Lake Macquarie
City Council

TREE PRESERVATION

GUIDELINES

Revision History

Rev. No.	Date Changed	Modified By	Details/Comments
Master	22/03/04	LMC^2 Consulting Group	Master Document - adopted by Council on 22 March 2004
01	12/12/05	LMC^2 Consulting Group	General Changes to the document ▪ Amend the document to achieve consistency between the Lake Macquarie Local Environmental Plan (LMLEP) 2004, Development Control Plan (DCP) No. 1, and the Guidelines Supporting DCP No. 1. ▪ Amend to ensure consistency with the *Review Native Vegetation Management and Tree Preservation Report* adopted by Council on the 12 July 2004. Section 1 Introduction ▪ Change definition of tree to make it clear that only saplings over 3 meters are covered. Remove term 'scrub' as it relates to a vegetation community rather than a tree. ▪ Amend the definition of "Native Vegetation" to remove "trees" as "tree" now has it own definition. Add scrub to the definition of native vegetation so that Coastal Health and the like are covered. Existing definition is unclear, and inconsistent with Councils policy. ▪ Amend the definition of "non-urban zone" to include current LMLEP 2004 zones. The current Guidelines list zones relevant to LMLEP 1984, which no longer applies. The following amendments are required to improve the clarity and readability of the document: ▪ Insert definition of "Significant Flora and Fauna Species and Vegetation Communities." ▪ Remove definition of "culturally significant tree." ▪ Insert definition of "native." ▪ Insert definition of "Significant tree." ▪ Amend the definition of "Significant Species and communities". 2.1 When Is Consent Required For Clearing or Tree Removal? ▪ minor wording amendments/ 2.3 Tree Removal Considerations ▪ Insert statement that Council will only approve the application for removal of tree on an adjoining property where there is written agreement from both landowners. Reformat the information outlining the matters Council consider in assessing removal of either a tree or patches of remnant vegetation. Section 3.1 ▪ Remove the detailed information relating to "*When is a consent required for clearing"* as this is already covered in Section 2.1. Section 3.2 ▪ Insert a note indicating different requirements, depending on location and type of vegetation. ▪ Insert additional requirements for a description of existing trees and native vegetation on the site to include a plan showing habitat trees and size and location of hollows .

Rev. No.	Date Changed	Modified By	Details/Comments
			Section 3.3 ▪ Insert a note to indicate clearing be permitted when consistent with objectives of the zone. Also, insert that Council does not support removal of native vegetation listed in Council's Significant Species Schedule. ▪ Insert additional matters for Council to consider in assessing applications for clearing. Section 4.1 ▪ Replace with note referring to current legislation including *Rural Fires Act 1997*, and Council's *Review of Native Vegetation Management and Tree Preservation Report* as adopted by Council on 12 July 2004. ▪ Clarify that the clearing of a tree or native vegetation is permitted where Council is satisfied, prior to clearing, that the tree or native vegetation is dangerous to life or property. ▪ Insert new section, "*Interpretation*", which outlines the conditions when Council will be satisfied that a tree is dangerous and ought to be removed. This is required to clarify what constitutes Council satisfaction as to when a tree is dangerous to life and property and ought to be removed. Section 4.2 (new section) ▪ Clarify that the clearing of native vegetation (other than trees) does not require consent where complying with an order issued, by Council, under Section 124 of the Local Government Act. ▪ Clarify that minor clearing is permitted to enable survey where in accordance with Section 20 of the Surveying Act 2002. Table 7.1.2 ▪ Insert additional species of plants into *Table 7.1.2: Plants Declared Noxious in Lake Macquarie.* 7.2.2. Species of Ecological Communities of State Significance ▪ Include additional species to ensure the list of 'species known to exist in Lake Macquarie' is up to date. Table 7.2.3.4 Regionally Significant Vegetation Communities ▪ Merge and update *Regional Biodiversity Conservation Strategy Stage 1* and *Regional Biodiversity Conservation Strategy Stage 2 Tables* to include all regionally significant vegetation communities. Appendix 1 ▪ Insert *Native Vegetation Act 2003 – clearing native vegetation and property vegetation plans*. Appendix 3 ▪ Insert an Appendix 3 to document informing applicants how Council assesses the removal of trees.
02	January 2008	Integrated Planning	4.0 Exemptions ▪ In section a) amended 8.2.5 to read 7.2.5 ▪ Delete b) and reletter subsequent sections

Rev. No.	Date Changed	Modified By	Details/Comments
03	November 2009	Inegrated Planning	Amended Section 1.3 Definitions - definition of “crown maintenance pruning”

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1.0 INTRODUCTION

1.1 Purpose and features of these guidelines

Lake Macquarie is a City well endowed with urban bushland however, the City's trees need to be well managed to ensure the environmental amenity, special landscape characteristics, unique vegetation qualities and ecological values that they provide are maintained and enhanced.

The guidelines are designed to build on the Tree Preservation and Management provisions contained within the following sections of DCP No 1 – Principles of Development:

- 2.1 Environmental responsibility and land capability
- 2.4 Heritage
- 2.7 Streetscape and the Public Realm

1.2 Aims and Objectives

The aim of the guidelines is to manage the trees and bushland for the betterment of the City

More specifically the objectives of the Guidelines are to:

- To further define Council's responsibilities and requirements with respect to the protection, retention and replacement of native trees and vegetation
- To ensure that proper consideration is given to native trees and vegetation in planning, designing and constructing development
- To minimise unnecessary injury to or destruction of native trees and vegetation
- To retain healthy individual trees of local amenity and aesthetic value
- To facilitate the removal of undesirable exotic, noxious weeds, dangerous trees and other inappropriate plantings and to replace these with suitable local indigenous species which will positively contribute to visual and environmental amenity, biodiversity and ecological sustainability
- To retain viable representative samples of native vegetation which have an intact structure and complete floristic wherever practicable
- To further detail requirements for submission of sufficient and relevant information for development applications and applicants

1.3 Definitions

"**arboriculture"** means cultivating and managing trees as individuals and in small groups for amenity purposes.

"bushland" means land on which there is vegetation which is either a remainder of the natural vegetation of the land or, if altered, is still representative of the structure and/or floristics of the natural vegetation.

"**crown maintenance pruning"** is as defined in Australian Standard AS 4373, 1996 "Pruning of Amenity Trees" and is considered to involve a reduction in tree foliage and branches (ie the airspace occupied by the tree) by up to 10 percent in any five (5) years with no reduction in the height of the main trunk.

"destroy" means any activity leading to the death, disfigurement, or mutilation of a tree.

"injury" means damage to a tree or native vegetation and includes:

a) lopping and topping;

b) poisoning, including applying herbicides and other plant toxic chemicals to a tree or spilling (including washing off or directing water contaminated by) oil, petroleum, paint, cement, mortar and the like onto the root zone;

c) cutting and tearing of branches and roots that is not carried out in accordance with accepted arboricultural practices, does not qualify as "pruning" or is done for invalid reasons;

d) ringbarking, scarring the bark when operating machinery, fixing objects (eg. signs) by nails, staples or wire, using tree climbing spikes in healthy trees marked for retention (except for access to an injured tree worker) or fastening materials that circle and significantly restrict the normal vascular function of the trunk or branches;

e) damaging a trees root zone by compaction or excavation, asphyxiation (including unauthorised filling or stockpiling of materials);

f) underscrubbing or slashing unless very minor in extent and carried out by hand tools, such as brush cutters and the like.

"lopping" means cutting between branch unions or at internodes on young trees, (but does not refer to lopping solely for the purpose of feeding stock in an officially drought declared area).

"native" means
a) being of a species or comprising species that existed in the State of NSW before European Settlement, and
b) Norfolk Island Pine *(Araucaria heterophylia).*

"native vegetation" includes:

a) understorey plants;
b) groundcover plants;
c) plants occurring in a wetland, or
d) scrub

but excludes trees. Where groundcover means any type of herbaceous vegetation.

"non-urban zone" means all land identified by Lake Macquarie Local Environmental Plan 2004, as Rural production, Rural Living, Infrastructure, Open Space, Environmental Protection, Conservation, Natural Resources and Investigations Zones No's 1(1), 1(2), 5, 6(1), 6(2), 7(3), 7(5), 7(1), 7(2), 9 and 10.

"prune or pruning" is defined as all other pruning which is not "crown maintenance pruning" and includes "crown modification" as defined in Australian Standard AS 4373-1996, "Pruning of Amenity Trees"

"remnant tree or vegetation" means a native tree or any patch of native vegetation that remains in the landscape after removal of most or all of the native vegetation in the immediate vicinity.

"significant species and communities" are species listed in the Schedules to the Threatened Species Conservation Act 1995 and species listed in Section 7.2 of this Guideline. These include protected native plants, species of state and regional significance and keystone species.

"significant tree" means any native tree or exotic species listed on the Significant Tree Register Schedule in Section 7.2.5.

"significant tree register" means Council's Register of Significant Trees maintained to facilitate the preservation of trees that have recognised cultural significance. Significant trees are those which exhibit aesthetic, historic, scientific, environmental or social value for past, present or future generations. Inclusion of trees on this register (section 8.2.5.) shall not preclude removal but flag the need for especially careful appraisal of any proposal to prune or remove them.

"remove" means to cut down, take away or transplant a tree from its place of origin.

"topping" means cutting away part or all of the tree canopy leaving a trunk and stubbed main branches.

"tree" includes:

a) a native sapling grater than 3 metres in height or with a trunk diameter at ground level of 75mm or more; or
b) a native shrub greater than 3 metres in height with a trunk diameter at ground level of 75mm or more; or
c) any tree listed on the Council's Significant Tree Register.

"undesirable species" means plants that have characteristics that may lead to poisoning, weed infestation, brittle and dangerous wood, excessive spread of roots or bushland invasion. (Refer to Part 7.0 of this Plan).

"**vegetation management plan"** means a structured program adopted by the Council for the protection, maintenance, restoration and replacement of trees and native vegetation.

2.0 NATIVE VEGETATION AND TREE REMOVAL

2.1 When Is Consent Required For Tree Removal?

Generally, consent is required for the clearing, pruning or removal of:

a) NSW native vegetation; and/or
b) A NSW native tree, shrub or sapling over three metres height; or
c) A tree listed in Council's significant tree register; or
d) Trees or native vegetation that are subject to a condition of development consent that requires them to be retained; or
e) Any trees or native vegetation that are listed as heritage items or are in a conservation area; or
f) If the clearing or tree removal is not one of the exemptions outlined under Part 4.0 of this Guideline.

Other Approval Authorities

A consent from the Hunter and Central Rivers Catchment Management Authority is likely to be required for:

a) Clearing of native vegetation or trees or land in area within a Rural, Rural Residential, Infrastructure, Open Space, Environmental, Conservation, Natural Resources or Investigation zones.
b) For clearing within 20 metres of Dora Creek, the Hunter and Central Rivers Catchment Management Authority (HCRCMA) should be contacted.

Note –

There are certain exemptions in the Native Vegetation Act 2003.

Contact the the Hunter and Central Rivers Catchment Management Authority (HCRCMA) for applications under the Native Vegetation Act 2003.

Consent from Council is required for:

a) The clearing of land where/when consent is not otherwise required from the Hunter and Central Rivers Catchment Management Authority, or the Department of Natural Resources or
b) The clearing of land of any size in Residential, Industrial and urban Centre Zones.

Clearing works that are necessary to carry out an approved development or building works, do not require an additional consent from Council and are outlined under Part 4.0 of this Guideline. However, if the development is not for a dwelling an additional consent to clear the land may be required from the Department of Environment and Conservation or the Hunter and Central Rivers Catchment Management Authority.

2.2 What Are The Requirements When Making Application For Tree Removal?

The following general information is **usually required to be submitted with an application. However, the amount and level of detail required may vary depending on the circumstances**

a) application on the proscribed form

b) the written consent of the owner of the land;

c) details as to the reasons for the removal of the tree;

d) a description of **existing trees and vegetation including the following** -

   i a plan of this site showing the location of the tree(s) to be removed, drainage and sewer mains, all buildings, paved areas and overhead power lines;

   ii species type (botanical names and common name if known);

   iii approximate height, canopy spread of individual trees (or groups of trees), and trunk diameter at 1.4 metres above ground;

e) a description, (as above), of **existing trees and native vegetation on adjoining land**-

   i within 3 metres of the site boundaries (including street trees);

   ii where the canopy of a tree overhangs the site boundaries; and

f) **proposed landscape treatments** identifying -

   i trees and vegetation to be retained and to be protected;

   ii methods of retention and/or protection during the works;

   iii proposed new plantings (species, mature heights and spread);

   iv altered ground levels, including cut and fill details;

   v site drainage including siltation and erosion controls to be implemented where necessary;

   vi proposed horticultural details, including growing mediums, mulching and irrigation.

