

Conversion Lake Macquarie Native Vegetation Community Map Units to Plant Community Types (PCTs) March 2016

Introduction

Stephen Bell from Eastcoast Flora Surveys has, at the request of Lake Macquarie Council, conducted a review of all LMCC, Bell and Driscoll 2015 vegetation community map units (MUs) against Plant Community Types (PCTs) and Biometric Vegetation Types (BVTs). An export of all PCTs within NSW (from the Office of Environment and Heritage - OEHL Vegetation Information System - VIS) was used to compare dominant species and landscape positions/descriptions with available information on the LMCC map units. Where possible, selected PCTs were from those listed for the Hunter Catchment Management Area (CMA) (eg HU740), but where better alternatives were evident others were chosen. In some cases, more than one PCT could be applied, and notes to this effect are provided. In many instances, appropriate PCTs were not available so a broad interpretation has been made. Allocations using this procedure are shown in columns "PCT ID" and "PCT Name".

A field is included to the table ("Confidence of PCT Match") which aims to provide additional information on the matching process. High matches are generally those where sufficient similarities are evident; Medium where some uncertainties are present; and Low where there is considerable doubt over the match, but due to the absence of better matches these have been selected.

LookUp tables were used to populate the "BVT as per PCT" column using the VIS export table, with limited review.

Keith Formation and Class fields, as contained in the VIS PCT export table and extracted through LookUp tables, have also been added (columns "Keith Formation and Keith Class (2004) as per PCT Table VIS Export 2015 - coloured indigo). No attempt has been made to check consistency with existing "Keith Class Equivalent" (white column) that have been allocated directly to the LMCC map unit (in existing reports) rather than indirectly through the "PCT ID". There will be different interpretations in the application of these to local-scale vegetation units, and it is suggested that the existing allocations made directly from the local Map Units (Keith Class Equivalent" (white column) take precedence over those contained in the VIS export.

The matching of LMCC local-scale units to State-wide PCTs is difficult due to scale issues, and different workers will have differing opinions for some vegetation types. There will be scope in the future to conduct matching such as this in a more systematic way using site allocations from the LMCC analysis to compare with those allocations under the PCT system, and discussions with OEHL have commenced on this issue.

Please contact Robbie Economos Lake Macquarie Council reconomos@lakemac.nsw.gov.au if you would like to have some input on these conversions.

Key

*No LHCCREMS equivalent - best fit chosen
Endangered Ecological Community (EEC), Keith Class, LHCCREMS allocated directly to the LMCC Map Unit (MU) rather than indirectly through the PCT
PCT allocated by Stephen Bell March 2016 allocated directly to the LMCC Map Unit with BVT, Keith Class and Formation allocated indirectly through PCT & VIS.
LHCCREMS and Keith Class allocated directly to the LMCC Map Unit

LMCC Bell & Driscoll 2015 MU	LMCC Bell & Driscoll 2015 MU (LHCCREMS units <u>underlined</u>)	Floristic Summary (Characteristic Spp *) Characteristic Species defined as indicators that make this vegetation community appear visually different from others. Full floristic plot survey and analysis will be required across the whole map unit to properly define this unit/subunit.	Notes	LHCCREMS Equivalent	Keith Class Equivalent	EEC Equivalent	PCT ID VIS export Aug 2015)	PCT Name new (VIS export Aug 2015)	Confidence of PCT Match (S. Bell)	BVT as per PCT Table (VIS export Aug 2015)	Keith Formation (2004) as per PCT Table (VIS export 2015)	Keith Class (2004) as per PCT Table (VIS export Aug 2015)	S. Bell comments March 2016
1	<u>Coastal Wet Gully Forest</u>	<i>Eucalyptus saligna</i> , <i>Syncarpia glomulifera</i> , <i>Eucalyptus acmenoides</i> and <i>Allocasuarina torulosa</i> in the often widely spaced emergent layer, over a sub-canopy of rainforest species such as <i>Cryptocarya microneura</i> , <i>Claoxylon australe</i> and <i>Dorophora sassafras</i> . Ground layer vegetation includes <i>Cordyline stricta</i> , <i>Blechnum cartilagineum</i> , <i>Adiantum hispidulum</i> , <i>Gahnia melanocarpa</i> , and the vines <i>Cissus hypoglauca</i> , <i>Cissus antarctica</i> , <i>Marsdenia rostrata</i> and <i>Ripogonum fawcettianum</i>	Most well protected gullies and lower slopes of the Watagan Ranges support Coastal Wet Gully Forest, which in places merges over broad ecotones with Coastal Warm Temperate Rainforest (MU1a). This is an original REMS2000 community, and it has been interpreted to mean the sheltered slopes and gullies along the Watagan/Sugarloaf escarpments.	Coastal Wet Gully Forest (MU1)	North Coast Wet Sclerophyll Forests	Lowland Rainforest (?)	1573	Sydney Blue Gum - Lilly Pilly mesic tall open forest of coastal ranges and tablelands escarpment	high	HU787;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	The name of 1573 seems to have changed.
1a	<u>Coastal Warm Temperate - Subtropical Rainforest</u>	Species typically present include <i>Cryptocarya microneura</i> , <i>Acmena smithii</i> , <i>Claoxylon australe</i> , <i>Neolitsea dealbata</i> , <i>Ficus rubiginosa</i> , and <i>Eupomatia laurina</i> . Vines are prominent in this community and a sparse fern layer including <i>Adiantum aethiopicum</i> , <i>Adiantum formosum</i> , <i>Doodia aspera</i> , <i>Pellaea falcata</i> and <i>Blechnum</i> species is characteristic.	Closely related to Coastal Wet Gully Forest (MU1), and supports a large number of rainforest species, but generally without the emergent canopy of Bluegums (<i>Eucalyptus saligna</i>) and Turpentine (<i>Syncarpia glomulifera</i>). Occurs in well protected gullies on alluvium, along major creeks and in gully heads	Coastal Warm Temperate - Subtropical Rainforest (MU1a)	Northern Warm Temperate Rainforests/ Subtropical Rainforests	Lowland Rainforest	1528	Jackwood - Lilly Pilly - Sassafras riparian warm temperate rainforest of the Central Coast	high	HU742;	Rainforests;	Northern Warm Temperate Rainforests;	PCT ID has changed with name.
1g	<u>Permian Gully Rainforest</u>	Prominent species in the canopy include <i>Pittosporum undulatum</i> , <i>Acmena smithii</i> , <i>Synoum glandulosum</i> , <i>Cryptocarya microneura</i> and <i>Elaeodendron australe</i> var. <i>australe</i> .	Represents gully rainforest occurring on the coastal plains on Permian sediments, generally in incised drainage systems. This type occurs in rocky gullies (not sandy alluvium), and tends not to be as well developed as MU 1a. It requires further testing against similar rainforest types on other substrates to ascertain real differences.	Coastal Wet Gully Forest (MU1)	Northern Warm Temperate Rainforests/ Subtropical Rainforests	n/a (?) #	1526	Lilly Pilly - Grey Myrtle - Rasp Fern warm temperate rainforest on ranges of the Central and lower North Coast	medium	HU740;	Rainforests;	Northern Warm Temperate Rainforests;	Not enough Fig and Streblus to justify 1525. OEHL PCT table includes 1525 as a TEC, see note # Has some species in common with Lowland Rainforest EEC so important to assess whether it meets the EEC criteria onsite.

3e	Lake Macquarie Dry Rainforest	Floristically simple; <i>Backhousia myrtifolia</i> usually dominant in the poorest sites, under a canopy of emergent eucalypts including <i>Eucalyptus acmenioides</i> and <i>Corymbia maculata</i> .	Occurs in shallow gullies mostly on Permian geology. Floristically simple - <i>Backhousia myrtifolia</i> usually dominant in the poorest sites. Very depauperate rainforest occurring as narrow bands in eastern LM. Inadequately sampled so true relationships difficult to resolve. Related to MU 21 but lower diversity.	Hunter Valley Dry Rainforest (MU3)	Dry Rainforests	n/a#	1584	White Mahogany - Spotted Gum - Grey Myrtle semi-mesic shrubby open forest of the central and lower Hunter Valley	high	HU798;	Wet Sclerophyll Forests (Grassy sub-formation);	Northern Hinterland Wet Sclerophyll Forests;	Could also be either 1539 or 1540, but more likely 1584 based on the presence of <i>Corymbia maculata</i> and <i>Eucalyptus acmenioides</i> in the canopy. Could also be 877 or 1839, given the mention of <i>Corymbia maculata</i> .
4	Littoral Rainforest	Typically very low in stature and tightly packed with a few dominant tree species such as <i>Cupaniopsis anacardioides</i> , <i>Acmena smithii</i> , and <i>Guioa semiglauca</i> . Other species include <i>Syzygium paniculatum</i> , <i>Glochidion ferdinandi</i> , <i>Livistona australis</i> , <i>Rapanea variabilis</i> , <i>Endiandra sieberi</i> , <i>Pittosporum undulatum</i> , <i>Notelaea longifolia</i> , <i>Smilax glycyphylla</i> , <i>Smilax australis</i> , <i>Cissus Antarctica</i> , <i>Cissus hypoglauca</i> .	A simple rainforest occurring close to the ocean on coastal headlands or at the back of coastal dunes. Often merges into surrounding headland scrub. The definition of Littoral Rainforest taken in the strict sense for this work, meaning that superficially similar rainforest stands away from the immediately effects of coastal exposure (onshore salt-laden winds and sea spray) have not been included. Analysis has shown that these stands are floristically more complex and are closer to warm temperate rainforest than they are to littoral rainforests.	Littoral Rainforest (MU4)	Littoral Rainforests	Littoral Rainforest	1536	Tuckeroo - Lilly Pilly - Coast Banksia littoral rainforest	high	HU750;	Rainforests;	Littoral Rainforests;	Could also be 1832, as very little differences.
5	Alluvial Tall Moist Forest	<i>Eucalyptus saligna</i> is prominent in the emergent canopy layer, often co-occurring with <i>Syncarpia glomulifera</i> and <i>Angophora floribunda</i> , over a lower tree layer of <i>Acmena smithii</i> , <i>Melaleuca styphelioides</i> , <i>Glochidion ferdinandi</i> , <i>Cryptocarya microneura</i> and <i>Claoxylon australe</i> . Ground layer vegetation includes the grasses <i>Oplismenus imbecillus</i> and <i>Microlaena stipoides</i> var. <i>stipoides</i> , the ferns <i>Calochlaena dubia</i> , <i>Blechnum cartilagineum</i> and <i>Adiantum aethiopicum</i> , and shrubs <i>Cordyline stricta</i> , <i>Hymenosporum flavum</i> , and <i>Breynia oblongifolia</i> . The sedges <i>Gymnostachys anceps</i> and <i>Carex longibrachtiata</i> are also common. In some areas, <i>Archontophoenix cunninghamiana</i> is dominant, and most likely forms a distinct community of its own.	Typically occurs on deeper alluvial sandy loams at the bases of the larger gullies.	Alluvial Tall Moist Forest (MU5)	North Coast Wet Sclerophyll Forests	River-Flat Eucalypt Forest on Coastal Floodplains	1568	Blackbutt - Turpentine - Sydney Blue Gum mesic tall open forest on ranges of the Central Coast	low	HU782;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	These forests are dominated by <i>Eucalyptus saligna</i> , which is closer to 1242 (now decommissioned) than 1568. Other possibilities are 1573 or 1241. An option of <i>Eucalyptus saligna</i> on alluvial soils seems to be absent. This unit is more suited to North Coast Wet Sclerophyll Forest than Forested Wetlands.
5a	Alluvial Bluegum-Paperbark Forest	Typified by a canopy of <i>Eucalyptus saligna</i> and an often dense sub-canopy of <i>Melaleuca biconvexa</i> and <i>Callistemon salignus</i> . Other species include <i>Syncarpia glomulifera</i> , <i>Eucalyptus deanei</i> , <i>Melaleuca styphelioides</i> , <i>Livistona australis</i> , <i>Acmena smithii</i> , <i>Ficus coronata</i> , <i>Pittosporum revolutum</i> , <i>Glochidion ferdinandi</i> , <i>Gahnia clarkei</i> .	Occurs along major creek systems with alluvial flats in the south-western Lake Macquarie and Wyong areas, and extending into Gosford LGA. Only a few remnants remain in Lake Macquarie, such as around the Cooranbong and Mandalong Valleys.	Alluvial Tall Moist Forest (MU5)	North Coast Wet Sclerophyll Forests	River-Flat Eucalypt Forest on Coastal Floodplains	1723	Melaleuca biconvexa - Swamp Mahogany - Cabbage Palm swamp forest of the Central Coast	low	HU937;	Forested Wetlands;	Coastal Swamp Forests;	No real equivalent that has <i>Melaleuca biconvexa</i> under <i>Eucalyptus saligna</i> . 1723 is probably the closest fit given the absence of a <i>Eucalyptus saligna</i> type on alluvial soils.
5b	Alluvial Bluegum-Apple Moist Forest	A moist forest type of <i>Eucalyptus saligna</i> and <i>Angophora floribunda</i> , with <i>Callistemon salignus</i> and <i>Acacia parramattensis</i> common in the mid-storey, over <i>Pteridium esculentum</i> , <i>Microlaena stipoides</i> var. <i>stipoides</i> and <i>Adiantum aethiopicum</i> .	Noted in the Cooranbong area of south-western Lake Macquarie, on alluvial flats. Related to but drier than other moist forest types on alluvial flats, such as Cooranbong Blackbutt Tall Forest (MU123), Alluvial Bluegum - Paperbark Forest (MU5a) and Floodplain Redgum - Rough-barked Apple Forest (MU38a). Further exploratory analyses in this group are required to clarify relationships..	Alluvial Tall Moist Forest (MU5)	North Coast Wet Sclerophyll Forests	River-Flat Eucalypt Forest on Coastal Floodplains	1568	Blackbutt - Turpentine - Sydney Blue Gum mesic tall open forest on ranges of the Central Coast	low	HU782;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	No alluvial type with <i>Eucalyptus saligna</i> and <i>Angophora floribunda</i> .
5e	Alluvial Bluegum - Spotted Gum Moist Forest	An alluvial forest where <i>Eucalyptus saligna</i> co-occurs with <i>Corymbia maculata</i> , but other canopy species are also present and may be locally dominant. These include <i>Angophora floribunda</i> , <i>Eucalyptus amplifolia</i> , <i>Eucalyptus siderophloia</i> and <i>Eucalyptus globoidea</i> . Understorey vegetation includes species such as <i>Melaleuca decora</i> , <i>Melaleuca linariifolia</i> , <i>Acacia longifolia</i> and <i>Daviesia ulicifolia</i> , and a range of grasses and herbs occur on the ground.	This vegetation type may be ecotonal between the wetter alluvial Bluegum-dominated communities and the drier Spotted Gum communities, and further sampling and investigation is required.	Alluvial Tall Moist Forest (MU5)	North Coast Wet Sclerophyll Forest	River-Flat Eucalypt Forest on Coastal Floodplains	1568	Blackbutt - Turpentine - Sydney Blue Gum mesic tall open forest on ranges of the Central Coast	low	HU782;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	No alluvial type with <i>Eucalyptus saligna</i> and <i>Corymbia maculata</i> .
5h	Alluvial Riparian Blackbutt Forest	<i>Eucalyptus pilularis</i> is dominant. Common understorey species include <i>Acacia longifolia</i> , <i>Leptospermum polygalifolium</i> , <i>Pteridium esculentum</i> , <i>Dodonaea triquetra</i> , <i>Banksia spinulosa</i> var. <i>collina</i> , <i>Lomandra longifolia</i> , <i>Entolasia stricta</i> and <i>Gahnia clarkei</i> .	Occurs along major creek systems such as Dora Creek and Cackle Creek and environs, extending south into Wyong LGA. This type is related to Cooranbong Blackbutt Tall Forest (MU123) but further investigation is required to determine how the two differ. Little extant area left to sample well.	Alluvial Tall Moist Forest (MU5)	North Coast Wet Sclerophyll Forest	River-Flat Eucalypt Forest on Coastal Floodplains	1568	Blackbutt - Turpentine - Sydney Blue Gum mesic tall open forest on ranges of the Central Coast	low	HU782;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	

