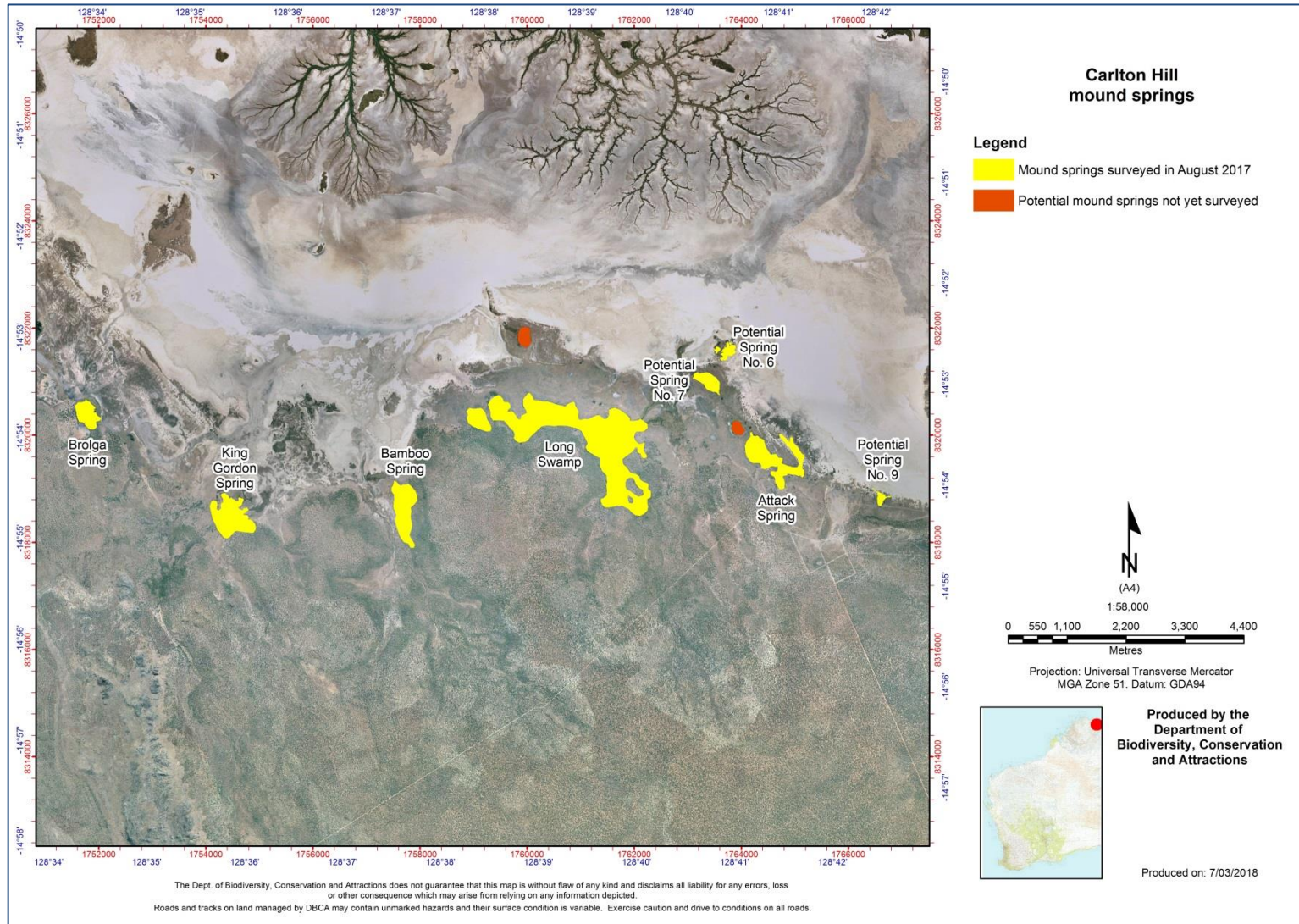
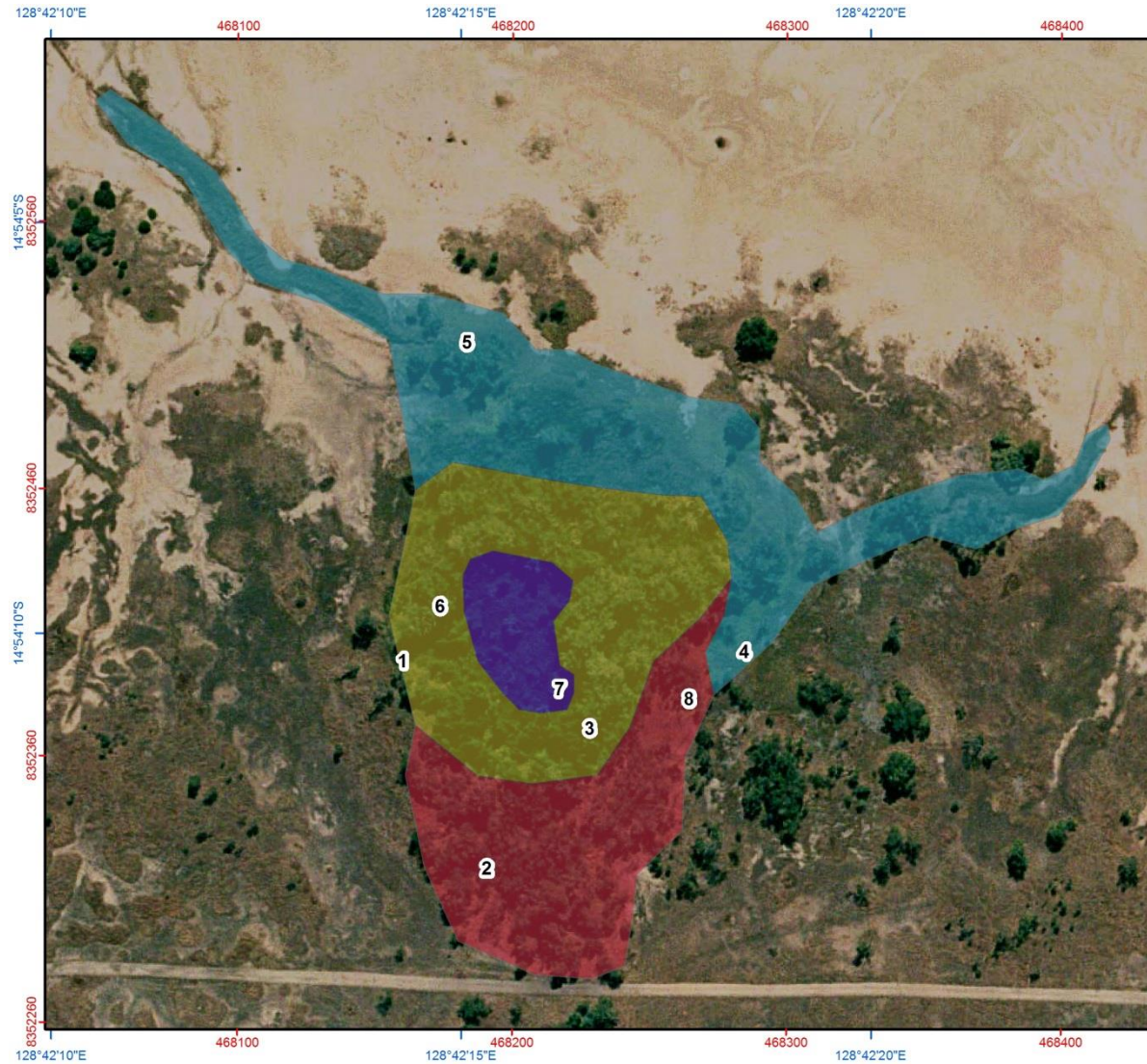


