

5.3 What information is required in a vegetation management plan?

In addition to the general information required to be submitted with an application for clearing of land (refer Section 3.3 of this DCP), the following specific information is also required to be included in a Vegetation Management Plan:

- a An overall site plan at an appropriate scale, showing the location of the proposed works, including staging information.
- b A detailed Vegetation Management Plan Report identifying:
 - i The works involved and the methodology for the undertaking of such works;
 - ii The likely impacts as a result of such works both within and external to the site; and,
 - iii The proposed measures to mitigate against the impacts that will occur. This should include a works program and specification detailing the timely implementation of mitigating measures corresponding with the staging of works.

6 0 PENALTIES

6.1 Public land

Pursuant to Section 629 of the Local Government Act 1993, an **on-the-spot fine of \$2,200** applies to the injury, or unnecessary disturbance of trees and native vegetation on public land including road reserves. A person who, without lawful excuse, removes or destroys any plant or animal from a public place, is guilty of an offence under the Act. Maximum penalty per offence is 20 penalty units.

6.2 Private land

Offences against the provisions of Wyong Local Environmental Plan 1991, namely the unauthorised injury, removal or destruction of trees or clearing of native vegetation, **can be prosecuted** under the provisions of the EP&A Act 1979. In addition to fines (up to the equivalent of 1000 penalty points), the offender may also be required to rehabilitate the site, plant new trees and native vegetation and maintain these until maturity.

7 0 SPECIES LISTS

7.1 Undesirable species

7.1.1 Plants with Undesirable Characteristics due to their Location

Trees within 6m of an approved structure in residential areas, or 12m of an approved structure in non residential areas, will be considered to be **undesirable due to their location**. This distance is measured from the exterior surface of any trunk of the tree, measured at 1.4 metres above ground level, to the outer surface of the nearest footing (or the waters edge for pools), of the approved structure.

With the exception of:

- o any trees identified for retention by a condition of development consent; or
- o any trees listed within any of the Significant Species Schedules within s.7.2 of this DCP;

trees located within 6m of an approved structure in residential areas, or 12m of an approved structure in non residential areas may be removed without further consent from Council (Refer Figure 2 on p.21). Trees located within 6m of an approved structure in residential areas, or 12m of an approved structure in non residential areas **on an adjoining property** may only be removed with the consent of the owner of that land.

Trees proposed to be removed in accordance with this clause should be first inspected by a Council Tree Assessment Officer or a trade (AQF3) or consulting (AQF5) arborist. **This is to determine whether the tree is of a species to be protected under s.7.2 of this plan.**

An inspection by an ecologist may also be required if the tree is considered likely to be habitat for Threatened Species, listed under Schedules 1 & 2 of the Threatened Species Conservation Act (1995). **In these circumstances development consent is required and this exemption by location does not apply.**

The arborist may also identify special measures that should be in place to reduce the potential for injury or death of animals likely to inhabit the tree. Such measures may include:

- o Inspection of hollows and other potential sites on the tree;
- o Sectional dismantling; and
- o Supervision of works by an arborist and/or a licensed wildlife carer or handler.

In order to protect the amenity of the Shire and the locality, Council strongly encourages the planting of a replacement native tree, elsewhere on site.

7.1.2 Plants with Undesirable Characteristics Generally

Council has determined that "Plants with Undesirable Characteristics Generally" include **all exotic trees** (those that are of non-native species). Application to Council is not required for the removal of non-native trees.

Notes:

1. *Prior inspection of the tree(s) by a Council Tree Assessment Officer or a trade (AQF3) or consulting (AQF5) arborist is necessary to identify the species of the tree(s), prior to their removal. A copy of the identification should be retained should any dispute arise.*

2. Some exotic tree species are listed for protection under s.7.2.5 as Trees of Cultural Significance to the Wyong Shire; and
3. Some exotic tree species are located within the curtilage of identified Heritage Items and may be protected under the provisions of the Wyong Local Environmental Plan, 1991, or the NSW Heritage Act, 1977. Prior reference to these documents is advisable.

7.1.3 Plants Declared Noxious

The plants within the following Schedule have been declared as Noxious Weeds. Those species marked with an "*" indicate species known to occur in Wyong Shire. Appropriate weed removal techniques (available from Council) should be applied to ensure that the spread of the weed does not occur.

If the weed is identified as a Class 1, 2 or 5 weed, Council must be notified within 3 days of discovery of the weed. Class 3 & 4 weeds may be removed without any further action.

Common Name	Botanical Name	Class
African boxthorn *	<i>Lycium ferocissimum</i>	4
African feathergrass	<i>Pennisetum macrourum</i>	5
African Turnipweed	<i>Sisymbrium runcinatum</i>	5
African turnipweed	<i>Sisymbrium thellungii</i>	5
Alligator weed *	<i>Alternanthera philoxeroides</i>	3
Anchored water hyacinth	<i>Eichhornia azurea</i>	1
Annual ragweed	<i>Ambrosia artemisiifolia</i>	5
Arrowhead *	<i>Sagittaria montevidensis</i>	5
Artichoke thistle	<i>Cynara cardunculus</i>	5
Athel tree	<i>Tamarix aphylla</i>	5
Bathurst/Noogoora/Californian/ cockle burrs *	<i>Xanthium</i> species	4
Bitou bush *	<i>Chrysanthemoides monilifera</i> subspecies <i>rotunda</i>	4
	<i>Centaurea nigra</i>	1
Black knapweed		
Blackberry *	<i>Rubus fruticosus</i> aggregate species	4
Boneseed *	<i>Chrysanthemoides monilifera</i> subspecies <i>monilifera</i>	4
Bridal creeper	<i>Asparagus asparagoides</i>	5
Broomrapes (Includes all <i>Orobanch</i> species except the native <i>O. cernua</i> variety <i>Australiana</i> and <i>O. minor</i>)	<i>Orobanch</i> species	1
Burr ragweed	<i>Ambrosia confertiflora</i>	5
Cabomba	<i>Cabomba caroliniana</i>	5
Californian burrs	<i>Xanthium</i> species	4
Cayenne snakeweed	<i>Stachytarpheta cayennensis</i>	5
Chilean needle grass	<i>Nassella neesiana</i>	4
Chinese violet	<i>Asystasia gangetica</i> subspecies <i>micrantha</i>	1
Clockweed	<i>Gaura lindheimeri</i>	5
Cockle burrs	<i>Xanthium</i> species	4
Columbus grass	<i>Sorghum x almum</i>	4
Corn sowthistle	<i>Sonchus arvensis</i>	5
Crofton weed *	<i>Ageratina adenophora</i>	4

