

# *Kootingal Greening Plan*

*Compiled by Philippa Lloyd,  
NW Urban Bushland Project Officer  
Greening Australia, North West  
Manilla  
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Marlene Gilchrist

Philippa Lloyd – *Greening Australia*

Euan Belson - *Parry Shire Council*

Dorothea Vaux

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*Philippa Lloyd, Project Co-ordinator, Greening Australia*

# Summary

Kootingal has had a similar vegetation history to many of the small towns within the Northwest. The majority of the area's native vegetation has been cleared for agriculture, leaving isolated remnants on country that was unsuitable for farming; such as riversides and hilltops.

Most of the remaining native vegetation within Kootingal occurs on the hills on either side of the Cockburn River valley. Small fingers of vegetation extend down from these hills forming fragmented corridors across the valley. It is the protection and the enhancement of these corridors that forms the 'vision' of the Kootingal Greening Plan. This 'vision' was divided into six separate corridors depending on their location. Highest priority was given to the Northern and Central Corridors because these represented the most continuous within the remaining vegetation.

The Kootingal Greening Plan attempts to provide direction and assistance to property owners within these areas to protect and enhance the value of their remaining native vegetation. In addition to providing each landholder with an overall picture highlighting the importance of their piece of land.

The committee also recognised the importance of the Kootingal urban environment in providing a vegetative link between the sides of the Cockburn River Valley. As a result a plan for the improvement of the section of Sandy Creek on public land was formulated, in addition to suggestions for the promotion of native street trees and the establishment wildlife gardens.

A community advisory committee, the Kootingal Greening Body (KGB), with the aid of Greening Australia and Parry Shire Council produced this document. It is to be utilised as a guide for groups and individuals undertaking environmental work and a reference document for individuals developing property plans. It can also be used to support funding applications for environmental improvement work on both public and private land. It is not a legal document.

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# 1 Introduction

## 1.1 What is the Kootingal Greening Plan

A Greening Plan is a plan produced by the community. It is a systematic and long-term approach to bushland and native vegetation management with the focus being on the preservation and protection of biodiversity. Biodiversity is short for biological diversity, and refers to the “variety of all life forms – the plants, animals, micro-organisms, the genes they contain and the ecosystems of which they are a part” (Farrier et al, 1999). The decline in biodiversity of Australia’s native species since settlement, is the result of a variety of factors acting in unison; however habitat loss and fragmentation are often considered the most significant (Fahrig 1997, NSW ).

The focus of past conservation and environmental work in urban areas has been on an individual site basis. The concept of a Greening Plan is to extend beyond this to considering the entire landscape, its connectivity and the issues that affect it. The protection of urban vegetation is important because many towns within the northwest contain small remnants of native vegetation. These remnants exist as “islands” in urban areas and are the only direct point of contact many residents have with the native environment that existed in their township before urban development. Consequently the enhancement of these areas will have tremendous conservation, educational and historical significance.

The concept of a Greening Plan is to provide native vegetation management options on a variety of levels within the Kootingal area. The focus will be on the management requirements of small areas of remnant bushland while providing a strategy of the wider revegetation and management of native vegetation within the region.

## 1.2 Aims & Objectives

### **Aim**

To develop a proactive management plan for the native vegetation within and surrounding the Kootingal area.

### **Objectives**

1. To protect and enhance the existing native vegetation within the Kootingal area
2. To consolidate and connect significant areas of native vegetation
3. To stimulate a co-ordinated approach to the management of the Kootingal environment.

## 1.3 Development

The development of the Kootingal Greening Plan was funded by the Environmental Trust and involved the collaboration of Greening Australia and the Parry Shire Council. A community advisory committee was responsible for the development of the plan. This consists of a record of the distribution and characteristics of Kootingal’s remnant vegetation and a related set of recommendations to preserve and enhance these areas. This plan is not a legal document. It is a set of recommendations that can be utilised on a voluntary basis as a guide for future works by property owners and councils alike, to ensure that environmental work undertaken will benefit not only individual sites but also the entire surrounding area.

## 1.4 Relevance to Kootingal

The benefits of an Urban Greening Plan are not just limited to the urban boundaries of Kootingal. The achievement of the recommendations this plan sets out will also help to fulfil the targets set out by the 'Namoi Catchment, a blueprint for the future' specifically related to biodiversity and riverine ecosystems (Namoi Catchment Management Board, 2001).

The importance of biodiversity is not only recognised on a local scale but it is recognised as an essential part of the legal and political context in which local government operates. Biodiversity is formally recognised in the following plans.