Carlton Hill Mound Spring Survey – August 2017



Potential spring 9 photo-points and vegetation composition



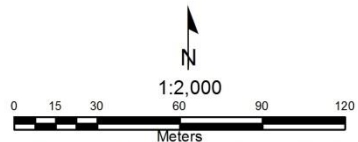
Carlton Hill Potential Mound Spring No. 9 (MS10)

Legend

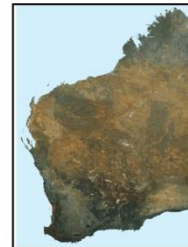
Photo-points

Vegetation composition

- Closed *Flagellaria indica* thicket
- Tall closed *Melaleuca leucadendra* forest
- Low open *Melaleuca viridiflora* forest
- Closed *Typha domingensis* grassland



Projection: Universal Transverse Mercator
MGA Zone 52. Datum: GDA94



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Site notes (Identification/verification pending contact Mike Lyons)

Closed *Flagellaria indica* thicket - *Flagellaria indica*.

Tall closed *Melaleuca leucadendra* forest – *Melaleuca leucadendra*; over *Flagellaria indica*, *Timonius timon* (AT143) and *Sebania formosa* in the midstorey; over *Colocasia esculenta*, *Cyclosorus interruptus* and *Typha domingensis*; At boundary (photo-point 1) there was also an *Acacia* spp. (AT94 & AT142), *Eucalyptus* spp. (AN77), *Cyperus javanicus* (AN67 & AT106), unidentified creeper 1 (AN01) and unidentified creeper 2 (MC01 & AN95).

Low closed *Melaleuca viridiflora* forest – *Melaleuca viridiflora*, *Pandanus spiralis* and *Timonius timon* (AT143); over *Acacia* spp. (AT94 & AT142), *Eucalyptus* spp. (AN77); over *Cyperus javanicus* (AN67 & AT106), unidentified shrub (AT141), *Colocasia esculenta*, unidentified fern (AT107), *Utricularia aurea* and *Marsilea* spp.; Heavy pugging was noted at photopoint 2.

Closed *Typha domingensis* grassland – *Melaleuca viridiflora*; over *Typha domingensis*.