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TREE MANAGEMENT

(7.1.3 Continued)

Common Name	Botanical Name	Class
Dodder (<i>includes all cuscuta species except the native species C. australis, C. tasmanica and C. victoriana</i>) *	Cuscuta species	5
East Indian hygrophila	Hygrophila polysperma	1
Espartillo	Achnatherum brachychaetum	5
Eurasian water milfoil	Myriophyllum spicatum	1
Fine-bristled burr grass	Cenchrus brownii	5
Fountain grass *	Pennisetum setaceum	5
Gallon's curse	Cenchrus biflorus	5
Giant Parramatta grass	Sporobolus fertilis	3
Glaucon starthistle	Carthamus glaucus	5
Golden thistle	Scolymus hispanicus	5
Gorse	Ulex europaeus	3
Green cestrum *	Cestrum parqui	3
Groundsel bush *	Baccharis halimifolia	3
Harrisia cactus	Harrisia species	4
Hawkweed	Hieracium species	1
Horsetail	Equisetum species	1
Hygrophila	Hygrophila costata	2
Hymenachne	Hymenachne amplexicaulis	1
Johnson grass *	Sorghum halepense	4
Karoo thorn	Acacia karroo	1
Kochia	Bassia scoparia	1
Lagorosiphon	Lagorosiphon major	1
Lantana sp. *	Lantana species	5
Long-leaf willow primrose	Ludwigia longifolia	5
Mexican feather grass	Nassella tenuissima	
Mexican poppy	Argemone mexicana	5
Miconia	Miconia species	1
Mimosa	Mimosa pigra	1
Mistflower *	Ageratina riparia	4
Mossman River grass	Cenchrus echinatus	5
Noogoora burrs *	Xanthium species	4
Onion grass (<i>Includes all romulea species and varieties except R. rosea var. australis</i>) *	Romulea species	5
Oxalis (<i>Includes all Oxalis species and varieties except the native species O. chnodes, O. exilis, O. perannans, O. radicata, O. rubens and O. thompsoniae</i>) *	Oxalis species and varieties	5
Pampas grass *	Cortaderia species	4
Parthenium weed	Parthenium hysterophorus	1
Pond apple	Annona glabra	1
Prickly acacia	Acacia nilotica	1
Prickly pear	Cylindropuntia species	4
Prickly Pear *	Opuntia. Species except O. ficus indica	4
Red rice	Oryza rufipogon	5
Rhus tree *	Toxicodendron succedanea	4
Rubbervine	Cryptostegia grandiflora	1

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TREE MANAGEMENT

(7.1.3 Continued)

Common Name	Botanical Name	Class
Sagittaria *	<i>Sagittaria platyphylla</i>	5
Salvinia *	<i>Salvinia molesta</i>	3
Sand oat	<i>Avena strigosa</i>	5
Senegal tea plant	<i>Gymnocoronis spilanthoides</i>	1
Serrated tussock	<i>Nassella trichotoma</i>	4
Siam weed	<i>Chromolaena odorata</i>	1
Smooth-stemmed turnip	<i>Brassica barrelieri</i> subspecies <i>oxyrrhina</i>	5
Soldier thistle	<i>Picnemon acama</i>	5
Spiny burrgrass	<i>Cenchrus incertus</i>	4
Spiny burrgrass	<i>Cenchrus longispinus</i>	4
Spiny emex *	<i>Emex australis</i>	4
Spotted knapweed	<i>Centaurea maculosa</i>	1
St Johns wort *	<i>Hypericum perforatum</i>	4
Texas blueweed	<i>Helianthus ciliaris</i>	5
Water caltrop	<i>Trapa species</i>	1
Water hyacinth *	<i>Eichhornia crassipes</i>	4
Water lettuce	<i>Pistia stratiotes</i>	1
Water soldier	<i>Stratiotes aloides</i>	1
Willows (<i>Includes all Salix species except S. babylonica S. x reichardtii, S. x calodendron</i>)	<i>Salix species</i>	5
Witchweed (<i>Includes all striga species except native species and Striga parviflora</i>)	<i>Striga species</i>	1
Yellow burrhead	<i>Limnocharis flava</i>	1
Yellow nutgrass	<i>Cyperus esculentus</i>	5

7.2 Significant Species Schedule (Register of Significant Trees)

Species having conservation significance are listed under one or more of the following headings. These lists are regularly updated and it is recommended that Council or, where relevant, the Office of Environment and Heritage within the NSW Department of Premier and Cabinet (OEH) is to be contacted to determine the status of species proposed to be removed, harmed, picked, etc., prior to any works being undertaken.

- o **Protected Native Plants (s.7.2.1)**, as contained in Schedule 13 of the *National Parks and Wildlife Act 1974*. These species may be picked or removed from private land or land controlled by Council with the consent of the owner, providing the action is not for commercial, scientific, conservation or educational purposes. Removal, harming or picking of these species for these purposes, or if the species is also listed as an *Endangered, Vulnerable Plant Species, Endangered Population or Ecological Community*, requires a licence to be obtained from the OEH.
- o **Threatened Plant Species, Populations and Ecological Communities (s7.2.2)**, as listed under Schedule 1 and 2 of the *Threatened Species Conservation Act 1995*. These species may not be removed, picked or harmed unless a licence to do so has been obtained from the OEH.
- o **Keystone Species (s7.2.3)**, identified by Wyong Council as having a critical relationship in providing food or habitat for native fauna. These species may not be removed unless Council consent has been obtained.
- o **Species of Local Conservation Significance (s7.2.4)**, These species may not be removed unless Council consent has been obtained.
- o **Trees of Cultural Significance (s7.2.5)** These species may not be removed unless Council consent has been obtained.