   (Note: Trees to be inspected should be identified on site with a ribbon, tape or non-permanent marker.)

g) where the application will cause injury to a culturally significant tree, a report from a suitably qualified arborist, as specified in DCP No1 - Principle of Development 2.1.4 Tree Preservation and Management.

h) any specified fees applicable.

2.3 Tree Removal Considerations

Council does not generally support removal of trees listed in Council's Significant Species Schedule in Section 7.2 to this plan.

Where Council receives an application to remove a tree that is within five (5) metres of a building (for which development consent has been granted) that is on an adjoining allotment, Council will approve the application provided the owners of both properties are in agreement with the removal of the tree.

In assessing whether or not to approve the **pruning or removal** of either a tree or small patches of remnant vegetation, Council will take into consideration the following matters as shown in Table 1:

Note: Provided that no significant hazard or other safety issues also apply, **the following shall not generally be considered as valid reasons to remove a tree** -

i leaf drop (into gutters and downpipes - pools, lawns and the like);

ii to increase natural light;

iii to improve street lighting of private property;

iv to enhance views;

v to reduce shade created by a tree;

vi to reduce fruit, resin or bird droppings on cars, driveways and clothes lines/washing

vii minor lifting of driveways and paths by tree roots;

viii to erect a fence;

ix bushfire hazard control that has not been verified by Council;

x potential damage to sewer mains unless supported by written expert advice and only where reasonable alternatives are not feasible (eg. relocation or encasement of main) and the trees causing the damage can be identified.

Council's refusal of a tree removal will only be reconsidered where satisfactory evidence is supplied by a suitably qualified person.

Table 1 – *Matters taken into account when council considers whether to approve the pruning or removal of either a tree or native vegetation.*

Statement of Environmental Effects and Matters to be Considered		Comments
Legislative/Policy		
Does a development consent exist that requires the tree or native vegetation to be retained	Yes/No	
Is the tree within 5 metres of a house on the adjacent property and have both owners agreed to removal	Yes/No Yes/No	
Environmental Effects		
Is the tree of scientific interest	Yes/No	
Does the tree or native vegetation have significant amenity, aesthetic, scenic value	Yes/No	
Is the tree of cultural or historical value	Yes/No	If a heritage item, the tree must be assessed under the Heritage Provisions of the LEP. If the tree is of cultural value, a report from an archaeologist may be required.
Does the tree or native vegetation have significant ecological value or provide significant wildlife habitat	Yes/No	If the tree or native vegetation provides wildlife habitat (refer to P1)
Is the tree or native vegetation isolated from other native trees and native vegetation	Yes/No	
Does the tree/s or native vegetation form part of a native vegetation corridor	Yes/No	
Is the tree listed on the Significant Species Schedule or the Significant Tree Register	Yes/No	Emphasis is placed on retaining species and communities listed Council's Significant Tree Register and in the Significant Species Schedule Section 7.2.5 of the Tree Preservation Guidelines
Is the tree or native vegetation indigenous to Lake Macquarie City	Yes/No	Retention of locally indigenous species will be favoured
Is/are the species a nuisance species or naturalised in the City	Yes/No	Removal of species with the potential to create a nuisance in the landscape will be favoured e.g. Cootamundra Wattle, Silky Oak, *Pittosporum undulatum*

Statement of Environmental Effects and Matters to be Considered		Comments
Environmental Effects (cont.)		
What is the maturity or life expectancy of the tree or native vegetation	young, semi mature mature over mature	
Are remedial actions practical	Yes/No	
Is the tree or native vegetation performing a significant role of in stabilizing the soil and the prevention of land degradation	Yes/No	
Is the tree or native vegetation performing a significant role in water quality and associated ecosystems such as steams rivers and waterways	Yes/No	
Tree Assessment		A Tree Assessment Report as per Appendix 3 of the Tree Preservation Guidelines
Has a report by a suitably qualified arborist been provided.	Yes/No/NA	
Characteristics and history of species	A/NA	
Ground and substratum conditions	NA Waterlogged Reactive Soils Heaving	More detailed studies may be required eg soil analysis
Root condition	A/NA	More detailed studies may be required
Insect infestations, fungus or disease	Present Absent	
Is the tree/native vegetation affected by or having an impact on existing earthworks or structures, tanks or pools	Yes/No	
Is the tree/native vegetation affecting or impacted by services i.e. overhead powerlines, sewer or drainage pipes.	Yes/No	

Statement of Environmental Effects and Matters to be Considered		Comments
Residents Amenity		
Evidence of allergies	Yes/No/NA	Specific evidence provided by an expert in the relevant medical field and link between the ailment and the species is reasonably established.
Is the tree or native vegetation affecting solar access to existing windows, doors, solar appliances cloths lines or outdoor living areas	Yes/No/NA	
Does an amenity tree or native vegetation no longer fill its original purpose	Yes/No/NA	
Did the applicant plant the tree	Yes/No/NA	

3.0 LAND CLEARING

3.1 When Is Consent Required For Clearing?

Section 2.1 outlines when consent is required for clearing native vegetation and trees.

Generally, clearing will only be permitted where it is ancillary to and necessary for undertaking or conducting an approved use of the land.

3.2 What Are The Requirements When Making An Application For Land Clearing?

a) The following general information is usually required to be submitted with an application. However, the amount and level of detail required may vary depending on the circumstances applying.

i the written consent of the owner of the land.

ii a flora and fauna assessment in accordance with Councils flora and fauna assessment guidelines

Note –

Depending on the location and type of vegetation there are different requirements for small sites and minor developments that clear less than 1000m^2 or less than 5 individual trees. These sites require a lower level of assessment.

iii a description of the **existing trees and native vegetation on the site**

- location on plan including spot levels and/or contours to be generally at 2 metre intervals and at a scale of 1:200 for sites up to 1 hectare and 10 metre intervals and at a scale of 1:1,000 for sites of more than 1 hectare.

- the area to be cleared in hectares.

- species (botanical names and common names if known) of individual trees and native plants, or the dominants in the case of woodland, forest or groups of trees (to be shown as clumps) and/or vegetation communities to be marked on the plan. A corresponding schedule shall be submitted for vegetation communities outlining structure and floristics (a plant list), identifying the dominants. Any endangered, vulnerable, or locally significant plant species should be shown and in such cases an assessment of potential impacts undertaken as per Section 5A of the EP&A Act. A description of the survey methodology should also be provided.

- appropriate height and trunk diameter at 1.4 metres above ground (breast height diameter) for individual trees, where applicable. Approximate canopy spread of individual trees, groups of trees and vegetation communities to be marked on the plan.

- a schedule, prepared by a suitably qualified and experienced person, of individual trees and/or groups of trees, summarising useful life expectancy values with recommendations for removal, retention and/or rehabilitation. In the case of vegetation communities, the schedule should summarise the condition, maturity, intactness and rarity, with recommendations for removal, retention and/or rehabilitation.

- A plan showing the location of any habitat trees and the number and size of hollows in those trees.

- a method statement detailing the intended approach to the undertaking of the recommended works.

- plans shall identify site boundaries, dimensions, orientation (north point), the location of relevant land use zones and site areas of the whole of the land and that area proposed to

be cleared in hectares or square metres.

iv a brief description on the plans of **existing trees and native vegetation on adjoining land** showing -

- trees, groups of trees and vegetation communities within 20 metres of the site boundaries.
- the location of trees whose canopy overhangs the site boundaries.

Note: The development shall not involve works (eg. roads, driveways, installation of services, cut and fill, drainage works, installation of barriers to natural drainage) that destabilise, disfigure, or ultimately destroy any other trees and native vegetation on adjoining or downstream public or private land.

v the **reasons for and purpose of** the proposed **clearing**.

vi **trees and vegetation to be retained**, including the purposes of such retention, such as semi-natural open spaces, buffer and exclusion zones, filter/protection and/or riparian habitat strips.

vii **details for protecting remnant trees and vegetation from damage** during clearing works, construction and on completion. This should include site preparation and location of protective fences, in accordance with the methods set out in 6.0 of these Guidelines.

viii **soil report and altered ground levels**, including soil landscape and profile descriptions, cut and fill, regrading, changes to the soil profile or future growing mediums, fill material, if applicable, and necessary amelioration works required for horticultural purposes.

ix **drainage details** including any natural watercourses or drainage structures, proposed works involving alteration to hydrology, such as ground surface treatments (eg. paving, access ways, introduction of roads, bund walls, dams or trunk drainage works).

x **erosion and sediment controls**, including a program and species list for stabilising disturbed areas and soil stockpiling measures that shall be compatible with vegetation retention measures.

xi **utility installations** (underground and overhead lines) where known. Final locations and installation works to be consistent with vegetation retention proposals and the Design, Maintenance and Construction Guidelines in Council's Engineering Requirements for Development.

xii **proposed new plantings** (species, mature heights and spread) establishment and maintenance details. The level of detail shall be sufficient to assess the adequacy of vegetation retention and future landscape proposals. For large scale landscaping proposals, reference should be made to Council's Guidelines Volume 1 – Principles of Development – *Landscape Design guidelines (2004).*

xiii **location of future buildings** where known and applicable.

xiv the **proposed method of clearing**, including size and type of any machinery to be used. Final details to comply with Council's Engineering Requirements for Development.

xv proposed means for **disposal of cleared materials**. In this regard, sale of millable timber, chipping or tub grinding of plant materials for re-use onsite as mulch to protect and rehabilitate retained vegetation are the preferred methods.

b) In addition to the information required by clause (a) above, applications for clearing in **non-urban zones** shall also submit a **farm or property management plan** showing the following:

   i all existing and proposed property improvements including fences, dams, structures, services, service easements, roads, tracks, buildings, outbuildings, stockyards, grazing or cultivated areas, other cleared areas, etc.

   ii all existing land features including identification of slopes in excess of 15 degrees (approx 1 vertical in 3 horizontal or 33%), rock outcrops, ridges, drainage lines, gullies, and erosion areas.

   iii where the application is for the purpose of agriculture, a description of the land's suitability for its intended use may be required together with supporting comments from the New South Wales Department of Primary Industries.

Refer to Council's **DCP No.1 Section 2.1.1 – Ecological Values** for more information on **farm or property management plans**.

c) In addition to the information required by clauses (a) and (b) above, applications for **subdivisions** which involve clearing shall also show -

   i that the subdivision is designed to maximise retention of significant species and communities present which are listed in Council's Significant Species Schedule at Part 7.2 of these Guidelines.

3.3 Clearing Considerations

It is important to note that:

a) Clearing will only be allowed where it is necessary to enable a use permitted on the land that is consistent with the objectives of the land use zone. Council will not permit any clearing to be carried out as an activity in itself for an unspecified end-use.

b) Council does not general support removal of native vegetation listed in Council's Significant Species Schedule in Section 7.2 of these Guidelines.