- United Nations Convention on Biodiversity
- National Local Government Biodiversity Strategy
- NSW Biodiversity Strategy
- National Strategy for the Conservation of Australia's Biodiversity
- National Objectives and Targets for Biodiversity Conservation 2001-2005

# 2 Importance of Corridors

Clearing vegetation is listed as a key threatening process under the Threatened Species Conservation Act (1995). Thus it is a recognised cause of the decline of species number and diversity in Australia, directly through habitat destruction and indirectly through habitat fragmentation and isolation. This is shown for a number of different landscapes in Figure 1.

rt

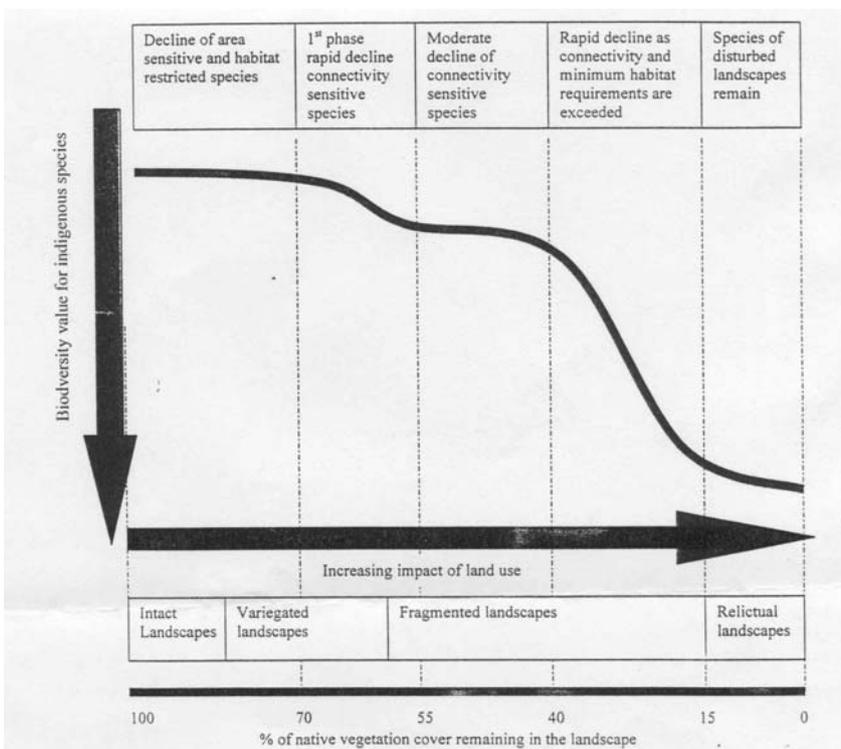


Figure 1  
Diagrammatic Representation of Biodiversity Loss in Relation to Habitat Loss

ct access to resources these  
of food, shelter and territory.  
lth or stimulating  
al extinction of the species

Maintaining, protecting and enhancing native bushland has many benefits additional to protecting our native wildlife. Native vegetation:

- helps to regulate the watertable thus preventing salt problems.
- provides valuable shade and shelter for stock.
- increases the aesthetic appearance of the landscape
- filters runoff providing better water quality in rivers and streams

A bushland environment also provides habitat for a large variety of native fauna that can provide valuable pest control services. This can provide an enormous benefit for landholders, for example

- Magpies and Ibis eat large numbers of scarab larvae which are pests of pastures;
- Some native wasp species parasitise scarab larvae;
- Egrets consume many insects;
- Many birds eat the insects which graze native trees – including farm shelterbelts and shade tree;
- In eucalypt woodland native spiders help control insect populations;
- Ibis eat large numbers of grasshoppers and mice;
- Ladybirds prey on aphids

(Johnston & Don, 1990)

The popular solution to the fragmentation of native bushland is to consolidate these pockets of bushland through vegetation linkages, or corridors. Corridors are vitally important in Australia because a large percentage of our native species are nomadic, seasonal movers or require territories covering a variety of environments. They may require access to winter flowering plants or extra territory in dry conditions as resources such as water and feed become scarce.

It is recognised however that corridors are not the all-encompassing solution and there are many other environmental issues that should be addressed in conjunction with establishing a corridor system for the Kootingal Greening Plan to be completely effective. These additional issues will be addressed on an individual site basis or on a town scale.

## 3 Kootingal Area

### 3.1 Vegetation History

Grazing in Kootingal began in the early 1830's when sheep were brought into the area. To accommodate this, the vegetation of the area began being thinned. Between 1976 and 1981 Kootingal experienced the highest growth rate in the surrounding area at over 50%. At present the area surrounding Kootingal plays host to graziers, poultry farmers, horse training establishments, piggeries, vineyards, orchards, olive plantations, mushroom farms, market gardens and herb farms. The town boundaries are currently controlled by Parry Shire Council's zoning under the 1987 Local Environmental Plan, thus restricting the growth of the town (Donaldson Planning & Management Services, 1999).

### 3.2 Plans/Policies

#### **Existing Plans**

- Cockburn Catchment Land and Water Management Plan.
- Stormwater Management Plan

#### **Activities**

- Visioning exercise for changes to the LEP has also been undertaken in Kootingal

Both the Moonbi Community Landcare & Development Group and the Kootingal Economic and Social Development Committee (KESDEC) are currently undertaking environmental work in the area. The Kootingal Committee is working on the town entrances off the New England Highway. While the Moonbi Committee with the aid of the Kootingal group has planted native species near the Kootingal Sewage Treatment Works.