7.2.1 Protected Native Plants Contained in Schedule 13 of the National Parks and Wildlife Act 1974

Part 1: Plant parts used in the cut-flower industry

Scientific Name	Common Name(s)
Group 1	
(Group 1 of the Schedule is currently vacant)	
Group 2	
<i>Adiantum</i> spp.	Maidenhair Fern
<i>Archontophoenix cunninghamiana</i>	Bangalow Palm (foliage only)
<i>Baekea linifolia</i>	Weeping Baekea
<i>Baekea virgata</i>	Twiggy Heath-myrtle, Tall Baeckea
<i>Banksia spinulosa</i>	Hairpin Banksia
<i>Cassinia aureonitens</i>	Yellow Cassinia
<i>Caustis</i> spp., native to NSW	Curly Sedges, Old Man's Whiskers
<i>Cordyline stricta</i>	Narrow-leaved Palm Lily
<i>Crocea exalata</i>	Crocea
<i>Crocea saligna</i>	Crocea
<i>Davallia pyxidata</i>	Hare's Foot Fern
<i>Dodonaea lobulata</i>	Lobed-leaved Hop Bush

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TREE MANAGEMENT

(7.2.1. Part 1 - Continued)

Scientific Name	Common Name(s)
<i>Eriostemon</i> spp. Native to NSW (unless listed under the <i>Threatened Species Conservation Act 1995</i>)	
<i>Gahnia sieberiana</i>	Red-fruited Saw Sedge
<i>Isopogon</i> spp. native to NSW	Drumsticks, Cone Bushes
<i>Kunzea ambigua</i>	Tick Bush
<i>Kunzea capitata</i>	Pink Kunzea
<i>Leptospermum lanigerum</i>	Woolly Tea-tree
<i>Leptospermum rotundifolium</i>	Round-leaf Tea-tree
<i>Livistona australis</i> (foliage only)	Cabbage Tree Palm, Fan Palm
<i>Lomatia silaifolia</i>	Crinkle Bush
<i>Persoonia</i> spp. native to NSW (except <i>P. pinifolia</i> and all species listed under the <i>Threatened Species Conservation Act 1995</i>)	Geebungs
<i>Petrophile</i> spp. native to NSW	Conesticks
<i>Phebalium squamulosum</i>	Scaly Phebalium
<i>Philotheca</i> spp. native to NSW (except <i>P. obovatis</i> and all species listed under the <i>TSC Act 1995</i>)	philothecas
<i>Ptilotus exaltatus</i>	Tall Mulla Mulla
<i>Ptilotus obovatus</i>	Smoke Bush, Cotton Bush
<i>Pycnosorus</i> spp., native to NSW	Billy-buttons
<i>Restio tetraphyllus</i>	Tassel-rush
<i>Sprengelia incarnata</i>	Pink Swamp Heath
<i>Sticherus flabellatus</i>	Shiny Fan-fern, Umbrella Fern
<i>Swainsona formosa</i>	Sturt's Desert Pea
<i>Tmesipteris</i> spp.	Ferns
<i>Xanthorrhoea</i> spp.—foliage only	Grass Trees
<i>Xylomelum</i> spp., native to NSW	Woody Pear
Zamiaceae, native to NSW	Cycads
Group 3	
<i>Actinotus</i> spp., native to NSW (except <i>A. minor</i>)	Flannel Flower
<i>Boronia</i> spp., native to NSW	Boronias
<i>Doryanthes excelsa</i> (foliage only)	Giant Lilies
<i>Eriostemon australasius</i>	Wax Flower
<i>Lycopodium</i> spp., native to NSW	Mountain Moss
<i>Persoonia pinifolia</i>	Pine-leaved Geebung
<i>Philotheca obovatis</i>	Wax Flower
Group 4	
<i>Blandfordia</i> spp.	Christmas Bells
<i>Doryanthes excelsa</i> (flowers only)	Giant Lily
<i>Xanthorrhoea</i> spp. (flowers only)	Grass Tree
Group 5	
<i>Boronia deanei</i>	Dean's Boronia
<i>Boronia umbellata</i>	Boronia
<i>Craspedia</i> spp., native to NSW	Billy Buttons
<i>Dicranopteris linearis</i>	

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TREE MANAGEMENT

(7.2.1.Part 1 - Continued)

Scientific Name	Common Name(s)
<i>Doryanthes palmeri</i>	Spear Lily
<i>Grevillea longifolia</i>	Fern-leaf Grevillea
<i>Isopogon fletcheri</i>	
<i>Leptospermum spectabile</i>	
<i>Macrozamia johnsonii</i>	Cycad
<i>Macrozamia pauli-guilelmi</i> spp. <i>flexuosa</i>	Cycad
<i>Persoonia</i> spp.	Geebung
<i>Phebalium bifidum</i>	
<i>Phebalium glandulosum</i> spp.	
<i>eglandulosum</i>	
<i>Philotheca ericifolia</i>	
<i>Philotheca obovatifolia</i>	Native Daphne, Long-leaf Wax Flower
<i>Telopea</i> spp., native to NSW	Waratah
All other species of plant listed in Schedule 1, 1A or 2 to the Threatened Species Conservation Act 1995, unless otherwise listed in this Schedule	

Part 2: Whole Plants

All other species of plant included in the list of threatened species, as amended from time to time, established under section 178 of the Environment Protection and Biodiversity Conservation Act 1999 of the Commonwealth and published in the Commonwealth of Australia Gazette.

Scientific Name	Common Name(s)
Group 1	
<i>Ceratopetalum gummiferum</i>	Christmas Bush
<i>Isopogon</i> spp.	Drumsticks
<i>Swainsona formosa</i>	Sturt's Desert Pea
Group 2	
<i>Telopea aspera</i>	Gibraltar Range Waratah
<i>Telopea mongaensis</i>	Monga Waratah, Braidwood Waratah
<i>Telopea oreades</i>	Gippsland Waratah
<i>Telopea speciosissima</i>	Waratah
<i>Wollemia nobilis</i>	Wollemi Pine
Group 3	
<i>Arecaceae</i> , native to NSW	Palms
<i>Asplenium australasicum</i>	Bird's-nest Fern
<i>Asplenium falcatum</i>	Fern
<i>Cyanthea</i> spp.	Tree Ferns
<i>Dicksonia</i> spp.	Tree Ferns
Orchidaceae, native to NSW	Orchids
<i>Platycerium</i> , native to NSW	Elk Horn and Stag Horn
<i>Sphagnum</i> spp.	Sphagnum Mosses
<i>Todea barbara</i>	King Fern
<i>Xanthorrhoea</i> spp.	Grass Trees
<i>Zamiaceae</i> , native to NSW	Cycads
Group 4	
<i>Casuarina cunninghamiana</i>	River Oak
<i>Pandanus</i> spp., native to NSW	Pandanus

7.2.2 Threatened Plant Species, Populations and Ecological Communities

The following is a list of endangered and vulnerable plant species (Schedule 1 and 2 of the Threatened Species Conservation Act 1995) and endangered populations and ecological communities known to exist in Wyong Shire. Other listed species may occur in the Shire but have not been identified at this time. Reference should also be made to the schedules within the Act for the most recent listings by the Scientific Committee.

Vulnerable Species

Angophora inopina, a small tree to 8 metres tall, often multi-stemmed, found in open dry sclerophyll forest within the Wallarah catchment between Charmhaven and Wye.

Astrotricha crassifolia, a shrub to 2.4m tall, broad stiff linear leaves covered by dense hairs. Upper surface is shiny and smooth or occasionally wrinkled, lower surface covered in brown hairs. Occurs in dry sclerophyll woodland on sandstone.