Potential spring 9 – photographs







P4 – Northwest



P4 – Southwest



P4 – Southeast

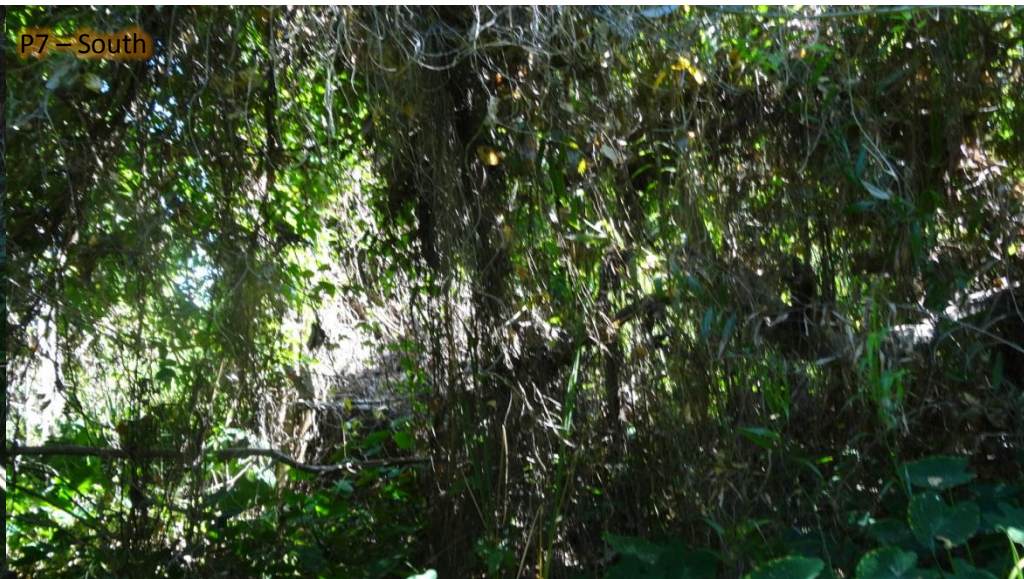


P4 – Northeast











P8 - Northeast



P8 - Northwest

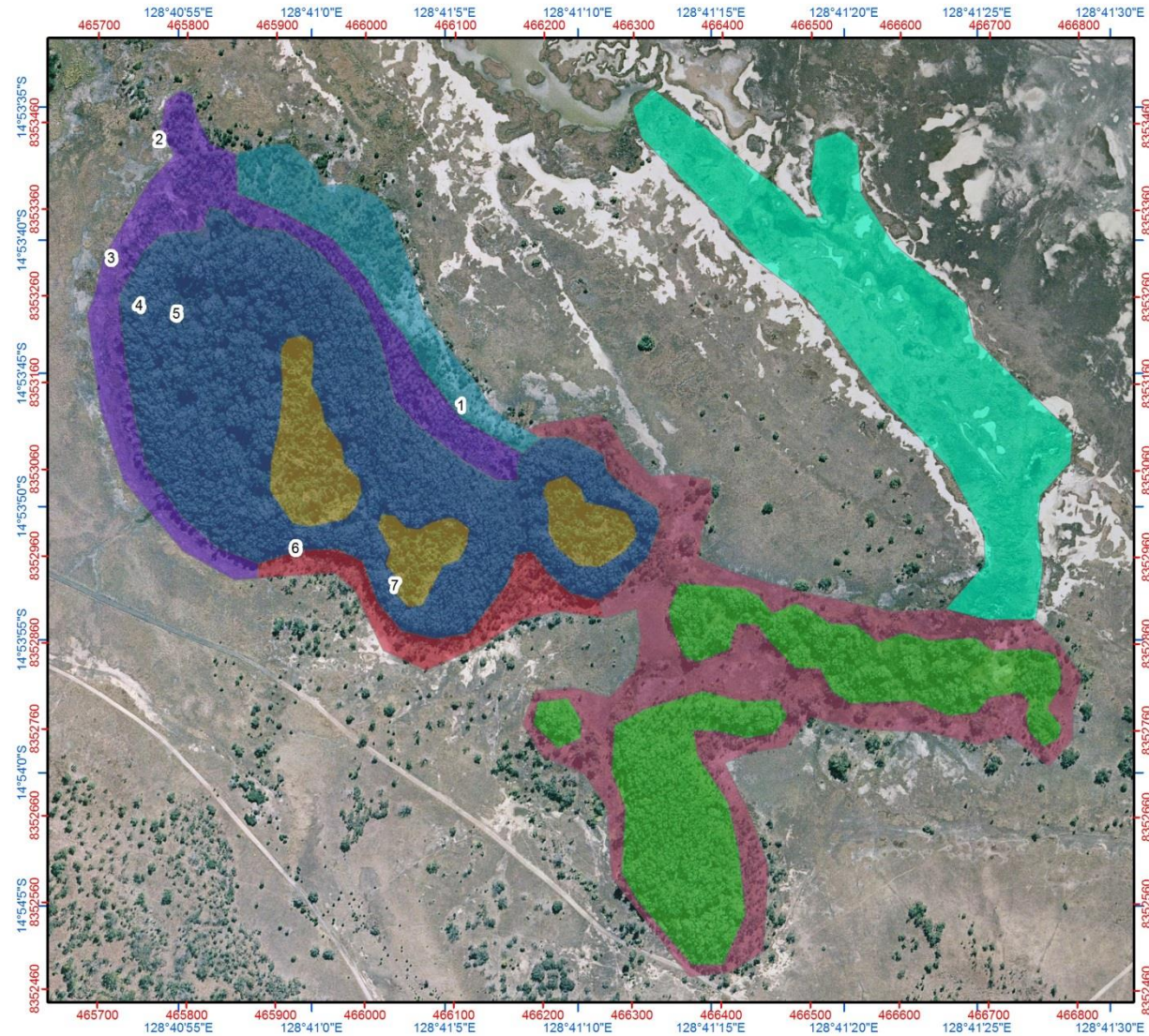


P8 - Southwest



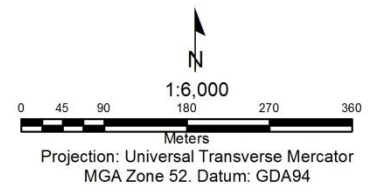
P8 - Southeast

Attack Spring photo-points and vegetation composition



Carlton Hill Attack Spring

- Legend**
- # Photo-points
 - Vegetation composition
 - Closed *Typha domingensis* thicket with occasional *Melaleuca viridiflora*
 - Low closed *Melaleuca alsophila* forest
 - Low open *Melaleuca viridiflora* forest over *Typha domingensis* and *Cyperus javanicus*
 - Tall closed *Melaleuca leucadendra* forest over *Flagellaria indica*, *Cyclosorus interruptus* and *Typha domingensis*
 - Tall open *Timonius timon* forest over *Flagellaria indica*
 - Not surveyed, presumed closed *Typha domingensis* thicket
 - Not surveyed, presumed closed *Typha domingensis* thicket with occasional *Melaleuca viridiflora*
 - Not surveyed, presumed tall closed *Melaleuca leucadendra* forest



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Site notes (Identification/verification pending contact Mike Lyons)

Closed *Typha domingensis* thicket with occasional *Melaleuca viridiflora* – *Typha domingensis*, *Melaleuca viridiflora*, *Utricularia* spp. and a broadleaved fern (AN10).

Low closed *Melaleuca alsophila* forest – *Melaleuca alsophila* (AT103), *Cyclosorus interruptus*, *Lemna* spp. and a round stemmed sedge (AT104). Pugging.

Low open *Melaleuca viridiflora* forest over *Typha domingensis* and *Cyperus javanicus* – *Pandanus spiralis* also present in canopy. *Acacia* spp. (AT94 & AT142) and *Eucalyptus* spp. (AN77) further out.

Tall closed *Melaleuca leucadendra* forest over *Flagellaria indica*, *Cyclosorus interruptus* and *Typha domingensis* – No notes.

Tall open *Timonius timon* forest over *Flagellaria indica* – No notes.