### 3.3 Existing Vegetation

As figure 2 shows, the majority of the native vegetation in the Kootingal area is located on the surrounding hills to the northwest and south east of the town. Fragmented vegetation corridors crisscross the area mainly following the drainage lines that flow into the Cockburn River.

Within the mapped Kootingal area, fifteen different vegetation communities were observed. Further investigation revealed a general pattern. The drainage lines on the southern side of the Cockburn River are characterised by Yellow Box (*Eucalyptus melliodora*). While on the north side of the Cockburn the main drainage line species was the Rough Barked Apple (*Angophora floribunda*). As the distance from the drainage lines increased a White box (*Eucalyptus albens*) or White Cypress (*Callitris glaucophylla*) woodland became dominant. However, on the northern side of the Cockburn a large proportion of Cypress was observed in the drainage lines. The Cockburn River contained a mixture of willows, River Red Gum (*Eucalyptus camaldulensis*) and River Oak (*Casuarina cunninghamiana*).

3.3.1 *Vegetation Communities of Kootingal*

Survey undertaken by Alf Haskins, Ron Webster and Philippa Lloyd

**Key to Figure 2**

- 1) *Angophora floribunda* (Rough Barked Apple) and *Eucalyptus albens* (White Box) woodland with *Callitris glaucophylla* (White Cypress Pine) association.
- 2) \**Angophora floribunda* (Rough Barked Apple) and *Eucalyptus blakelyi* (Blakely's Red Gum) woodland. 8
- 3) \**Angophora floribunda* (Rough Barked Apple) and *Eucalyptus blakelyi* (Blakely's Red Gum) with *Eucalyptus melliodora* (Yellow Box).2
- 4) *Angophora floribunda* (Rough Barked Apple) woodland and *Eucalyptus melliodora* (Yellow Box) and *Eucalyptus blakelyi* (Blakely's Red Gum) association with scattered *Brachychiton populneus* (Kurrajong). 7,17
- 5) *Angophora floribunda* (Rough Barked Apple) woodland
- 6) *Eucalyptus albens* (White Box) woodland with a *Callitris glaucophylla* (White Cypress Pine) association and scattered *Eucalyptus blakelyi* (Blakely's Red Gum). 4,6,10,16
- 7) *Eucalyptus albens* (White Box) woodland
- 8) \**Callitris glaucophylla* (White Cypress Pine) open forest with a *Eucalyptus blakelyi* (Blakely's Red Gum), and *Eucalyptus albens* (White Box).5
- 9) *Callitris glaucophylla* (White Cypress Pine) open woodland with *Eucalyptus albens* (White Box) association percentage of white box increasing as you move from Kootingal. 14
- 10) *Callitris glaucophylla* (White Cypress Pine) open forest.3
- 11) \*Woodland with *Callitris glaucophylla* (White Cypress Pine), *Eucalyptus albens* (White Box), *Eucalyptus blakelyi* (Blakely's Red Gum) and *Angophora floribunda* (Rough Barked Apple). 9
- 12) *Eucalyptus camaldulensis* (River Red Gum) and *Casuarina cunninghamiana* (River Oak) riparian woodland with scattered willows. 11
- 13) *Eucalyptus melliodora* (Yellow Box) woodland. 13
- 14) *Eucalyptus melliodora* (Yellow Box) and *Eucalyptus blakelyi* (Blakely's Red Gum) woodland with *Angophora floribunda* (Rough Barked Apple) association. 15
- 15) *Angophora floribunda* (Rough Barked Apple) and *Eucalyptus melliodora* (Yellow Box) woodland with scattered Peppertrees extending up the gully into *Callitris glaucophylla* (White Cypress Pine) 12 NB.May change as you move up the gully.

This survey was conducted from the roads surrounding Kootingal as a result it represents only a general interpretation of what exists in each area. Thus small discrepancies may occur between what is in the field and what is on the ground. Time did not allow for a more accurate survey of the area. Those communities indicated by a \* were a substantial distance from the road so the classification was made through what it was possible to observe and what was known of the landscape.

### 3.4 White Cypress Pine

An issue that was observed during the survey of the different vegetation communities was the high incidence of White Cypress Pine (*Callitris glaucophylla*). The White Cypress Pine is native to the area and therefore has its place in the ecosystem. However, it is a very effective coloniser, and when the native vegetation of an area is disturbed and the native eucalypts removed, the Cypress pine can quickly multiply to form thick stands. This creates an environment in which little other native vegetation can grow; in worst-case scenarios no groundcover will grow under the trees, resulting in erosion. Thus, efforts must be made to maintain the balance between this species and the other native that exist in the area.