Baloskion longipes, a perennial grass-like herb. Flowering stems are up to 1.5m tall and circular in cross section. Commonly found in swamps or depressions in sandy alluvium, sometimes growing with sphagnum moss. Also occurs in swales within tall forest, and in Black Gum (*Eucalyptus aggregata*) Woodland.

Callistemon linearifolius, a shrub up to 2-4m tall with long and narrow lance shaped leaves. Flowers are clustered into the typical 'bottlebrush' Callistemons and are red in colour. Flowers in spring and grows in dry sclerophyll forest on the coast and adjacent ranges.

Cryptostylis hunteriana, an orchid in Precinct 4 and the Lake Haven area, at the southern limit of its population. Only identifiable during flowering (December to early February).

Darwinia glaucophylla, a prostrate spreading shrub. Leaves are blue-grey with a white bloom and often tinged with red-purple. Flowers are yellow-green when new, turning red in upper parts as flower matures. Occurs in sandy heath, scrub and woodlands. Often associated with sandstone rock platforms or near hanging swamps and friable sandstone shallow soils.

Diuris praecox, is an orchid that occurs on Munmorah Conglomerates.

Epacris purpurascens var. purpurascens, an erect shrub, 50 - 180 cm high. Leaves are spreading and recurved above, ovate to heart-shaped, 7 - 21 mm long, 4.4 - 9 mm wide, with sharply pointed tips. Flowers are showy, 7 - 10 mm diam., covering much of the branchlets, white or sometimes pinkish. Fruit approximately 2 mm long. Found within grassy woodlands with strong shale soil influence.

Eucalyptus camfieldii, a mallee (multi-trunked, generally less than 5 metres high) growing in coastal sandy soil, populations recently identified at Norah Head, Charmhaven and Bateau Bay. Also includes *Eucalyptus camfieldii* x *Eucalyptus capitellata*.

Grevillia parviflora subsp. parviflora, a low spreading to erect shrub to 1.5m high. Leaves are narrow and flowers are white or pinkish. Occurs in light clayey soils in woodlands.

Maundia triglochinooides, a perennial herb. Flowers in warmer months. Occurs in swamps or shallow freshwater on heavy clay. Is at its southern limit near Wyong

Melaleuca biconvexa, a shrub or small tree growing in moist swamp forests communities on Quaternary Alluvium soils along creek lines.

(7.2.2 Continued)

Rutidosis heterogama, small perennial herb within the daisy family with a woody base. Grows in heath on sandy soils and moist areas in open forest.

Syzygium paniculatum, a Lilly Pilly found in littoral and gallery rainforest on Quaternary Sands such as, North Entrance Peninsula, Canton Beach, the old pump station site at North Entrance, Munmorah State Recreation Area, Norah Head and the Ourimbah Creek Valley.

Tetratheca glandulosa, a purple flowering low shrub in heath or scrub on sandy or rocky soils (Kulnura area).

Tetratheca juncea, a low shrub, almost exclusively confined to the Munmorah Conglomerate sequence mainly on ridgetops in small, isolated and patchy populations in the north-east of the Shire.

Endangered Species

Acacia bynoeana, a low shrub found in heath and woodlands on sandy soils in the Kulnura plateau area and in some *Eucalyptus haemastoma* woodlands.

Caladenia tessellata, a ground orchid from dry forest and heath in coastal areas extending from Porters Creek to Munmorah State Recreation Area. Often only evident after fire in dense shrubbery. Only identifiable when flowering from late August to early November.

Caladenia porphyrea, a terrestrial herb orchid, growing singly or in small groups. Highly restricted geographic distribution. It has been recorded from 2 localities in the Wyong local government area approx. 2 km apart. At these locations it covers areas of 2 ha and 0.2ha respectively.

Chamaesyce psammogeton, a prostrate perennial herb found on foredunes and exposed headlands.

Corunastylis insignis, a terrestrial orchid with a single cylindrical leaf which encloses the flowering system. Flowers are dark purple. Located between Chain Valley Bay and Wyong. Grows in patches of Kangaroo grass amongst shrubs and hedges in heathland and forests. Associated with dry sclerophyll forests.
PREVIOUSLY GENOPLESIMUM INSIGNIS

Cynanchum elegans, a climber or twiner which can grow to 10m long with a stem thickness of 3.5cm with white flowers. Occurs on the edge of dry rainforest vegetation. Can also be associated with other vegetation types including littoral rainforest; Coastal Tea-tree *Leptospermum laevigatum* – Coastal Banksia *Banksia integrifolia* subsp. *integrifolia* coastal scrub; Forest Red Gum *Eucalyptus tereticornis* aligned open forest and woodland; Spotted Gum *Eucalyptus maculata* aligned open forest and woodland; and Bracelet Honeymyrtle *Melaleuca armillaris* scrub to open scrub.

Diuris bracteata, an orchid with two linear leaves. Flowers are yellow with blackish markings. Located in dry sclerophyll woodlands with total number of individuals estimated at 50.

Eucalyptus pumila, is a small tree that grows in clumps and is found near Mangrove Mountain.

Genoplesium insignis, A terrestrial orchid with a solitary cylindrical leaf that encloses the flowering stem. Flowers are dark purple and approximately 5 mm in diameter. Recorded from four localities between Chain Valley Bay and Wyong in Wyong local government area. Grows in patches of Themeda australis (Kangaroo Grass) amongst shrubs and sedges in heathland and forest. Flowering period is September to October.

(7.2.2 Continued)

Hibbertia procumbens, a prostrate spreading shrub with yellow flowers. Stems are smooth and mostly hairless, with leaves linear and having similar surfaces. Known populations occur within Banksia ericifolia–Angophora hispida–Allocasuarina distyla scrub/heath on skeletal sandy soils. May also be found associated with 'hanging swamp' vegetation communities on sandy deposits and in escarpment areas.

Prostanthera askania, a small shrub 2 metres high occurring in rainforests and gullies and only known to occur at Askania Park, Strickland State Forest, Niagara Park, Matcham Holgate and Berkeley Vale area.

Prostanthera junonis, a low spreading shrub 0.1m to 0.3m high. Only recorded in the Gosford/Wyong local government area. One population at Somersby and one at Kulnura, both growing on soils derived from Hawkesbury Sandstones.

Rulingia prostrata, a small prostrate shrub found in heath and dry sclerophyll forests mainly in gullies and along escarpments. Recorded in Ourimbah State Forest.

Senecio spathulatus, low growing smooth stemmed daisy often forming hummocks. Grows on primary dunes.

