

BASELINE SURVEY REPORT

Project: Regeneration of Coolowyn Road and Uworra Close, Goulburn NSW

Client: Bob Philipson, Sustainable Goulburn Mulwaree

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Contents

Introduction	1
Existing tree canopy cover	2
Why canopy cover matters	2
Identification of vegetation communities nearby	3
Tree assessment.....	4
Tree assessment image.....	5
Soil erosion and soil loss results	6
Why soil erosion occurs	7
How to prevent soil erosion.....	8
References	8

Introduction

This report includes the following information:

- A review of information from topographic maps, satellite data and aerial photographs to:
 - estimate existing canopy cover and
 - assess the regeneration site in the context of the surrounding area.
- A tree assessment of all trees on public land within the project area.
- A survey of soil loss and soil erosion on public land within the project area.

Please note that tree inspections and soil inspections were limited to a visual review.

Existing tree canopy cover

Using aerial imagery from Google Earth Pro (see below) and the tools available in that program the following canopy cover estimates were made.

Total study area = 82 381m² (20.4 acres)

Tree canopy area = 9795.24m²

Canopy cover = 12%



Why canopy cover matters

Trees in the urban environment have many benefits. These benefits are environmental, social and economic. Some of the environmental benefits are providing shade and cooling, reducing stormwater flows and nutrient loads and reducing air pollution. Social benefits include encouraging outdoor activity and improving community cohesion, and economic benefits are increasing property values and avoiding costs of infrastructure damage. Cities around Australia are setting targets for canopy cover, as shown below.

Name	Canopy Target
ACT Government Urban Forest Strategy	30% by 2045
City of Sydney Urban Forest Strategy	27.13% by 2050
City of Melbourne Urban Forest Strategy	40% by 2040
City of Perth Urban Forest Plan	30% in 30 years

(GallagherStudio & Studio Zanardo, 2021), (ACT Government, 2021)

Identification of vegetation communities nearby

The diagram below shows the study area outlined in yellow. The red circle defines an area within a 2km radius of the study area. Two important vegetation communities within this area are identified.




The first important vegetation community within a 2km radius is the West Goulburn Bushland Reserve, a 20 ha public reserve. This area has been assessed by Lori Gould, Director Environmental Restoration Design & Planning, who found rare and threatened species in the area.

The Wollondilly River corridor is the second important vegetation community close to the study area. River corridors differ from the adjacent areas in several ways. They often have better soils, higher moisture and different plant species. For these reasons, riparian land provides the habitat features needed by many wildlife species. For some species this habitat is critical. The components of habitat that are important are food, water, shelter from predators and from harsh physical conditions and safe sites for nesting and roosting. (Australian Government, 2004)

A healthy riparian zone and strong connections to other parts of the catchment are important for wildlife. The study area is located midway between two vegetation communities. It would contribute to a corridor for wildlife movement were it to be replanted with native trees and understory plants.

Tree assessment




The following tree assessment includes all existing trees on public land within the study area.

Tree No / Group No	Code	Botanical name	Common name	Height (m)	Canopy diameter (m)	No Trunks	General Health	Comments	Image/s
Tree 1	Euj	Eucalyptus species - juvenile		1.8	1	1	Fair	Species difficult to identify while still a juvenile. Tree leggy with limited foliage.	
Group 1	BRp	Brachychiton populneus	Kurrajong	2 to 3	2	1	Good	7 trees, sturdy and in good health. Note that sapling growth for this species is very slow, but these trees are established and should now be very hardy. One tree has died and should be removed.	
Tree 2	Upa	Ulmus parvifolia	Chinese elm	3	3	1	Fair	Tree looking stressed. Perhaps suffering from too much moisture in recent wet years.	
Group 2	Las	Lagerstroemia species	Crepe myrtle (white)	2	2	1	Good	Trees sturdy and healthy.	
Group 3	Pca	Prunus cerasifera	Cherry plum	4	4	multi	Fair	Prunus cerasifera is regarded as an environmental weed in NSW. These trees are affected by pear and cherry slug which defoliates the leaves but will not kill the tree.	

Tree assessment image



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

-  Tree in good health
-  Tree in fair health
-  Dead tree for removal
- BRp

 Tree identification code - refer to tree assessment table

Soil erosion and soil loss results



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-  Areas of soil erosion
-  Areas of soil loss due to surface water flow

Examples of soil erosion in the study area:



Examples of soil loss in the study area:



Why soil erosion occurs

Soil erosion occurs when unprotected soil particles are dislodged by the impact of raindrops or surface water flow. These loosened particles may then be moved by stormwater or wind. In urban areas this process is often started when a site is developed and protective vegetation is removed. The results can be damage to property by sediment deposits in streets and drains or through the silting up of downstream water bodies.

How to prevent soil erosion

Surface cover is a major factor to control erosion because it reduces the impact of raindrops falling on bare soils and wind removing soil particles. It also reduces the speed of water flowing over the land. Erosion risk is significantly reduced when there is more than 30% soil cover. (Queensland Government, 2013)

References

ACT Government, 2021. *Urban Forest Strategy*, Canberra: ACT Government.

Australian Government, 2004. *Riparian Habitat for Wildlife*, s.l.: s.n.

GallagherStudio & Studio Zanardo, 2021. *Urban Tree Canopy Targets & Development Controls Report*, s.l.: s.n.

Queensland Government, 2013. *Preventing and managing erosion*, s.l.: s.n.

Please contact me if you would like to discuss this baseline survey.

Yours sincerely

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