Not surveyed, presumed closed *Typha domingensis* thicket.

Not surveyed, presumed closed *Typha domingensis* thicket with occasional *Melaleuca viridiflora*.

Not surveyed, presumed tall closed *Melaleuca leucadendra* forest.

Attack Spring – photographs



P2 – Southeast



P2 – Northeast



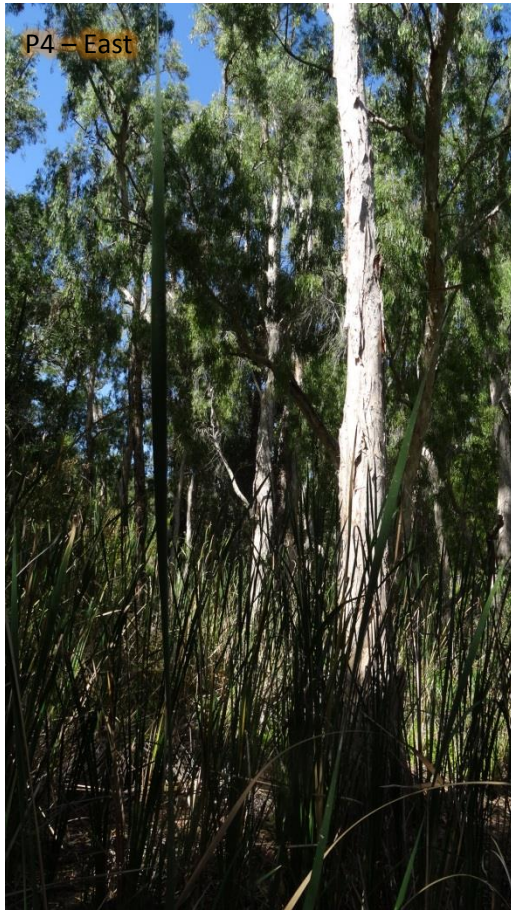
P2 – Northwest



P2 – Southwest













P7 - East



P7 - North



P7 - West



P7 - South

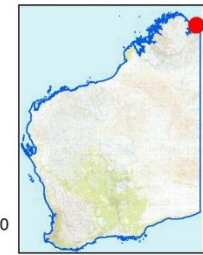
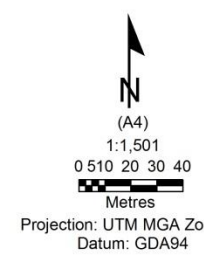
Potential spring no. 6 photo-points and vegetation composition



Carlton Hill Potential Spring 6

Legend

- # Photo-points
- Vegetation composition
 - Closed *Melaleuca leucodendra* forest over *Sesbania formosa*, *Carallia brachiata* and *Pandanus spiralis* over *Cyperus javanicus* and *Flagellaria indica*
 - Closed *Melaleuca leucadendra* forest over *Pandanus spiralis* and *Carallia brachiata*
 - Closed *Typha domingensis* thicket with occasional *Melaleuca viridiflora* and *Sesbania formosa*
 - Low open *Melaleuca viridiflora* and *Melaleuca alsophila* woodland over mangrove and *Cyperus javanicus*
 - Open sedgeland
 - *Sesbania formosa* and *Pandanus spiralis* over *Typha domingensis*



Projection: UTM MGA Zone 50
Datum: GDA94



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Site notes (Identification/verification pending contact Mike Lyons)

Closed *Melaleuca leucodendra* forest over *Sesbania formosa*, *Timonius timon* and *Pandanus spiralis* over *Cyperus javanicus* and *Flagellaria indica* – Plant collected at photo-point 9 [PS605].

Closed *Melaleuca leucadendra* forest over *Pandanus spiralis* and *Carallia brachiata* – No notes.

Closed *Typha domingensis* thicket with occasional *Melaleuca viridifolia* and *Sesbania formosa* – No notes.

Low open *Melaleuca viridiflora* and *Melaleuca alsophila* woodland over mangrove and *Cyperus javanicus* – A creeper [PS601] and a mangrove [PS602] collected at photo-point 1

Open sedgeland – A spear-headed decumbent rush collected at photo-point 3 [PS604]

Sesbania formosa and *Pandanus spiralis* over *Typha domingensis* – No notes.