6a	Coastal Narrabeen Bluegum Ridge Forest	<i>Eucalyptus deanei</i> , <i>Eucalyptus saligna</i> , <i>Syncarpia glomulifera</i> and <i>Eucalyptus acmenoides</i> are prominent. The open or dense mid-layer comprises species such as <i>Acacia maidenii</i> , <i>Trochocarpa laurina</i> , <i>Persoonia linearis</i> , and <i>Synoum glandulosum</i> , over a well developed herb and grass layer.	A moist ridgetop vegetation occurring in the Watagan Mountains, where <i>Eucalyptus deanei</i> , <i>Eucalyptus saligna</i> , <i>Syncarpia glomulifera</i> and <i>Eucalyptus acmenoides</i> are prominent. This community generally occurs in higher rainfall areas at the top of the Olney SF catchment, such as along the ridges around Heaton Gap. Few areas remain untouched by logging operations. Some further sampling is required to clarify the relationship of this type with Coastal Wet Gully Forest (MU1).	Coastal Narrabeen Moist Forest (MU6)	North Coast Wet Sclerophyll Forest	n/a	1580	Turpentine - Rough-barked Apple - Mountain Blue Gum shrubby open forest on ranges of the Sydney Basin	medium	HU794;	Wet Sclerophyll Forests (Grassy sub-formation);	Northern Hinterland Wet Sclerophyll Forests;	
9a	Coastal Ranges Mesic Blackbutt Forest	A tall forest where <i>Eucalyptus pilularis</i> is clearly dominant, but may also occur with <i>Eucalyptus saligna</i> or <i>Allocasuarina torulosa</i> . The mesic understorey of semi-rainforest species includes <i>Acacia parramattensis</i> , <i>Astrotricha latifolia</i> , <i>Clerodendrum tomentosum</i> , <i>Synoum glandulosum</i> , <i>Claoxylon australe</i> and <i>Cryptocarya glaucescens</i> .	A widespread forest type in the Watagan Mountains system, but is currently poorly sampled across its distribution. Merges with Coastal Wet Gully Forest (MU1) and other similar moist vegetation types in protected slope positions.	Coastal Ranges Open Forest (MU9)	Northern Hinterland Wet Sclerophyll Forests	n/a	1568	Blackbutt - Turpentine - Sydney Blue Gum mesic tall open forest on ranges of the Central Coast	high	HU782;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	
9b	Coastal Ranges Dry Blackbutt Forest	Characteristically, it comprises a canopy dominated by <i>Eucalyptus pilularis</i> , together with <i>Allocasuarina torulosa</i> and <i>Angophora floribunda</i> . Understorey vegetation is generally sparse, but includes <i>Pteridium esculentum</i> , <i>Imperata cylindrica</i> var. <i>major</i> , <i>Lepidosperma laterale</i> , <i>Acacia implexa</i> and <i>Themeda australis</i> .	Occurs along the drier parts of the Watagan Mountains and Sugarloaf Range. Commonly impacted upon by past logging practices.	Coastal Ranges Open Forest (MU9)	Northern Hinterland Wet Sclerophyll Forests	n/a	1579	Smooth-barked Apple - Turpentine - Blackbutt open forest on ranges of the Central Coast	medium	HU793;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	
9d	Coastal Ranges Dry Spotted Gum - Blackbutt Forest	Characterised in the canopy by <i>Eucalyptus pilularis</i> and <i>Corymbia maculata</i> , but other important species include <i>Angophora costata</i> and <i>Allocasuarina torulosa</i> . The understorey supports species such as the shrubs <i>Acacia ulicifolia</i> , <i>Bossiaea obcordata</i> and <i>Gompholobium latifolium</i> , with a ground layer of <i>Themeda australis</i> , <i>Aristida vagans</i> , <i>Entolasia stricta</i> , <i>Gonocarpus tetragynus</i> and <i>Imperata cylindrical</i> .	A dry grassy variant of the wider Coastal Ranges open forests, occurring west of Cooranbong and Wyee. It may represent a disturbed form of Coastal Ranges Dry Blackbutt Forest (MU9b), again occurring in the vicinity of that unit and Coastal Foothills Spotted Gum – Ironbark Forest (MU15).	Coastal Ranges Open Forest (MU9)	Northern Hinterland Wet Sclerophyll Forests	n/a	1579	Smooth-barked Apple - Turpentine - Blackbutt open forest on ranges of the Central Coast	low	HU793;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	Some North Coast PCTs may be applicable.
9e	Coastal Ranges Mesic Peppermint Forest	<i>Eucalyptus piperita</i> is the dominant canopy species present, co-occurring with <i>Allocasuarina torulosa</i> and <i>Angophora costata</i> . A moderately dense understorey of species such as <i>Cryptocarya rigida</i> , <i>Glochidion ferdinandi</i> , and <i>Astrotricha latifolia</i> occurs over <i>Entolasia marginata</i> , <i>Cymbopogon refractus</i> , <i>Gahnia melanocarpa</i> and <i>Lomandra longifolia</i> .	Present in the Watagan Mountains in and around Watagans NP, and some parts of the Sugarloaf Range. Further investigation is required to determine its relationship to similar moist forests.	Coastal Ranges Open Forest (MU9)	Northern Hinterland Wet Sclerophyll Forests	n/a	1568	Blackbutt - Turpentine - Sydney Blue Gum mesic tall open forest on ranges of the Central Coast	low	HU782;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	No PCT of mesic <i>Eucalyptus piperita</i> .
9f	Coastal Ranges Dry Peppermint - Blackbutt Forest	Characterised in the canopy by <i>Eucalyptus piperita</i> and <i>Eucalyptus pilularis</i> , but other species such as <i>Corymbia gummifera</i> , <i>Allocasuarina torulosa</i> , <i>Banksia serrata</i> and <i>Eucalyptus scias</i> also occur. Common understorey species include <i>Pteridium esculentum</i> , <i>Podolobium ilicifolium</i> , <i>Persoonia linearis</i> , <i>Acacia implexa</i> , <i>Dampiera stricta</i> , <i>Entolasia stricta</i> and <i>Imperata cylindrica</i>	Perhaps an ecotonal community occurring at the interface of remnant Hawkesbury sandstone geology and older Narrabeen sediments. Very closely related to Watagans Remnant Hawkesbury Forest (MU26h), and with further data collection and analysis the two may be merged.	Coastal Ranges Open Forest (MU9)	Northern Hinterland Wet Sclerophyll Forests	n/a	1579	Smooth-barked Apple - Turpentine - Blackbutt open forest on ranges of the Central Coast	low	HU793;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	
9h	Coastal Ranges Dry Tallowwood – Blackbutt Forest	Canopy species present include <i>Eucalyptus pilularis</i> , <i>Eucalyptus microcorys</i> , <i>Allocasuarina torulosa</i> and <i>Syncarpia glomulifera</i> . Understorey vegetation includes <i>Platysace lanceolata</i> , <i>Pteridium esculentum</i> , <i>Gompholobium virgatum</i> , <i>Persoonia linearis</i> , <i>Themeda australis</i> , <i>Entolasia stricta</i> , <i>Goodenia heterophylla</i> and <i>Dianella caerulea</i> .	Represents a variant of Coastal Ranges open forest from the Martinsville Valley where <i>Eucalyptus microcorys</i> is characteristic, and co-occurs with <i>Eucalyptus pilularis</i> . Further data collection and analysis is required to clarify relationships with other similar communities within the Coastal Ranges open forest complex.	Coastal Ranges Open Forest (MU9)	Northern Hinterland Wet Sclerophyll Forests	n/a	1556	Tallowwood - Smooth-barked Apple - Blackbutt grass tall open forest of the Central and lower North Coast	medium	HU770;	Wet Sclerophyll Forests (Grassy sub-formation);	Northern Hinterland Wet Sclerophyll Forests;	
9i	Coastal Ranges Mesic Stringybark - Mahogany Forest	Dominated in the canopy by the prominent <i>Eucalyptus agglomerata</i> with <i>Allocasuarina torulosa</i> , <i>Syncarpia glomulifera</i> , <i>Eucalyptus acmenoides</i> and <i>Angophora floribunda</i> . Common mid-storey species include <i>Cryptocarya rigida</i> , <i>Synoum glandulosum</i> , <i>Cordylina stricta</i> and <i>Gymnostachys anceps</i> , over a rich and diverse ground layer of herbs and grasses.	Occurs in the Watagan Mountains on high rainfall slopes and ridges, and merges with other moist forest types. Further investigation is required to determine the relationship between this and similar communities, although the distribution of <i>Eucalyptus agglomerata</i> is distinctive where it occurs.	Coastal Ranges Open Forest (MU9)	Northern Hinterland Wet Sclerophyll Forests	n/a	1568	Blackbutt - Turpentine - Sydney Blue Gum mesic tall open forest on ranges of the Central Coast	low	HU782;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	PCT715 Blue-leaved Stringybark - Blackbutt open forest of the NSW North Coast Bioregion from North Coast is similar.

9l	Coastal Ranges Mesic Blackbutt-Tallowwood Forest	Typified by a canopy of <i>Eucalyptus pilularis</i> , <i>Eucalyptus microcorys</i> , and <i>Allocasuarina torulosa</i> , over an understorey of <i>Xanthorrhoea malocophylla</i> , <i>Synoum glandulosum</i> , <i>Perosonia linearis</i> , <i>Daviesia ulicifolia</i> , <i>Gompholobium latifolium</i> , <i>Calochlaena dubia</i> , <i>Poa affinis</i> and <i>Themeda australis</i> . Other eucalypts may also be present, including <i>Eucalyptus propinqua</i> , <i>Corymbia maculata</i> and <i>Eucalyptus acmenioides</i> .	Occurs in two areas in the hills west of Morisset and Wyee, but has not yet been sampled.	Coastal Ranges Open Forest (MU9)	Northern Hinterland Wet Sclerophyll Forests	n/a	1556	Tallowwood - Smooth-barked Apple - Blackbutt grass tall open forest of the Central and lower North Coast	low	HU770;	Wet Sclerophyll Forests (Grassy sub-formation);	Northern Hinterland Wet Sclerophyll Forests;	
11	Coastal Sheltered Apple-Peppermint Forest	Clearly dominated by <i>Eucalyptus piperita</i> and <i>Angophora costata</i> , and with a sparse or moderate cover of understorey shrubs and grasses such as <i>Allocasuarina littoralis</i> , <i>Pteridium esculentum</i> , <i>Entolasia stricta</i> , <i>Themeda australis</i> , and <i>Imperata cylindrica</i> .	Occurs in dry drainage lines and associated slopes, generally at southerly to south-easterly aspects. Dominates in shallow drainage lines in small catchments around northern and central Lake Macquarie. Often cleared for grazing, cropping or horticulture, and is generally restricted in extent. <i>Eucalyptus piperita</i> as a dominant is diagnostic.	Coastal Sheltered Apple-Peppermint Forest (MU11)	Sydney Coastal Dry Sclerophyll Forests	n/a	1627	Smooth-barked Apple - Turpentine - Sydney Peppermint heathy woodland on sandstone ranges of the Central Coast	low	HU841;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
11a	Riparian Paperbark-Peppermint Forest	Canopy of <i>Eucalyptus piperita</i> , <i>Eucalyptus punctata</i> and <i>Angophora costata</i> . The tall shrub layer includes <i>Callicoma serratifolia</i> , <i>Glochidion ferdinandi</i> and <i>Melaleuca linariifolia</i> , and with a dense ground layer of <i>Gahnia clarkei</i> .	Minor drainage lines on the lower elevation undulating country of the coastal plains support a swampy community, typically occupies only narrow bands 15m or less in width.	Coastal Sheltered Apple-Peppermint Forest (MU11)	Sydney Coastal Dry Sclerophyll Forests	n/a	1627	Smooth-barked Apple - Turpentine - Sydney Peppermint heathy woodland on sandstone ranges of the Central Coast	low	HU841;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
11c	Awaba Peppermint-Black Wattle Riparian Forest	Emergent <i>Eucalyptus piperita</i> , <i>Angophora costata</i> , <i>Allocasuarina torulosa</i> +/- <i>Corymbia gummifera</i> ; over <i>Callicoma serratifolia</i> , <i>Glochidion ferdinandi</i> , <i>Calochlaena dubia</i> , <i>Prostanthera incise</i> , <i>Gahnia melanocarpa</i> , <i>Oplismenus imbecillus</i> .	Narrow rocky gully lines high in the catchment where <i>Callicoma serratifolia</i> dominates the small tree/ shrub layers. Emergent <i>Eucalyptus piperita</i> and <i>Acostata</i> with <i>Atorulosa</i>	Coastal Sheltered Apple-Peppermint Forest (MU11)	Sydney Coastal Dry Sclerophyll Forests	n/a	1627	Smooth-barked Apple - Turpentine - Sydney Peppermint heathy woodland on sandstone ranges of the Central Coast	low	HU841;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
12	Hunter Valley Moist Forest	In most cases a canopy of <i>Corymbia maculata</i> with <i>Eucalyptus acmenioides</i> is present, although other species such as <i>Eucalyptus siderophloia</i> and <i>Eucalyptus punctata</i> may also occur. Important understorey species include <i>Polyscias sambuccifolia</i> , <i>Pteridium esculentum</i> , <i>Pittosporum undulatum</i> , <i>Notelaea longifolia</i> , <i>Poa affinis</i> , <i>Oplismenus imbecillus</i> and <i>Pseuderanthemum variabile</i> .	A broadly defined unit requiring further clarification and assessment, and it may overlap considerably with other MU12 subunits so far defined. As defined here, this is an original REMS2000 unit that has been subdivided regionally (see MU12 subunits). This community is effectively an ecotonal unit between moister forests in sheltered locations, and dryer ridgetop types.	Hunter Valley Moist Forest (MU12)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1584	White Mahogany - Spotted Gum - Grey Myrtle semi-mesic shrubby open forest of the central and lower Hunter Valley	medium	HU798;	Wet Sclerophyll Forests (Grassy sub-formation);	Northern Hinterland Wet Sclerophyll Forests;	
12a	Hunter Valley Moist Spotted Gum – Blackbutt Forest	Typified by the presence of <i>Eucalyptus pilularis</i> with <i>Corymbia maculata</i> in the canopy, with common understorey species including <i>Daviesia ulicifolia</i> , <i>Acacia implexa</i> , <i>Pultenaea villosa</i> , <i>Billardiera scandens</i> , <i>Entolasia stricta</i> and <i>Dianella caerulea</i> .	Only on the lower hinterland hills near Mandalong, and in a small area of Pulbah Island. Further investigation is required to determine the relationship of this community with other vegetation in Units 12 and 15. In particular, it may simply be a lower-elevation, moister form of Coastal Ranges Dry Spotted Gum – Blackbutt Forest (MU9d).	Hunter Valley Moist Forest (MU12)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1584	White Mahogany - Spotted Gum - Grey Myrtle semi-mesic shrubby open forest of the central and lower Hunter Valley	low	HU798;	Wet Sclerophyll Forests (Grassy sub-formation);	Northern Hinterland Wet Sclerophyll Forests;	No PCT available. Broadly similar to PCT688 Blackbutt - Spotted Gum shrubby open forest on sandstones of the lower Clarence Valley of the NSW North Coast Bioregion AND PCT1206 Spotted Gum - Blackbutt shrubby open forest on the coastal foothills, southern Sydney Basin Bioregion and northern South East Corner Bioregion, but differing species replacements.
12b	Hunter Valley Moist Spotted Gum – Turpentine Forest	<i>Corymbia maculata</i> , <i>Syncarpis glomulifera</i> , <i>Eucalyptus propinqua</i> and <i>Allocasuarina torulosa</i> in the canopy, over shrubs such as <i>Glochidion ferdinandi</i> , <i>Acacia prominens</i> , and <i>Acrotriche divaricata</i> . Ground layer vegetation includes <i>Lomandra longifolia</i> , <i>Entolasia stricta</i> and <i>Poa labillardieri</i>	Previously recorded within parts of Jiliby SCA (outside of Lake Macquarie LGA), and has now also been noted at the top end of the Mandalong Valley. May not differ significantly from other MU12 types, and full sampling is required.	Hunter Valley Moist Forest (MU12)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1584	White Mahogany - Spotted Gum - Grey Myrtle semi-mesic shrubby open forest of the central and lower Hunter Valley	low	HU798;	Wet Sclerophyll Forests (Grassy sub-formation);	Northern Hinterland Wet Sclerophyll Forests;	
12c	Hunter Valley Moist Spotted Gum – Ironbark Forest	Dominated by <i>Corymbia maculata</i> with <i>Eucalyptus paniculata</i> and/or <i>Eucalyptus siderophloia</i> . <i>Eucalyptus punctata</i> may be locally present but is not consistent, and in many areas <i>Eucalyptus fergusonii</i> and <i>Eucalyptus microcorys</i> are also locally common.	Mapped extensively on sheltered slopes in the Mandalong region of the LGA, generally in the vicinity of Coastal Foothills Spotted Gum – Ironbark Forest (MU15). Despite this, only very limited sampling has been completed there, and hence true relationships with related types are yet to be determined. This and the closely related northern unit Hunter Valley Moist Spotted Gum – Ironbark Forest (MU12d) require detailed revision, as it is possible that floristically they are very similar.	Hunter Valley Moist Forest (MU12)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	low	HU802;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	