In assessing applications involving the clearing of land, Council will consider the following matters -

a) Whether any of the clearing can be avoided.

b) whether any species or communities present are listed in Council's **Significant Species Schedule** or the vegetation is part of **a significant vegetation community listed in** section 7.2 of these Guidelines. If so, what measures are needed for their conservation, including on-site protection during and after construction and/or the taking of plant material for propagation?

c) the condition, maturity and useful life expectancy of remnant trees and native vegetation to be retained.

d) impacts on scenic and visual amenity.

e) effects on natural ecosystems, wildlife, wildlife habitats and whether fauna needs protection or, if appropriate, relocation.

f) whether permanent mitigation measures (such as bund walls, catch drains and stilling ponds) to contain nutrient flows and minimise weed spread need to be installed eg. In non-urban zones or on sites adjoining remnant bushland or semi-natural open spaces.

g) whether the proposed means of clearing is appropriate with respect to the soil type, species of understorey or the trees to be retained.

h) the adequacy and appropriateness of siltation and erosion controls during and after construction. In this regard, turf grasses are generally unsuitable in Conservation or other non-urban zones, particularly along or near natural watercourses and remnant bushland.

i) the need for retaining vegetation by providing -

   i **buffer zones** as screening to roads or for the protection of identified core habitats, wetlands, littoral and other rainforests;
   ii **filter and protection strips** to natural drainage lines, watercourses, streams, foreshores or constructed drainage corridors;
   iii **riparian (watercourse) habitat strips**;

iv **wildlife and other "green" corridors** connecting remnant patches of vegetation; and

v **exclusion zones** for preserving vulnerable and/or significant remnant vegetation and species.

k) the need to install temporary tree/vegetation protection measures prior to clearing works.

l) possible salvage and/or reuse of cleared plants and whether the proposed method for disposing of cleared materials is appropriate. Any useful timber should be retrieved. Salvage of cleared plants by Landcare or other group working to rehabilitate native vegetation. Recycling of waste vegetation for fuel, logs, or as chip or grindings is mandatory. The use of wood chips and tub grindings for on site mulching or seedbed regeneration is encouraged.

m) the need for periodic or full time supervision of clearing works to protect environmental values or oversee relocation of native animals.

n) the need to rehabilitate any tree or vegetation adversely affected by clearing or construction works.

o) the need to select and plant new trees as replacement for trees cleared.

p) the effect of the development on the viability and quality of the bushland and, in particular, the likelihood of soil erosion, siltation of streams, wetlands and other water bodies, direct or indirect alterations to drainage patterns and to fire hazard reduction regimes, the spread of weeds, undesirable and exotic species in the bushland, rubbish dumping and incursion by domestic or feral animals.

q) the effectiveness of measures proposed to mitigate any identified adverse impacts.

r) any comments made by a public authority including, where appropriate, the Rural Fire Service, the Department of Planning, Department of Environment and Conservation or the Hunter and Central Region Catchment Management Authority, and the Department of Primary Industries.

s) whether the vegetation is affected by the provisions of any other Act, Regulation or State Environmental Planning Policy applying to the land (See Appendix 1 of this Plan).

t) whether the tree or trees provide habitat or is a significant component of the habitat of a species listed or ecological community in Schedule 1 or 2 of the Threatened Species Conservation Act, and whether there is a need to assess the significance of the works in accordance with Section 5A of the Environmental Planning and Assessment Act.

u) the need to salvage and relocate tree hollows or supplement habitat with next boxes.

v) whether a bond should be required to secure the protection of native vegetation or trees that may be impacted by the development.

w) whether a Vegetation Management Plan prepared by a suitably qualified person and detailing procedures and specifications necessary to address any issues of concern, should be submitted for approval prior to commencement of clearing works.

x) whether the trees or vegetation is subject to a condition of development consent aimed at the retention of the native vegetation or trees.

y) whether the vegetation forms part of a native vegetation corridor.

z) the role of the native vegetation and tree/s play/s in stabilising the soil and the prevention of land degradation.

aa) The role the native vegetation and tree/s play/s in water quality and associated ecosystems such as streams, rivers and waterways.

3.4 Noxious Weed Removal Considerations

In issuing **a formal notice under the Noxious Weeds Act 1993**, in response to an owner's request, Council will consider -

a) the suitability of the selected method given its likely affect on soils and harm to trees and other native vegetation; and

b) whether rehabilitation or replacement of existing vegetation should be ensured by submission of a satisfactory Vegetation Management Plan before starting work; and

c) whether the proposed work is of such an extent as to require a more detailed assessment and therefore requiring the lodgement of a development application to ensure compliance with the Local Environmental Plan. (That is, works likely to affect a significant area of land, or of an intensity likely to cause direct harm to the environment or vegetation in the vicinity).

Note –

Compliance with this provision shall not be taken as implying the granting of an exemption under Native Vegetation Conservation Act 1997 or Native Vegetation Conservation Act 2003.

4.0 EXEMPTIONS

4.1 Works Which Do Not Need A Consent

In accordance with clause 34 of the Lake Macquarie Local Environmental Plan 2004 the following works do not require a consent from Council –

a) the removal of a non-native (exotic) tree species **unless it is a heritage item, in a conservation area or specifically listed in Council's Significant Tree Register (see part 7.2.5 and contact Councils' Tree Preservation Officer for any more recent listings)**

b) the removal, clearing or trimming of trees and native vegetation in accordance with Part 11 of the **Electricity Supply (Safety Plans) Regulation 2001**; or

c) the removal, clearing or trimming of trees or native vegetation in accordance with clauses 88, 107, 138 and 139 of the **Roads Act 1993**; or

d) the removal, clearing or harvesting of trees grown commercially or domestically for their edible fruit; or

e) the control of noxious weeds within the meaning of the **Noxious Weeds Act 1993**; or

f) the clearing of commercially grown plantation trees in accordance with the **Plantations and Reafforestation Act 1999**; or

g) the removal or clearing of native vegetation approved under the **Native Vegetation Act 2003,** any other related Act or environmental planning instruments; or

h) **the removal of hazardous dead trees within Residential, Urban Centre core, Urban Centre, Industrial, Infrastructure, Open space, and Tourism and Recreation Zones.** Where the tree or trees does not provide habitat for animal species listed in Schedule 1 or 2 of the Threatened Species Conservation Act 1995, expert advice should be obtained in relation to this; or

i) the removal of native vegetation on land other than in the 7(1) Conservation (Primary) Zone **for the purposes of creating or maintaining landscaped and lawn areas** where -

   i the work does not involve the removal, injury or destruction of trees; and

   ii the area to be cleared is within the curtilage and on the same property as, a dwelling for which development consent has been granted; and

   iii the area to be cleared is less than 600 square metres in total with the amount of surface exposed in any period of 90 consecutive days, being less than 250m^2; and

   iv the slope of the land is not in excess of 15 degrees (approx 1 in 3.6 or 27%); and

   v the work does not involve the disturbance of native vegetation which is part of an ecological community or habitat for species listed in Schedule 1 or 2 to the Threatened Species Conservation Act 1995.

   vi. the area is not subject to a development consent condition that requires the trees to native vegetation to be retained.

j) Bushfire hazard reduction work that his able to be carried out without consent under the Rural fires Act 1997; or

k) Clearing trees or native vegetation if Council is satisfied before hand that the tree or native vegetation is:
   - Dangerous to life or property; and
   - Ought to be cleared; or

l) Tree works and clearing that are necessary to carry out an approved development or building works within five (5) metres of the outermost projection of an approved building or structure on the subject land. The subject land is the land to which the development or building approval relates.

m) Clearing of a tree or native vegetation that is within one (1) metre of a sealed driveway to a building or which approval has been granted and on the same allotment.

Interpretation

In order for Council to be satisfied that a tree is dangerous and ought to be removed, a report from a suitably qualified person is to be submitted to Council.

A suitably qualified person:

i. Has a Level 2 or higher Certificate in Arboriculture or interstate equivalent; and
ii. Has at least five (5) years practical experience in tree diagnosis and reporting; and
iii. Is not employed to remove the tree or vegetation.

In addition to the arborist report requirements outlined below, the report must provide evidence to substantiate any claim that the tree is dangerous. Such evidence should document:

Health of the tree
Insect infestations or disease
Structural soundness
Substratum condition
Root condition
Proximity to property and structures
Reason for danger to life or property

An approved building or structure **does not** include drainage, excavation, or garden shed; or a like but does include underground water storage structures and septic tanks.

A sealed driveway is a driveway or car park with an impervious surface such as concrete, pavers, bitumen and alike but does not include gravel.

4.2 Exempt Vegetation Management Works

The following additional tree works are defined as **Exempt Vegetation Management Works** and do not require a consent from Council -

i **crown maintenance pruning** as defined by this Plan; or

ii **removal of trees to give effect to a development in accordance with a consent.** That is, the removal of trees and vegetation located within the alignment of a proposed road or service easement (in accordance with approved engineering plans) or within a proposed building footprint and up to 3 metres from the outer most projection of buildings (on the same land parcel), **provided that** -

- the building or work is the subject of a current development approval and the trees are not shown as intended to be retained or subject to a condition of consent that requires their retention; and
- tree removal/clearing procedures are in accordance with Section 2.0 of these Guidelines.

iii **removal of dead or dangerous trees**, where the tree's **instability is obvious** and is independently confirmed by an approved arborist and there is **immediate danger and/or hazard,** for example, structurally split trunks, trees or limbs, felled by storms, that are damaging buildings or blocking access ways; or

Note –

1. If appropriate, the branch removal option should be adopted in preference to complete tree removal.
2. Documentation should be provided demonstrating the tree's instability.

iv **immediate removal of trees** or native vegetation where this is **essential for emergency access or emergency works** by Council or a public authority; or

v **Removal of undesirable species** as listed in Section 7.1 of these Guidelines provided that:

- The vegetation is confirmed as an undesirable species by Council or by a person qualified in plant identification; and
- Where there is substantial clearing of undesirable species, there is replacement planting of suitable native species. Such plantings are to be appropriately maintained to ensure their establishment; and

- the slopes are not in excess of 15 degrees, the amount of soil surface exposed at any time being less than 250m^2; and appropriate soil retention methods are employed to minimise the potential for erosion to occur and control runoff from the site.

Note –

To ensure complete control/removal of undesirable plant species, bush regeneration techniques should be adopted in preference to mechanical clearing; or

vi minor hand clearing of native vegetation for the purpose of enabling survey to be carried out by a registered surveyor, provided that no alternative survey method is feasible and in accordance with Section 20 of the Surveying Act 2002 as little damage as possible is done.

vii clearing of the minimum about of native vegetation (not trees) necessary to comply with an order issued by Council under Section 124 of the Local Government Act 1993.

Note –

The removal or disturbance of an Aboriginal relic is an offence under the National Parks and Wildlife Act 1974. A tree believed to be, or in the vicinity of, an Aboriginal relic should be examined by an appropriately qualified person and instruction taken before any work commences.)

5.0 VEGETATION MANAGEMENT PLANS

5.1 What is a Vegetation Management Plan?

a) A **Vegetation Management Plan** (VMP) comprehensively addresses protection, maintenance, rehabilitation, removal and/or replanting of trees and vegetation on a particular site.

b) A VMP must be **prepared by a suitably qualified and experienced person**.

c) Council may grant **development consent** for a VMP **for implementation over** a period of **2 to 5 years**, depending on the scope and complexity of the program and the size of the site. No further consents are required where works comply with an approved VMP.

5.2 When is a Vegetation Management Plan required?

a) A VMP will be required when Council is of the opinion that the proposed clearing or tree works are of a type needing a comprehensive site-specific plan of management. The VMP will provide analysis and a strategy to address issues relating to the staging of works, cumulative impact, long term vegetation monitoring and management of progressive tree works for the same site over an extended period of time.

b) Submission of **a VMP is preferred to the making of separate successive applications** for works on/or removal of individual trees for the same site.

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 Plan), 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 PROTECTION OF TREES ON CONSTRUCTION SITES

Trees within development sites are vulnerable to injury, disease and die-back. Failure to adequately protect trees on development sites has the potential to delay developments, create negative environmental impacts and add to biodiversity loss.

Refer to the Lake Macquarie Guidelines Volume 1 – Principles of Development – *Landscape Design Guidelines (2004)* for the preparation of landscape plans including the retention of existing vegetation.

6.1 Tree Protection Guidelines for Construction Sites

- All existing trees which are to remain undisturbed shall be indicated on the approved project drawings and shall be adequately protected for the duration of the construction phase of the project.
- Stockpiling or storage or mixing of materials, vehicle parking, disposal of liquids, machinery repairs and refuelling, siting of offices or sheds and the lighting of fires, shall not occur within the drip line of trees identified to remain on the site.
- All tree protection works including protective fencing shall be carried out before excavation, grading and site works commence
- Protective fencing using brightly coloured 'bunting' type fencing supported by 1800mm high star pickets is preferred
- Any excavation or removal or addition of topsoil within the drip line of trees to be retained is strongly discouraged.
- Avoid over-compaction within the drip line of trees to be retained.

6.2 Bonds and Guarantees

For site development/construction activities within sensitive areas containing remnant vegetation or significant trees, Council will levy a bond or guarantee on the applicant to ensure protection of the tree(s) or vegetation. The sum of the bond will be a reasonable estimate of the cost of rectifying any damage to trees or tree groups caused by a failure on the applicant's part to provide protection to the tree(s) or vegetation.

For significant trees which might be affected by development works a condition to require the placement of a bond or bank guarantee of $10,000 for the first significant tree and $2000 for each significant tree thereafter will be required. This bond is to be submitted prior to release of the construction certificate and released at the end of works subject to a certificate being provided by a qualified arborist stating that the designated significant tree(s) have not been adversely affected by the works.

