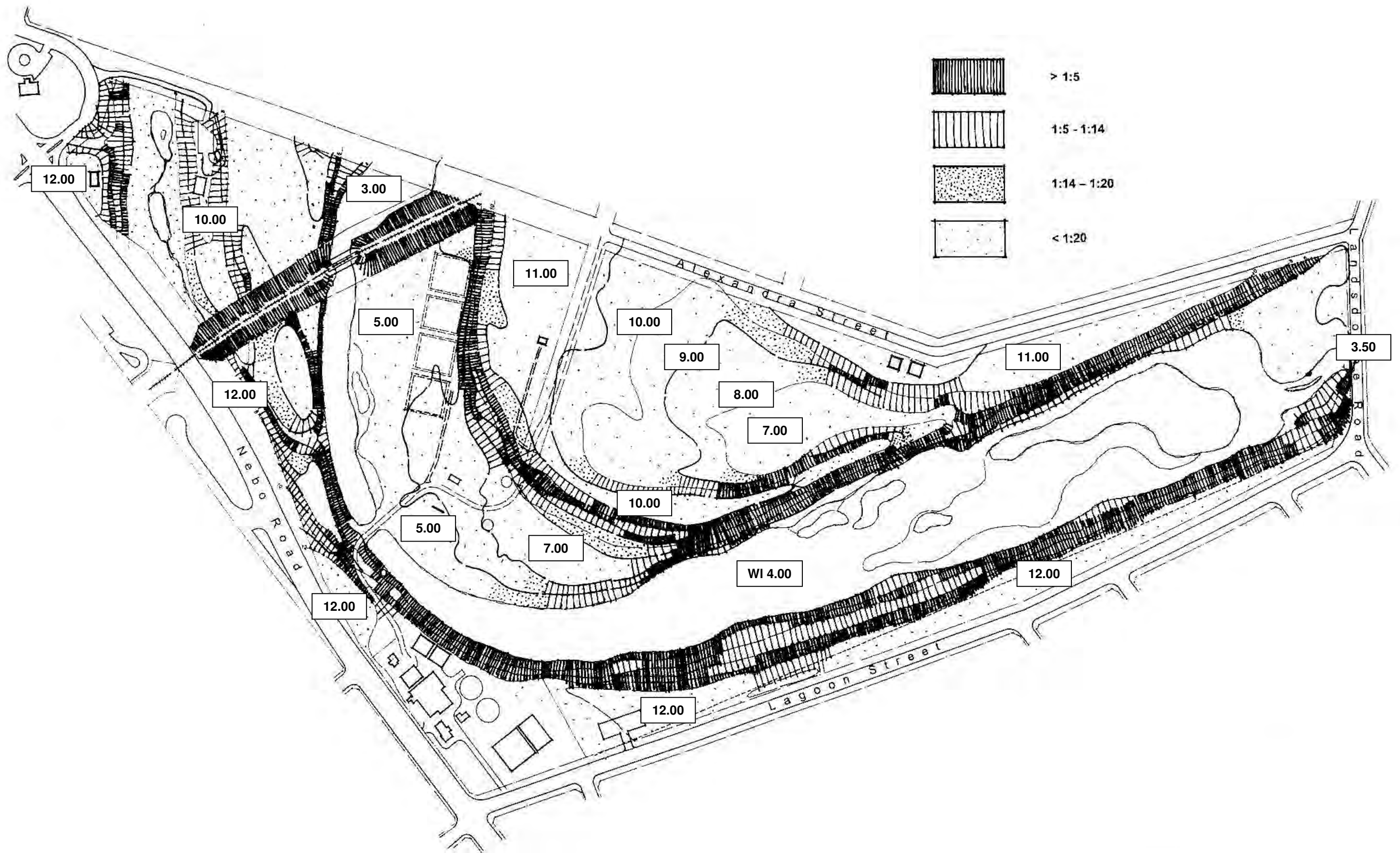

Mackay Regional Botanic Gardens - Master Plan 2010
SITE REFERENCE ZONES
 LANDPLAN landscape architects 2090303 January 2010

Figure
3.01



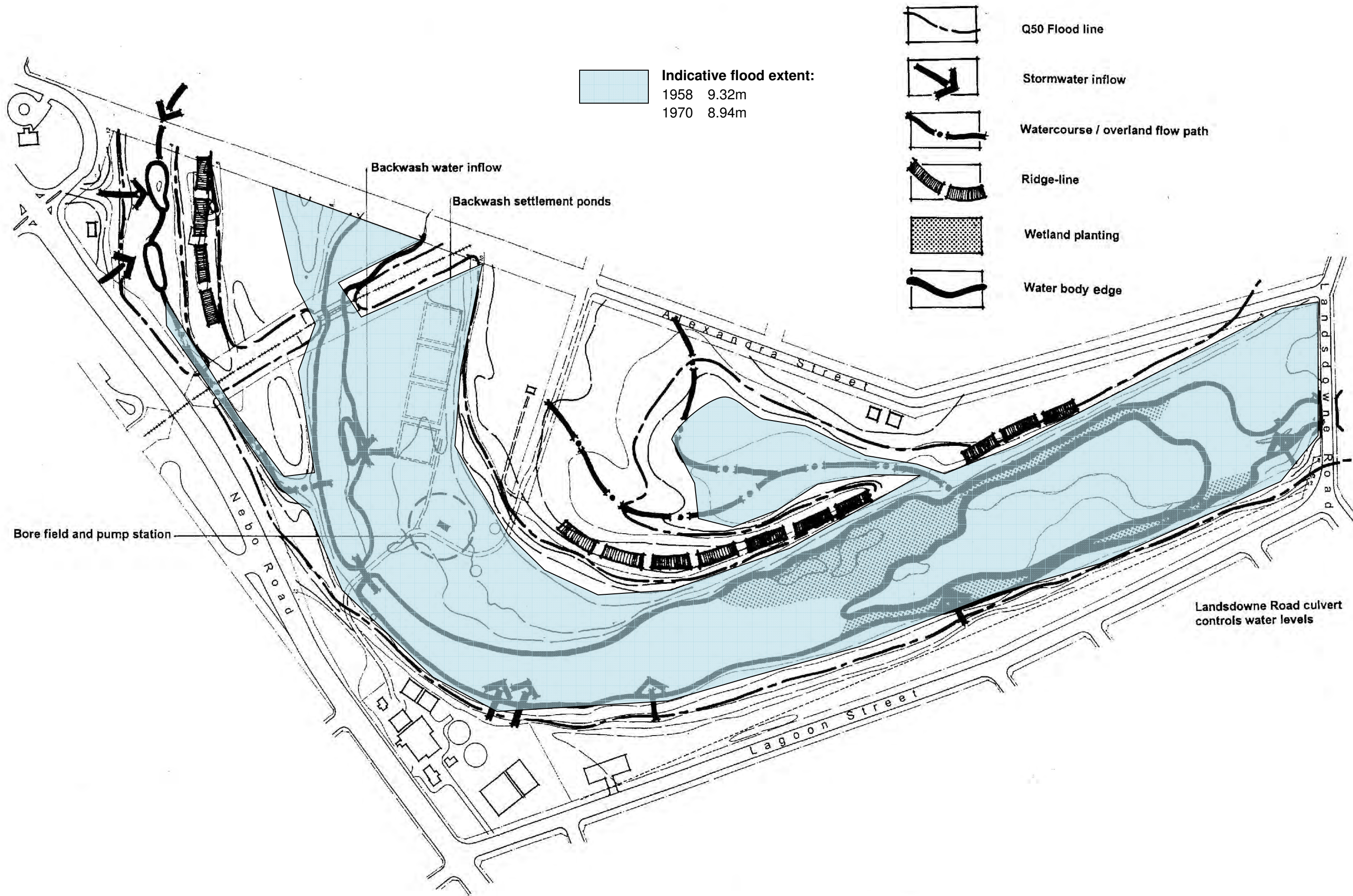
Mackay Regional Botanic Gardens - Master Plan 2010

TOPOGRAPHY & SLOPES

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Figure

3.02

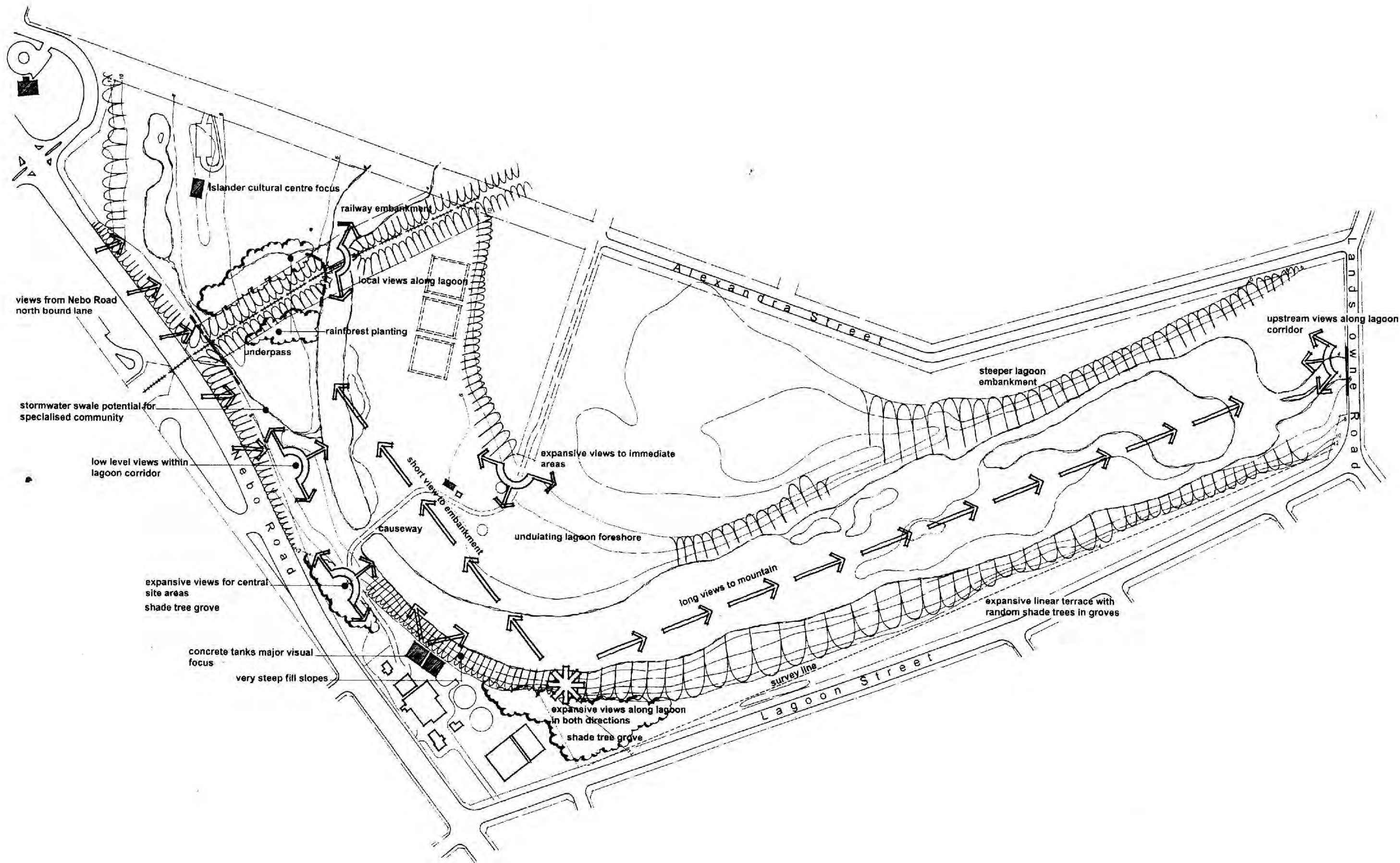


Mackay Regional Botanic Gardens - Master Plan 2010

HYDROLOGY

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Figure
3.03



Mackay Regional Botanic Gardens - Master Plan 2010

VISUAL CONTEXT

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Figure

3.04



1. Pine grove at water treatment plant
2. Nebo Road mature exotic tree grove
3. Lagoon Street exotic tree plantings
4. *Albizzia lebeck* along lagoon edge
5. Wetlands & aquatic vegetation
6. South Sea Island Village & coconut palms
7. Lowland rainforest
8. Riverine rainforest
9. Pine tree windbreak along Crowleys Road

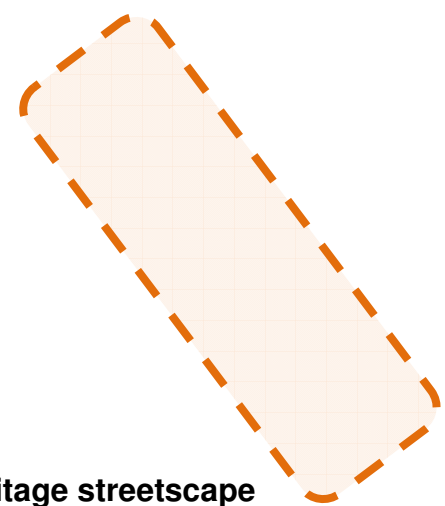
**Nebo Road - heritage streetscape
Cuban Royal Palm Precinct**
(associated with the Sugar Research Institute)

Mackay Regional Botanic Gardens - Master Plan 2010
EXISTING VEGETATION (2000)
 LANDPLAN landscape architects 2090303 January 2010

Figure
3.05
 Page 1



1. Pine grove at water treatment plant
2. Nebo Road mature exotic tree grove
3. Lagoon Street exotic tree plantings
4. *Albizzia lebbbeck* along lagoon edge
5. Wetlands & aquatic vegetation
6. South Sea Island Village & coconut palms
7. Lowland rainforest
8. Riverine rainforest
9. Pine tree windbreak along Crowleys Road



**Nebo Road - heritage streetscape
Cuban Royal Palm Precinct**
(associated with the Sugar Research Institute)



Mackay Regional Botanic Gardens - Master Plan 2010

EXISTING SERVICES (2000)

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Figure
3.06



EXISTING ELEMENTS
 The history of the site and its uses for agriculture, parkland, and water supply purposes has left a number of elements some have local or regional significance for preservation; not all shown below.

BUILDINGS

- A1 Mackay Tourist Information Centre
- A2 South Sea Islander Shelter
- A3 Meeting Hut
- A4 Water Treatment Plant
- A5 Amenities Block
- A6 Pump House
- A7 Farm Shed
- A8 Canefields Homestead

STRUCTURES

- B1 Footbridges
- B2 Culverts
- B3 Stormwater headwalls
- B4 Decks
- B5 Bird Hide
- B6 Rail bridge

SCULPTURES / ARTEFACTS

- C1 Sculpture gate
- C2 Windmill
- C3 Log Seat
- C4 Kanaka Memorial
- C5 Low stone walls
- C6 Turtle Sculpture
- C7 Sculptural Seat

- C8 Intake Tower
- C9 Old Wells
- C10 Settlement Ponds
- C11 Bores
- C12 Measuring Flume
- C13 Rising Main Valves
- C14 Survey Calibration Line

CIRCULATION

- D1 Lagoon Street Carpark
- D2 Bikeway
- D3 Pedestrian paths
- D4 Aboriginal motif paths
- D5 Causeway
- D6 Railway Underpass
- D7 Railway Corridor

Mackay Regional Botanic Gardens - Master Plan 2010

ORIGINAL SITE ELEMENTS – 2000

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Figure

3.07



NEW ELEMENTS – stages 1 & 2
 Construction of stages 1 & 2 has added a number of new elements; not all shown below.

BUILDINGS

- A1 Cremorne Visitor Centre
- Eungella Cloud Garden
- Finch Hatton Waterway
- A2 The Fernery
- A3 Operations Centre & Nursery
- A4 Mackay Water Treatment Plant

INFRASTRUCTURE

- B1 Kaliguil Shelter
- B2 Gymnosperm deck & ramp
- B3 Sugar Cane Wall & sculpture

- B4 Malta Colonnade & Bocce court
- B5 Heritage Arbour & Shelter
- B6 Coal Garden Sails
- B7 Eulamere Shelter & Boardwalk
- B8 Forest Arbour
- B9 Under the Banyan Playgarden

THEME GARDENS / ARTEFACTS

- C1 Brigalow Stream,
- C2 Sarina-Proserpine Walkway
- C3 Gymnosperm Walkway
- C4 Tropical Shade Garden & Poles
- C5 Finch Hatton Waterway
- C6 Tropical Sun Garden
- C7 Screens & Hedges
- C8 Grass Plots

- C9 Japan Garden
- C10 Heritage Gardens
- C11 Kanaka Walls
- C12 Coal Garden & Waterway
- C13 Geology Gardens
- C14 Regional Flora Terraces
- C15 Mackay Port Bollard
- C16 Monsoon Waterway

CIRCULATION

- D1 Cremorne Carpark
- D2 Magani Malu Kes Walkway
- D3 Tamarind Carpark
- D4 Pathway Network

CREMORNE VISITOR CENTRE

Mackay Regional Botanic Gardens - Master Plan 2010

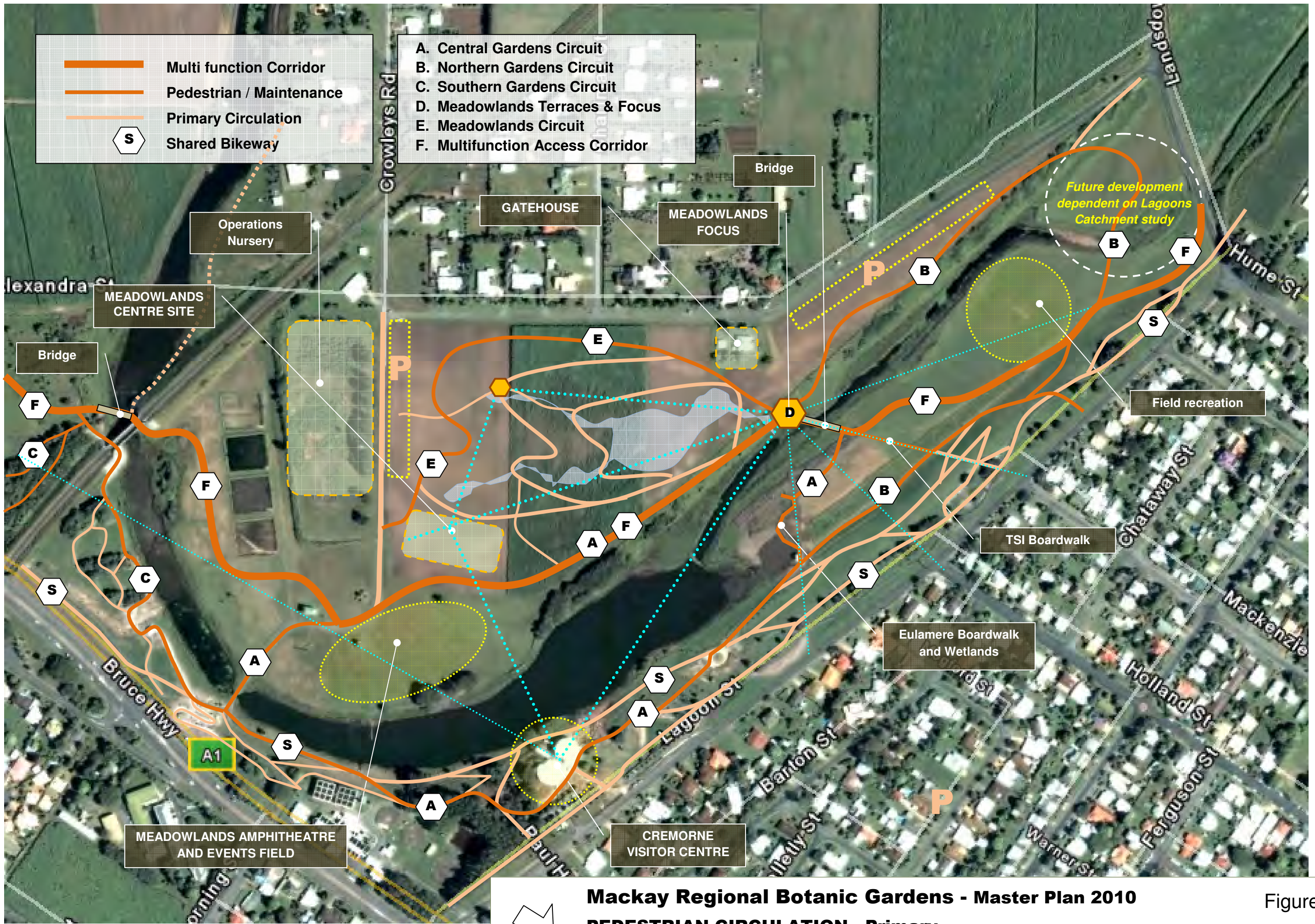
NEW SITE ELEMENTS – stages one & two

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Figure

3.08



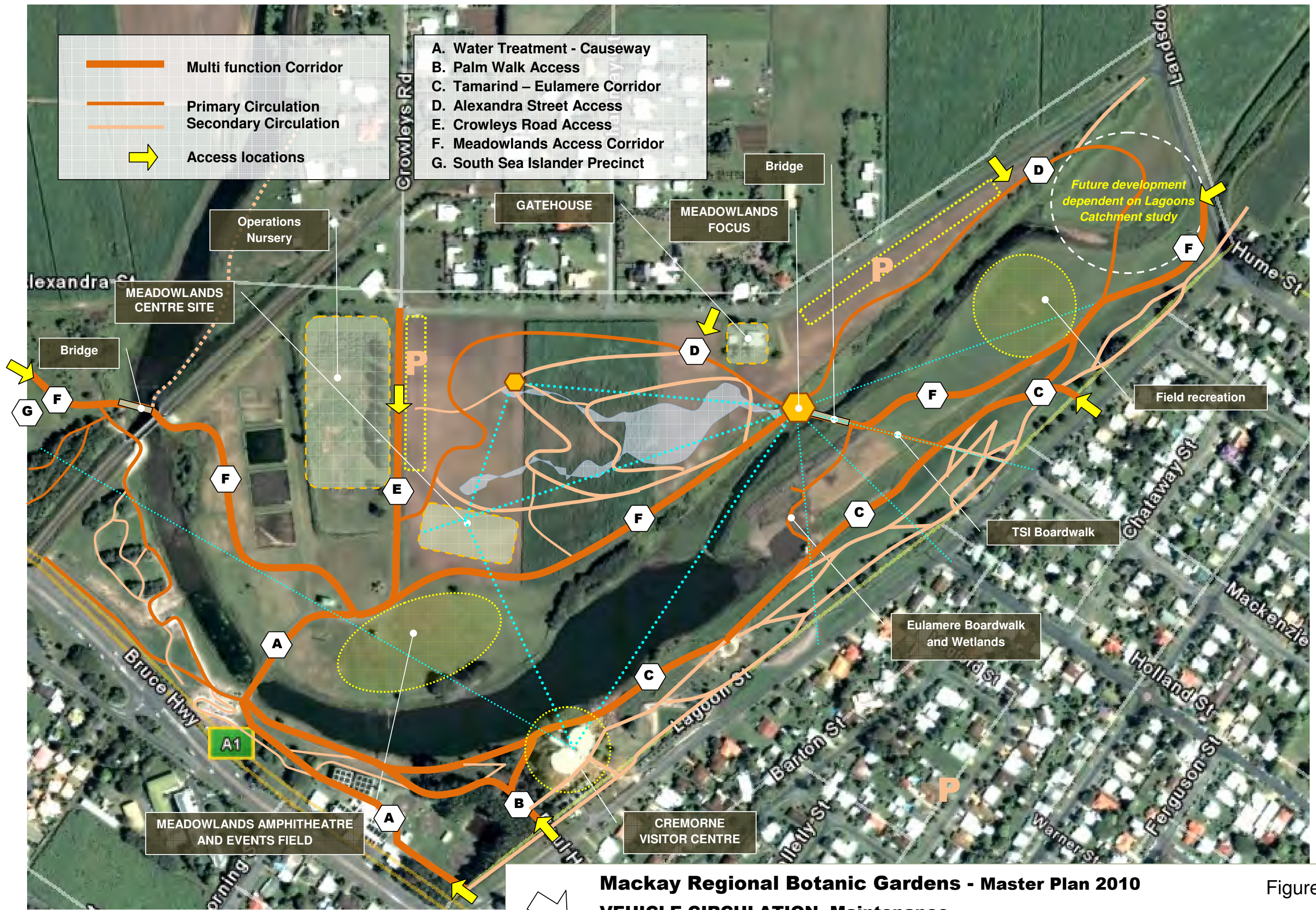
Mackay Regional Botanic Gardens - Master Plan 2010

PEDESTRIAN CIRCULATION - Primary

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Figure

4.01



——— Multi function Corridor
——— Primary Circulation
——— Secondary Circulation
➔ Access locations

- A. Water Treatment - Causeway
- B. Palm Walk Access
- C. Tamarind – Eulamere Corridor
- D. Alexandra Street Access
- E. Crowleys Road Access
- F. Meadowlands Access Corridor
- G. South Sea Islander Precinct

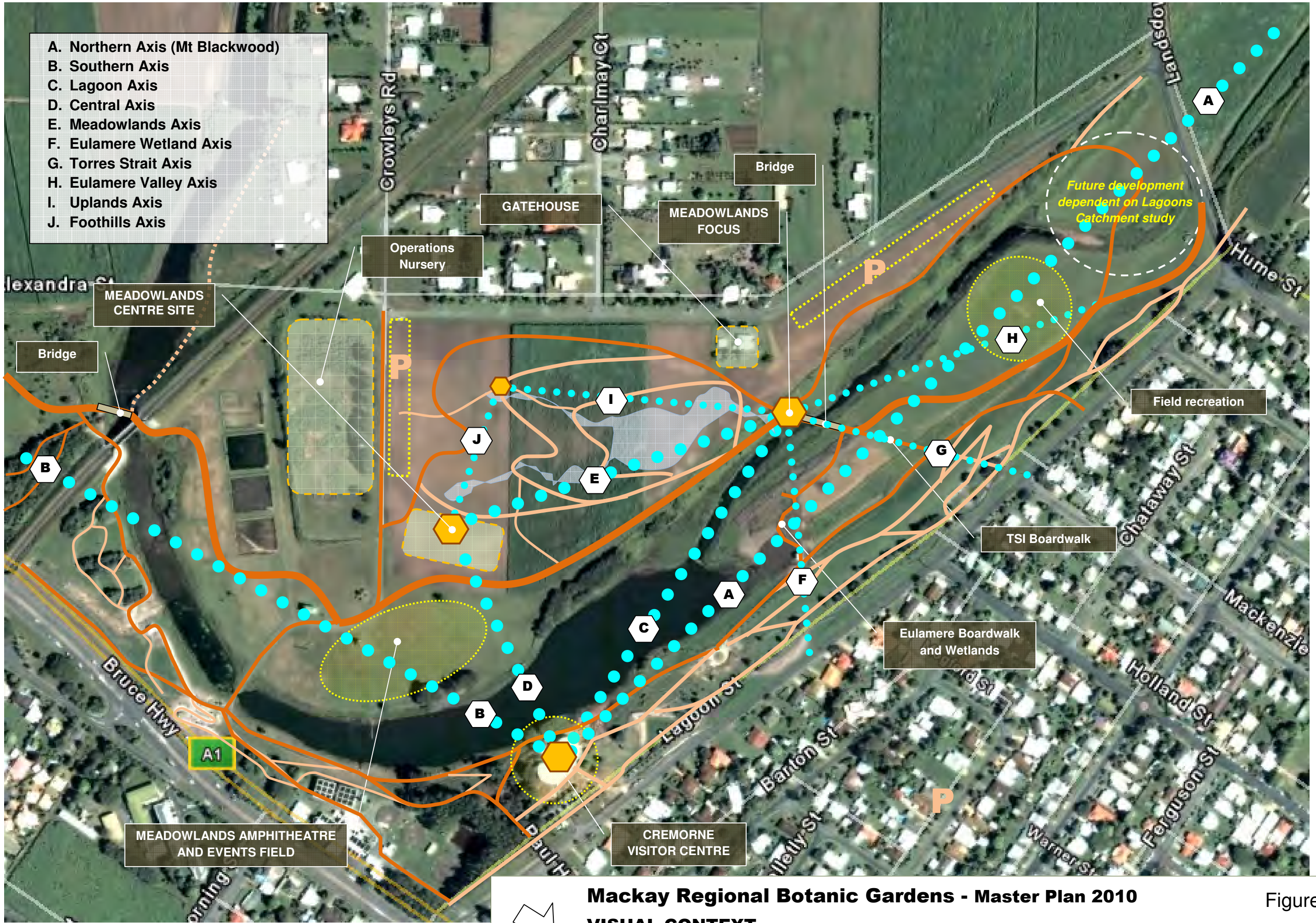
Mackay Regional Botanic Gardens - Master Plan 2010

