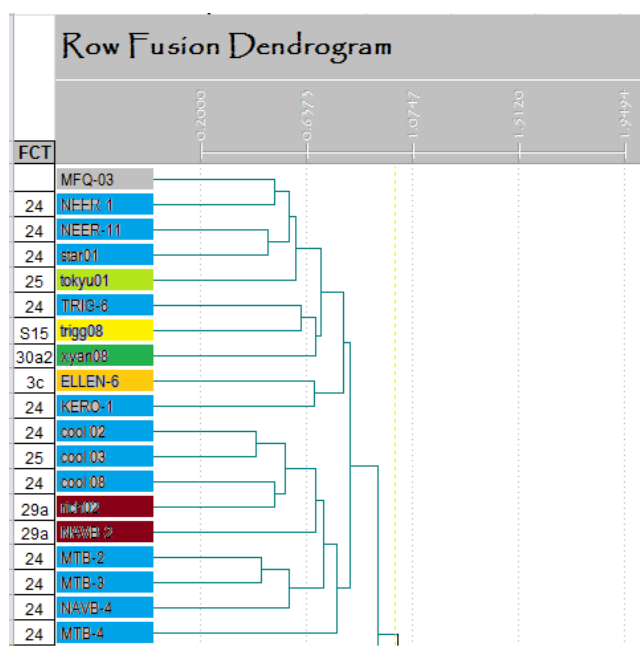


Figure K.4: Single insertion of Quadrat MFQ-03 in the Swan Coastal Plain floristic dataset (extract of dendrogram).

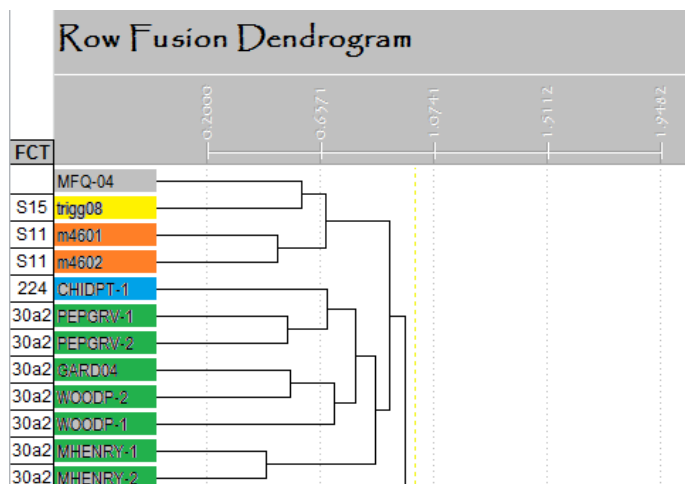


Figure K.5: Single insertion of Quadrat MFQ-04 in the Swan Coastal Plain floristic dataset (extract of dendrogram).

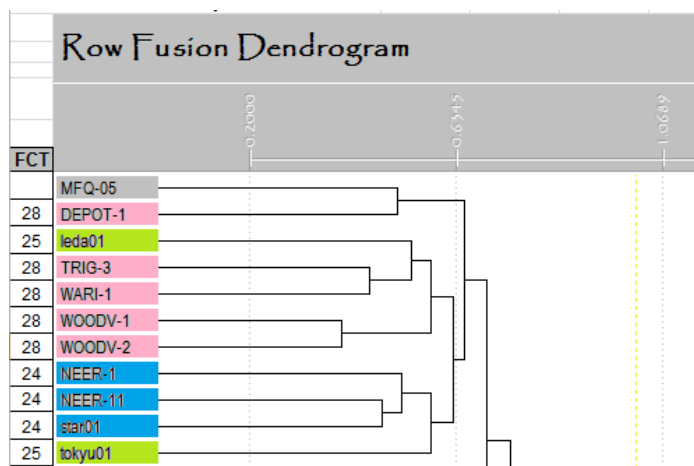


Figure K.6: Single insertion of Quadrat MFQ-05 in the Swan Coastal Plain floristic dataset (extract of dendrogram).

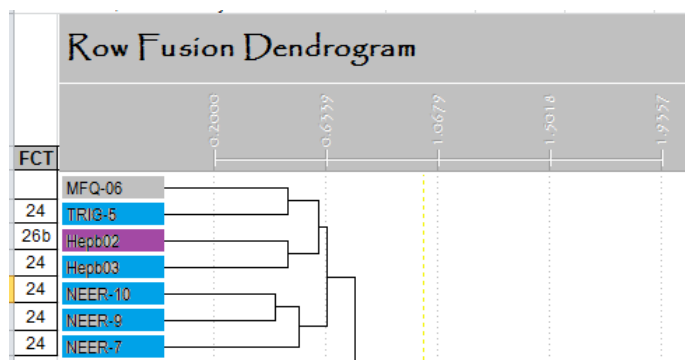


Figure K.7: Single insertion of Quadrat MFQ-06 in the Swan Coastal Plain floristic dataset (extract of dendrogram).

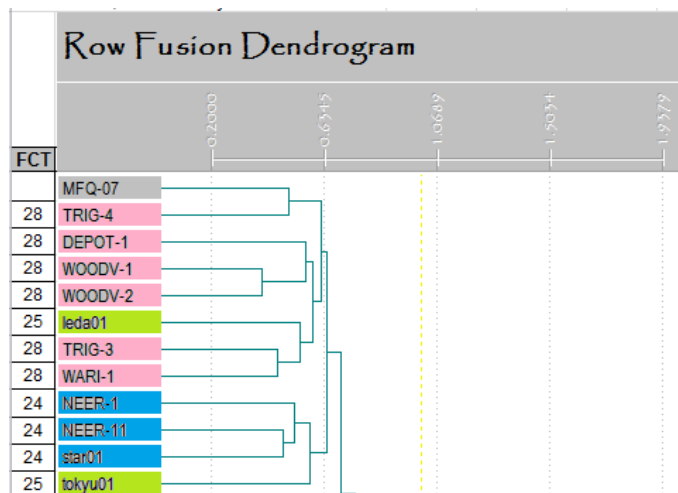


Figure K.8: Single insertion of Quadrat MFQ-07 in the Swan Coastal Plain floristic dataset (extract of dendrogram).

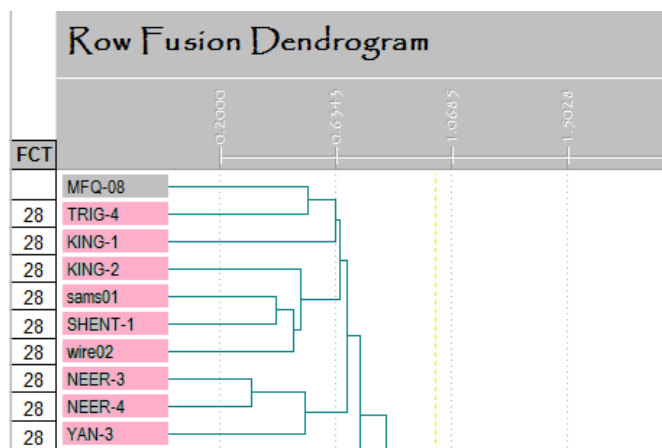


Figure K.9: Single insertion of Quadrat MFQ-08 in the Swan Coastal Plain floristic dataset (extract of dendrogram).

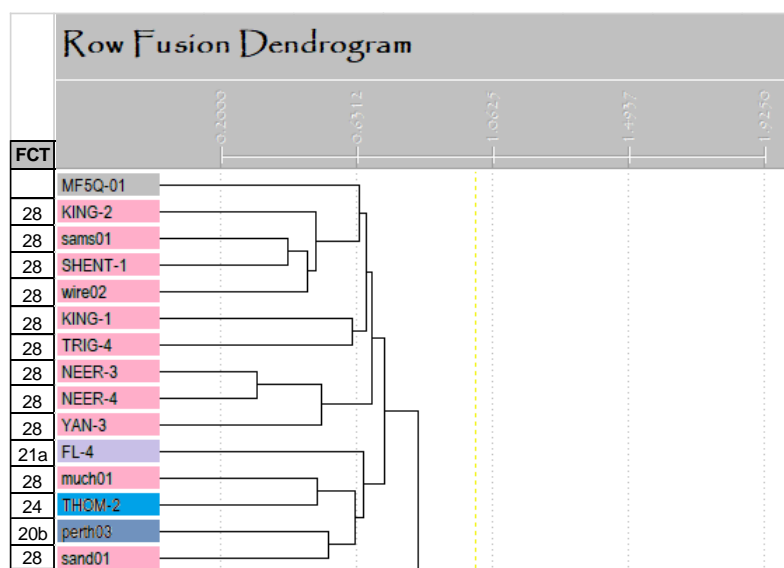


Figure K.10: Single insertion of Quadrat MF5Q-01 in the Swan Coastal Plain floristic dataset (extract of dendrogram).

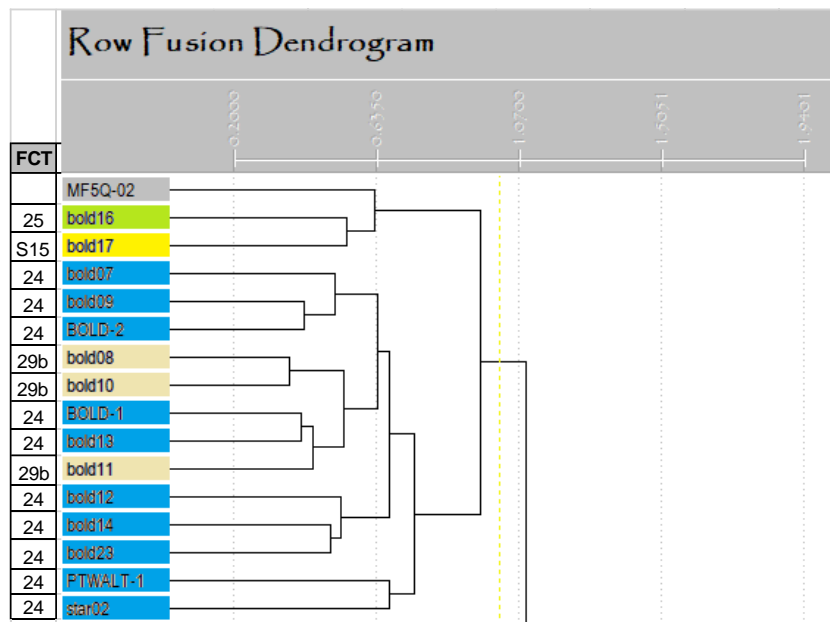


Figure K.11: Single insertion of Quadrat MF5Q-02 in the Swan Coastal Plain floristic dataset (extract of dendrogram).

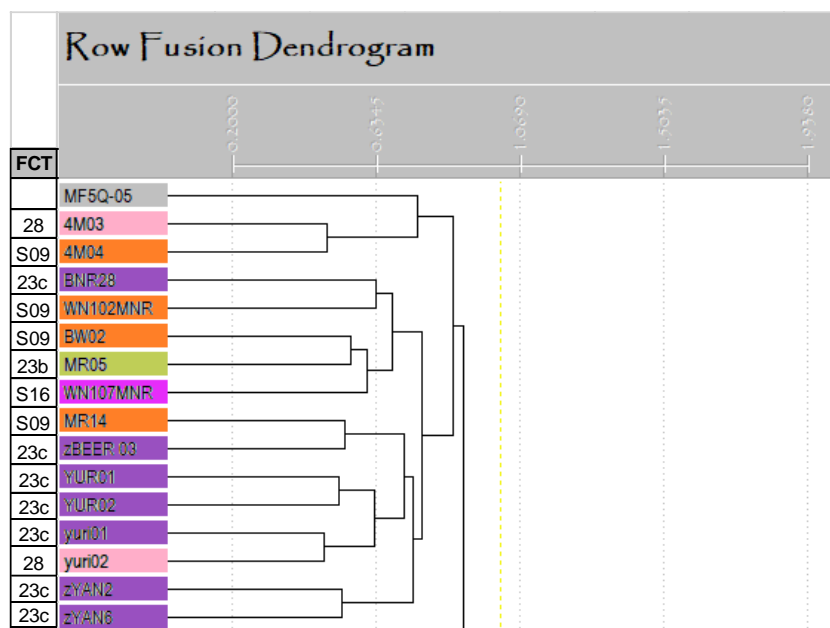


Figure K.12: Single insertion of Quadrat MF5Q-03 in the Swan Coastal Plain floristic dataset (extract of dendrogram).