6.3 Forfeit of Deposit/Guarantee through Breach of Consent

Where trees and/or remnant bushland, identified for retention and protection, are damaged or die as a result of the building or development works, Council will actively pursue the breach of consent and seek to apply the deposit or guarantee in order to minimize loss of amenity and/or habitat value as follows;

- To ensure that installation of fencing and soil erosion treatments are completed;
- To provide remedial tree care to affected tree(s);
- To replace damaged or dead trees; or
- To rehabilitate/regenerate disturbed bushland.

6.4 Period of Deposit/Guarantee and Refund

The deposit or guarantee will be released no earlier than twelve months and no later than two years after practical completion of the development. Release of the deposit/guarantee will be contingent upon receipt of a report prepared by a properly qualified arborist (see part 2.5 of this Plan) certifying that the significant tree(s)/vegetation nominated for protection have been adequately protected and are in satisfactory condition.

The period for holding of the deposit/guarantee will be not less than twelve months to allow adequate time for the developmental impact on significant tree(s) and/or remnant bushland to be assessed properly. For release of the deposit/guarantee, significant tree(s) and/or remnant bushland will need to display vigour, integrity, sustainability of natural processes and no signs of increased decline, "die-back", disease or pathogens.

The following guidelines may be used to identify tree protection zones and restrict activities within those areas.

There is no Australian standard for the determination of tree protection zones for construction sites. The guidelines below are based on, and extrapolated from, the British Standard BS 5878 *Guide for Trees in Relation to Construction*.

6.5 Tree Protection Zone Guidelines

For the purpose of this Plan, trees with a Breast Height Diameter (BHD) greater than 500mm and a canopy spread of 6m radius shall be considered significant or those trees that have been otherwise identified for retention.

Species Tolerance of Construction Disturbance

Common Name	Scientific Name	Tolerance
Red Mahogany	Eucalyptus Resinifera	Poor
Ironbark	Eucalyptus Paniculata	Poor
Rough Bark Apple	Angophora Floribunda	Poor
Blackbutt	Eucalyptus Pilularis	Moderate
Swamp Mahogany	Eucalyptus Robusta	Moderate
Scribbly gum	Eucalyptus Haemastoma	Moderate
Spotted gum	Corymbia Maculata	Moderate
Smooth Bark Apple	Angophora Costata	Moderate
Norfolk Island Pine	Araucaria Heterophylla	Moderate

Table used to calculate the Optimal Tree Protection Zone.

Species Tolerance	Tree Age Category	Distance from Trunk per 25mm trunk diameter
Good	Young	150mm
	Mature	200mm
	Over mature	300mm
Moderate	Young	200mm
	Mature	300mm
	Over mature	375mm
Poor	Young	300mm
	Mature	375mm
	Over mature	450mm

To calculate the **optimal** tree protection zone:

1. Evaluate the **species tolerance**, ie good, moderate, poor;

2. Identify the **tree age category**, ie young, mature, over mature;

3. Calculate the **distance from the trunk** that should be protected for each increment of 25mm of trunk diameter measured at breast height;

4. Multiply the figure given in column 3 by the trunk diameter to get the distance in metres from the trunk to the tree protection fence.

Optimal, Minimal & Critical Tree Protection Zones

Species	**Minimum distance free of disturbance*** (based on BS 5837 guidelines) *unless technical data demonstrates a lesser area can be achieved – see adjacent column	**Minimum Critical distance free of disturbance*** *only where investigation demonstrates the lesser area can be achieved without imposing tree health or public risk problems
Blackbutt	8.0 metres	4.0 metres
Ironbark	6.0 metres	4.0 metres
Swamp Mahogany	5.0 metres	3.0 metres
Spotted Gum	5.0 metres	3.0 metres
Red Mahogany	5.0 metres	3.0 metres
Smooth Bark Apple	5.0 metres	3.0 metres
Scribbly Gum	4.0 metres	3.0 metres
Rough Bark Apple	4.0 metres	2.5 metres
Red Bloodwood	4.0 metres	2.5 metres
Norfolk Island Pine	4.0 metres	3.0 metres
	The above distances account for tree size and age, and the sensitivity of the species to disturbance	The above distances are extrapolated from a 'failure boundary curve' established after study of 2300 wind-thrown trees (Mattheck 1994). The figures are the diameter of the root plate remaining after windthrow.

6.7 Excavation Within The Tree 'Drip' Zone

Disturbance of the tree root system of a particular tree, while avoiding damage to the tree itself, does not guarantee the tree's long term survival. In some cases the severing of all roots on one side of a tree, (such as may occur when a trench is excavated past a tree trunk but still within the drip zone), may weaken the tree making it unstable and likely to collapse some time in the future.
The tree drip line or zone may be defined as the outer edge of the tree canopy projected to ground level. The extent of the tree canopy is a reasonable indication of the extent of the tree root system.

Having determined the optimal tree protection zone, any excavation within the tree drip zone or drip line shall be undertaken in a sensitive manner, with a combination of machine and hand excavation, to minimise disturbance to the tree root system.
Minor tree roots may be cleanly severed while major tree roots, exceeding 50mm in diameter, should be left undisturbed whenever possible.

7.0 SPECIES LISTS

7.1 Undesirable Plant Species

7.1.1 Environmental Weeds occurring in Lake Macquarie

Scientific Name	Common Name
Acacia saligna	Golden Wreath Wattle
Acetosa sagittata	Turkey rhubarb
Ambrosia tenuifolia	Lacy Ragweed
Ambrosia sp.	Ambrosia
Ambrosia psilostachya	Perennial Ragweed
Anagallis arvensis	Scarlet Pimpernel
Andropogon virginicus	Whisky grass
Anredena cordifolia	Madeira Vine
Araujia hortorum	Moth Vine
Arctotheca calendula	Capeweed
Arundo donax	Giant Reed
Aster subulatus	Wild Aster
Asparagus officinalis	Asparagus
Atriplex prostrata	Saltbush Narrow-leaved Carpet
Avena fatua	Wild Oats
Axonopus affinis	Grass
Bidens pilosa	Cobblers Peg
Briza maxima	Quaking Grass
Briza minor	Shivery Grass
Bromus cartharticus	Prairie Grass
Bryophyllum deagonense	Mother of millions
Cakile endentula	American Searocket
Canna indica	Canna
Cardamine hirsuta	Flickweed
Cardiospermum grandiforum	Balloon Vine
Centaurea melitensis	Maltese Cockspur
Centaurium erhthraea	Common Centaury
Cerastium glomeratum	Mouse-eared Chickweed
Chamaesyce spp	Caustic weed
Chloris gayana	Rhodes Grass
Chlorophytum comosum	spider plant
Chrysanthemoides monilifera	Bitou Bush
Cinnamomum camphora	Camphor laurel
Cirsium vulgare	Scotch Thistle
Colocasia esculenta	Elephants Ears
Comprosa repens	Mirror Plant
Conifer sp.	Pine Tree
Conyza spp.	Fleabanes
Conyza bonariensis	Fleabane
Coreopsis lanceolata	Coreopsis
Cotoneaster spp.	Cotoneaster
Cotula coronopifolia	Water Buttons
Crassocephalum crepidioides	Thick head
Crocosmia x crocosmiiflora	Montbretia
Crotalaria semperflorens	Rattlepod

Scientific Name	Common Name
Cynodon dactylon	Couch
Cytisus scoparius	English/Scotch Broom
Cyperus brevifolius	Mullumbimby Couch
Cyperus congestus	Cyperus
Cyperus eragrostis	Umbrella Sedge
Cyperus involucratus	Cyperus
Cyperus papyrus	Papyrus
Cyperus rotundus	Nutgrass
Delairea odorata	Cape Ivy
Digitaria ciliaris	
Digitaria sanguinalis	Summer Grass
Dipogon lignosus	Dolichos Pea
Echinochloa crus-galli	Barnyard Grass
Echium plantagineum	Paterson's curse
Ehrharta erecta	Veldt grass
Eichhornia crassipes	Water Hyacinth
Eleusine indica	Crowsfoot Grass
Eragrostis curvula	African Love grass
Erechities vallerianifolia	Brazilian Fireweed
Erythrina crista-galli	Cockspur Coral Tree
Erythrina X sykesii	Coral Tree
Eucalyptus lehmannii	Western Aust. Eucalypt
Euphorbia peplus	Petty Spurge
Foeniculum vulgare	Fennel
Ficus elastica	Rubber Tree
Freesia refracta	Freesia
Fumaria muralis subsp. Muralis	Wall Fumitory
Genista monspessulana	Cape (Montpellier) Broom
Gnaphalium sp.	Cudweed
Gomphocarpus fruticosus	Cottonbush
Grevillea robusta	Silky Oak
Hedera helix	Cape Ivy
Hydrocotyle bonariensis	Pennywort
Hyparrhenia hirta	Coolatai Grass
Hypochoeris radicata	Catsear (flatweed)
Impatiens walleriana	Impatients
Impomoea cairica	Coastal Morning Glory
Impomoea indica	Morning Glory
Isolepis prolifera	Club-rush
Jacaranda mimosifolia	Jacaranda
Juncus acutus	Spiny Rush
Juncus articulatus	Rush
Lagunaria pattersonii	Norfolk Island Hibiscus
Lantana camara	Lantana
Lemna disperma	Common Duckweed
Ligustrum lucidum	Broadleaved (Large-leaved) privet
Ligustrum sinense	Small leaved (Chinese) privet
Lilium formosanum	Formosan Lily
Lolium spp.	Rye Grass
Lonicera japonica	Japanese honey suckle
Macfadyena unguis-cati	Cat's Claw Creeper
Medicago polymorpha	Burr Medic

Scientific Name	Common Name
Myrsiphyllum asparagoides	Baby Smilax (Bridal Creeper)
Nephrolepsis cordifolia	Fishbone Fern
Nothoscordum gracile	Onion Weed
Nymphaea capensis	Cape Waterlily
Nymphaea gigantea	Giant Waterlily
Ochna serrulata	Ochna (Mickey Mouse Plant)
Oenothera stricta	Evening Primrose
Olea europaea subsp. africana	African Olive
Onopordum acanthium	Scotch Thistle
Opuntia stricta var. stricta	Prickly Pear
Oxalis	Oxalis
Oxalis debilis var corymbosa	Purple oxalis
Oxalis corniculata	Creeping Oxalis
Panicum repens	Torpedo Grass
Parietaria judaica	Sticky Weed
Paspalum dilatatum	Paspalum
Paspalum urvillei	Vasey Grass
Pennisetum clandestinum	Kikuyu
Phoenix canariensis	Canary Date Palm
Phyllostachys spp.	Bamboo
Phytolacca octandra	Inkweed
Physalis viscosa	Sticky Cape Gooseberry
Plantago lanceolata	Common Plantain (Ribwort, Lamb's Tongue, Ribgrass)
Plantago major	Large Plaintain
Poa annua	Winter Grass
Polygala mytifolia	Polygala
Portulaca oleracea	Pigweed
Protoasparagus aethiopicus	asparagus fern
Protoasparagus plumosus	climbing asparagus fern
Prunella vulgaris	Self-heal
Ranunculus repens	Creeping buttercup
Richardia brasiliensis	Richardia, Brazilian callallily
Richardia humistrata	Mexican Clover
Ricinus communis	Castor Oil Plant
Romulea rosea var. australis	Onion grass
Rumex conglomeratus	Clustered Dock
Rumex crispus	Curled Dock
Sansevieria trifasciata	Mother in Laws Tongue
Schinus terebinthifolia	Broad-leaf pepper tree
Senecio madagascariensis var glabrata	Fireweed
Senna pendula	Cassia
Setaria gracilis (S.geniculata)	Slender Pigeon Grass
Setaria palmifolia	Palm Grass
Setaria spp	Pigeon Grass
Sida rhombifolia	Padd's lucerne
Solanum mauritianum	Wild tabacco tree
Solanum nigrum	Blackberry nightshade
Soliva sessilis	Bindii, Jo-jo
Sonchus oleraceus	Common sowthistle
Sporobolus indicus var capensis	Parramatta Grass
Stenotaphrum secundatum	Buffalo grass
Tagetes minuta	Stinking Rodger

Scientific Name	Common Name
Taraxacum officinale	Dandelion
Thunbergia alata	Black-eyed Susan
Tradescantia albiflora	Wandering jew
Trifolium repens	White Clover
Tropaeolum majus	Nasturtium
Ulex europaeus	Gorse
Verbena bonariensis	Purple top
Vivia spp.	Vetch
Vicia salvia	
Watsonia borbonica subsp.ardernei	Watsonia