## 4 The Vision

Figure 3 displays potential native vegetation corridors in the Kootingal area. The aim of this proposed design is to take advantage of the existing vegetation that is scattered along the many drainage lines. Incorporating these areas in a corridor system will enhance their ability to supply effective habitat for the native species while enabling species to move between the different environments of the hills and the Cockburn River. It was recognised that a corridor of native vegetation does exist along the New England Highway; this area was not included in the corridor system because it is not desirable to encourage native animals to spend a large amount of time in a high traffic zone. Implementation of this design will create a vegetative link across the Cockburn River Valley.

### Recommendation

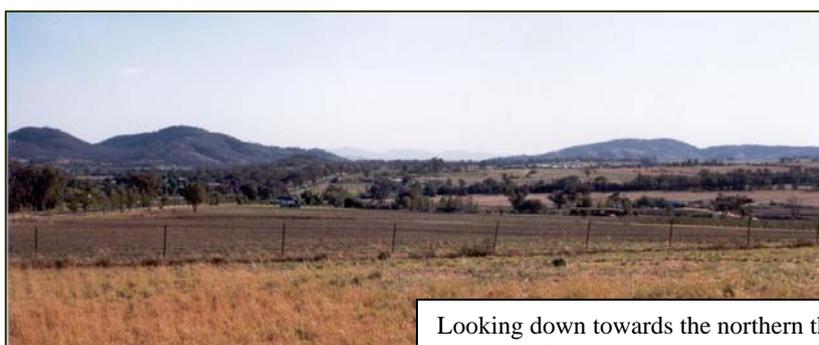
The enhancement of the corridor system across the Cockburn River Valley.

## 5 Corridors

Figure 3 is broken up into specific corridor sections. This was done to allow ease of interpretation in the planning stages. The identified corridors are as follows;

- |    |                         |            |
|----|-------------------------|------------|
| 1. | Northern corridor       | } Priority |
| 2. | Central Corridor 1      |            |
| 3. | Central Corridor 2      |            |
| 4. | Western Corridor        |            |
| 5. | Cockburn River Corridor |            |
| 6. | Southern Corridor       |            |

The Northern and Central corridor 1 & 2 have been listed as a priority because they contain the largest amount of continual native vegetation, thus providing the best link to the Cockburn River. In addition the enhancement of the vegetation along this corridor will in turn enhance the health of Sandy Creek.



Looking down towards the northern then Northern (foreground) and Central (background) Corridors

This does not diminish the importance of protecting and enhancing the native vegetation in the other identified corridors. This plan can be utilised by any group or individual who wishes to undertake native vegetation work.

### 5.1 What does it mean to be identified in a Corridor

The majority of the remnant bushland and therefore corridors, exist on private land. This document aims to be a guide to for potential works in the Kootingal area. Participation in the implementation of the Kootingal Greening Plan is on a voluntary basis.

The information and recommendations contained in this document can be used by individual property owners to plan, and implement revegetation and remnant protection programs on their land. When the plan identifies sections of property as significant, this increases the probability of obtaining funding for projects involving revegetation, remnant protection or stream bank management. Section 6 contains some general suggestion regarding revegetation and remnant management. In addition, a list of organisations that can help with different aspects of property planning, revegetation, remnant protection and funding opportunities is located in appendix 1.

Each property owner identified in this plan will be approached and given the opportunity to view the plan and put forward their ideas regarding how they could be involved with its implementation. Copies of the plan are available on request from the Kootingal Greening Body (KGB).

The preservation and enhancement of existing vegetation is much more cost effective then replanting in the future. Maintaining native vegetation stabilises the soil against erosion, provides shade and shelter for stock, provides habitat for pest controlling native species and increases the attractiveness of a property.

### 5.2 Corridor Recommendations

Within each corridor the general suggestions of the Greening Plan are:

1. For creek lines and drainage lines to be fenced off and managed to promote regeneration.
2. For all remaining bushland within the corridors to be retained.
3. To improve the continuity of the corridors by planting with native species where little or no native vegetation exists.
4. The staged removal of woody weeds such as privet and willow.
5. Monitor the concentration of White Cypress. Consider thinning thicker areas to allow additional native vegetation in. Always consult the Department of Land and Water Conservation (DLWC) before undertaking the removal of any native vegetation.

For proposed work along the Cockburn River it is best to consult the local River Planner with the Department of Land and Water Conservation.

#### 5.2.1 *Central Corridor 1*

The majority of the bushland within the Central Corridor 1 exists on public land. It is characterised by *Angophora floribunda* woodland with thick *typha spp.* along the creek. It is an important area because it contains relatively healthy bushland that is easily accessible by the community. It contains sections of valuable native understorey and is home to a large

variety of birds (appendix 2). However, Coolatai Grass is spreading into the area in addition to large leaf privet. A map displaying these areas is located in appendix 3. The control of these weeds, since they are only in the early stages of colonisation, is vital. If they are not controlled they will gradually move through the bushland vastly reducing its value. Other problems for the area include the lack of any native shrubs, garden refuse and rubbish dumping and the multitude of tracks that run through the area.

Always work from the best areas of vegetation out. Please consult the relevant sections in section 6 in addition to the following recommendations.