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Appendix L: Significant Ecological Communities

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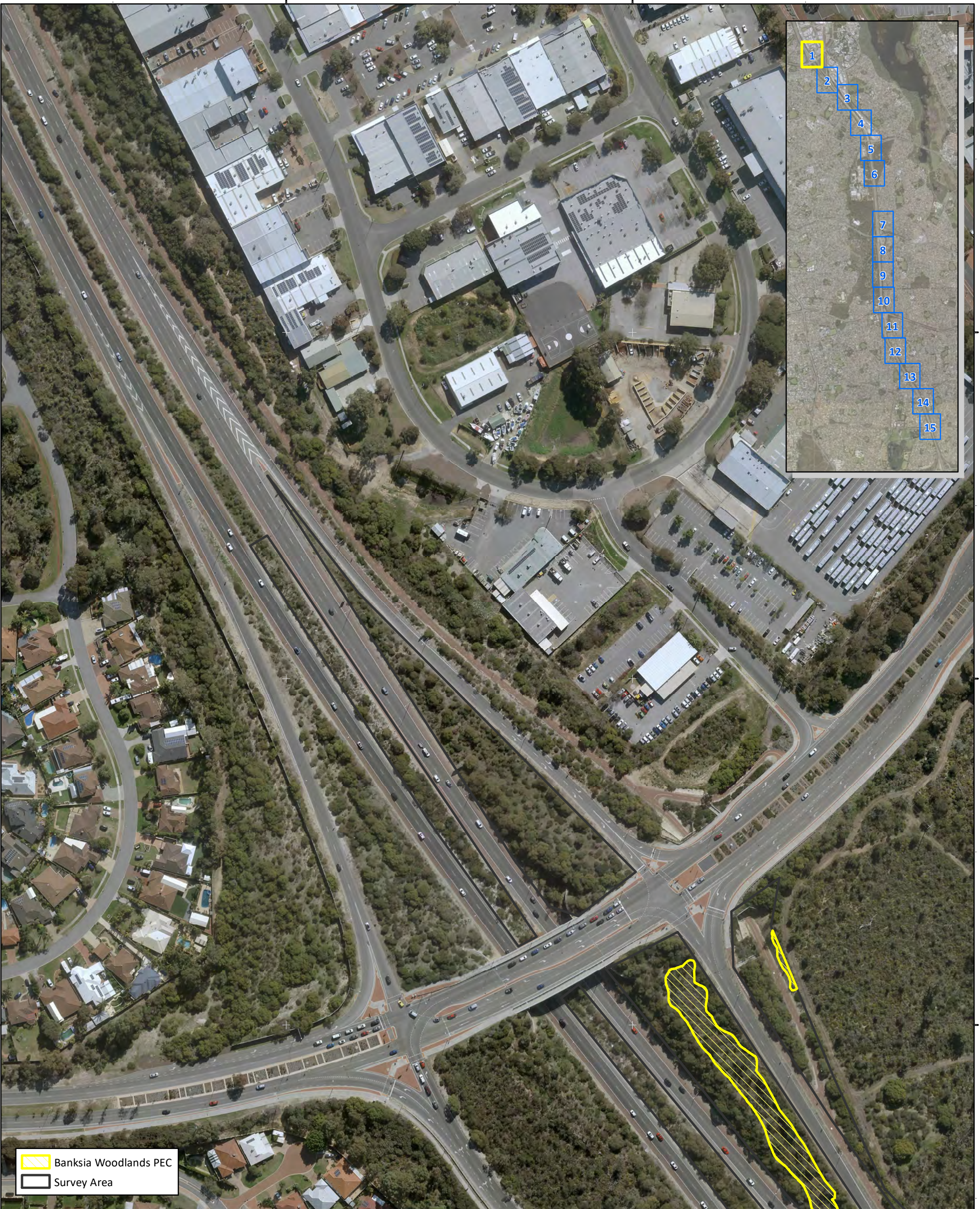
382800



383000

6486400

6486200

6486000



 Banksia Woodlands PEC
 Survey Area

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



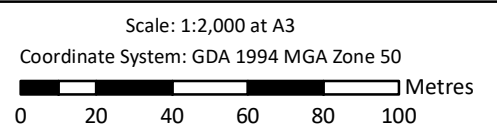
L.1.1: Priority Ecological Communities

Author: C. Dyde

Date: 11-05-2020

Drawn: A. Sleep

Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1



383200

383400

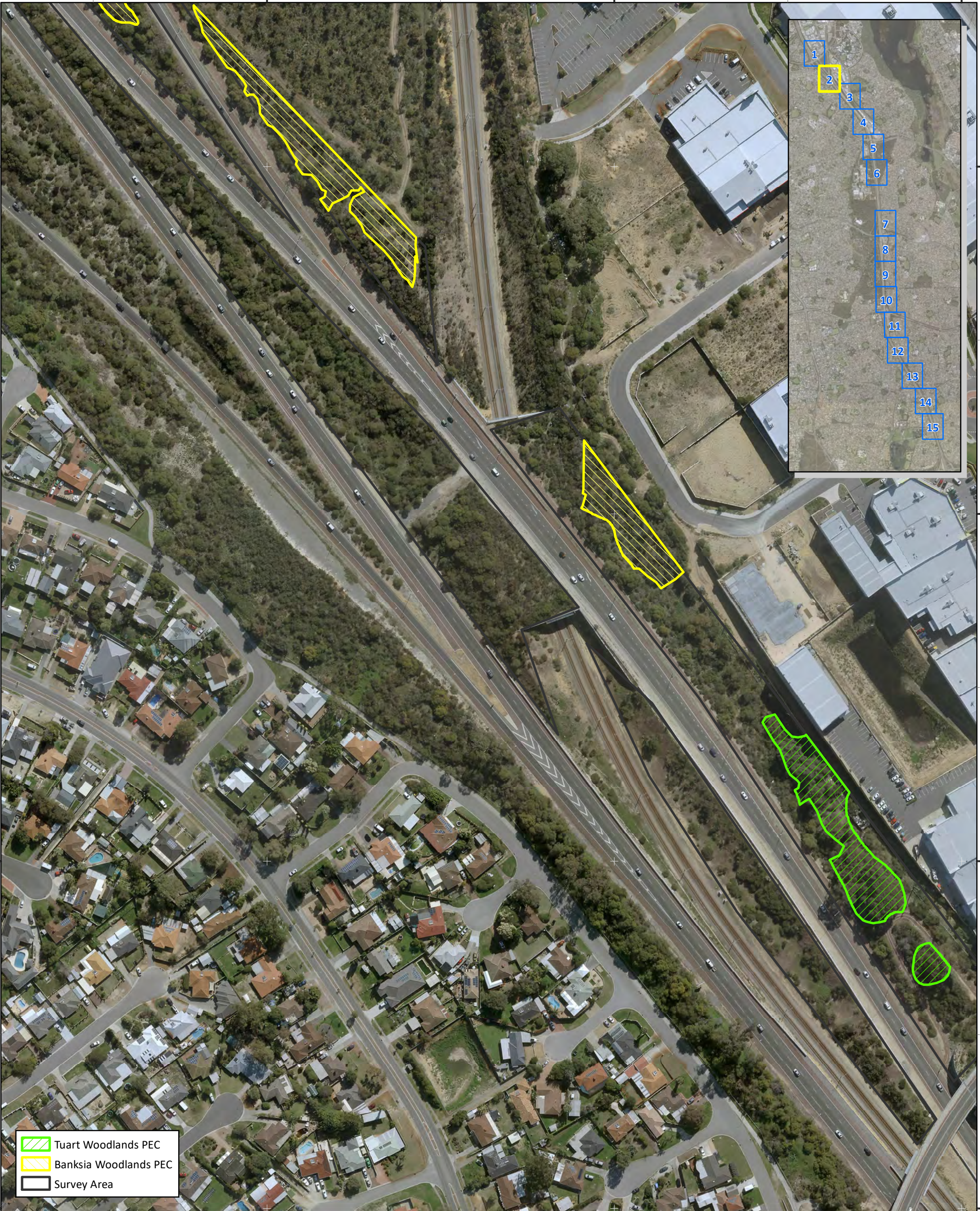
383600

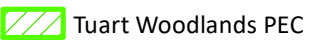


6485800

6485600

6485400

6485200



-  Tuart Woodlands PEC
-  Banksia Woodlands PEC
-  Survey Area

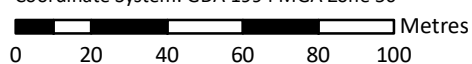

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



L.1.2: Priority Ecological Communities

Author: C. Dyde	Date: 11-05-2020
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1