7.1.2 Plants Declared Noxious in Lake Macquarie

Botanical Name	Common Name	Category
Acacia karoo	Karoo thorn	W1
Ageratina adenophora	Crofton weed	W2
Ageratina riparia	Mistflower	W3
Alternanthera philoxeroides	Alligator weed	W1
Baccharis halimifolia	Groundsel Bush	W2
Cabomba spp. except *Caboma furcata*	Cabomba (except pink cabomba)	W4g
Cenchrus incertus	Spiny burrgrass	W2
Cenchrus longispinus	Spiny burrgrass	W2
Centaurea maculosa	Spotted knapweed	W1
Centaurea nigra	Black knapweed	W1
Cestrum parqui	Green cestrum	W3
Chromolaena odorata	Siam weed	W1
Chrysanthemoides monilifera	Bitou/Boneseed	W1
Cortaderia spp.	Pampas grass	W2
Cuscuta campestris	Dodder	W2
Eichhornia crassipes	Water hyacinth	W3
Equisetum spp.	Horsetail	W1
Gymnocoronis spilanthoides	Senegal tea plant	W1
Harrisia spp.	Harrisia cactus	W4f
Hieracium spp.	Hawkweeds	W1
Hypercium perforatum	St John's wort	W2
Kochia scoparia except *K. scoparia* Subsp. *tricophylla*	Kochia	W1
Lagarosiphon major	Lagarosiphon	W1
Lycium ferocissimum	African boxthorn	W2
Miconia spp.	Miconia	W1
Opuntia spp. except *O*. *ficus indica*	Prickly pears	W4f
Orobanche spp	Broomrape	W1
Parthenium hysterophorus	Parthenium weed	W1
Pistia stratiotes	Water lettuce	W1
Rubus fruticosus (agg.spp.)	Blackberry	W3
Salix spp.except S. babylonica	Willows	W4g
Salvinia molesta	Salvinia	W2
Sorghum halepense	Johnson grass	W2
Sorghum x alum	Columbus grass	W2
Sporobolus indicus var. major	Giant Parramatta grass	W2
Toxicodendron succedaneum	Rhus tree	W2
Xanthium spp.	Bathurst/Noogoora/alifornian/Cockle burs	W3

Notes –

W1 The presence of the weed on land must be notified to the local control authority and the weed must be fully and continuously suppressed and destroyed.

W2 The weed must be fully and continuously suppressed and destroyed.

W3 The weed must be prevented from spreading and its numbers and distribution reduced.

W4f The weed must not be sold, propagated or knowingly distributed. Any biological control or other control program directed by a local control authority must be implemented.

W4g The weed must not be sold, propagated or knowingly distributed.

7.2 Significant Species Schedule

Species having conservation significance are listed under one or more of the following headings:

a) **Protected Native Plants,** *as contained in Schedule 13 of the* ***National Parks and Wildlife Act 1974****. These plants cannot be picked without first obtaining a licence from Department of Environment and Conservation.*
b) **Species of State Significance -** *as listed under Schedule 1 and 2 of the* ***Threatened Species Conservation Act 1995****.*
c) **Regionally Significant Plant Species**
d) **Keystone Species**
e) **Trees of Cultural Significance – Lake Macquaries Significant Tree Register**

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

Seed Plants	
Botanical Name	**Common Name**
Actinotus helianthi	Flannel Flower
Archontophoenix cunninghamiana	Bangalow Palm
Blandfordia, all native species	Christmas Bells
Boronia, all native species	Boronia
Bulbophyllum, all native species	Orchid
Calanthe triplicata	Orchid
Ceratopetalum gummiferum	Christmas Bush
Crowea, all native species	Crowea
Cymbidium, all native species	Orchid
Dendrobium, all native species	Orchid
Dipodium, all native species	Orchid
Doryanthes, all native species	Giant Lily
Eriostemon, all native species	Wax Plant
Galeola, all native species	Orchid
Liparis, all native species	Orchid
Livistona australis	Cabbage Tree Palm
Papillilabium beckleri	Orchid
Persoonia pinifolia	Pine-leaved Geebung
Restio tetraphyllus	Restio
Sarcochilus, all native species	Orchid
Sprengelia incarnata	Sprengelia
Telopea, all native species	Waratah
Xylomelum, all native species	Woody Pear

Ferns and Fern Allies	
Botanical Name	**Common Name**
Adiantum, all native species	Maiden Hair Fern
Asplenium nidus	Bird's Nest Fern
Cyathea, all native species	Tree Fern
Davallia pyxidata	Hare's Foot Fern
Dicksonia, all native species	Tree Fern
Platycerium, all native species	Elk Horn and Stag Horn
Todea barbara	Tree Fern

Mosses	
Botanical Name	**Common Name**
Sphagnum, all native species	Sphagnum Moss

7.2.2 Species and Ecological Communities of State Significance

Species and Ecological Communities of State Significance include those listed as endangered and vulnerable plant species under Schedule 1 and 2 of the Threatened Species Conservation Act 1995. An up to date list of those known to exist in Lake Macquarie can be obtained from Council. Other listed species may occur in the City but have not been identified at this time. The following are State Significant Species listed at the time of drafting this document:

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

Acacia terminalis subsp terminalis, generally restricted to Sydney Harbour Foreshores. Distinct from subsp longiatialis in that subsp terminalis has 7 to 14 flowers in the head and subsp longiatialis has 5 to 9.

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 Wyee.

Callistomen linearifolius an erect shrub to 2.5m high found in damp woodland and sandstone gullies.

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.

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

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).

Cynamchum elegans, a white flowered wax plant known to exist in isolated populations from Woko National Park in the Manning Valley to the Illawarra region, Cumberland Plain and the Goulburn River National Park. Occurs predominately in dry rainforest but known to occur in litteral forest, open forest, scrub and transition zones between types.

Diuris praecox, is an orchid that occurs on Munmorah Conglomerates. Occurs in Glenrock SCA, North Wallarah Peninsula and Gateshead/Whitebridge.

Dendrobium melaleucaphium an epiphytic orchid (grows in trees) or occasionally an epilith (grows on rocks). Occurs in coastal districts and often grows on *Melaleuca stpheloides.*

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*.

Grevillea parivflora subsp parviflora, a newly identified species – no information currently available.

Genoplesium baueri, a terrestrial fleshy brittle yellowish/green or red herb which occurs in sparse scherophyll forest and in moss gardens over sandstone.

Maundia triglochinoides, a perennial herb that grows in swamps or shallow fresh water on heavy clay.

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

Prostanthera densa, an erect, compact and bushy shrub to 1 metre high found in heath on sea coast sandstone. Known to occur from Cronulla south to Royal National Park.

Rhizanthera slateri is a terrestrial saprophytic herb with a fleshy underground stem. Flowering heads mature below the soil surface or extend 2cm above the ground. This species is difficult to detect and is usually located when soil is disturbed. It grows in eucalypt forests and is known to occur in the Cooranbong area.

Rutidosis heterogama is a perennial herb with a yellow to orange daisy flower. This plant is known to occur in the Cooranbong and Wakefield areas.

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 ridge tops in small, isolated and patchy populations throughout the City

Thesium australe a short-lived herbaceous shrub with wiry stems up to 40 centimetres in length. Early records suggest species ranges from south-eastern Queensland through eastern New South Wales to Victoria.

Zannichellia palustris an aquatic plant growing totally submerged under water. Prefers brackish water adjacent to estuaries. Known to occur in wetlands in the Lake Macquarie area.

7.2.3 Regionally Significant Plant Species

Plants

Species	Status
Abrophyllum ornans	Common in Gosford Rainforests – uncommon in north.
Acacia baueri subsp. Baueri	Very rare
Acacia bulgaensis	Not conserved, but in Pokolbin State Forest.
Acacia fulva	Very rare.
Acacia leiocalyx	Maybe conserved in Munmorah SRA
Acacia longissima	Coastal hills.
Acacia mathewii	Wollembi only.
Acacia prominens	Some representation in Brisbane Water and Dharug National Park. Mainpopulation not reserved.
Acacia quadrilateralis	Probably extinct in Munmorah SRA, but occurs in Windale/Belmont area.
Acronychia wilcoxiana	Inadequately reserved. Isolated trees inWyrrabalong National Park.
Actites megalocarpa	Locality unknown.
Alyxia ruscifolia	Dry Rainforests in coastal hills of Port Stephens Shire.
Allania endlicheri	Brisbane Water National Park.
Almaleea paludosa	Redhead
Alpinia arundelliana	Not reserved.
Ancistrachne uncinulata.	Pokolbin State Forest.
Angophora subvelutina	East Maitland & in hinterland of Port Stephens
Apium prostratum var. filiforme	Moma Point.
Archontophoenix cunninghamiana	Isolated pockets - Gosford, Pinney Beach and Bouddi Rainforests.
Arthropteria beckleri	Not reserved.
Asplenium aethiopicum	Not reserved.
Asplenium attenuatum	Dry Rainforests.
Asplenium difforme	Moma Point.
Asplenium flaccidum	Rainforests
Astrotricha latifolia	Reserved in Wyrrabalong National Park.
Atriplex australasica	Five Islands.
Atriplex cinerea	Common in south, but uncommon in north -Green Point.
Austrofestuca littoralis	Tomaree Peninsula..
Baeckia diosmifolia	Brisbane Water National Park and Killingworth areas
Bauera capitata	Newcastle Bight.
Bertya brownii	Not reserved.
Blandfordia grandiflora	Status unknown.
Blechnum ambiguum	Well reserved in Brisbane Water NP
Boronia pinnata	Tomaree Peninsula.
Boronia safrolifera	Tomaree Peninsula.
Bossiaea stephensonii	Uncommon in northern part of region, not reserved.
Brasenia schreberi	Reserve status unknown.
Burmannia disticha	Locality unknown.
Caldcluvia paniculosa	Not reserved.
Callistemon shiressii	Not reserved.

Species	Status
Callistemon pachyphylla	Anna Bay
Callistemon pinifolius	Rare-Pearl- Beach Patonga.
Callitris macleayana	Southern limit.
Carpobrotus glaucescens	Glen Rock Lagoon.
Casuarina capitata?	
Cinnamomum virens	Rainforests.
Cissus terculiifolia	Not reserved.
Codonocarpus attenuatus	Rainforests.
Comesperma defoliatum	Redhead
Clematis microphylla var. leptophylla	Dry Rainforests..
Clerodendrum floribundum	Tomago Sandbeds
Conospermum ericifolium.	Tomaree Peninsula.
Crinum pedunculatum	Very rare - McMasters Beach and Gosford Lagoons
Cryptocarya rigida	Found in Bouddi Additions.
Cupaniopsis foveolata	Rare.
Daphnandra sp. 'A'	Not reserved, Watagan Mountains.
Darwinia glaucophylla	Brisbane Water National Park.
Darwinia procera	Brisbane Water National Park.
Decaspermum paniculatum	Not reserved. Probably unable to be reserved.
Dianella prunina	Pokolbin State Forest..
Dillwynia floribunda var. floribunda	Common in south, but uncommon in north Anna Bay
Dillwynia tenuifolia	Yengo National Park.
Dodonaea megazyga	Watagan Mountains.
Doryanthes excelsa	Gan Gan Hill and Toronto.
Dracophyllum secundum	Watagan Mountains.
Dysoxylum fraseranum	Not reserved. Jilliby Valley.
Dysoxylum rufum	Southern limit - Jilliby.
Enydra fluctuans	Glen Rock Lagoon..
Elaepcarpus kirtonii	Very rare
Elaeocarpus obovatus	Isolated trees in Wyrrabalong NP.
Embelia australiana	Not reserved. Probably unable to be reserved.
Endiandra discolor	Small population in Bouddi National Park, but generally inadequately reserved
Eucalyptus analiculata	Not reserved Coastal hinterland- Port Stephens.
Eucalyptus deanei	Northern limit.
Eucalyptus fergusonii subsp. dorsiventralis	Not reserved.Pokolbin and Yengo SF
Eucalyptus fergusonii subsp. fergusonii	Not reserved. Watagan State Forest.
Eucalyptus fracta	Broken Back Range
Eucalyptus grandis	Southern limit- Port Stephens
Eucalyptus hyostomatica	Not reserved. Morisset Forestry District.
Eucalyptus luehmanniana	Brisbane Water National Park
Eucalyptus michaeliana	Not reserved.
Eucalyptus microcorys	Southern limit
Eucalyptus multicaulis	Brisbane Water National Park.
Eucalyptus oblonga	Northern limit
Eucalyptus paniculata ssp. matutin	Newcastle to Port Stephens only
Eucalyptus placita	Southern limit - Newcastle
Eucalyptus prominula	Not reserved. Pokolbin and Olney SF.
Eucalyptus robusta x E. tereticornis	Not reserved. Nords Wharf.
Eucalyptus signata	Southern limit - Munmorah
Eucalyptus squamosa	Localised -Wollemi and Mulbring
Euroschinus falcata.	Included in Wyrrabalong National Park. Adequately reserved
Evolvulus alsinoides var.decumbens	Pokolbin State Forest.