VEHICLE CIRCULATION- Maintenance

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Figure

4.02



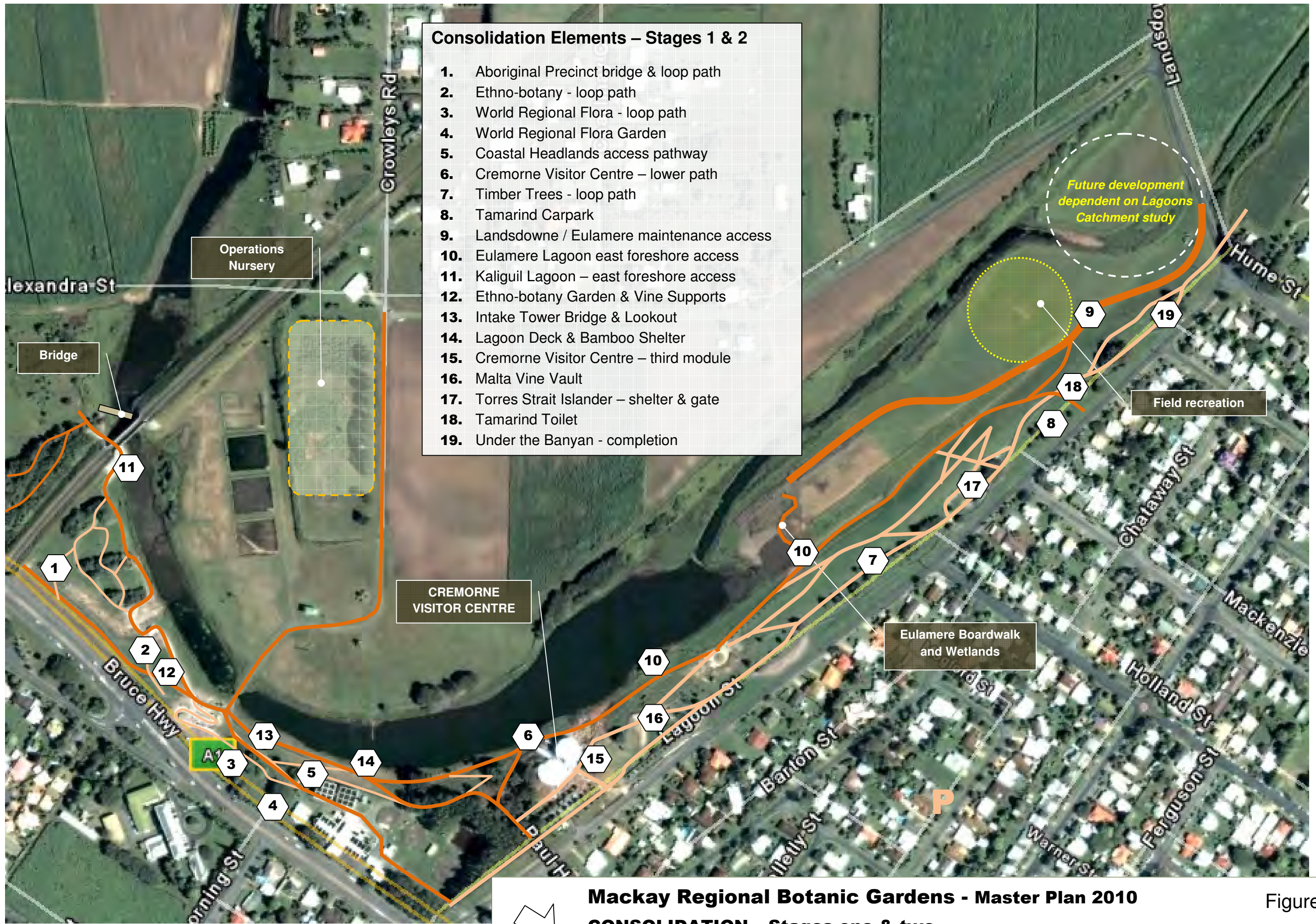
Mackay Regional Botanic Gardens - Master Plan 2010

VISUAL CONTEXT

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Figure

4.03



- Consolidation Elements – Stages 1 & 2**
1. Aboriginal Precinct bridge & loop path
 2. Ethno-botany - loop path
 3. World Regional Flora - loop path
 4. World Regional Flora Garden
 5. Coastal Headlands access pathway
 6. Cremorne Visitor Centre – lower path
 7. Timber Trees - loop path
 8. Tamarind Carpark
 9. Landsdowne / Eulamere maintenance access
 10. Eulamere Lagoon east foreshore access
 11. Kaliguil Lagoon – east foreshore access
 12. Ethno-botany Garden & Vine Supports
 13. Intake Tower Bridge & Lookout
 14. Lagoon Deck & Bamboo Shelter
 15. Cremorne Visitor Centre – third module
 16. Malta Vine Vault
 17. Torres Strait Islander – shelter & gate
 18. Tamarind Toilet
 19. Under the Banyan - completion

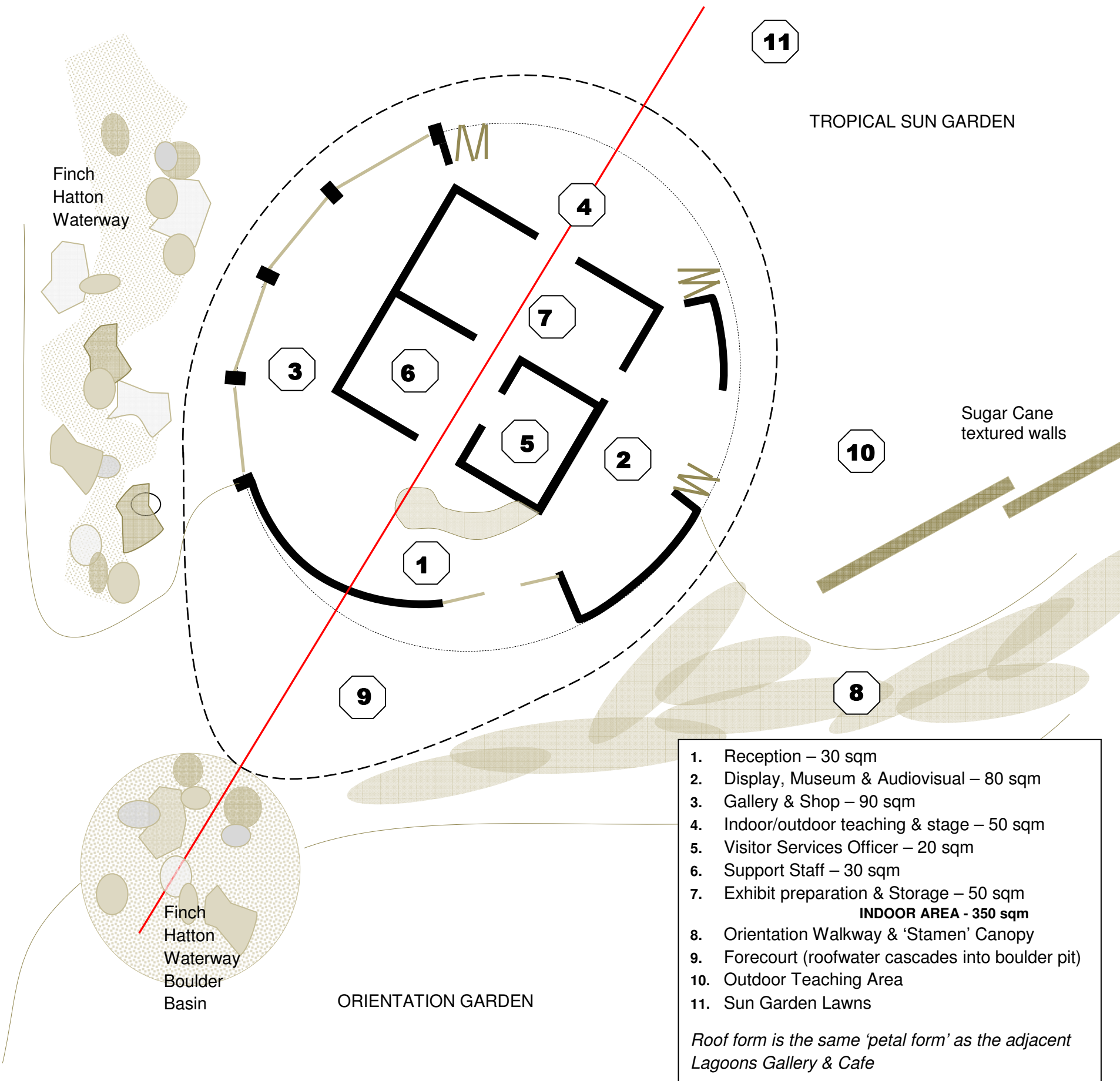
Mackay Regional Botanic Gardens - Master Plan 2010

CONSOLIDATION – Stages one & two

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Figure

4.04



Education & Visitor Reference Centre

The building design concept aims to provide a specialised facility providing optimum communication of information and education to various community participants in a variety of ways.

General Public

Through displays, exhibits (living, digital, posters/ notices), brochures, fact sheets, booklets and merchandise complimented by personnel including Friends of the Gardens volunteers and council staff. The variety of communication options will assist in identifying and interpreting the specific values of the regional flora and associated fauna as well as promoting their potential for horticultural use.

School and Youth Groups

Two areas available for small and large group teaching options, communicating with digital / visual media, living specimens, utilizing outdoor break out areas adjacent to teaching stations. The larger teaching area /stage (at the rear of the centre) with concertina fold back doors provides shelter for groups to gather during inclement weather.

Staff and Friends of the Gardens

The facilities and areas will be variously used for training purposes and for communicating issues to each other and to the public.

Functions

The building would be more than just an education & reference centre, with some areas available for weddings / entertainment / presentation stages, a shop and gallery area for sales and small gatherings (social groups young and old), a small theatrette area to view educational screenings as well as an area displaying museum items. The building's internal section would include:

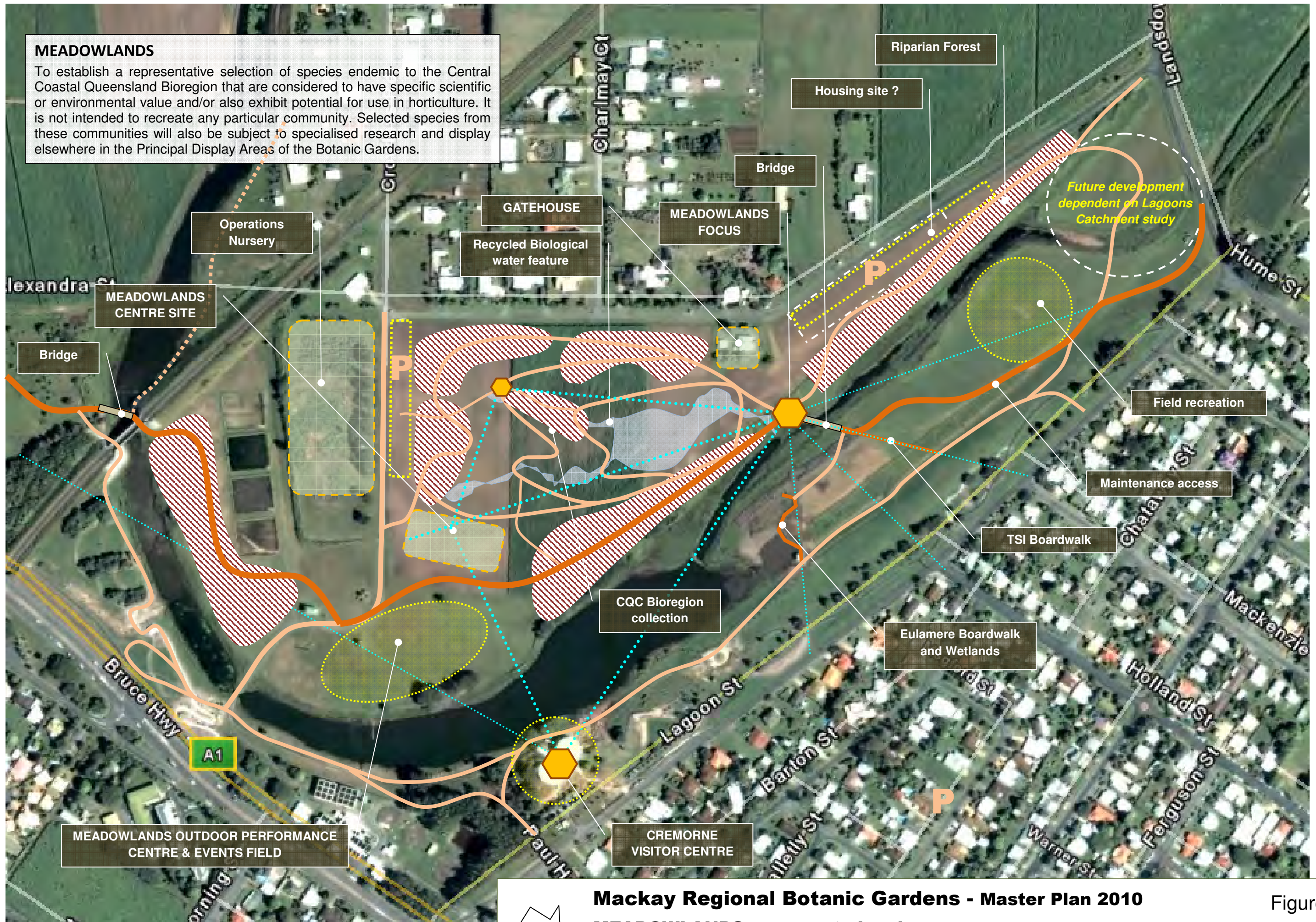
- an office that can be closed for private meetings;
- a support staff section for council staff and Friends of the Garden, who service the reception and shop area; and
- a large storeroom and preparation area, providing and housing the many and varied teaching resources needed to educate the public, especially the youth. The large preparation / storage area would also provide space for the comprehensive selection of brochure and fact sheet stock needed on hand to distribute to the public as well as storing the Botanic Gardens' growing Art & Photographic Collection.

All of these needs have been considered in designing the building for the multiple uses and functions it will be required to provide (within the one space) while having aesthetic and environmental sustainable / receptive / responsive construction, complimenting the existing buildings.



MEADOWLANDS

To establish a representative selection of species endemic to the Central Coastal Queensland Bioregion that are considered to have specific scientific or environmental value and/or also exhibit potential for use in horticulture. It is not intended to recreate any particular community. Selected species from these communities will also be subject to specialised research and display elsewhere in the Principal Display Areas of the Botanic Gardens.



Mackay Regional Botanic Gardens - Master Plan 2010

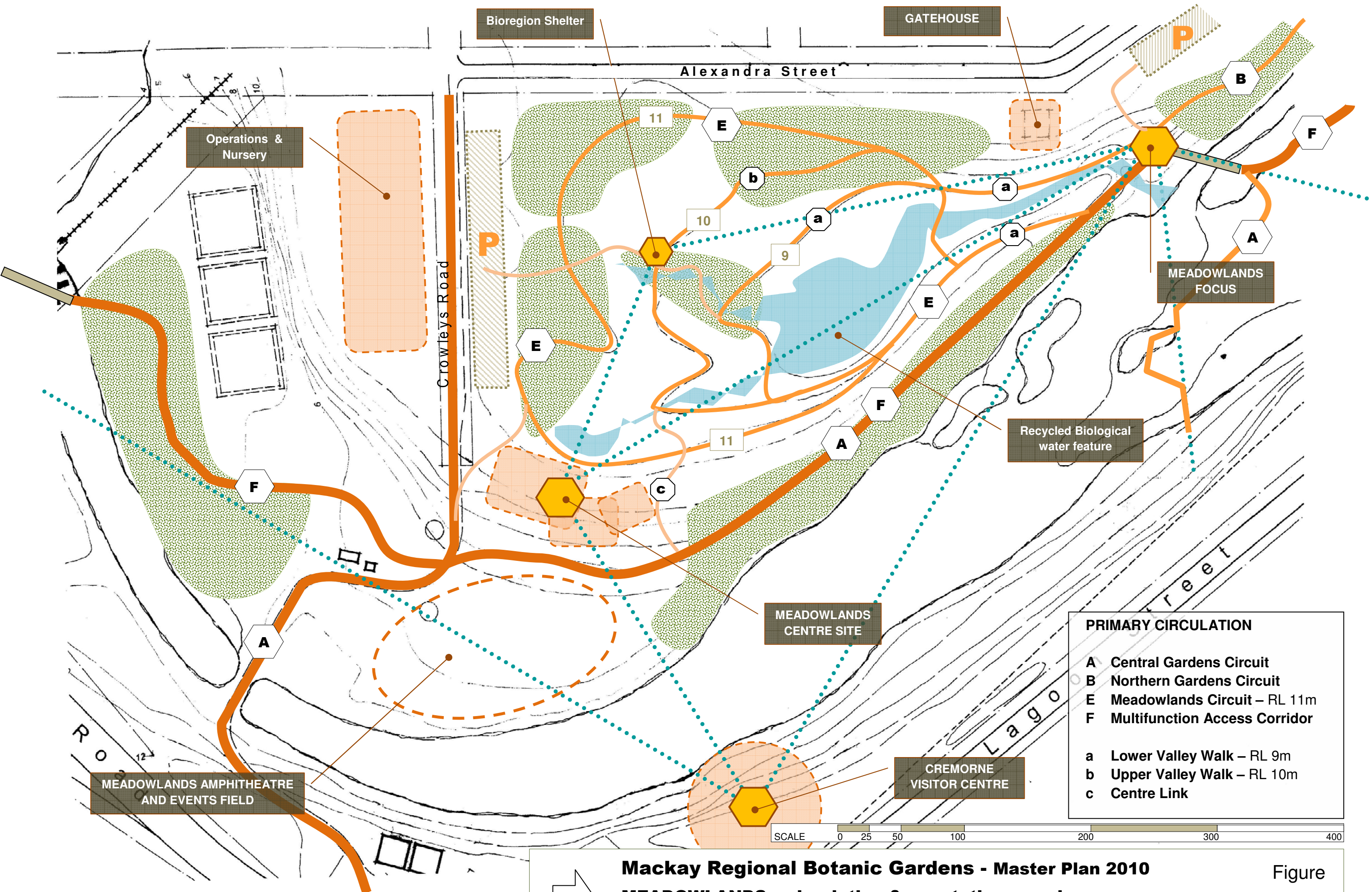
MEADOWLANDS – concept planning

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Figure

4.06

Page 1



PRIMARY CIRCULATION

A	Central Gardens Circuit
B	Northern Gardens Circuit
E	Meadowlands Circuit – RL 11m
F	Multifunction Access Corridor
a	Lower Valley Walk – RL 9m
b	Upper Valley Walk – RL 10m
c	Centre Link

SCALE 0 25 50 100 200 300 400

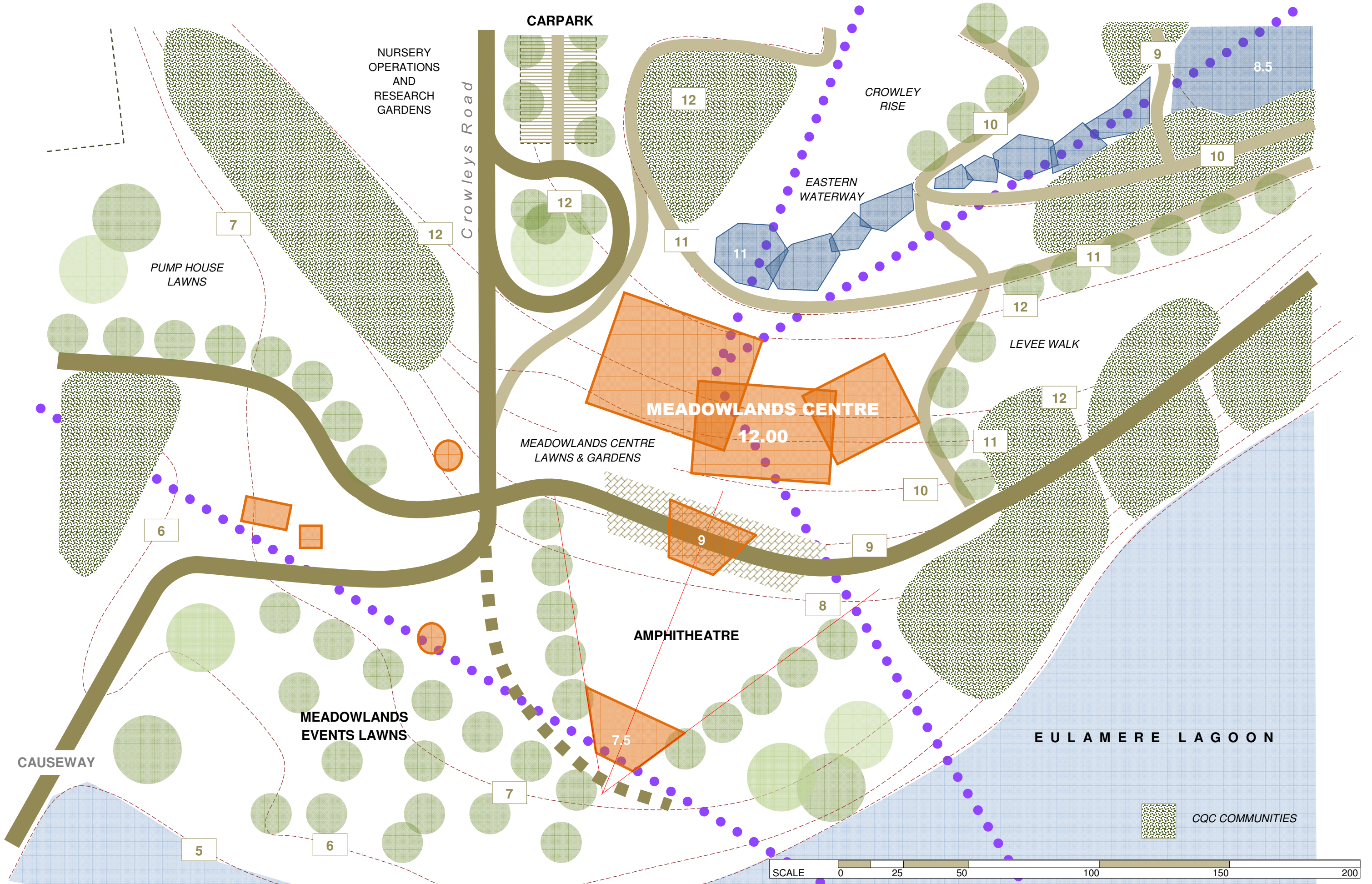
Mackay Regional Botanic Gardens - Master Plan 2010

MEADOWLANDS – circulation & vegetation massing

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Figure

4.07



Mackay Regional Botanic Gardens - Master Plan 2010
MEADOWLANDS CENTRE – Indicative Structures & Landscape

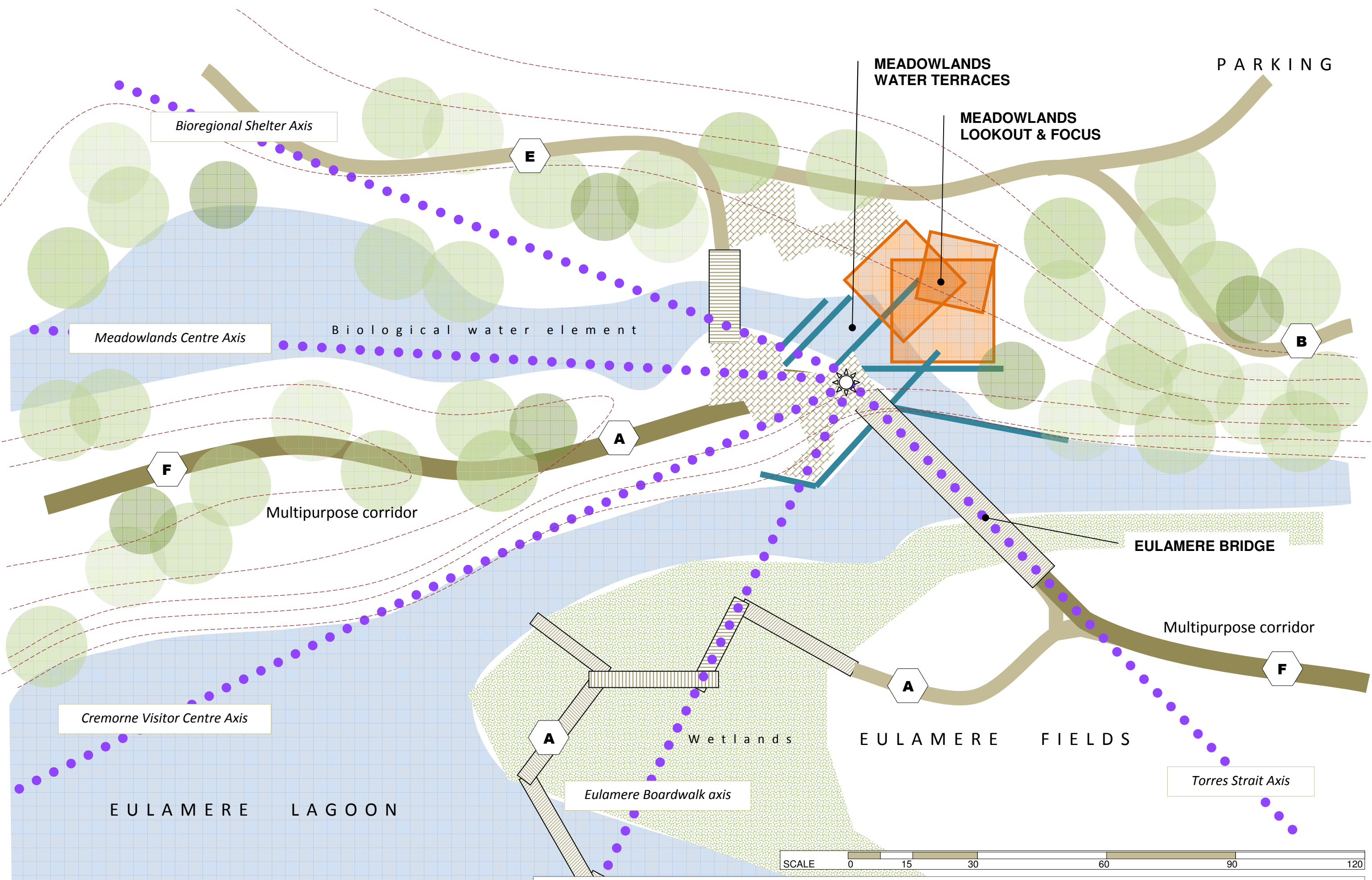
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Figure
4.08