Critically Endangered Species

***Thelymitra* sp. 'Adorata'**, a hairless terrestrial herb, dying back annually to a tuberous rootstock. A single linear to linear-lanceolate leaf emerges from the ground in about May, dying off in late November. The flowering stem (usually emerging in September, with not all plants flowering in all years) is dark bluish-purple when seen from a distance. Individual flowers 15-27 mm across, pale to dark blue, opening in warm weather. Found in the area bounded by the towns of Wyong, Warnervale and Wyongah. Recorded populations occupy patches totalling less than 100 m². The geographical distribution is therefore very highly restricted.

Endangered Populations

***Eucalyptus oblonga* endangered population**, consists of trees to 15m high, narrow leaved Stringybark. Occurs in Bateau Bay on coastal sands of the Norah Head Soil Landscape. Population consists of about 20 trees, and can sometimes be confused with *Eucalyptus camfieldii* which occurs in the same area. The population is at the eastern limit of the species' range.

***Eucalyptus parramattensis* subsp *parramattensis* endangered population**, consists of approximately 1300 trees in the Wyong LGA and 10 in the Lake Macquarie LGA. The population is located at the north eastern limit of the range of the species.

Endangered Ecological Communities

Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner Bioregions, occurs in the intertidal zone on the shores of estuaries and lagoons, permanently or intermittently open to the sea, often a zone on the landward side of mangrove stands. Characteristic plants include *Baumea juncea*, *Juncus kraussii*, *Sarcocornia quinqueflora*, *Sporobolus virginicus*, *Triglochin striata*, *Isolepis nodosa*, *Samolus repens*, *Selliera radicans*, *Suaeda australis* and *Zoysia macrantha*. Occasionally mangroves are scattered through the saltmarsh. Tall reeds may also occur, as well as salt pans.

(7.2.2 Continued)

Freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions, occurs on silts, muds or humic loams in low-lying parts of floodplains, alluvial flats, depressions, drainage lines, backswamps, lagoons and lakes. May also occur in backbarrier landforms where floodplains adjoin coastal sandplains. Dominated by herbaceous plants and have very few woody species. The structure and composition of the community varies both spatially and temporally depending on water regime.

Littoral Rainforest in the NSW North Coast, Sydney Basin and South East Corner Bioregions, generally a closed forest, occurring on sand dunes and on soil derived from underlying rocks. The species of this community are predominantly rainforest species. Associated species including *Angophora costata*, *Banksia integrifolia*, *Eucalyptus botryoides* and *Eucalyptus tereticornis*.

Low woodland with heathland on indurated sand at Norah Head, very open cover of trees up to 3 metres high with a mid to dense cover of shrubs, grasses, and grass like plants (e.g. rushes and sedges) up to 1 metre high. Dominant trees include *Melaleuca quinquenervia* and *Melaleuca sieberi*. The endangered *Eucalyptus camfieldii* is also present. Shrubs include *Banksia oblongifolia*, *Hakea dactyloides*, and *Allocasuarina distyla* plus others.

River-Flat Eucalypt forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions, associated with silts, clay-loams and sandy loams, on periodically inundated alluvial flats, drainage lines and river terraces associated with coastal floodplains. Has a tall open tree layer of eucalypts, which may exceed 40 m in height, but can be shorter in regrowth stands or in lower quality sites. Composition of the tree stratum varies however, the most widespread and abundant dominant trees include *Eucalyptus tereticornis* (forest red gum), *E. ampifolia* (cabbage gum), *Angophora floribunda* (rough-barked apple) and *A. subvelutina* (broad-leaved apple).

Swamp oak floodplain forest of the NSW North Coast, Sydney Basin and South East Corner bioregions, associated with grey-black clay-loams and sandy loams, where the groundwater is saline or sub-saline, on waterlogged or periodically inundated flats, drainage lines, lake margins and estuarine fringes associated with coastal floodplains. Has a dense to sparse tree layer in which *Casuarina glauca* (swamp oak) is the dominant species. Other trees including *Acmena smithii* (lilly pilly), *Glochidion* spp. (cheese trees) and *Melaleuca* spp. (paperbarks). Understorey characterised by vines, *Parsonsia straminea*, *Geitonoplesium cymosum* and *Stephania japonica* var. *discolor*, a sparse cover of shrubs, and a continuous groundcover of forbs, sedges, grasses and leaf litter.

Swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin, and South East Corner bioregions, Associated with humic clay loams and sandy loams, on waterlogged or periodically inundated alluvial flats and drainage lines associated with coastal floodplains. Open to dense tree layer of eucalypts and paperbarks. Trees may exceed 25 m in height, but can be shorter in regrowth stands. Includes some areas of fernland and tall reedland or sedgeland, where trees are very sparse or absent. Widespread and abundant dominant trees include *Eucalyptus robusta* (swamp mahogany), *Melaleuca quinquenervia* (paperbark). Other trees may be scattered throughout at low abundance or may be locally common at few sites, including *Callistemon salignus* (sweet willow bottlebrush), *Casuarina glauca* (swamp oak) and *Eucalyptus resinifera* subsp. *hemilampra* (red mahogany), *Livistona australis* (cabbage palm) and *Lophostemon suaveolens* (swamp turpentine).

Sydney Freshwater Wetlands in the Sydney Basin Bioregion, restricted to freshwater swamps in coastal areas. Occurs on sand dunes and low-nutrient sandplains along coastal areas. Species include sedges and aquatic plants such as *Baumea* species, *Eleocharis sphacelata*, *Gahnia* species, *Ludwigia peploides* ssp. *montevicensis* and *Persicaria* species.

(7.2.2 Continued)

Lowland Rainforest in NSW North Coast and Sydney Basin Bioregion, is a community of subtropical rainforest and some related, structurally complex forms of dry rainforest. In its relatively undisturbed state, it has a closed canopy, characterised by a high diversity of trees and a wide variety of shapes and sizes. Typically, the trees form three major strata: emergents, canopy and sub-canopy which, combined with variations in crown shapes and sizes results in an irregular canopy appearance. Includes palms, vines and vascular epiphytes.

7.2.3 Keystone Species

Keystone species are functionally important links in the wildlife food chain. These species are typically widespread and common in Wyong but clearing and fragmentation have significantly reduced the occurrence of some species (eg. *Eucalyptus robusta* and *Eucalyptus tereticornis*). Whilst the list below is not exhaustive, the species listed are considered the most important for retention.