P3 - East



P3 - North



P3 - West



P3 - South























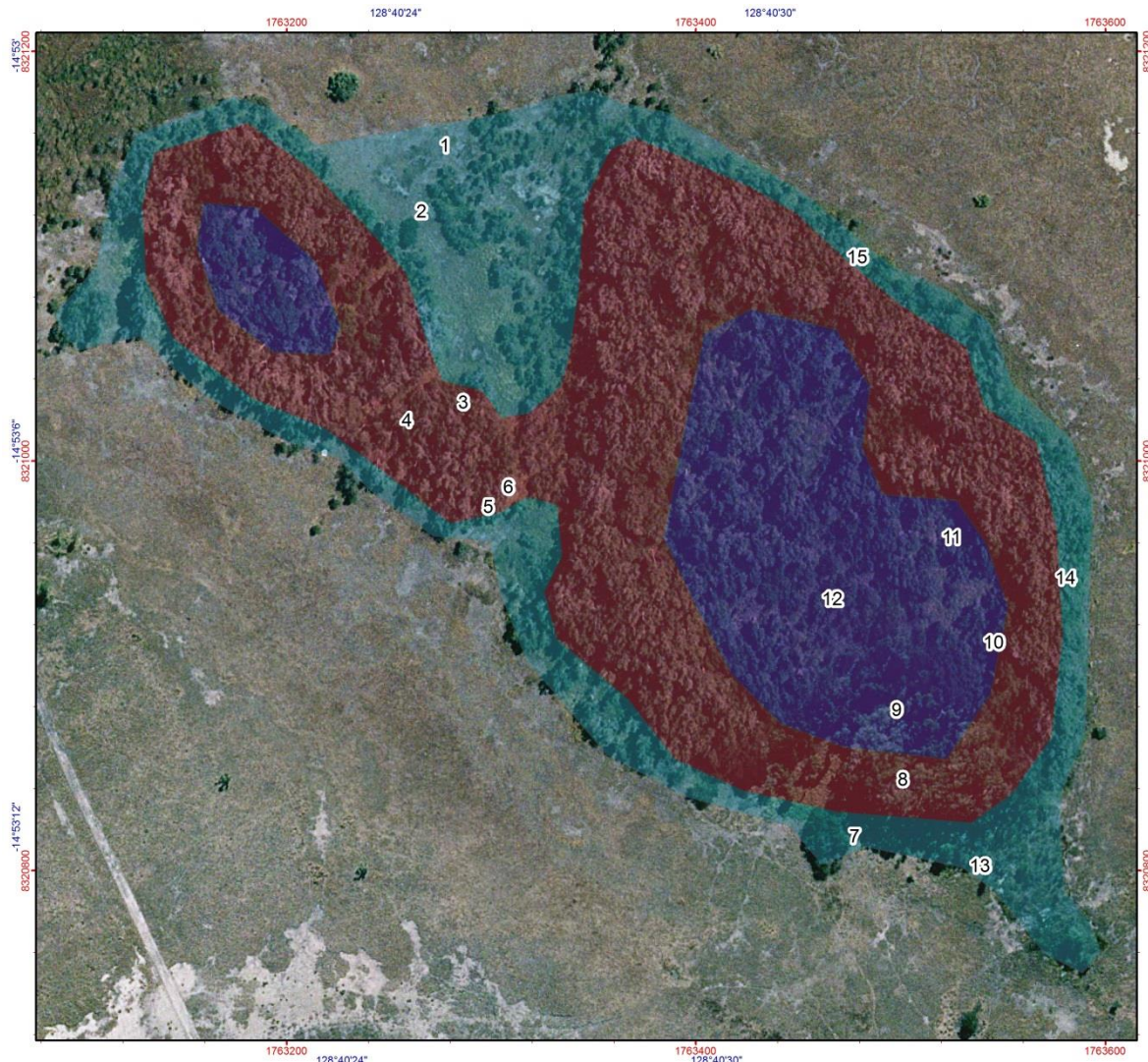








Potential spring no. 7 photo-points and vegetation composition



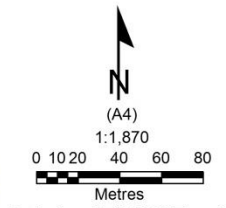
Carlton Hill Potential Spring 7

Legend

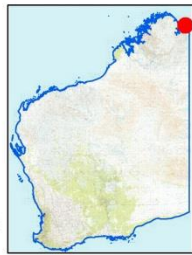
Photo-points

Vegetation composition

- Closed *Melaleuca leucadendra*, *Carallia brachiata* and *Sesbiana formosa* forest over *Stenochlaena palustris*, *Flagellaria indica* and *Cyperus javanicus*
- Low *Melaleuca viridiflora* and *Melaleuca alsophila* woodland over *Typha domingensis*, *Cyperus javanicus* and *Schoenoplectus subulatus*
- Tall closed *Melaleuca leucadendra* forest over *Carallia brachiata*, *Typha domingensis*, *Marselea* sp., *Flagellaria indica*, *Phragmites karka*, *Cyperus javanicus* and *Stenochlaena palustris*