Mackay Regional Botanic Gardens - Master Plan 2010
MEADOWLANDS – Outdoor Performance Centre & Events Field
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Figure
4.09



Mackay Regional Botanic Gardens - Master Plan 2010

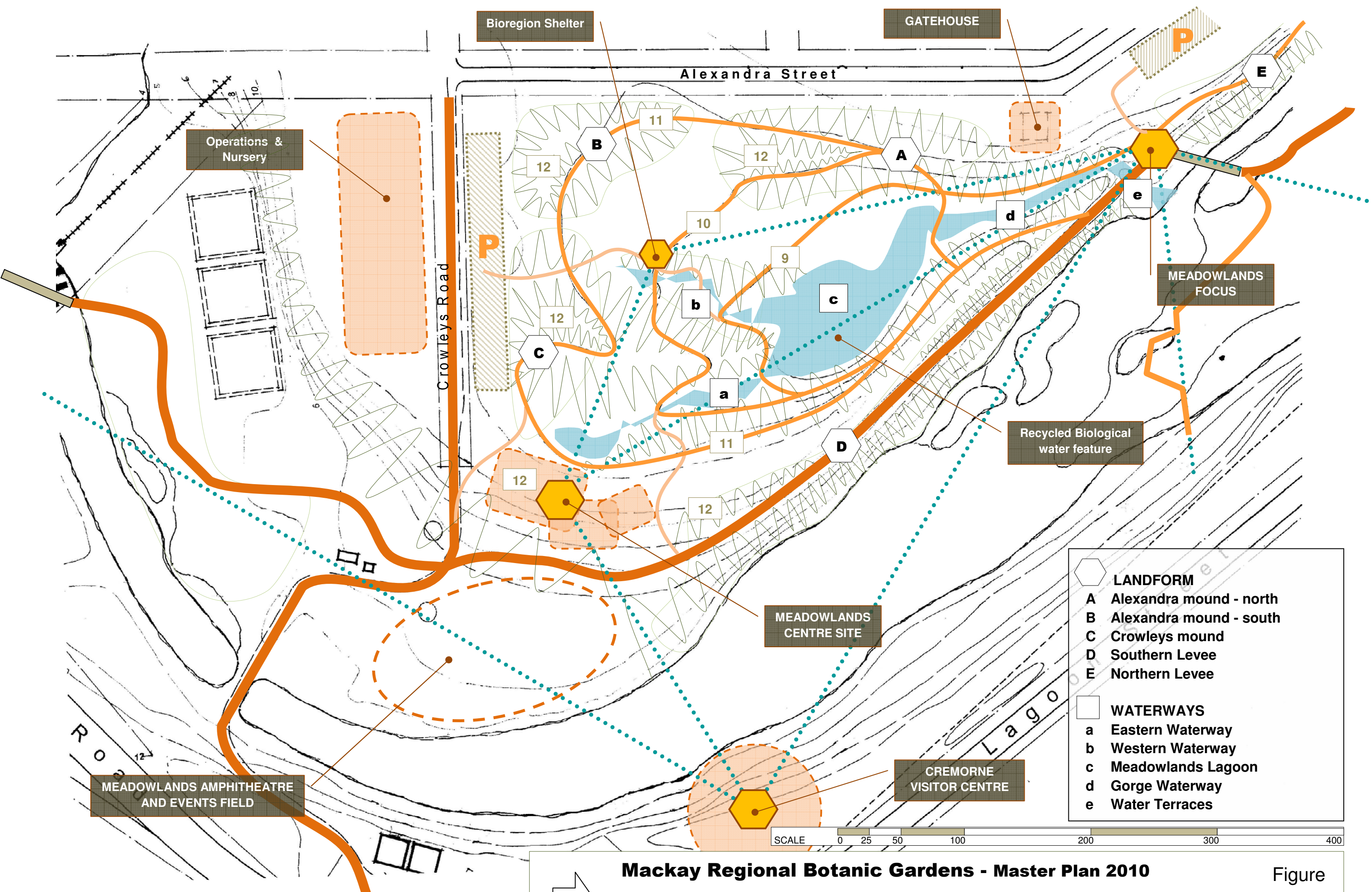
MEADOWLANDS FOCUS – Water Terraces and Lookout

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Figure

4.10

Page 1



Bioregion Shelter

GATEHOUSE

Operations & Nursery

Crowleys Road

Alexandra Street

MEADOWLANDS FOCUS

Recycled Biological water feature

MEADOWLANDS CENTRE SITE

CREMORNE VISITOR CENTRE

MEADOWLANDS AMPHITHEATRE AND EVENTS FIELD

- LANDFORM**
 A Alexandra mound - north
 B Alexandra mound - south
 C Crowleys mound
 D Southern Levee
 E Northern Levee
- WATERWAYS**
 a Eastern Waterway
 b Western Waterway
 c Meadowlands Lagoon
 d Gorge Waterway
 e Water Terraces

SCALE 0 25 50 100 200 300 400

Mackay Regional Botanic Gardens - Master Plan 2010

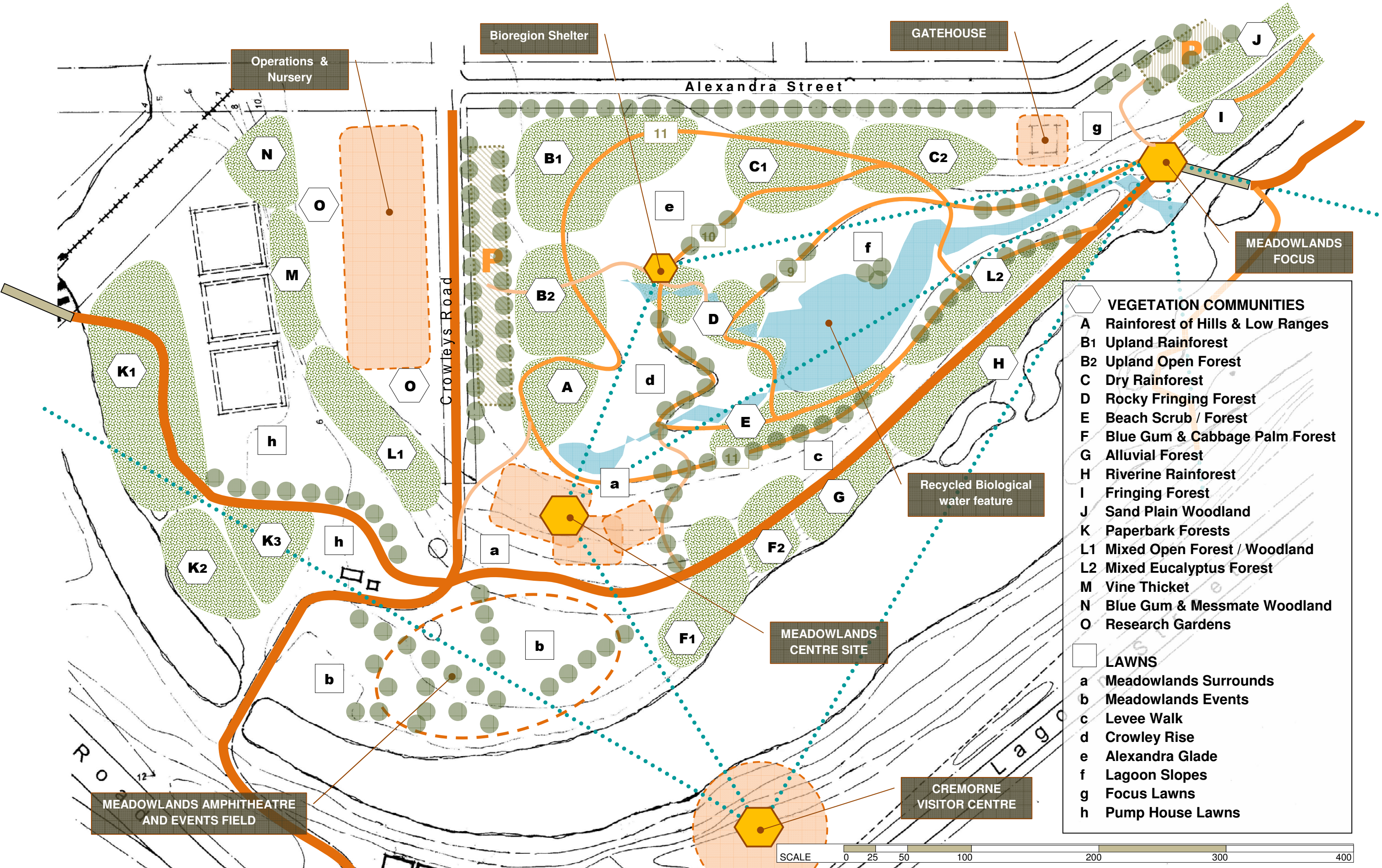
MEADOWLANDS – landform and waterways

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Figure

5.01

Page 1



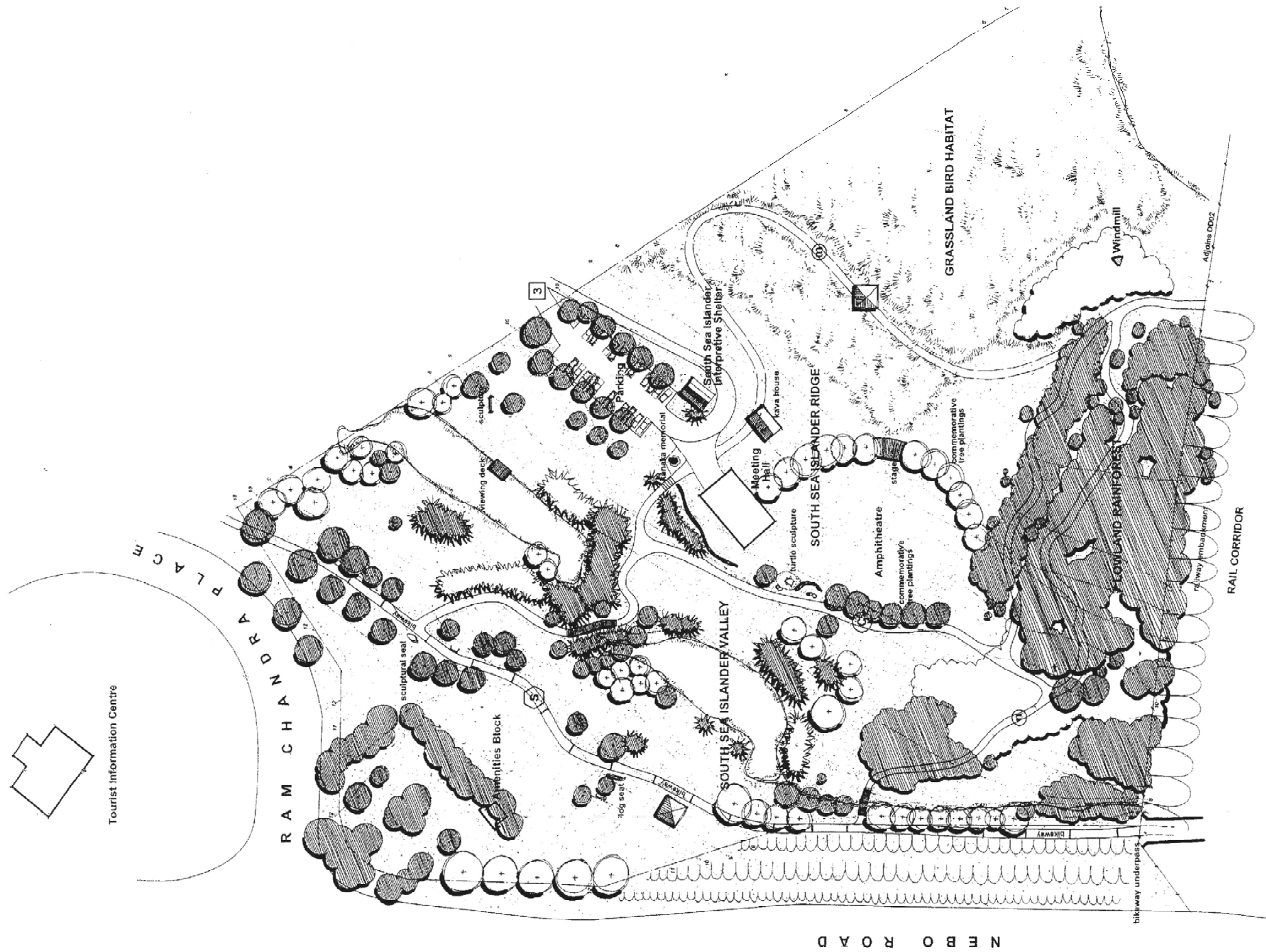
Mackay Regional Botanic Gardens - Master Plan 2010

MEADOWLANDS - plant communities and lawns

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Figure

5.02



Drawing
DD
01

Mackay Regional Botanic Garden
DESIGN DEVELOPMENT
SOUTH SEA ISLANDER PRECINCT
LANDPLAN landscape architects July 2001 091101.DWG

NORTH

scale 1:500 @ A1
0 5 10 20 30 40 50 m



Mackay Regional Botanic Gardens - Master Plan 2010
Design Development of Master Plan 2000 (July 2001)

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Figure

DD.01

**MACKAY REGIONAL BOTANIC GARDENS - Master Plan 2010
ESTIMATED DEVELOPMENT COSTS**

ITEM			QTY	UNIT	RATE	VALUE	FEE RELATED	SUB.TOTAL	PHASE one	PHASE two	PHASE three	PHASE four	PHASE five	PHASE six	PHASE seven	PHASE eight	PHASE nine	PHASE ten	PHASE eleven	FUTURE	TOTAL	
									09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20			
MEADOWLANDS																						
SITWORKS								1,346,000														1,346,000
1.01	Formation of waterway to Meadowlands		1	allow	500,000	500,000								250,000					250,000		500,000	
1.02	Landform bulk earthworks (40,000 sqm)		20,000	cum	25	500,000	500,000			150,000	350,000										500,000	
1.03	Boulderwork and specialised landform construction		5,000	sqm	30	150,000	150,000			50,000	50,000	50,000									150,000	
1.04	Earthworks and landform demonstration gardens zones		1	allow	50,000	50,000	50,000						30,000	20,000							50,000	
1.05	Tree removal		1	allow	25,000	25,000					25,000										25,000	
1.06	Strip and stockpile topsoil - respread		12,000	sq m	3	36,000				15,000	12,000	9,000									36,000	
1.07	Supply and placement of specialised soils		5,000	cum	9	45,000	45,000				10,000	10,000	15,000	10,000							45,000	
1.08	Mulch - supply & spread		5,000	cum	8	40,000					5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000			40,000	
SERVICES								1,000,000														1,080,000
2.01	Water supply - recycled discharge (ex Mackay Water)		1	item	175,000	175,000						50,000		60,000				65,000		80,000	255,000	
2.02	Water recirculation system		1	item	185,000	185,000	185,000			75,000	50,000		60,000								185,000	
2.03	Water for buildings & drinking fountains		1	item	10,000	10,000	10,000						10,000								10,000	
2.04	Sewerage connection		1	item	50,000	50,000						20,000	30,000								50,000	
2.05	Subsurface and SW drainage		1	allow	50,000	50,000	50,000				5,000	10,000	20,000	10,000	5,000						50,000	
2.06	Power and lighting (ex Crowleys Road)		1	allow	80,000	80,000				80,000											80,000	
2.07	Irrigation (shrubs/g covers + selected turf = qcv's)		1	allow	450,000	450,000	450,000								300,000	150,000					450,000	
CIRCULATION								2,971,000														3,021,000
<i>Pedestrian Circulation</i>																						
3.01	Primary paths - hard paved (2.4m - 3m)		7,000	sqm	50	350,000	320,000									160,000		160,000			320,000	
3.02	Secondary paths (2 - 2.5m)		1,500	sqm	40	60,000	40,000								10,000	10,000	10,000	10,000			40,000	
3.03	Tertiary paths		500	sqm	30	15,000	15,000											10,000		5,000	15,000	
3.04	Amphitheatre paving		400	sqm	40	16,000	16,000						16,000								16,000	
3.05	Specialty paving - Meadowlands Centre		300	sqm	80	24,000	24,000							12,000	12,000						24,000	
3.06	Specialty paving - Meadowlands Focus		100	sqm	80	8,000	8,000						8,000								8,000	
3.07	Specialty paving - Bioregional shelter		50	sqm	80	4,000	4,000					4,000									4,000	
3.08	Waterway boardwalks & bridges		50	sqm	500	25,000	25,000								25,000						25,000	
3.09	10,000 steps project		1	item	5,000	5,000			5,000												5,000	
<i>Vehicle Circulation</i>																						
3.10	Meadowlands Corridor - Eulamere to Crowleys (700m)		3,000	sqm	100	300,000	300,000				200,000	100,000									300,000	
3.11	Meadowlands Corridor - Terraces (100m)		400	sqm	150	60,000	60,000					60,000									60,000	
3.12	Meadowlands Corridor - Eulamere Bridge (70m)		300	sqm	1,000	300,000	300,000				150,000	150,000									300,000	
3.13	Meadowlands Corridor - Crowleys to Kaliguil (400m)		1,600	sqm	100	160,000	160,000						80,000	80,000							160,000	
3.14	Meadowlands Corridor - Kaliguil Bridge (70m)		300	sqm	1,000	300,000	300,000							150,000	150,000						300,000	
3.15	Meadowlands Corridor - Kaliguil to Ram Chandra (300m)		1,200	sqm	100	120,000	120,000								60,000	60,000					120,000	
3.16	Crowleys Road upgrade - Alexandra to gate (300m)		1,800	sqm	80	144,000							70,000	74,000							144,000	
3.17	Crowleys Road upgrade - gate to Causeway (200m)		1,200	sqm	80	96,000										96,000					96,000	
3.18	Crowleys Road Carpark		4,000	sqm	75	300,000	300,000			150,000	150,000										300,000	
3.19	Alexandra Street upgrade - north (400m)		2,400	sq m	80	192,000										100,000		92,000			192,000	
3.20	Alexandra Street upgrade - south (400m)		2,400	sq m	80	192,000										100,000		92,000			192,000	
3.21	Alexandra Street Carpark		4,000	sq m	75	300,000	300,000					150,000				150,000	100,000				400,000	
CONSTRUCTION								3,115,000														3,115,000
<i>General Building Structures</i>																						
4.01	Operational Depot upgrade		1	item	710,000	710,000			10,000			150,000			250,000					300,000	710,000	
<i>Meadowlands Focus</i>																						
4.02	Meadowlands Water Terraces - focus feature		1	item	150,000	150,000	150,000				150,000										150,000	
4.03	Meadowlands Pedestrian Terraces		1	item	80,000	80,000	80,000					40,000		40,000							80,000	
4.04	Meadowlands Tower		1	item	250,000	250,000	250,000							150,000	100,000						250,000	
4.05	Bioregional Shelter		1	item	100,000	100,000	100,000						100,000								100,000	
<i>Meadowlands Centre</i>																						
4.06	Administration, herbarium,			item	500,000	0	0														0	
4.07	Conservatory & Shadehouse			item	1,000,000	0	0														0	
4.08	Conference Centre, Meeting Rooms & Stage			item	700,000	0	0														0	
4.09	Community Group meeting facilities			item	200,000	0	0														0	

MACKAY REGIONAL BOTANIC GARDENS - Master Plan 2010

ESTIMATED DEVELOPMENT COSTS

ITEM		QTY	UNIT	RATE	VALUE	FEE RELATED	SUB.TOTAL	PHASE	PHASE	PHASE	PHASE	PHASE	PHASE	PHASE	PHASE	PHASE	PHASE	PHASE	FUTURE	TOTAL	
								one	two	three	four	five	six	seven	eight	nine	ten	eleven			
								09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20			
MEADOWLANDS																					
4.10	Restaurant		item	500,000	0	0														0	
4.11	Restaurant decks & terraces		item	100,000	0	0														0	
4.12	TAFE School of Horticulture	1	item	0	0	0														0	
4.13	Gatehouse rehabilitation	1	item	100,000	100,000						100,000									100,000	
4.14	Amphitheatre & Stage - earthworks	1	item	200,000	200,000	200,000			200,000											200,000	
4.15	Meadowlands Amphitheatre & Stage - initial works	1	item	475,000	475,000	475,000			275,000	200,000										475,000	
4.16	Meadowlands Amphitheatre & Stage - permanent		item	4,000,000	0															0	
4.17	Meadowlands Events Lawns	1	item	20,000	20,000	20,000			20,000											20,000	
4.18	"Platysorium" - entrepreneurial attraction	1	item		0	0														0	
4.19	Meadowlands Housing	1	item		0	0														0	
Water Supply elements																					
4.19	Settling ponds - rehabilitation	1	item	25,000	25,000	25,000			25,000											25,000	
4.20	Pump House surrounds	1	item	10,000	10,000	10,000			10,000											10,000	
4.21	Wells & bores - aesthetic rehabilitation	1	item	15,000	15,000	15,000			15,000											15,000	
Other elements																					
4.21	Sun & rain shelters	5	item	30,000	150,000	150,000							50,000	50,000	50,000					150,000	
4.22	Outdoor education interpretation shelter	1	item	50,000	50,000	50,000								50,000						50,000	
4.23	Botanic Gardens sign Alexandra / Landsdowne	1	item	30,000	30,000	30,000					30,000									30,000	
4.24	Signage - directional and interpretative	1	item	100,000	100,000	100,000								20,000	20,000	20,000	20,000	20,000	20,000	100,000	
4.25	Furniture (seats, picnic platforms, bbq's)	1	item	50,000	50,000	50,000							10,000	10,000	10,000	10,000	10,000			50,000	
4.26	Fencing - Alexandra (900m), Landsdowne (100m)	1,000	lin m	300	300,000			150,000	150,000											300,000	
4.27	Fencing - security for stage 3	1	item	300,000	300,000			150,000		150,000										300,000	
							1,000,000													1,000,000	
VEGETATION																					
5.01	Biological wetlands	3,000	sqm	20	60,000	60,000			30,000	30,000										60,000	
5.02	Turfing	5,000	sqm	15	75,000					25,000	25,000	25,000								75,000	
5.03	Grass seeding	50,000	sqm	5	250,000				30,000	50,000	60,000	50,000	40,000	20,000						250,000	
5.04	Demonstration Gardens	1	item	20,000	20,000	20,000				20,000										20,000	
5.05	Massed planting - shrubs / groundcovers	15,000	sqm	25	375,000				10,000	20,000	30,000	50,000	80,000	100,000	60,000	25,000				375,000	
5.06	Massed planting - trees	3,000	sqm	20	60,000					5,000	5,000	15,000	10,000	10,000	10,000	5,000				60,000	
5.07	Massed planting - Riparian Forest (400m)	7,000	sqm	20	140,000				40,000	50,000	50,000									140,000	
5.08	Specimen tree planting	100	no	200	20,000	20,000							5,000	5,000	5,000	5,000				20,000	
SUBTOTAL																					
						5,537,000	9,432,000	15,000	1,315,000	1,667,000	1,008,000	1,144,000	1,151,000	1,213,000	700,000	537,000	412,000	320,000	80,000	9,562,000	
OTHER ASSOCIATED COSTS																					
							1,052,030	0.2	13.8	17.4	10.5	12.0	12.0	12.7	7.3	5.6	4.3	3.3		1,043,228	
Project Management and Operations		<i>percentage of overall costs</i>		7%	387,590			608	53,303	67,571	40,859	46,371	46,655	49,168	28,374	21,767	16,700	12,971		384,347	
General contingency		<i>percentage of overall costs</i>		3%	166,110			261	22,844	28,959	17,511	19,873	19,995	21,072	12,160	9,329	7,157	5,559		164,720	
Consultancy fees		<i>percentage of overall costs</i>		9%	498,330			782	68,532	86,877	52,533	59,620	59,985	63,216	36,481	27,986	21,472	16,677		494,161	
TOTAL							10,484,030	16,650	1,459,679	1,850,407	1,118,902	1,269,865	1,277,635	1,346,457	777,015	596,082	457,329	355,207	80,000	10,605,228	
Notes:																					
1. Costs have been estimated at 2010 values without adjustment for CPI to later phases																					
2. Costs have been estimated exclusive of GST																					
3. Costs associated with the Meadowlands Centre may be fully or partially committed by the private sector in return for leasehold operational rights																					
4. Costs associated with some community group facilities may be fully or partially committed by the community groups through government grants or fundraising																					
5. Voluntary and educational institutional input through work experience schemes could lead to considerable savings in plant supply, propagation, and planting cost																					
6. The costings are allocated to an indicative phased 10 year programme. The actual programme will be dependant upon available funding and may extend over a considerably greater time span.																					
7. Consultancy fees shall include costs of architecture, landscape architecture, and engineering design and supervision services of both consultants and Council designers																					

