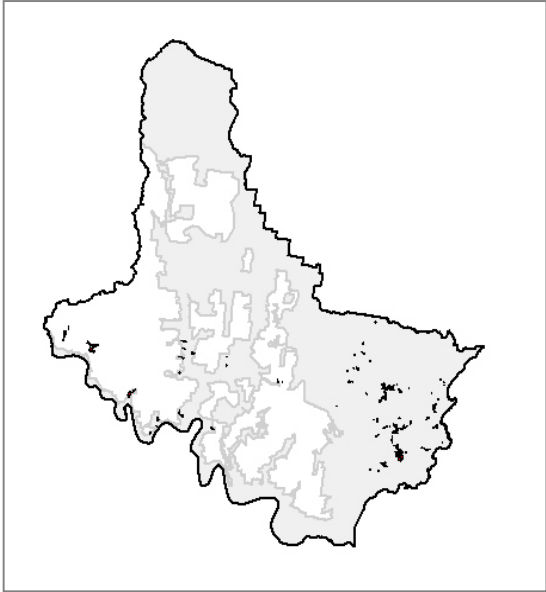


Swamp Mahogany – Paperbark Forest

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Unit E37
REMS Unit 37



General Description:

Swamp Mahogany-Paperbark Forest is typified by the presence of *Eucalyptus robusta* in the canopy, and may occur with a range of associates including *Melaleuca linariifolia*, *Melaleuca sieberi*, *Melaleuca styphelioides*, *Eucalyptus resinifera*, *Eucalyptus tereticornis*, and *Angophora floribunda*. The understorey is variable, often with a dense shrub layer of species such as *Acacia longifolia*, *Omalanthus nutans*, and *Pultenaea villosa*, and the sedge *Gahnia clarkei*. This type is common around coastal estuaries and flats where drainage is impeded, and is also present as backswamps along major tributaries of the Hawkesbury River. Several variants of this Swamp Mahogany complex have been identified, and are dealt with separately as sub-units in the following profiles.

Known Floristic/ Structural Variations:

No variants have been identified in this vegetation type (but see sub-units following).

Distribution:

Within Gosford LGA – along major tributaries of many floodplain creek systems, such as the Erina and Narrara Creek floodplains. Also present as backswamps in tributaries of the Hawkesbury River.

Within LHCC Region – NPWS (2000) have mapped 4763ha of their Swamp Mahogany-Paperbark Swamp Forest (Unit 37) remaining in the region.

Examples Within Gosford LGA

- Cockle Bay Nature Reserve
- Erina Creek floodplain, Erina
- Mangrove Creek, Lower Mangrove

Extent: *Extant* - 274.20ha

Relationship to Other Communities:

This vegetation type forms a mosaic with the other identified Swamp Mahogany sub-communities (Units E37a-e). It can be separated from these through the lack of a prominent canopy of *Melaleuca biconvexa* (as in E37a); the lack of *Eucalyptus longifolia* (E37b); the lack of a dense understorey of *Blechnum indicum* and *Baloskion tetraphyllum* (E37c); the lack of *Eucalyptus amplifolia* and *Eucalyptus saligna* (E37d); and the lack of *Melaleuca quinquenervia* as a dense

canopy component (E37e). The Narrabeen Alluvial Sedge Woodland (Unit E42) also shares *Eucalyptus robusta*, but that community is heavily sedge-dominated, and supports *Angophora costata*, *Eucalyptus resinifera*, *Melaleuca linariifolia* and *Melaleuca sieberi*.

Equivalent Vegetation Types:

• Benson 1981 (Mangrove Creek):	n/a
• Benson & Fallding 1981 (Brisbane Water)	n/a
• Benson 1986 (Gosf-Lake Mac):	Open Forest (Unit 27a)
• Clarke & Benson 1986 (Dharug):	Forest/ Swamp Forest (Unit A6)
• Strom 1986 (Bouddi Peninsula):	Open forest (Units 1.2.1 & ?1.2.2)
• Clarke & Benson 1987 (Mt White/ Mt Olive):	Swamp Mahogany Forest (Unit A4)
• McRae 1990 (Bouddi Peninsula):	Woodland (Unit 4.2)
• Binns 1996 (SF MFD):	n/a
• Payne 1997 (Cockle Bay/ Bouddi):	Woodland (Unit 4.2)
• Bell 1998 (Popran NP):	Alluvial Mahogany Swamp Forest (Unit SF2)
• Bell 2002 (Wyong LGA):	Alluvial Floodplain Shrub Swamp Forest (Unit 20)

Significant Species:

- Undescribed species – *none recorded*
- Threatened (TSC Act) – *Melaleuca biconvexa* (?)
- Rare (ROTAP) – *none recorded*

Community Conservation Status:

Reserve Representation - within Gosford, this vegetation type is known from Cockle Bay NR.