Scale: 1:2,000 at A3
 Coordinate System: GDA 1994 MGA Zone 50

383800

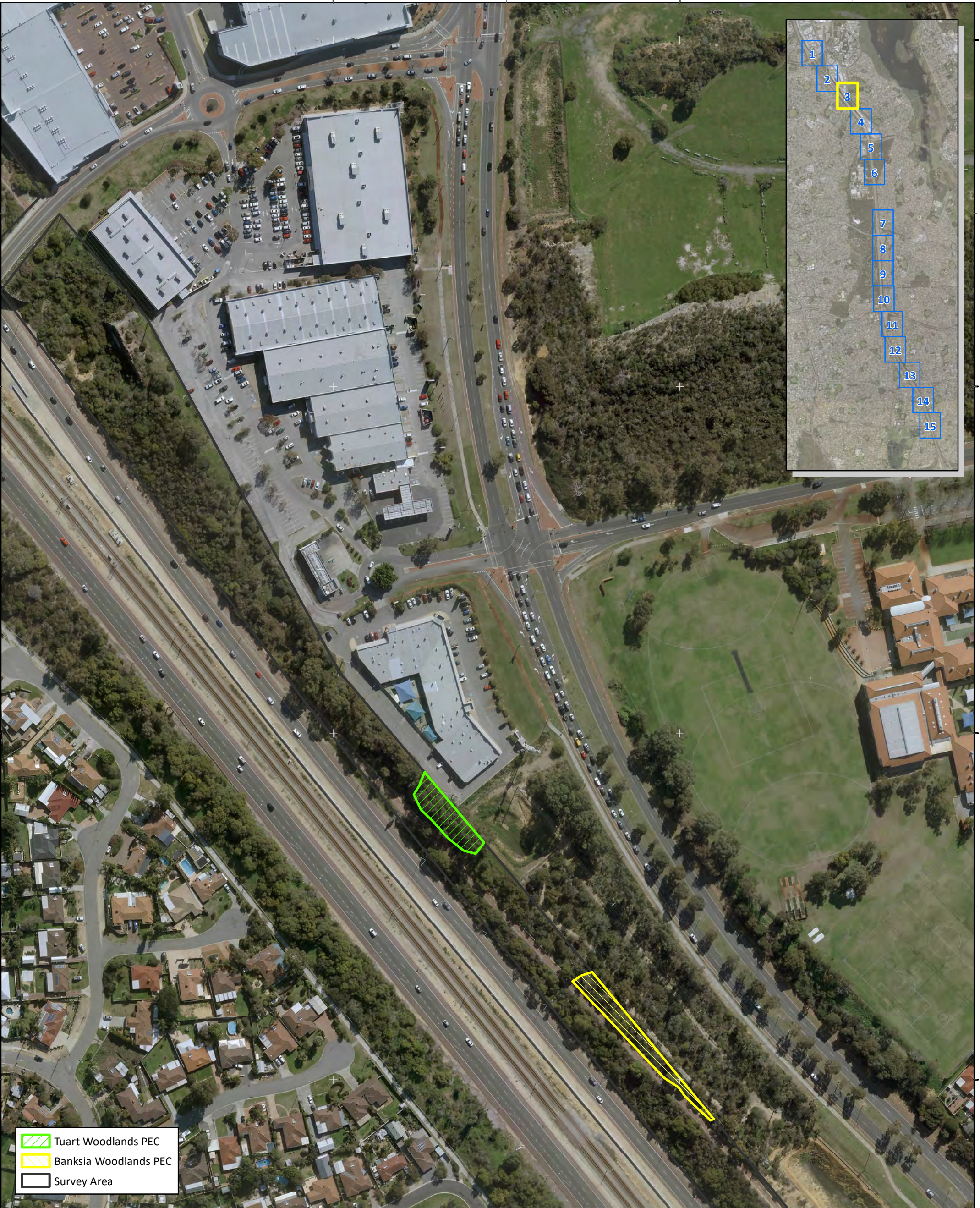
384000




6485400

6485200

6485000

6484800



 Tuart Woodlands PEC
 Banksia Woodlands PEC
 Survey Area

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey

L.1.3: Priority Ecological Communities




Author: C. Dyde

Date: 11-05-2020

Drawn: A. Sleep

Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1

Scale: 1:2,000 at A3
 Coordinate System: GDA 1994 MGA Zone 50
 Metres

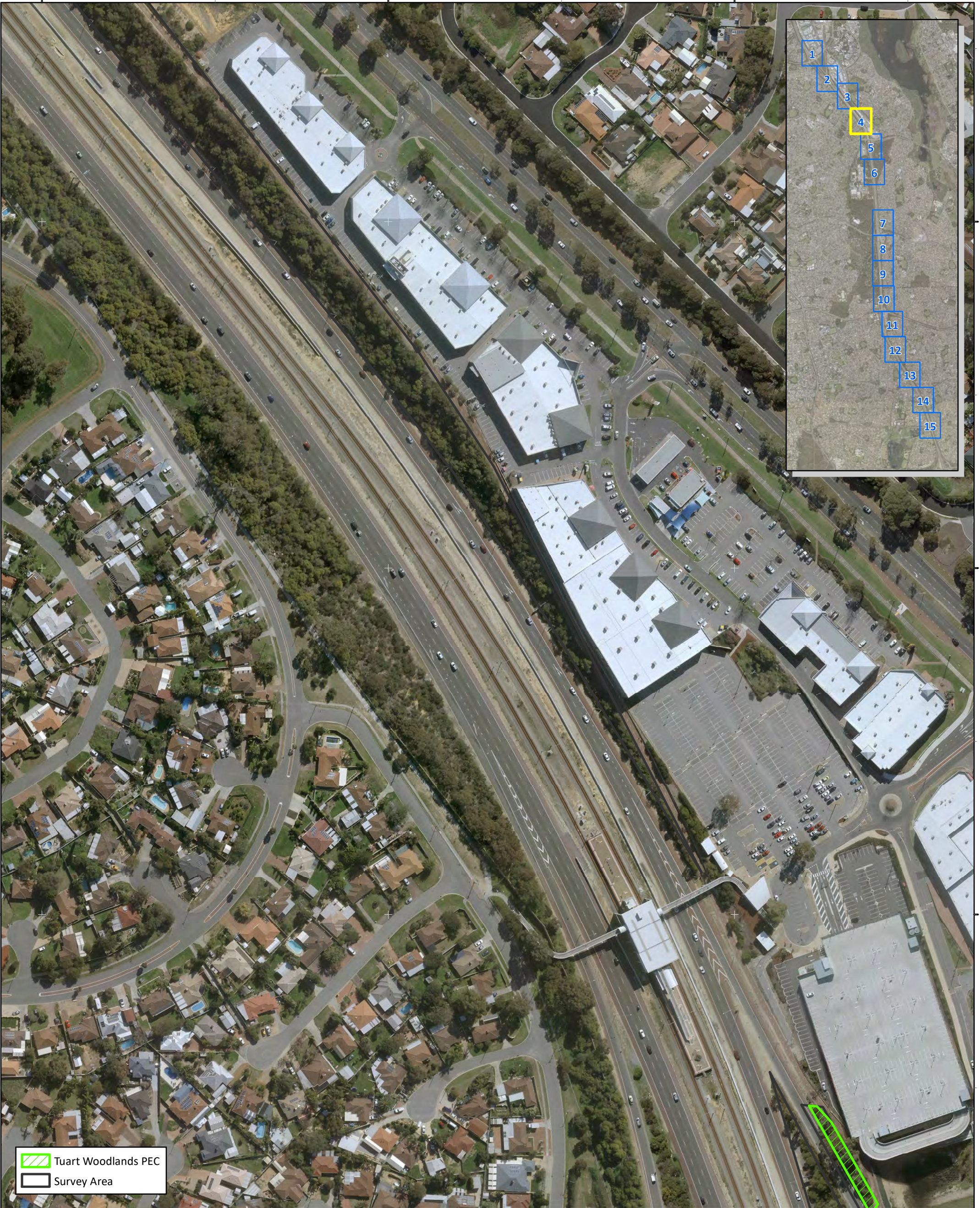




384000 384200 384400

6484600

6484400

6484200



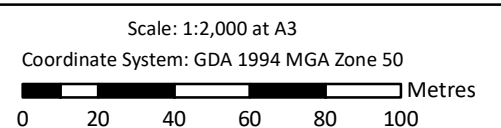
 Tuart Woodlands PEC
 Survey Area

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



L.1.4: Priority Ecological Communities

Author: C. Dyde	Date: 11-05-2020
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1



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384600

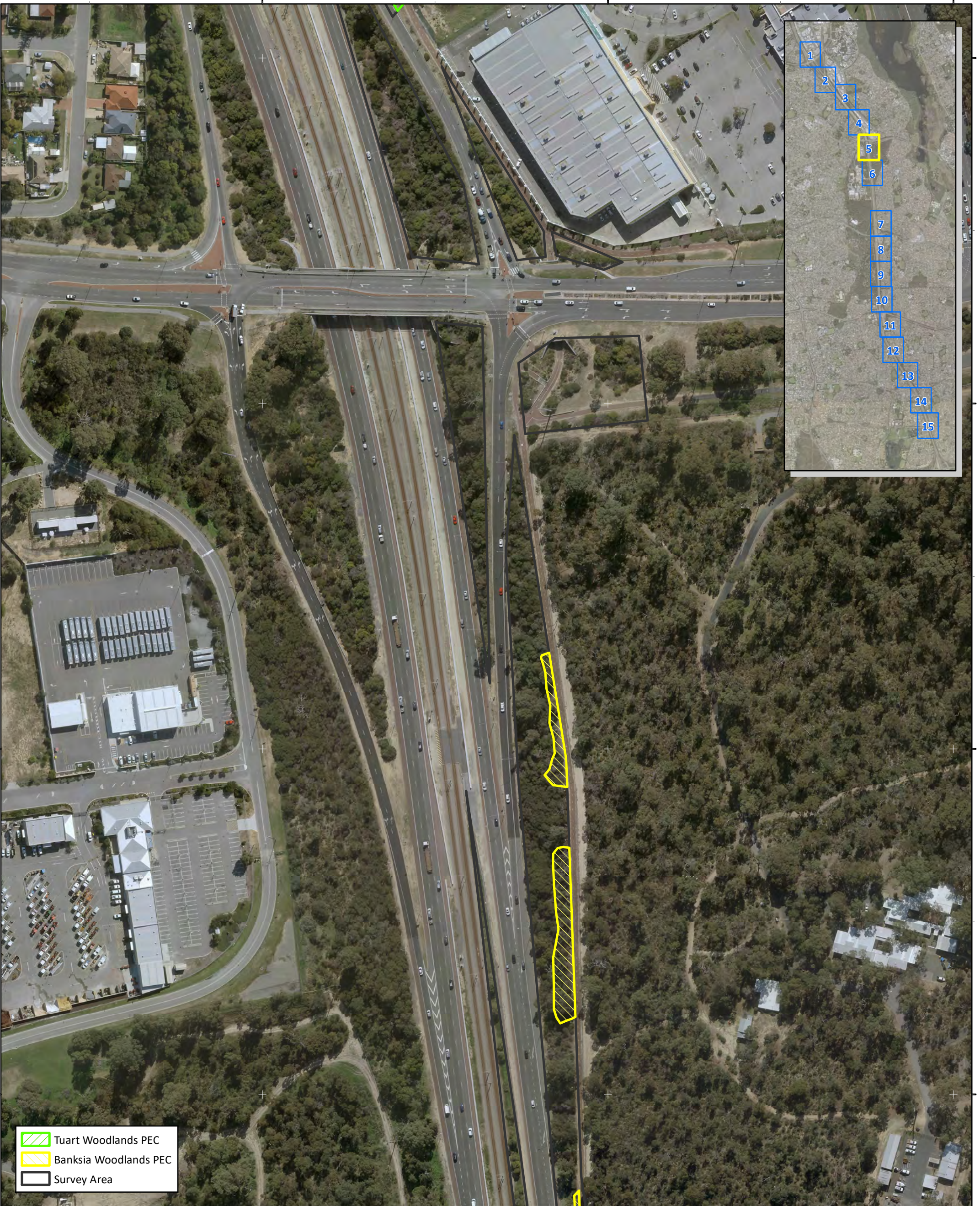
384800

6483400

6483800

6483600

6483400



- Tuart Woodlands PEC
- Banksia Woodlands PEC
- Survey Area

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey

L.1.5: Priority Ecological Communities

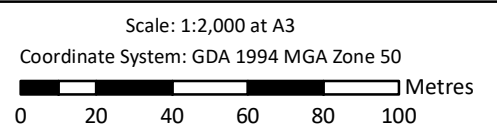


Author: C. Dyde

Date: 11-05-2020

Drawn: A. Sleep

Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1



384400

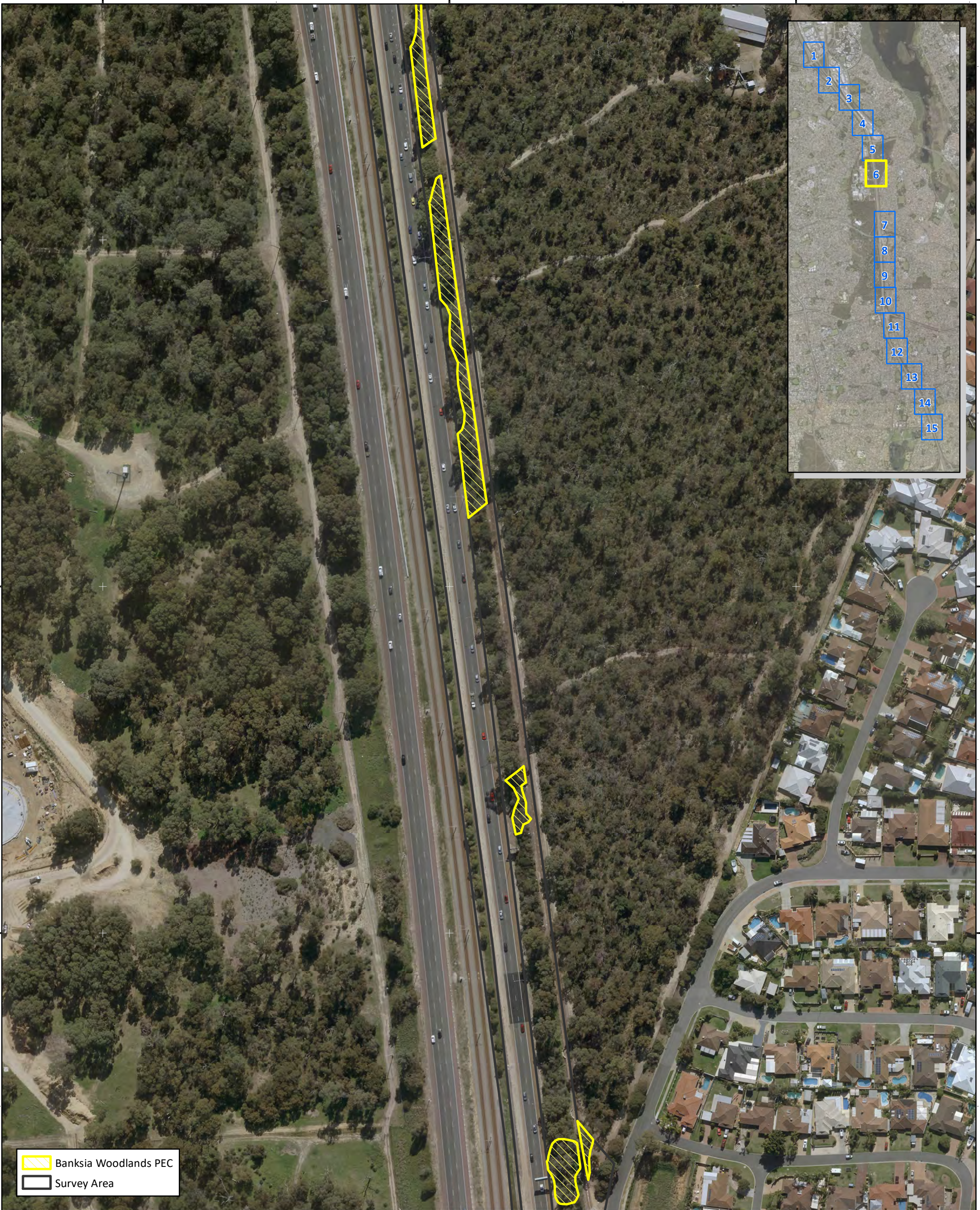
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384800

6483200

6483000

6482800



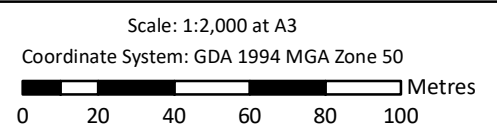
Banksia Woodlands PEC
 Survey Area

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



L.1.6: Priority Ecological Communities

Author: C. Dyde	Date: 11-05-2020
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1



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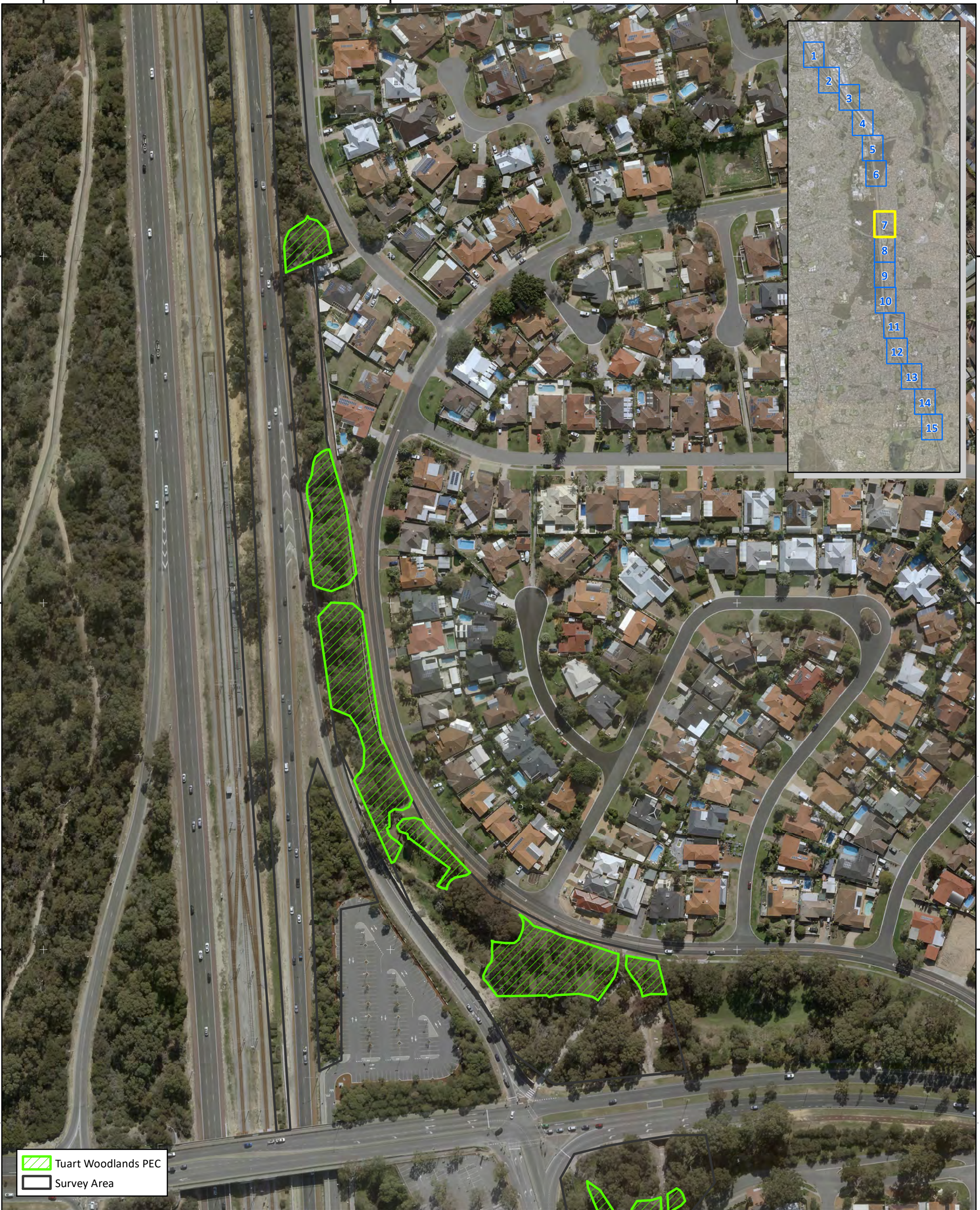
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385000