MACKAY REGIONAL BOTANIC GARDENS - Master Plan 2010
ESTIMATED DEVELOPMENT COSTS

ITEM				QTY	UNIT	RATE	VALUE	FEE RELATED	SUB.TOTAL	PHASE one 09/10	PHASE two 10/11	PHASE three 11/12	PHASE four 12/13	PHASE five 13/14	PHASE six 14/15	PHASE seven 15/16	PHASE eight 16/17	PHASE nine 17/18	PHASE ten 18/19	PHASE eleven 19/20	FUTURE	TOTAL	
CONSOLIDATION - STAGES ONE & TWO																							
CIRCULATION									1,043,750														
<i>Pedestrian / vehicle circulation - Eastern Precincts</i>																							
1.01		Regional Forest Garden - pathway repairs	1	item		50,000	50,000			10,000				10,000		10,000		10,000		10,000		50,000	
1.02		Kaliguil - pathway upgrade & repairs	1	item		85,000	85,000							50,000		20,000				15,000		10,000	85,000
1.03	1	Regional Rainforests (Aboriginal) - bridge	42	sqm		1,000	42,000	42,000				42,000											42,000
1.03	2	Regional Rainforests (Aboriginal) - loop road	160	sqm		50	8,000	8,000				8,000											8,000
1.04	1	Ethnobotany - landform & loop road	1	item		50,000	50,000	50,000			50,000												50,000
1.04	2	Ethnobotany - snake path	1	item		20,000	20,000				20,000												20,000
1.05	1	World Regional Flora - loop road	700	sqm		80	56,000	56,000					40,000		16,000								56,000
1.05	2	World Regional Flora - retain walls (30m)	50	sqm		800	40,000	40,000					40,000										40,000
1.05	3	World Regional Flora Garden - other paths / steps	80	sqm		150	12,000	12,000							12,000								12,000
1.05	4	World Regional Flora Garden - decking	150	sqm		300	45,000	45,000					40,000						5,000				45,000
1.06		Coastal Headlands - access & pathways by MRBG	1	item		10,000	10,000	10,000		10,000													10,000
1.07		Bamboo Collection - lagoon deck & shelter	1	item		90,000	90,000	90,000				40,000					50,000						90,000
1.08	1	Cremorne Visitor Centre - lower path widening	60	sqm		100	6,000	6,000				6,000											6,000
1.08	2	Cremorne Visitor Centre - retaining wall (25m)	50	sqm		500	25,000	25,000				25,000											25,000
1.09		Timber Trees / Geology Garden - loop path	1	item		26,000	26,000	26,000				18,000			8,000								26,000
1.10		Torres Strait Islands Garden - pathways	1	item		25,000	25,000	25,000			20,000						5,000				5,000		30,000
1.11		Tamarind Carpark	1,500	sqm		80	120,000	120,000		120,000													120,000
1.12	1	Landsdowne to Eulamere Boardwalk - access road (500m)	2,000	sqm		75	150,000	150,000							50,000		100,000						150,000
1.12	2	Eulamere to Monsoon - access road (150m)	600	sqm		120	72,000	72,000			72,000												72,000
1.12	3	Eulamere Boardwalk - expansion, oiling	1	item		97,000	97,000	97,000					35,000				32,000				30,000		97,000
1.13	1	Eulamere Lagoon access - adjacent boardwalk	100	sqm		60	6,000				6,000												6,000
1.13	2	Eulamere Lagoon access - below screens & hedges	75	sqm		50	3,750				3,750												3,750
1.13	3	Kaliguil Lagoon access - rail embankment	100	sqm		50	5,000				5,000												5,000
CONSTRUCTION									3,874,800														
<i>Cremorne Visitor Centre -</i>																							
2.01	1	Administration Building - fire system install	1	item		52,000	52,000			52,000													52,000
2.01	2	Administration Building - building maintenance	1	item		140,000	140,000								60,000					80,000			140,000
2.01	3	Herbarium equipment - camera, testing etc	1	item		46,500	46,500				20,000		10,000		5,000		5,500			6,000			111,500
2.01	4	Computer system expansion	1	item		21,500	21,500			10,000		2,000		2,000		2,500		2,500			2,500		21,500
2.01	5	Cafe Equipment upgrades	1	item		30,000	30,000						30,000									50,000	80,000
2.01	6	Decks & Handrails	1	item		60,000	60,000			10,000		10,000				10,000		10,000			10,000		60,000
2.01	7	Visitor Centre soffits	1	item		75,000	75,000				20,000			30,000		25,000						45,000	120,000
2.01	8	Courtyard - drinking fountain, artwork	1	item		13,800	13,800			4,000		1,800		2,000		2,000				2,000		2,000	13,800
2.01	9	Eungella Cloud Garden - rehabilitation	1	item		7,500	7,500			7,500													7,500
2.01	10	Eungella Cloud Garden - irrigation	1	item		13,000	13,000					5,000							8,000				13,000
																							0
2.02	1	Education & Visitor Research Centre (EVRC)	1	item		1,500,000	1,500,000	1,500,000															0
2.02	2	EVRC Sustainability components	1	item		100,000	100,000	100,000															0
2.02	3	EVRC - landscape surrounds	1	item		90,000	90,000	90,000															0
2.02	4	EVRC - Orientation Walkway Canopy	1	item		120,000	120,000	120,000															0
<i>Other structures</i>																							
2.03	1	Fence: Kaliguil - Nebo Road boundary fence (400m)	1	item		80,000	80,000				80,000												80,000
2.03	2	Fence: Cremorne (450m)	1	item		230,000	230,000				50,000		180,000										230,000
2.03	3	Fence: Summerlands (450)	1	item		60,000	60,000									50,000				10,000			60,000
2.03	4	Fence: Rawson's Hollow (200m)	1	item		100,000	100,000						50,000		50,000								100,000
2.04		Regional Forest Garden - signage & seating	1	item		12,500	12,500						2,500		5,000	2,500				2,500			12,500
2.05		Kaliguil Shelter - signage	1	item		5,000	5,000			5,000													5,000
2.06		Ethno Botany Gardens - vine structures, interp signs	1	item		35,000	35,000	35,000		1,000			10,000		2,000		10,000			2,000		10,000	35,000
2.07		Intake Tower - deck, bridge & lookout	1	item		70,000	70,000	70,000								70,000							70,000
2.08	1	Malta Garden - Vine Vault	1	item		75,000	75,000				60,000				15,000								75,000
2.08	2	Malta Garden - power outlet	1	item		15,000	15,000			15,000													15,000

**MACKAY REGIONAL BOTANIC GARDENS - Master Plan 2010
ESTIMATED DEVELOPMENT COSTS**

ITEM		QTY	UNIT	RATE	VALUE	FEE RELATED	SUB.TOTAL	PHASE one 09/10	PHASE two 10/11	PHASE three 11/12	PHASE four 12/13	PHASE five 13/14	PHASE six 14/15	PHASE seven 15/16	PHASE eight 16/17	PHASE nine 17/18	PHASE ten 18/19	PHASE eleven 19/20	FUTURE	TOTAL	
CONSOLIDATION - STAGES ONE & TWO																					
2.09	Eulamere Shelter - painting & slats	1	item	18,000	18,000					5,000				8,000					5,000	18,000	
2.10	Tamarind Toilet	1	item	200,000	200,000															0	
2.11	1 Torres Strait Islander Garden - shelter & gateway	1	item	80,000	80,000	80,000		80,000												80,000	
2.11	2 Torres Strait Islander Garden - signage	1	item	19,000	19,000	19,000		10,000				5,000							4,000	19,000	
Garden Construction																					
2.12	Regional Flora terraces - lawn slope modification	1	item	20,000	20,000	20,000				20,000										20,000	
2.13	Ethno Botany Gardens - construction	1	item	65,000	65,000	65,000			50,000				10,000				5,000			10,000	
2.14	World Regional Flora gardens	1	item	50,000	50,000	50,000			50,000											50,000	
2.15	Clark Connors Range	1	item	20,000	20,000	20,000							20,000							20,000	
2.16	1 Gymnosperm Gardens - drainage pit & outlet	1	item	6,000	6,000				3,000					3,000						6,000	
2.16	2 Gymnosperm Gardens - deck repairs & painting	1	item	50,000	50,000			10,000				20,000							20,000	50,000	
2.17	Palm Walk - pole painting	1	item	20,000	20,000								20,000							20,000	
2.18	1 Orientation Garden - entry sign	1	item	15,000	15,000	15,000		15,000												15,000	
2.18	2 Orientation Garden - pole painting	1	item	37,000	37,000				17,000						20,000					37,000	
2.19	Australian Showcase gardens	1	item	60,000	60,000				60,000											60,000	
2.20	Malta Garden - review cacti & succulents	1	item	10,000	10,000				10,000											10,000	
2.21	Native Cultivar Garden - replace Malvaceae	1	item	5,000	5,000				5,000											5,000	
2.22	Flora for Fauna - waterwise garden review	1	item	10,000	10,000				10,000											10,000	
2.23	1 Regional Flowering Trees - replace exotic	1	item	10,000	10,000				5,000	5,000										10,000	
2.23	2 Regional Flowering Trees - replace timber trees	1	item	10,000	10,000				5,000	5,000										10,000	
2.23	3 Regional Flowering Trees - replace fruit tree orchard	1	item	20,000	20,000				5,000	7,000	8,000									20,000	
2.24	Torres Strait Islander Garden - gardens	1	item	20,000	20,000					20,000										20,000	
2.25	Under the Banyan - play garden expansion	1	item	150,000	150,000	150,000					150,000									150,000	
2.27	Landsdowne Entry statement	1	item	28,000	28,000	28,000				8,000		20,000								28,000	
SERVICES							27,000													27,000	
3.01	Summerlands services	1	item	27,000	27,000	10,000			12,000	15,000										27,000	
VEGETATION							110,000													110,000	
4.01	Turfing	2,000	sqm	15	30,000			5,000	5,000	10,000	10,000									30,000	
4.02	Massed planting - shrubs / groundcovers	1,000	sqm	50	50,000			8,000	7,000	15,000	20,000									50,000	
4.03	Massed planting - trees	1,000	sqm	20	20,000			2,000	3,000	7,000	8,000									20,000	
4.04	Specimen tree planting	20	no	500	10,000			2,000	2,000	3,000	3,000									10,000	
RECURRENT INVESTMENTS							593,000													648,000	
5.01	Botanic Collections - stages 1, 2 & 3	1	item	550,000	550,000			50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	600,000	
5.02	Plant & Equipment	1	item	3,000	3,000			3,000												3,000	
5.03	Interpretation & Directional Signage	1	item	40,000	40,000	40,000			5,000	5,000	5,000		5,000	5,000	5,000		5,000	5,000	5,000	45,000	
SUBTOTAL							3,286,000	5,648,550	209,500	910,750	547,800	351,500	396,000	349,000	190,000	272,500	96,000	191,000	124,500	230,000	3,868,550
OTHER ASSOCIATED COSTS							624,340														587,221
Project Management and Operations				<i>percentage of overall costs</i>	7%	230,020		12,457	54,152	32,572	20,900	23,546	20,751	11,297	16,203	5,708	11,357	7,403		216,344	
General contingency				<i>percentage of overall costs</i>	3%	98,580		5,339	23,208	13,959	8,957	10,091	8,893	4,842	6,944	2,446	4,867	3,173		92,719	
Consultancy fees				<i>percentage of overall costs</i>	9%	295,740		16,016	69,624	41,878	26,871	30,273	26,680	14,525	20,832	7,339	14,601	9,518		278,157	
TOTAL							6,272,890	243,311	1,057,735	636,209	408,228	459,910	405,325	220,664	316,478	111,493	221,825	144,593	230,000		4,455,771
Notes:																					
1. Costs have been estimated at 2010 values without adjustment for CPI to later phases																					
2. Costs have been estimated exclusive of GST																					
5. Voluntary and educational institutional input through work experience schemes could lead to considerable savings in plant supply, propagation, and planting cost																					
6. The costings are allocated to an indicative phased 10 year programme. The actual programme will be dependant upon available funding and may extend over a considerably greater time span.																					
7. Consultancy fees shall include costs of architecture, landscape architecture, and engineering design and supervision services of both consultants and Council designer																					

CQC Bioregion - Schedule of Regional Ecosystems (RE)

RE	Structure	short description	biodiversity status	description	subregion	protected areas
<p><i>Compiled by Grant Paterson Senior Environmental Scientist, Aurecon Australia Pty. Ltd. from Queensland Herbarium (2009) Regional Ecosystem Description Database (REDD). Version 6.0b Updated November 2009, (November 2009) (Department of Environment and Resource Management: Brisbane).</i></p>						
8.1.1	CF	Mangrove closed-forest to open-shrubland of marine clay plains and estuaries	No concern at present	Closed-forest to open-shrubland of mangrove species forming a variety of associations, depending on their position in relation to tidal channels and the amount of freshwater input they receive. The seaward edge and fringe of waterways is often dominated by <i>Rhizophora</i> spp. Landward of the <i>Rhizophora</i> spp. zone a variety of species occur together or in a mosaic and include <i>Avicennia marina</i> , <i>Bruguiera</i> spp., <i>Rhizophora</i> spp., <i>Excoecaria agallocha</i> , <i>Xylocarpus moluccensis</i> , <i>Lumnitzera racemosa</i> , <i>Ceriops</i> spp. and <i>Osbornia octodonta</i> (pure stands of <i>Avicennia marina</i> often occur within this). Higher tide and spring tide areas adjacent to salt pans often support pure stands of <i>Ceriops</i> spp. The mistletoe <i>Lysiana maritima</i> is common throughout the mangrove associations, and occasional epiphytes include <i>Dendrobium discolor</i> , <i>Drynaria rigidula</i> , and <i>Platynerium bifurcatum</i> . The ground layer includes <i>Sporobolus virginicus</i> , <i>Acrostichum speciosum</i> , and <i>Crinum pedunculatum</i> . Occurs on intertidal flats which are often dissected by tidal streams. Includes communities on the seaward edge of the tidal flats as a pioneer, and on the landward edge in areas bordering salt pans and that are inundated by the highest spring tides.	2, 5, 1, 6	Cape Palmerston NP, Conway NP, Sandringham Bay CP, Whitsunday Islands NP, Bakers Creek CP, Dryander NP, West Hill NP, Byfield NP, Newry Islands NP, Reliance Creek NP, Cape Hillsborough NP, South Cumberland Islands NP, [Mount Hector CP], [Molle Islands NP]
8.1.2	OFB	Samphire open forland to isolated clumps of forbs on salt pans and plains adjacent to mangroves	Of concern	Salt pans and mudflats with clumps of saltbush including one or several of the following species; <i>Sesuvium portulacastrum</i> , <i>Halosarcia indica</i> subsp. <i>julacea</i> , <i>H. indica</i> subsp. <i>leiostachya</i> , <i>H. halconemoides</i> subsp. <i>tenuis</i> , <i>H. pergranulata</i> subsp. <i>queenslandica</i> , <i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i> , <i>Suaeda australis</i> , <i>S. arbusculoides</i> , <i>Tecticornia australasica</i> and <i>Sporobolus virginicus</i> and sedges including <i>Cyperus polystachyos</i> var. <i>polystachyos</i> , <i>C. scariosus</i> , <i>Fimbristylis ferruginea</i> , <i>F. polytrichoides</i> . Occurs on plains adjacent to mangroves with soils consisting of marine sediments. There is salt accumulation at the soil surface from evaporation of sea water which inundates these areas during the higher tides.	2, 6, 5,	Cape Palmerston NP, West Hill NP, Byfield NP, Whitsunday Islands NP, Conway NP, Sandringham Bay CP, Dryander NP, Bakers Creek CP, Keppel Bay Islands NP, Newry Islands NP, [Reliance Creek NP], [Cape Hillsborough NP], [Percy Isles NP], [Skull Knob CP]
8.1.3	TG	<i>Sporobolus virginicus</i> grassland on marine sediments	Of concern	<i>Sporobolus virginicus</i> grassland. Other species usually present are <i>Fimbristylis ferruginea</i> , <i>Cyperus victoriensis</i> , <i>C. scariosus</i> , and sometimes <i>Eleocharis spiralis</i> and <i>Leptochloa fusca</i> . Occurs on supratidal flats adjacent to mangroves and salt pans (slightly more elevated than mangroves and salt pans). Often only inundated by highest spring tides and often dissected by small tidal channels. Formed from Quaternary estuarine sediments with deep grey or black and grey saline cracking clays with occasional mottling, minor gilgai occasionally present.	2, 5, 6	Byfield NP, Sandringham Bay CP, Cape Palmerston NP, West Hill NP, Whitsunday Islands NP, Cape Hillsborough NP, [Bakers Creek CP], [Percy Isles NP]
8.1.4	V	<i>Paspalum</i> spp. and <i>Fimbristylis ferruginea</i> sedgeland/grassland (estuarine wetland). Includes areas of deep open water with clumps of <i>Schoenoplectus litoralis</i> +/- <i>Eleocharis dulcis</i>	Endangered	Estuarine wetland dominated by <i>Schoenoplectus litoralis</i> or <i>Eleocharis dulcis</i> in deeper areas, and by <i>Paspalum vaginatum</i> in shallower areas. Other typical species in shallower margins include <i>Fimbristylis ferruginea</i> , <i>Phyla nodiflora</i> , * <i>Cynodon dactylon</i> , <i>Sporobolus virginicus</i> and <i>Cyperus polystachyos</i> . Occurs on marine plain, low lying drainage lines and swamps receiving a mixture of saltwater and freshwater depending on tides and seasons. Usually a narrow zone landward of and adjoining tidal ecosystems.	2, 5	Byfield NP, Bakers Creek CP, Percy Isles NP, Sandringham Bay CP, Cape Palmerston NP, Brampton Islands NP, [Broad Sound Islands NP]
8.1.5	W	<i>Melaleuca</i> spp. and/or <i>Eucalyptus tereticornis</i> and/or <i>Corymbia tessellaris</i> woodland to open-forest with a ground stratum of salt tolerant grasses and sedges, usually in a narrow zone adjoining tidal ecosystems	Endangered	<i>Melaleuca</i> spp. and/or <i>Eucalyptus tereticornis</i> and/or <i>Corymbia tessellaris</i> woodland to open-forest. Mangrove trees and shrubs are often present, and there are sometimes scattered shrubs of <i>Myoporum acuminatum</i> . There is usually a dense ground layer of <i>Sporobolus virginicus</i> , with other species including <i>Cynanchum canosum</i> , <i>Fimbristylis ferruginea</i> , <i>Cyperus scariosus</i> , <i>C. polystachyos</i> , <i>Gymnanthera oblonga</i> , <i>Acrostichum speciosum</i> and <i>Centella asiatica</i> . Usually occurs as a narrow zone landward of and adjoining tidal regional ecosystems.	2, 5, 4	Cape Palmerston NP, MacKenzie Island CP, Sandringham Bay CP, Causeway Lake CP, West Hill NP
8.2.1	OF	<i>Casuarina equisetifolia</i> open-forest to woodland with <i>Ipomoea pes-caprae</i> and <i>Spinifex sericeus</i> dominated ground layer, on foredunes	Of concern	<i>Casuarina equisetifolia</i> open-forest, to woodland, to isolated clumps of trees, with a secondary tree layer of <i>Thespesia populnea</i> , <i>Sophora tomentosa</i> , <i>Pandanus tectorius</i> , <i>Hibiscus tiliaceus</i> , <i>Terminalia muelleri</i> , <i>Alphitonia excelsa</i> , and <i>Caesalpinia bonduc</i> , and shrub layer of <i>Vitex trifolia</i> , <i>Clerodendron inerme</i> , <i>Cupaniopsis anacardioides</i> and <i>Argusia argentea</i> . The ground layer usually includes <i>Thuarea involuta</i> , <i>Ipomoea pes-caprae</i> , <i>Spinifex sericeus</i> , <i>Canavalia rosea</i> and <i>Cyperus pedunculatus</i> . Includes the upper beach zone which consists of a low herbland of <i>Ipomoea pes-caprae</i> , <i>Spinifex sericeus</i> , and <i>Canavalia rosea</i> . In subregions 4 and 5 this unit includes small areas of wind-sheared heathland (<i>Casuarina equisetifolia</i> , <i>Pandanus tectorius</i> , <i>Petalostigma pubescens</i> , <i>Phebalium woombye</i> , and shrublands dominated by <i>Acacia aulacocarpa</i>). Occurs on Quaternary coastal foredunes and beaches.	2, 5	Byfield NP, Whitsunday Islands NP, Broad Sound Islands NP, Keppel Bay Islands NP, Cape Palmerston NP, Percy Isles NP, West Hill NP, Dryander NP, [South Cumberland Islands NP], [Cape Hillsborough NP], [Gloucester Island NP], [Newry Islands NP], [Bakers Cre
8.2.2	CF	Microphyll vine forest on coastal dunes	Endangered	Microphyll vine forest (beach scrub). Characteristic species include <i>Mimusops elengi</i> , <i>Ganophyllum falcatum</i> , <i>Diospyros geminata</i> , <i>D. compacta</i> , <i>Pouteria sericea</i> , <i>Pleioygnium timorense</i> , <i>Drypetes deplanchei</i> , <i>Eugenia reinwardtiana</i> , <i>Cupaniopsis anacardioides</i> . Includes small patches of <i>Pisonia grandis</i> shrubland, woodland and open forest on coral rubble on some islands. Occurs on coastal dunes.	5, 2, 6	Byfield NP, Broad Sound Islands NP, Cape Palmerston NP, Percy Isles NP, West Hill NP, Northumberland Islands NP, Gloucester Island NP, Dryander NP, South Cumberland Islands NP, Whitsunday Islands NP, [Holbourne Island NP], [Bloomsbury CP]

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8.2.3	S	Acacia spp., or a mixture of <i>Allocasuarina littoralis</i> , <i>Phyllota phyllicoides</i> and <i>Homoranthus virgatus</i> closed-scrub to open-forest with heathy understorey, on high parabolic dunes	Of concern	<p>Closed-scrub to open-shrubland to open-forest with species including <i>Allocasuarina littoralis</i>, <i>Phyllota phyllicoides</i>, <i>Homoranthus virgatus</i>, <i>Leptospermum</i> spp., <i>Banksia integrifolia</i> subsp. compar., <i>Phebalium woombye</i>, <i>Brachyloma daphnoides</i> and <i>Lithomyrtus obtusa</i>. Eucalypts may appear as emergents including <i>Eucalyptus exserta</i>, <i>Corymbia tessellaris</i> and <i>C. intermedia</i>. Occurs on high parabolic dunes.¶</p> <p>Major vegetation communities include: ¶</p> <p>8.2.3a: <i>Allocasuarina littoralis</i>, <i>Phyllota phyllicoides</i>, <i>Homoranthus virgatus</i>, <i>Leptospermum</i> spp., <i>Banksia integrifolia</i> subsp. compar., <i>Phebalium woombye</i> closed-heath to open-shrubland. Occurs on parabolic and whaleback dunes (subregion 5).¶</p> <p>8.2.3d: Palustrine wetland (e.g. vegetated swamp). <i>Allocasuarina littoralis</i>, <i>Baeckea stenophylla</i>, <i>Sprengelia sprengelioides</i>, <i>Ricinocarpus pinifolius</i>, <i>Leptospermum polygalifolium</i> open to closed heathland to shrubland, with heath & sedge understorey. Low coastal parallel dune ridges and sand plains.</p>	5	Byfield NP
8.2.4	OW	Restionaceae and Cyperaceae tall sedgeland and/or <i>Sprengelia sprengelioides</i> +/- <i>Banksia robur</i> +/- <i>Baeckea frutescens</i> +/- <i>Epacris microphylla</i> open heath to closed heathland, +/- <i>Melaleuca</i> spp., of swampy sand plains and swales	Of concern	<p><i>Lepironia articulata</i> and/or <i>Baumea rubiginosa</i> and/or other Restionaceae and Cyperaceae spp. tall sedgeland or <i>Sprengelia sprengelioides</i> +/- <i>Banksia robur</i> +/- <i>Baeckea frutescens</i> +/- <i>Epacris microphylla</i> open heath to closed heathland. Other common species in tall sedgeland include <i>Schoenus calostachys</i>, <i>Balloskion pallens</i>, <i>Empodisma minus</i>, <i>Gahnia sieberiana</i>, <i>Juncus</i> spp., <i>Lepidosperma longitudinale</i>, <i>Cyperus haspan</i>, <i>Utricularia biloba</i>, <i>Xyris juncea</i>, <i>Drosera spatulata</i>, <i>D. binata</i>, <i>Phylidrum lanuginosum</i>, <i>Lycopodiella serpentina</i>, <i>L. cernua</i>, <i>Cassytha</i> sp., and <i>Ceraptopteris thalictroides</i>. Other common species in the heathland component include <i>Schoenus brevifolius</i>, <i>Sporodanthus interruptus</i>, <i>Hibbertia salicifolia</i>, <i>Leptospermum polygalifolium</i>, <i>Balloskion pallens</i>, <i>Drosera spatulata</i>, <i>Fimbristylis nutans</i>, <i>Gahnia sieberiana</i>, <i>Persoonia virgata</i>, and <i>Pseudanthus orientalis</i>. Some areas with an overstorey of <i>Melaleuca quinquenervia</i> or <i>M viridiflora</i> +/- <i>Banksia integrifolia</i> +/- <i>Eucalyptus latisinensis</i> +/- <i>E. tereticornis</i>. Lagoons and plains with a shallow to deep peat layer, on coastal sand plains, or low parallel dune swales.¶</p> <p>Major vegetation communities include: ¶</p> <p>8.2.4x2: Palustrine wetland (e.g. vegetated swamp). <i>Lepironia articulata</i> and/or <i>Baumea rubiginosa</i> and/or other Restionaceae and Cyperaceae spp. tall sedgeland or <i>Sprengelia sprengelioides</i> +/- <i>Banksia robur</i> +/- <i>Baeckea frutescens</i> +/- <i>Epacris microphylla</i> open heath to closed heathland. Other common species in tall sedgeland include <i>Schoenus calostachys</i>, <i>Balloskion pallens</i>, <i>Empodisma minus</i>, <i>Gahnia sieberiana</i>, <i>Juncus</i> spp., <i>Lepidosperma longitudinale</i>, <i>Cyperus haspan</i>, <i>Utricularia biloba</i>, <i>Xyris juncea</i>, <i>Drosera spatulata</i>, <i>D. binata</i>, <i>Phylidrum lanuginosum</i>, <i>Lycopodiella serpentina</i>, <i>L. cernua</i>, <i>Cassytha</i> sp., and <i>Ceraptopteris thalictroides</i>. Other common species in the heathland component include <i>Schoenus brevifolius</i>, <i>Sporodanthus interruptus</i>, <i>Hibbertia salicifolia</i>, <i>Leptospermum polygalifolium</i>, <i>Balloskion pallens</i>, <i>Drosera spatulata</i>, <i>Fimbristylis nutans</i>, <i>Gahnia sieberiana</i>, <i>Persoonia virgata</i>, and <i>Pseudanthus orientalis</i>. Some areas with an overstorey of <i>Melaleuca quinquenervia</i> or <i>M viridiflora</i> +/- <i>Banksia integrifolia</i> +/- <i>Eucalyptus latisinensis</i> +/- <i>E. tereticornis</i>. Lagoons and plains with a shallow to deep peat layer, on coastal sand plains, or low parallel dune swales.¶</p> <p>8.2.4x2a: Palustrine wetland (e.g. vegetated swamp). <i>Lepironia articulata</i> and/or <i>Baumea rubiginosa</i> and/or other Restionaceae and Cyperaceae spp. tall sedgeland. Other common species include <i>Schoenus calostachys</i>, <i>Balloskion pallens</i>, <i>Empodisma minus</i>, <i>Gahnia sieberiana</i>, <i>Juncus</i> spp., <i>Lepidosperma longitudinale</i>, <i>Cyperus haspan</i>, <i>Utricularia biloba</i>, <i>Xyris juncea</i>, <i>Drosera spatulata</i>, <i>D. binata</i>, <i>Phylidrum lanuginosum</i>, <i>Lycopodiella serpentina</i>, <i>L. cernua</i>, <i>Cassytha</i> sp., and <i>Ceraptopteris thalictroides</i>. Occasional heathy shrub species include <i>Sprengelia sprengelioides</i> and <i>Epacris microphylla</i>. Lagoons with a shallow to deep peat layer, on coastal sand plains, or low parallel dune swales.¶</p> <p>8.2.4x2b: Palustrine wetland (e.g. vegetated swamp). <i>Sprengelia sprengelioides</i> +/- <i>Banksia robur</i> +/- <i>Baeckea frutescens</i> +/- <i>Epacris microphylla</i> open heath to closed heathland, with other species (forming part of the heathy shrub or ground layer) often including <i>Schoenus brevifolius</i>, <i>Sporodanthus interruptus</i>, <i>Hibbertia salicifolia</i>, <i>Leptospermum polygalifolium</i>, <i>Balloskion pallens</i>, <i>Drosera spatulata</i>, <i>Fimbristylis nutans</i>, <i>Gahnia sieberiana</i>, <i>Persoonia virgata</i>, and <i>Pseudanthus orientalis</i>. Plains with a shallow to deep peat layer, on coastal sand plains, or low parallel dune swales.¶</p> <p>8.2.4x2c: Palustrine wetland (e.g. vegetated swamp). <i>Melaleuca quinquenervia</i> or <i>M viridiflora</i> +/- <i>Banksia integrifolia</i> +/- <i>Eucalyptus latisinensis</i> +/- <i>E. tereticornis</i> open woodland to open forest +/- shrubs of <i>Banksia robur</i>, and with sedge/ wet heath understorey. Swampy sand plains (subregion 5)</p>	5	Byfield NP
8.2.5	CF	Notophyll feather palm vine forest dominated by <i>Archontophoenix cunninghamiana</i> on parabolic dunes	Of concern	<p>Notophyll feather palm vine forest dominated by <i>Archontophoenix cunninghamiana</i>. Other species include <i>Cryptocarya vulgaris</i>, <i>Calophyllum australianum</i>, <i>Elaeocarpus eumundi</i>, <i>Mackinalaya macrosciadea</i>, <i>Melicope elleryana</i> and <i>Myristica globosa</i> subsp. muelleri. Occurs on parabolic dunes.</p>	5, 4	Byfield NP