Species	Status
Ficus fraseri	Included in Wyrrabalong National Park. Total population in area reserved.
Ficus watkinsiana	Tomaree Peninsula.
Flagellaria indica	Rainforests.
Goodenia bellidifolia subsp. bellidifolia	Killingworth and Redhead.
Goodenia stelligera	Newcastle Bight.
Gonocarpus chinensis subsp. verrucosa	Not reserved, occurs at the Hawkesbury River.
Gompholobium inconspicuum	Pokolbin State Forest.
Gompholobium pinnatum	Popran National Park, Tomaree and Morna Pt.
Helicia glabriflora	Rainforests
Hybanthus stellarioides	Gan Gan Hill
Hybanthus veronii subsp. veronii	Watagan Mountains.
Hymenophyllum australe	Not reserved.
Keraudrenia hillii	Very rare.
Lepidosperma quadrangulatum	Not reserved, although possible inclusion in Cockle Bay Nature Reserve.
Leptospermum emarginatum	Rare
Leptospermum liversidgei	Southern limit - Tomaree - Anna Bay
Leptospermum squarrosum	Rare - Jewells Swamp
Leucopogon amplexicaulis	Conserved in Brisbane Water NP
Leucopogon esquamatus	Tomaree Peninsula - probably extinct in Brisbane Water National Park.
Leucopogon margarodes	Probably now extinct in Brisbane Water NP
Leucopogon pleiospermus	Probably now extinct in Brisbane Water NP
Lindsaea dimorpha	Brisbane Water National Park.
Lobelia gibbosa	Belmont and Croudace Bay.
Lomandra micrantha subsp. tuberculata	
Lomandra montana	
Lomatia myricoides	Rainforests. Gosford and the Watagans.
Macarthuria neocambria	Reserved in Munmorah SRA
Maclura cochinchinensis	Not reserved.
Macroglena caudata	Not reserved..
Maundia triglochinoides	Ettymalong Creek and Wyong, not reserved
Melaleuca deanei	Very rare - Brisbane Water National Park.
Melaleuca decora	Very rare
Micrantheum ericoides	Tomago Peninsula.
Mirabelia speciosa subsp. speciosa	Very rare - Pinney Beach.
Mollugo verticullata	Tomago
Muehlenbeckia gracillima	Locality unknown.
Neolitsea australiensis	Probably extinct in the region.
Notelaea longifolia forma intermedia	Green Point Headland.
Olearia nernstii	Small population in Wambina Road NR
Olearia viscidula	Very rare.
Ottelia ovalifolia.	Wetlands - uncommon
Ozothamnus argophyllus	Rare
Persicaria elatior	Very uncommon.
Persicaria praetermissa	Seaham Swamp, but more common further north.
Persoonia laurina subsp. laurina	Watagan and Redhead.
Petrophile pedunculata	Glenrock SRA and Redhead.
Pisonia umbellifera	Myall Lakes only.
Parsonsia velutina	Not reserved.
Phebalium dentatum	
Phebalium lamprophyllum	Broken Back Range
Platycerium superbum	Rainforests
Pomaderris aspera	Blackbutt Reserve.
Prostanthera incisa (Askania)	Not reserved.
Prostanthera sp. Somersby (junosis)	Not reserved.

Species	Status
Pultenaea myrtoides	
Pultenaea rosmarinifolia	Heaton State Forest, Brisbane Water National Park and Munmorah SRA.
Restio pallens	Tomaree Peninsula.
Rhodomyrtus psidioides	Inadequately reserved. Small population in Wyrrabalong National Park.
Rhodosphaera rhodanthema	Blackbutt Reserve.
Ripogonum fawcettianum	Small population in Bouddi National Park. Inadequately reserved.
Ripogonum discolor	Rainforests.
Rulingia hermanniifolia	Very rare - Bouddi National Park.
Rupicola apiculata	Tomago Sandbeds.
Sarcopteryx stipata	Green Point Headland.
Sesuvium portulacastrum	Moma Pt, Saratoga and Chittaway Pt
Sicyos australis	Rainforests.
Sloanea woollsii	Southern limit - Port Stephens
Sprengelia incarnata	Common in south - uncommon in north - Redhead.
Sellaria radicans	Common in south, uncommon in north - Green Point.
Stylidium lineare	Tomaree Peninsula.
Styphelia laeta var. latifolia	Conserved in Brisbane Water National Park.
Symplocos stawellii	Rainforests - Gosford and Green Point.
Syzygium francisii	Wambina Road Nature Reserve.
Syzygium paniculatum	Wyrrabalong NP, Fletchers Glen and Ourimbah Creek Valley. Inadequately reserved.
Tetrasigma nitens	Not reserved.
Trigloochin microtuberosum	Very rare.
Typhonium brownii	Very rare
Typhonium eliosurum	Not reserved.
Velleia spathulata	Catherine Hill Bay.
Vittaria elongata	Wambina Road Nature Reserve
Wilsonia backhousei	Wamberal Lagoon Nature Reserve.
Melaleuca biconvexa	Not reserved.
Woollsia pungens	Common in south - uncommon in north - Anna Bay - Tomaree Peninsula.
Xanthorrhoea fulva	
Zieria latifolia	Tomago Sandbeds

Source: Payne 1998
(Payne (1998a) *Lower Hunter and Central Coast Regional biodiversity Strategy Stage 1*, prepared by R. Payne for NSW Department of Planning draft February

7.2.3.1 Rare or Threatened Australian Plant Species (ROTAP)

There are some species occurring in the City listed as Rare or Threatened Australian Plant (ROTAP) species (Briggs and Leigh 1995) but are not listed as threatened species in the legislation. These include:

Callistemon shiressii
Eucalyptus fergusonii subsp. fergusonii
Gonocarpus salsoloides
Typhonium elisoursum
Macrozamia pauli-guilielmi subsp flexuosa

7.2.3.2 Vegetation of Gosford-Lake Macquarie

As part of the mapping of vegetation in the Gosford-Lake Macquarie Area Benson 1986 compiled a list of species with particular conservation significance. These species are described below.

- *Galeola cassythoides* – a climbing orchid which feeds on dead or decaying organic matter, (saprophyte) which occurs scattered throughout the area. This was previously listed as rare (Leigh et al.1981) but was not included in the Briggs and Leigh 1988 or 1995 (Winning, 1990b).
- *Hakea bakerana* – is considered to be a regionally significant species, which is threatened by urban development. Benson (1986) lists this species to be uncommon.
- *Acacia quadrilateralis* – this species is considered rare by Benson (1986) but not by Briggs and Leigh (1988). It has been noted in the Redhead area by Baxter and McDonald (1984) (Winning, 1990b) and possibly in the Jewells area (Travers Morgan, 1992).
- *Xanthorrhoea resinosa ssp fluva,* a grass tree that may occur in the Redhead district (Winning 1990b).
- *Alpina caerulea* – the Native Ginger Lily, which grows in rainforest and wet Eucalypt forests. It is at its southern limit in Lake Macquarie (Winning, 1990b). Benson (1986) reports it to occur at Martinsville.
- *Botrychium australe* – a fern which is considered to be uncommon and is reported to occur at Martinsville (Benson 1986).
- *Eucalyptus robusta* – is considered to be a significant species flowering prolifically in winter. As the one of the few flowering Eucalypts in this area, it provides food for many species including a number of endangered species of birds (Regent Honeyeater and the Swift Parrot), the Koala and the Squirrel Glider. This species is considered to be inadequately conserved (Payne pers comm.) and has been disproportionately subject to human disturbance (Travers Morgan, 1992).

7.2.3.3 New or Special Species

- *Grevillea humulis* – a new species of Grevillea was discovered in 1999 at Northlakes (north of Edgeworth).

- *Xanthorrhoea resinifera* - An unusual form of this species which has not been recorded by the National Herbarium of NSW occurs in the vicinity of Catherine Hill Bay Village. The specimens are much higher (up to 4 metres than ever recorded before and the age of this population would be measured in hundreds of years. It is also the most northerly occurrence of this species (RBGS 1994).

- *Bulbostylis densa* - was located in the Jewells Swamp area and was considered by SWC (1996b) to be locally important as it has a limited distribution within NSW and is close to it's southern limit in Lake Macquarie.

7.2.3.4 Regionally Significant Vegetation Communities

Regional Biodiversity Conservation Strategy

The following vegetation communities are likely to be of conservation significance in Lake Macquarie because of their natural rarity and the historical extent of clearing.

No.	Vegetation Community	Area in Lake Macquarie (ha)
	Seagrass	
1a	Coastal Warm Temperate – Subtropical Rainforest	347
4	**Littoral Rainforest**	**6**
5	Alluvial Tall Moist Forest	1743
11	Coastal Sheltered Apple – Peppermint Forest	302
15	Coastal Foothills Spotted Gum – Ironbark Forest*	7971
17	Lower Hunter Spotted Gum Woodland*	287
30	Coastal Plains Smooth-barked Apple Woodland*	16675
31	Coastal Plains Scribbly Gum Woodland*	4501
33	Coastal Sand Apple-Blackbutt Forest	570
34a	Heath	100
37	**Swamp mahogany-Paperbark Forest**	**560**
38	Redgum Rough Barked Apple Forest	311
39	**Apple – Palm Gully Forest**	**118**
40	**Swamp Oak Rushland Forest**	**344**
40a	**Rushland**	**72**
41	**Swamp Oak Sedge Forest**	**543**
42	**Riparian Melalueca Swamp Woodland**	**1844**
42a	Melalueca Scrub	70
43	**Wyong Paperbark Swamp Forest**	**990**
45	**Lepironia Swamp**	**3**
46	**Freshwater Wetland Complex**	**52**
47	Mangrove – Estuarine Complex	113
47a	Saltmarsh	46
48	Coastal Clay Heath	277
50	Coastal Sand Scrub	184
51	Coastal Headland Complex	6
53	Beach Spinifex	13

Notes –

Bold type depicts Endangered Ecological communities (EEC) under Threatened Species Conservation Act 1995 and communities that intergrade with EECs.

* depicts regionally significant habitat.

Source: NEWS (2000) Correspondence from the NEWS to Lake Macquarie Council 26 September 2000. Data derived from the Lower Hunter and Central Coast Regional Environmental Strategy – Regional Biodiversity Conservation Strategy Stage 2 and Lower Hunter Central Coast Regional Environmental Strategy 2003. Refer to Council's State of the Environment Report 2004 for more details.

7.2.4 Keystone Species

7.2.4.1 Flora and Fauna Habitat

In total there are 456 different species of fauna in the City made up of 303 species of birds, 68 species of mammals, 48 species of reptiles, 37 species of amphibians and 17 species of native freshwater fish.

What has become apparent from the City Wide Vegetation, Fauna Habitat, and Biodiversity mapping is that all the vegetation communities provide important habitat for all fauna not just Threatened Species regardless of the significance allocated. The project concluded:

> "The majority of vegetation communities/habitats have the potential to support a large number of threatened flora and fauna species. Therefore the natural areas within the City of Lake Macquarie have overall high conservation significance" (BIOS's Research 1998).

A number of widespread communities including *Angophora costate /Corymbia gummifera* Open Forest, Scribbly Gum Open Forest/Woodland and *Eucalyptus maculata* Open Forest contain important habitat resources for threatened flora and fauna species, as well as regionally significant and common species (Biosis Research 1998).

Such habitat resources include food (fungi, leaves seed flowers, blossom and fruit) shelter for nesting and roosting (tree hollows, fallen logs, rocks etc) and water. However, the size of the bushland fragment, its linkages to other fragments, the quality of the habitat and the degree of disturbance need to be considered to determine the viability of any population of threatened species that is present.