6481800

6481600

6481400



 Tuart Woodlands PEC
 Survey Area

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey




L.1.7: Priority Ecological Communities

Author: C. Dyde

Date: 11-05-2020

Drawn: A. Sleep

Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1

Scale: 1:2,000 at A3
 Coordinate System: GDA 1994 MGA Zone 50
 Metres



384600

384800

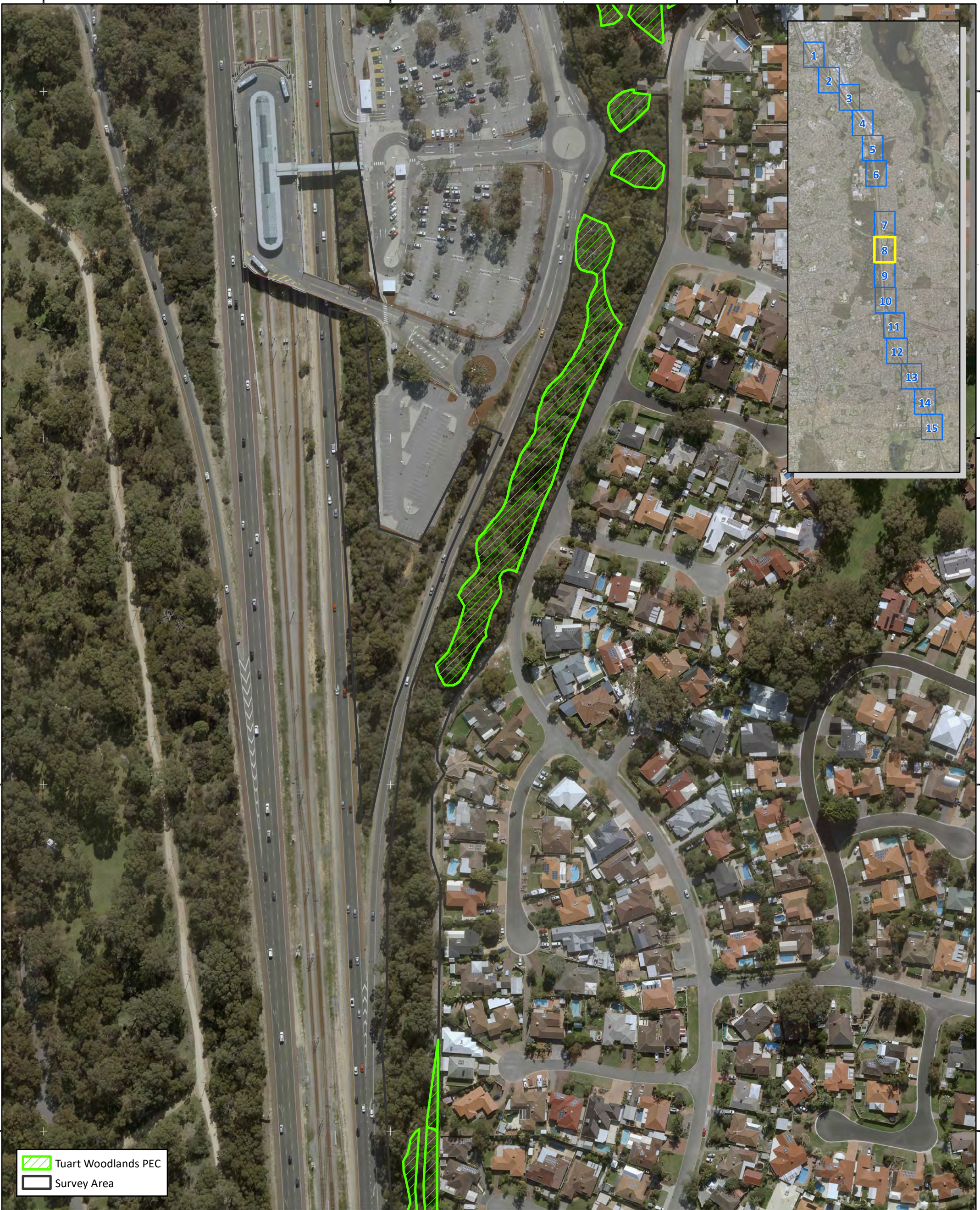
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6481200

6481000

6480800

6480600



Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



L.1.8: Priority Ecological Communities

Author: C. Dyde	Date: 11-05-2020
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1

Scale: 1:2,000 at A3
 Coordinate System: GDA 1994 MGA Zone 50

0 20 40 60 80 100 Metres

384600

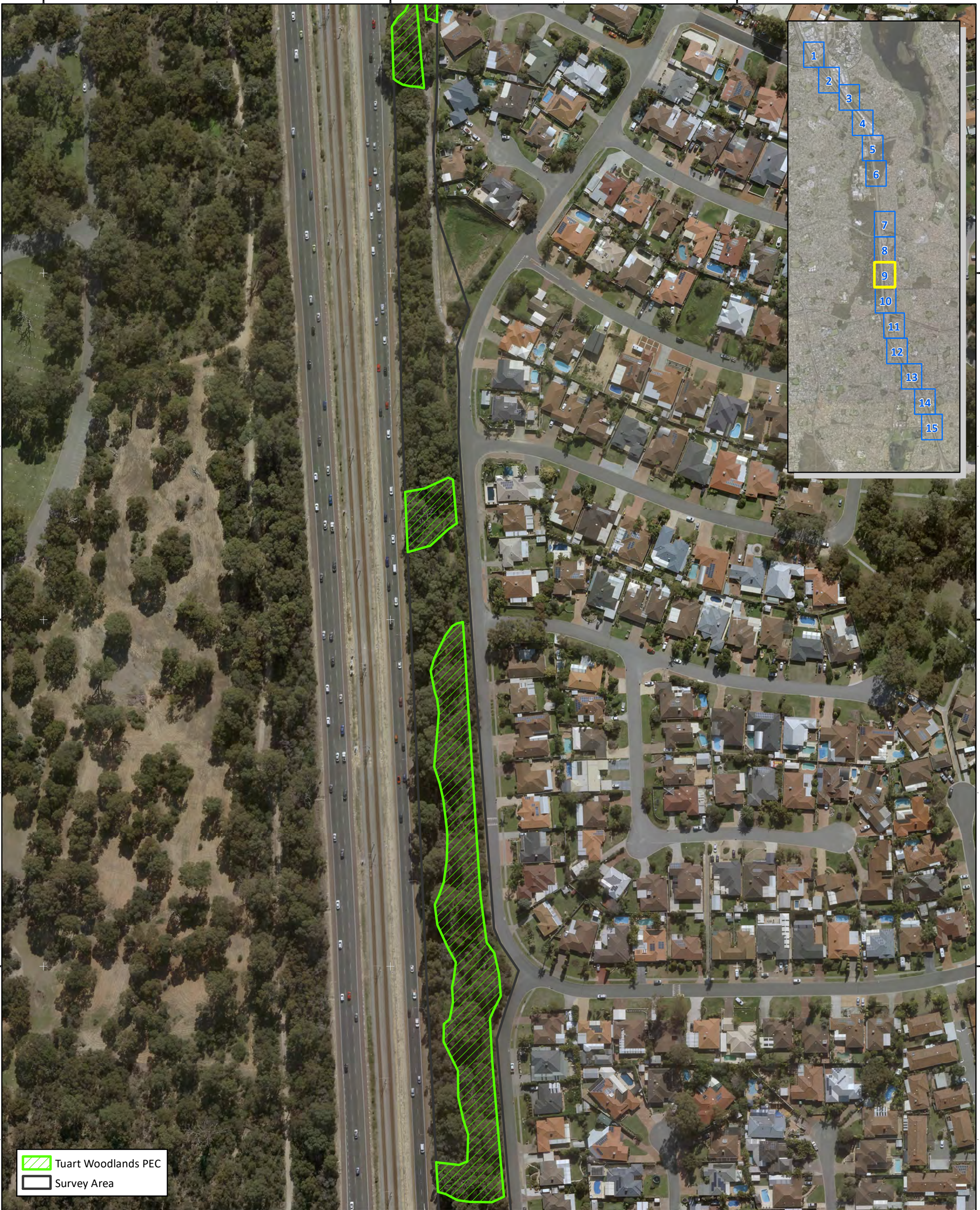
384800



385000

6480400

6480200

6480000



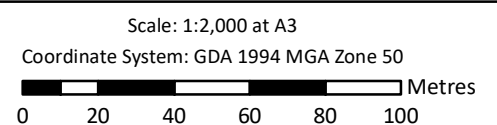
 Tuart Woodlands PEC
 Survey Area

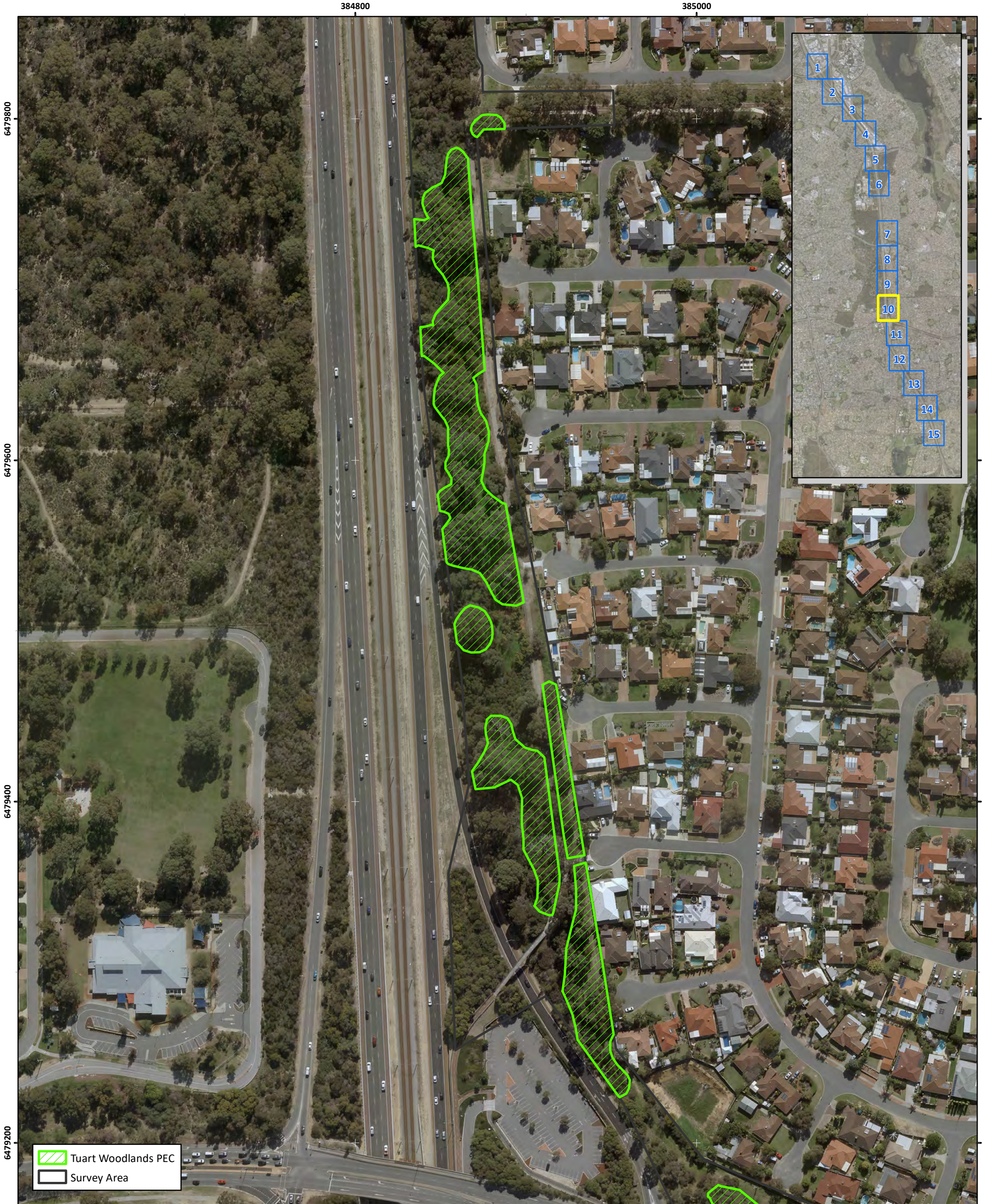
Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey

L.1.9: Priority Ecological Communities



Author: C. Dyde	Date: 11-05-2020
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1





Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



L.1.10: Priority Ecological Communities

Author: C. Dyde	Date: 11-05-2020
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1

Scale: 1:2,000 at A3
 Coordinate System: GDA 1994 MGA Zone 50

0 20 40 60 80 100 Metres

385000

385200

6479000

6478800

6478600



Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey

L.1.11: Priority Ecological Communities

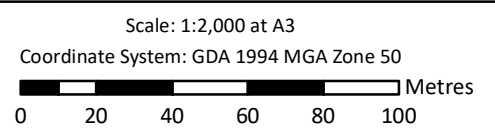


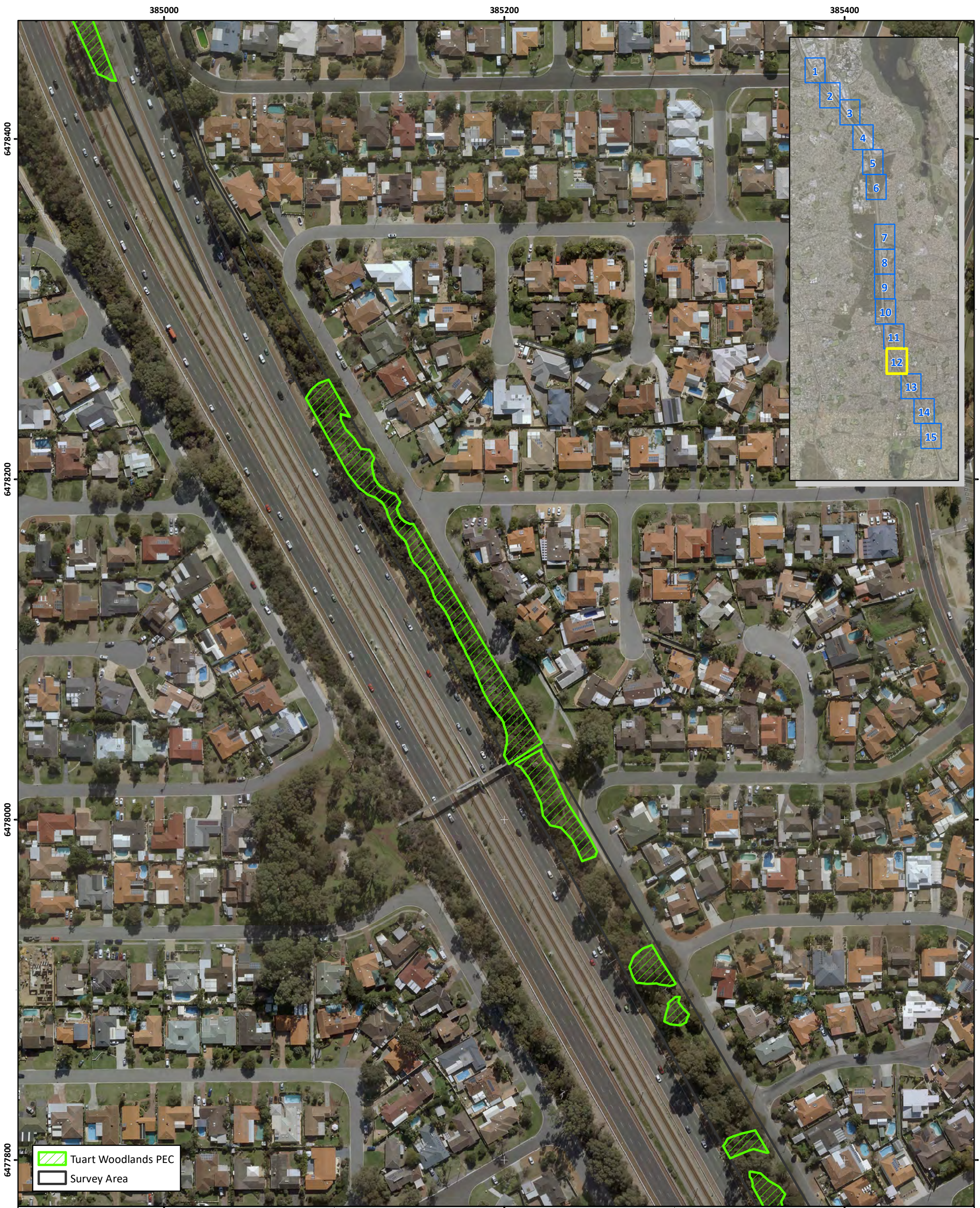
Author: C. Dyde

Date: 11-05-2020

Drawn: A. Sleep

Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1





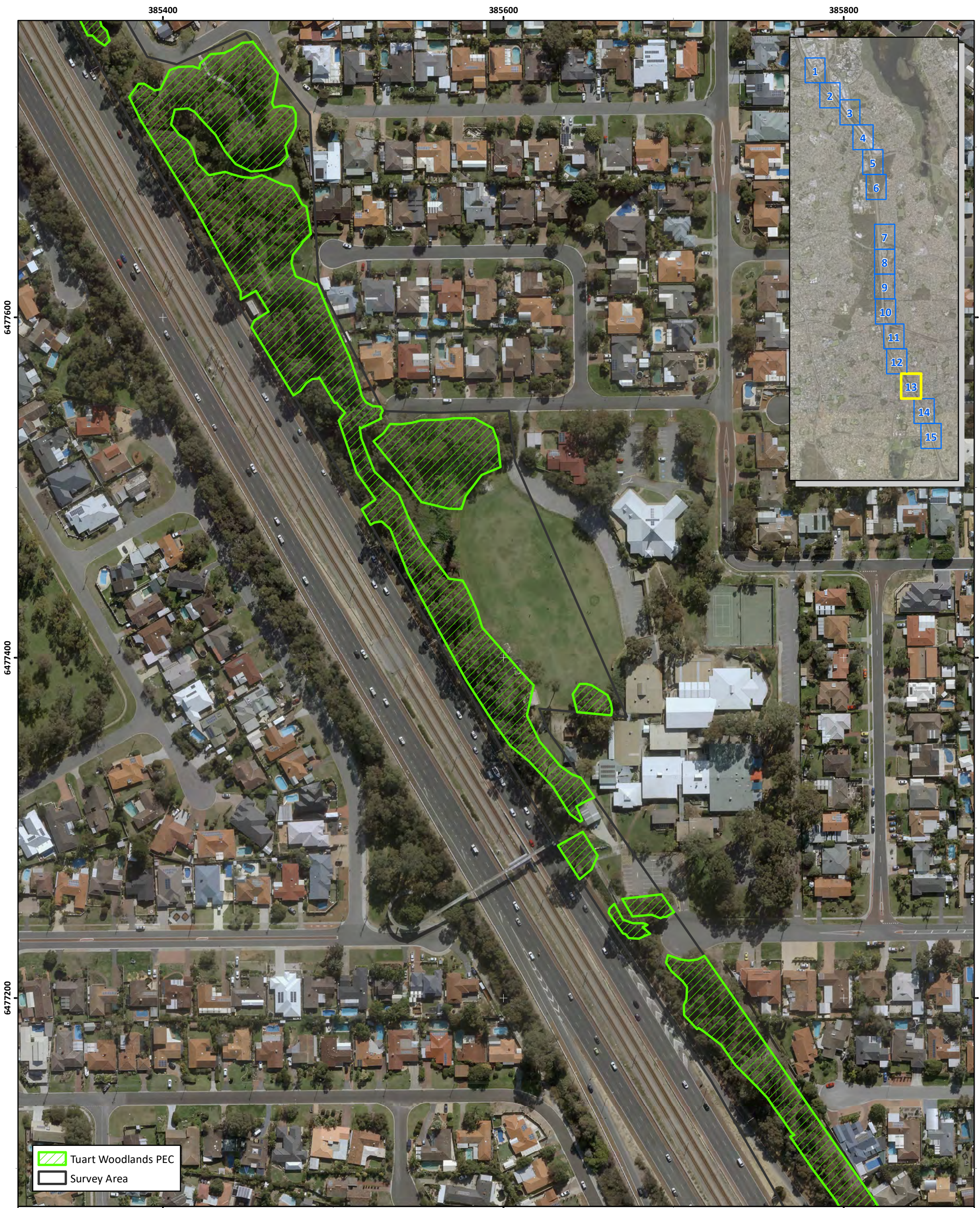
Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey
L.1.12: Priority Ecological Communities



Author: C. Dyde	Date: 11-05-2020
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1

Scale: 1:2,000 at A3
 Coordinate System: GDA 1994 MGA Zone 50

0 20 40 60 80 100 Metres



Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



L.1.13: Priority Ecological Communities

Author: C. Dyde	Date: 11-05-2020
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200511_PEC_FigL1

Scale: 1:2,000 at A3
 Coordinate System: GDA 1994 MGA Zone 50

0 20 40 60 80 100 Metres



Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey
L.1.14: Priority Ecological Communities



Author: C. Dyde	Date: 17-06-2020
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200617_PEC_FigL1

Scale: 1:2,000 at A3
 Coordinate System: GDA 1994 MGA Zone 50

0 20 40 60 80 100 Metres

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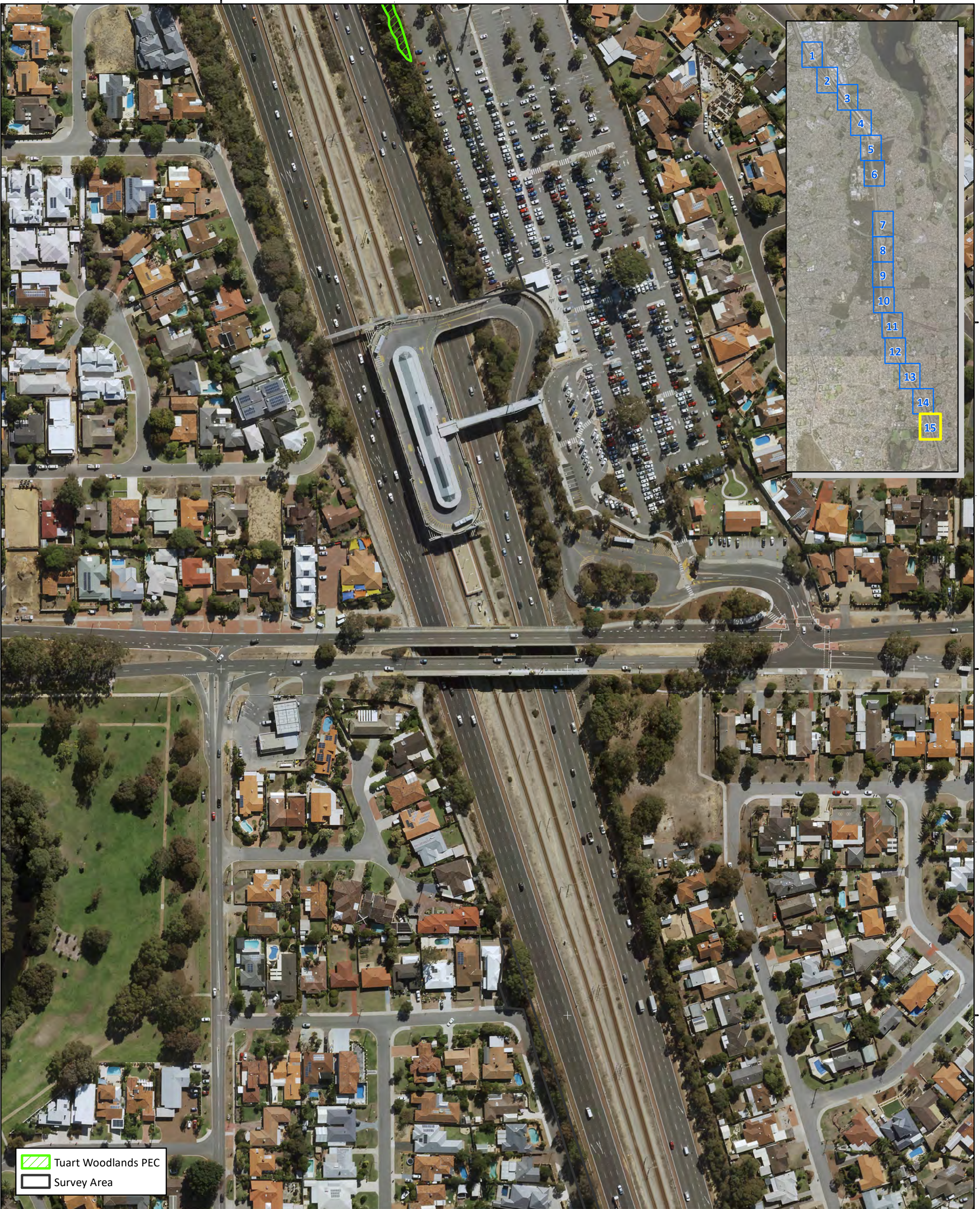
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386400

6476200

6476000

6475800



 Tuart Woodlands PEC
 Survey Area

Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey

L.1.15: Priority Ecological Communities

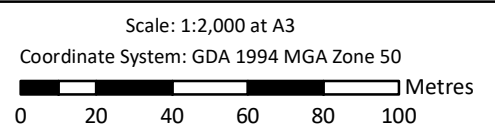


Author: C. Dyde

Date: 17-06-2020

Drawn: A. Sleep

Figure Ref: 8612-19-BIDR-1RevB_200617_PEC_FigL1





Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: Tuart woodlands of the SCP PEC		OBSERVATION DATE: 03/10/2019	
New occurrence <input checked="" type="checkbox"/> Site ID: _____		CONS STATUS: P3	
OBSERVER/S: Bethea Loudon and Alexandra Sleep		PHONE: 94219600	
ROLE: Senior botanist / env. scientist		ORGANISATION: Astron	
EMAIL: alexandra.sleep@astron.com.au			

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):

Mitchell Freeway road reserve - shapefile provided

_____ **Reserve No:** _____

DISTRICT: _____ **LGA:** _____ **Land manager present:**

DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input checked="" type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: _____	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____
Unknown <input type="checkbox"/>	Zone: _____	

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input checked="" type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Fragmentation	edge effect (large edge to area ratio)	%	E		
• Road/rail/utility maintenance	clearing/slashing/herbicide	%	H		
• Human movement	dumped rubbish and garden refuse, pedestrian use	%	H		
• Weed invasion	Annual veldt grass, perennial veldt grass, African love grass	%	E		
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme
*Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good _____% Degraded _____%

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent ____%

Good ____%

Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input checked="" type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input checked="" type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:

1. See GIS data

2.