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8.2.6	OF	Corymbia tessellaris +/- Acacia leptocarpa +/- Banksia integrifolia +/- Melaleuca dealbata +/- beach scrub species open-forest on coastal parallel dunes	Of concern	<p>Corymbia tessellaris open-forest (usually the sole canopy species, although Melaleuca dealbata is common in some areas, and Acacia leptocarpa may sometimes reach canopy level). There are a few areas (e.g. Cape Palmerston) with a dense overstorey of Allocasuarina littoralis. The mid-layer is variable depending on the depth of sand, exposure to wind/salt spray, and protection from disturbance such as fire. Some areas have a well developed beach scrub (microphyll rainforest) secondary layer including species such as Jagera pseudorhus, Chionanthus ramiflora, Exocarpos cupressiformis, Pleiogynium timorensis and Alphitonia excelsa, whilst other areas are more open with Acacia leptocarpa and Banksia integrifolia subsp. compar. The ground layer is usually sparse, with common species including Imperata cylindrica, Heteropogon triticeus, Themeda triandra, Lomandra longifolia, and Dianella caerulea. Xanthorrhoea johnsonii is sometimes present. Occurs on coastal parallel dunes, excluding the strand and exposed front of foredune.¶</p> <p>Major vegetation communities include: ¶</p> <p>8.2.6a: Corymbia tessellaris +/- Acacia leptocarpa +/- beach scrub species open forest. Occurs on parallel dunes (subregions 1, 2 and 6).¶</p> <p>8.2.6b: Corymbia tessellaris and/or C. clarksoniana +/- Livistona decora +/- beach scrub spp. open-forest. Occurs on parallel dunes (subregions 4 and 5).¶</p> <p>8.2.6x1: Banksia integrifolia, vine scrub spp. +/- Allocasuarina littoralis +/- Corymbia tessellaris shrubland to open forest, and/or Acacia aulacocarpa shrubland. Occurs on Holocene parabolic dunes.¶</p> <p>8.2.6x1a: Banksia integrifolia, vine scrub spp. +/- Allocasuarina littoralis shrubland. Occurs on Holocene parabolic dunes. Subregion 5.¶</p> <p>8.2.6x1b: Corymbia tessellaris +/- Acacia leptocarpa +/- Banksia integrifolia subsp. compar +/- beach scrub species open-forest. Occurs on Holocene parabolic dunes (subregions 1 and 2).¶</p> <p>8.2.6x1c: Acacia aulacocarpa shrubland. Occurs on Holocene parabolic dunes. Subregion 5.</p>	2, 5, 6	Byfield NP, Cape Palmerston NP, West Hill NP, Bakers Creek CP, Keppel Bay Islands NP, Newry Islands NP, Cape Hillsborough NP, Dryander NP, Skull Knob CP, Bloomsbury CP, Byfield CP
8.2.7	OF	Melaleuca spp. and/or Lophostemon suaveolens and/or Eucalyptus robusta open-forest to woodland in wetlands associated with parabolic dunes	Endangered	<p>Complex of dune swales and low lying sandy/swampy wetlands which include pure stands of Melaleuca leucadendra in swamps adjacent to parabolic dunes, parabolic dune swales with M. leucadendra and other Melaleuca spp., broad swampy areas on sand with M. leucadendra, Corymbia tessellaris, C. intermedia, Eucalyptus tereticornis and Livistona decora, and buried swales with Melaleuca leucadendra. Also includes areas dominated by Lophostemon suaveolens. Also includes small perched wetlands. Occurs on parabolic dunes, low lying undulating areas with sandy soil consisting of mixtures of beach sand and alluvial material.¶</p> <p>Major vegetation communities include: ¶</p> <p>8.2.7a: Palustrine wetland (e.g. vegetated swamp). Melaleuca leucadendra open-forest in near-coastal wetlands. Occurs on parabolic dunes (subregions 1 and 2).¶</p> <p>8.2.7b: Palustrine wetland (e.g. vegetated swamp). Eucalyptus robusta, Melaleuca quinquenervia open-forest to open-woodland with dense understorey of wet heath, or wet heathland/sedgeland. Occurs on parabolic dunes (subregions 4 and 5).¶</p> <p>8.2.7c: Lophostemon suaveolens +/- Corymbia intermedia +/- C. tessellaris +/- rainforest spp. open-forest to woodland. Occurs on sand associated with parabolic dunes (subregions 4 and 5).¶</p> <p>8.2.7e: Palustrine wetland (e.g. vegetated swamp). Melaleuca leucadendra and/or M. quinquenervia and/or M. dealbata and/or M. sp.aff. viridiflora open-forest. Occurs in near -coastal wetlands and swales associated with parabolic dunes (all coastal subregions).</p>	5, 2,	Byfield NP, Percy Isles NP, Whitsunday Islands NP, Byfield CP
8.2.8	OF	Variable eucalypt open-forest to woodland often with heathy elements on parabolic dunes and beach ridges	No concern at present	<p>Variable eucalypt open-forest to woodland, with one or several of the following species; Corymbia clarksoniana, Eucalyptus exserta, C. intermedia, C. tessellaris, E. latisinensis, E. acmenoides, Syncarpia glomulifera and Lophostemon suaveolens. Acacia spp. including A. flavescens, A. julifera, and/or A. crassicaarpa or pioneering rainforest species such as Acronychia laevis, are often present as a secondary tree layer or tall shrub layer. A shrub layer dominated by heath species is often present including Lithomyrtus obtusa and Ricinocarpus pinifolius. On parabolic dunes and beach ridges.¶</p> <p>Major vegetation communities include: ¶</p> <p>8.2.8a: Variable open-forest to woodland. Dominants usually include one or several of Corymbia tessellaris, C. intermedia, Eucalyptus portuensis, Syncarpia glomulifera, and E. exserta. Occurs on parabolic dunes, mainly of Pleistocene age (subregion 5).¶</p> <p>8.2.8b: Eucalyptus exserta and Corymbia clarksoniana open-forest with a rainforest understorey. Occurs on fine white coastal sands on parabolic dunes (subregion 1).¶</p> <p>8.2.8d: Acacia spp. +/- Leptospermum neglectum +/- Allocasuarina littoralis closed-heath to open-forest. Occurs on parabolic dunes of predominantly Pleistocene age. Subregion 5.¶</p> <p>8.2.8e: Acacia crassicaarpa or A. julifera closed-forest to open-forest +/- heathy understorey. Occurs on Pleistocene parabolic dunes.</p>	5, 1, 2	Byfield NP, Whitsunday Islands NP, Percy Isles NP, Byfield CP
8.2.9	TG	Heteropogon triticeus, Imperata cylindrica and Themeda triandra grassland on coastal dunes	Endangered	<p>Heteropogon triticeus, Imperata cylindrica, and Themeda triandra grassland. Other species include Aphyllodium biarticulatum, Eragrostis interrupta, Heteropogon contortus, Brachiaria bracteata, Cassytha filiformis, Cyperus pedunculatus, Eriachne glauca var. barbinodis, Allotetopsis semialata, Desmodium rhytidophyllum, Glycine tomentella, Crotalaria montana, Bulbostylis barbata, Mnesithea rotboelliooides, Perotis rara, Zornia dyctiocarpa var. filifolia, Chrysocephalum apiculatum, Crotalaria mitchellii, Dianella longifolia, Polycarpea corymbosa, Schizachyrium fragile and Spermacece brachystema. Occurs on coastal dunes, predominantly of Holocene age.</p>	1, 2	South Cumberland Islands NP, Gloucester Island NP, Broad Sound Islands NP, Northumberland Islands NP, [Holbourne Island NP]
8.2.10	SH	Sand blows with bare sand and areas of sparse herbland/shrubland	Of concern	<p>Sparse herb/grassland. Occurs on sand blows with bare sand.</p>	5	Byfield NP

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8.2.11	CF	Melaleuca spp. closed-forest to woodland in parallel dune swales	Of concern	Melaleuca spp. closed-forest to woodland. Species include <i>M. leucadendra</i> , <i>M. quinquenervia</i> , <i>M. sp. aff. viridiflora</i> and <i>M. dealbata</i> . A tall shrub to low tree layer of <i>Banksia integrifolia</i> subsp. <i>compar</i> and <i>Pandanus</i> spp. is sometimes present. The ground layer commonly includes <i>Lepironia articulata</i> , <i>Dapsilanthus ramosus</i> and <i>Blechnum indicum</i> . Occurs in parallel dune swales.	2, 5	Cape Palmerston NP, West Hill NP, Broad Sound Islands NP, Conway NP, [Bakers Creek CP], [Cape Hillsborough NP]
8.2.12	W	Eucalyptus spp. open woodland to open-forest often with a heath understorey, or <i>Acacia</i> spp. and/or <i>Leptospermum neglectum</i> , and/or <i>Allocasuarina littoralis</i> shrubland, on parallel dunes	Of concern	Eucalyptus spp. open-woodland to open-forest often with a heath understorey, or <i>Acacia</i> spp. and/or <i>Leptospermum neglectum</i> , and/or <i>Allocasuarina littoralis</i> shrublands. Occurs on parallel dunes. Major vegetation communities include: 8.2.12a: <i>Eucalyptus latisinensis</i> and/or <i>C. tessellaris</i> +/- other eucalypts open-woodland to open-forest with heath understorey or <i>Imperata cylindrica</i> . Occurs on parallel dunes (subregions 4 and 5). 8.2.12b: <i>Acacia</i> spp. and/or <i>Leptospermum neglectum</i> +/- <i>Allocasuarina littoralis</i> +/- <i>Grevillea banksii</i> +/- <i>Petalostigma pubescens</i> sparse shrubland to closed-scrub. Occurs on parallel dunes (subregions 4 and 5).	5, 4	Byfield NP
8.2.13	OF	<i>Corymbia tessellaris</i> , <i>Melaleuca</i> spp., <i>Livistona decora</i> and/or <i>Acacia</i> spp. and/or <i>Lophostemon suaveolens</i> open-forest to closed-forest on dune sands mixed with alluvial material +/- marine sediments	Endangered	<i>Corymbia tessellaris</i> , <i>Melaleuca</i> spp., <i>Livistona decora</i> and/or <i>Acacia</i> spp. and/or <i>Lophostemon suaveolens</i> open-forest to closed-forest. Occurs on dune sands mixed with alluvial material +/- marine sediments. Major vegetation communities include: 8.2.13a: <i>Corymbia tessellaris</i> , <i>Melaleuca</i> spp., <i>Livistona decora</i> , <i>Corymbia intermedia</i> , <i>E. tereticornis</i> open-forest. Some areas of <i>Acacia</i> spp. closed-forest with <i>C. tessellaris</i> . Occurs in near coastal situations on dune sands mixed with alluvial material and marine sediments (subregion 2). 8.2.13b: Palustrine wetland (e.g. vegetated swamp), <i>Melaleuca quinquenervia</i> and/or <i>Lophostemon suaveolens</i> +/- <i>Livistona decora</i> open-forest to woodland. Other tree species such as <i>Eucalyptus tereticornis</i> , <i>Corymbia tessellaris</i> , <i>Corymbia intermedia</i> , <i>Endiandra sieberi</i> or other rainforest species may also be present. There is usually a dense ground stratum containing <i>Gahnia sieberiana</i> and <i>Blechnum indicum</i> . Occurs on interface of parabolic dunes with adjoining land zones with some alluvial influence. dunes with adjoining land zones (subregions 4 and 5).	2, 4, 5	[Conway NP], [Bakers Creek CP]
8.3.1	CF	Semi-deciduous notophyll/mesophyll vine forest fringing watercourses on alluvial plains	Endangered	Semi-deciduous notophyll/mesophyll vine forest fringing watercourses. Characteristic species are <i>Terminalia sericocarpa</i> , <i>Acmenosperma claviflorum</i> , <i>Alstonia scholaris</i> , <i>Cryptocarya hypospodia</i> , <i>Archontophoenix alexandrae</i> , <i>Myristica globosa</i> subsp. <i>muelleri</i> , <i>Ficus racemosa</i> , <i>F. virens</i> , <i>Nauclaea orientalis</i> , <i>Syzygium australe</i> , <i>Beilschmiedia obtusifolia</i> . Occurs on alluvial plains. Major vegetation communities include: 8.3.1a: Riverine wetland or fringing riverine wetland. Semi-deciduous (complex) notophyll/mesophyll vine forest. Occurs on Cainozoic alluvial plains fringing or in vicinity of watercourses (subregions 1 to 3 and 6). 8.3.1b: Riverine wetland or fringing riverine wetland. Notophyll rainforest +/- <i>Archontophoenix alexandrae</i> or <i>A. cunninghamiana</i> with emergent sclerophyll species Occurs fringing watercourses (subregions 4 and 5).	2, 3, 4, 5	Byfield NP, Dryander NP, Reliance Creek NP, Bluff Hill NP, South Cumberland Islands NP, [Eungella NP], [Mount Martin NP]
8.3.2	W	<i>Melaleuca viridiflora</i> woodland to open-forest, often with emergent eucalypts and grassy/herbaceous ground layer, on seasonally inundated alluvial plains with impeded drainage	Endangered	<i>Melaleuca viridiflora</i> woodland to open forest, often with <i>Corymbia clarksoniana</i> or <i>C. intermedia</i> as an emergent or subdominant. Other overstorey species may include <i>Acacia leptocarpa</i> , <i>Eucalyptus platyphylla</i> , <i>E. exserta</i> and <i>Pandanus</i> sp. A secondary tree layer is sometimes present and usually consists of juvenile <i>Melaleuca viridiflora</i> , and scattered <i>Acacia leptocarpa</i> . A sparse shrub layer is sometimes present, usually consisting of <i>M. viridiflora</i> juveniles, <i>Planchonia careya</i> , <i>Acacia leptocarpa</i> , and <i>Petalostigma pubescens</i> . The ground layer is dense and very diverse. Common dominants include <i>Ischaemum</i> spp., <i>Imperata cylindrica</i> , <i>Eremochloa bimaculata</i> , and <i>Themeda triandra</i> . Other common herb species include <i>Fimbristylis dichotoma</i> , <i>Fimbristylis cinnamometorum</i> , <i>Chrysopogon fallax</i> , <i>Paspalum scrobiculatum</i> , <i>Flemingia parviflora</i> , <i>Heteropogon triticeus</i> , <i>Scleria brownii</i> , <i>Abildgaardia ovata</i> , <i>Dianella longifolia</i> , and <i>Murdannia gigantea</i> . Occurs on seasonally inundated alluvial plains.	2	Cape Palmerston NP, Sandringham Bay CP, Newry Islands NP, [Lindeman Islands NP], [West Hill NP]
8.3.3	OF	<i>Melaleuca leucadendra</i> or <i>M. fluviatilis</i> +/- <i>Casuarina cunninghamiana</i> open-forest to woodland, fringing watercourses	Of concern	<i>Casuarina cunninghamiana</i> and/or <i>Melaleuca leucadendra</i> (or <i>M. fluviatilis</i>) open-forest to woodland, sometimes with a rainforest understorey. Gently graded sandy creeks tend to be dominated by <i>Melaleuca leucadendra</i> with occasional <i>Casuarina cunninghamiana</i> , and a mid-layer of <i>Pandanus</i> spp. Areas with a steeper gradient tend to be dominated by <i>Casuarina cunninghamiana</i> with occasional <i>M. leucadendra</i> (or <i>M. fluviatilis</i>). Other tree species include <i>Nauclaea orientalis</i> , <i>Terminalia sericocarpa</i> , <i>Eucalyptus tereticornis</i> , and <i>Lophostemon grandiflorus</i> . The secondary tree layer often includes <i>Melaleuca viminalis</i> , <i>Bursaria tenuifolia</i> and <i>Syzygium australe</i> , and many areas have a well developed rainforest component in this layer. The ground layer typically includes <i>Lomandra hystrix</i> , <i>Lomandra longifolia</i> , <i>Ottocloa nodosa</i> , <i>Juncus</i> spp., <i>Monochoria cyanea</i> , and <i>Leersia hexandra</i> . Occurs on sandbars in the river bed. Major vegetation communities include: 8.3.3a: Riverine wetland or fringing riverine wetland. <i>Melaleuca leucadendra</i> or <i>M. fluviatilis</i> and/or <i>Casuarina cunninghamiana</i> fringing open-forest to woodland. Occurs on sandy or rocky creek beds. 8.3.3b: Riverine wetland or fringing riverine wetland. <i>Melaleuca leucadendra</i> , <i>Syzygium oleosum</i> , <i>Syncarpia glomulifera</i> +/- rainforest spp. fringing open-forest to woodland. Occurs on rocky creek beds (subregions 4 and 5).	2, 3, 4, 6, 5	Byfield NP, Cape Palmerston NP, West Hill NP, Bluff Hill NP, Dryander NP, Eungella NP, [Mount Martin NP], [Sandringham Bay CP], [Andromache CP]
8.3.4	FB	Freshwater wetlands with permanent water and aquatic vegetation including <i>Phragmites australis</i> , <i>Nymphaea gigantea</i> , <i>Nymphaeoides indica</i> , <i>Eleocharis</i> spp., <i>Cyperus</i> spp., and <i>Juncus</i> spp	Endangered	Wetlands with a forbland to isolated forbs, sedgeland or grassland of one or a variety of species which may include <i>Phragmites australis</i> , <i>Nymphaeoides crenata</i> , <i>Eleocharis sphacelata</i> , <i>Nymphaeoides indica</i> , <i>Nymphaea gigantea</i> , <i>Leersia hexandra</i> , <i>Eleocharis</i> spp., <i>Cyperus</i> spp., <i>Pericaria decipiens</i> , <i>Juncus</i> spp., <i>Ludwigia peploides</i> subsp. <i>montevidensis</i> , <i>Marsilea</i> spp., <i>Hygrophila angustifolia</i> and <i>Centipeda minima</i> . Occurs in near coastal swamps.	2	Cape Palmerston NP, Northumberland Islands NP, [Conway NP]

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8.3.5	OF	<i>Corymbia clarksoniana</i> +/- <i>Lophostemon suaveolens</i> +/- <i>Eucalyptus platyphylla</i> open-forest to woodland, or <i>E. platyphylla</i> open-forest to woodland on alluvial plains	Endangered	<i>Corymbia clarksoniana</i> open-forest to woodland, often with <i>Lophostemon suaveolens</i> and/or <i>Eucalyptus platyphylla</i> and/or <i>C. dallachiana</i> , and sometimes with <i>E. drepanophylla</i> . Includes areas with almost pure stands of <i>Eucalyptus platyphylla</i> , and a few areas which are pure stands of <i>L. suaveolens</i> . Occasionally <i>Livistona decora</i> is prominent. A sparse to mid-dense secondary tree layer of <i>Melaleuca viridiflora</i> is sometimes present. There is usually a sparse shrub layer of <i>Planchonia careya</i> , <i>Alphitonia excelsa</i> , <i>Glochidion lobocarpum</i> and <i>Acacia leptocarpa</i> . The ground layer is commonly dominated by <i>Heteropogon triticeus</i> , <i>Sorghum nitidum</i> forma <i>aristatum</i> , <i>Lomandra longifolia</i> , <i>Heteropogon contortus</i> and <i>Themeda triandra</i> . Alluvial plains.	2, 6, 3, 1, 4	Dryander NP, Cape Palmerston NP, Conway NP, West Hill NP, Gloucester Island NP, Cape Hillsborough NP, Pioneer Peaks NP, Sandringham Bay CP, Andromache CP, [Eungella NP], [Mount Ossa NP], [Bluff Hill NP], [Mount Kinchant CP], [Reliance Creek NP]
8.3.6	OF	<i>Eucalyptus tereticornis</i> , <i>Corymbia intermedia</i> and <i>Lophostemon suaveolens</i> (or <i>C. tessellaris</i> dominant) open-forest on alluvial levees and lower terraces	Endangered	<i>Eucalyptus tereticornis</i> , <i>Corymbia intermedia</i> (or <i>C. clarksoniana</i>) and <i>Lophostemon suaveolens</i> open-forest, or sometimes dominated by <i>C. tessellaris</i> . A sparse secondary tree layer of <i>Albizia procera</i> and sometimes <i>Melaleuca</i> spp. and <i>Livistona decora</i> is often present. Rainforest species are occasionally present and include <i>Cupaniopsis anacardioides</i> , <i>Jagera pseudorhus</i> , <i>Acronychia laevis</i> , <i>Litsea glutinosa</i> and <i>Mallotus philippensis</i> . There is a sparse shrub layer of <i>Planchonia careya</i> and <i>Timonius timon</i> . The ground layer is commonly composed of <i>Imperata cylindrica</i> , <i>Sorghum nitidum</i> forma <i>aristatum</i> , <i>Heteropogon triticeus</i> , <i>H. contortus</i> , <i>Lomandra longifolia</i> and <i>Oplismenus burmannii</i> . Occurs on very fertile alluvial levees and lower terraces.!! Major vegetation communities include: !! 8.3.6a: Floodplain (other than floodplain wetlands). <i>Eucalyptus tereticornis</i> , <i>Corymbia intermedia</i> (or <i>C. clarksoniana</i>) and <i>Lophostemon suaveolens</i> open-forest. Occurs on river and creek terraces and alluvial fans (subregions 1-3 and 6).!! 8.3.6c: Floodplain (other than floodplain wetlands). <i>Eucalyptus tereticornis</i> and/or <i>Corymbia tessellaris</i> and/or <i>Lophostemon suaveolens</i> and/or <i>E. platyphylla</i> +/- rainforest spp. open-woodland to open-forest. Occurs on alluvial terraces (subregions 4 and 5).	2, 3, 4	Byfield NP, Dryander NP, West Hill NP, Keppel Bay Islands NP, Eungella NP, [Andromache CP], [South Cumberland Islands NP]
8.3.8	OF	<i>Syncarpia glomulifera</i> , <i>Eucalyptus portuensis</i> , <i>Corymbia intermedia</i> open-forest on sandy creek flats and granite outwash	Of concern	<i>Syncarpia glomulifera</i> , <i>Eucalyptus portuensis</i> , <i>Corymbia intermedia</i> +/- <i>Eucalyptus latisinensis</i> , <i>Lophostemon confertus</i> , <i>Lophostemon suaveolens</i> open-forest. The mid-storey is dominated by <i>Allocasuarina</i> spp., <i>Grevillea banksii</i> , <i>Acacia aulacocarpa</i> , <i>Acacia flavescens</i> and <i>Banksia integrifolia</i> subsp. <i>compar</i> . Occurs on sandy creek flats. Includes narrow rocky creeks with riparian vegetation of notophyll rainforest or <i>Syncarpia glomulifera</i> with rainforest species.	4, 5	Byfield NP
8.3.9	CF	Complex notophyll vine forest on perched alluvials in valleys of undulating mountain ranges	Of concern	Complex notophyll vine forest. Species include <i>Argyrodendron actinophyllum</i> subsp. <i>diversifolium</i> , <i>Cryptocarya hypospodia</i> , <i>Acmenosperma claviflorum</i> , <i>Myristica globosa</i> subsp. <i>muelleri</i> , <i>Pouteria myrsinodendron</i> , <i>Terminalia sericocarpa</i> , <i>Beilschmiedia obtusifolia</i> and <i>Archontophoenix alexandrae</i> . Occurs on perched alluvials in valleys of undulating mountain ranges.	1	Conway NP
8.3.10	CF	Notophyll vine forest with variable dominants, on gently to moderately sloping alluvial fans adjacent to ranges	Of concern	Notophyll vine forest. Excludes riparian rainforest. Dominants are variable, but may include <i>Argyrodendron polyandrum</i> , <i>Cryptocarya hypospodia</i> , <i>Dissiliaria indistincta</i> , <i>Cordia dichotoma</i> , <i>Ficus virens</i> , <i>Elaeocarpus obovatus</i> , <i>Milletia pinnata</i> , and <i>Syzygium australe</i> . Occurs on gently to moderately sloping short alluvial fans adjacent to ranges.	1, 4, 2	Conway NP, Dryander NP, Molle Islands NP
8.3.11	OF	<i>Melaleuca</i> sp. aff. <i>viridiflora</i> closed-forest to woodland in broad drainage areas	Endangered	<i>Melaleuca</i> sp. aff. <i>viridiflora</i> (usually the sole canopy species) closed-forest to woodland (wetland). Occasional other canopy species include <i>Naucllea orientalis</i> , <i>Melaleuca dealbata</i> , <i>M. leucadendra</i> , <i>Lophostemon suaveolens</i> and <i>Corymbia tessellaris</i> . Shrub layers are usually absent. The ground layer is dense and consists of sedges and grasses including <i>Leersia hexandra</i> , <i>Cyperus dactyloides</i> , <i>Cyperus gunnii</i> subsp. <i>novae-hollandiae</i> , <i>Cyperus lucidus</i> , <i>Gymnanthera oblonga</i> , or in some areas <i>Phragmites australis</i> , <i>Blechnum indicum</i> , <i>Cyclosorus interruptus</i> and <i>Lygodium microphyllum</i> . Occurs on swampy areas and broad drainage depressions (wetlands) on alluvial plains. Water lies at the surface for most of the year.	2	[South Cumberland Islands NP]
8.3.12	TG	Grassland on alluvial and old marine plains	Endangered	Grassland on alluvial plains and old marine plains (no longer inundated by saline water). Dominants are variable and may include <i>Imperata cylindrica</i> , <i>Dichanthium setosum</i> , * <i>Cynodon dactylon</i> and <i>Sorghum nitidum</i> forma <i>aristatum</i> . Other common species are <i>Eremochloa bimaculata</i> , <i>Centella asiatica</i> , <i>Fimbristylis sieberiana</i> , <i>Alysicarpus vaginalis</i> , <i>Cyperus polystachyos</i> , <i>Aster subulatus</i> , <i>Bothriochloa decipiens</i> , <i>Leptochloa fusca</i> , <i>Digitaria violascens</i> , <i>Flemingia lineata</i> , <i>Glycine tabacina</i> , <i>Pratia concolor</i> and <i>Sida spinosa</i> . Weeds and pasture species are now abundant in many areas and species which often dominate are * <i>Brachiaria mutica</i> , * <i>Echinochloa polystachya</i> , and introduced <i>Sporobolus</i> spp. Occurs on flat alluvial plains and slight depressions in alluvial plains, often on black cracking clays.	2	Bakers Creek CP
8.3.13	W	<i>Eucalyptus tereticornis</i> and/or <i>Corymbia tessellaris</i> and/or <i>Melaleuca</i> spp. open-woodland to open-forest on alluvial and old marine plains, often adjacent to estuarine areas	Endangered	Vary variable community, usually adjacent to estuarine communities. Ranges from open-woodland to closed-forest. Includes open-woodlands with <i>Melaleuca viridiflora</i> and/or <i>M. leucadendra</i> over <i>Imperata cylindrica</i> , <i>Ischaemum</i> spp. and <i>Leersia hexandra</i> . Also includes woodland and open-forest of <i>Corymbia tessellaris</i> and/or <i>Eucalyptus tereticornis</i> (and frequently <i>E. tereticornis</i> and <i>E. platyphylla</i> hybrids) often with <i>Melaleuca dealbata</i> (sometimes pure stands of <i>M. dealbata</i>), over a dense grassy layer of <i>Sorghum nitidum</i> forma <i>aristatum</i> , <i>Ischaemum</i> spp, <i>Chrysopogon filipes</i> and <i>Leersia hexandra</i> . Occurs on marine and alluvial plains adjacent to estuarine areas.!! Major vegetation communities include: !! 8.3.13a: Palustrine wetland (e.g. vegetated swamp). Mixed <i>Melaleuca</i> spp. woodlands. Occurs on marine plains or alluvial plains, usually adjacent to estuarine areas.!! 8.3.13b: Palustrine wetland (e.g. vegetated swamp). <i>Melaleuca dealbata</i> woodland to open-forest with grassy understorey. Occurs on swampy marine or alluvial plain adjacent to mangroves.!! 8.3.13c: Floodplain (other than floodplain wetlands). <i>Eucalyptus tereticornis</i> and/or <i>Corymbia tessellaris</i> woodland with a secondary tree layer of <i>Melaleuca</i> spp.. Occurs on marine and alluvial plains commonly adjacent to estuarine areas.!! 8.3.13d: Floodplain (other than floodplain wetlands). <i>Eucalyptus tereticornis</i> and or <i>C. tessellaris</i> woodland. Occurs on marine and alluvial plains adjacent to estuarine areas.	1, 2, 5, 4	Byfield NP, Sandringham Bay CP, West Hill NP, Bakers Creek CP, Cape Palmerston NP, [Conway NP], [South Cumberland Islands NP], [Causeway Lake CP]