12d	Hunter Valley Moist Spotted Gum - Fergusons Forest	Dominated by <i>Corymbia maculata</i> , <i>Eucalyptus acmenoides</i> , <i>Allocasuarina torulosa</i> and <i>Eucalyptus fergusonii</i> subsp. <i>fergusonii</i> . <i>Eucalyptus punctata</i> and <i>Syncarpia glomulifera</i> may also be present in some areas. The mesic shrub layer includes <i>Melaleuca styphelioides</i> , <i>Indigofera australis</i> , <i>Rhodamnia rubescens</i> , <i>Acrotricha divaricata</i> , <i>Croton verreauxii</i> , and <i>Cordyline stricta</i> . Ground layer species include <i>Oplismenus imbecillus</i> , <i>Smilax australis</i> , <i>Gymnostachys anceps</i> , <i>Adiantum formosum</i> , <i>Doodia aspera</i> and <i>Dichondra repens</i> .	Hunter Valley Moist Spotted Gum – Ironbark Forest is one of several communities where <i>Corymbia maculata</i> is prominent in the canopy. This more northern community is very closely related to Hunter Valley Moist Spotted Gum – Ironbark Forest (MU12c) occurring in the south of the LGA around Mandalong, and the two require careful revision.	Hunter Valley Moist Forest (MU12)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	low	HU802;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	There are no PCTs with <i>Eucalyptus fergusonii</i> , so have to opt for the related <i>Eucalyptus paniculata</i> , and hence PCT 1588
15	Coastal Foothills Spotted Gum - Ironbark Forest	Dominated in the canopy by <i>Eucalyptus siderophloia</i> , <i>Allocasuarina torulosa</i> and <i>Eucalyptus acmenoides</i> , with <i>Corymbia maculata</i> in some areas. The shrub layer supports species such as <i>Clerodendrum tomentosum</i> , <i>Hibbertia aspera</i> , <i>Polyscias sambucifolia</i> , and <i>Persoonia linearis</i> . Ground layer vegetation includes <i>Microlaena stipoides</i> , <i>Imperata cylindrica</i> var. <i>major</i> , <i>Lomandra longifolia</i> , <i>Entolasia stricta</i> , <i>Themeda australis</i> and <i>Desmodium gunnii</i> .	Mainly occurs on the coastal foothills west of Lake Macquarie, however variants of it extend along drainage lines into the Wyee area, and other parts of the Wyong LGA. Requires some further testing.	Coastal Foothills Spotted Gum - Ironbark Forest (MU15)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	low	HU802;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	Best fit is PCT1216 Spotted Gum - Grey Ironbark open forest on the foothills of the Central Coast, Sydney Basin Bioregion, but that has been decommissioned.
15d	Coastal Foothills Spotted Gum - Ironbark Forest (Kurri Kurri)	<i>Corymbia maculata</i> , <i>Eucalyptus siderophloia</i> , <i>Eucalyptus paniculata</i> , <i>Allocasuarina torulosa</i> , and <i>Eucalyptus acmenoides</i> . Common understorey species include <i>Acacia falcata</i> , <i>Podolobium ilicifolium</i> , <i>Acacia implexa</i> , <i>Bursaria spinosa</i> and <i>Dodonaea triquetra</i> , over <i>Themeda australis</i> , <i>Entolasia stricta</i> and <i>Imperata cylindrica</i> .	Yet to be sampled in detail, and occurs on the low rises of Permian sediments in the southern section of Sugarloaf State Conservation Area near Awaba. Relates to a similar form found in the Cessnock LGA, and further sampling and analysis is required to determine its relationship to Coastal Foothills Spotted Gum – Ironbark Forest (MU15).	Coastal Foothills Spotted Gum - Ironbark Forest (MU15)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	low	HU802;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	Best fit is PCT1216 Spotted Gum - Grey Ironbark open forest on the foothills of the Central Coast, Sydney Basin Bioregion, but that has been decommissioned. Placing this unit with PCT 1590 would mean it is LHSGIF, but it is clearly not - all those in Unit 15 are moister types. Suggest maybe PCT 1588.
15h	Lake Macquarie Spotted Gum Forest	Characterised by <i>Corymbia maculata</i> , <i>Eucalyptus punctata</i> , <i>Eucalyptus paniculata</i> and <i>Eucalyptus umbra</i> , over an understorey of species such as <i>Breynia oblongifolia</i> , <i>Acacia implexa</i> , <i>Persoonia linearis</i> , <i>Dodonaea triquetra</i> and <i>Daviesia ulicifolia</i> . On the ground, grasses such as <i>Entolasia stricta</i> , <i>Themeda australis</i> , <i>Imperata cylindrica</i> and <i>Poa affinis</i> dominate, together with <i>Dianella caerulea</i> , <i>Desmodium rhytidophyllum</i> and <i>Lomandra longifolia</i> . In places, <i>Macrozamia reducta</i> forms a conspicuous ground layer.	Prevalent on the low hills of Permian sediments around Lake Macquarie, where it merges with various forms of forest dominated by <i>Angophora costata</i> .	Coastal Foothills Spotted Gum - Ironbark Forest (MU15)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	medium	HU802;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	Best fit is PCT1216 Spotted Gum - Grey Ironbark open forest on the foothills of the Central Coast, Sydney Basin Bioregion, but that has been decommissioned. Placing this unit with PCT 1590 would mean it is LHSGIF, but it is clearly not - all those in Unit 15 are moister types. Suggest maybe PCT 1588.
15i	Lake Macquarie Ironbark Forest	Dominated by <i>Eucalyptus paniculata</i> , <i>Eucalyptus siderophloia</i> and <i>Eucalyptus punctata</i> , with occasional <i>Angophora costata</i> . Understorey vegetation includes <i>Notelaea longifolia</i> , <i>Persoonia linearis</i> , <i>Bursaria spinosa</i> , <i>Acacia longifolia</i> , <i>Dodonaea triquetra</i> , and <i>Acacia falcata</i> . The ground layer is rich in grasses and herbs, and includes <i>Oplismenus imbecillus</i> , <i>Dichondra repens</i> , <i>Imperata cylindrica</i> , <i>Glycine clandestina</i> and <i>Poranthera microphylla</i> .	Occurs in exposed locations on narrow peninsulas on the shores of Lake Macquarie (eg Point Wolstoncroft), in fine-grained sediments on near-level ground, most likely corresponding to a specific stratum within the Permian rock layers.	Coastal Foothills Spotted Gum - Ironbark Forest (MU15)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	low	HU802;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	Best fit is PCT1216 Spotted Gum - Grey Ironbark open forest on the foothills of the Central Coast, Sydney Basin Bioregion, but that has been decommissioned. Placing this unit with PCT 1590 would mean it is LHSGIF, but it is clearly not - all those in Unit 15 are moister types. Suggest maybe PCT 1588.
15k	Coastal Foothills Moist Grey Gum-Mahogany Forest	Canopy of <i>Eucalyptus propinqua</i> , <i>Corymbia maculata</i> and <i>Eucalyptus umbra</i> , with <i>Eucalyptus microcorys</i> and <i>Syncarpia glomulifera</i> occasionally occurring. The understorey is typified by <i>Daviesia ulicifolia</i> , <i>Podolobium ilicifolium</i> and <i>Podolobium aciculiferum</i> , with <i>Themeda australis</i> , <i>Entolasia stricta</i> and <i>Imperata cylindrica</i> on the ground.	Occurs on sheltered slopes in the south-eastern parts of the LGA. This community is yet to be sampled in detail, and hence relationships between it and other units within the Coastal Foothills group (MU15's) are yet to be clarified. However, the presence of <i>Eucalyptus propinqua</i> in this community distinguishes it from several others.	Coastal Foothills Spotted Gum - Ironbark Forest (MU15)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	low	HU802;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	Best fit is PCT1216 Spotted Gum - Grey Ironbark open forest on the foothills of the Central Coast, Sydney Basin Bioregion, but that has been decommissioned.

15l	Sugarloaf Uplands Dry Spotted Gum - Ironbark Forest	Dominated by <i>Corymbia maculata</i> , <i>Eucalyptus fergusonii</i> subsp. <i>fergusonii</i> , <i>Eucalyptus umbra</i> and <i>Eucalyptus punctata</i> . The typical open shrub layer includes <i>Persoonia linearis</i> , <i>Macrozamia reducta</i> , <i>Podolobium ilicifolium</i> , and <i>Maytenus silvestris</i> , over a diverse range of grasses and herbs such as <i>Themeda australis</i> , <i>Imperata cylindrica</i> var. <i>major</i> , <i>Panicum simile</i> , <i>Microlaena stipoides</i> var. <i>stipoides</i> , <i>Entolasia stricta</i> and <i>Lepidosperma laterale</i> .	Occurs on the higher ridges and exposed slopes of the Sugarloaf Range. <i>Eucalyptus fergusonii</i> subsp. <i>fergusonii</i> is a listed rare eucalypt, however it is a community dominant in this community.	Coastal Foothills Spotted Gum - Ironbark Forest (MU15)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	low	HU802;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	There are no PCTs with <i>Eucalyptus fergusonii</i> , so have to opt for the related <i>Euc. paniculata</i> , and hence PCT 1588. Placing this unit with PCT 1590 would mean it is LHSGIF, but it is clearly not - all those in Unit 15 are moister types. Suggest maybe PCT 1588.
15m	Jilliby Spotted Gum-Northern Ironbark-Mahogany Forest	Supports <i>Corymbia maculata</i> , <i>Eucalyptus umbra</i> and <i>Eucalyptus siderophloia</i> , and an understorey of species such as <i>Podolobium ilicifolium</i> , <i>Leucopogon juniperinus</i> and <i>Podolobium aciculiferum</i> occurs over a ground layer of <i>Entolasia stricta</i> , <i>Themeda australis</i> , <i>Aristida vagans</i> and <i>Joycea pallida</i> .	Occurs in the Mandalong Valley in the south-west of the LGA. Fulfils an almost equivalent role to Jilliby Spotted Gum – Fergusons Ironbark – Mahogany Forest (MU15n), which occurs in a similar locality.	Coastal Foothills Spotted Gum - Ironbark Forest (MU15)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	medium	HU802;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	Placing this unit with PCT 1590 would mean it is LHSGIF, but it is clearly not - all those in Unit 15 are moister types. Suggest maybe PCT 1588.
15n	Jilliby Spotted Gum-Ferguson's Ironbark-Mahogany Forest	<i>Corymbia maculata</i> with <i>Eucalyptus fergusonii</i> subsp. <i>fergusonii</i> , <i>Eucalyptus punctata</i> and <i>Eucalyptus umbra</i> . Understorey vegetation includes <i>Podolobium aciculiferum</i> , <i>Daviesia ulicifolia</i> , <i>Persoonia linearis</i> and <i>Bursaria spinosa</i> , over <i>Entolasia stricta</i> , <i>Dianella caerulea</i> , <i>Lomandra filiformis</i> subsp. <i>coriacea</i> , and <i>Lepidosperma laterale</i> .	Occurs in and around the Mandalong Valley, where it adjoins areas currently mapped as Jilliby Spotted Gum – Northern Ironbark – Mahogany Forest (MU15m). These two communities are floristically very similar, and differ most markedly in the different Ironbark species co-dominating. Further sampling and analysis is required to clarify the relationship between this community and MU15m.	Coastal Foothills Spotted Gum - Ironbark Forest (MU15)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	low	HU802;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	There are no PCTs with <i>Eucalyptus fergusonii</i> , so have to opt for the related <i>Eucalyptus paniculata</i> , and hence PCT 1588. Placing this unit with PCT 1590 would mean it is LHSGIF, but it is clearly not - all those in Unit 15 are moister types. Suggest PCT 1588.
15o	Sugarloaf Uplands Moist Spotted Gum – Ironbark Forest	Supports a canopy of <i>Corymbia maculata</i> and <i>Eucalyptus fergusonii</i> subsp. <i>fergusonii</i> , joined by <i>Eucalyptus acmenoides</i> and <i>Eucalyptus punctata</i> . Understorey vegetation supports species such as <i>Hibbertia aspera</i> , <i>Persoonia linearis</i> , <i>Macrozamia reducta</i> and <i>Clerodendrum tomentosum</i> , over a ground layer of <i>Microlaena stipoides</i> var. <i>stipoides</i> , <i>Desmodium gunnii</i> , <i>Gymnostachys anceps</i> , <i>Pratia purpurascens</i> , <i>Dichondra repens</i> and <i>Oplismenus imbecillus</i> . Vines and scramblers, such as <i>Hibbertia scandens</i> , <i>Smilax australis</i> , <i>Eustrephus latifolius</i> , and <i>Pandorea pandorana</i> are also common.	Occurs on the more sheltered slopes of the Sugarloaf Range. Currently not represented on LGA mapping , but is included within other units of the Coastal Foothills complex. Relative to its dryer counterpart (MU15l), understorey vegetation is slightly more mesic.	Coastal Foothills Spotted Gum - Ironbark Forest (MU15)	Hunter-Macleay Dry Sclerophyll Forests	n/a	1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	low	HU802;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	There are no PCTs with <i>Eucalyptus fergusonii</i> , so have to opt for the related <i>Eucalyptus paniculata</i> , and hence PCT 1588.
15p	Sugarloaf Uplands Paperbark Thicket	Paperbark scrub clearly dominated by <i>Melaleuca nodosa</i> . Emergent canopy trees can include any of <i>Corymbia maculata</i> , <i>Eucalyptus punctata</i> , <i>Eucalyptus fergusonii</i> subsp. <i>fergusonii</i> or <i>Eucalyptus umbra</i> . Few other shrub species are common in this vegetation type, but <i>Epacris pulchella</i> , <i>Leptospermum polygalifolium</i> subsp. <i>cistmontanum</i> or <i>Acrotricha divaricata</i> may occur. Grasses and graminoids dominate the ground layer, including <i>Themeda australis</i> , <i>Panicum simile</i> , <i>Ptilothrix deusta</i> and <i>Aristida vagans</i> .	Occurs on level or very gently sloping spurs and ridgetops with compacted clay soils. This type is currently not represented in associated mapping.	Coastal Foothills Spotted Gum - Ironbark Forest (MU15)	Coastal Valley Grassy Woodlands	n/a	1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	low	HU802;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	There are no PCTs with <i>Eucalyptus fergusonii</i> , so have to opt for the related <i>Eucalyptus paniculata</i> , and hence PCT 1588.
17o	Hinterland Spotted Gum - Red Ironbark Forest	Dominated by <i>Corymbia maculata</i> and <i>Eucalyptus fibrosa</i> , with occasional <i>Angophora costata</i> , <i>Eucalyptus umbra</i> or <i>Eucalyptus punctata</i> . Understorey species commonly include <i>Pultenaea villosa</i> , <i>Daviesia ulicifolia</i> subsp. <i>ulicifolia</i> and <i>Leptospermum polygalifolium</i> subsp. <i>cistmontanum</i> in the shrub layer, over a grassy ground layer of <i>Themeda australis</i> , <i>Entolasia stricta</i> , <i>Joycea pallida</i> , <i>Microlaena stipoides</i> var. <i>stipoides</i> , and <i>Panicum simile</i> . In some areas, thickets of <i>Melaleuca nodosa</i> can occur.	Occurs on the lowlands of the north-western side of Lake Macquarie.	Lower Hunter Spotted Gum-Ironbark Forest MU17	Hunter-Macleay Dry Sclerophyll Forests	Lower Hunter Spotted Gum - Ironbark Forest	1590	Spotted Gum - Broad-leaved Mahogany - Red Ironbark shrubby open forest	high	HU804;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	
21a	Hunter Range Dry Escarpment Apple Forest	Prominent canopy species include <i>Angophora costata</i> , <i>Eucalyptus agglomerata</i> and <i>Eucalyptus umbra</i> . The understorey varies between sparse and dense, but invariably includes <i>Podolobium aciculiferum</i> , <i>Cassinia cunninghamii</i> , <i>Daviesia ulicifolia</i> and <i>Leucopogon lanceolatus</i> . Ground layer species are typified by <i>Lomandra confertifolia</i> subsp. <i>rubiginosa</i> , <i>Lepidosperma laterale</i> , <i>Aristida vagans</i> and <i>Austrostipa pubescens</i> .	Occurs on exposed and rocky sandstone escarpment edges and spur ends within the Watagan Ranges. This community is similar to others within the Hunter Range dry forests, and some further clarifications are required.	Hunter Range Grey Gum Forest (MU21)	Sydney Coastal Dry Sclerophyll Forests	n/a	1622	Grey Gum - Smooth-barked Apple - Blue-leaved Stringybark shrub - grass open forest on coastal ranges of the Sydney Basin	medium	HU836;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Hinterland Dry Sclerophyll Forests;	