7.2.4.2 Wetlands and Wetland Vegetation Communities

All wetland vegetation communities are regarded to be of high conservation significance because they:

- have very limited distribution and many have been cleared and filled in the past,
- have an important role in water quality by filtering runoff ,
- play an important role in the water cycle by recharging groundwater and storing flood waters,
- support a diverse and unique range of flora and fauna species which often do not occur elsewhere, and
- support either directly or indirectly a number of threatened and regionally significant fauna species.

These figures exclude State Forests and National Parks. Vegetation communities marked with an (*) are considered to have high conservation significance and those communities in bold type are recommended for no further loss.

Vegetation Community	Approx. Area in City (ha) #	% of Veg. Cover
***Angophora costata /Corymbia gummifera* Dune Open Forest /Woodland**	63.8	0.24%
Angophora costata/Eucalyptus maculata Open Forest * (+)	2556.7	9.50%
Eucalyptus maculata Open Forest * (+)	4854.4	18.05%
Eucalyptus pilularis Open forest * (+)	1066.7	3.97%
***Eucalyptus piperita/Angophora costata/Eucalyptus resinifera* Open Forest ***	37.1	0.14%
***Syncarpia glomulifera/Eucalyptus piperita* Open Forest ***	68.0	0.25%
***Eucalyptus saligna* Tall Open Forest ***	853.0	3.17%
***Eucalyptus tereticornis* Tall Forest ***	793.1	2.95%
***Eucalyptus robusta* Forest ***	367.7	1.37%
***Livistona australis* Palm Forest ***	18.8	0.07%
Rainforest *	267.0	0.99%
Grass Heath *	132.7	0.49%
Closed Heath *	2.7	0.01%
***Banksia* Heath ***	434.8	1.62%
***Casuarina glauca* Forest ***	194.5	0.72%
***Melaleuca* Swamp Forest ***	601.6	2.24%

Vegetation Community	Approx. Area in City (ha) #	% of Veg. Cover
***Eucalyptus resinifera/Melaleuca styphelioides* Open Forest ***	5.6	0.02%
Sandstone Heathland *	0.2	0.00%
Rushland *	0.1	0.00%
Swamp *	49.5	0.18%
Ectones (all types) *	1957.0	7.28%
Total area mapped by Biosis 1998 to have high conservation significance	**14625.0**	**53.25%**
Angophora costata / Corybia gummeifera Open Forest (except in the Toronto and Morisset areas)	5370.2	19.96%
Scribbly Gum Open Forest / Woodland	5475.7	20.36%
Angophora floribunda Open Forest (except in the West Wallsend area)	222.2	0.83%
Total area mapped by Biosis 1998	**11068.1**	**41.15%**
Swamp Forest Eucalyptus robusta/Melaleuca/Casuarina *	74.0	0.28%
Swamp Forest *Eucalyptus robusta* *	25.5	0.09%
Swamp Forest/Scrubland- *Melaleuca* *	326.0	1.21%
Swamp Forest *Casuarina glauca & Melaleuca* *	79.9	0.30%
Swamp Forest *Casuarina glauca* *	95.1	0.35%
Swamp Forest *Livistona australis /Eucalyptus robusta/ Melaleuca/ Casuarina* *	104.9	0.39%
Swamp Forest *Casuarina /Mangrove* *	13.4	0.05%
Swamp Forest/Scrubland – *Mangrove* *	109.5	0.41%
Open Water *	167.9	0.62%
Intermittent Fresh Meadow *	13.3	0.05%
Perennial Fresh/Brackish Rushland, Reedland, Reedswamp, Meadow *	77.8	0.29%
Phragmites Reedswamp *	15.3	0.06%
Typha Rushland *	156.8	0.58%
Wet Heath *	75.9	0.28%
Saltmarsh *	171.2	0.64%
Total area mapped by SWC 1998	**1506.5**	**5.60%**
Total Vegetation	**26899.6**	

(Derived from Biosis Research 1998 and SWC 1998 (LMCC 1999)

Note –

Vegetation Communities mapped from 1996 air photos.

Vegetation communities, which have a high conservation value in certain parts of the city include:

- *Angophora costata/Eucalyptus maculate* Open Forest (around the Toronto and Morisset areas and Wallarah peninsula)
- *Angophora floribunda* Open Forest (around the West Wallsend area); and
- *Angophora costata/Corymbia gummifera* Open Forest (Toronto and Morisset Planning areas only).

7.2.4.3 Bushland Corridors

Corridors are strips of native vegetation that can be used to join bushland fragments. By linking bushland fragments, their combined ecological viability increases. Once joined, fragments function more effectively for the:-

- movement of plant pollinators,
- dispersal of juvenile fauna,
- re-colonisation after fire,
- escape during fire, and
- transfer of genetic diversity between species.

To be effective for many flora and fauna species, corridors need to be at least 100 to 200 metres wide. Corridors should be wider than their length, however, a corridor of any width is better than no corridor at all. The width of corridors may play an important role in species survival. For a given corridor, the wider it is:-

- the greater the diversity of species which will use it
- the more regularly it will be used, and
- the less hazardous it is for fauna to use, (since the "edge effect" is less).

It is also important to duplicate corridors especially where a corridor is less than the optimum width. This allows alternative routes for movement.

The smaller bat species, the large forest owls, the Fruit Doves and the Glossy Black Cockatoo are some of the species that forage as they move and are therefore much more likely to use wide corridors. Many flora species, rely on the presence and movement of pollinators for their survival. Therefore, corridors are important for both stationary and mobile species.

The maintenance of corridors is fundamental to maintenance of the ecological resources of the City. At the very least, existing corridors within the City need to be maintained at their current width or enhanced where possible.

7.2.5 Significant Tree Register

Significant trees are those which exhibit aesthetic, historical, scientific or social value for past, present or future generations. Inclusion of trees on the "**Significant Tree Register"** shall not preclude removal but flag the need for especially careful appraisal of any proposal to prune or remove them.

The criteria for listing a tree, either native or exotic, on the "Significant Tree Register" shall include:

- Historic
- Contribution to landscape/townscape
- Commemorative tree
- Belonging to a historic building/garden/park
- Exceptionally old or fine specimen
- Curious growth habit or physical appearance
- Horticultural/scientific value
- Unusually large
- Rare to area
- Outstanding aesthetic quality
- Fauna/bird habitat tree

Procedure for Permanent listing of trees on the Significant Tree Register

1. Nominations for additions or nominations for removal of trees on Council's Significant Tree Register can be made in writing from any member of the community, a government organisation, landowner, Councillor or Council Officer. The correspondence should outline the reasons for listing or delisting.

2. The listing of the tree on the register, or removal of the tree from the register, is to be investigated by Council's Tree Assessment Officer in consultation with other Council officers or relevant experts.

3. The landowner is to be notified in writing and given the opportunity to respond to the proposed listing or delisting.

4. A report is to be prepared for Council indicating the reasons for listing or delisting, the landowner's response (if any), and the results of the assessment.

5. Council resolves to make the listing/delisting or not to list/delist the tree on the Significant Tree Register.

Procedure for Interim listing of trees on the Significant Tree Register

1. Where Council or the General Manager is satisfied that a tree, which could qualify as a significant tree, is under threat of damage or removal, interim listing of the tree on the Register may occur for three months.

2. The landowner is to be notified of the interim listing and given the opportunity to comment.

3. The listing is to be investigated by Council's Tree Assessment Officer in consultation with other Council officers or relevant experts.

4. A report is to be prepared for Council indicating the reasons for listing, the landowner's response (if any), and the results of the assessment.

5. Council resolves to make the interim listing a permanent listing or not to permanently list the tree.

The Significant Tree Register may be formally updated and recognised by Council every two years or earlier if deemed necessary.

7.2.5.1 Significant Tree Register

This list of Significant Trees is as at the date of the preparation of this Plan. Other Significant Trees may have been identified and listed. Contact Council's Tree Preservation Officer to view the most recent version of the Significant Tree Register

STR ITEM NO.	SUBURB	ADDRESS	TREE
0001	Argenton	Lake Road – Waratah Golf course entrance	Canary Island Date Palm
0002	Balcolyn	1a Queen Street – Shingle Splitters Point – accessed at the end of Queen Street	Norfolk Island Palm
0003	Barnsley	Appletree road – cnr Northville Drive	Canary Island Date Palm
0004	Blackalls Park	19 Blackalls Avenue	Canary Island Date Palm
0005	Bonnells Bay	71 Harbord Street	Angophora Costata
0006	Cardiff	393 Main Road	Cedrus Deodara
0007	Cardiff	248 Main Road – next to h.no.242 – former stationmasters house – next to railway station	Canary Island Dale Palm
0008	Cardiff	Cnr Main Road & Macquarie Road – zoned as road, next to lot prt1, DP 17169, 304 Main Road	Pine tree
0009	Cardiff	Cnr Myall Road & Macquarie Road – outside Cardiff RSL	Norfolk Island Pines
0010	Charlestown	Pearson Street – very top of Hilltop Plaza, near Rebel Sport – zoned as road: Pearson Street	Plane Tree
0011	Charlestown	Jennifer Street – end of Jennifer Street in winding creek reserve behind houses 71 & 73 at end of cul-de-sac.	Eucalyptus Fergosomil
0012	Dudley	Boundary Street – Dudley Public School – first gate on right after you turn into Boundary Street	Canary Island Date Palm
0013	Eraring	Cnr Rocky Point Road & Foreshore Street	Bunya Pines
0014	Eraring	45 Payten street	Gums & Bunya Pines
0015	Eraring	Payne Street	Figs

STR ITEM NO.	SUBURB	ADDRESS	TREE
0016	Eraring	Point Piper Road – strung out along Point Piper Road in the area indicated on the map below	Melaleuca
0017	Glendale	Main road – Cardiff Railway Workshops. Now occupied by Clyde Engineering. Entrance from main road across from Glendale Road. Photos taken from the back of the railway workshops.	Canary Island Date Palms
0018	Holmesville	94 Seaham Street	Canary Island Date Palms
0019	Marong Point	George Street	Norfolk Island Pines
0020	Morisset	Bridge Street – entrance road to Morisset Hospital	Cristina Convert
0021	Morisset	Bridge Street – Morisset Hospital grounds	
0022	Morisset	Macquarie Street	Morisset's tree
0023	Rathmines	Stilling Street – foreshore park	Norfolk Island Pines
0024	Redhead	1 Collier Street – Lambton Colliery	Norfolk Island Pines
0025	Redhead	11 Beach Street	Norfolk Island Pines
0026	Redhead	2a Beach street – Redhead Surf Club Carapook	Norfolk Island Pines
0027	Redhead	87 Redhead Road - "The Gables"	Canary Island Palm
0028	Redhead	87 Redhead Road – "The Gables"	Tea Tree hedge
0029	Teralba	5 Victoria Street	Canary Island Date Palm
0030	Teralba	52 James Street	Cedrus Deodara?
0031	Teralba	7 Racecourse Road – across from Teralba Bowling Club	Canary Island Date Palms
0032	Toronto	Cnr Victory Parade & Cary Street	Canary Island Date Palms
0033	Toronto	1 Day Street – right on water – lefthand side at end of Day Street	Canary Island Date Palms
0034	Toronto	Renwick Street – on Renwick Street around numbers 5-11	Norfolk Island Pines
0035	Toronto	Renwick Street – Along both sides of Renwick Street, from Bay Street to Day Street	Jacarandas
0036	Toronto	The Boulevard – south side of The Boulevard from Victory Parade to Cary Street (retail section)	Figs
0037	Toronto	The Boulevard – north side of The Boulevard from Victory Parade to Cary Street (retail section)	Canary Island Date Palms
0038	Toronto	28 Victory Parade – foreshore park. Straight across from the end of The Boulevard on lakes edge	Canary Island Date Palms
0039	West Wallsend	41 Brown Street – at front of Uniting Church in Brown Street	Canary Island Date Palm
0040	West Wallsend	40 Boundary Road – across from the entrance to Sugar Valley Golf Course	Bunya Pine
0041	West Wallsend	Cnr Carrington Street & George Booth Drive – on reservoir & pumping station site – north west corner of intersection	Bunya Pine
0042	West Wallsend	Location to be confirmed	Silky Oaks