3.

4.

FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY: <u>Banksia dominated woodlands of the SCP PEC</u>		OBSERVATION DATE: <u>03/10/2019</u>	
New occurrence <input checked="" type="checkbox"/> Site ID: _____		CONS STATUS: <u>P3</u>	
OBSERVER/S: <u>Bethea Loudon and Alexandra Sleep</u>		PHONE: <u>94219600</u>	
ROLE: <u>Senior botanist / env. scientist</u>		ORGANISATION: <u>Astron</u>	
EMAIL: <u>alexandra.sleep@astron.com.au</u>			

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):

Mitchell Freeway road reserve - shapefile provided

_____ **Reserve No:** _____

DISTRICT: _____ **LGA:** _____ **Land manager present:**

DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)	METHOD USED:
GDA94 / MGA94 <input checked="" type="checkbox"/>	DecDegrees <input type="checkbox"/> DegMinSec <input type="checkbox"/> UTM <input type="checkbox"/>	GPS <input type="checkbox"/> Differential GPS <input type="checkbox"/> Map <input type="checkbox"/>
AGD84 / AMG84 <input type="checkbox"/>	Lat / Northing: _____	No. satellites: _____ Map used: _____
WGS84 <input type="checkbox"/>	Long / Easting: _____	Boundary polygon captured: <input checked="" type="checkbox"/> Map used: _____
Unknown <input type="checkbox"/>	Zone: _____	

LAND TENURE:

Nature reserve <input type="checkbox"/>	Timber reserve <input type="checkbox"/>	Private property <input type="checkbox"/>	Rail reserve <input type="checkbox"/>	Shire road reserve <input type="checkbox"/>
National park <input type="checkbox"/>	State forest <input type="checkbox"/>	Pastoral lease <input type="checkbox"/>	MRWA road reserve <input checked="" type="checkbox"/>	Other Crown reserve <input type="checkbox"/>
Conservation park <input type="checkbox"/>	Water reserve <input type="checkbox"/>	UCL <input type="checkbox"/>	SLK/Pole _____ to _____	Specify other: _____

AREA ASSESSMENT: Edge survey Partial survey Full survey Area observed (m²): _____

EFFORT: Time spent surveying (minutes): _____ No. of minutes spent / 100 m²: _____

THREATS - type, and supporting information: <small>e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.</small>	Cause/Agent: <small>e.g. weed type, grazing species, recreation type</small>	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Fragmentation	edge effect (large edge to area ratio)	%	E		
• Road/rail/utility maintenance	clearing/slashing/herbicide	%	H		
• Human movement	dumped rubbish and garden refuse, pedestrian use	%	H		
• Weed invasion	Annual veldt grass, perennial veldt grass, African love grass	%	E		
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: **N=Nil, L=Low, M=Medium, H=High, E=Extreme**

*Estimate time to potential impact: **S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)**

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine _____% Very Good _____% Degraded _____%

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or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Excellent ____%

Good ____%

Completely Degraded ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input type="checkbox"/> Hill <input type="checkbox"/> Ridge <input type="checkbox"/> Outcrop <input type="checkbox"/> Slope <input checked="" type="checkbox"/> Flat <input checked="" type="checkbox"/> Open depression <input type="checkbox"/> Drainage line <input type="checkbox"/> Closed depression <input type="checkbox"/> Wetland <input type="checkbox"/>	Granite <input type="checkbox"/> Dolerite <input type="checkbox"/> Laterite <input type="checkbox"/> Ironstone <input type="checkbox"/> Limestone <input checked="" type="checkbox"/> Quartz <input type="checkbox"/> Specify other:	(on soil surface; e.g. gravel, quartz fields) 0-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-50% <input type="checkbox"/> 50-100% <input type="checkbox"/>	Sand <input checked="" type="checkbox"/> Sandy loam <input type="checkbox"/> Loam <input type="checkbox"/> Clay loam <input type="checkbox"/> Light clay <input type="checkbox"/> Peat <input type="checkbox"/> Specify other:	Red <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Yellow <input type="checkbox"/> White <input type="checkbox"/> Grey <input type="checkbox"/> Black <input type="checkbox"/> Specify other:	Well drained <input type="checkbox"/> Seasonally inundated <input type="checkbox"/> Permanently inundated <input type="checkbox"/> Tidal <input type="checkbox"/> Specify other:

Specific Landform Element: (Refer to field manual for additional values)

CONDITION OF SOIL:

Dry Moist Waterlogged Inundated Cracked Saline Other:

VEGETATION CLASSIFICATION:

1. See GIS data
- 2.
- 3.
- 4.

FIRE HISTORY:

Last Fire: Season/Month: Year: Fire Intensity: High Medium Low No evidence of fire

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

Actual Occurrence Landuse:

Adjacent Landuse:

Associated Flora Species:

Associated Fauna Species:

OTHER COMMENTS:

ATTACHED: Map Mudmap Photo GIS data Field notes

Other:

COPY SENT TO: Regional Office District Office Other:

Submitter of record: Alexandra Sleep **Role:** Environmental Scientist

Signature: Alexandra sleep **Date submitted:** 13/05/20

Please return form to:
communities.data@dpaw.wa.gov.au
or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ *Date entered:* _____ *Database no:* _____

L1 - Key Diagnostic Characteristics of Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain ecological community (Department of the Environment and Energy 2019)

The ecological community is limited to patches of vegetation (with their associated biota) that meet all of the following key diagnostic characteristics:

- Occurs in the Swan Coastal Plain Bioregion, Western Australia – IBRA v7 (Department of the Environment and Energy 2020)
- Primarily occurs on the Spearwood and Quindalup dune systems, but can also occur on the Bassendean dunes and Pinjarra Plain. It can occur on the banks of rivers and wetlands.
- The primary defining feature is the presence of at least two living established *Eucalyptus gomphocephala* (Tuart) trees in the uppermost canopy layer, although they may co-occur with trees of other species. There is a gap of no more than 60 m between the outer edges of the canopies of adjacent Tuart trees. These trees may occur either as single stemmed trees or as a mallee growth form.
- Most often occurs as a woodland but can occur in other structural forms, for example, forest, open forest, woodland, open woodland, and various mallee forms.
- Other tree species may be present in the canopy or sub-canopy. They commonly include: *Agonis flexuosa* (Peppermint) and *Banksia grandis* (Bull Banksia) (both in the southern part of the range), *Banksia attenuata* (Candlestick Banksia), *Eucalyptus marginata* (Jarrah); and less commonly, *Corymbia calophylla* (Marri), *Banksia menziesii* (Firewood Banksia) and *Banksia prionotes* (Acorn Banksia).
- An understorey of native plants is typically present, which may include grasses, herbs and shrubs, although this is often modified by disturbance.

Table L.1: Condition categories and thresholds for the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain ecological community (Department of the Environment and Energy 2019).

Biotic thresholds	Patch size	
	≥2 ha <5 ha	≥0.5 ha <2 ha
<p>Very high condition ≥80 % of all understorey vegetation cover is native Or At least 12 native understorey species per 0.01 ha (10 m x 10 m plot or equivalent sample unit)</p>	<p>Medium sized patches with very high condition understorey. PART OF THE PROTECTED ECOLOGICAL COMMUNITY</p>	<p>Smaller patches with very high condition understorey. PART OF THE PROTECTED ECOLOGICAL COMMUNITY</p>
<p>High condition ≥60 % of all understorey vegetation cover is native Or At least 8 native understorey species per 0.01 ha (10 m x 10 m plot or equivalent sample unit)</p>	<p>Medium sized patches with high condition understorey. PART OF THE PROTECTED ECOLOGICAL COMMUNITY</p>	<p>Smaller patches with high condition understorey. AND That either: have an important landscape role (≤100 m to native vegetation) OR have a habitat role (≥2 very large trees per 0.5 ha) OR show regeneration (≥15 seedlings and/or saplings per 0.5 ha) PART OF THE PROTECTED ECOLOGICAL COMMUNITY</p>
<p>Moderate condition ≥50 % of all understorey vegetation cover is native Or At least 4 native understorey species per 0.01 ha (10 m x 10 m plot or equivalent sample unit)</p>	<p>Medium sized patches with moderate condition understorey. AND That either: have an important landscape role (≤100 m to native vegetation) OR have a habitat role (≥2 very large trees per 0.5 ha) OR show regeneration (≥15 seedlings and/or saplings per 0.5 ha) PART OF THE PROTECTED ECOLOGICAL COMMUNITY</p>	<p><u>NOT</u> PART OF THE PROTECTED ECOLOGICAL COMMUNITY (but may be a focus for local protection or restoration)</p>
<p>Poor Has minimal or no native cover and species richness. That is: <50% of all understorey vegetation is native And Less than 4 native understorey species per 0.01 ha (10 x 10 m plot or equivalent sample unit)</p>	<p><u>NOT</u> PART OF THE PROTECTED ECOLOGICAL COMMUNITY (but may be a focus for local protection or restoration)</p>	<p><u>NOT</u> PART OF THE PROTECTED ECOLOGICAL COMMUNITY (but may be a focus for local protection or restoration)</p>

L.2 Key diagnostic characteristics of the Banksia Woodlands of the Swan Coastal Plain ecological community (Department of the Environment and Energy 2016)

Location and physical environment:

- The Banksia Woodlands ecological community primarily occurs in the Swan Coastal Plain IBRA bioregion.
 - This covers the coastal plain from around Jurien Bay south, through Perth, to around Dunsborough. It also includes the Dandaragan Plateau.
 - Pockets of the Banksia Woodlands ecological community also extend into the adjacent lower parts of the Darling and Whicher escarpments that lie within the Jarrah Forest IBRA bioregion to the immediate east and south of the Swan Coastal Plain.

AND

Soils and landform:

- The Banksia Woodlands ecological community:
 - typically occurs on well drained, low nutrient soils on sandplain landforms, particularly deep Bassendean and Spearwood sands and occasionally on Quindalup sands
 - is also common on sandy colluvium and aeolian sands of the Ridge Hill Shelf, Whicher Scarp and Dandaragan Plateau
 - in other less common scenarios (e.g. transitional substrates, sandflats), as described under Section 1.2.

AND

Structure:

- The structure of the ecological community is a low woodland to forest (see footnote 1 , page 5) with these features:
 - A distinctive upper sclerophyllous layer of low trees (occasionally large shrubs more than 2 m tall), typically dominated or co-dominated by one or more of the *Banksia* species identified below; AND
 - Emergent trees of medium or tall (>10 m) height *Eucalyptus* or *Allocasuarina* species may sometimes be present above the Banksia canopy; AND
 - A often highly species-rich understorey that consists of:
 - a layer of sclerophyllous shrubs of various heights; and,
 - a herbaceous ground layer of cord rushes, sedges and perennial and ephemeral forbs, that sometimes includes grasses. The development of a ground layer may vary depending on the density of the shrub layer and disturbance history.

AND

Composition:

- The canopy is most commonly dominated or co-dominated by *Banksia attenuata* (candlestick banksia, slender banksia) and/or *B. menziesii* (firewood banksia). Other Banksia

species that dominate in some examples of the ecological community are *B. prionotes* (acorn banksia) or *B. ilicifolia* (holly-leaved banksia); AND

- The patch must include at least one of the following diagnostic species:
 - *Banksia attenuata* (candlestick banksia)
 - *Banksia menziesii* (firewood banksia)
 - *Banksia prionotes* (acorn banksia)
 - *Banksia ilicifolia* (holly-leaved banksia); AND
- If present, the emergent tree layer often includes *Corymbia calophylla* (marri), *E. marginata* (jarrah), or less commonly *Eucalyptus gomphocephala* (tuart); AND
- Other trees of a medium height that may be present, and may be codominant with the Banksia species across a patch, include *Eucalyptus todtiana* (blackbutt, pricklybark), *Nuytsia floribunda* (Western Australian Christmas tree), *Allocasuarina fraseriana* (western sheoak), *Callitris arenaria* (sandplain cypress), *Callitris pyramidalis* (swamp cypress) and *Xylomelum occidentale* (woody pear); AND
- The understorey typically contains a high to very high diversity of shrub and herb species that often vary from patch to patch. Some of the more widespread and potentially characteristic species present in the ecological community are outlined above in Section 1 – Description, and in descriptions of vegetation types that relate to the Banksia Woodlands (e.g. Gibson et al., 1994).