21d	Hunter Range Dry Ironbark – Grey Gum Forest	<i>Eucalyptus punctata</i> and <i>Eucalyptus paniculata</i> are dominant. Other canopy species present in this community include <i>Eucalyptus agglomerata</i> , <i>Allocasuarina torulosa</i> , <i>Syncarpia glomulifera</i> and <i>Eucalyptus acmenioides</i> . <i>Eucalyptus pilularis</i> is also present in some parts.	Mapped for a single location at the top of the Martinsville Valley, and is yet to be sampled in detail. With further investigation this community may simply be seen as a localised form of the more widespread Hunter Ranges Dry Stringybark – Blackbutt Forest (MU21g). No data on understorey species is yet available.	Hunter Range Grey Gum Forest (MU21)	Sydney Coastal Dry Sclerophyll Forests	n/a	1622	Grey Gum - Smooth-barked Apple - Blue-leaved Stringybark shrub - grass open forest on coastal ranges of the Sydney Basin	medium	HU836;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Hinterland Dry Sclerophyll Forests;
21e	Hunter Range Dry Mahogany - Grey Gum Forest	Key canopy species include <i>Eucalyptus acmenioides</i> , <i>Eucalyptus umbra</i> , <i>Eucalyptus punctata</i> , <i>Eucalyptus microcorys</i> , <i>Eucalyptus scias</i> , <i>Syncarpia glomulifera</i> and <i>Eucalyptus agglomerata</i> .	Mapped from only a single location along Lemon Tree Road in the Jilliby Ranges. It is a dry, rocky low forest with many eucalypts present but no clear dominants. As with MU21d, this community is yet to be sampled in detail. No data on understorey species is yet available. Further investigation is required to ascertain relationships between this community and other closely related units within the Hunter Range forest complex. It is likely that sampling and analysis will reveal this community to be a localised form of the more widespread Hunter Ranges Dry Stringybark – Blackbutt Forest (MU21g).	Hunter Range Grey Gum Forest (MU21)	Sydney Coastal Dry Sclerophyll Forests	n/a	1622	Grey Gum - Smooth-barked Apple - Blue-leaved Stringybark shrub - grass open forest on coastal ranges of the Sydney Basin	medium	HU836;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Hinterland Dry Sclerophyll Forests;
21f	Hunter Range Dry Mahogany - Apple Forest	Generally supports <i>Eucalyptus umbra</i> as the key dominant species, but with any of <i>Angophora floribunda</i> , <i>Eucalyptus paniculata</i> , <i>Eucalyptus fergusonii</i> , <i>Eucalyptus agglomerata</i> , <i>Eucalyptus punctata</i> and <i>Allocasuarina torulosa</i> often present. Understorey vegetation commonly includes <i>Podolobium aciculiferum</i> , with <i>Olearia tomentosa</i> , <i>Asterolasia correifolia</i> , <i>Entolasia stricta</i> , <i>Paspalidium distans</i> , <i>Paspalidium criniforme</i> and <i>Lomandra longifolia</i> .	Best developed on exposed rocky spur ends and exposed slopes within Jilliby State Conservation Area, off Prickly Ridge Road. Further sampling and analysis is required to determine the relationship of this community with other forms of Hunter Range forest types.	Hunter Range Grey Gum Forest (MU21)	Sydney Coastal Dry Sclerophyll Forests	n/a	1622	Grey Gum - Smooth-barked Apple - Blue-leaved Stringybark shrub - grass open forest on coastal ranges of the Sydney Basin	low	HU836;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Hinterland Dry Sclerophyll Forests;
21g	Hunter Range Dry Stringybark – Blackbutt Forest	Dominated by a canopy of <i>Eucalyptus agglomerata</i> and <i>Eucalyptus pilularis</i> , with other species such as <i>Eucalyptus punctata</i> , <i>Eucalyptus paniculata</i> , <i>Allocasuarina torulosa</i> and <i>Angophora floribunda</i> also present. Understorey species include <i>Acacia implexa</i> , <i>Podolobium aciculiferum</i> and <i>Acacia ulicifolia</i> , with <i>Entolasia stricta</i> , <i>Cleistochloa rigida</i> and <i>Panicum simile</i> on the ground.	Floristically similar to Hunter Range Dry Mahogany – Apple Forest (MU21f), and some further investigation is required to determine the status of both. While <i>Eucalyptus agglomerata</i> is occasionally present in MU21f, it is clearly not a dominant feature as it is in this community.	Hunter Range Grey Gum Forest (MU21)	Sydney Coastal Dry Sclerophyll Forests	n/a	1622	Grey Gum - Smooth-barked Apple - Blue-leaved Stringybark shrub - grass open forest on coastal ranges of the Sydney Basin	medium	HU836;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Hinterland Dry Sclerophyll Forests;
22	Coastal Narrabeen Shrub Forest	<i>Eucalyptus pilularis</i> , <i>Angophora costata</i> , <i>Allocasuarina torulosa</i> , <i>Corymbia gummifera</i> and <i>Eucalyptus umbra</i> . Important understorey vegetation includes <i>Pteridium esculentum</i> , <i>Persoonia linearis</i> , <i>Glochidion ferdinandi</i> , <i>Bossiaea obcordata</i> and <i>Gompholobium latifolium</i> . Ground layer species include <i>Entolasia stricta</i> , <i>Panicum simile</i> , <i>Dampiera stricta</i> , <i>Dianella caerulea</i> and <i>Themeda australis</i> .	Limited sample data suggests it occurs in the Dudley-Whitebridge area. This community requires additional sampling to clarify its relationship with Coastal Ranges Dry Blackbutt Forest (MU9b).	Coastal Narrabeen Scrub Forest (MU22)	Northern Hinterland Wet Sclerophyll Forests	n/a	1579	Smooth-barked Apple - Turpentine - Blackbutt open forest on ranges of the Central Coast	high	HU793;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;
22e	Coastal Narrabeen Dry Bloodwood - Apple - Mahogany Forest	<i>Angophora costata</i> , <i>Corymbia gummifera</i> , <i>Eucalyptus umbra</i> , <i>Eucalyptus pilularis</i> , <i>Eucalyptus scias</i> , and <i>Banksia serrata</i> . Understorey vegetation includes <i>Allocasuarina littoralis</i> , <i>Leptospermum trinervium</i> , <i>Banksia spinulosa</i> , <i>Xylomelum pyriforme</i> , <i>Leptospermum polygalifolium</i> , <i>Lambertia formosa</i> , and <i>Bossiaea obcordata</i> , over <i>Xanthorrhoea latifolia</i> , <i>Entolasia stricta</i> , <i>Themeda australis</i> , and <i>Imperata cylindrical</i> .	Mapped for a ridge system on Narrabeen sandstone north of Cooranbong, but requires sampling and analysis to determine its relationship to similar communities. Further investigation is required to clarify relationships to Coastal Narrabeen Shrub Forest (MU22).	Coastal Narrabeen Scrub Forest (MU22)	Northern Hinterland Wet Sclerophyll Forests	n/a	1579	Smooth-barked Apple - Turpentine - Blackbutt open forest on ranges of the Central Coast	medium	HU793;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;
25a	Narrabeen Peppermint - Apple Forest	<i>Eucalyptus piperita</i> , <i>Angophora costata</i> , <i>Allocasuarina torulosa</i> and <i>Corymbia gummifera</i> . Shrub species include <i>Hibbertia aspera</i> , <i>Olearia tomentosa</i> , <i>Polyscias sambuccifolia</i> , <i>Gompholobium latifolium</i> and <i>Gymnostachys anceps</i> . The sparse ground layer typically supports <i>Entolasia stricta</i> , <i>Brunoniella australis</i> , <i>Goodenia heterophylla</i> subsp. <i>heterophylla</i> , <i>Poa affinis</i> , and <i>Microlaena stipoides</i> var. <i>stipoides</i>	Sheltered upper slopes on Narrabeen Sandstone along the Sugarloaf Range, such as around The Gap, support this vegetation. Very similar to MU25 but likely to have a different suite of understorey species - yet to be tested.	Sheltered Dry Hawesbury Woodland (MU25)	Sydney Coastal Dry Sclerophyll Forests	n/a	1183	Smooth-barked Apple - Sydney Peppermint - Turpentine heathy open forest on plateau areas of the Sydney Basin Bioregion	medium	HN587; HU622;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;

26h	Watagans Remnant Hawkesbury Forest	Dominated in the canopy by <i>Eucalyptus sieberi</i> , <i>Eucalyptus piperita</i> , <i>Corymbia gummifera</i> , <i>Eucalyptus scias</i> , and <i>Banksia serrata</i> , over an understorey of species such as <i>Banksia spinulosa</i> , <i>Acacia kulnurensis</i> , <i>Lambertia formosa</i> , <i>Xylomelum pyriforme</i> , <i>Styphelia tubiflora</i> , <i>Caustis flexuosa</i> , <i>Comesperma defoliatum</i> , <i>Lomandra cylindrica</i> , and <i>Tetrarhena juncea</i> .	Occurs only on remnant Hawkesbury Sandstone geology in and around 'The Pines' picnic area in Olney State Forest. Vegetation in this unit is more typical of that found on Hawkesbury Sandstone further to the south and west, where that geological strata outcrops more consistently.	Exposed Hawkesbury Woodland (MU26)	Sydney Coastal Dry Sclerophyll Forests	n/a	1786	Red Bloodwood - Silvertop Ash - Stringybark open forest on ironstone in the Sydney region	medium	no data	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	This is a broad PCT, but there are none specifically dealing with the Watagan Forests form of this type. PCT 1786 was not listed as a HU community 17-3-2016. PCT 1786 applies to the remnant Hawkesbury Sandstone forest in the Watagans.
30	Coastal Plains Smooth-barked Apple Woodland	<i>Angophora costata</i> occurs with <i>Corymbia gummifera</i> , <i>Eucalyptus umbra</i> and <i>Eucalyptus capitellata</i> , over an understorey of species such as <i>Allocasuarina littoralis</i> , <i>Banksia spinulosa</i> , <i>Acacia myrtifolia</i> , <i>Leptospermum polygalifolium</i> , <i>Lambertia formosa</i> , <i>Dillwynia retorta</i> , <i>Themeda australis</i> , <i>Entolasia stricta</i> , <i>Pteridium esculentum</i> , <i>Lomandra obliqua</i> , <i>Phyllanthus hirtellus</i> , <i>Imperata cylindrica</i> , and <i>Lepidosperma laterale</i> .	An original REMS2000 vegetation unit which has been progressively sub-divided to accommodate more detailed revision across the region. Some areas remain on the current map layer which will require allocation to new divisions.	Coastal Plains Smooth-barked Apple Woodland (MU30)	Sydney Coastal Dry Sclerophyll Forests	n/a	1619	Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	high	HU833;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
30a	Buttongerry Footslopes Forest	<i>Eucalyptus globoidea</i> , <i>Angophora costata</i> , <i>Corymbia gummifera</i> , <i>Eucalyptus umbra</i> , and <i>Eucalyptus capitellata</i> occurs over an understorey of <i>Pteridium esculentum</i> , <i>Bossiaea obcordata</i> , <i>Daviesia squarrosa</i> , <i>Banksia spinulosa</i> , <i>Epacris pulchella</i> , <i>Gompholobium latifolium</i> , and <i>Polyscias sambuccifolia</i> . The ground layer supports <i>Entolasia stricta</i> , <i>Lomandra cylindrica</i> , <i>Lomandra obliqua</i> , <i>Joycea pallida</i> , <i>Xanthorrhoea latifolia</i> , <i>Microlaena stipoides</i> var. <i>stipoides</i> , and <i>Phyllanthus hirtellus</i> .	Originally defined for the northern Wyong area, and parts of southern Lake Macquarie (mainly south of Morisset) appear to support similar vegetation. Further clarification of this type and other defined forms of MU30 is required to it's determine position in the classification.	Coastal Plains Smooth-barked Apple Woodland (MU30)	Sydney Coastal Dry Sclerophyll Forests	n/a	1619	Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	medium	HU833;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
30b	Sugarloaf Uplands Bloodwood - Apple Forest	Dominated by <i>Angophora costata</i> , <i>Corymbia gummifera</i> and <i>Eucalyptus umbra</i> , and dominant shrub and understorey species include <i>Persoonia linearis</i> , <i>Podolobium ilicifolium</i> , <i>Macrozamia reducta</i> , <i>Daviesia ulicifolia</i> subsp. <i>ulicifolia</i> , and <i>Pteridium esculentum</i> in the shrub layer, over <i>Themeda australis</i> , <i>Joycia pallida</i> , <i>Lomandra confertifolia</i> subsp. <i>pallida</i> , <i>Lepidosperma laterale</i> and <i>Entolasia stricta</i> on the ground.	Common across parts of the Sugarloaf Range and surrounding areas, occurring principally on Narrabeen Sandstone geology.	Coastal Plains Smooth-barked Apple Woodland (MU30)	Sydney Coastal Dry Sclerophyll Forests	n/a	1619	Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	medium	HU833;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
30e	Coastal Plains Stringybark - Apple Forest	<i>Eucalyptus globoidea</i> and <i>Angophora costata</i> , with some <i>Corymbia gummifera</i> , <i>Eucalyptus umbra</i> and <i>Eucalyptus resinifera</i> also present. Understorey species include <i>Pultenaea euchila</i> , <i>Acacia terminalis</i> , <i>Dodonaea triquetra</i> and <i>Leptospermum polygalifolium</i> subsp. <i>cistmontanum</i> .	Occurs on the lowlands near the F3 Freeway in the north-west of the LGA. It is possible that this community equates to a localised form of MU30h (Sugarloaf Lowlands Bloodwood - Apple Forest), but requires further investigation.	Coastal Plains Smooth-barked Apple Woodland (MU30)	Sydney Coastal Dry Sclerophyll Forests	n/a	1619	Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	low	HU833;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
30f	Freemans Peppermint-Apple-Bloodwood Forest	Characterised by <i>Eucalyptus piperita</i> in the canopy, where it occurs with <i>Angophora costata</i> and <i>Corymbia gummifera</i> . Understorey species include the dominant presence of <i>Doryanthes excelsa</i> in the shrub layer, with <i>Pteridium esculentum</i> , <i>Gompholobium latifolium</i> , <i>Acacia myrtifolia</i> , <i>Hibbertia empetrifolia</i> subsp. <i>empetrifolia</i> , <i>Podolobium ilicifolium</i> , <i>Bossiaea obcordata</i> , <i>Banksia spinulosa</i> var. <i>collina</i> and <i>Leptospermum trinervium</i> . On the ground, <i>Themeda australis</i> is common, along with <i>Entolasia stricta</i> , <i>Gonocarpus tetragynus</i> , <i>Brunoniella australis</i> , <i>Lomandra obliqua</i> and <i>Patersonia glabrata</i> .	Centred on Freeman's Waterhole, this vegetation type is characterised by <i>Eucalyptus piperita</i> .	Coastal Plains Smooth-barked Apple Woodland (MU30)	Sydney Coastal Dry Sclerophyll Forests	n/a	1619	Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	low	HU833;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
30h	Sugarloaf Lowlands Bloodwood - Apple Forest	<i>Angophora costata</i> , <i>Corymbia gummifera</i> and <i>Eucalyptus umbra</i> dominate the canopy, while <i>Dillwynia retorta</i> , <i>Pultenaea paleacea</i> , <i>Pimelea linifolia</i> subsp. <i>linifolia</i> and <i>Epacris pulchella</i> are common in the shrub layer. <i>Themeda australis</i> , <i>Entolasia stricta</i> , <i>Ptilothrix deusta</i> , <i>Joycia pallida</i> , <i>Lepidosperma laterale</i> , <i>Lomandra obliqua</i> , <i>Aristida warburgii</i> , <i>Mirbelia rubifolia</i> , <i>Paspalidium distans</i> and <i>Gompholobium pinnatum</i> are common in the ground layer.	Closely related to the Sugarloaf Uplands Bloodwood - Apple Forest (MU30b), Sugarloaf Lowlands Bloodwood - Apple Forest occurs largely on Narrabeen and Permian sediment (Moon Island Beach subgroup) geology, and is floristically simpler.	Coastal Plains Smooth-barked Apple Woodland (MU30)	Sydney Coastal Dry Sclerophyll Forests	n/a	1619	Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	medium	HU833;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	

30i	West Wallsend Stringybark Forest	<i>Eucalyptus globoidea</i> , <i>Eucalyptus capitellata</i> and <i>Eucalyptus umbra</i> , and. <i>Angophora costata</i> is also occasionally present. Understorey vegetation includes a sparse shrub layer of <i>Acacia ulicifolia</i> , <i>Callistemon linearis</i> and <i>Leptospermum trinervium</i> , over a dense grassy layer of <i>Aristida vagans</i> , <i>Dichelachne micrantha</i> , <i>Entolasia stricta</i> , <i>Eragrostis brownii</i> , <i>Lomandra filiformis</i> subsp. <i>filiformis</i> , <i>Panicum simile</i> , <i>Joycea pallida</i> and <i>Themeda australis</i> .	Mapped for areas immediately around West Wallsend in the north-west of the LGA. This community is characterised by a dominance of stringybarks over a grassy understorey. The current floristic composition of this community may reflect a history of disturbance, particular frequent fire, and further investigation is required to determine if such disturbance drives the differences to other units in the MU30 complex.	Coastal Plains Smooth-barked Apple Woodland (MU30)	Sydney Coastal Dry Sclerophyll Forests	n/a	1619	Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	low	HU833;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
30j	Sugarloaf Lowlands Bloodwood-Apple-Scribbly Gum Forest	Supports a canopy of <i>Corymbia gummifera</i> , <i>Eucalyptus capitellata</i> , <i>Eucalyptus haemastoma</i> , and <i>Angophora costata</i> . Understorey vegetation includes <i>Leptospermum trinervium</i> , <i>Lambertia formosa</i> , <i>Epacris pulchella</i> , <i>Dillwynia retorta</i> , <i>Banksia spinulosa</i> and <i>Allocasuarina littoralis</i> , over <i>Xanthorrhoea latifolia</i> , <i>Entolasia stricta</i> , <i>Ptilothrix deusta</i> , <i>Lomandra obliqua</i> and <i>Themeda australis</i> .	Occurs in the Cardiff to Valentine and Kahibah areas of the north-eastern portion of the LGA, principally on the Boolaroo subgroup of the Permian sediments in these areas. This community is floristically very similar to Sugarloaf Lowlands Bloodwood - Apple Forest (MU30h), but supports <i>Eucalyptus haemastoma</i> as a prominent canopy component. That community also occurs on different geological strata (Narrabeen sediments and Permian Moon Island Beach subgroup). Some limited further investigation may help clarify relationships with this and similar units.	Coastal Plains Smooth-barked Apple Woodland (MU30)	Sydney Coastal Dry Sclerophyll Forests	n/a	1638	Smooth-barked Apple - Red Bloodwood - Scribbly Gum grass - shrub woodland on lowlands of the Central Coast	medium	HU852;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
31	Coastal Plains Scribbly Gum Woodland	<i>Eucalyptus haemastoma</i> , <i>Corymbia gummifera</i> , <i>Eucalyptus capitellata</i> and <i>Angophora costata</i> in the canopy, over a diverse understorey of heathy shrubs, sub-shrubs and forbs, including <i>Lambertia formosa</i> , <i>Leptospermum trinervium</i> , <i>Banksia oblongifolia</i> , <i>Allocasuarina littoralis</i> , <i>Hakea laevipes</i> , <i>Isopogon anemonifolius</i> , <i>Aristida warburgii</i> , <i>Entolasia stricta</i> , <i>Ptilothrix deusta</i> , <i>Xanthorrhoea latifolia</i> , <i>Lomandra obliqua</i> .	Widespread on Narrabeen sediments of the Central Coast hinterland.	Coastal Plains Scribbly Gum Woodland (MU31)	Sydney Coastal Dry Sclerophyll Forests	n/a	1636	Scribbly Gum - Red Bloodwood - Angophora inopina heathy woodland on lowlands of the Central Coast	high	HU850;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
31h	Coastal Plains Dry Heath	Common species include <i>Banksia oblongifolia</i> , <i>Angophora inopina</i> (shrub form), <i>Hakea laevipes</i> and <i>Ptilothrix deusta</i> .	Occurs on the Narrabeen coastal plains of southern Lake Macquarie LGA, and forms a mosaic within the wider matrix of Coastal Plains Scribbly Gum Woodland (MU31). Mappable on aerial photographs, the distribution of this community is dynamic and responds to disturbance events such as fire or partial clearing. Very often good habitat for terrestrial orchids.	Coastal Plains Scribbly Gum Woodland (MU31)	Sydney Coastal Dry Sclerophyll Forests	n/a	1636	Scribbly Gum - Red Bloodwood - Angophora inopina heathy woodland on lowlands of the Central Coast	medium	HU850;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	PCT 1635 not used as none of those dominants are present in this community.
31i	Coastal Sandstone Laterite Heath	<i>Banksia oblongifolia</i> is prominent, with other important species including <i>Lambertia formosa</i> , <i>Epacris pulchella</i> , <i>Isopogon anemonifolia</i> , <i>Ptilothrix deusta</i> , <i>Lomandra obliqua</i> , <i>Patersonia sericea</i> and <i>Themeda australis</i> .	Filling a similar niche to Coastal Plains Dry Heath (MU31h), Coastal Sandstone Laterite Heath occurs as small patches on the Permian sandstones of north-eastern Lake Macquarie. Some additional sampling and analysis is required to clarify the relationship between these two heaths.	Coastal Plains Scribbly Gum Woodland (MU31)	Sydney Coastal Dry Sclerophyll Forests	n/a	1636	Scribbly Gum - Red Bloodwood - Angophora inopina heathy woodland on lowlands of the Central Coast	low	HU850;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
31j	Snappy Gum Ridgetop Heathy Forest	<i>Eucalyptus racemosa</i> , <i>Angophora costata</i> and <i>Corymbia gummifera</i> are key canopy species in this community. Understorey species include <i>Pultenaea paleacea</i> , <i>Daviesia ulicifolia</i> , <i>Pimelea linifolia</i> and <i>Acacia myrtifolia</i> , together with <i>Xanthorrhoea latifolia</i> , <i>Entolasia stricta</i> and <i>Themeda australis</i> on the ground.	Substantial variant of Coastal Plains Scribbly Gum Woodland (MU31), as it replaces <i>Eucalyptus haemastoma</i> in that community with <i>Eucalyptus racemosa</i> . Known from Narrabeen sandstone ridgetops between Morisset and Catherine Hill Bay (separated by the southern reaches of Lake Macquarie), with a small outlier near Toronto. With further investigation, this latter site may instead form the southern extent of Killingworth Snappy Gum Forest (MU111c).	Coastal Plains Scribbly Gum Woodland (MU31)	Sydney Coastal Dry Sclerophyll Forests	n/a	1638	Smooth-barked Apple - Red Bloodwood - Scribbly Gum grass - shrub woodland on lowlands of the Central Coast	low	HU852;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
31k	Narrabeen Dune Forest	<i>Corymbia gummifera</i> with <i>Eucalyptus haemastoma</i> and <i>Angophora costata</i> , over a shrub layer of <i>Ricinocarpus pinifolius</i> , <i>Dillwynia retorta</i> , <i>Leptospermum polygalifolium</i> , <i>Platysace linearifolia</i> , <i>Acacia suaveolens</i> and <i>Bossiaea heterophylla</i> .	Evident as small sandy old alluvial dunes within the wider Narrabeen Sandstone landscape. These deeper sand deposits support some species more typical of larger Pleistocene sand deposits along the coast, and which are rare within the surrounding Coastal Plains Scribbly Gum Woodland (MU31). At present, this type has been noted in only two locations in the Morisset district.	Coastal Plains Scribbly Gum Woodland (MU31)	Sydney Coastal Dry Sclerophyll Forests	n/a	1638	Smooth-barked Apple - Red Bloodwood - Scribbly Gum grass - shrub woodland on lowlands of the Central Coast	low	HU852;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	