STR ITEM NO.	SUBURB	ADDRESS	TREE
0043	West Wallsend	Location to be confirmed	Coral Trees
0044	West Wallsend	Location to be confirmed	Canary Island Date Palms
0045	Rathmines	Location to be confirmed	Figs
0046	Rathmines	Location to be confirmed	Melaleuca
0047	Catherine Hill Bay	Hale Street – across the road from Surf Club	Norfolk Island Pines
0048	Catherine Hill Bay	26A Flowers Drive – behind school	Norfolk Island Pines
0049	Caves Beach	155A The Esplanade – Caves Beach surf club	Norfolk Island Pines
0050	Swansea	Wallarah Road – in and around caravan park on headland	Melaleuca
0051	Swansea	12 Channel Street – in Burragallana Reserve. Trees dotted around soccer fields	Melaleucas
0052	Swansea	2 Chalmers Street – in yard of house right next door to Swansea RSL	Magnolia Grandiflora
0053	Swansea Heads	9 Northcote Avenue	Norfolk Island Pines
0054	Swansea	Bowman Street	Canary Island Date Palms
0055	Little Pelican	Little Pelican Road? – about halfway along road to Little Pelican on left side mainly.	Melaleuca
0056	Blacksmiths	2 Gommera Street – on left before Swansea bridge	Canary Island Date Palms
0057	Blacksmiths	Pacific Highway – along east side of road between Maneela Street & Tirriki Street in reserve	Melaleuca
0058	Pelican	5 Soldiers Road – Cnr Pacific Highway & Soldiers Road – NW corner of intersection	Cabbage Tree Palms
0059	Pelican	Lakeview Parade – foreshore park near boat ramp	Cabbage Tree Palms
0060	Pelican	Lakeview Parade – foreshore reserve. Can be accessed via a path across from 72 Lakeview Parade	Mangroves
0061	Pelican	53A Karog Street – Cnr Karoburra Street & Piriwal Street – paperbarks are on Piriwal Street side of Pelican Public School	Melaleucas
0062	Pelican	864 Pacific Highway – Pelican Airport. Aeropelican	Cabbage Tree Palms
0063	Marks Point	2A Village Bay Road – Cnr Village Bay Road and Marks Point Road – in park on right hand side as you drive down Marks Point Road	Figs
0064	Marks Point	81 Marks Point Road – on right just after park. May not be the correct tree.	Hoop Pine
0065	Belmont South	Pacific Highway – foreshore park between Paley Crescent & Cold Tea Creek	Coral Tree
0066	Belmont	Bellevue Road – right in middle of road – appears to be the focus of cul-de-sac	Norfolk Island Pine
0067	Belmont	23 Bellevue Road	Magnolia Grandiflora
0068	Belmont	1 Ada Street	Hoop Pine
0069	Belmont	25 Brooks Parade – foreshore park on Brooks Parade	Canary Island Date Palms
0070	Belmont	25 Brooks Parade – foreshore park on Brooks Parade	Figs

STR ITEM NO.	SUBURB	ADDRESS	TREE
0071	Belmont	50 Brooks Parade – Cnr Marks Street & Brooks Parade – in park on corner.	Norfolk Island Pines
0072	Belmont	142 Ross Street	Norfolk Island Pines
0073	Belmont	Cnr Evans Street & Ross Street – across from Belmont 16ft'ers Club in Laughlin Park	Canary Island Date Palms
0074	Valentine	151A Dilkera Avenue – Green Point Reserve. Can be accessed at the end of Dilkera Avenue Valentine or Ross Street Belmont	Casuarina
0075	Valentine	151A Dilkera Avenue – Green Point Reserve – can be accessed at the end of Dilkera Avenue Valentine or Ross Street Belmont	Rainforest elements
0076	Warners Bay	John Street – in Westpac carpark behind Esplanade Shops – off John Street	Eucalypt
0077	Warners Bay	The Esplanade – across from shops	Canary Island Date Palms
0078	Warners Bay	The Esplanade – across from shops	Figs
0079	Warners Bay	Fairfax Road - on Cnr Fairfax and Medcalf Streets	Canary Island Date Palm
0080	Warners Bay	50 Fairfax Road – just up from Warners Bay Private Hospital – on same side	Canary Island Date Palms
0081	Speers Point	380 The Esplanade – 3 or 4 houses up on Speers Point side of Fairfax & Esplanade intersection	Canary Island Date Palms
0082	Speers Point	328 The Esplanade	Canary Island Date Palms
0083	Speers Point	290 The Esplanade – between Thompson & Morse Streets	Canary Island Date Palm
0084	Speers Point	288 The Esplanade – between Thompson & Morse Streets	Canary Island Date Palm
0085	Speers Point	284 The Esplanade – between Thompson & Morse Streets	Canary Island Date Palm
0086	Speers Point	276 The Esplanade – between Thompson & Morse Streets	Canary Island Date Palm
0087	Speers Point	The Esplanade – between Thompson & Morse Street	Canary Island Date Palms
0088	Speers Point	274 The Esplanade – between Thompson & Morse Streets	Fig?
0089	Speers Point	The Esplanade – between Thompson & Morse Streets	Canary Island Date Palms
0090	Speers Point	208 The Esplanade	Canary Island Date Palm
0091	Speers Point	The Esplanade – Speers Point Park – access from the end of Main Road	Norfolk Island Pines

8.0 REFERENCES

Baxter N. & Mac Donald K. (1984) *Flora of the Redhead –Dudley- Jewells Area* In B. Gilligan (ed) Awabakal Nature Reserve reference handbook, NSW Department of Education, Awabakal Field Studies , Dudley.

Benson D.H. (1986) "The Vegetation of the Gosford and Lake Macquarie 1:100,000 map sheet," *Cunninghamia* 1(4) 467-489.

Biosis Research(1998) *Lake Macquarie City Wide Vegetation and Fauna Habitat and Biodiversity Mapping Project*, prepared by C. Hall & D Saunders (Biosis Research Pty Ltd) for Lake Macquarie Council, November 1998.

Briggs J.D. and Leigh J.H. (1988) *Rare or Threatened Australian Plants,* Revised Edition, Special Publication No 14 Australian National Parks and Wildlife Service, Canberra.

Briggs J.D. and Leigh J.H. (1995) *Rare or Threatened Australian Plants, 1995* Revised Edition, CSIRO & Australian Nature Conservation Agency, Canberra.

LMCC (1998/1999) State of the Environment Report 1998/1999, Lake Macquarie Council, November1999.

LMCC (1999) *Environmental Strategy, Technical Report for Lifestyle 2020* prepared by Robbie Economos- Shaw for Lake Macquarie City Council Unpublished May 1999.

LMCC (2004) Lake Macquarie City Council State of the Environment Report 2004

LHCCREMS (2003a) Lower Hunter and Central Coast Extant Vegetation Map 2003 and pre 1750 Vegetation Map 2003, Lower Hunter and Central Coast Regional Biodiversity Conservation Strategy November 2003.

LHCCREMS (2003b) Regional Biodiversity Conservation Assessment and Implementation Plan for the Hunter and Central Coast, Volume 3 and 4, prepared by Sophie Powrie and Meredith Laing for the Lower Hunter and Central Coast Regional Environmental Management Strategy November 2003 unpublished.

RBGS (1994) Correspondence from the Royal Botanical Gardens, National Herbarium Sydney, to Mr T. Tame, September 1994.

SWC (1998) *Lake Macquarie Wetlands Management Study* prepared by Shortland Wetland Centre Consultancy for Powercoal, December 1998.

SWC (1996b) "Flora and Fauna Assessment for the Proposed Sewage Rinsing Main between Windale and Belmont", prepared by SWC, December 1996. Appendix F in Environmental *Impact Statement for Windale to Belmont Rising Main Crossing of Jewells Swamp,* prepared by Patterson Britton & Partners Pty Ltd for Hunter Sewerage Project, April 1997, Report No HSP 9712.

Todd M. (1998) *Lake Macquarie Biodiversity Project, Fauna Database Report* prepared by M. Todd of the Department of Biological Sciences, University of Newcastle for Lake Macquarie Council and the Lake Macquarie Catchment Management Committee. This project has been supported by the One Billion Trees/Save the Bush Program a Federal Government Initiative administered by the Australian Nature Conservation Agency as well as Total Catchment Management Funds administered by the NSW Government.

Travers Morgan (1992) Travers Morgan Pty Ltd in association with Patterson Consultants Pty Ltd, *Jewells Wetland Local Environmental Study August 1992* prepared for Lake Macquarie City Council.

Winning G (1990) *Lake Macquarie Natural Areas Study – A conservation Study of the Remnant Natural Areas in Lake Macquarie City,* The Wetlands Centre 1990. Lake Macquarie Research Grant Project No 90-1.

Wyong Shire Council (2000) *Tree Management Development Control Plan No 14*

APPENDICES

APPENDIX 1 OTHER LEGISLATION APPLYING TO TREE REMOVALS, VEGETATION MANAGEMENT AND CLEARING

Applications for tree clearing and removals will also need to comply with the provisions of other legislation, including but not limited to the following -

a) **National Parks and Wildlife Act 1974** (Schedules 12 and 13) - fauna habitat, protected plants;

b) **Threatened Species Conservation Act 1995** - ecological communities, critical habitat, endangered and vulnerable species, key threatening processes, recovery plans;

c) **Native Vegetation Conservation Act 1997** - clearing native vegetation, regional vegetation management plans, and property agreements.

d) **Native Vegetation Act 2003 –** clearing native vegetation, property vegetation plans.

e) **Fisheries Management Act 1994** - prohibits cutting of mangroves;

f) **Rivers and Foreshores Act 1948** - a permit is required under Section 3A of this Act for excavation or removal of vegetation within 40 metres of the mean high water mark of any creek, river, lake, lagoon or wetland prior to commencement of any excavation or removal of vegetation in these areas;

g) **Rural Fires Act 1997** - authorised removal of fire hazards;

h) **New South Wales Heritage Act 1977** (Sections 129A and 139) - sites under conservation orders, relics;

i) **Noxious Weeds Act 1993** - clearing of noxious weeds;

j) **State Environmental Planning Policy No 14** - Wetlands;

k) **State Environmental Planning Policy No 26** - Littoral Rainforests;

l) **State Environmental Planning Policy No 44** - Koala Habitat

APPENDIX 2 SOURCES OF INFORMATION AND CONTACTS

Reference Information Available from Council

a) Rural Dwellings and associated tourism Development Control Plan (Draft)

b) Information Sheets:

- Foreshore and Streambank planting guide
- Flora and Fauna Guidelines

Contact Phone Numbers and Addresses

Lake Macquarie City Council
Phone: (02) 4921 0333
Fax: (02) 4958 7257
Address: Box 1906 Hunter Regional Mail Centre NSW 2310

Department of Planning (Newcastle)
Phone: (02) 4929 4346
Fax: (02) 4929 6364
Address: PO Box 2213 DANGAR NSW 2309

Department of Environment and Conservation (Parks and Wildlife Division)
Regional Office – Nelson Bay
Phone: (02) 4384 8200
Fax: (02) 4381 5914
Address: Locked Mail Bag 99 NELSON BAY NSW 2315

Head Office - Sydney
Phone: (02) 9995 5000
Fax: (02) 9995 5999
Address: P O Box A290 SYDNEY SOUTH NSW 1232

National Arborists Association
Phone: (02) 9970 7899
Address: PO Box 1184 DEE WHY NSW 2099

Wildlife Animal Rescue - 'Native Animal Trust Fund'
Phone: 0500 502294 – Lower Hunter – 24 hours

APPENDIX 3 TREE ASSESSMENT REPORT

Lake Macquarie City Council

TREE ASSESSMENT REPORT

CITY OF Lake Macquarie

Doc No _____ File No _____

Application No. _____ Address where trees located _____

Inspection by (initials only) _____ Date of inspection _____

Tree No.1 _____ Tree No. 2 _____ Tree No. 3 _____

TREE ASSESSMENT CRITERIA Code denoted by bold highlight or values in per cent or answer yes/tick or no/cross	NO. 1	NO. 2	NO. 3	NOTES
Trunk diameter (m@DBH)				
Height (m)				
Canopy (m)				
Condition - Healthy, stable, unhealthy, unstable				
Trunk structure - single/multi				
Codominance Y/N				
Included bark Y/N				
Trunk damage/decay Y/N				
Age - Young/semi-mature/mature				
Crown cover %				
Major deadwood Y/N				
Epicormic Shoots Y/N				
Root damage Y/N				
Borers Old/New Y/N				
Stress Fractures Y/N				
Recommendation Remove/Prune				

SITE DIAGRAM

P-88 1/03*