### Recommendations

The focus of the regeneration work is the western side of the creek as this is the best area of bushland.

1. *Staged removal of privet coinciding with the planting of scattered native shrubs.* This will attract more small birds into the area. The privet should be removed through a process of cutting and painting the stumps with herbicide. Once sunlight is allowed through to the ground in this area the privet seeds in the soil will germinate, hence seedling removal will have to be undertaken each year until the seed bank is exhausted. Remove the small privet plants from just north of the good area first. Then move through the rest of the area removing isolated individuals before beginning on the thick privet area at the southern end. Since the Kootingal Creek is a registered stream approval from the DLWC will have to be sort to undertake any privet removal.
2. *Staged removal of Coolatai Grass.* Coolatai has the potential to very quickly become the dominant ground cover in a bushland area. The most effective method of control is to spray the grass with round-up working from the edges of the clumps inwards. This should be undertaken in a staged process in the thicker areas and requires a relatively high round-up concentration. Any isolated individuals within the native grasses ideally should be removed by hand: this is best done after rain.
3. *Establishment of a formal track.* By establishing a formal track across the creek at the northern end will prevent people making their own tracks, which increases erosion and weed encroachment. For this to be achieved a funding application will have to be lodged or alternately a local Greencorps group may be a source of labour.

NB. Always check with the Department of Land and Water Conservation before removing any vegetation from near a waterway.

## 5.3 Commonly Asked Questions

This section aims to answer some commonly asked questions with relation to environmental work. These questions are answered in reference to the Greening Plan. It is important to emphasis that all involvement in this project is on a voluntary basis.

### 5.3.1 *Fencing off...*

#### **How much help do I get to put in a fence?**

The labour to put up a fence is usually part of the in-kind contribution of the landholder if they apply for funding for fencing materials. However there are groups such as Greencorps and Australian Trust for Conservation Volunteers that can sometimes offer help with these projects. Contact Parry Shire Council to find out what volunteers there are in your area.

#### **What are the conditions if I fence off an area?**

The Greening Plan itself has no legal standing to enforce any conditions on private landholders fencing off an area. Conditions will vary with regards to the funding body that is approached. It is the suggestion of the Greening Plan that all fenced off areas be managed to promote regeneration.

#### **Can I still graze the area? Is there preference for sheep or cattle?**

The Kootingal Greening Plan is not advocating the concept of locking up land; instead it is supporting the concept of management. Fenced off areas may be grazed when conditions are unfavourable such as drought but this would only be for a short period. Bushland ecosystems benefit from isolated disturbances, but the primary aim of these areas is regeneration. Different funding source may have different requirements.

Sheep tend to inflict more damage on an area than cattle as they can graze to a lower level. Grazing any area of bushland must be monitored.

#### **How do you expect me to keep the weeds down in fenced off areas?**

Weed control will be the responsibility of the landholder as part of an in-kind contribution, however funding may be able to be obtained for herbicide. This will vary between the relevant funding bodies.

#### **How do I manage small or isolated patches of ground if I have no water supply?**

Some funding bodies will provide funds to establish alternative watering points for stock, if fencing off a creek line.

### 5.3.2 *Planting...*

#### **What support do I get to control weeds?**

Refer to weed control in previous section

#### **How long do I have to lock up planted areas and to what extent?**

Stock will have to be excluded from planted areas until the plants are large enough not to be substantially damaged by them.

#### **Can I open these areas or part of them later on?**

In terms of creek land it is recommended that stock are kept out of them as much as possible, however isolated grazing can be undertaken. In other areas once the plants are at a stage they can tolerate stock the area could be opened up to periodic grazing.

#### **Native seedlings usually die, what's to say new plantings won't do the same?**

The success of native plantings is dependant upon a lot of factors. By ensuring good ground preparation, the area is ripped 3-4 times, local endemic species are selected and watering is undertaken when needed, a higher survival rate will be more probable. The best time to plant

is when there is moisture throughout the soil profile. The success of a planting is very weather dependant and will always involve a degree of luck.

# 6 Recommendations

## 6.1 Regeneration

Regeneration is the process in which an area of remnant bushland is protected and encouraged to fix itself. It involves a process that encourages the germination of native seeds within the bushland or the reintroduction from other areas. For this process to occur:

- Stock must be removed from the site (or only grazed for very short periods of time)
- Environmental weeds need to be removed or controlled. In weed removal move from the best area of bushland out.

Once stock and environmental weeds have been controlled or removed regeneration should start to occur. For example small eucalypts and native shrubs should begin to emerge. However in some cases even though there is remaining native vegetation very little or no regeneration takes place. This most commonly occurs in attempting to re-establish a native understorey. In instances such as this planting will have to be undertaken. There are many theories on the length of time an area should be rested before planting; one example from the northern tableland describes resting the area for 4 years before planting (Morsley, 2002).