Projection: UTM MGA Zone 50
Datum: GDA94



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P1 – Southeast



P1 – Northeast



P1 – Northwest



P1 – Southwest

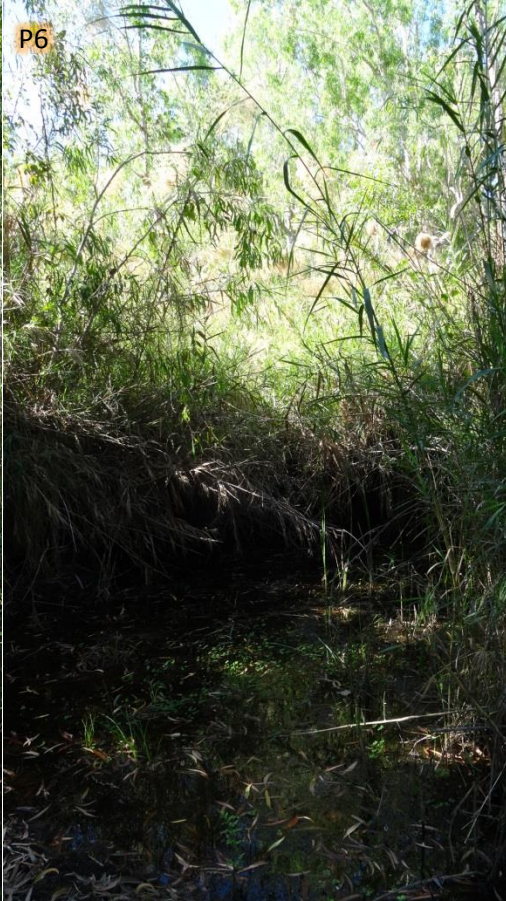
















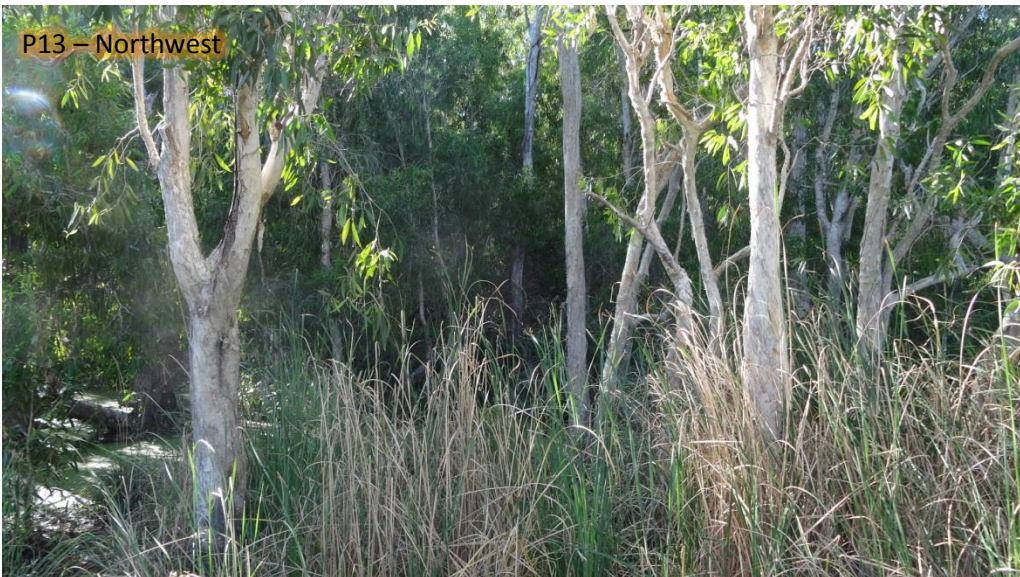








P13 – Northwest



P13 – Southwest



P13 – Southeast



P13 – Northeast





P15 – Southwest



P15 – Southeast



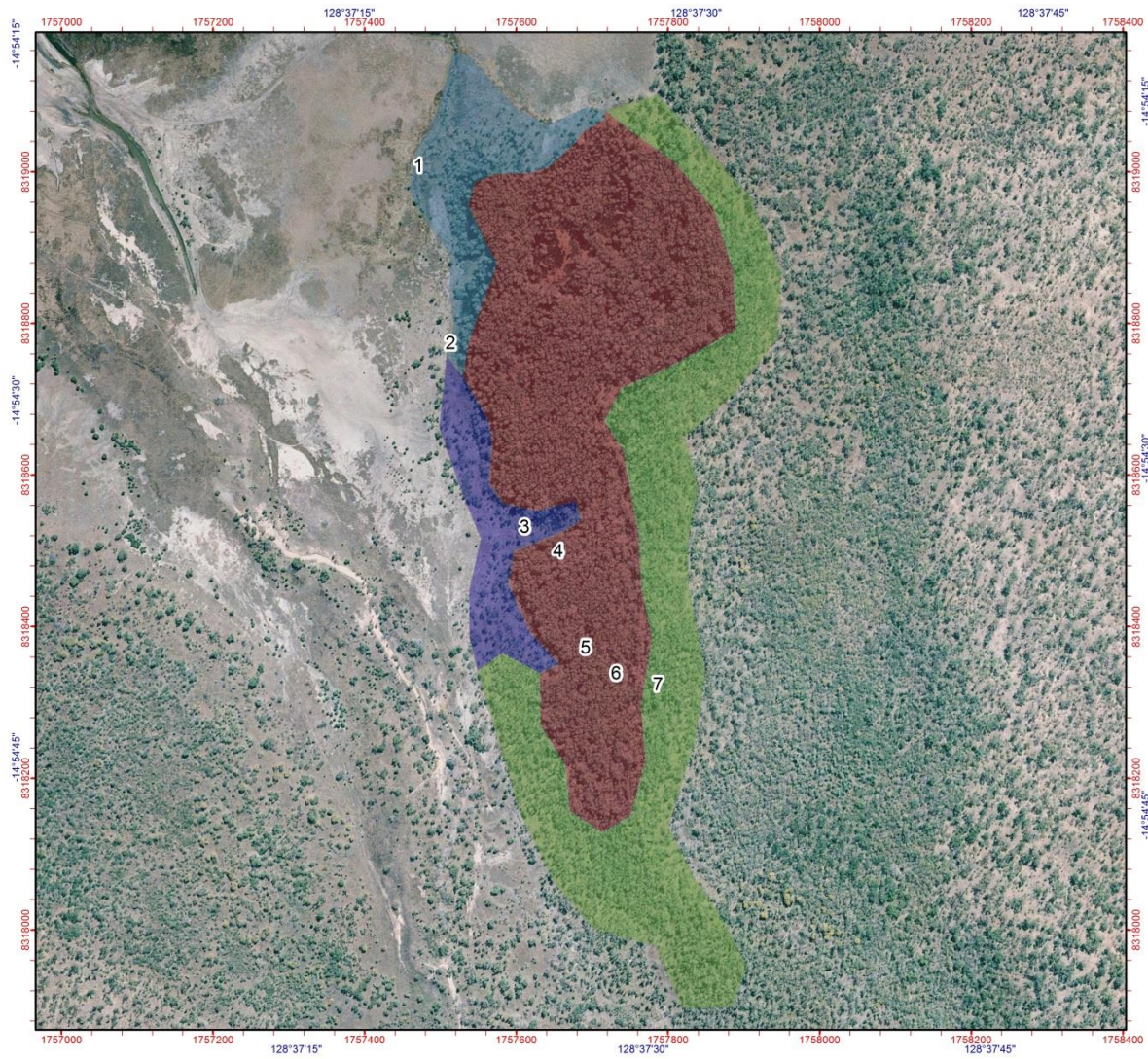
P15 – Northeast



P15 – Northwest



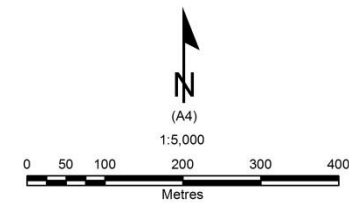
Bamboo Spring photo-points and vegetation composition



Carlton Hill Bamboo Spring

Legend

- Tall closed *Melaleuca leucadendra* forest
- Closed *Melaleuca* sp.-*Pandanus spiralis* forest
- Low *Melaleuca viridiflora* woodland over *Cyperus javanicus*
- Low *Melaleuca viridiflora* woodland over *Typha domingensis*