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8.3.14	TG	Ischaemum australe and Fimbristylis dichotoma grassland on drainage channels in gently undulating upland areas	Endangered	Ischaemum australe, and Fimbristylis dichotoma grassland. Other species include Centella asiatica, Bothriochloa bladhii, Eclipta prostrata, Ranunculus lappaceus, Pratia concolor, and Desmodium triflorum. Occurs on drainage channels in gently undulating upland areas.	3	No representation
8.3.15	bare	Open water in river channels, water holes and lagoons, and exposed stream bed and bars	Of concern	Open water in river channels, water holes and lagoons, and exposed stream bed and bars. Usually devoid of emergent vegetation although scattered trees and shrubs such as Melaleuca viminalis or Melaleuca spp. may be present and aquatic species may be abundant particularly in water holes and lagoons.	2	Conway NP
8.5.1	OF	Corymbia clarksoniana open-forest on Tertiary sand plains including small areas of shale. Includes low rises with Corymbia intermedia open-forest, +/- Melaleuca viridiflora +/- rainforest spp. open-forest	Endangered	Corymbia clarksoniana open-forest, sometimes with Eucalyptus drepanophylla, often with a secondary tree or shrub layer of Melaleuca viridiflora +/- Acacia leptostachya, +/- Planchonia careya, +/- Persoonia falcata, +/- Pogonolobus reticulatus, and often a low shrub layer of Xanthorrhoea johnsonii. The ground stratum includes Abildgaardia ovata, Lomandra longifolia, Aristida queenslandica, Eremochloa bimaculata, Alloteropsis semialata and Cajanus reticulatus. Includes low rises on fine sediments with Corymbia intermedia open-forest, with a secondary tree layer of Melaleuca viridiflora. Grevillea parallela and some pioneering rainforest spp., as well as areas of shale supporting C. clarksoniana +/- E. drepanophylla with a shrubby layer of Acacia leptocarpa, Melaleuca viridiflora, Lophostemon confertus and Acacia simsii. Occurs on low rises on fine sediments as well as areas of shale. Underlain by fine grained sediments and areas of shale leading to minor impurities of land zones 9 and 10. Major vegetation communities include: 8.5.1a: Corymbia intermedia +/- Melaleuca viridiflora +/- rainforest spp. open-forest. Occurs on low Tertiary rises. Underlain by fine grained sediments and areas of shale leading to minor impurities of land zones 9 and 10 (mainly subregion 6). 8.5.1b: Corymbia clarksoniana open forest +/- secondary tree layer of Melaleuca viridiflora. Occurs on low rises on undulating Tertiary sand plains. Underlain by fine grained sediments and areas of shale leading to minor impurities of land zones 9 and 10 (mainly subregion 6).	6, 2	No representation
8.5.2	W	Melaleuca viridiflora +/- Allocasuarina luehmannii, or M. viridiflora and M. nervosa woodland to open-forest on Tertiary sand plains	Endangered	Melaleuca viridiflora woodland to open-forest, often with Allocasuarina luehmannii or Melaleuca nervosa and emergent Corymbia clarksoniana. There is a sparse secondary tree or shrub layer which may include Melaleuca viridiflora, Acacia julifera, Acacia leptocarpa, Petalostigma pubescens and Melaleuca nervosa. The ground layer is diverse and includes Aristida warburgii, Schoenus sparteus, Ectrosia leporina, Schizachyrium dolosum, Fimbristylis cinnamometorum, Eremochloa bimaculata, Chrysopogon fallax, Schizachyrium spp. and Eriachne trisetata. Occurs on Tertiary sand plains. Major vegetation communities include: 8.5.2a: Melaleuca viridiflora +/- Allocasuarina luehmannii woodland to open-forest. Occurs on Tertiary sand plains (mainly subregion 6). 8.5.2c: Melaleuca viridiflora and M. nervosa woodland to open-forest (mainly north-western parts of subregion 6). Occurs on Tertiary sand plains (mainly subregion 6).	6, 2	[Dryander NP]
8.5.3	W	Eucalyptus drepanophylla +/- Corymbia dallachiana +/- C. clarksoniana, +/- E. platyphylla +/- Melaleuca viridiflora woodland to open-forest on broad low rises and gently sloping Tertiary sand plains	Endangered	Eucalyptus drepanophylla woodland to open-forest, often with Corymbia dallachiana, and sometimes C. clarksoniana and E. platyphylla. There are usually secondary tree or shrub layers with typical species including Melaleuca viridiflora, Acacia leptocarpa, A. julifera, Planchonia careya and Allocasuarina luehmannii. The ground layer commonly includes Chrysopogon fallax, Eremochloa bimaculata, Aristida warburgii, Fimbristylis cinnamometorum, Alloteropsis semialata, Schizachyrium spp., Abildgaardia ovata, Xanthorrhoea johnsonii, Lomandra longifolia, and Desmodium pullenii. Occurs on low rises on gently sloping Tertiary plains, dissected and reworked by many minor drainage lines (white sandy surface). Major vegetation communities include: 8.5.3a: Eucalyptus drepanophylla +/- Corymbia dallachiana woodland to open-forest +/- secondary layer of Melaleuca viridiflora. Occurs on broad low rises and gently sloping Tertiary sand plains (mainly subregion 6). 8.5.3b: Eucalyptus drepanophylla +/- Corymbia clarksoniana +/- E. platyphylla +/- Melaleuca viridiflora woodland to open-forest. Occurs on sloping, dissected Tertiary plains with alluvial influence (mainly subregion 6).	6, 2	Cape Palmerston NP, [Dryander NP]
8.5.5	W	Eucalyptus exserta and/or Corymbia clarksoniana woodland to open-forest +/- E. crebra usually with a lower tree layer of Melaleuca viridiflora and M. nervosa on Tertiary sand plains	Endangered	Eucalyptus exserta and/or Corymbia clarksoniana woodland to open-forest +/- E. crebra +/- C. dallachiana, +/- E. platyphylla, usually with a lower tree layer of Melaleuca viridiflora and M. nervosa +/- Acacia leptocarpa +/- Planchonia careya +/- Petalostigma pubescens. Occurs on Tertiary sand plains.	2	No representation
8.5.6	W	Melaleuca viridiflora and Allocasuarina littoralis woodland to open-forest with Eucalyptus spp., on Tertiary sand plains	Of concern	Melaleuca viridiflora woodland to open-forest, usually with Allocasuarina littoralis, and often including Eucalyptus exserta, Corymbia clarksoniana, C. intermedia and Eucalyptus platyphylla. A secondary tree/tall shrub layer is usually present consisting of Acacia leptocarpa, Allocasuarina littoralis, Banksia integrifolia subsp. compar, and Melaleuca viridiflora. The ground stratum includes Xanthorrhoea johnsonii, Chrysopogon fallax, Eriachne sp., Schoenus sparteus, Themeda triandra and Heteropogon triticeus. Occurs on Tertiary sand plains.	2	Cape Palmerston NP
8.5.7	W	Melaleuca viridiflora +/- Eucalyptus latisinensis +/- Syncarpia glomulifera +/- Allocasuarina littoralis open woodland to open forest on Cainozoic sand plains of uncertain age and origin	Of concern	Melaleuca viridiflora +/- Eucalyptus latisinensis +/- Syncarpia glomulifera +/- Allocasuarina littoralis open woodland to open forest, +/- a shrub layer of Banksia robur and Xanthorrhoea fulva, over sedges and grasses. Cainozoic sand plains of uncertain age and origin. Possibly formed by deep in-situ weathering of metamorphosed sandstone.	5, 4	Byfield NP

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8.8.1	CF	Complex notophyll (feather palm) vine forest on Tertiary basalt	Of concern	Complex notophyll (feather palm) vine forest. Characteristic species include <i>Acmena resa</i> , <i>Syzygium wesa</i> , <i>Argyrodendron actinophyllum</i> subsp. <i>diversifolium</i> , <i>Cryptocarya angulata</i> , <i>Cryptocarya corrugata</i> , <i>Archontophoenix cunninghamiana</i> , <i>Endiandra muelleri</i> subsp. <i>bracteata</i> , <i>Sloanea langii</i> , <i>S. macbrydei</i> , <i>Elaeocarpus largiflorens</i> and <i>Syzygium wilsonii</i> subsp. <i>cryptophlebium</i> . Occurs on wet uplands on Tertiary basalt. Major vegetation communities include: 8.8.1a: Complex notophyll feather palm vine forests. Occurs on wetter more elevated sites on basalt. 8.8.1b: Notophyll vine forest to vine thicket. Occurs on lower altitude and drier sites on basalt.	3	Homevale NP
8.9.1	W	<i>Eucalyptus latisinensis</i> +/- <i>E. exserta</i> +/- <i>E. crebra</i> +/- <i>Syncarpia glomulifera</i> woodland to open-forest, with a heath or shrubby understorey on low rises in coastal sand plains	Of concern	<i>Eucalyptus latisinensis</i> woodland to open-forest, often with other tree species including <i>E. exserta</i> , <i>E. crebra</i> , <i>Corymbia intermedia</i> , <i>E. portuensis</i> and <i>Syncarpia glomulifera</i> . The lower tree and shrub layer is dominated by <i>Allocasuarina</i> spp., <i>Banksia</i> spp., <i>Melaleuca viridiflora</i> , <i>Xanthorrhoea latifolia</i> subsp. <i>latifolia</i> , and various heath species. Occurs on low rises in coastal sand plains.	5, 4	Byfield NP
8.10.1	OF	<i>Acacia julifera</i> subsp. <i>julifera</i> and/or <i>Eucalyptus</i> spp. +/- <i>Corymbia</i> spp. +/- <i>Allocasuarina luehmannii</i> +/- <i>Acacia</i> spp. open-forest to woodland on exposed slopes of islands, on Cretaceous sedimentary rocks	Of concern	<i>Acacia julifera</i> subsp. <i>julifera</i> +/- <i>Eucalyptus exserta</i> +/- <i>Corymbia clarksoniana</i> +/- <i>Corymbia tessellaris</i> tall to mid-high to low closed forest or woodland, OR <i>Corymbia dallachyana</i> and/or <i>Eucalyptus exserta</i> and/or <i>C. clarksoniana</i> and/or <i>Melaleuca</i> spp. +/- <i>C. clarksoniana</i> +/- <i>C. tessellaris</i> +/- <i>E. platyphylla</i> open-forest to woodland. Occurs on exposed hill slopes of Wild Duck Island, on Cretaceous quartzose sediments (Styx Coal Measures). Major vegetation communities include: 8.10.1a: <i>Acacia julifera</i> subsp. <i>julifera</i> +/- <i>Eucalyptus exserta</i> +/- <i>Corymbia clarksoniana</i> +/- <i>Corymbia tessellaris</i> tall to mid-high to low closed forest or woodland. The dense mid-high tree layer of <i>Acacia julifera</i> subsp. <i>julifera</i> restricts most other shrubs. In the western part of Wild Duck island, patches of <i>Allocasuarina luehmannii</i> replace <i>Acacia julifera</i> subsp. <i>julifera</i> , or they may intergrade. A grassy groundlayer of <i>Paspalidium distans</i> , <i>Eriachne rara</i> , <i>Eragrostis</i> spp., <i>Lomandra multiflora</i> and <i>Lomandra confertiflora</i> occurs. Occasional vine thicket elements are present in areas that have remained unburnt, in particular <i>Jasminum simplicifolium</i> and <i>Psychotria daphnoides</i> . Occurs on exposed hill slopes of Wild Duck Island, usually with rock at surface, on Cretaceous quartzose sediments (Styx Coal Measures). 8.10.1b: <i>Corymbia dallachyana</i> and/or <i>Eucalyptus exserta</i> and/or <i>C. clarksoniana</i> and/or <i>Melaleuca</i> spp. +/- <i>C. clarksoniana</i> +/- <i>C. tessellaris</i> +/- <i>E. platyphylla</i> open-forest to woodland. In places there is a mixed shrublayer of <i>Acacia julifera</i> subsp. <i>julifera</i> and <i>Alphitonia excelsa</i> and other <i>Acacia</i> spp. In the western half of Wild Duck Island, a variation of this community was associated with soil soakages with localised clumps of <i>Melaleuca nervosa</i> and/or <i>Melaleuca viridiflora</i> . A grassy to forb-rich groundlayer may include <i>Heteropogon contortus</i> , <i>Sida subspicata</i> , <i>Aristida</i> spp., <i>Eriachne rara</i> and <i>Eragrostis</i> spp. In wetter areas, <i>Gahnia aspera</i> is present. Occurs on Cretaceous quartzose sediments on islands and headlands (subregion 2).	5	Broad Sound Islands NP
8.11.1	W	<i>Eucalyptus drepanophylla</i> and <i>E. platyphylla</i> woodland to open-forest on hills formed from metamorphosed sediments	Of concern	<i>Eucalyptus drepanophylla</i> and <i>E. platyphylla</i> woodland to open-forest, often with <i>Corymbia clarksoniana</i> . (<i>E. drepanophylla</i> dominant on ridgelines). There is a sparse shrub layer of <i>Cycas media</i> and <i>Planchonia careya</i> . The ground layer commonly includes <i>Themeda triandra</i> , <i>Heteropogon triticeus</i> , <i>H. contortus</i> , <i>Mnesithea rotboellioides</i> and <i>Chrysopogon fallax</i> . Occurs on low hills formed from metamorphosed sediments.	2	Mount Kinchant CP, Eungella NP, [Mount Ossa NP]
8.11.2	CF	Notophyll microphyll vine forest +/- <i>Araucaria cunninghamii</i> on low ranges on Permian sediments +/- volcanics	Of concern	Notophyll microphyll vine forest +/- <i>Araucaria cunninghamii</i> . Characteristic species include <i>Argyrodendron polyandrum</i> , <i>Paraserianthes toona</i> , <i>Cryptocarya triplinervis</i> , <i>C. bidwillii</i> , <i>Drypetes deplanchei</i> , <i>Atalaya rigida</i> , <i>Diospyros geminata</i> , <i>Mallotus philippensis</i> , <i>Memecylon pauciflorum</i> , <i>Mischocarpus anodotus</i> , <i>Alectryon tomentosus</i> and <i>Chionanthus ramiflora</i> . <i>Araucaria cunninghamii</i> present in places. Occurs on low ranges on Permian sediments +/- volcanics. Major vegetation communities include: 8.11.2x1: Semi-deciduous microphyll vine forest/thicket +/- emergent <i>Araucaria cunninghamii</i> . Similar to 8.12.11a but occurs on metamorphics and usually includes <i>Alectryon connatus</i> , <i>Polyalthia nitidissima</i> and <i>Xylosma ovatum</i> , and excludes <i>Cleistanthus dallachyanus</i> , <i>Croton arnhemicus</i> and <i>Eugenia reinwardtiana</i> . Other species include <i>Ficus</i> spp., <i>Brachychiton australis</i> and <i>Pouteria sericea</i> . Occurs on metamorphic and Cretaceous quartzose sedimentary rocks in coastal areas including islands (subregion 5). 8.11.2x1a: Semi-deciduous microphyll vine forest/thicket with emergent <i>Araucaria cunninghamii</i> . Similar to 8.12.11a but occurs on metamorphics and usually includes <i>Alectryon connatus</i> , <i>Polyalthia nitidissima</i> and <i>Xylosma ovatum</i> , and excludes <i>Cleistanthus dallachyanus</i> , <i>Croton arnhemicus</i> and <i>Eugenia reinwardtiana</i> . Occurs on metamorphic rocks in coastal areas including islands (subregion 5). 8.11.2x1b: Scrub to thicket to tall vine forest of usually wind-sheared woody plants typical of coastal vine scrubs with dominant species of <i>Ficus</i> spp., <i>Alectryon connatus</i> , <i>Brachychiton australis</i> , <i>Pouteria sericea</i> , <i>Exocarpos latifolius</i> , <i>Paraserianthes toona</i> but often species poor, few vines, to between 4.5-2 m tall. In sheltered narrow steep-sided gully locations, this may become a tall vine forest of emergent <i>Ficus obliqua</i> , <i>Ficus virens</i> and <i>Ficus rubiginosa</i> forma <i>rubiginosa</i> to 12 m tall, with midlayer of <i>Paraserianthes toona</i> , <i>Alectryon connatus</i> , <i>Geijera salicifolia</i> , <i>Cryptocarya triplinervis</i> , <i>Terminalia porphyrocarpa</i> , with obvious vine component across vegetation layers of <i>Jasminum simplicifolium</i> , <i>Capparis sepalaria</i> and <i>Pandorea pandorana</i> , <i>Cissus oblonga</i> or <i>C. reniformis</i> . Occurs on Cretaceous quartzose sedimentary rocks in coastal areas including islands (subregion 2).	4, 2, 5	Mount Kinchant CP, Byfield NP, Broad Sound Islands NP, Eungella NP, Capricorn Coast NP, Mount Ossa NP, Percy Isles NP

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8.11.3	OF	Mixed eucalypt including <i>Corymbia intermedia</i> , <i>Eucalyptus portuensis</i> , <i>C. clarksoniana</i> , <i>E. platyphylla</i> and <i>E. drepanophylla</i> open-forest to woodland on low hills, on metamorphosed sediments	Of concern	Open-forest to woodland with a variable species dominance. Species usually include a number of the following species; <i>Corymbia intermedia</i> , <i>C. intermedia</i> x <i>clarksoniana</i> (intermediates), <i>C. clarksoniana</i> , <i>Eucalyptus portuensis</i> , <i>E. platyphylla</i> , <i>E. drepanophylla</i> , <i>E. tereticornis</i> , <i>C. tessellaris</i> , <i>E. exserta</i> and <i>Lophostemon suaveolens</i> . A sparse secondary tree layer of <i>Lophostemon suaveolens</i> , <i>Planchonia careya</i> and <i>Banksia integrifolia</i> subsp. <i>compar</i> is sometimes present, or there may be a relatively dense layer of <i>Lophostemon confertus</i> . There is often a sparse to dense shrub layer of <i>Cycas media</i> , <i>Xanthorrhoea latifolia</i> subsp. <i>latifolia</i> , <i>Acacia leptocarpa</i> and <i>Hibiscus heterophyllus</i> . The ground layer usually includes <i>Imperata cylindrica</i> , <i>Themeda triandra</i> , <i>Heteropogon triticeus</i> , <i>Mnesithea rottboellioides</i> , <i>Eragrostis brownii</i> , <i>Alloteropsis semialata</i> and <i>Aristida queenslandica</i> var. <i>queenslandica</i> . Occurs on low to medium hills formed from metamorphosed sediments.¶ Major vegetation communities include: ¶ 8.11.3a: <i>Corymbia intermedia</i> and/or <i>Eucalyptus portuensis</i> and/or <i>C. clarksoniana</i> and/or <i>E. platyphylla</i> and/or <i>E. drepanophylla</i> open-forest to woodland. Occurs on low hills on metamorphosed sediments (subregion 2).¶ 8.11.3b: <i>Eucalyptus portuensis</i> and <i>Corymbia intermedia</i> open-forest. Occurs on steep hill slopes and low hills on metamorphosed sediments (subregion 4).¶ 8.11.3c: Variable woodland to open-forest of <i>Eucalyptus tereticornis</i> and/or <i>E. platyphylla</i> and/or <i>Lophostemon suaveolens</i> and other eucalypts. Occurs on slopes and ridges on metamorphosed sediments (subregion 4).	4, 2	Byfield NP, Mount Ossa NP, Eungella NP, [Percy Isles NP], [Pioneer Peaks NP]
8.11.4	W	<i>Eucalyptus platyphylla</i> and/or <i>Corymbia clarksoniana</i> +/- <i>E. drepanophylla</i> +/- <i>Lophostemon suaveolens</i> woodland to open-forest on low undulating areas on metamorphosed sediments	Endangered	<i>Eucalyptus platyphylla</i> and/or <i>Corymbia clarksoniana</i> +/- <i>Eucalyptus drepanophylla</i> +/- <i>Lophostemon suaveolens</i> woodland to open-forest. There is frequently a secondary tree layer/tall shrub layer of <i>Melaleuca viridiflora</i> and/or <i>M. nervosa</i> , and shrubs may include <i>Glochidion lobocarpum</i> , <i>Acacia holosericea</i> and <i>A. leiocalyx</i> . Occurs on gently undulating terrain on metamorphosed sediments, adjacent to alluvial plains.	2, 4, 6	Keppel Bay Islands NP
8.11.5	OF	<i>Corymbia tessellaris</i> and <i>Eucalyptus tereticornis</i> +/- <i>E. drepanophylla</i> open-forest to woodland on low hills formed from metamorphosed sediments or conglomerate	Of concern	<i>Corymbia tessellaris</i> and <i>Eucalyptus tereticornis</i> open-forest to woodland, sometimes with <i>E. drepanophylla</i> . There is often a secondary tree or shrub layer of <i>Albizia procera</i> , <i>Alphitonia excelsa</i> , <i>Cycas media</i> subsp. <i>media</i> and <i>Planchonia careya</i> . The ground layer commonly includes <i>Imperata cylindrica</i> , <i>Abildgaardia ovata</i> , <i>Heteropogon triticeus</i> , <i>Mnesithea rottboellioides</i> , <i>Panicum effusum</i> , <i>Digitaria parviflora</i> , <i>Themeda triandra</i> and <i>Heteropogon contortus</i> . Occurs on low hills formed from metamorphosed sediments or conglomerate.¶ Major vegetation communities include: ¶ 8.11.5a: <i>Corymbia tessellaris</i> and <i>Eucalyptus tereticornis</i> open-forest to woodland on low hills. Occurs on metamorphosed sediments (subregion 2 and 3).¶ 8.11.5b: <i>Corymbia tessellaris</i> +/- <i>Eucalyptus drepanophylla</i> open-forest to woodland. Occurs on low hills formed from conglomerate rocks (subregion 2).	2	No representation
8.11.6	OF	<i>Eucalyptus latisinensis</i> and/or <i>E. crebra</i> and/or <i>Corymbia intermedia</i> and/or <i>E. portuensis</i> open-forest to woodland on metamorphosed sediments	Of concern	<i>Eucalyptus latisinensis</i> and/or <i>E. crebra</i> and/or <i>Corymbia intermedia</i> and/or <i>E. portuensis</i> open-forest to woodland with a mid-dense to dense shrub layer dominated by <i>Allocasuarina torulosa</i> and a sparse to mid-dense ground layer dominated by <i>Xanthorrhoea latifolia</i> subsp. <i>latifolia</i> and <i>Themeda triandra</i> . Occurs on undulating low hills with shallow stony clay soils on metamorphosed sediments.	4	Byfield NP
8.11.7	OS	<i>Xanthorrhoea latifolia</i> subsp. <i>latifolia</i> and <i>Allocasuarina littoralis</i> open-shrubland to closed-scrub on exposed metamorphic mountain tops	Of concern	Open-shrubland to closed-scrub dominated by <i>Xanthorrhoea latifolia</i> subsp. <i>latifolia</i> and <i>Allocasuarina littoralis</i> . Other species include; <i>Alyxia ruscifolia</i> , <i>Astrotricha pterocarpa</i> , <i>Banksia robur</i> , <i>Monotoca scoparia</i> , <i>Leptospermum</i> sp., <i>Hibbertia</i> sp., <i>Acacia celsa</i> , <i>Banksia integrifolia</i> subsp. <i>compar</i> , <i>Dampiera ferruginea</i> , <i>Keraudrenia</i> sp., <i>Cassytha filiformis</i> and <i>Dianella caerulea</i> . Occurs on mountain crests on Shoalwater Formation geology.	4	Byfield NP
8.11.8	W	<i>Corymbia citriodora</i> and <i>Eucalyptus crebra</i> or <i>E. moluccana</i> woodland to open-woodland on lower slopes of metamorphic ranges	No concern at present	<i>Eucalyptus moluccana</i> or <i>Corymbia citriodora</i> woodland to open-woodland +/- <i>E. crebra</i> , +/- <i>E. exserta</i> , +/- <i>E. fibrosa</i> subsp. <i>fibrosa</i> , +/- <i>E. portuensis</i> , +/- <i>Corymbia trachyphloia</i> , +/- <i>C. clarksoniana</i> . The mid-stratum is sparse and the ground stratum is dominated by <i>Themeda triandra</i> , <i>Eremochloa bimaculata</i> and <i>Heteropogon contortus</i> . Occurs on lower slopes on metamorphosed sediments.¶ Major vegetation communities include: ¶ 8.11.8a: <i>Corymbia citriodora</i> and <i>Eucalyptus crebra</i> +/- <i>E. portuensis</i> +/- <i>C. trachyphloia</i> +/- <i>E. exserta</i> +/- <i>C. clarksoniana</i> +/- <i>C. intermedia</i> open-forest to open-woodland. Occurs on metamorphosed sediments (subregion 4).¶ 8.11.8b: <i>Eucalyptus moluccana</i> woodland to open-forest. Occurs on lower slopes on metamorphosed sediments (subregion 4).	4	Keppel Bay Islands NP