Botanical Name	Common Name	Potential Schedule 1 or 2 Fauna
<i>Acacia irrorata</i> and other 'gum' producing <i>Acacia</i> species	Wattle	Squirrel Glider
<i>Acacia longifolia</i>	Wattle	Squirrel Glider
<i>Allocasuarina torulosa</i>	Forest Oak	Glossy Black Cockatoo
<i>Angophora costata</i>	Sydney Red Gum	Squirrel Glider
<i>Banksia integrifolia</i>	Banksia	Squirrel Glider
<i>Banksia oblongifolia</i>	Banksia	Squirrel Glider
<i>Banksia serrata</i>	Banksia	Squirrel Glider
<i>Banksia spinulosa</i>	Banksia	Squirrel Glider
<i>Corymbia gummifera</i>	Red Bloodwood	Squirrel Glider
<i>C. maculata</i>	Spotted Gum	Squirrel Glider/Yellow-bellied Glider
<i>Eucalyptus acmenoides</i>	White Mahogany	Squirrel Glider
<i>E. amplifolia</i>	Cabbage Gum/Round leaved Gum	Yellow-bellied Glider
<i>E. botryoides</i>	Bangalay	Yellow-bellied Glider
<i>E. deanei</i>	Deanes Gum	Yellow-bellied Glider
<i>E. fibrosa</i>	Broad leaved Ironbark	Regent Honeyeater
<i>E. haemastoma</i>	Scribbly Gum	Masked Owl/Squirrel Glider
<i>E. longifolia</i>	Woollybutt	Various
<i>E. moluccana</i>	Grey Box	Koala
<i>E. paniculata</i>	Grey Ironbark	Regent Honeyeater
<i>E. pilularis</i>	Blackbutt	Koala/Greater Glider
<i>E. piperita</i>	Sydney Peppermint	Squirrel Glider
<i>E. propinqua</i>	Small Fruited Grey Gum	Yellow-bellied Glider/Koala
<i>E. punctata</i>	Grey Gum	Yellow-bellied Glider/Koala
<i>E. resinifera</i>	Red Mahogany	Yellow bellied Glider
<i>E. robusta</i>	Swamp Mahogany	Yellow-bellied and Squirrel Gliders/ Koala/Regent Honeyeater
<i>E. saligna</i>	Sydney Bluegum	Yellow-bellied Glider
<i>E. siderophloia</i>	Northern Grey Ironbark	Regent Honeyeater
<i>E. tereticornis</i>	Forest Red Gum	Yellow-bellied Glider/Koala
<i>E. umbra</i>	Broad leaved White Mahogany	Squirrel Glider
<i>Melaleuca quinquenervia</i> and other local <i>Melaleuca</i> species		Ringtail Possum
Rainforest communities in gullies and littoral rainforest patches at North Entrance		Frugivorous Pigeons/Doves (Fruit Eating)
<i>Xanthorrhoea</i> spp	Grass Tree	Squirrel Glider

7.2.4 Species of Local Conservation Significance

As listed by Benson, D., of the Royal Botanic Gardens, Sydney

Botanical Name	Common Name	
<i>Acronychia wilcoxiana</i>	Silver Aspen	Climber
<i>Alpinia coerulea</i>	Native Ginger	Herb
<i>Arthropteris beckleri</i>	Fishbone Fern	Fern
<i>Asplenium aethiopicum</i>	A Birds Nest Fern	Fern
<i>Banksia paludosa</i>	Swamp Banksia	Shrub
<i>Blandfordia grandiflora</i>	Christmas Bells	Herb
<i>Calcdcluvia paniculosa</i>	Rose-marara	Tree
<i>Callistemon shiressii</i>		Shrub
<i>Cryptocarya obovata</i>	Laurelk	Tree
<i>Cryptocarya rigida</i>	Rose Maple	Tree
<i>Decaspermum paniculatum</i>	Myrtle	Tree
<i>Dysoxylon fraserianum</i>	Rosewood	Tree
<i>Elaeocarpus obovatus</i>	Hard Quandong	Tree
<i>Embellia australiana</i>		Climber
<i>Endiandra discolor</i>		Tree
<i>Eucalyptus resinifera</i>	Red Mahogany	Tree
<i>Eucalyptus robusta</i>	Swamp Mahogany	Tree
<i>Ficus fraseri</i>	Sandpaper Fig	Tree
<i>Grevillea shiressii</i>		Shrub
<i>Hakea bakerana</i>	Hakea	Shrub
<i>Lepidosperma quadrangulatum</i>		Reed
<i>Macarthuria neocambria</i>		Herb
<i>Maudia triglochinoides</i>		Aquatic macrophyte
<i>Melaleuca biconvexa</i>	Biconvex Paperbark	Tree
<i>Neolitsia australiensis</i>	Green Bolly Gum	Tree
<i>Olearia nernstii</i>	Daisy Bush	Shrub
<i>Parsonia velutina</i>		Climber
<i>Prostanthera askania</i>	Tranquility Mintbush	Shrub
<i>Rhodomyrtus psidioides</i>		Tree
<i>Ripogonum fawcettianum</i>		Climber
<i>Sesuvium portulacastrum</i>		Water plant around lake shore
<i>Tetrastigma nitens</i>		Climber
<i>Toona cilata (australis)</i>	Red Cedar	Tree
<i>Vittaria elongata</i>		Fern
<i>Xanthorrhoea resinosa spp. fulva</i>	Grass Tree	Shrub

7.2.5 Trees of Cultural Significance

Plantings and remnant native trees of these species are significant features of Wyong Shire's cultural landscape. (See relevant Notes over).

Common Name (Botanical Name)	Locality ¹	Minimum Trunk Size (diameter at 1.4 m) ²	Tree Protection Zone (metres from trunk)	
			Optimum ³	Minimum ⁴
Native Species				
Smooth Bark Apple Gum (<i>Angophora costata</i>)	Bateau Bay East	300 mm	5.0	3.0
Rough Bark Apple Gum (<i>Angophora floribunda</i>)	Bateau Bay East	300 mm	4.0	3.0
Spotted Gum (<i>Corymbia maculata</i>)	Bateau Bay East Wyongah	300 mm	5.0	3.0

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(7.2.5 Continued)