TSC Act (1995) Status - included within the *Sydney Coastal Estuary Swamp Forest Complex* EEC.

Mapping Reliability & Included Units:

High Resolution Area – this vegetation type has been mapped from aerial photographic interpretation and ground truthing. Small areas of other swamp forest vegetation within the Unit E37 complex may be included in the mapping.

Low Resolution Area – modelled locations on floodplains of major tributaries, based on NPWS (2000).

Vegetation Structure:

Stratum	Mean height (m)	Min height (m)	Max height (m)	Mean cover (%)	Sdev	n
Emergent						
Tallest	17.72	8.00	25.00	43	21.8	11
Middle 1	7.94	4.00	14.00	32	21.3	11
Middle 2	2.43	1.00	4.00	53	31.0	4
Middle 3	1.19	0.10	3.00	74	36.1	11
Lowest	0.87	0.10	2.00	60	43.6	3

Key Diagnostic Species [based on 15 plots]:

Life Form	Species	Community		All others		Fidelity
		c/a	Freq.	c/a	Freq.	
Tree	<i>Eucalyptus robusta</i>	3	93%	2	5%	positive
	<i>Casuarina glauca</i>	3	47%	2	4%	positive
	<i>Melaleuca quinquenervia</i>	1	27%	4	2%	uninformative
	<i>Acmena smithii</i>	2	20%	2	14%	uninformative
	<i>Angophora floribunda</i>	2	7%	2	19%	uninformative