The preservation and management of the existing remnant bushland is vital for habitat as well as productivity, as previously described. It is important for both the council and private property owners who are looking towards preserving their areas of bushland to develop a simple management plan. Simply considering the points below will enable a better understanding of the issues affecting a piece of bushland.

The basic steps for adaptive management are:

- Identify management issues (eg weed infestation)
- Identify management goals (eg weeds managed, native seedling recruitment)
- Determine management strategies available (eg hand removal, targeted herbicide, spot spraying)
- Select appropriate management action (eg hand removal)
- Determine what will be monitored and how (eg establish a photo point)
- Determine how change and success will be evaluated (eg absence of living weeds one month and one year after removal)

(Elix & Lambert, date unknown)

## 6.2 Revegetation

As previously described the natural environment of Kootingal is characterised by woodlands with denser vegetation in the form of an open forest often occurring in the gullies. The woodland classification describes an environment with trees between 10-30 metres tall and a canopy cover of between 10-30%. Open forest refers to an environment that has trees of the same height but with a canopy cover of 30-50% (Specht, 1970). It is therefore these environments that should be encouraged to regenerate in the Kootingal area.

### 6.2.1 *Benefits*

There are many benefits to re-establishing the native communities in the landscape. Trees, deep-rooted perennial grasses and shrubs play a large role to controlling salinity in conjunction with stabilising the soil. Furthermore, native grasses are often better able to withstand drought than the more season-dependent 'improved grasses' (Elix & Lambert, unknown). Corridors of native woodland also provide valuable shelter. Strong wind across a paddock can remove valuable soil moisture and cause erosion. Cattle also benefit from the shade and shelter offered by these areas. The conservation benefits of woodland corridors are also substantial. They supply an important linkage role for the reasons explained in section 2.

In the process of compiling the vegetation survey it was noted that there were very few good examples of native understorey. The presence of understorey plants increases the value of a corridor as a shelterbelt, in addition to providing valuable shelter for beneficial insect-eating birds. From a wildlife conservation perspective a shrubby understorey provides invaluable habitat for many different species.

### 6.2.2 *Tips*

The aim of any revegetation project should be to recreate the environment that once existed in that area. The results of the vegetation survey in figure 2 should serve as a guide to the appropriate plant species and community that should be aimed for. A list of appropriate species for revegetation in the various areas surrounding Kootingal is located in appendix 4. The lists will contain suggested groundcover, shrub layer and additional tree species.

When planning to recreate a woodland, environment trees should not be spaced any closer than 10 metres apart. This will allow them to develop large spreading crowns, providing valuable shade in summer. The recommended species mixture is 40% trees and 60% shrubs. Along rivers and creeks the shrubs can be planted closer together to provide a greater root density to guard against erosion.

Further information regarding revegetation and related funding opportunities can be obtained from Greening Australia and Landcare, contact details are appended.

## 6.3 Street and Park Vegetation

Street vegetation is a major contributor to the vegetation that exists within urban areas. In many areas there has been a tendency to focus purely on exotics however there are many native species that provide attractive street vegetation. It is the suggestion of this committee that increased effort be given to establishing native street trees within Kootingal. Appropriate native local species would be; *Eucalyptus albens* (White box), *Eucalyptus melliodora* (Yellow Box), *Brachychiton populneus* (Kurrajong) and *Eucalyptus sideroxylon* (Mugga Ironbark). However it should be noted that Eucalypts do characteristically drop branches so care should be taken to place these away from houses. A copy of possible street vegetation is located in appendix 5.

A suggestion was also made that a map of the Kootingal area be produced that identifies important or significant trees. This map will then be passed on to the Parry Shire Council so that it can be referred to when required.

### 6.4 Wildlife Garden

The creation of wildlife corridors is not always possible in urban areas because of large areas of residential development. However, through encouraging residents to plant native species in their garden, habitat can be created for native wildlife to exist in or move through. Wildlife conservation is not just limited to the preservation of large areas.

There are many 'positives' of using native plants in backyards and gardens. Firstly they have a higher survival rate because they are already adapted to the soil and climatic conditions in Kootingal. Secondly they have an inbuilt pest control system for example they attract ladybirds that prey on aphids, and thirdly they help maintain the 'natural character' of the Australian environment (Johnson & Don, 1990). But most importantly they provide habitat for native wildlife such as small birds.

When designing a garden to attract wildlife consideration must be given to recreating the natural layering effect of bushland. This provides a wide variety of habitat. Native trees, shrubs, groundcovers and natural mulch should all be incorporated. This can attract species like lizards and provide a variety of nesting opportunities for birds.

Some examples of beneficial plants are:

- Insect attracting plants e.g. acacias, eucalypts and leptospermums attract small birds such as Fairy Wren and Tawney Frogmouth.
- Nectar-producing understory plants eg grevilleas and correas attract honeyeaters, lorikeets and possums. Having a variety of plants that produce nectar all year round will be a valuable resource for local wildlife.
- Seed-producing plants eg acacias, casuarinas and grasses attract finches and rosellas.
- Prickly dense shrubs provide protection for wrens and finches that prefer to nest in these protected areas.
- Provide hollows for nesting. One in five Australian bird species nest in hollows as do many arboreal mammals. Young trees take at least 70 years to develop hollows. (Johnson & Don, 1990). Nesting boxes can simulate hollows. Contact the local wildlife authorities regarding the size and placement of nesting boxes.