Common Name (Botanical Name)	Locality ¹	Minimum Trunk Size (diameter at 1.4 m) ²	Tree Protection Zone (metres from trunk)	
			Optimum ³	Minimum ⁴
Tuckeroo (<i>Cupaniopsis anacardioides</i>)	Bateau Bay East Canton Beach Foreshore	250 mm	4.0	3.0
Red Bloodwood (<i>Eucalyptus gummifera</i>)	Bateau Bay East	300 mm	4.0	3.0
Scribbly Gum (<i>Eucalyptus haemastoma</i>)	Bateau Bay East	300 mm	4.0	3.0
Ironbark (<i>Eucalyptus paniculata</i>)	Bateau Bay East Wyongah	300 mm	6.0	4.0
Blackbutt (<i>Eucalyptus pilularis</i>)	Bateau Bay East Wyongah	300 mm	8.0	4.0
Red Mahogany (<i>Eucalyptus resinifera</i>)	Bateau Bay East	300 mm	5.0	3.0
Swamp Mahogany (<i>Eucalyptus robusta</i>)	Bateau Bay East	300 mm	5.0	3.0
Forest Redgum (<i>Eucalyptus tereticornis</i>)	Bateau Bay East	300 mm	8.0	4.0
Broad-leaved Paperbark (<i>Melaleuca quinquenervia</i>)	Bateau Bay East	300 mm	6.0	4.0
Broad-Leaved Mahogany (<i>Eucalyptus umbra</i>)	Wyongah			
Northern Grey Ironbark (<i>Eucalyptus siderophloia</i>)	Wyongah			
Swamp Oak (<i>Casuarina glauca</i>)	Willow Creek Budgewoi East			
Tuckeroo (<i>Cupaniopsis anacardioides</i>)	Willow Creek			
Bangalay (<i>Eucalyptus botryoides</i>)	Willow Creek			
Tallowood (<i>Eucalyptus microcorys</i>)	Willow Creek			
Swamp mahogany (<i>Eucalyptus robusta</i>)	Willow Creek Budgewoi East			
Sydney Blue Gum (<i>Eucalyptus saligna</i>)	Willow Creek			
Port Jackson Fig (<i>Ficus rubignosa</i>)	Willow Creek			
Cheese Tree (<i>Glochidion ferdinandi</i>)	Willow Creek			
Cabbage-Tree Palm (<i>Livistona australis</i>)	Willow Creek			
Broad-leaved Paperbark (<i>Melaleuca quinquenervia</i>)	Willow Creek, Budgewoi East			
Magenta Cherry (<i>Syzygium paniculatum</i>)	Willow Creek			
Exotic Species				
Bunya Pine (<i>Araucaria bidwillii</i>)	Whole of Shire	500 mm	5.0	4.0
Hoop Pine (<i>Araucaria cunninghamii</i>)	Whole of Shire	500 mm	5.0	4.0
Norfolk Island Pine (<i>Araucaria heterophylla</i>)	To 1km inland	300 mm	4.0	4.0
Liquidamber (<i>Liquidambar styraciflua</i>)	Bateau Bay East	450 mm	5.0	3.0
Canary Date Palm (<i>Phoenix canariensis</i>)	Wyong & The Entrance Townships	250 mm	3.0	2.0
Date Palm (<i>Phoenix sylvestris</i>)	Wyong Township	150 mm	3.0	2.0

NOTES:

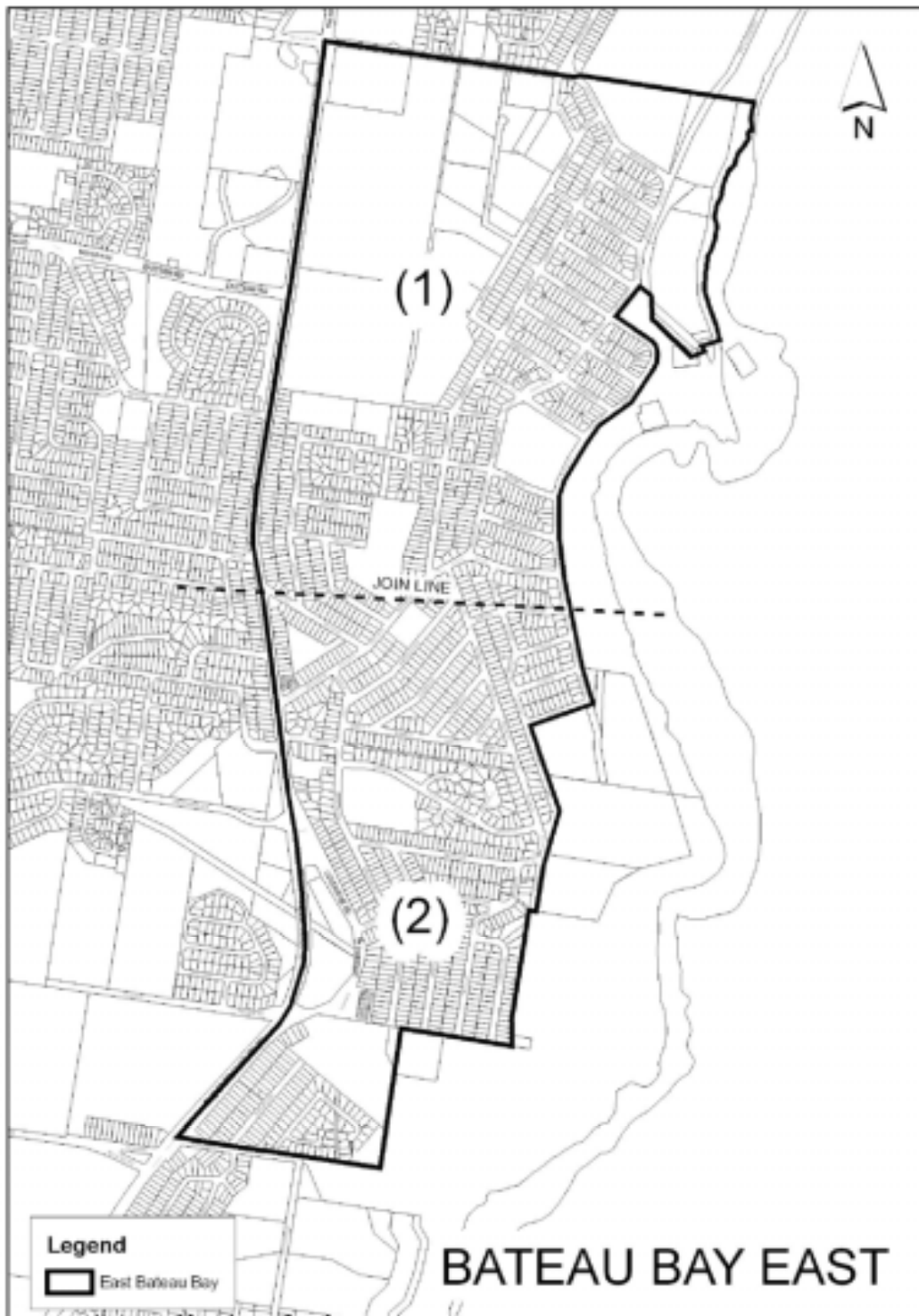
- 1 Bateau Bay East is the area of Bateau Bay East bounded by The Entrance Road, Yakalla Street and Wyrabalong National Park as identified by Map 1