33	Coastal Sand Apple-Blackbutt Forest	Dominated by <i>Eucalyptus pilularis</i> with <i>Angophora costata</i> and <i>Corymbia gummifera</i> , and <i>Banksia serrata</i> is also prominent. The understorey includes species such as <i>Bossiaea rhombifolia</i> , <i>Pteridium esculentum</i> , <i>Acacia longifolia</i> , <i>Ricinocarpus pinifolius</i> and <i>Acacia terminalis</i> , over a sparse ground layer of <i>Dianella caerulea</i> , <i>Lomandra longifolia</i> and <i>Poa affinis</i> .	Occurs on coastal sand bodies within parts of Awabakal Nature Reserve and in the Jewells Swamp area.	Coastal Sand Apple-Blackbutt Forest (MU33)	Coastal Dune Dry Sclerophyll Forests	n/a	1646	Smooth-barked Apple - Blackbutt - Old Man Banksia woodland on coastal sands of the Central and Lower North Coast	high	HU860;	Dry Sclerophyll Forests (Shrubby sub-formation);	Coastal Dune Dry Sclerophyll Forests;	
33c	Pelican Bangalay Forest	<i>Eucalyptus botryoides</i> dominates the canopy with <i>Angophora costata</i> , <i>Banksia serrata</i> , and some <i>Corymbia gummifera</i> . Understorey vegetation includes <i>Aotus ericoides</i> , <i>Monotoca elliptica</i> , <i>Acacia longifolia</i> , <i>Pimelea linifolia</i> , <i>Acacia suaveolens</i> , <i>Pteridium esculentum</i> , <i>Lomandra longifolia</i> , <i>Pomax umbellata</i> and <i>Imperata cylindrica</i> .	Occurs on the poorly drained sandy plains and rises in the Belmont South and Pelican Flats area. Floistically, this community has strong affinities to the Umina Coastal Sandplain Woodland EEC from the Gosford LGA, but under current legislation this type is not included in that community.	Coastal Sand Apple-Blackbutt Forest (MU33)	Coastal Dune Dry Sclerophyll Forests	n/a	659	Bangalay - Old-man Banksia open forest on coastal sands, Sydney Basin Bioregion and South East Corner Bioregion	medium	HN503; HU502; ME009; SR512;	Dry Sclerophyll Forests (Shrubby sub-formation);	South Coast Sands Dry Sclerophyll Forests;	PCT1645 considered but refers directly to Umina Coastal Sand Woodland. PCT 659 (Not listed as a HU community 17-3-2016) PCT 659 applies to the Pelican Flats vegetation where <i>Eucalyptus botryoides</i> is diagnostic.
33d	Awabakal Sand Mantled Blackbutt Forest	Dominated by a canopy of <i>Eucalyptus pilularis</i> , <i>Eucalyptus paniculata</i> , <i>Angophora costata</i> and <i>Allocasuarina torulosa</i> . Other species present include <i>Acacia longifolia</i> , <i>Acacia falcata</i> , <i>Polyscias sambuccifolia</i> , and <i>Pteridium esculentum</i> , with the grasses <i>Themeda australis</i> , <i>Imperata stricta</i> , <i>Entolasia stricta</i> and <i>Poa affinis</i> prominent.	Occurs on a sandy substrate overlying bedrock, often on slopes, and lies in close proximity to larger aeolian sand bodies, but lacks the full diversity of typical 'sand' species in the understorey. At present, this community is noted only for a small section of Awabakal Nature Reserve, and full revision is required to determine its correct place in the classification. It may, for example, represent a minor variant of Coastal Narrabeen Shrub Forest (MU22).	Coastal Sand Apple-Blackbutt Forest (MU33)	Coastal Dune Dry Sclerophyll Forests	n/a	1579	Smooth-barked Apple - Turpentine - Blackbutt open forest on ranges of the Central Coast	low	HU793;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	
33m	Sand Mantled Banksia Forest	Open forest of <i>Angophora costata</i> , <i>Banksia serrata</i> and <i>Corymbia gummifera</i> on sandy wind-blown deposits. Common understorey species include <i>Monotoca elliptica</i> , <i>Persoonia linearis</i> , <i>Acacia longifolia</i> , <i>Pteridium esculentum</i> , <i>Macrozamia communis</i> , <i>Gonocarpus teucrioides</i> , <i>Lomandra longifolia</i> , and <i>Themeda australis</i>	Occurs in a few location in the south-east of Lake Macquarie LGA, such as near Catherine Hill Bay and Swansea. These areas occur on small and typically isolated wind-blown sand deposits, often overlying Permian aged, clay-based sediments. Differs from Coastal Sand Apple - Blackbutt Forest most prominently in the absence of <i>Eucalyptus pilularis</i>	Coastal Sand Apple-Blackbutt Forest (MU33)	Coastal Dune Dry Sclerophyll Forests	n/a	1646	Smooth-barked Apple - Blackbutt - Old Man Banksia woodland on coastal sands of the Central and Lower North Coast	low	HU860;	Dry Sclerophyll Forests (Shrubby sub-formation);	Coastal Dune Dry Sclerophyll Forests;	PCT1646 is really one of coastal dunes.
34a	Coastal Sand Wallum Heath	Characterised by an often dense mid-layer of <i>Banksia aemula</i> , with stunted <i>Corymbia gummifera</i> and <i>Angophora costata</i> also present. Other prominent shrubs include <i>Ricinocarpus pinifolius</i> , <i>Aotus ericoides</i> , <i>Dillwynia retorta</i> , <i>Monotoca scoparia</i> , and <i>Leucopogon ericoides</i> .	Occurs only on the elevated coastal sand masses in the vicinity of Awabakal NR and Munmorah SCA. Further clarification is required between this community and the related Coastal Sandplain Dry Heath (MU34c), which appears to occur on shallower sands.	Heath (MU34a)	Wallum Sand Heaths	n/a	1703	Wallum Banksia-Monotoca scoparia heath on coastal sands of the Central Coast and lower North Coast	high	HU917;	Heathlands;	Coastal Headland Heaths;	
34b	Coastal Sand-Mantled Clay Heath	Typical species in this community include <i>Melaleuca nodosa</i> , <i>Banksia spinulosa</i> , <i>Banksia oblongifolia</i> , <i>Isopogon anemonifolius</i> , <i>Epacris pulchella</i> and <i>Hakea laevipes</i> . On the ground, <i>Xanthorrhoea latifolia</i> is characteristic, together with <i>Ptilothrix deusta</i> and various grasses.	Present in areas close to the coast around Catherine Hill Bay and Caves Beach, principally on clay soils, but where a light veneer of wind-blown sand allows other 'sand-based' species to also predominate.	Coastal Sand Wallum Woodland-Heath (MU34)	Wallum Sand Heaths	n/a	1700	Dwarf Casuarina - Prickly-leaved Paperbark - Hairpin Banksia Coastal Heath of the Central Coast and lower North Coast	medium	HU914;	Heathlands;	Coastal Headland Heaths;	
34c	Coastal Sandplain Dry Heath	<i>Banksia aemula</i> , <i>Allocasuarina distyla</i> , <i>Bossiaea ensata</i> , <i>Isopogon anemonifolius</i> , <i>Lambertia formosa</i> and <i>Monotoca scoparia</i> .	Occurs on shallower sands of the coastal sand masses in and around Awabakal NR and Munmorah SCA. Closely related to Coastal Sand Wallum Heath (MU34a), and requires further investigation.	Coastal Sand Wallum Woodland-Heath (MU34)	Wallum Sand Heaths	n/a	1703	Wallum Banksia-Monotoca scoparia heath on coastal sands of the Central Coast and lower North Coast	medium	HU917;	Heathlands;	Coastal Headland Heaths;	
36c	Tomago Clay Wallum Scrub	Characterised by the co-dominance of <i>Banksia aemula</i> with <i>Melaleuca nodosa</i> , together with shrub species more typical of sandy habitats including <i>Leptospermum trinervium</i> , <i>Banksia oblongifolia</i> , and <i>Melaleuca sieberi</i> .	Only at Pelican Flats within Lake Macquarie, but is present on the Tomago Sandbeds north of Newcastle. The only known stand in Lake Macquarie has been bisected by the Pacific Highway, and is becoming weed infested.	Tomago Sand Swamp Woodland (MU36)	Wallum Sand Heaths	n/a	1703	Wallum Banksia-Monotoca scoparia heath on coastal sands of the Central Coast and lower North Coast	medium	HU917;	Heathlands;	Coastal Headland Heaths;	

37	Swamp Mahogany - Paperbark Forest	Typified by the presence of <i>Eucalyptus robusta</i> in the canopy, and may occur with a range of associates including <i>Melaleuca linariifolia</i> , <i>Melaleuca sieberi</i> , <i>Eucalyptus resinifera</i> , and <i>Eucalyptus tereticornis</i> . The understorey is variable, often with a dense shrub layer of species such as <i>Acacia longifolia</i> , <i>Omalanthus nutans</i> , <i>Leptospermum juniperinum</i> , <i>Melaleuca thymifolia</i> and <i>Pultenaea villosa</i> , and the sedges <i>Gahnia clarkei</i> , <i>Chorizandra cymbaria</i> and <i>Baloskion tetraphyllum</i> subsp. <i>meiostachyus</i> .	Common in the better defined drainage lines. It is also a stronghold for <i>Eucalyptus robusta</i> in the area, a known Koala feed tree, and is a winter-flowering eucalypt that provides a food source for several other threatened fauna species.	Swamp Mahogany - Paperbark Forest (MU37)	Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains	1718	Swamp Mahogany - Flax-leaved Paperbark swamp forest on coastal lowlands of the Central Coast	high	HU932;	Forested Wetlands;	Coastal Swamp Forests;	
37a	Alluvial Paperbark Sedge Forest	Typical species present in this type include <i>Eucalyptus robusta</i> , the characteristic <i>Melaleuca biconvexa</i> , and <i>Melaleuca linariifolia</i> and <i>Gahnia clarkei</i> .	More common in the Wyong and Gosford LGAs to the south. Within Lake Macquarie, remnants have been noted in the Coorangong and Martinsville valleys on private lands. No detailed sampling has yet been undertaken in this community in Lake Macquarie due to access constraints, but it is anticipated that the full floristic composition will differ little from the more southern stands on the Central Coast.	Swamp Mahogany - Paperbark Forest (MU37)	Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains	1723	Melaleuca biconvexa - Swamp Mahogany - Cabbage Palm swamp forest of the Central Coast	high	HU937;	Forested Wetlands;	Coastal Swamp Forests;	
37b	Alluvial Floodplain Woollybutt Forest	<i>Eucalyptus longifolia</i> characterizes this community, along with <i>Melaleuca decora</i> , <i>Melaleuca nodosa</i> and <i>Melaleuca ericifolia</i> .	Few remaining stands, predominantly on the Cocked Hat Creek floodplain near Edgeworth where remnants are small and fragmented. Plot sampling is also problematic here, as previous clearing under the canopy has resulted in dense invasion by tall grassy weeds such as <i>Paspalum urvillei</i> . Ideally, better condition remnants require identification and sampling, and are seen as a priority	Swamp Mahogany - Paperbark Forest (MU37)	Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains	1719	Paperbarks - Woollybutt swamp forest on coastal lowlands of the Central Coast	high	HU933;	Forested Wetlands;	Coastal Swamp Forests;	Likely match, but Lake Macquarie remnants very small and highly disturbed.
37d	Alluvial Floodplain Cabbage Gum Forest	Dominant canopy species include <i>Eucalyptus amplifolia</i> subsp. <i>amplifolia</i> and occasionally <i>Angophora floribunda</i> . In better condition sites, a sub-canopy of <i>Melaleuca styphelioides</i> , <i>Melaleuca linariifolia</i> and <i>Melaleuca decora</i> is also present. Understorey vegetation includes the shrubs <i>Breynia oblongifolia</i> , <i>Notelaea longifolia</i> forma <i>longifolia</i> , and <i>Bursaria spinosa</i> ; the grasses <i>Microlaena stipoides</i> , <i>Cymbopogon refractus</i> and <i>Cynodon dactylon</i> ; the herbs <i>Dichondra repens</i> and <i>Commelina cyanea</i> ; the vines <i>Glycine tabacina</i> , <i>Parsonsia straminea</i> , <i>Cayratia clematidea</i> and <i>Geitonoplesium cymosum</i> ; and the fern <i>Cheilanthes sieberi</i> subsp. <i>sieberi</i> .	Occupies the broader creeklines and flats on deep alluvial soils, particularly in the south-west of Lake Macquarie LGA.	Swamp Mahogany - Paperbark Forest (MU37)	Coastal Swamp Forests	River-Flat Eucalypt Forest on Coastal Floodplains	1720	Cabbage Gum - Forest Red Gum - Flax-leaved Paperbark Floodplain Forest of the Central Coast	high	HU934;	Forested Wetlands;	Coastal Floodplain Wetlands;	Could also be PCT1594.
37e	Coastal Sand Swamp Forest	Characterised by dense stands of <i>Melaleuca quinquenervia</i> with scattered <i>Eucalyptus robusta</i> . Understorey vegetation generally contains <i>Gahnia clarkei</i> , various ground ferns and a small number of other sedge species, and is dependent on water depth and degree of waterlogging.	Occurs on coastal sand deposits where drainage is poor and is a common component of coastal sandplain vegetation along the New South Wales coastline.	Swamp Mahogany - Paperbark Forest (MU37)	Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains	1724	Broad-leaved Paperbark - Swamp Oak - Saw Sedge swamp forest on coastal lowlands of the Central Coast and Lower North Coast	high	HU938;	Forested Wetlands;	Coastal Swamp Forests;	Might not qualify for the EEC if MU37e occurs on coastal sand deposits so important to assess whether it meets the EEC criteria onsite.
37f	Swamp Mahogany - Livistona Swamp Forest	Comprises a distinct canopy of <i>Livistona australis</i> with <i>Eucalyptus robusta</i> and occasional <i>Melaleuca quinquenervia</i> and <i>Casuarina glauca</i> . A scattered mid-layer of species such as <i>Ficus coronata</i> and <i>Omalanthus populifolius</i> occurs with young <i>Livistona</i> over a ground layer of <i>Hypolepis muelleri</i> , <i>Oplismenus imbecillis</i> , <i>Commelina cyanea</i> and <i>Gahnia clarkei</i> .	Occurs principally on the poorly drained sand flats around Pelican and Belmont South. As with many communities where <i>Livistona</i> is characteristic, considerable frond-fall litter prevents the development of a diverse ground layer.	Swamp Mahogany - Paperbark Forest (MU37)	Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains	1624	Smooth-barked Apple - Swamp Mahogany - Red Mahogany - Cabbage Palm open forest on lowlands of the Central Coast	medium	HU838;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
37g	Swamp Mahogany - Tallowood Swamp Forest	<i>Eucalyptus microcorys</i> co-dominants with <i>Eucalyptus robusta</i> . Mid-layer vegetation includes <i>Melaleuca styphelioides</i> , <i>Callistemon salignus</i> and <i>Glochidion ferdinandi</i> , with <i>Gahnia clarkei</i> , <i>Microlaena stipoides</i> var. <i>stipoides</i> , <i>Adiantum aethiopicum</i> and <i>Oplismenus imbecillis</i> prominent on the ground.	Recorded at Wye near the M1 motorway, and additional stands may become apparent with further work, particularly to the west. There is some uncertainty regarding how this community differs from other forms of MU37.	Swamp Mahogany - Paperbark Forest (MU37)	Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains	1718	Swamp Mahogany - Flax-leaved Paperbark swamp forest on coastal lowlands of the Central Coast	medium	HU932;	Forested Wetlands;	Coastal Swamp Forests;	A <i>Eucalyptus robusta</i> type but with <i>Eucalyptus microcorys</i> locally dominant. No clear match, but without <i>Eucalyptus microcorys</i> it is closest to 1718.