It is recommended that a brochure or reference document listing appropriate native species for planting in suburban gardens and their benefits be investigated.

### 6.5 Additional Suggestions

These are additional suggestion made by the KGB that could be investigated at a later date:

- A Native Plant Identification Day could be held on a property within the area. This would provide an opportunity for local farmers to expand their knowledge of local plants in their area. Other environmental topics of interest could also be covered on the same day. Organisations that may be able to help with the running of this field day are Landcare and Greening Australia.
- Establishment of a local nursery that would grow and supply native species grown from local seed.

### 6.6 Promotion of the Plan

A list of all the properties within the proposed corridor system is located in appendix 6. These property owners will be approached on an individual basis. They will be given an explanation of how the project works and why it would be of benefit to be involved; in

addition to providing them with an opportunity to view the plan and highlight how they think they can be involved.

A copy of the plan will also be provided to the Kootingal Economic and Social Development Committee Kootingal and Moonbi Community Landcare & Development Group.

# References

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# Appendices

## CONTENTS

1. **Environmental Programs / Funding Opportunities / Contact Organisations**
2. **Sandy Creek Bird List**
3. **Map Central Corridor 1**
4. **Native Species List for the Kootingal Area**
5. **Street Tree List**
6. **Property List**

Appendix 1

Environmental Programs / Funding Opportunities /  
Contact Organisations

1. ***Greening Australia***  
Greening Australia runs a variety of programs and provides technical support to environmental projects.
  - For technical enquiries or information on current projects contact Greening Australia, Armidale on 67 723 248.
  
2. ***National Parks and Wildlife Service***  
The NPWS can provide information in regarding threatened species and communities. They also have an advisory role in relation to plant and animal identification and can provide information on the management of certain communities. The Walcha branch covers both the Parry and Tamworth council areas Phone: 67 771400, 188W North St, Walcha, 2354
  
3. ***Bushcare***  
Bushcare is an Environment Australia program that offers funding and technical support to individuals, groups and organisations that are involved in or interested in the protection, enhancement and/or extension of existing native vegetation.
  - For information regarding funding contact the Regional Bushcare Facilitator, on 67 645 933
  - For technical advise contact the Bushcare Support Project Manager, on 67 723248
  
4. ***Landcare***  
Landcare provide support to any individual group or organisation that is interested in undertaking any type of environmental work.
  - For further information contact the Tamworth Landcare Coordinator on 67 645 984
  
5. ***Department of Land and Water Conservation***  
The DLWC administers the 'Native Vegetation Act' any project involving the removal of native vegetation will have to be referred to them before it can be undertaken. DLWC also employs River Planners who have provide advise on all aspects of vegetation management along rivers.
  
6. ***Land for Wildlife***  
Is a voluntary property registration scheme, which aims to encourage and assist private landholders in managing areas for wildlife on their properties. Landholders receive newsletters, technical notes and a property sign. It cost nothing to join and is not legally binding.
  - Further information (02) 9585 6040 or [conservation.partners@npws.nsw.gov.au](mailto:conservation.partners@npws.nsw.gov.au)

Appendix 1 contd...

**7. *Grassy Ecosystem Grants***

Is concerned with the preservation and protection of high conservation value native grassland. The project supplies help with cost of fencing off high conservation areas, native plant identification and management option.

- For further information contact Heather Ranclaud Ph 67 471 793. email [ranclaud@northnet.com.au](mailto:ranclaud@northnet.com.au)

**8. *Grassy White Box Woodlands***

For information regarding this community please contact the Grassy Box Woodland Conservation Management Network this program is run through the National Parks and Wildlife Service. Lorraine Oliver, PO Box 2115, Queanbeyan, 2620. Ph (02) 62 989 709. email – [lorraine.oliver@pws.nsw.gov.au](mailto:lorraine.oliver@pws.nsw.gov.au)

Appendix 2

Sandy Creek Bird List

**Date** – 1/9/02

**Observers** – Representatives from the Tamworth Bird Watchers, KGB and the Community

*Native*

Australian Wood Duck  
Pacific Black Duck  
White-faced Heron  
Yellow-billed Spoonbill  
Crested Pigeon  
Peaceful Dove  
Galah  
Sulphur-crested Cockatoo  
Eastern Rosella  
Red-rumped Parrot  
Laughing Kookaburra  
Superb Fairy-wren  
Spotted Pardalote  
Red Wattlebird  
Spiny-cheeked Honeyeater

Noisy Friarbird  
White-plumed Honeyeater  
Grey Shrike-thrush  
Magpie-lark  
Willie Wagtail  
Black-faced Cuckoo-shrike  
Australian Magpie  
Pied Currawong  
Apostlebird  
Red-browed Finch  
Welcome Swallow  
Clamorous Reed-Warbler

*Introduced*

Common Starling

Appendix 3

Close up map of Central Corridor 1.