Projection: Universal Transverse Mercator
MGA Zone 51. Datum: GDA94



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P1 – Northeast



P1 – Northwest



P1 – Southwest



P1 – Southeast







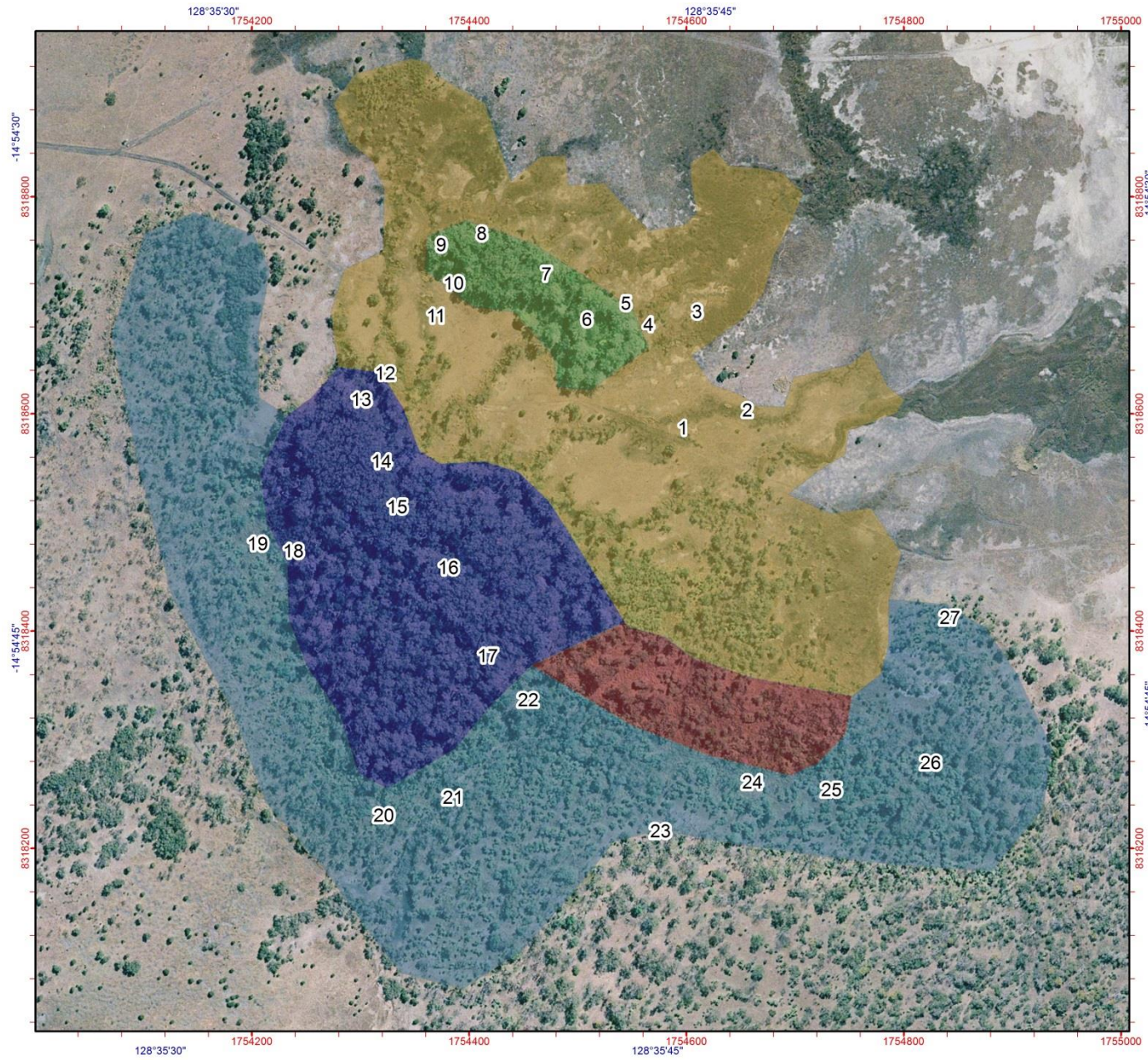








King Gordon Spring photo-points and vegetation composition



Carlton Hill King Gordon Spring

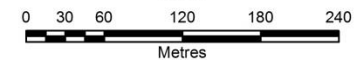
Legend

- Open *Melaleuca leucadendra*-Rainforest sp. forest over *Melaleuca viridiflora*-*Pandanus spiralis*
- Closed *Melaleuca leucadendra* forest over *Fimbristylis ferruginea*
- Tall closed *Melaleuca leucadendra*-Rainforest sp. forest over *Pandanus spiralis* over *Typha domingensis*
- Low open *Pandanus spiralis*-*Melaleuca viridiflora* forest with very gradual interface to dryland Eucalypt forest
- Low open *Melaleuca viridiflora* -*Melaleuca alsophila*-*Pandanus spiralis* woodland over *Typha domingensis*

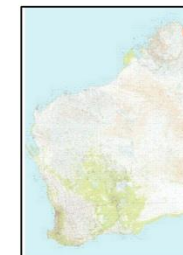


(A4)

1:3,500



Projection: Universal Transverse Mercator
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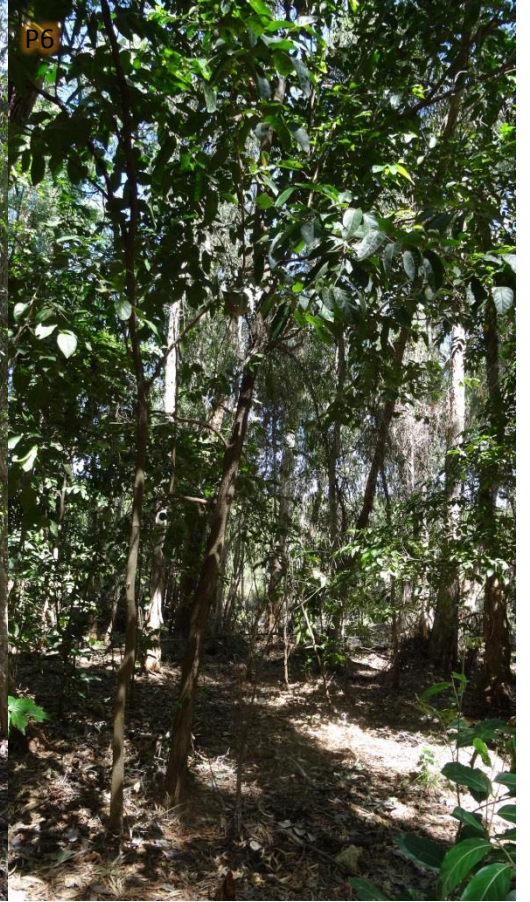














