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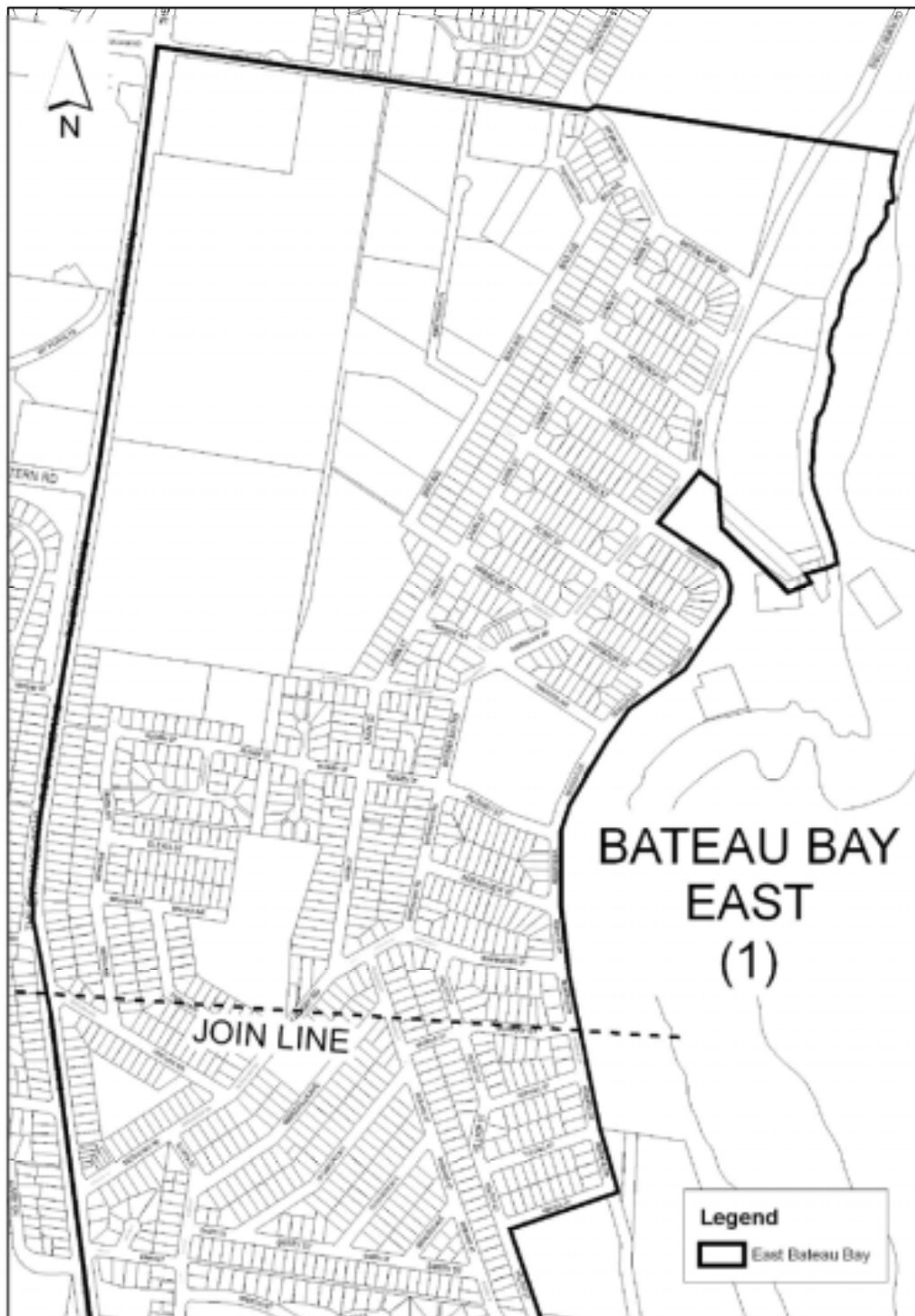
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- 2 Where the tree has more than one trunk, the trunk size is obtained by adding the measurements of each trunk together to get a total trunk size.
- 3 Examination of the tree and roots by a consulting arborist, and preparation of an arborist's report under Clause 2.7, may be able to demonstrate that disturbance of this area is possible, but not less than the Minimum Tree Zone. Disturbance includes excavation deeper than 200 mm, any construction activities and placement of paving or impermeable hard surfacing.
- 4 This distance indicates the minimum tree protection zone required to maintain the tree. However, a consulting arborist's report prepared under Clause 2.7 which includes the examination of the tree and roots, must firstly be prepared and show, to Council's satisfaction, that the disturbance and injury will not cause a reduction in the tree's life expectancy.
- 5 **Willow Creek** is the area between Norfolk Street, Anzac Road, Willow Street and The Entrance Road at Long Jetty as identified by **Map 2**. All plantings and remnant native trees of these species in this zone are to be preserved. Preparation of a report by a consulting arborist shall be submitted with an application for any development within the Willow Creek area, to ensure the proposed development is consistent with council's tree preservation objectives.
- 6 **Wyongah** is the area bounded by Wahroonga Road, Springall Avenue, Craigie Avenue, Stelling Street, Stanley Street, Kaye Avenue, Minnamurra Road, and the foreshore of Tuggerah Lake adjacent to Tuggerawong Road at Wyongah as identified by **Map 3**. All plantings and remnant native trees of these species in this zone are to be preserved. Preparation of a report by a consulting arborist shall be submitted with an application for any development within the Wyongah area, to ensure the proposed development is consistent with council's tree preservation objectives.
- 7 **Budgewoi East** is the area of Crown Land on the Lake Munmorah foreshore containing the Budgewoi Tourist Park and including the two parcels of land located north of Weemala and Ourringo Streets and extending east along Mimosa Road to the northern cadastral boundary, behind the row of houses fronting Mimosa Road. It is bounded in the west by Budgewoi Creek and in the north by the Lake Munmorah foreshore as identified in **Map 4**. All plantings and remnant native trees of these species in this zone are to be preserved. Preparation of a report by a consulting arborist shall be submitted with an application for any development within the Budgewoi East area, to ensure the proposed development is consistent with council's tree preservation objectives.

MAP 1 - BATEAU BAY EAST AREA



MAP 1A - BATEAU BAY EAST AREA



MAP 1B - BATEAU BAY EAST AREA



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MAP 2 – WILLOW CREEK AREA

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MAP 3 – WYONGAH AREA