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8.11.9	TG	Grassland, or Xanthorrhoea latifolia subsp. latifolia shrubland/heathland with Themeda triandra and/or Heteropogon contortus on exposed rocky headlands on metamorphosed sediments, subject to strong sea-breezes and salt-laden winds	Of concern	Themeda triandra +/- Imperata cylindrica grassland, or Heteropogon contortus, Imperata cylindrica and Heteropogon triticeus grassland, or Xanthorrhoea latifolia subsp. latifolia shrubland/heathland with Themeda triandra. Small clumps of wind sheared vine thicket and sclerophyllous species may be present, including shrubby species such as Acacia leiocalyx or Acacia flavescens, Allocasuarina littoralis, Banksia integrifolia subsp. compar, Dodonaea lanceolata, Jacksonia scoparia and Wikstroemia indica. Other ground-stratum species may include Dichanthium sericeum, Aristida spp., Cassytha pubescens, Oxalis perennans, Glycine tomentosa, Scleria mackaviensis, Crotalaria montana and Phyllanthus spp. Occurs on coastal exposed rocky headlands on metamorphosed sediments and Cretaceous quartzose sediments, subject to strong sea-breezes and salt-laden winds. Major vegetation communities include: 8.11.9a: Themeda triandra +/- Imperata cylindrica grassland, or Heteropogon contortus, Imperata cylindrica and Heteropogon triticeus grassland, or Xanthorrhoea latifolia subsp. latifolia shrubland/heathland with Themeda triandra. Small clumps of wind sheared vine thicket and sclerophyllous species may be present, including shrubby species such as Acacia leiocalyx or Acacia flavescens, Allocasuarina littoralis, Banksia integrifolia subsp. compar, Dodonaea lanceolata, Jacksonia scoparia and Wikstroemia indica. Occurs on coastal exposed rocky headlands on metamorphosed sediments, subject to strong sea-breezes and salt-laden winds. 8.11.9b: Heteropogon contortus tussock grassland with small areas of Themeda triandra. Other species include Dichanthium sericeum, Aristida spp., Cassytha pubescens, Oxalis perennans, Glycine tomentosa, Scleria mackaviensis, Crotalaria montana and Phyllanthus spp. Small clumps of wind sheared vine thicket may be present, up to 1 m in height. In minor areas, an unvegetated pavement of rock may predominate. In other minor seaward areas, an open woodland of Casuarina equisetifolia subsp. incana with isolated trees of Pandanus tectorius, occasional shrubs or vines of wind sheared Geijera salicifolia, Pouteria sericea, Jasminum spp., and grassy groundlayer of Thuarea involuta, Sporobolus virginicus, or Heteropogon contortus, may occur. Occurs on coastal exposed rocky headlands on Cretaceous quartzose sediments, subject to strong sea-breezes and salt-laden winds.	5, 2	Keppel Bay Islands NP, Percy Isles NP, Byfield NP, Byfield CP, Broad Sound Islands NP, Capricorn Coast NP
8.11.10	LW	Lophostemon confertus and/or Acacia spp. and/or Allocasuarina littoralis +/- Corymbia spp. +/- Eucalyptus spp. +/- Melaleuca viridiflora low woodland to open-forest on exposed hillslopes of islands, on metamorphosed sediments	Of concern	Lophostemon confertus and/or Acacia leptostachya and/or Acacia leiocalyx and/or Acacia aulacocarpa and/or Allocasuarina littoralis +/- Acacia flavescens +/- Corymbia dallachiana +/- Eucalyptus drepanophylla +/- E. exserta +/- Melaleuca viridiflora low woodland to low open-forest. More open communities may have a moderately dense shrub layer with species such as Acacia leptostachya, Xanthorrhoea latifolia subsp. latifolia, Dodonaea lanceolata and Melaleuca viridiflora. The ground layer usually includes Xanthorrhoea latifolia subsp. latifolia, Eriachne glauca var. glauca, Eriachne pallescens, Themeda triandra, Eragrostis brownii, Aristida holathera, Gahnia aspera and Abildgaardia ovata. Occurs on exposed hill slopes of islands and headlands usually with rock at surface, on metamorphosed sediments. Headlands in the Emu Park-Yeppon area, Keppel Island Group, and also other offshore islands.	5, 2	Keppel Bay Islands NP, Percy Isles NP, Byfield NP, Broad Sound Islands NP, Capricorn Coast NP, Byfield CP, Shoalwater Bay CP
8.12.1	CF	Complex notophyll (feather palm) vine forest often with Acmena resa and Syzygium wesa, of wet uplands on Mesozoic to Proterozoic igneous rocks	No concern at present	Complex notophyll (feather palm) vine forest. Characteristic species include Acmena resa, Syzygium wesa, Argirodendron actinophyllum subsp. diversifolium, Cinnamomum oliveri, Cryptocarya corrugata, C. angulata, Archontophoenix cunninghamiana, Mischarytera lautereriana, Endiandra muelleri subsp. bracteata, Sloanea langii, S. macybridei, Elaeocarpus largiflorens, E. foveolatus, Neolitsea dealbata, Syzygium wilsonii subsp. cryptophlebium, Tetrasynandra laxiflora and Ficus destruens. Occurs on wet uplands on Mesozoic to Proterozoic igneous rocks. Major vegetation communities include: 8.12.1a: Complex notophyll feather palm vine forest. Occurs on high mountain plateaus (highest wettest areas) on Mesozoic to Proterozoic igneous rocks (subregion 3). 8.12.1b: Complex notophyll feather palm vine forest. Occurs on high mountain plateaus (highest wettest areas) on Mesozoic to Proterozoic igneous rocks (subregion 1).	3, 1	Eungella NP, Conway NP, Dryander NP
8.12.2	CF	Notophyll to complex notophyll vine forest often with Argirodendron actinophyllum subsp. diversifolium +/- A. polyandrum, on drier uplands and coastal ranges on Mesozoic to Proterozoic igneous rocks	No concern at present	Notophyll to complex notophyll vine forest. Characteristic species include Argirodendron actinophyllum subsp. diversifolium +/- A. polyandrum (at lower altitudes), Cryptocarya macdonaldii, Diospyros pentamera, Baloghia inophylla, Pouteria queenslandica, Olea paniculata, Dendrocnide photinophylla, Podocarpus elatus, Endiandra muelleri subsp. bracteata, Mischocarpus stipitatus, Wilkiea macrophylla, Neolitsea brassii and Randia sp. Shute Harbour. Araucaria cunninghamii sometimes present as emergent. Occurs on drier uplands and coastal ranges on Mesozoic to Proterozoic igneous rocks, contains minor areas of Tertiary acid volcanics.	3	Eungella NP, Bluff Hill NP, Pioneer Peaks NP, Mount Martin NP, Mount Ossa NP, Homevale RR, St Helens Gap CP, Andromache CP
8.12.3	CF	Notophyll rainforest/microphyll rainforest often with Argirodendron polyandrum and Paraserianthes toona, +/- Araucaria cunninghamii, on low to medium ranges on Mesozoic to Proterozoic igneous rocks	No concern at present	Notophyll rainforest/microphyll rainforest +/- Araucaria cunninghamii. Characteristic species include Argirodendron polyandrum, Paraserianthes toona, Cryptocarya triplinervis, C. bidwillii, Drypetes deplanchei, Atalaya rigida, Diospyros geminata, Mallotus philippensis, Memecylon pauciflorum, Mischocarpus anodontus, Alectryon tomentosus and Chionanthus ramiflora. Araucaria cunninghamii present in places. In extreme instances such as shallow soils the vegetation is a tall shrubland with Araucaria cunninghamii emergents. Occurs on ranges on Mesozoic to Proterozoic igneous rocks. Lower altitudes and drier or more exposed situations than RE 8.12.2. Contains minor areas of Tertiary acid volcanics (land zone 8). Major vegetation communities include: 8.12.3a: Notophyll rainforest/microphyll rainforest +/- Araucaria cunninghamii. Occurs on coastal hills ranges on Mesozoic to Proterozoic igneous rocks. Contains minor areas of Tertiary acid volcanics (land zone 8). Lower altitudes and drier or more exposed situations than RE 8.12.2 (subregions 1-3 and 6). 8.12.3b: Archidendropsis thozetiana, Strychnos psilosperma rainforest. Occurs on steep exposed cliffs, on Mesozoic to Proterozoic igneous rocks. Contains minor areas of Tertiary acid volcanics (land zone 8) (subregions 1-3). 8.12.3c: Notophyll rainforest/microphyll rainforest +/- Araucaria cunninghamii. Occurs in gullies and exposed areas, on Mesozoic to Proterozoic igneous rocks. Contains minor areas of Tertiary acid volcanics (land zone 8, subregion 4).	3, 2, (4)	Eungella NP, Bluff Hill NP, Pioneer Peaks NP, Mount Martin NP, Mount Ossa NP, West Hill NP, Cape Hillsborough NP, Andromache CP, Homevale NP, Homevale RR, Mount Blarney CP, Kelvin NP, Skull Knob CP, Round Top Island NP, St Helens Gap CP

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8.12.4	OF	Eucalyptus grandis open-forest of wet uplands on Mesozoic to Proterozoic igneous rocks (predominantly granite)	Of concern	Eucalyptus grandis and Corymbia intermedia open-forest. Eucalyptus portuensis is also frequently present. Other species sometimes present may include E. resinifera, C. trachyphloia and E. tereticornis. The secondary tree layer may be sclerophyll dominated with species such as Allocasuarina littoralis, A. torulosa, Banksia integrifolia subsp. compar, Lophostemon suaveolens, and Acacia melanoxylon. Alternatively many areas have a secondary tree layer with a high proportion of rainforest species including Glochidion ferdinandi, Cassinia subtropica, Mackinlaya macrosciadea, Rhodomyrtus trineura, Polyalthia nitidissima, Scolopia braunii, and Livistona australis. The ground layer has a dense cover of grasses and herbs including Imperata cylindrica, Sorghum nitidum, Gahnia aspera, Pteridium esculentum, Desmodium rhytidophyllum, Blechnum cartilagineum, Calochlaena dubia, Oplismenus aemulus, Veronica plebeia, Alyxia spicata, and Hardenbergia violacea. Occurs on mountain ranges on Mesozoic to Proterozoic igneous rocks (predominantly granite). Contains minor areas of Tertiary acid volcanics (land zone 8).	3	Eungella NP
8.12.5	OF	Corymbia intermedia, E. portuensis +/- Lophostemon spp. +/- Syncarpia glomulifera +/- Banksia integrifolia, open-forest to closed-scrub on Mesozoic to Proterozoic igneous rocks	No concern at present	Eucalyptus portuensis or Lophostemon confertus open-forest to closed-scrub +/- Corymbia intermedia, +/- C. trachyphloia, +/- Syncarpia glomulifera, +/- E. suffulgens, +/- E. fibrosa subsp. fibrosa, +/- E. exserta, often with a secondary layer of Lophostemon confertus, Banksia integrifolia subsp. compar, +/- Allocasuarina littoralis or A. torulosa. Xanthorrhoea latifolia subsp. latifolia usually present in the understorey. Occurs on high moist upper slopes on ridgelines of high ranges on Mesozoic to Proterozoic igneous rocks. Major vegetation communities include: 8.12.5a: Lophostemon confertus and Eucalyptus portuensis open-forest to closed-scrub. Occurs on steep upper slopes and spurs on Mesozoic to Proterozoic igneous rocks (subregions 1-3). 8.12.5b: Eucalyptus portuensis, Corymbia intermedia, Lophostemon suaveolens, Syncarpia glomulifera open-forest. Occurs on Mesozoic to Proterozoic igneous rocks (subregion 4). 8.12.5c: Eucalyptus portuensis and Lophostemon confertus +/- Corymbia intermedia open-forest. Occurs at low to moderate altitudes on near coastal hills on Mesozoic to Proterozoic igneous rocks (subregions 1 and 2).	3, 4, 1, 2	Conway NP, Eungella NP, Cape Palmerston NP, Dryander NP, Homevale NP, Molle Islands NP
8.12.6	W	Eucalyptus drepanophylla +/- E. platyphylla +/- Corymbia clarksoniana woodland to open-forest on low to medium hills, on Mesozoic to Proterozoic igneous rocks	No concern at present	Eucalyptus drepanophylla +/- E. platyphylla woodland to open-forest, sometimes with occasional Corymbia clarksoniana and C. dallachiana. There is sometimes a shrub layer of Planchonia careya, Alphitonia excelsa, Cycas media subsp. media, Dodonaea triquetra, Flueggea virosa, and often Xanthorrhoea latifolia subsp. latifolia. The ground layer is usually dominated by Mnesithea rotboellioides, Sorghum nitidum forma aristatum, Heteropogon triticeus, Aristida queenslandica, Lomandra longifolia, H. contortus and Themeda triandra. Includes more open areas on steep exposed hillsides consisting of a shrubland of Flueggea virosa and Jasminum didymum. Occurs on low to medium hills on Mesozoic to Proterozoic igneous rocks. Major vegetation communities include: 8.12.6a: Eucalyptus drepanophylla and E. platyphylla woodland to open-forest. Occurs on low hills and foothills on Mesozoic to Proterozoic igneous rocks (subregions 2, 3 and 6). 8.12.6b: Eucalyptus drepanophylla woodland with grassy or Xanthorrhoea latifolia subsp. latifolia understorey. Occurs on low to medium hills on Mesozoic to Proterozoic igneous rocks (subregion 1 and 6).	2, 3, 6	Dryander NP, Gloucester Island NP, Andromache CP, Eungella NP
8.12.7	OF	Corymbia citriodora +/- Eucalyptus portuensis +/- E. drepanophylla (or E. crebra) open-forest to woodland on hill slopes and undulating plateaus, on Mesozoic to Proterozoic igneous rocks	No concern at present	Corymbia citriodora, Eucalyptus portuensis, and C. trachyphloia open-forest to woodland. Subdominant species often include E. exserta, C. intermedia, and E. drepanophylla. In drier, more western areas C. citriodora and E. drepanophylla (or E. crebra in the south) are dominant. Stands of E. melanophloia may also occur in drier parts. A secondary tree layer of Banksia integrifolia subsp. compar and Allocasuarina littoralis is occasionally present, and Lophostemon confertus occurs on shallower soils. A sparse low shrub layer of Xanthorrhoea latifolia subsp. latifolia, may be present. Rocky knolls may support a shrubby layer of Jacksonia scoparia. A dense grassy/herbaceous layer is usually dominated by Imperata cylindrica, Themeda triandra, Eremochloa bimauculata, Sorghum nitidum forma aristatum, Heteropogon triticeus, H. contortus, Lomandra longifolia and Chrysopogon fallax. Occurs on hill slopes and undulating plateaus on Mesozoic to Proterozoic igneous rocks. Contains minor areas of Tertiary acid volcanics (land zone 8). Major vegetation communities include: 8.12.7a: Corymbia citriodora, Eucalyptus portuensis, and C. trachyphloia open-forest to woodland on hills on Mesozoic to Proterozoic igneous rocks. Occurs on Mesozoic to Proterozoic igneous rocks. Contains minor areas of Tertiary acid volcanics (land zone 8), (subregion 2). 8.12.7b: Corymbia citriodora and Eucalyptus crebra +/- E. portuensis woodland to open-forest Mesozoic to Proterozoic igneous rocks. Occurs on dry hills on Mesozoic to Proterozoic igneous rocks. Contains minor areas of Tertiary acid volcanics (land zone 8), (subregion 4). 8.12.7c: Eucalyptus drepanophylla and Corymbia citriodora +/- E. portuensis +/- E. exserta woodland. Occurs on dry hills on Mesozoic to Proterozoic igneous rocks. Contains minor areas of Tertiary acid volcanics (land zone 8), (subregion 2).	3,4	Eungella NP, Homevale NP, Homevale RR
8.12.8	OF	Eucalyptus montivaga +/- E. resinifera open-forest on plateaus of high ranges on Mesozoic to Proterozoic igneous rocks	Of concern	Eucalyptus montivaga +/- E. resinifera open-forest. Corymbia intermedia may also be common. There is a dense secondary tree layer of Allocasuarina littoralis (or A. torulosa), and often Banksia integrifolia subsp. compar. The shrub layer includes Xanthorrhoea latifolia subsp. latifolia, and Monotoca scoparia. The ground layer is moderately dense and includes Imperata cylindrica, Panicum effusum, Pteridium esculentum, Dampiera ferruginea, Hibbertia aspera, Lomandra longifolia, Hardenbergia violacea, Ranunculus lappaceus, and Oplismenus burmannii. Occurs on ridgelines, peaks, high plateaus, and upper slopes of high mountains on Mesozoic to Proterozoic igneous rocks.	3	Eungella NP
8.12.9	W	Eucalyptus tereticornis +/- Lophostemon suaveolens +/- Corymbia intermedia woodland to open-forest on undulating uplands, on Mesozoic to Proterozoic igneous rocks	Of concern	Eucalyptus tereticornis, often with Corymbia intermedia and Lophostemon suaveolens woodland to open-forest. A secondary tree layer of Allocasuarina littoralis or A. torulosa, Banksia integrifolia subsp. compar, and Timonius timon is sometimes present. Some areas have a secondary tree layer consisting of rainforest species. Shrubs are absent or may include scattered Xanthorrhoea latifolia subsp. latifolia, and occasionally Glochidion apodogynum, and Cycas media. The ground layer is dense and grassy, dominated by species such as Imperata cylindrica, Centella asiatica, Dichondra repens, Oplismenus burmannii, Themeda triandra, Sorghum nitidum forma aristatum, Microlaena stipoides, Carex inversa, Pteridium esculentum and Mnesithea rotboellioides. Occurs on gently undulating areas on mountain ranges on Mesozoic to Proterozoic igneous rocks. Contains minor areas of Tertiary acid volcanics (land zone 8).	3	Homevale RR, Eungella NP, [Homevale NP]

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8.12.10	S	Lophostemon confertus +/- Leptospermum neglectum +/- Hibiscus divaricatus +/- Melaleuca pearsonii closed-scrub, closed-heath or open-shrubland on exposed plateaus of Cretaceous-Tertiary acid to intermediate volcanics, and Mesozoic to Proterozoic igneous rocks	Of concern	In the Diamond Cliffs/Sydney Heads area this vegetation type consists of a closed-scrub or closed-heath to open shrubland of Lophostemon confertus with Melaleuca pearsonii, Bertya sharpeana, Astraloma sp. (Baal Gammon B.P. Hyland 10341), Leptospermum neglectum, L. polygalifolium, Leucopogon cuspidatus, Melichrus adpressus, M. urceolatus, Acrotriche aggregata, Pultenaea retusa and Acacia leprosa. The ground layer includes Lomandra sp., Tetraera capillaris, Cleistochloa subjuncea and Plectranthus diversus. In the Pioneer Peaks area this vegetation unit is more typically an open heathland of Leptospermum neglectum with other species including Zieria sp., Hibiscus divaricatus, Cassinia subtropica, Allocasuarina littoralis, and emergents of Araucaria cunninghamii. Occurs on exposed plateaus of Cretaceous-Tertiary acid to intermediate volcanics, and Mesozoic to Proterozoic igneous rocks. Contains substantial areas of Tertiary acid volcanics (land zone 8). Major vegetation communities include: 8.12.10a: Variable shrubland or open-shrubland to closed-heath with Lophostemon confertus and/or Leptospermum neglectum +/- Melaleuca pearsonii. Occurs on Cretaceous-Tertiary acid to intermediate volcanics, and Mesozoic to Proterozoic igneous rocks. 8.12.10b: Closed-heath to open-shrubland at high altitude. Occurs on Mesozoic to Proterozoic igneous rocks (subregion 4)	4, 3	Homevale NP, Pioneer Peaks NP
8.12.11	CF	Semi-deciduous microphyll vine forest/thicket with emergent Araucaria cunninghamii in coastal areas including islands, on Mesozoic to Proterozoic igneous rocks and Tertiary acid to intermediate volcanics and granite	Of concern	Semi-deciduous microphyll vine forest/thicket with emergent Araucaria cunninghamii. Characteristic species are Cleistanthus dallachyanus, Croton arnhemicus, Cupaniopsis anacardioides, Diospyros geminata, Pouteria sericea, Eugenia reinwardtiana, Alectryon connatus, Polyalthia nitidissima, Xylosma ovatum and Drypetes deplanchei. Contains minor areas of Tertiary acid volcanics (land zone 8). Major vegetation communities include: 8.12.11a: Semi-deciduous microphyll vine forest/thicket with emergent Araucaria cunninghamii. Characteristic species are Cleistanthus dallachyanus, Croton arnhemicus, Cupaniopsis anacardioides, Diospyros geminata, Pouteria sericea, Eugenia reinwardtiana, Alectryon connatus, Polyalthia nitidissima, Xylosma ovatum and Drypetes deplanchei. Includes very small areas of Pisonia grandis shrubland to open forest on some islands. Occurs on Mesozoic to Proterozoic igneous rocks and Tertiary acid to intermediate volcanics and granite, in coastal areas including islands. 8.12.11c: Semi-deciduous microphyll vine forest/thicket with emergent Araucaria cunninghamii. This subunit differs from 8.12.11a by the presence of Alectryon connatus, Polyalthia nitidissima and Xylosma ovatum, and absence of Cleistanthus dallachyanus, Croton arnhemicus and Eugenia reinwardtiana. Occurs on Mesozoic to Proterozoic igneous rocks and Tertiary acid to intermediate volcanics and granite, in coastal areas including islands (subregion 5).	1, 2, 5, 6	Conway NP, Whitsunday Islands NP, Dryander NP, Molle Islands NP, Northumberland Islands NP, South Cumberland Islands NP, Gloucester Island NP, Broad Sound Islands NP, Smith Islands NP, Cape Hillsborough NP, Percy Isles NP, Lindeman Islands NP, Brampton Is
8.12.12	OF	Variable Corymbia spp. +/- Eucalyptus tereticornis +/- E. platyphylla +/- E. drepanophylla +/- E. portuensis open-forest to woodland on lower and mid-slopes of ranges on Mesozoic to Proterozoic igneous rocks	No concern at present	Variable mixed open-forest to woodland consisting of a number of the following species; Corymbia intermedia, C. intermedia x clarksoniana, Eucalyptus tereticornis, E. platyphylla, E. drepanophylla and E. portuensis. The shrub layer often contains Cycas media and Xanthorrhoea latifolia subsp. latifolia. The ground layer is usually dominated by Imperata cylindrica, Themeda triandra, Heteropogon triticeus and Mnesithea rottboellioideis. Occurs on lower and mid-slopes of hills on Mesozoic to Proterozoic igneous rocks. Contains minor areas of Tertiary acid volcanics (land zone 8). Major vegetation communities include: 8.12.12a: Mixed open forest to woodland of Corymbia intermedia +/- Eucalyptus portuensis +/- E. platyphylla +/- E. drepanophylla +/- E. tereticornis. Occurs on lower and mid-slopes of mountains and hills formed on Mesozoic to Proterozoic igneous rocks (subregions 2 and 3). 8.12.12b: Variable open-forest to woodland of Eucalyptus tereticornis and/or E. platyphylla and/or Lophostemon suaveolens +/- E. crebra +/- C. intermedia +/- E. portuensis. Occurs on slopes and ridges on Mesozoic to Proterozoic igneous rocks. Contains minor areas of Tertiary acid volcanics (land zone 8) (subregion 4). 8.12.12c: Eucalyptus tereticornis, Corymbia intermedia, C. tessellaris, Lophostemon suaveolens +/- Melaleuca spp. open-forest with rainforest spp. in the lower tree layer. Occurs on Mesozoic to Proterozoic igneous rocks (subregion 4). 8.12.12d: Corymbia clarksoniana, C. tessellaris, Eucalyptus platyphylla +/- C. dallachiana +/- E. drepanophylla +/- E. tereticornis woodland to open-forest. Occurs on low to medium hills on Mesozoic to Proterozoic igneous rocks. Contains minor areas of Tertiary acid volcanics (land zone 8), (mainly subregion 1).	3, 2, 4, 1, 6	Eungella NP, Dryander NP, Mount Martin NP, Gloucester Island NP, Bluff Hill NP, Pioneer Peaks NP, South Cumberland Islands NP, Mount Ossa NP, Andromache CP, Broad Sound Islands NP, Conway NP, Percy Isles NP, Lindeman Islands NP, Mount Blarney CP, Cape Hill
8.12.13	S	Grassland, or Xanthorrhoea latifolia subsp. latifolia shrubland, including areas recently colonised by Timonius timon shrubland, on slopes of islands and headlands, on Mesozoic to Proterozoic igneous rocks and Tertiary acid to intermediate volcanics	Of concern	Imperata cylindrica and/or Themeda triandra and/or Chionachne cyathopoda and/or Heteropogon contortus +/- Chrysopogon fallax +/- Sorghum nitidum forma aristatum +/- Heteropogon contortus +/- Aristida spp. grassland, or Xanthorrhoea latifolia subsp. latifolia shrubland with Themeda triandra. Small clumps of wind sheared vine thicket and sclerophyllous species may be present. Some areas have a prominent Timonius timon and Pittosporum ferrugineum shrub layer (some of this has appeared since the 1960s). Occurs on islands and rocky headlands on Mesozoic to Proterozoic igneous rocks, and Tertiary acid to intermediate volcanics. Contains minor areas of Tertiary acid volcanics (land zone 8). Major vegetation communities include: 8.12.13a: Imperata cylindrica and/or Themeda triandra and/or Chionachne cyathopoda +/- Chrysopogon fallax +/- Sorghum nitidum forma aristatum +/- Heteropogon contortus +/- Aristida spp. grassland, or Xanthorrhoea latifolia subsp. latifolia shrubland with Themeda triandra. Small clumps of wind sheared vine thicket and sclerophyllous species may be present. Occurs on slopes of islands and headlands on Mesozoic to Proterozoic igneous rocks, and Tertiary acid to intermediate volcanics. 8.12.13b: Timonius timon +/- Pittosporum ferrugineum shrubland to closed-scrub. Occurs on Mesozoic to Proterozoic igneous rocks, and Tertiary acid to intermediate volcanics.	2, 1, 5, (11.14), (6)	South Cumberland Islands NP, Northumberland Islands NP, Molle Islands NP, Whitsunday Islands NP, Smith Islands NP, Gloucester Island NP, Lindeman Islands NP, Brampton Islands NP, Broad Sound Islands NP, Percy Isles NP, Dryander NP, Cape Palmerston NP, Rep