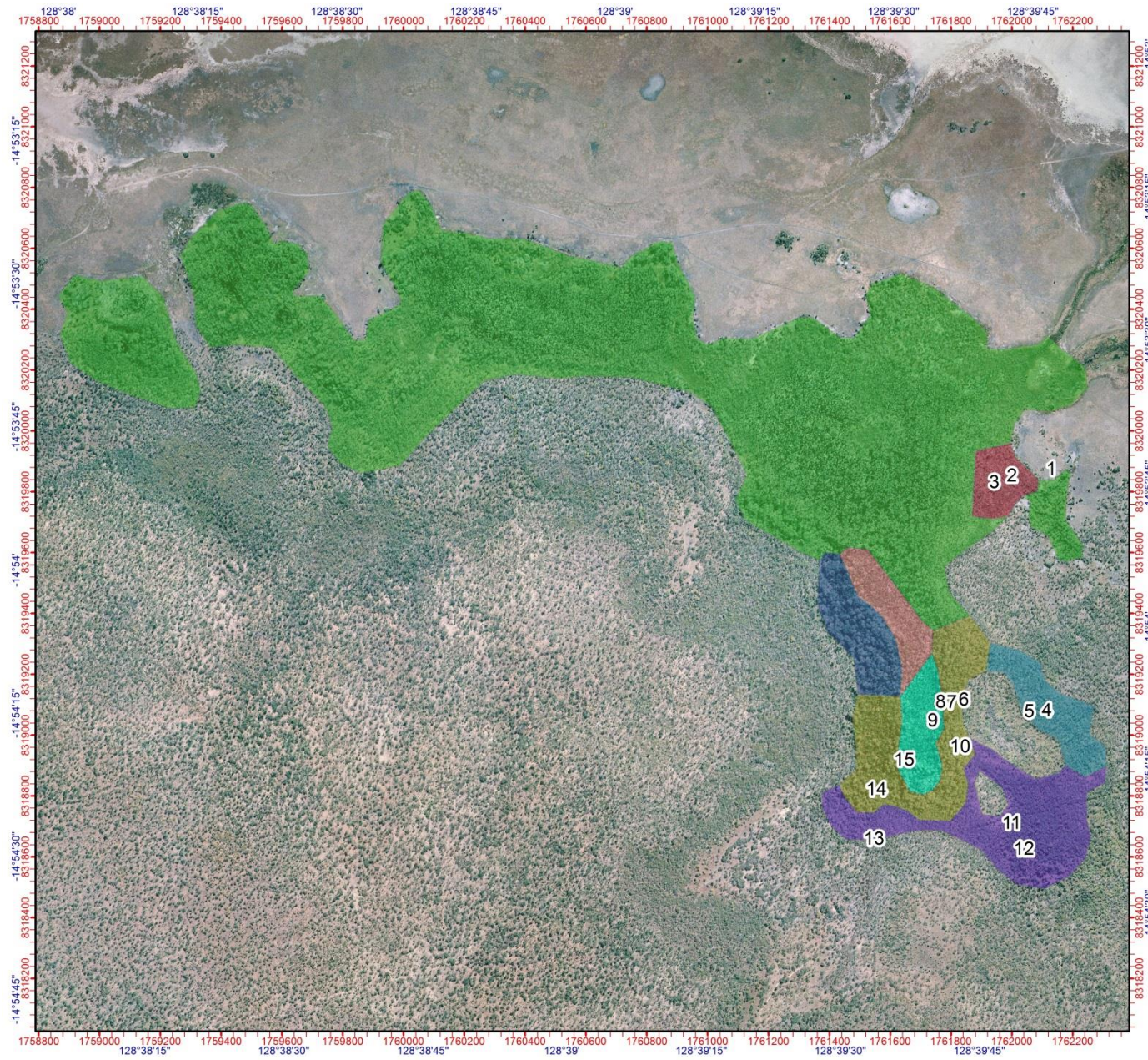








Long Swamp photo-points and vegetation communities



Carlton Hill Long Swamp

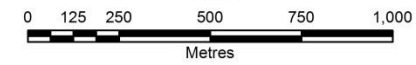
Legend

- Low closed *Melaleuca viridiflora*-*Pandanus spiralis*-*Sesbania formosa* forest
- Low closed *Pandanus spiralis*-*Melaleuca viridiflora* forest
- Tall closed *Melaleuca leucadendra* forest over *Typha domingensis*
- Tall closed *Melaleuca leucadendra*-rainforest sp. forest over *Lindsaea ensifolia* and open pools
- Tall closed rainforest sp. forest over *Lindsaea ensifolia*
- Not surveyed, presumed mound spring vegetation
- Not surveyed, presumed tall closed *Melaleuca leucadendra*-rainforest sp. forest over *Lindsaea ensifolia* and open pools
- Not surveyed, presumed tall closed rainforest sp. forest over *Lindsaea ensifolia*



(A4)

1:12,500



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Brolga Spring vegetation communities



Carlton Hill Brolga Spring

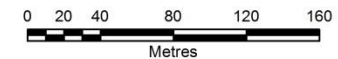
Legend

- Closed *Typha domingensis* thicket
- Low *Melaleuca viridiflora* woodland
- Low open *Melaleuca alaphila* forest
- Low open *Pandanus spiralis*-*Melaleuca viridiflora* forest
- Low open *Sesbania formosa*-*Pandanus spiralis*-*Melaleuca viridiflora* forest
- Clearing with *Hibiscus* sp. tree



(A4)

1:2,500



Metres

Projection: Universal Transverse Mercator
MGA Zone 51. Datum: GDA94



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