37j	Dune Swale Swamp Forest	<i>Eucalyptus robusta</i> over a scrubby understorey of species such as <i>Callicoma serratifolia</i> , <i>Elaeocarpus reticulatus</i> , <i>Dodonaea triquetra</i> , <i>Leptospermum polygalifolium</i> subsp. <i>cismontanum</i> and <i>Pteridium esculentum</i> . Ground layer vegetation is distinct in the high abundance of <i>Baloskion tetraphyllum</i> , <i>Gahnia clarkei</i> and <i>Entolasia marginata</i> .	Occurs in poorly drained drainage lines on coastal sandplains. Currently poorly sampled (a single sample from Awabakal NR), and further clarification of species composition is required through additional sampling.	Swamp Mahogany - Paperbark Forest (MU37)	Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains EEC (?)	1725	Swamp Mahogany - Broad-leaved Paperbark - Swamp Water Fern - Plume Rush swamp forest on coastal lowlands of the Central Coast and Lower North Coast	low	HU939;	Forested Wetlands;	Coastal Swamp Forests;	
38	Foreshore Redgum-Rough-barked Apple Forest	<i>Eucalyptus tereticornis</i> with <i>Angophora floribunda</i> , and <i>Allocasuarina littoralis</i> , <i>Acacia longifolia</i> , <i>Leptospermum polygalifolium</i> , <i>Melaleuca styphelioides</i> , <i>Melaleuca linariifolia</i> , <i>Breynia oblongifolia</i> , <i>Dodonaea triquetra</i> , <i>Imperata cylindrical</i> , <i>Lomandra longifolia</i> , and <i>Entolasia stricta</i> .	Remnants of this type occur on alluvial flats of Lake Macquarie and associated lagoons. Restricted in distribution in the region, and has commonly been converted to foreshore parks and picnic areas. Some good intact examples occur in the Eraring area, and Landcare groups have been removing extensive stands of Lantana from these stands.	Redgum Rough Barked Apple Forest (MU38)	Coastal Swamp Forests ?	River-Flat Eucalypt Forest on Coastal Floodplains	1598	Forest Red Gum grassy open forest on floodplains of the lower Hunter	low	HU812;	Forested Wetlands;	Coastal Floodplain Wetlands;	
38a	Floodplain Redgum-Rough-barked Apple Forest	<i>Eucalyptus tereticornis</i> and <i>Angophora floribunda</i> occurs over a moderately dense mid-storey of <i>Acacia irrorata</i> , and a rich ground layer of species such as <i>Entolasia marginata</i> , <i>Dichondra repens</i> , <i>Oplismenus imbecillis</i> , <i>Pratia purpurascens</i> and <i>Microlaena stipoides</i> var. <i>stipoides</i> .	Related to Foreshore Redgum – Rough-barked Apple Forest (MU38), but occurs on larger floodplain environments distant from and to the west of the current lake shoreline (eg: Killingworth-Teralba).	Redgum Rough Barked Apple Forest (MU38)	Coastal Swamp Forests ?	River-Flat Eucalypt Forest on Coastal Floodplains	1598	Forest Red Gum grassy open forest on floodplains of the lower Hunter	low	HU812;	Forested Wetlands;	Coastal Floodplain Wetlands;	
38c	Foreshore Redgum-Ironbark Forest	<i>Eucalyptus tereticornis</i> and <i>Angophora floribunda</i> are joined by <i>Eucalyptus paniculata</i> and <i>Eucalyptus siderophloia</i> in the canopy, over a scattered shrub layer of <i>Melaleuca nodosa</i> , <i>Acacia falcata</i> and <i>Glochidion ferdinandi</i> . The well-developed ground layer is dominated by <i>Lomandra longifolia</i> , <i>Entolasia stricta</i> , <i>Microlaena stipoides</i> var. <i>stipoides</i> , <i>Panicum simile</i> and <i>Imperata cylindrical</i> .	Occurs as remnant stands around the foreshore of Lake Macquarie, typically on clayey footslopes rather than alluvial deposits. Further investigation is required, including additional sampling, to ascertain relationships between all units currently ascribed to MU38.	Redgum Rough Barked Apple Forest (MU38)	Coastal Valley Grassy Woodlands	River-Flat Eucalypt Forest on Coastal Floodplains	1598	Forest Red Gum grassy open forest on floodplains of the lower Hunter	low	HU812;	Forested Wetlands;	Coastal Floodplain Wetlands;	
39	Apple-Palm Gully Forest	Typified by a canopy of <i>Livistona australis</i> , <i>Corymbia maculata</i> and <i>Eucalyptus paniculata</i> . Other characteristic species include <i>Melaleuca styphelioides</i> , <i>Acmena smithii</i> , <i>Diospyros australis</i> , <i>Pittosporum undulatum</i> and <i>Glochidion ferdinandi</i> , over a ground layer of <i>Adiantum aethiopicum</i> , <i>Oplismenus imbecillis</i> and <i>Dioscorea transversa</i> .	Originally defined during the REMS2000 regional project, but has not yet been examined since in any detail. This community occurs on narrow alluvial deposits in the well-protected gullies of the Wallarah Peninsula in the south-east. Apple (<i>Angophora costata</i>), as defined in the original circumscription, is not apparent in areas sampled to date.	Apple-Palm Gully Forest (MU39)	North Coast Wet Sclerophyll Forests	n/a	1681	Smooth-barked Apple - Cabbage Palm - Broad-leaved Mahogany woodland on Wallarah Peninsular	low	HU895;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	
40	Swamp Oak - Rushland Forest	<i>Casuarina glauca</i> clearly dominates this community, with an understorey of sedges and rushes such as <i>Juncus kraussii</i> subsp. <i>australiensis</i> and <i>Baumea juncea</i> , and the herb <i>Apium prostratum</i> .	Occurs adjacent to tidal estuaries on Lake Macquarie and associated inlets. Areas that have been previously cleared and then left to regenerate are quickly re-colonised by monospecific stands of Swamp Oak (eg: on Crooked Creek at Myuna Bay), however other components of the community do not always return, and are replaced by weed species.	Swamp Oak - Rushland Forest (MU40)	Coastal Floodplain Wetlands	Swamp Oak Floodplain Forest	1727	Swamp Oak - Sea Rush - <i>Baumea juncea</i> swamp forest on coastal lowlands of the Central Coast and Lower North Coast	high	HU941;	Forested Wetlands;	Coastal Floodplain Wetlands;	
40a	Phragmites Rushland	Almost exclusively dominated by <i>Phragmites australis</i> .	A secondary vegetation community occupying previously cleared areas of Swamp Oak – Rushland Forest (MU40) and associated wetlands near coastal estuaries.	Phragmites Rushland (MU40a)	Coastal Floodplain Wetlands	Swamp Oak Floodplain Forest	1808	Common Reed on the margins of estuaries and brackish lagoons along the New South Wales coastline	high	no data	Freshwater Wetlands;	Coastal Freshwater Lagoons;	Another option is 1071 that could cover man-made occurrences of this community. PCT 1808 was listed as "Provisionally Approved" as at 17-3-2016.
40c	Estuarine Juncus Rushland	Dominated almost exclusively with <i>Juncus kraussii</i> subsp. <i>australiensis</i> .	Occurs on near-level tidal flats associated with Mangrove-Estuarine Complex (MU47) and Swamp Oak – Rushland Forest (MU40).	Swamp Oak - Rushland Forest (MU40)	Coastal Floodplain Wetlands	Swamp Oak Floodplain Forest #	1727	Swamp Oak - Sea Rush - <i>Baumea juncea</i> swamp forest on coastal lowlands of the Central Coast and Lower North Coast	low	HU941;	Forested Wetlands;	Coastal Floodplain Wetlands;	No PCT for <i>Juncus kraussii</i> sedgeland, but as these are associated with estuarine Swamp Oak forest it makes sense to link it with 1727.

40d	Lake Macquarie Headland Swamp Oak Forest	<i>Casuarina glauca</i> dominates the canopy in these areas, over an understorey of <i>Acacia longifolia</i> , <i>Breyntia oblongifolia</i> , <i>Myrsine variabilis</i> and <i>Pteridium esculentum</i> . At Catherine Hill Bay, the large sedge <i>Gahnia melanocarpa</i> is prominent.	Occurs in localised stands on some exposed headlands on the edge of Lake Macquarie, and also on one coastal headland near Catherine Hill Bay. There is some uncertainty over whether some or all of these stands are the result of previous clearing events, which have subsequently re-established as dense stands of <i>Casuarina glauca</i> . Similar effects have been noted to the south in Pittwater LGA.	Swamp Oak - Rushland Forest (MU40)	Coastal Floodplain Wetlands	n/a #	1727	Swamp Oak - Sea Rush - <i>Baumea juncea</i> swamp forest on coastal lowlands of the Central Coast and Lower North Coast	low	HU941;	Forested Wetlands;	Coastal Floodplain Wetlands;	
42	Red Mahogany-Apple Paperbark Forest	<i>Eucalyptus resinifera</i> , <i>Angophora costata</i> , <i>Melaleuca linariifolia</i> , <i>Melaleuca sieberi</i> and <i>Eucalyptus globoidea</i> in the canopy, over a sparse understorey of <i>Acacia longifolia</i> , <i>Pultenaea villosa</i> and <i>Banksia spinulosa</i> var. <i>collina</i> in the shrub layer, and several grasses and sedges on the ground. <i>Gahnia clarkei</i> can be common, although generally not in large, dense stands.	Occupies shallow drainage lines and open depressions, such as on the lowlands around Awaba.	Riparian Melaleuca Swamp Woodland (MU42)	Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains	1649	Smooth-barked Apple - Red Mahogany - Swamp Mahogany - Melaleuca sieberi heathy swamp woodland of coastal lowlands	medium	HU863;	Forested Wetlands;	Coastal Swamp Forests;	Could also be PCT1618 Smooth-barked Apple - White Stringybark - Red Mahogany - Melaleuca sieberi shrubby open forest on lowlands of the lower North Coast.
42a	Narrabeen Alluvial Paperbark Thicket	Dense stands of <i>Melaleuca linariifolia</i> within shallow drainage lines on the coastal plains, where impeded drainage supports a dense ground layer of <i>Gahnia clarkei</i> . Other common species include the shrub <i>Glochidion ferdinandi</i> and the tree ferns <i>Cyathea australis</i> and/or <i>Cyathea leichhardtiana</i> .	This community represents one of several where <i>Melaleuca linariifolia</i> forms an important component, and further investigation is required to elucidate relationships between them.	Melaleuca Scrub (MU42a)	Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains	1718	Swamp Mahogany - Flax-leaved Paperbark swamp forest on coastal lowlands of the Central Coast	medium	HU932;	Forested Wetlands;	Coastal Swamp Forests;	
42c	Wye Turpentine - Red Mahogany Apple Riparian Forest	Dominant canopy species include <i>Eucalyptus resinifera</i> , <i>Angophora costata</i> and <i>Syncarpia glomulifera</i> , over <i>Glochidion ferdinandi</i> , <i>Melaleuca sieberi</i> and <i>Allocasuarina littoralis</i> .	Known from two locations at Wye and near Morisset, and the presence of <i>Syncarpia glomulifera</i> in it distinguished it from related types. Targeted sampling and assessment will likely subsume this type back as a localised variant of Red Mahogany - Apple - Paperbark Forest (MU42).	Riparian Melaleuca Swamp Woodland (MU42)	Coastal Swamp Forests	River-Flat Forest on Coastal Floodplains	1649	Smooth-barked Apple - Red Mahogany - Swamp Mahogany - Melaleuca sieberi heathy swamp woodland of coastal lowlands	medium	HU863;	Forested Wetlands;	Coastal Swamp Forests;	Could also be PCT1618 Smooth-barked Apple - White Stringybark - Red Mahogany - Melaleuca sieberi shrubby open forest on lowlands of the lower North Coast.
43a **	Estuarine Paperbark Scrub Forest	Characterised by dense thickets of paperbarks (<i>Melaleuca nodosa</i> , <i>Melaleuca sieberi</i>) with stunted emergent eucalypts such as <i>Eucalyptus resinifera</i> , <i>Eucalyptus paniculata</i> or <i>Angophora costata</i> . Understorey vegetation is often limited, although clumps of <i>Gahnia clarkei</i> and <i>Baumea juncea</i> are typical. Grasses, such as <i>Microlaena stipoides</i> var. <i>stipoides</i> , are common.	Occurs in limited extent on compacted clay soils near estuarine swamp systems. As all forms of MU43 have been poorly sampled, further investigation is required to determine relationships between this community and the related units White Stringybark - Paperbark Scrub-Forest (MU43e) and Forest Redgum - Paperbark Scrub-Forest (MU43f), which may simply be variants of the one community.	Wyong Paperbark Swamp Forest (MU43)	Coastal Floodplain Wetlands/ Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains	1716	Prickly-leaved Paperbark forest on coastal lowlands of the Central Coast and Lower North Coast	high	HU930;	Forested Wetlands;	Coastal Swamp Forests;	
43c	Paperbark Clay Heath	Dominated by paperbark shrubs including <i>Melaleuca nodosa</i> and <i>Melaleuca thymifolia</i> , with other species such as <i>Isopogon anemonifolius</i> , <i>Mirbelia rubiifolia</i> , <i>Themeda australis</i> and <i>Aristida warburgii</i> also present.	Occurs as small, disjunct and restricted patches within the lower Hunter region, generally within a wider matrix of Hinterland Spotted Gum - Ironbark Forest (MU17o). Only a single stand is currently known from Lake Macquarie LGA, and additional patches are present in the adjacent Cessnock LGA west of Mt Sugarloaf. Current-day occurrences may possibly be an artefact of previous disturbances.	Wyong Paperbark Swamp Forest (MU43)	Coastal Floodplain Wetlands/ Coastal Swamp Forests	Lower Hunter Spotted Gum - Ironbark Forest #	1701	Prickly-leaved Paperbark - Fern-leaved Banksia heath on coastal headlands of Central Coast	low	HU915;	Heathlands;	Coastal Headland Heaths;	No equivalent PCT. PCT1701 occurs in the wrong landscape.
43e	White Stringybark Paperbark Scrub-Forest	<i>Eucalyptus globoidea</i> characterises the emergent canopy. The mid-storey comprises a dense layer of <i>Melaleuca nodosa</i> and <i>Melaleuca decora</i> , over a sparse shrub layer but well developed ground layer.	Occupies a similar landscape position to Estuarine Paperbark Scrub-Forest (MU43a), and differs principally in the replacement of <i>Eucalyptus resinifera</i> and <i>Eucalyptus paniculata</i> with <i>Eucalyptus globoidea</i> in the emergent canopy. As all forms of MU43 have been poorly sampled, further investigation is required to determine relationships between this community and the related units Estuarine Paperbark Scrub-Forest (MU43a) and Forest Redgum - Paperbark Scrub-Forest (MU43f).	Wyong Paperbark Swamp Forest (MU43)	Coastal Floodplain Wetlands/ Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains	1716	Prickly-leaved Paperbark forest on coastal lowlands of the Central Coast and Lower North Coast	high	HU930;	Forested Wetlands;	Coastal Swamp Forests;	No PCT with appropriate emergents.