Contra-indicators:



- Patches clearly dominated by *Banksia littoralis* are not part of the Banksia Woodlands ecological community but indicates a different, dampland community is present.
- Patches clearly dominated by *Banksia burdettii* are not part of the Banksia Woodlands ecological community but indicates a tall shrubland and not the Banksia Woodlands ecological community.
- FCT 20c – Eastern shrublands and woodlands, corresponds with a separate EPBC Act ecological community listing, Shrublands and Woodlands of the eastern Swan Coastal Plain. Occurrences of this FCT should be considered under that separate listing.


Table L.2: Minimum patch sizes for Banksia Woodlands of the Swan Coastal Plain ecological community (Department of the Environment and Energy 2016).


Condition (Environmental Protection Authority 2016)	Minimum patch size
Pristine	No minimum patch size applies
Excellent	0.5 ha or 5,000 m ²
Very Good	1 ha or 10,000 m ²
Good	2 ha or 20,000 m ²
Degraded	To be considered as part of the EPBC Act ecological community, a patch should meet at least the Good condition category
Completely Degraded	To be considered as part of the EPBC Act ecological community, a patch should meet at least the Good condition category

Table L.3: Tuart (*Eucalyptus gomphocephala*) patch assessments.

Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-01 (TP04)	Woodland	5	None	<i>Acacia saligna</i> <i>Xanthorrhoea preissii</i> <i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i> * <i>Avena barbata</i> * <i>Bromus diandrus</i> * <i>Ehrharta longiflora</i> * <i>Gazania linearis</i>	Poor		Yes	0	383505	6485467	
MFT-02 (TP06)	Open Forest	3	None	* <i>Oxalis pes-caprae</i> * <i>Ehrharta longiflora</i> <i>Spyridium globulosum</i> <i>Melaleuca systema</i> <i>Melaleuca lateriflora</i> * <i>Fumaria capreolata</i> * <i>Euphorbia terracina</i> * <i>Bromus diandrus</i>	Poor		Yes	0	383866	6484944	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-03 (TP12)	Open Forest	4	None	<i>Conostylis aculeata</i> <i>Tricoryne elatior</i> * <i>Ehrharta longiflora</i> <i>Acacia rostellifera</i> <i>Acacia saligna</i> <i>Chamelaucium uncinatum</i> <i>Banksia sessilis</i> * <i>Briza maxima</i> * <i>Oxalis pes-caprae</i> * <i>Gladiolus caryophyllaceus</i>	Poor		No	3	384560	6483615	
MFT-04 (TP12)	Scattered trees	2	<i>Corymbia calophylla</i> <i>Eucalyptus marginata</i>	<i>Xanthorrhoea preissii</i> * <i>Eragrostis curvula</i> * <i>Ehrharta calycina</i> * <i>Ehrharta longiflora</i> * <i>Pelargonium capitatum</i> <i>Acacia rostellifera</i> <i>Acacia saligna</i> <i>Banksia sessilis</i>	Poor		No	0	384574	6483452	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-05 (TP12)	Scattered trees	3	None	<i>Acacia rostellifera</i> <i>Melaleuca nesophila</i> * <i>Eragrostis curvula</i> * <i>Ehrharta calycina</i> * <i>Avena fatua</i> <i>Calothamnus quadrifidus</i>	Poor		Yes	0	384625	6483368	
MFT-06 (TP12)	Woodland	3	<i>Eucalyptus marginata</i>	<i>Acacia cyclops</i> <i>Acacia rostellifera</i> * <i>Avena fatua</i> <i>Banksia menziesii</i> * <i>Bromus diandrus</i> * <i>Ehrharta calycina</i> * <i>Euphorbia terracina</i> <i>Hardenbergia comptoniana</i> <i>Melaleuca huegelii</i> * <i>Oxalis pes-caprae</i> * <i>Pelargonium capitatum</i> * <i>Sonchus oleraceus</i>	Poor		Yes	0	384595	6483234	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-07 (TP12)	Open Forest	6	<i>Eucalyptus marginata</i>	* <i>Avena fatua</i> * <i>Ehrharta calycina</i> * <i>Ehrharta longiflora</i> * <i>Oxalis pes-caprae</i>	Poor		Yes	0	384616	6483100	
MFT-08 (TP12)	Open Forest	8	<i>Eucalyptus marginata</i>	* <i>Chamelaucium uncinatum</i> * <i>Acacia saligna</i> * <i>Avena fatua</i> * <i>Oxalis pes-caprae</i> * <i>Bromus diandrus</i> * <i>Xanthorrhoea preissii</i> * <i>Acacia iteaphylla</i> * <i>Briza maxima</i>	Poor		Yes	0	384625	6482992	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-09 (TP12)	Scattered trees	1	<i>Banksia attenuata</i>	<i>Xanthorrhoea preissii</i> <i>Hardenbergia comptoniana</i> * <i>Avena fatua</i> <i>Acacia saligna</i> <i>Acacia cochlearis</i> * <i>Bromus diandrus</i>	Poor		Yes	0	384648	6482920	
MFT-10 (TP12)	Scattered trees	2	<i>Eucalyptus marginata</i>	* <i>Avena fatua</i> <i>Acacia rostellifera</i> * <i>Bromus diandrus</i>	Poor		Yes	0	384686	6482681	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-11 (TP12)	Open Forest	10	<i>Eucalyptus marginata</i>	* <i>Ehrharta calycina</i> * <i>Bromus diandrus</i> <i>Acacia rostellifera</i> * <i>Fumaria capreolata</i> * <i>Lactuca serriola</i>	Poor		Yes	0	384687	6482611	
MFT-12 (TP12)	Open Forest	5	None	<i>Hibbertia hypericoides</i> <i>Gompholobium tomentosum</i> * <i>Ehrharta calycina</i> <i>Chamelaucium uncinatum</i> <i>Acacia rostellifera</i> <i>Acacia saligna</i> * <i>Oxalis pes-caprae</i>	Poor		Yes	0	384726	6482271	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-13 (TP12)	Open Forest	2	<i>Eucalyptus marginata</i> <i>Corymbia calophylla</i>	<i>Jacksonia furcellata</i> <i>Acacia cyclops</i> * <i>Eragrostis curvula</i> * <i>Ehrharta calycina</i> <i>Melaleuca nesophila</i> <i>Adenanthos cygnorum</i> * <i>Acacia iteaphylla</i> <i>Jacksonia furcellata</i>	Poor		No	2	384737	6482125	
MFT-14 (TP12)	Open Forest	5	<i>Corymbia calophylla</i> <i>Eucalyptus platypus</i>	<i>Melaleuca nesophila</i> <i>Acacia rostellifera</i> * <i>Ehrharta calycina</i>	Poor		No	0	384736	6481829	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-15 (TP30)	Open Forest	3	<i>Corymbia calophylla</i>	<i>*Avena fatua</i> <i>Melaleuca nesophila</i> <i>Calothamnus quadrifidus</i>	Poor		No	0	384772	6481653	
MFT-16 (TP30)	Open Forest	>2	<i>Eucalyptus marginata</i>	<i>Agonis flexuosa</i> <i>*Acacia iteaphylla</i> <i>Chamelaucium uncinatum</i> <i>Xanthorrhoea preissii</i> <i>*Ehrharta calycina</i>	Poor		Yes	0	384807	6481482	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-17 (TP30)	Open Forest	6	<i>Eucalyptus marginata</i> <i>Eucalyptus sideroxylon</i>	<i>Xanthorrhoea preissii</i> * <i>Acacia iteaphylla</i> * <i>Ehrharta calycina</i>	Poor		Yes	0	384933	6481365	
MFT-18 (TP19)	Forest	>2	None	-	Poor		Yes	0	384932	6481244	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-19 (TP20)	Open Forest	>2	None	<i>Chamelaucium uncinatum</i> * <i>Ehrharta calycina</i> * <i>Gazania linearis</i> * <i>Ehrharta longiflora</i>	Poor		No	0	385030	6481388	
MFT-20 (TP19)	Scattered trees	>2	<i>Eucalyptus marginata</i> <i>Eucalyptus</i> sp. (planted)	* <i>Ehrharta longiflora</i>	Poor		Yes	0	384942	6481141	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-21 (TP20)	Open Forest	>2	<i>Eucalyptus</i> sp. (planted)	<i>*Lupinus cosentinii</i> <i>*Ehrharta calycina</i> <i>*Lagurus ovatus</i> <i>Chamelaucium uncinatum</i> <i>*Gazania linearis</i> <i>Acacia rostellifera</i>	Poor		Yes	0	384895	6480992	
MFT-22 (TP20)	Open Forest	7	<i>Corymbia calophylla</i> <i>Eucalyptus marginata</i>	<i>*Ehrharta calycina</i> <i>Xanthorrhoea preissii</i> <i>Hardenbergia comptoniana</i> <i>*Pelargonium capitatum</i>	Moderate		Yes	0	384829	6480819	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-23 (TP20)	Open Forest	4	<i>Eucalyptus marginata</i>	* <i>Acacia iteaphylla</i> <i>Acacia saligna</i> <i>Acacia rostellifera</i> <i>Chamelaucium uncinatum</i> * <i>Avena fatua</i> * <i>Ehrharta calycina</i>	Poor		No	0	384810	6480587	
MFT-24 (TP20)	Open Forest	4	<i>Banksia attenuata</i> <i>Eucalyptus marginata</i>	<i>Banksia attenuata</i> <i>Allocasuarina fraseriana</i> <i>Xanthorrhoea preissii</i> * <i>Bromus diandrus</i> * <i>Ehrharta longiflora</i> * <i>Avena fatua</i>	Poor		Yes	0	384838	6480321	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-25 (TP20)	Open Forest	5	<i>Eucalyptus</i> sp. (planted)	<i>*Bromus diandrus</i> <i>*Ehrharta calycina</i> <i>*Avena fatua</i> <i>Grevillea olivacea</i> <i>*Euphorbia terracina</i> <i>*Ehrharta longiflora</i> <i>Acacia saligna</i> <i>Chamelaucium uncinatum</i>	Poor		No	0	384837	6480101	
MFT-26 (TP20)	Open Forest	>2	<i>Banksia attenuata</i> <i>Corymbia calophylla</i> <i>Allocasuarina fraseriana</i>	<i>Xanthorrhoea preissii</i> <i>*Fumaria capreolata</i> <i>*Ehrharta calycina</i> <i>*Euphorbia terracina</i> <i>*Ehrharta longiflora</i> <i>*Avena fatua</i> <i>Acacia rostellifera</i> <i>*Bromus diandrus</i>	Poor		Yes	0	384867	6479852	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-27 (TP20)	Open Forest	6	<i>Eucalyptus</i> sp. (planted)	<i>*Acacia iteaphylla</i> <i>Grevillea crithmifolia</i> <i>Callistemon viminalis</i> 'Kings Park Special' <i>*Ehrharta calycina</i>	Poor		No	0	384913	6479828	
MFT-28 (TP20)	Open Forest	>2	None	Cleared ground	Poor		Yes	0	384858	6479761	




Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-29 (TP20)	Open Forest	>2	<i>Banksia attenuata</i> <i>Eucalyptus marginata</i> <i>Allocasuarina fraseriana</i>	* <i>Oxalis pes-caprae</i> * <i>Ehrharta longiflora</i> * <i>Pelargonium capitatum</i> <i>Xanthorrhoea preissii</i> * <i>Avena fatua</i>	Poor		Yes	0	384884	6479571	
MFT-30 (TP20)	Open Forest	>2	<i>Eucalyptus</i> sp. (planted) <i>Melia azedarach</i>	* <i>Tropaeolum majus</i> * <i>Bromus diandrus</i> * <i>Pelargonium capitatum</i> * <i>Cenchrus clandestinus</i>	Poor		Yes	0	384975	6478816	


Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-31 (TP21)	Open Forest	>2	<i>Eucalyptus marginata</i>	<i>Acacia rostellifera</i> * <i>Ehrharta calycina</i> * <i>Bromus diandrus</i>	Poor		Yes	0	384978	6479060	
MFT-32 (TP21)	Open Forest	>2	None	<i>Acacia rostellifera</i> * <i>Acacia iteaphylla</i> <i>Melaleuca nesophila</i> <i>Melaleuca lanceolata</i> * <i>Ehrharta calycina</i> * <i>Eragrostis curvula</i>	Poor		No	0	384952	6478771	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-33 (TP22)	Scattered trees	>2	None	<i>Acacia rostelifera</i>	Poor		No	0	384959	6478586	
MFT-34 (TP31)	Scattered trees	>2	<i>Eucalyptus platypus</i>	* <i>Acacia iteaphylla</i> <i>Melaleuca nesophila</i> * <i>Ehrharta longiflora</i> * <i>Eragrostis curvula</i>	Poor		No	0	385122	6478214	

Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-35 (TP24)	Open Forest	2	<i>Banksia attenuata</i> <i>Corymbia calophylla</i>	<i>Chamelaucium uncinatum</i> <i>Eucalyptus platypus</i> <i>Callistemon viminalis</i> <i>Grevillea olivacea</i> * <i>Acacia iteaphylla</i> * <i>Ehrharta calycina</i>	Poor		Yes	0	385123	6478130	
MFT-36 (TP24)	Woodland	1	<i>Corymbia calophylla</i>	<i>Eucalyptus platypus</i> <i>Chamelaucium uncinatum</i> <i>Grevillea crithmifolia</i> <i>Daviesia divaricata</i> * <i>Ehrharta calycina</i>	Poor		No	0	385208	6478060	



Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-37 (TP25)	Woodland	4	<i>Corymbia calophylla</i> <i>Eucalyptus marginata</i>	<i>*Ehrharta calycina</i> <i>Allocasuarina humilis</i> <i>Xanthorrhoea preissii</i> <i>Acacia pulchella</i> <i>Desmocladius flexuosus</i> <i>Mesomelaena pseudostygia</i> <i>Lepidosperma calcicola</i> <i>Corynotheca micrantha</i>	Moderate		Yes	0	386168	6475833	
MFT-38 (TP26)	Open Forest	2	<i>Eucalyptus</i> sp. (planted)	<i>*Acacia iteaphylla</i> <i>*Ehrharta longiflora</i> <i>*Eragrostis curvula</i>	Poor		Yes	0	383505	6485467	

Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-39 (TP12)	Open Forest	9	<i>Eucalyptus marginata</i>	<i>*Avena fatua</i> <i>*Ehrharta calycina</i> <i>*Briza maxima</i> <i>Banksia attenuata</i> <i>Hakea lissocarpha</i> <i>Xanthorrhoea preissii</i> <i>Mesomelaena pseudostygia</i>	Very High		Yes	6	384683	6483054	
MFT-40 (TP12)	Open Forest	3	<i>Eucalyptus marginata</i>	<i>*Ehrharta calycina</i> <i>*Briza maxima</i> <i>*Ursinia anthemoides</i> <i>*Lysimachia arvensis</i> <i>Banksia attenuata</i> <i>Allocasuarina fraseriana</i> <i>Xanthorrhoea preissii</i> <i>Hakea lissocarpha</i> <i>Hibbertia hypericoides</i> <i>Mesomelaena pseudostygia</i>	Very High		Yes	2	384637	6483617	
MFT-41 (TP12)	Open Forest	11	<i>Eucalyptus marginata</i>	<i>*Avena fatua</i> <i>*Ehrharta calycina</i> <i>*Briza maxima</i> <i>Allocasuarina fraseriana</i> <i>Daviesia divaricata</i> <i>Xanthorrhoea preissii</i> <i>Hibbertia hypericoides</i> <i>Banksia attenuata</i>	Very High		Yes	7	384720	6483734	

Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MFT-42 (TP12)	Open Forest	3	<i>Eucalyptus marginata</i>	* <i>Sonchus oleraceus</i> * <i>Ehrharta longiflora</i> * <i>Raphanus raphanistrum</i> <i>Banksia prionotes</i> <i>Allocasuarina fraseriana</i> <i>Xanthorrhoea preissii</i>	Very High		Yes	2	385098	6483688	
MF5T-01 (NA)	Woodland			* <i>Acacia iteaphylla</i> <i>Acacia rostelifera</i> <i>Allocasuarina lehmanniana</i> * <i>Casuarina equisetifolia</i> <i>Eucalyptus gomphocephala</i> <i>Eucalyptus platypus</i> * <i>Gazania linearis</i> <i>Grevillea crithmifolia</i> <i>Grevillea olivacea</i> <i>Grevillea preissii</i> <i>Guichenotia ledifolia</i> <i>Melaleuca nesophila</i> <i>Xanthorrhoea preissii</i>	Poor		No	0	385292	6479046	
MF5T-02 (TP20)	Open Forest			<i>Acacia rostelifera</i> <i>Corymbia calophylla</i> * <i>Eragrostis curvula</i> <i>Eucalyptus gomphocephala</i> <i>Eucalyptus sideroxylon</i> <i>Jacksonia calcicola</i> <i>Jacksonia sternbergiana</i> * <i>Lagurus ovatus</i>	Poor		Yes	0	385014	6479168	

Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MF5T-03 (TP21)	Open Forest	7	<i>Corymbia calophylla</i>	<i>Agonis flexuosa</i> <i>Cenchrus clandestinus</i> <i>Corymbia calophylla</i> <i>Cynodon dactylon</i> <i>Eucalyptus gomphocephala</i> <i>Eucalyptus marginata</i>	Poor		Yes	0	385012	6478800	
MF5T-04 (TP25)	Open Forest	2	<i>Allocasuarina fraseriana</i>	* <i>Acacia iteaphylla</i> * <i>Agave americana</i> <i>Agonis flexuosa</i> * <i>Aizoon pubescens</i> * <i>Aloe vera</i> <i>Chamelaucium uncinatum</i> <i>Corymbia calophylla</i> <i>Ehrharta calycina</i> <i>Eragrostis curvula</i> <i>Eucalyptus conferruminata</i> <i>Eucalyptus erythrocorys</i> <i>Eucalyptus gomphocephala</i> * <i>Polygala myrtifolia</i>	Poor		Yes	0	385291	6477923	

Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MF5T-05 (TP25)	Open Forest	10	<i>Eucalyptus marginata</i>	<i>Allocasuarina fraseriana</i> * <i>Cynodon dactylon</i> <i>Eucalyptus gomphocephala</i> <i>Eucalyptus marginata</i> <i>Eucalyptus platypus</i> <i>Xanthorrhoea preissii</i>	Poor		Yes	0	385405	6477723	
MF5T-06 (TP25)	Open Forest	7	<i>Banksia grandis</i> <i>Banksia attenuata</i> <i>Corymbia calophylla</i> <i>Eucalyptus marginata</i>	* <i>Ehrharta calycina</i> <i>Eucalyptus gomphocephala</i> <i>Eucalyptus marginata</i> <i>Grevillea vestita</i> <i>Hardenbergia comptoniana</i> <i>Hibbertia hypericoides</i> * <i>Oxalis pes-caprae</i> <i>Schoenus grandiflorus</i> <i>Xanthorrhoea preissii</i>	Moderate		Yes	0	385470	6477613	
MF5T-07 (TP33)	Open Forest	3	<i>Eucalyptus marginata</i>	<i>Acacia pulchella</i> <i>Banksia attenuata</i> <i>Corymbia calophylla</i> <i>Dianella revoluta</i> * <i>Ehrharta calycina</i> <i>Eremaea pauciflora</i> <i>Eucalyptus gomphocephala</i> <i>Eucalyptus marginata</i> * <i>Gazania linearis</i> <i>Gompholobium tomentosum</i> <i>Hakea prostrata</i> <i>Lepidosperma</i> sp. <i>Lomandra hermaphrodita</i> * <i>Olea europaea</i> <i>Scaevola crassifolia</i> <i>Xanthorrhoea preissii</i>	Moderate		Yes	0	386087	6476416	

Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
MF5T-08 (TP33)	Open Forest	8	<i>Corymbia calophylla</i>	* <i>Acacia iteaphylla</i> <i>Acacia pulchella</i> <i>Banksia sessilis</i> <i>Chamelaucium uncinatum</i> <i>Corymbia calophylla</i> <i>Ehrharta calycina</i> <i>Eucalyptus adesmophloia</i> <i>Eucalyptus gomphocephala</i> <i>Grevillea preissii</i> <i>Lagurus ovatus</i> <i>Melaleuca nesophila</i> * <i>Pelargonium capitatum</i> <i>Scaevola crassifolia</i>	Poor		Yes	1	386032	6476538	
MF5T-09 (TP33)	Open Forest	5	<i>Corymbia calophylla</i> <i>Eucalyptus marginata</i>	<i>Acacia pulchella</i> * <i>Agave americana</i> <i>Caesia micrantha</i> <i>Corymbia calophylla</i> <i>Corynotheca micrantha</i> <i>Desmodcladus flexuosus</i> * <i>Ehrharta calycina</i> <i>Eucalyptus gomphocephala</i> <i>Eucalyptus marginata</i> <i>Hardenbergia comptoniana</i> <i>Hibbertia hypericoides</i> <i>Lomandra hermaphrodita</i> <i>Lomandra nigricans</i> <i>Mesomelaena pseudostygia</i> * <i>Romulea rosea</i> <i>Xanthorrhoea preissii</i>	Moderate		Yes	2	386020	6476616	
MF5T-10	Open Forest	4	<i>Corymbia calophylla</i>	* <i>Acacia iteaphylla</i> <i>Acacia rostellifera</i> <i>Agonis flexuosa</i> * <i>Aizoon pubescens</i> <i>Banksia attenuata</i> <i>Banksia prionotes</i> <i>Banksia sessilis</i> * <i>Briza maxima</i> <i>Chamelaucium uncinatum</i> * <i>Conyza bonariensis</i> <i>Corymbia calophylla</i> * <i>Ehrharta calycina</i> <i>Eucalyptus gomphocephala</i>	Poor		Yes	0	385837	6477037	

Tuart (<i>Eucalyptus gomphocephala</i>) Patch Assessments											
Site name (Patch no.)	Structure	Approx. no. tuart	Other tree canopy species	Understorey inventory	Tuart condition	TEC	Very large trees present (yes/no)	Number of eucalypt juveniles	Location (GDA 94 zone 50)		Photograph
									Easting (mE)	Northing (mN)	
				<i>Eucalyptus platypus</i> * <i>Gazania linearis</i> * <i>Ipomoea cairica</i>							

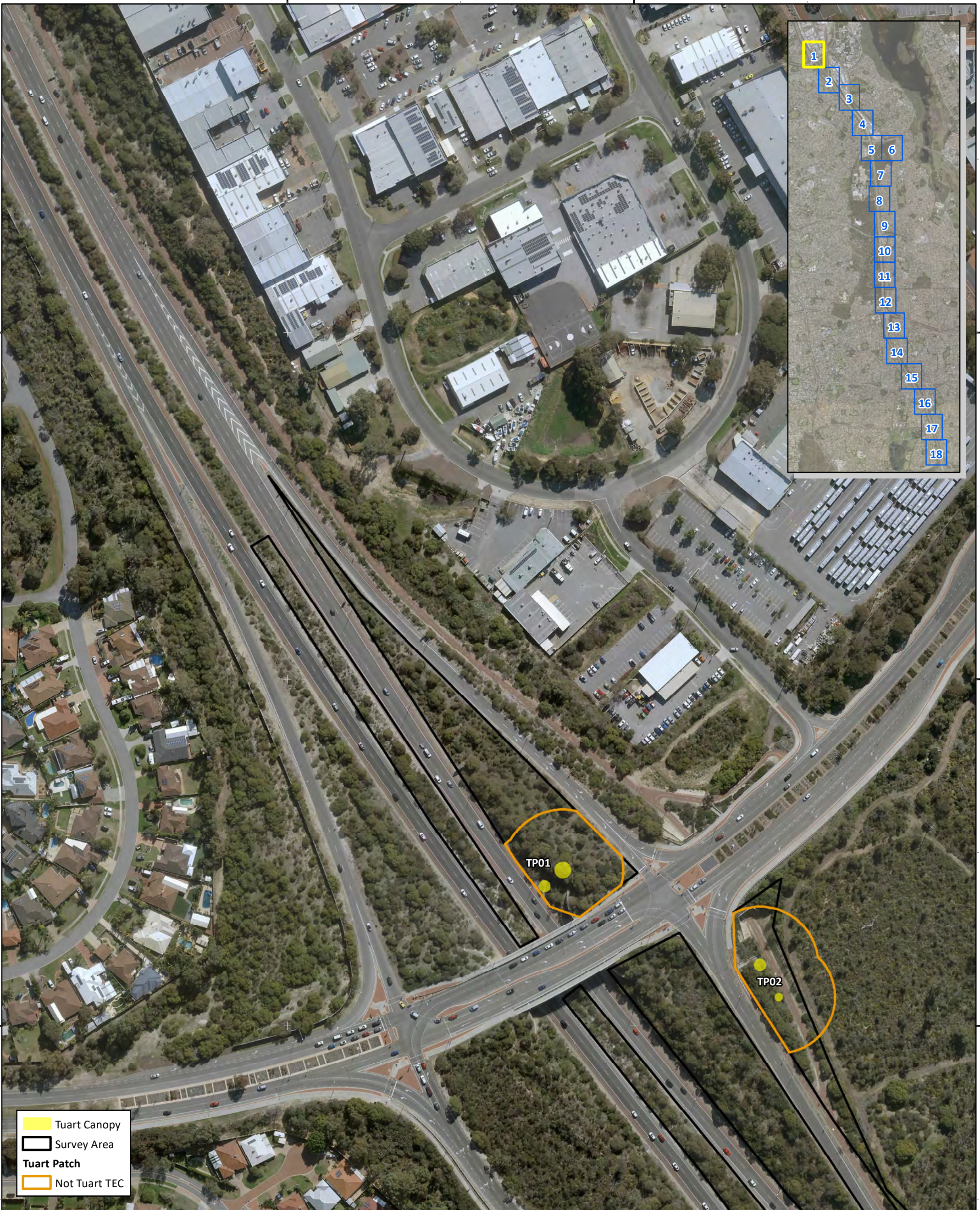
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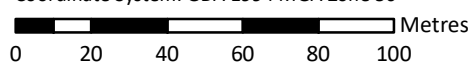
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Main Roads Western Australia
 Mitchell Freeway Widening Southbound and PSP Mitchell Freeway Gaps Hodges Drive to Reid Highway - Biological Survey



Figure L.2.1: Tuart woodlands and forests of the Swan Coastal Plain

Author: C. Dyde	Date: 21-05-2020	Scale: 1:2,000 at A3 Coordinate System: GDA 1994 MGA Zone 50 
Drawn: A. Sleep	Figure Ref: 8612-19-BIDR-1RevB_200520_Tuart_FigL2	