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	<i>Ceratopetalum apetalum</i>	2	7%	3	5%	uninformative
	<i>Eucalyptus botryoides</i>	1	7%	2	2%	uninformative
Palm	<i>Livistona australis</i>	3	7%	1	16%	uninformative
Small tree	<i>Melaleuca linariifolia</i>	3	80%	2	4%	positive
	<i>Melia azedarach</i>	1	7%	0	0%	unique
	<i>Glochidion ferdinandii</i>	1	73%	2	27%	uninformative
	<i>Acacia irrorata</i> subsp. <i>irrorata</i>	2	20%	1	2%	uninformative
	<i>Acacia parramattensis</i>	2	13%	1	4%	uninformative
	<i>Callicoma serratifolia</i>	1	13%	2	4%	uninformative
	<i>Callistemon salignus</i>	2	13%	2	3%	uninformative
	<i>Melaleuca styphelioides</i>	3	13%	1	3%	uninformative
	<i>Synoum glandulosum</i> subsp. <i>glandulosum</i>	1	13%	1	13%	uninformative
Shrub	<i>Leptospermum polygalifolium</i>	3	33%	2	24%	uninformative
	<i>Melaleuca ericifolia</i>	2	33%	2	2%	uninformative
	<i>Polyscias sambucifolia</i>	1	33%	1	17%	uninformative
	<i>Duboisia myoporoides</i>	2	27%	1	5%	uninformative
	<i>Acacia floribunda</i>	1	27%	1	4%	uninformative
	<i>Breynia oblongifolia</i>	1	27%	1	33%	uninformative
	<i>Acacia longifolia</i>	1	20%	2	11%	uninformative
	<i>Callistemon citrinus</i>	1	20%	1	3%	uninformative
	<i>Dodonaea triquetra</i>	1	20%	1	17%	uninformative
	<i>Omalanthus populifolius</i>	1	20%	1	4%	uninformative
	<i>Goodenia ovata</i>	2	13%	1	3%	uninformative
	<i>Leptospermum arachnoides</i>	1	13%	2	3%	uninformative
	<i>Leptospermum juniperinum</i>	1	13%	2	2%	uninformative
	<i>Rapanea howittiana</i>	1	13%	1	1%	uninformative
	Herb	<i>Hydrocotyle laxiflora</i>	2	40%	2	7%
<i>Pratia purpurascens</i>		2	40%	2	20%	positive
<i>Viola hederacea</i>		2	40%	2	12%	positive
<i>Lycopus australis</i>		2	7%	0	0%	unique
<i>Ranunculus lappaceus</i>		2	7%	0	0%	unique
<i>Viola betonicifolia</i>		2	7%	0	0%	unique
<i>Isachne globosa</i>		1	13%	0	0%	unique
<i>Ranunculus inundatus</i>		2	13%	0	0%	unique
<i>Commelina cyanea</i>		1	33%	1	6%	uninformative
<i>Lobelia alata</i>		1	20%	2	2%	uninformative
<i>Gonocarpus tetragynus</i>		2	13%	2	5%	uninformative
<i>Hydrocotyle peduncularis</i>		2	13%	2	3%	uninformative
<i>Pseuderanthemum variabile</i>		2	13%	2	17%	uninformative
<i>Vernonia cinerea</i> var <i>cinerea</i>		1	13%	1	2%	uninformative
Grass		<i>Entolasia marginata</i>	2	80%	2	14%
	<i>Imperata cylindrica</i> var <i>major</i>	1	40%	2	29%	uninformative
	<i>Oplismenus imbecillis</i>	2	27%	2	17%	uninformative
	<i>Hemarthria uncinata</i>	2	20%	4	1%	uninformative
	<i>Oplismenus aemulus</i>	1	20%	2	4%	uninformative
	<i>Paspalidium distans</i>	2	13%	1	4%	uninformative
	<i>Phragmites australis</i>	2	13%	4	2%	uninformative
	<i>Digitaria parviflora</i>	1	13%	1	4%	uninformative
	<i>Entolasia stricta</i>	2	7%	2	55%	negative
Graminoid	<i>Thelionema caespitosum</i>	1	20%	0	0%	unique
	<i>Dianella caerulea</i>	1	40%	1	51%	uninformative
	<i>Lomandra longifolia</i>	2	13%	2	46%	negative
Ground fern	<i>Hypolepis muelleri</i>	4	60%	2	5%	positive
	<i>Blechnum indicum</i>	3	40%	1	1%	positive
	<i>Calochlaena dubia</i>	3	33%	3	18%	uninformative
	<i>Adiantum aethiopicum</i>	2	33%	2	12%	uninformative
	<i>Pteridium esculentum</i>	1	20%	2	43%	negative
Climber	<i>Parsonsia straminea</i>	2	40%	1	19%	positive

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	<i>Geitonoplesium cymosum</i>	1	40%	1	23%	uninformative
	<i>Glycine clandestina</i>	1	40%	2	22%	uninformative
	<i>Stephania japonica var discolor</i>	1	40%	1	16%	uninformative
	<i>Eustrephus latifolius</i>	2	27%	1	25%	uninformative
	<i>Pandorea pandorana subsp. pandorana</i>	1	27%	1	24%	uninformative
	<i>Rubus moluccanus var trilobus</i>	1	20%	1	7%	uninformative
	<i>Sarcopetalum harveyanum</i>	1	20%	1	11%	uninformative
	<i>Billardiera scandens</i>	2	13%	1	30%	uninformative
	<i>Cissus hypoglauca</i>	2	13%	1	18%	uninformative
	<i>Morinda jasminoides</i>	2	13%	1	15%	uninformative
	<i>Tylophora barbata</i>	1	13%	1	4%	uninformative
Sedge/ Rush	<i>Gahnia clarkei</i>	2	67%	2	9%	positive
	<i>Baumea juncea</i>	2	40%	5	3%	positive
	<i>Carex appressa</i>	4	27%	2	4%	uninformative
	<i>Isolepis inundata</i>	1	20%	2	0%	uninformative
	<i>Lepidosperma quadrangulatum</i>	2	13%	5	0%	uninformative
	<i>Baumea articulata</i>	1	13%	2	1%	uninformative
	<i>Juncus continuus</i>	1	13%	2	1%	uninformative
	<i>Lepidosperma laterale</i>	1	13%	2	28%	uninformative