43f	Forest Red Gum Paperbark Scrub-Forest	<i>Eucalyptus tereticornis</i> characterises the emergent canopy. The mid-storey comprises a dense layer of <i>Melaleuca nodosa</i> , over a sparse shrub layer and well developed ground layer.	Occupies a similar landscape position to Estuarine Paperbark Scrub-Forest (MU43a), but supports <i>Eucalyptus tereticornis</i> in the emergent canopy. As all forms of MU43 have been poorly sampled, further investigation is required to determine relationships between this community and the related units Estuarine Paperbark Scrub-Forest (MU43a) and White Stringybark – Paperbark Scrub-Forest (MU43f).	Wyong Paperbark Swamp Forest (MU43)	Coastal Floodplain Wetlands/ Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains	1716	Prickly-leaved Paperbark forest on coastal lowlands of the Central Coast and Lower North Coast	high	HU930;	Forested Wetlands;	Coastal Swamp Forests;	No PCT with appropriate emergents.
44a	Munmorah Grasstree Wet Heath	<i>Xanthorrhoea fulva</i> characterises this community and is the dominant species present.	Occurs in broad, impeded basins and drainage lines in the southern parts of the LGA, generally within a Narrabeen sandstone landscape. Stands are typically relatively small, and may form a mosaic with other wet heaths on the coastal plain. Larger occurrences are present to the south in Wyong LGA.	Coastal Wet Sand Cyperoid Heath (MU44)	Coastal Heath Swamps	n/a#	1706	Leptospermum liversidgei-Callistemon citrinus-Xanthorrhoea fulva wet heath on coastal sands of lower North Coast	low	HU920;	Heathlands;	Wallum Sand Heaths;	No Central Coast PCTs dominated by <i>Xanthorrhoea fulva</i> , so have opted for North Coast type, which is (very) broadly similar.
44g	Coastal Sand Bottlebrush Wet Heath	<i>Acacia elongata</i> , <i>Callistemon citrinus</i> and <i>Leptospermum juniperinum</i> , over sedges such as <i>Leptocarpus tenax</i> and <i>Schoenus brevifolius</i>	Occurs on the coastal sand sheets in the Belmont-Jewells area. Similar floristically to other wet heaths in Lake Macquarie, and further work is required to clarify relationships.	Coastal Wet Sand Cyperoid Heath (MU44)	Coastal Heath Swamps	n/a#	1706	Leptospermum liversidgei-Callistemon citrinus-Xanthorrhoea fulva wet heath on coastal sands of lower North Coast	low	HU920;	Heathlands;	Wallum Sand Heaths;	No Central Coast wet heath type that easily fits.
44j	Tomago Strand Plain Intermediate Heath	Prominent species include the shrubs <i>Leptospermum polygalifolium</i> , <i>Banksia oblongifolia</i> , <i>Melaleuca nodosa</i> , <i>Persoonia lanceolata</i> and <i>Epacris microphylla</i> , and the sedges <i>Leptocarpus tenax</i> and <i>Lepyrodia scariosa</i> .	Parts of the heath complex within the Jewells Swamp area supports vegetation that is floristically similar to that present on the Tomago Sandbeds north of Newcastle. This unit has not yet been mapped, but is included in 44m at present.	Coastal Wet Sand Cyperoid Heath (MU44)	Coastal Heath Swamps	n/a	1704	Fern-leaf Banksia - Prickly-leaved Paperbark-Tantoon - Leptocarpus tenax wet heath on coastal sands of the Central Coast and lower North Coast	high	HU918;	Freshwater Wetlands;	Coastal Heath Swamps;	
44l	Munmorah Impeded Sand Sedgeland	Prominent species present include <i>Leptospermum juniperinum</i> , <i>Sprengelia sprengelioides</i> , <i>Epacris obtusifolia</i> , <i>Banksia oblongifolia</i> and <i>Xanthorrhoea fulva</i> .	A wet heath occurring on coastal sands where drainage is particularly poor, and a range of sedge species dominate the ground layer. Closely related to other wet heaths, further analysis of sample data is required to clarify relationships.	Coastal Wet Sand Cyperoid Heath (MU44)	Coastal Heath Swamps	n/a#	1704	Fern-leaf Banksia - Prickly-leaved Paperbark-Tantoon - Leptocarpus tenax wet heath on coastal sands of the Central Coast and lower North Coast	medium	HU918;	Freshwater Wetlands;	Coastal Heath Swamps;	PCT823 (now decommissioned) would have been a better fit. This is effectively a wet heath, not a sedgeland.
44m	Coastal Plains Wet Heath	<i>Banksia oblongifolia</i> , <i>Hakea teretifolia</i> , <i>Baeckea diosmifolia</i> and <i>Melaleuca thymifolia</i> . Scattered taller shrubs of <i>Melaleuca sieberi</i> or <i>Angophora inopina</i> may also be present.	Occurs in broad shallow drainage lines on the coastal plains in the south of the LGA, most commonly within a landscape supporting Coastal Plains Scribbly Gum Woodland (MU31). In places, this community merges with Munmorah Grasstree Wet Heath (MU44a).	Coastal Wet Sand Cyperoid Heath (MU44)	Coastal Heath Swamps	n/a (assessment of the 2 sample plots within this unit show floristics to be different to existing EECs)	1707	<i>Banksia oblongifolia</i> - <i>Hakea teretifolia</i> - <i>Leptocarpus tenax</i> - <i>Lepyrodia scariosa</i> wet heath on sandstone ranges of the Central Coast	medium	HU921;	Freshwater Wetlands;	Coastal Heath Swamps;	PCT846 is perhaps more fitting, but not present in Hunter apparently.
45	Lepironia Swamp	<i>Lepironia articulata</i> dominates, with the ground layer supporting species such as the grass <i>Pseudoraphis paradoxa</i> and the herb <i>Villarsia exaltata</i> .	Known only from Redhead Lagoon within the Awabakal NR, where it forms a band of tall sedgeland around the rim of the deeper water body. Regionally, this vegetation type is rare, and occurs only in coastal sand swamp systems.	Lepironia Swamp (MU45)	Coastal Freshwater Lagoons	Sydney Freshwater Wetlands #	1741	<i>Lepironia articulata</i> sedgeland	high	HU955;	Freshwater Wetlands;	Coastal Freshwater Lagoons;	
46	Freshwater Wetland Complex	Various, but may include <i>Persicaria strigose</i> , <i>Azolla pinnata</i> , <i>Maundia triglochoides</i> , <i>Phragmites australis</i> , <i>Triglochin procerum</i> , <i>Typha australis</i> , <i>Hemarthria uncinata</i> .	Commonly represented only in dis-used man-made dams or previously cleared swamp forests across much of Lake Macquarie LGA. Variation in dominant sedge species can occur, depending on the colonisation history of the particular water body, and depth of water. Some attempt has been made to differentiate different wetland communities (see other Unit 46s), but further variations will likely be documented with additional sampling.	Freshwater Wetland Complex (MU46)	Coastal Freshwater Lagoons	Freshwater Wetlands on Coastal Floodplains	1736	Water Couch - Tall Spike Rush freshwater wetland of the Central Coast and lower Hunter	high	HU950;	Freshwater Wetlands;	Coastal Freshwater Lagoons;	

46a	Freshwater Typha Wetland	<i>Typha orientalis</i> dominates these areas almost exclusively.	A floristically simple community occupying man-made dams or other disturbed areas that results in water impoundment or poor drainage.	Freshwater Wetland Complex (MU46)	Coastal Freshwater Lagoons	Freshwater Wetlands on Coastal Floodplains	1737	Typha rushland	high	HU951;	Freshwater Wetlands;	Coastal Freshwater Lagoons;	
46b	Freshwater Baumea Sedgeland	<i>Baumea articulata</i>	Commonly present in disused water bodies throughout the region. Mapped only for a single site at Catherine Hill Bay, but likely to occur across the City.	Freshwater Wetland Complex (MU46)	Coastal Freshwater Lagoons	Freshwater Wetlands on Coastal Floodplains	1742	Jointed Twig-rush sedgeland	high	HU956	Freshwater Wetlands	Coastal Freshwater Lagoons	
46c	Freshwater Carex Rainforest Sedgeland	Species present include <i>Carex fascicularis</i> , <i>Carex appressa</i> and <i>Cyperus exaltatus</i> .	Within rainforest patches in poorly drained depressions. Very few stands have been recorded for Lake Macquarie, but it is also present in Wyong LGA.	Freshwater Wetland Complex (MU46)	n/a	n/a	1528	Jackwood - Lilly Pilly - Sassafras riparian warm temperate rainforest of the Central Coast	low	HU742;	Rainforests;	Northern Warm Temperate Rainforests;	There is no PCT to suit, so this has been included in the surrounding rainforest type. Cladium is not present in 46c, and it really is a different system (floodplain wetland vs small areas of poorly drained land in rainforest). PCT 1735 is structurally similar, but floristically very different, and other PCTs with the specific Carex spp are part of wider wetland units. It was placed in the REMS MU46 with a '?' as broadly it fits, but as noted above it really is part of a different system. Could possibly include it in Lowland Rainforest TEC. but it is very small - its a scale/resolution issue really.
46f	Freshwater Philydrum Sedgeland	<i>Philydrum lanuginosum</i> +/- <i>Eleocharis</i> and <i>Baumea</i> spp.	Disused farm dams or open depressions with reasonable levels of water retention support a sedgeland of <i>Philydrum lanuginosum</i> . In shallower areas, species such as <i>Eleocharis</i> and <i>Baumea</i> may also be present. Only known areas have been mapped to data, and it is likely that additional stands are present throughout the LGA.	Freshwater Wetland Complex (MU46)	Coastal Freshwater Lagoons	Freshwater Wetlands on Coastal Floodplains	1739	Woolly Water lily - Sand Couch coastal freshwater wetland	high	HU953;	Freshwater Wetlands;	Coastal Heath Swamps;	
46h	Freshwater Cladium Sedgeland	<i>Cladium procerum</i> +/- <i>Phragmites australis</i> and <i>Typha orientalis</i>	Forms large monospecific stands in the coastal sands of Jewells and Belmont, merging into surrounding sedgelands of <i>Phragmites</i> and/or <i>Typha</i> . May also include stunted but widely scattered <i>Melaleuca quinquenervia</i> .	Freshwater Wetland Complex (MU46)	Coastal Freshwater Lagoons	Freshwater Wetlands on Coastal Floodplains	1735	Cladium procerum coastal freshwater wetland	high	HU949;	Freshwater Wetlands;	Coastal Freshwater Lagoons;	
46i	Freshwater Gahnia Sedgeland	Species present include <i>Gahnia sieberiana</i> , <i>Banksia robur</i> , <i>Leptospermum juniperinum</i> , <i>Callistemon citrinus</i> and <i>Gleichenia dicarpa</i> ; however <i>Gahnia</i> is always the dominant species. Also present may be the occasional stunted <i>Eucalyptus robusta</i> or <i>Melaleuca quinquenervia</i> .	Dominated by <i>Gahnia sieberiana</i> , and forms large dense stands in enclosed sand-based freshwater wetland systems.	Freshwater Wetland Complex (MU46)	Coastal Freshwater Lagoons	Freshwater Wetlands on Coastal Floodplains	1911	Red-fruit Saw-sedge - Baumea - Coral Fern shrubby sedgeland on the margins of freshwater coastal lagoons along the New South Wales coastline	high	no data	Freshwater Wetlands;	Coastal Freshwater Lagoons;	Another option may be 1010, but that is probably a North Coast type. PCT 1911 was listed as "Provisionally Approved" as at 17-3-2016.
47	Mangrove - Estuarine Complex	Solely dominated by <i>Avicennia marina</i> subsp. <i>australasica</i> in the canopy. Ground layer vegetation is variable and depends on the extent of tidal inundation: areas at slightly higher elevation will support species more typical of Saltmarsh, such as <i>Sarcocornia quinqueflora</i> and <i>Sporobolus virginicus</i> , while locations regularly inundated support little if any ground vegetation	Occurs immediately within and adjacent to tidal estuaries, and in close association with Saltmarsh (MU47a) and Swamp Oak – Rushland Forest (MU40), but differs structurally and floristically.	Mangrove - Estuarine Complex (MU47)	Mangrove Swamps	n/a	1747	Grey Mangrove low closed forest	high	HU961;	Saline Wetlands;	Mangrove Swamps;	Could also be PCT920 Mangrove Forests in estuaries of the Sydney Basin Bioregion and South East Corner Bioregion.
47a	Saltmarsh	<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i> , <i>Samolus repens</i> and <i>Suaeda australis</i> in saltmarsh; and <i>Sporobolus virginicus</i> in grasslands.	Occurs immediately within and adjacent to tidal estuaries. This community occurs in close association with Swamp Oak – Rushland Forest (MU40), but differs structurally and floristically.	Saltmarsh (MU47a)	Saltmarshes	Coastal Saltmarsh	1126	Saltmarsh in estuaries of the Sydney Basin Bioregion and South East Corner Bioregion	high	HN579; HU606; ME025; SR614;	Saline Wetlands;	Saltmarshes;	Could also be PCT 1746 Saltmarsh Estuarine Complex.

50a	Coastal Sand Foredune Scrub	<i>Acacia sophorae</i> dominates this shrubland, and stunted individuals of <i>Leptospermum laevigatum</i> may also be present in this wind-sheared vegetation. Few other species are evident, although <i>Carpobrotus glaucescens</i> and <i>Spinifex sericeus</i> invariably occur.	Occurs immediately behind the low grassland of Beach Spinifex (MU53) along the foredunes of the coastal zone. Although many areas, particularly north of Swansea, have been impacted upon by Bitou Bush invasion, some relatively good quality examples of this community remain towards the south. Current mapping of this community under-estimates the total present within the LGA, given mapping procedures used to cut original interpretation and linework against Councils veg-noveg layer	Coastal Sand Scrub (MU50)	Coastal Headland Heaths	n/a	772	Coast Banksia - Coast Wattle dune scrub of the Sydney Basin Bioregion and South East Corner Bioregion	high	no data	Heathlands;	Sydney Coastal Heaths;	PCT1821 Coastal Foredune Wattle Scrub (now decommissioned) would have been more appropriate. This is really a low scrub of <i>Acacia</i> and little else.
50b	Coastal Sand Banksia Scrub	<i>Leptospermum laevigatum</i> , <i>Banksia integrifolia</i> subsp. <i>integrifolia</i> and <i>Monotoca elliptica</i> dominate the tallest layer, with occasional shrubs such as <i>Leucopogon parviflorus</i> and <i>Correa alba</i> also present. In some areas, <i>Cupaniopsis anacardioides</i> occurs as scattered individual shrubs, and <i>Acacia sophorae</i> is often present. <i>Chrysanthemoides monilifera</i> is also a component of this community.	Occurring on the land-ward side of Coastal Sand Foredune Scrub (MU50a), Coastal Sand Banksia Scrub is structurally more complex than that community, yet remains floristically simple.	Coastal Sand Scrub (MU50)	Coastal Headland Heaths	n/a	1653	Coast Tea Tree - Coast Banksia - <i>Ficinia nodosa</i> low open shrubland on coastal foredunes	high	HU867;	Dry Sclerophyll Forests (Shrubby sub-formation);	South Coast Sands Dry Sclerophyll Forests;	Could also be PCT 771 Coast Banksia - Coast Tea-tree low moist forest on coastal sands and headlands, Sydney Basin Bioregion and South East Corner Bioregion.
50c	Bitou Bush Scrub	<i>Chrysanthemoides monilifera</i>	Extensive areas of coastline and the associated coastal headlands support dense shrublands of Bitou Bush. This species is particularly dominant on the beach foredunes, and has replaced much of the Coastal Dune Foredune Scrub (MU50a) north from Swansea. Mapping does not show the full extent of this community, as the process of cutting original linework to Councils veg-no veg layer has eliminated most beach environments.	n/a	n/a	n/a	not assessed	not assessed	high	#N/A	#N/A	#N/A	No equivalents as exotic species.
51a	Coastal Headland Grassland	Characterised by high abundance of <i>Themeda australis</i> on the ground, and few or no shrubs or trees. Many other species also occur, including <i>Ptilothrix deusta</i> , <i>Pimelea linifolia</i> , <i>Acacia myrtifolia</i> , and <i>Lasiopetalum parvifolium</i> .	Occurs in highly exposed locations along the coast. Fire history and other disturbances have a role in the current distribution of this community, and it often forms a mosaic with Coastal Headland Shrubland (MU51b). Current mapping likely excludes some areas of this community, as the process of cutting original linework to Councils veg-noveg layer has eliminated some patches.	Coastal Headland Complex (MU51)	Maritime Grasslands	Themeda grassland on seacliffs and headlands	1697	Kangaroo Grass - Coastal Rosemary grassland on coastal headlands	high	HU911;	Grasslands;	Maritime Grasslands;	Could also be PCT897 Kangaroo Grass sod tussock grassland of coastal areas of the Sydney Basin Bioregion.
51b	Coastal Headland Shrubland	<i>Allocasuarina distyla</i> clearly dominates and characterises the community, with other common species including <i>Lasiopetalum parvifolium</i> , <i>Westringia fruticosa</i> and <i>Callistemon linearis</i> . On the ground, <i>Ptilothrix deusta</i> and <i>Entolasia stricta</i> commonly occur, although <i>Lasiopetalum parvifolium</i> often forms expansive carpets, particularly after fire damage.	Occurs on wind-swept coastal headlands, and forms a mosaic with both Coastal Headland Grassland (MU51a) and Coastal Headland Paperbark Scrub (MU51d) Boundaries between the three are dynamic in response to fire events.	Coastal Headland Complex (MU51)	Coastal Headland Heaths	Themeda grassland on seacliffs and headlands #	1700	Dwarf Casuarina - Prickly-leaved Paperbark - Hairpin Banksia Coastal Heath of the Central Coast and lower North Coast	medium	HU914;	Heathlands;	Coastal Headland Heaths;	
51c	Coastal Headland Low Forest	<i>Eucalyptus umbra</i> and <i>Angophora costata</i> , over an understorey of <i>Banksia spinulosa</i> , <i>Hibbertia aspera</i> , <i>Lasiopetalum parvifolium</i> , <i>Acrotriche divaricata</i> , <i>Leptospermum polygalifolium</i> and <i>Polyscias sambuccifolia</i> . Ground vegetation includes species such as <i>Entolasia stricta</i> , <i>Dianella caerulea</i> , <i>Imperata cylindrica</i> and <i>Lomandra longifolia</i> . In some areas, <i>Eucalyptus paniculata</i> may also occur in the canopy.	Occurs on coastal headlands and associated low hills where there is some immediate protection from onshore winds.	Coastal Headland Complex (MU51)	Sydney Coastal Dry Sclerophyll Forests	Themeda grassland on seacliffs and headlands #	1620	Grey Ironbark - Broad-leaved Mahogany - Smooth-barked Apple coastal headland low open forest of the Central Coast	high	HU834;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	Overall not equivalent to any EEC however, this map unit may contain patches of Themeda Grassland.
51d	Coastal Headland Paperbark Scrub	<i>Melaleuca nodosa</i> dominates these areas, often forming impenetrable thickets interspersed with more open grassy patches. Other emergent shrubs include <i>Callistemon linearis</i> , <i>Acrotriche divaricata</i> and <i>Lissanthe strigosa</i> . Within openings in the shrub layer, <i>Themeda australis</i> is the dominant ground cover, together with <i>Aristida warburgii</i> , <i>Lasiopetalum parviflorum</i> and <i>Ptilothrix deusta</i> .	Forms a low or tall dense heath on exposed coastal headlands on clay soils.	Coastal Headland Complex (MU51)	Coastal Headland Heaths	Themeda grassland on seacliffs and headlands #	1701	Prickly-leaved Paperbark - Fern-leaved Banksia heath on coastal headlands of Central Coast	medium	HU915;	Heathlands;	Coastal Headland Heaths;	