## Appendix 4

### Native Species Lists for Planting in the Kootingal Area

NB These lists are not an exhaustive list of the species that would occur in each environment especially for the groundcover.

#### White Box Woodland

##### **Trees**

*Eucalyptus albens* (White Box)  
*Angophora floribunda* (Rough-barked Apple)  
*Eucalyptus melliodora* (Yellow Box)  
*Brachychiton populneum* (Kurrajong) } In the moister areas

##### **Shrubs**

*Acacia decora* (Western Golden Wattle)  
*Bursaria spinosa* (Blackthorn)  
*Dodonaea viscosa* (Hop Bush)  
*Notolaea micorcarpa* (Native Olive)  
*Olearia elliptica* (Sticky Daisy Bush)  
*Myoporum montanum* (Western Boobialla)  
*Cassinia laevis* (Cough Bush)  
*Geijera pariflora* (Wilga)

##### **Groundcover**

*Dianella revolute* (Blue Flax Lily)  
*Jasminum suavissimum* (Native Jasmine)  
*Themeda australis* (Kangaroo Grass)  
*Poa*

#### Riparian Community

##### **Trees**

*Eucalyptus camaldulensis* (River Red Gum)  
*Casuarina cunninghamiana* (River Sheoak)  
*Eucalyptus mellidora* (Yellow Box)  
*Angophora floribunda* (Rough-barked Apple)

##### **Shrubs**

*Acacia salicina* (River Cooba)  
*Acacia filicifolia* (Fern Leaved Wattle)  
*Acacia implexa* (Hickory Wattle)  
*Acacia dealbata* (Silver Wattle) } Upper bank

Appendix 4 contd...
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*Callistemon viminalis* (Weeping Bottlebrush)  
*Leptospermum polygalifolium* (Tea Tree)

**Groundcover**

*Dichanthium sericeum* (Queensland Bluegrass)  
*Bothriochloa macra* (Red Grass)  
*Danthonia sp.* (Wallaby Grass)

## Drainage lines

**Trees**

*Eucalyptus camaldulensis* (River Red Gum)  
*Eucalyptus mellidora* (Yellow Box)  
*Eucalyptus blakelyi* (Blakely's Red Gum)  
*Angophora floribunda* (Rough-barked Apple)  
*Casuarina cunninghamiana* (River Sheoak)

**Shrubs**

*Acacia decora* (Western golden Wattle)  
*Acacia implexa* (Hickory Wattle)  
*Acacia dealbata* (Silver Wattle)  
*Notolaea micorcarpa* (Native Olive)  
*Bursaria spinosa* (Blackthorn)  
*Geijera pariflora* (Wilga)

**Groundcover**

*Dichanthium sericeum* (Queensland Bluegrass)  
*Bothriochloa macra* (Red Grass)  
*Danthonia sp.* (Wallaby Grass)

Appendix 5

Street Tree List

Appendix 6

Property List

## Kootingal Greening Body

### Property Identification Covering Potential Vegetation Conservation Areas

1.	86 ha
	“Kiga Park” KOOTINGAL NSW 2352
2.	257 ha
	Betts Lane PO Box 113 KOOTINGAL NSW 2352
3.	227 ha
	“Sunnyside” Betts Lane (5 Overlanders Way) TAMWORTH NSW 2340
4.	16 ha
	Box Hill Betts Lane (PO Box 473) KOOTINGAL NSW 2352
5.	188 ha
	“Box Hill” KOOTINGAL NSW 2352
6.	16 ha
	“Reno” PO Box 137 KOOTINGAL NSW 2352
7.	15 ha
	“Forest Farm” New England Highway KOOTINGAL NSW 2352
8.	58 ha
	New England Highway North (PO Box 12) KOOTINGAL NSW 2352
9.	PARRY SHIRE COUNCIL – SEWERAGE TREATMENT PLANT

10.	“Wongaburra” New England Highway KOOTINGAL NSW 2352	50 ha
11.	New England Highway (PO Box 399) RUTHERFORD NSW 2320	62 ha
12.	Yarrol Road (Piggery) KOOTINGAL NSW 2352	382 ha
13.	Yarrol Road (Piggery) KOOTINGAL NSW 2352	382 ha
14.	Yarrol Road (Piggery) KOOTINGAL NSW 2352	382 ha
15.	Yarrol Road (Piggery) KOOTINGAL NSW 2352	382 ha
16.	Yarrol Road KOOTINGAL PO Box 59 TAMWORTH NSW 2340	89 ha
17.	Ormans Lane KOOTINGAL NSW 2352	12 ha
18.	Lot 2 Ormans Lane KOOTINGAL NSW 2352	1.5 ha

Property details as a guide only.

Property boundaries not precise, refer to relevant DP.

Source: PSC 2002