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8.12.14	OF	Eucalyptus drepanophylla and/or E. crebra, and/or E. exserta and/or Acacia spirorbis subsp. solandri +/- Lophostemon confertus, on islands and headlands, on Mesozoic to Proterozoic igneous rocks, and Tertiary acid to intermediate volcanics	No concern at present	<p>Complex of eucalypt woodland to closed-forest communities. Includes woodland to open-forest of Eucalyptus drepanophylla (or E. crebra in southern areas), Lophostemon confertus, E. exserta, Acacia spirorbis subsp. solandri Corymbia clarksoniana and Corymbia intermedia (some areas with E. moluccana), OR closed-forest of Acacia spirorbis often with E. drepanophylla, and E. tereticornis, OR closed-forest of Lophostemon confertus. There is often a secondary tree to shrub layer of Drypetes deplanchei, Euroschinus falcatus Pouteria sericea, and Dodonaea lanceolata var. subsessilifolia, and a low shrub of Xanthorrhoea latifolia subsp. latifolia. The ground layer is typically dominated by Gahnia aspera, Themeda triandra, Oplismenus spp., and Dianella caerulea. Occurs on islands and rocky headlands on Mesozoic to Proterozoic igneous rocks and Tertiary acid to intermediate volcanics (land zone 8). Major vegetation communities include: 8.12.14a: Eucalyptus drepanophylla and Lophostemon confertus woodland. Occurs on exposed hill slopes of islands on Mesozoic to Proterozoic igneous rocks, and Tertiary acid to intermediate volcanics (land zone 8), (subregions 1 and 2). 8.12.14b: Acacia spirorbis subsp. solandri open-forest to closed-forest. Occurs on hill slopes of islands and headlands on Mesozoic to Proterozoic igneous rocks, and Tertiary acid to intermediate volcanics (land zone 8), (subregions 1 and 2). 8.12.14c: Lophostemon confertus closed-forest. Occurs on slopes of islands on Mesozoic to Proterozoic igneous rocks, and contains minor areas of Tertiary acid to intermediate volcanics (land zone 8), (subregions 1 and 2). 8.12.14d: Eucalyptus crebra and/or E. exserta and/or Corymbia clarksoniana and/or C. dallachyana and/or Lophostemon confertus and/or Lophostemon suaveolens open-forest to woodland with Acacia spp. +/- rainforest species. Occurs on Mesozoic to Proterozoic igneous rocks on islands and headlands. 8.12.14x2: Eucalyptus crebra and/or E. drepanophylla and/or E. exserta and/or Corymbia clarksoniana and/or C. dallachyana and/or C. xanthope and/or Lophostemon confertus and/or Lophostemon suaveolens open-forest to woodland with Acacia spp. +/- rainforest species. Occurs on metamorphic rocks on islands and headlands. 8.12.14x2a: Eucalyptus drepanophylla, Corymbia trachyphloia, Corymbia xanthope open forest to low open forest, on serpentinite. There is a dense tall shrub layer, with some vine scrub species prominent. May include lower shrubs of Leucopogon imbricatus and sparse ground layer of Entolasia stricta. Occurs serpentinite on islands, in positions protected from the predominating breezes. 8.12.14x2b: Corymbia xanthope +/- Acacia julifera low open forest with a lower stratum dominated by Xanthorrhoea latifolia, with occasional Dodonaea lanceolata subsp. subsessilifolia, and Leucopogon imbricatus, over sparse Gahnia aspera, Themeda triandra, Aristida spuria, Scleria mackayensis, Brunoniella australis and Eriachne pallescens. Exposed headlands and upper hills on serpentinite. Very rocky substrate with minimal soil. 8.12.14x2c: Eucalyptus crebra and/or E. exserta and/or Corymbia clarksoniana and/or C. dallachyana and/or Lophostemon confertus and/or Lophostemon suaveolens open-forest to woodland with Acacia spp. +/- rainforest species. Occurs on metamorphic rocks on islands and headlands.</p>	1, 2, 5, 6	Whitsunday Islands NP, Lindeman Islands NP, South Cumberland Islands NP, Dryander NP, Smith Islands NP, Brampton Islands NP, Percy Isles NP, Molle Islands NP, Cape Hillsborough NP, Gloucester Island NP, Conway NP, Newry Islands NP, Repulse Islands NP, Nor
8.12.16	CF	Low microphyll vine forest to semi-evergreen vine thicket on drier sub coastal hills on Mesozoic to Proterozoic igneous rocks	Of concern	Low microphyll vine forest to semi-evergreen vine thicket. Characteristic species include Gossia bidwillii, Psydrax odorata, Drypetes deplanchei, Bridelia leichhardtii, Pleiogynium timorense, Brachychiton australis, Capparis arborea, Diospyros geminata, Alectryon connatus, Notelaea microcarpa, Strychnos psilosperma, Parasarianthes toona, Flindersia australis and Gyrocarpus americanus. Occurs on drier sub coastal hills on Mesozoic to Proterozoic igneous rocks.	3	Homevale NP, Homevale RR
8.12.17	CF	Notophyll mossy evergreen vine forest on mountain slopes and summits subject to regular mist cover, on Mesozoic to Proterozoic igneous rocks	Of concern	<p>Notophyll mossy vine forest (evergreen type with hanging mosses). Characteristic species include Balanops australiana, Symlocos stawellii, Polyscias australiana, Acmena resa, Syzygium endophloium, Pouteria queenslandica, Pittosporum venulosum, Acronychia eungellensis, Cryptocarya macdonaldii, Archontophoenix cunninghamiana, Cyathea rebecca, Myrsine irenae subsp. irenae and Tasmania insipida. Occurs on higher mountain slopes and summits subject to regular mist and cloud cover. Major vegetation communities include: 8.12.17a: Microphyll mossy vine forest. Occurs at highest altitudes on extensive plateaus of mountains on Mesozoic to Proterozoic igneous rocks (subregion 3). 8.12.17b: Notophyll vine forest/fern forest dominated by Balanops australiana, Endiandra discolor, Elaeocarpus eumundi and Pouteria queenslandica. Occurs on Mesozoic to Proterozoic igneous rocks. 8.12.17c: Microphyll mossy vine forest. Occurs on ridges and plateaus of mountains on Mesozoic to Proterozoic igneous rocks (subregion 1).</p>	3, 1, 4	Eungella NP, Conway NP
8.12.18	CF	Notophyll to complex notophyll vine forest with Argrodendron polyandrum +/- Argrodendron sp. (Whitsundays W.J. McDonald 5831) +/- Araucaria cunninghamii, on near-coastal ranges and islands, on Mesozoic to Proterozoic igneous rocks	No concern at present	Notophyll to complex notophyll vine forest +/- Araucaria cunninghamii. Coastal ranges and islands of Whitsunday subregion. Characteristic dominant species include Argrodendron polyandrum +/- A. sp. (Whitsundays W.J. McDonald+ 5831) and locally Dissiliaria indistincta. Other characteristic species include Macropteranthes fitzalanii, Backhousia citriodora, Arytera sp. (Dryander Creek P.R. Sharpe 4184), Parasarianthes toona, Cleistanthus dallachyanus, Cryptocarya bidwillii, Aidia racemosa, Flindersia schottiana, Mallotus philippensis, Dendrocnide photinophylla, Terminalia porphyrocarpa and Pleiogynium timorense. Araucaria cunninghamii emergent in places. Occurs on Mesozoic to Proterozoic igneous rocks.	1, 2	Conway NP, Dryander NP, Whitsunday Islands NP, Molle Islands NP, South Cumberland Islands NP

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8.12.19	CF	Complex notophyll feather palm vine forest with <i>Argyrodendron actinophyllum</i> subsp. <i>diversifolium</i> and sub canopy of <i>Myristica globosa</i> subsp. <i>muelleri</i> , on moist, low to moderate, coastal and sub coastal ranges on Mesozoic to Proterozoic igneous rocks	Of concern	Complex notophyll feather palm vine forest. Characterised by <i>Argyrodendron actinophyllum</i> subsp. <i>diversifolium</i> in the canopy and a dense sub canopy of <i>Myristica globosa</i> subsp. <i>muelleri</i> , <i>Acmenosperma claviflorum</i> and <i>Archontophoenix alexandrae</i> . Other characteristic species include <i>Terminalia sericocarpa</i> , <i>Alstonia scholaris</i> , <i>Cryptocarya hypospodia</i> , <i>Dysoxylum mollissimum</i> subsp. <i>molle</i> , <i>Endiandra coveleyana</i> , <i>Dysoxylum alliaceum</i> and <i>Pouteria myrsinodendron</i> . Occurs on moist sites at low to moderate altitudes on coastal and sub coastal ranges.	3, 1	Eungella NP, Conway NP, Dryander NP, Bluff Hill NP, Pioneer Peaks NP, Mount Martin NP, Mount Ossa NP, St Helens Gap CP
8.12.20	W	<i>Eucalyptus drepanophylla</i> and/or <i>E. platyphylla</i> +/- <i>Corymbia clarksoniana</i> +/- <i>C. dallachiana</i> woodland to open-forest on low gently undulating landscapes on Mesozoic to Proterozoic igneous rocks	Of concern	<i>Eucalyptus drepanophylla</i> and/or <i>E. platyphylla</i> woodland to open-forest, usually with <i>Corymbia clarksoniana</i> and <i>C. dallachiana</i> . A sparse mid-layer of <i>Melaleuca viridiflora</i> is often present. The ground layer is commonly dominated by <i>Themeda triandra</i> , <i>Heteropogon triticeus</i> , <i>Sorghum nitidum</i> forma <i>aristatum</i> and <i>Mnesithea rottoelloides</i> . Occurs on gently undulating landscape on Mesozoic to Proterozoic igneous rocks (verging on Land zone 3). Major vegetation communities include: 8.12.20a: <i>Eucalyptus drepanophylla</i> and <i>E. platyphylla</i> +/- <i>Melaleuca viridiflora</i> woodland. Occurs on low gently undulating landscapes (grading into land zone 3) on Mesozoic to Proterozoic igneous rocks (subregions 2 and 6). 8.12.20c: <i>Eucalyptus platyphylla</i> +/- <i>Melaleuca viridiflora</i> woodland to open-forest. Occurs on colluvial foot slopes, on Mesozoic to Proterozoic igneous rocks (subregion 4).	2, 6, 3	Newry Islands NP, Eungella NP, Cape Hillsborough NP, [Andromache CP]
8.12.22	W	<i>Eucalyptus drepanophylla</i> +/- <i>E. platyphylla</i> +/- <i>Corymbia clarksoniana</i> +/- <i>E. exserta</i> +/- <i>C. trachyphloia</i> woodland to open-forest including small stands of <i>E. portuensis</i> and <i>E. melanophloia</i> . Hills and ranges at low to moderate altitudes, in drier areas	No concern at present	Variable woodland to open-forest usually dominated by <i>Eucalyptus drepanophylla</i> , and usually one to several of the following species; <i>E. platyphylla</i> , <i>Corymbia clarksoniana</i> , <i>E. exserta</i> , <i>C. trachyphloia</i> and <i>C. dallachiana</i> . Includes small areas of <i>E. portuensis</i> and <i>C. intermedia</i> , and occasional low open stands of <i>E. melanophloia</i> . <i>Lophostemon confertus</i> is often present as a secondary tree layer. There is usually a tall shrub layer with typical species including <i>Planchonia careya</i> , <i>Acacia flavescens</i> , <i>Glochidion lobocarpum</i> , <i>Timonius timon</i> and <i>A. leptocarpa</i> . A low shrub layer of <i>Xanthorrhoea latifolia</i> subsp. <i>latifolia</i> is usually present (and sometimes <i>Cycas media</i>). The ground layer is dominated by <i>Heteropogon triticeus</i> , <i>Themeda triandra</i> and <i>Mnesithea rottoelloides</i> , <i>Sorghum nitidum</i> forma <i>aristatum</i> , <i>H. contortus</i> , <i>Flemingia parviflora</i> , <i>Chrysopogon fallax</i> and <i>Imperata cylindrica</i> . Occurs on hills and ranges on Mesozoic to Proterozoic igneous rocks at low to moderate altitudes, in drier areas. Contains minor areas of Tertiary acid volcanics (land zone 8).	3, 2	Cape Palmerston NP, Newry Islands NP, Mount Hector CP
8.12.23	W	<i>Eucalyptus moluccana</i> woodland to open-forest on elevated tablelands on Mesozoic to Proterozoic igneous rocks	Of concern	<i>Eucalyptus moluccana</i> woodland to open-forest, sometimes with <i>E. drepanophylla</i> , and/or <i>Corymbia citriodora</i> , +/- <i>E. portuensis</i> . Shrub layers are usually very sparse or absent. The ground layer commonly includes <i>Eremochloa bimaculata</i> , <i>Themeda triandra</i> , <i>Chrysopogon fallax</i> , <i>Lomandra longifolia</i> , <i>Sarga leiocladum</i> <i>Xanthorrhoea latifolia</i> subsp. <i>latifolia</i> , and <i>Flemingia parviflora</i> . Occurs on undulating plateaus on Mesozoic to Proterozoic igneous rocks on the drier western edge of the bioregion.	3	Eungella NP, Homevale RR
8.12.25	W	<i>Eucalyptus tereticornis</i> +/- <i>E. platyphylla</i> x <i>E. tereticornis</i> woodland to open-forest on hill slopes of islands on Mesozoic to Proterozoic igneous rocks	Of concern	<i>Eucalyptus tereticornis</i> woodland to open-forest, often with <i>E. platyphylla</i> x <i>tereticornis</i> , and often with subdominants of <i>Corymbia clarksoniana</i> and <i>E. platyphylla</i> . A secondary tree layer of <i>Lophostemon confertus</i> is sometimes present. The ground layer is dominated by <i>Imperata cylindrica</i> , <i>Heteropogon contortus</i> , <i>Sorghum nitidum</i> forma <i>aristatum</i> , <i>S. leiocladum</i> , <i>H. triticeus</i> and <i>Themeda triandra</i> . Occurs on rounded moderate to very steep slopes on Mesozoic to Proterozoic igneous rocks, on islands.	2, 1	South Cumberland Islands NP, Newry Islands NP, Smith Islands NP
8.12.26	OF	<i>Corymbia tessellaris</i> and/or <i>Eucalyptus tereticornis</i> open-forest +/- vine thicket understorey on hill slopes of islands and near coastal areas, on Mesozoic to Proterozoic igneous rocks, and Tertiary acid to intermediate volcanics	Endangered	<i>Corymbia tessellaris</i> and <i>Eucalyptus tereticornis</i> (occasionally only one of these two species is present) open-forest, often with a sparse to dense secondary tree layer of vine thicket species including <i>Acacia spirorbis</i> subsp. <i>solandri</i> , <i>Pittosporum ferrugineum</i> , <i>Mallotus philippensis</i> , <i>Drypetes deplanchei</i> , <i>Pouteria sericea</i> , <i>Jagera pseudorhus</i> , <i>Euroschinus falcatus</i> , <i>Lophostemon confertus</i> and <i>Cupaniopsis anacardioides</i> . A tall shrub layer is sometimes present and may include <i>Timonius timon</i> , <i>Planchonia careya</i> and <i>Clerodendron floribundum</i> . A low shrub layer is absent or occasionally includes <i>Xanthorrhoea latifolia</i> subsp. <i>latifolia</i> . The ground layer includes <i>Imperata cylindrica</i> , <i>Themeda triandra</i> , <i>Sorghum nitidum</i> forma <i>aristatum</i> , <i>Chionachne cyathopoda</i> , and <i>Heteropogon triticeus</i> . Occurs on hill slopes on Mesozoic to Proterozoic igneous rocks, and Tertiary acid to intermediate volcanics, on islands and near-coastal areas.	1, 2	Molle Islands NP, Dryander NP, Smith Islands NP, South Cumberland Islands NP, Whitsunday Islands NP, Brampton Islands NP, Northumberland Islands NP, Lindeman Islands NP, Conway NP, Percy Isles NP, [Holbourne Island NP]
8.12.27	OF	<i>Eucalyptus tereticornis</i> , <i>Corymbia tessellaris</i> , <i>Livistona decora</i> +/- <i>C. intermedia</i> +/- rainforest pioneering spp. open-forest, on low hills on Mesozoic to Proterozoic igneous rocks	Endangered	<i>Eucalyptus tereticornis</i> , <i>Corymbia tessellaris</i> and <i>Livistona decora</i> (<i>C. intermedia</i> co dominant in some areas) open-forest. A secondary tree layer of <i>Albizia procera</i> , <i>Timonius timon</i> , and <i>Lophostemon suaveolens</i> may be present, and rainforest pioneering species are common, including species such as <i>Euroschinus falcatus</i> , <i>Ficus</i> spp., <i>Mallotus philippensis</i> , <i>Scolopia braunii</i> , <i>Glochidion lobocarpum</i> , <i>Acronychia laevis</i> , <i>Neolitsea australiensis</i> and <i>Cupaniopsis anacardioides</i> . The ground layer is usually dominated by <i>Imperata cylindrica</i> , <i>Heteropogon triticeus</i> , <i>H. contortus</i> , and <i>Gahnia aspera</i> . Occurs on low hills on Mesozoic to Proterozoic igneous rocks. Major vegetation communities include: 8.12.27a: <i>Eucalyptus tereticornis</i> , <i>Corymbia tessellaris</i> and <i>Livistona decora</i> +/- rainforest spp. open-forest. Occurs on low hills on Mesozoic to Proterozoic igneous rocks. 8.12.27b: <i>Corymbia intermedia</i> , <i>Eucalyptus tereticornis</i> , <i>C. tessellaris</i> and <i>Livistona decora</i> +/- rainforest spp. open-forest. Occurs on low hills on Mesozoic to Proterozoic igneous rocks.	2, 3	Cape Palmerston NP

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8.12.28	CF	Low microphyll vine forest to semi-evergreen vine thicket with <i>Acacia fasciculifera</i> , on foothills of low, near-coastal ranges, on acid to intermediate volcanics	Of concern	Low microphyll vine forest to semi-evergreen vine thicket. Locally dominated by <i>Acacia fasciculifera</i> . Other characteristic species include <i>Cleistanthus dallachyanus</i> , <i>Pleiogynium timorense</i> , <i>Atalaya rigida</i> , <i>Brachychiton compactus</i> , <i>Terminalia porphyrocarpa</i> , <i>Drypetes deplanchei</i> , <i>Alectryon reticulatus</i> and <i>Capparis</i> sp. (Coen L.S.Smith 11862). Occurs on northern foothills.	1	Dryander NP
8.12.29	OSC	<i>Lophostemon</i> spp. and/or <i>Acacia</i> spp. and/or <i>Allocasuarina littoralis</i> +/- <i>Eucalyptus</i> spp. +/- <i>Melaleuca viridiflora</i> closed-scrub to open-forest on islands and headlands, on Mesozoic to Proterozoic igneous and Tertiary acid to intermediate rocks	Of concern	Mixed open-scrub to low open-forest including <i>Lophostemon confertus</i> , <i>Acacia leptostachya</i> , <i>Corymbia dallachiana</i> , <i>Eucalyptus drepanophylla</i> , <i>E. exserta</i> , <i>Allocasuarina littoralis</i> , <i>Melaleuca viridiflora</i> , OR dominated by <i>Acacia leptostachya</i> OR dominated by <i>Allocasuarina littoralis</i> . There may be a shrub layer of species such as <i>Pseudanthus ligulatus</i> subsp. <i>ligulatus</i> , <i>Acacia leptostachya</i> , <i>Xanthorrhoea latifolia</i> subsp. <i>latifolia</i> , <i>Dodonaea lanceolata</i> and <i>Melaleuca viridiflora</i> . The ground layer usually includes <i>Xanthorrhoea latifolia</i> subsp. <i>latifolia</i> , <i>Eriachne glauca</i> var. <i>glauca</i> , <i>Eriachne pallescens</i> , <i>Cleistochloa subjuncea</i> , <i>Themeda triandra</i> , <i>Eragrostis brownii</i> , <i>Aristida holathera</i> , <i>Gahnia aspera</i> , <i>Abildgaardia ovata</i> and <i>Cymbopogon bombycinus</i> . Occurs on exposed hill slopes of islands and headlands usually with rock at surface, on Mesozoic to Proterozoic igneous rocks, and minor areas of Tertiary acid volcanics (land zone 8) to intermediate volcanics.¶ Major vegetation communities include: ¶ 8.12.29a: <i>Allocasuarina littoralis</i> closed-scrub to closed-forest. Occurs on hill slopes of islands on Mesozoic to Proterozoic igneous rocks, and Tertiary acid to intermediate volcanics (subregions 1 and 2).¶ 8.12.29b: <i>Lophostemon confertus</i> +/- <i>Acacia leptostachya</i> +/- <i>Corymbia dallachiana</i> +/- <i>Eucalyptus drepanophylla</i> +/- <i>E. exserta</i> +/- <i>Melaleuca viridiflora</i> +/- <i>Allocasuarina littoralis</i> closed-scrub to open-forest. Occurs on exposed hillslopes of islands with abundant rock at the surface, on Mesozoic to Proterozoic igneous rocks, and Tertiary acid to intermediate volcanics (subregions 1 and 2).¶ 8.12.29c: <i>Acacia aulacocarpa</i> , <i>Melaleuca viridiflora</i> , <i>Grevillea banksii</i> +/- <i>Lophostemon suaveolens</i> +/- <i>Acacia julifera</i> +/- and <i>Allocasuarina littoralis</i> closed-scrub to closed-forest. Occurs on Mesozoic to Proterozoic igneous rocks (subregions 4 and 5).	1, 6, 2, 5,	Whitsunday Islands NP, Lindeman Islands NP, Gloucester Island NP, Cape Hillsborough NP, South Cumberland Islands NP, Broad Sound Islands NP, Brampton Islands NP, Percy Isles NP, Northumberland Islands NP, Repulse Islands NP, Newry Islands NP, Smith Island
8.12.30	CF	Notophyll mossy evergreen vine forest dominated by <i>Ristantia waterhousei</i> , on upper slopes and summits of mountains on rhyolite	Of concern	Notophyll mossy vine forest (evergreen type with hanging mosses) dominated by endemic <i>Ristantia waterhousei</i> . Associated species include <i>Pouteria queenslandica</i> , <i>Cryptocarya macdonaldii</i> , <i>Cryptocarya murrayi</i> , <i>Archontophoenix alexandrae</i> , <i>Wilkiea macrophylla</i> and <i>Tasmania insipida</i> . Confined to upper slopes and summit on rhyolite.	1	Dryander NP
8.12.31	OF	<i>Eucalyptus portuensis</i> , <i>E. resinifera</i> , <i>Corymbia intermedia</i> +/- <i>Lophostemon suaveolens</i> closed-forest to woodland, or <i>Allocasuarina</i> spp., on moist upper slopes of ranges on Mesozoic to Proterozoic igneous rocks	No concern at present	<i>Eucalyptus portuensis</i> , <i>E. resinifera</i> , <i>Corymbia intermedia</i> +/- <i>Lophostemon suaveolens</i> open forest, often with a secondary tree layer of <i>Allocasuarina littoralis</i> or <i>A. torulosa</i> , and with <i>Xanthorrhoea latifolia</i> usually common in the groundstratum. Includes areas of <i>Allocasuarina</i> spp. closed-forest to closed-scrub. In subregion 5, other common species include <i>Corymbia trachyphloia</i> , <i>Eucalyptus exserta</i> , <i>Eucalyptus suffulgens</i> +/- <i>Syncarpia glomulifera</i> in the understorey. Occurs on moist upper slopes and ridges of ranges, on Mesozoic to Proterozoic igneous rocks.¶ Major vegetation communities include: ¶ 8.12.31a: <i>Eucalyptus portuensis</i> , <i>E. resinifera</i> , <i>E. intermedia</i> +/- <i>Lophostemon suaveolens</i> open forest, with <i>Allocasuarina torulosa</i> +/- <i>Banksia integrifolia</i> , and a groundstratum usually dominated by <i>Xanthorrhoea latifolia</i> . In subregion 5, other common species include <i>Corymbia trachyphloia</i> , <i>Eucalyptus exserta</i> , <i>Eucalyptus suffulgens</i> , +/- understorey of <i>Syncarpia glomulifera</i> . Occurs on moist upper slopes and ridgelines of high ranges, on Mesozoic to Proterozoic igneous rocks.¶ 8.12.31b: <i>Allocasuarina littoralis</i> or <i>A. torulosa</i> closed-forest to closed-scrub. Occurs on exposed ridges and crests at high altitude on Mesozoic to Proterozoic igneous rocks.	3, 4	Eungella NP, Homevale NP, Pioneer Peaks NP
8.12.32	OF	<i>Corymbia intermedia</i> +/- <i>E. portuensis</i> +/- <i>Eucalyptus drepanophylla</i> open-forest to woodland with areas of <i>Allocasuarina</i> spp. +/- <i>Banksia integrifolia</i> open-forest to open-woodland, on high ranges, on Mesozoic to Proterozoic igneous rocks	No concern at present	<i>Corymbia intermedia</i> +/- <i>E. portuensis</i> +/- <i>Eucalyptus drepanophylla</i> open-forest to woodland with areas of <i>Allocasuarina</i> spp. +/- <i>Banksia integrifolia</i> open-forest to open-woodland. Other species may include <i>Lophostemon suaveolens</i> , <i>E. trachyphloia</i> , <i>E. exserta</i> , and <i>Syncarpia glomulifera</i> . The midstratum ranges from almost absent to relatively dense stands of <i>Allocasuarina</i> spp., and the groundstratum may be grassy (usually dominated by <i>Imperata cylindrica</i>) or with abundant <i>Xanthorrhoea latifolia</i> . Occurs on high ranges, on Mesozoic to Proterozoic igneous rocks.	3, 4	Eungella NP