53	Beach Spinifex	Dominated by <i>Spinifex sericeus</i> . The weed <i>Hydrocotyle bonariensis</i> is present in all stands, along with native species such as <i>Carpobrotus glaucescens</i> and <i>Scaevola calendulaceae</i>	Beach lines south of Swansea support good stands of Beach Spinifex, where <i>Spinifex sericeus</i> dominates. Much of the beach sands north of Swansea have been invaded by Bitou Bush following sand mining, and indiscriminant 4WD use has assisted in the demise of this community.	Beach Spinifex (MU53)	Maritime Grasslands	n/a	1204	Spinifex beach strand grassland, Sydney Basin Bioregion and South East Corner Bioregion	high	no data	Grasslands;	Maritime Grasslands;	PCT 1204 was listed as "Provisionally Approved" as at 17-3-2016.
54	Hawkesbury Hanging Swamps	Prominent species present include <i>Gleichenia microphylla</i> , <i>Gahnia sieberiana</i> , <i>Baeckea linifolia</i> and <i>Empodisma minus</i> .	Occurs in a single area of impeded drainage on Hawkesbury Sandstone geology within Olney State Forest. This swamp is the only one known from Lake Macquarie LGA, although the community becomes more common to the south into Wyong and Gosford LGAs, and into western Sydney and beyond. Floristic diversity is dependant on fire history, and the Olney stand supports a more fern-based form as well as a shrubby form.	Sandstone Hanging Swamps (MU54)	Coastal Heath Swamps	Coastal Upland Swamp	978	Needlebrush - banksia wet heath on sandstone plateaux of the Sydney Basin Bioregion	high	HN560; HU579; ME015; SR587;	Freshwater Wetlands;	Coastal Heath Swamps;	
54e	Munmorah Sedge Swamp	<i>Baumea juncea</i> , <i>Baumea articulate</i> , <i>Glechnia dicarpa</i>	Currently known only from a single location of very small extent, on a small cliff adjacent to the ocean. Affinities with Hawkesbury Hanging Swamps. Yet to be sampled in any detail	Sandstone Hanging Swamps (MU54)	Coastal Heath Swamps	n/a#	1742	Jointed Twig-rush sedgeland	low	HU956	Freshwater Wetlands	Coastal Freshwater Lagoons	A poor match but little other options. Most wet heath types have an often diverse shrub component, which this community lacks.
100a	Swamp Paperbark Thicket (Floodplain Alluvials)	<i>Melaleuca ericifolia</i> over <i>Baumea juncea</i> , <i>Phragmites australis</i> and <i>Centella asiatica</i> .	Occurs principally as a fringe around coastal estuaries or lagoons. This fringe is typically less than 20m in width. Similar vegetation also occurs in previously cleared floodplain habitats, such as in the Mandalong Valley, where <i>Melaleuca ericifolia</i> forms small, dense thickets. This vegetation type occurs in similar situations to the south and north of Lake Macquarie.	<i>Melaleuca Scrub (MU42a)*</i>	Coastal Floodplain Wetlands	Swamp Oak Floodplain Forest (?)	1730	Swamp paperbark - <i>Baumea juncea</i> swamp shrubland on coastal lowlands of the Central Coast and Lower North Coast	high	HU944;	Forested Wetlands;	Coastal Swamp Forests;	
108b	Paperbark Depression Forest (M. styphelioides)	Dense low trees of <i>Melaleuca styphelioides</i> over scattered <i>Glochidion ferdinandi</i> in the mid-storey, and a ground layer of <i>Carex longibrachtiata</i>	Distinct low forest of drainage depressions within a wider moist forest matrix at the foot of the coastal ranges. Only a single occurrence of this type has been mapped to date, and only limited sampling has occurred. Further investigation is required to determine if this may be a disturbance artefact from previous logging activities, such as off the end of Alton Road, Cooranbong, in Olney State Forest.	n/a	Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains (?)	1064	Paperbark swamp forest of the coastal lowlands of the NSW North Coast Bioregion and Sydney Basin Bioregion	low	ME050; NR217;	Forested Wetlands;	Coastal Swamp Forests;	PCT1064 appears to be a generic catch-all type. PCT 1064 was listed as "Provisionally Approved" as at 17-3-2016.
110a	Red Ironbark - Paperbark Forest	Characterised by a dominance of <i>Eucalyptus fibrosa</i> in the canopy, often forming monospecific stands of this species. Other canopy species present include <i>Eucalyptus capitellata</i> and <i>Corymbia gummifera</i> . Paperbarks (<i>Melaleuca decora</i> , <i>Melaleuca nodosa</i>) form a mid-layer, with other shrubs including <i>Dodonaea triquetra</i> , <i>Acacia longifolia</i> subsp. <i>longifolia</i> and <i>Pultenaea paleacea</i> . <i>Themeda australis</i> , <i>Ptilothrix deusta</i> , <i>Entolasia stricta</i> , <i>Panicum simile</i> and <i>Gahnia radula</i> are prominent in the ground layer.	A dryer forest of Red Ironbark and characteristically dense thickets of paperbarks. <i>Corymbia maculata</i> is generally present in the surrounding areas, where it forms a component of Hinterland Spotted Gum – Red Ironbark Forest (MU17o). See Bell (2009) for further information.	<i>Lower Hunter Spotted Gum-Ironbark Forest (MU17)*</i>	Hunter-Macleay Dry Sclerophyll Forests	Lower Hunter Spotted Gum - Ironbark Forest	1593	Red Ironbark - Spotted Gum - Prickly-leaved Paperbark shrubby open forest of the Lower Hunter	high	HU807;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	
110b	Depression Paperbark Thicket	<i>Melaleuca decora</i> , <i>Melaleuca nodosa</i> , <i>Bursaria spinosa</i> (+/- <i>Eucalyptus fibrosa</i>), with a well developed grass and herb layer.	Within the wider landscape of Red Ironbark – Paperbark Forest (MU110a), moist depressions support a range of wetter grasses and sedges, and less <i>Eucalyptus fibrosa</i> , but a more prominent <i>Melaleuca decora</i> subcanopy. Often occur adjacent to roads or easements and hence may be an artefact of these. See Bell (2009) for further information.	<i>Lower Hunter Spotted Gum-Ironbark Forest (MU17)*</i>	Hunter-Macleay Dry Sclerophyll Forests	Lower Hunter Spotted Gum - Ironbark Forest	1593	Red Ironbark - Spotted Gum - Prickly-leaved Paperbark shrubby open forest of the Lower Hunter	medium	HU807;	Dry Sclerophyll Forests (Shrub/grass sub-formation);	Hunter-Macleay Dry Sclerophyll Forests;	
111a	Lake Macquarie Snappy Gum Forest	<i>Eucalyptus racemosa</i> , <i>Angophora costata</i> , <i>Corymbia gummifera</i> , over <i>Dodonaea triquetra</i> , <i>Acacia longifolia</i> , <i>Pultenaea villosa</i> , <i>Pteridium esculentum</i> , and <i>Imperata cylindrical</i> .	Occurs in low elevations areas on Narrabeen sediments around southern and south-western Lake Macquarie, in between the drainage line swamp forests and the higher elevation Coastal Plains Scribbly Gum Woodland (MU31). Has been described and mapped for the northern parts of Wyong LGA, with which Lake Macquarie stands are analogous	<i>Coastal Plains Scribbly Gum Woodland (MU31)*</i>	Sydney Coastal Dry Sclerophyll Forests	n/a	1638	Smooth-barked Apple - Red Bloodwood - Scribbly Gum grass - shrub woodland on lowlands of the Central Coast	low	HU852;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	Not relevant PCTs for <i>Eucalytus racemosa</i> on coastal plains.

111c	Killingworth Snappy Gum Forest	Characterised by a canopy of <i>Eucalyptus racemosa</i> and <i>Angophora costata</i> , with occasional <i>Corymbia gummifera</i> or <i>Eucalyptus capitellata</i> . Understorey vegetation includes <i>Dillwynia retorta</i> , <i>Gonocarpus tetragynus</i> , <i>Leptospermum trinervium</i> and <i>Acacia ulicifolia</i> , over high abundance of <i>Entolasia stricta</i> , <i>Aristida vagans</i> , <i>Joycea pallida</i> and <i>Lomandra obliqua</i> .	Floristically similar to Snappy Gum Ridgetop Heathy Forest (MU31j) and Kahibah Snappy Gum Forest (MU119), and with further analysis the three may be shown to be variants of the one type. Of the three, only MU31j occurs on Narrabeen sandstone geology while the other two lie on older Permian sediments (MU111c on Moon Island Beach subgroup; MU119 on Adamstown subgroup). At present, Killingworth Snappy Gum Forest has been mapped for areas immediately around the township of Killingworth in north-western Lake Macquarie, with a smaller outlier near Fassifern.	Coastal Plains Scribbly Gum Woodland (MU31)*	Sydney Coastal Dry Sclerophyll Forests	n/a	1638	Smooth-barked Apple - Red Bloodwood - Scribbly Gum grass - shrub woodland on lowlands of the Central Coast	low	HU852;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	Not relevant PCTs for <i>Eucalyptus racemosa</i> on coastal plains.
113	Paperbark - Carex Backswamp Forest	Dominated by <i>Melaleuca linariifolia</i> in the low canopy, over a dense ground layer of <i>Carex appressa</i> . Other wetland species present include <i>Persicaria hydropiper</i> , <i>Alternanthera denticulata</i> and <i>Pseudoraphis paradoxa</i> .	Currently known from only a single location within Lake Macquarie SCA. This occurrence lies adjacent to Lake Macquarie, and occurs in an area of impeded drainage with limited release of accumulated moisture	Swamp Mahogany - Paperbark Forest (MU37)	Coastal Swamp Forests	Swamp Sclerophyll Forest on Coastal Floodplains	1231	Swamp Mahogany swamp sclerophyll forest on coastal lowlands of the Sydney Basin Bioregion and South East Corner Bioregion	low	HN593; ME010; SR648;	Forested Wetlands;	Coastal Swamp Forests;	No appropriate PCT, so included in the broader swamp forest type. PCT 1231 was listed as "Provisionally Approved" as at 17-3-2016. Placed this with LLCCREMS MU42a.
114	Mesic Paperbark Thicket	Dense stands of <i>Gahnia clarkei</i> dominate the ground, often with <i>Carex longebrachiata</i> , <i>Adiantum aethiopicum</i> and the occasional <i>Cyathea</i> spp. <i>Melaleuca linariifolia</i> dominates the sub-canopy, often with some <i>Melaleuca styphelioides</i> and <i>Eucalyptus piperita</i> as an emergent or overhanging species. Other characteristic species present include <i>Ficus coronata</i> and <i>Glochidion ferdinandi</i> .	Present in narrow, poorly drained riparian strips in low-relief creeks in the Freeman's Waterhole area.	Swamp Mahogany - Paperbark Forest (MU37)*#	North Coast Wet Sclerophyll Forests	n/a	1718	Swamp Mahogany - Flax-leaved Paperbark swamp forest on coastal lowlands of the Central Coast	medium	HU932;	Forested Wetlands;	Coastal Swamp Forests;	PCT1726 may be an alternative.
119	Kahibah Snappy Gum Forest	<i>Eucalyptus racemosa</i> occurs with <i>Corymbia gummifera</i> , <i>Angophora costata</i> and occasionally <i>Eucalyptus piperita</i> . Understorey vegetation includes <i>Pteridium esculentum</i> , <i>Allocasuarina littoralis</i> , <i>Hibbertia empetrifolia</i> , <i>Polyscias sambuccifolia</i> , <i>Dodonaea triquetra</i> , <i>Tetralochea juncea</i> , <i>Entolasia stricta</i> , <i>Themeda australis</i> and <i>Lomandra obliqua</i> .	Occurs principally on ridges and slopes of Permian geology (Adamstown subgroup), in and around the townships of Kahibah and Whitebridge and extending to near Jewells. As with other similar communities, <i>Eucalyptus racemosa</i> is diagnostic for this type. Some further targeted sampling and analysis is required to confirm relationships between this unit and Snappy Gum Ridgetop Heathy Forest (MU31j) and Killingworth Snappy Gum Forest (MU111c).	Coastal Plains Scribbly Gum Woodland (MU31)*	Sydney Coastal Dry Sclerophyll Forests	n/a	1638	Smooth-barked Apple - Red Bloodwood - Scribbly Gum grass - shrub woodland on lowlands of the Central Coast	low	HU852;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	Not relevant PCTs for <i>Eucalyptus racemosa</i> on coastal plains.
121	Seagrass	<i>Zostera</i> sp. <i>Posidonia</i> sp. <i>Halophila</i> sp.	Seagrass occurs in the shallower reaches of Lake Macquarie, but has not been targeted or sampled during this study.		n/a	n/a	1913	Seagrass meadows of the estuaries and lagoons of the New South Wales coast	high	no data	Saline Wetlands;	Seagrass Meadows;	PCT 1913 was listed as "Provisionally Approved" as at 17-3-2016.
122	Cockle Creek Dune Forest	<i>Eucalyptus racemosa</i> with <i>Corymbia gummifera</i> , <i>Banksia serrata</i> and <i>Angophora costata</i> . <i>Xanthorrhoea glauca</i> is prominent in the understorey, together with <i>Lambertia formosa</i> , <i>Pteridium esculentum</i> , <i>Acacia ulicifolia</i> , and <i>Allocasuarina littoralis</i> . Grasses, such as <i>Entolasia stricta</i> , <i>Imperata cylindrica</i> and <i>Themeda australis</i> , comprise the ground layer vegetation.	A distinct vegetation type occurring presumably on old fluvial dunes formed by Cockle Creek, in the north-eastern parts of the LGA. This community is broadly similar to several threatened communities elsewhere in the region, but supports a differing suite of component species.	Coastal Sand Apple-Blackbutt Forest (MU33)*#	Coastal Dune Dry Sclerophyll Forests	n/a	1638	Smooth-barked Apple - Red Bloodwood - Scribbly Gum grass - shrub woodland on lowlands of the Central Coast		HU852;	Dry Sclerophyll Forests (Shrubby sub-formation);	Sydney Coastal Dry Sclerophyll Forests;	No appropriate PCT for <i>Eucalyptus racemosa</i> dominated vegetation on sandy dunes. Have gone with closest broader option.
123	Cooranbong Blackbutt Tall Forest	Often tall stands of <i>Eucalyptus pilularis</i> on the undulating valley flats around Cooranbong and Martinsville. Largely depleted due to clearing and logging, other species co-occurring include <i>Allocasuarina torulosa</i> , <i>Calistemon salignus</i> and <i>Glochidion ferdinandi</i> in the mid layer, over a rich herb and grass layer.	Tall forests of Blackbutt, mostly depleted, on the undulating valley flats around Cooranbong and Martinsville. Broadly related to Coastal Narrabeen Shrub Forest (MU22) and Coastal Ranges Open Forest (MU9) through the sharing of Blackbutt in the canopy, but occurs in a very different landscape position. It is also very similar to Alluvial Riparian Blackbutt Forest (MU5h), and further clarification of differences with that community is required.	Coastal Sand Apple-Blackbutt Forest (MU33)*	North Coast Wet Sclerophyll Forests	n/a	684	Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion	medium	HN505; HU507;	Wet Sclerophyll Forests (Shrubby sub-formation);	North Coast Wet Sclerophyll Forests;	No direct PCT match.
125	Water Couch Meadow	<i>Paspalum distichum</i> dominates in mostly monospecific meadows.	Occurs as small patches or strips along the side of freshwater lagoons or creeks, where sufficient shallow water is present. No targeted sampling of these areas has been undertaken, and known occurrences are too small to map.	n/a	Coastal Floodplain Wetlands	n/a	1736	Water Couch - Tall Spike Rush freshwater wetland of the Central Coast and lower Hunter	high	HU950;	Freshwater Wetlands;	Coastal Freshwater Lagoons;	Placed this with LHCCREMS MU46, within which it broadly fits.

Notes on allocation to LHCCREMS & EECs

# MU 1g	
#MU 40c	Occurs in only very limited areas in Lake Macquarie. The larger areas have absolutely no <i>Casuarina glauca</i> .
#MU40d	Occurs in areas that are not on floodplain, but on elevated rises close to the Lake. This however, could be a result of disturbance (the Swamp Oak having been cleared and now what remains are <i>Juncus</i> reedlands).
**	For the purposes of this project/map, MU43a is a subgroup and is not the LHCCREMS MU43a.
#MU43c	This is a confusing unit, and in hindsight it should have classified it differently. It is known from only a couple of locations in the region. In these it is associated broadly with Lower Hunter Spotted Gum Ironbark Forest (LHSGIF) rather than swamp forest. In the analysis it was more strongly related to the Spotted Gum-Ironbark forests, and the Lake Macquarie stand occurs adjacent to Red Ironbark Forest (MU110a), which is effectively LHSGIF without the Spotted Gum. Floristically and in a landscape context it makes sense to include it as LHSGIF EEC.
#MU 44a, 44g, and 44i	Are all forms of wet heath, so would not be included in Freshwater Wetlands EEC. The determination for this one includes aquatic and 'wetland' species, but very few (if any) typical wet heath species.
#MU45	Could be included in Sydney Freshwater Wetlands (SFW) EEC rather than Freshwater Wetlands on floodplains EEC. These areas typically occur on sand substrates (eg Awabakal NR), which fits in better with SFW.
MU46c	This is a very localized wetland type that occurs within well-developed rainforest. It may even be an artifact from previous disturbance. It has been sampled. Floristically it does not really fit with either Lowland Rf or Freshwater Wetlands EEC so it is not an EEC in the latest reports. The earlier suggestion that it be included within Lowland Rainforest f EEC was purely recognising the very small size of known stands, and their locations within wider rainforest environments - this made sense from a landscape perspective. But floristically, they are not a rainforest. Similarly with Freshwater wetlands. There is unlikely to be a location where these sedgeland occur on their own outside of surrounding rainforest.
#MU51a	Certainly will be the EEC, and parts of the mapped distribution of the other variants may also contain the EEC. Coastal headlands are dynamic and the structure changes due to management and fire – former shrublands can be burnt and then start up again as grasslands dominated by <i>Themeda</i> . Also, the aerial photos used for the mapping will show a certain stage in the transition from grasslands to shrublands, and in some areas this may be very different today. The determination states that the structure may be open shrubland or open grassland with a grassy matrix underneath, and that patches as small as a few square metres are included.
#MU 51b-d	A site-by-site inspection of potential areas within the Map Units 51b, 51c and 51d will be required to determine whether the EEC is present. There may be small occurrences of <i>Themeda</i> grassland. The Final Determination indicates that the <i>Themeda</i> Grassland EEC can occur in patches of a few square metres. These areas may contain small patches of <i>Themeda</i> grassland EEC, even though overall Map Unit is not equivalent to any EEC.
#MU54e	The Coastal Upland Swamps EEC only occurs on Hawkesbury Sandstone, this site is Permian so it is not the Coastal Uplands Swamps EEC.
#MU114	<i>Melaleuca linariifolia</i> is more characteristic of MU37 than MU42a however both are equally wrong.
# MU122	MU33 rather than MU31 - Not really a coastal sand but the structure and floristics are closer than a heathy woodland but neither match well.