

COFFS HARBOUR CITY COUNCIL

A guide to species selection for revegetation projects in the Coffs Harbour Local Government Area



March 2015



THIS IS A LOOKING AFTER OUR ENVIRONMENT PROJECT
Helping to achieve the 2030 Community Vision

Citation and acknowledgements

This report should be cited as follows:

Stehn C¹ 2015, 'A guide to species selection for revegetation projects in the Coffs Harbour Local Government Area', Coffs Harbour City Council, Coffs Harbour, New South Wales, Australia, unpublished draft report.

¹ Coffs Harbour City Council, Locked Bag 155, Coffs Harbour, New South Wales 2450 Australia

Acknowledgements

Written by Craig Stehn – Coffs Jaliigirr Project Officer, Coffs Harbour City Council.

The following people provided valuable technical advice on the content of this document:

John Ross – Lacebark Nursery

Colin Broadfoot – Boggy Creek Natives

Kris Hely, Brent Hely and Ricky Crane – Coffs Coast Bush Regeneration

Aaron Hartley – Senior Bush Regenerator, Coffs Harbour City Council

Nigel Cotsell – Senior Biodiversity Officer, Coffs Harbour City Council

Rachel Binskin – Biodiversity Officer, Coffs Harbour City Council.

Production was supported in part by funding from the Australian Government's Biodiversity Fund, North Coast Local Land Services and Coffs Harbour City Council.

The Jaliigirr Project is funded by the Australian Government.



Australian Government

Copyediting:

Donella Andersen, Nature Edit,
www.natureedit.com.au

Graphic Design:

The Interpretive Design Company,
www.interpretivedesign.com.au

All images supplied by Craig Stehn unless stated otherwise.

National Library of Australia Cataloguing-in-Publication entry

Creator: Stehn, Craig, author.

Title: A guide to species selection for revegetation projects in the Coffs Harbour local government area / Craig Stehn.

ISBN: 9780994271006 (paperback)

Subjects: Revegetation--New South Wales--Coffs Harbour Region, Vegetation management--New South Wales--Coffs Harbour Region, Coffs Harbour Region (N.S.W.)--Environmental conditions.

Other Creators/Contributors: Coffs Harbour (N.S.W.). Council, issuing body.

Dewey Number: 631.64099443



Orara Valley Rivercare



Local Land
Services
North Coast

Table of Contents

SECTION 1	4
Introduction.....	4
When is planting the best option?.....	4
What to plant on your site	6
Maximising the biodiversity benefits of your planting.....	7
Trees in productive landscapes	9
Revegetation techniques	13
Further information on specific vegetation types.....	15
SECTION 2	18
Species Selection Tables	18

Tables

Table 1. Coastal Dunes and Headlands	21
Table 2. Dry Open Forests.....	25
Table 3. Wet Sclerophyll Forests.....	28
Table 4. Rainforests	33
Table 5. Riparian Communities.....	38
Table 6. Freshwater Wetlands.....	44
Table 7. Estuarine Communities.....	46

SECTION 1

Introduction

Selecting the correct species is an essential part of planning your revegetation project. This guide will help you select the most appropriate species for revegetating or regenerating vegetation on your property. Most of the vegetation communities occurring within the Coffs Harbour Local Government Area (LGA) are covered in this guide, including

plant communities from the coastal dunes to the escarpment ranges. This guide provides detailed information on 24 broad vegetation types occurring in the LGA, including a list of potential plant species, a description of each plant as well as information on plant height, growth rate, frost tolerance and habitat values.



Selecting the correct species is an essential part of planning your revegetation project.

When is planting the best option?

There are many approaches that can be used to rehabilitate your site, but the two most common techniques are natural regeneration and revegetation (i.e. planting). The capacity of your site to regenerate naturally — called *site resilience* — helps determine which technique to use on your property. Areas with minimal to moderate levels of disturbance often have a natural capacity to recover, while highly disturbed areas require active revegetation through plantings.

Resilient sites maintain a high level of ecological function and natural processes such as seed dispersal and pollination. This means that regeneration occurs naturally in these areas, and that vegetation can often re-establish without planting taking place. For many areas in the Coffs Harbour LGA, these natural processes will be sufficient to re-establish native vegetation, especially when complementary

weed control is also undertaken. This approach is called either *natural regeneration* or *assisted natural regeneration* depending on the level of weed control and other interventions required.

Less resilient sites usually only support a limited number of native species intermixed with invasive weeds. In the least resilient sites, there are no or only a few native species, and disturbance and weed invasion are common. On these degraded sites, planting is often required to reconstruct the desired (or reference) vegetation community and help reinstate natural regenerative processes.



Highly vegetated and well-connected catchments have a natural capacity to recover.



Planting is often needed in highly disturbed sites where seed sources are limited, or site conditions make natural regeneration unlikely.

When assessing whether planting is appropriate for your site, ask yourself the following questions:

1. Are native seedlings already regenerating in the ground layer?
2. Are there any mature, remnant native trees (potential seed source trees) on the site?
3. Is the site close to other areas of native vegetation that might act as a seed source? And is your site well connected to these areas by existing vegetation?
4. Are conditions on the site suitable for natural regeneration? For example, is there adequate topsoil?
5. Are current disturbances, such as grazing, fire, erosion and highly competitive exotic species stopping native seedlings regenerating? If so, can these disturbances be effectively managed?

If you answered ‘yes’ to several of these questions, then it is likely that planting will not be necessary on your site. Targeted and gradual weed control will likely lead to sufficient natural regeneration to revegetate the area you are working on. However, if you answered ‘no’ to several of these questions, it is likely that you will need to plant out your site. Remember; if in doubt, seek advice from a professional bush regenerator or your local Landcare network.

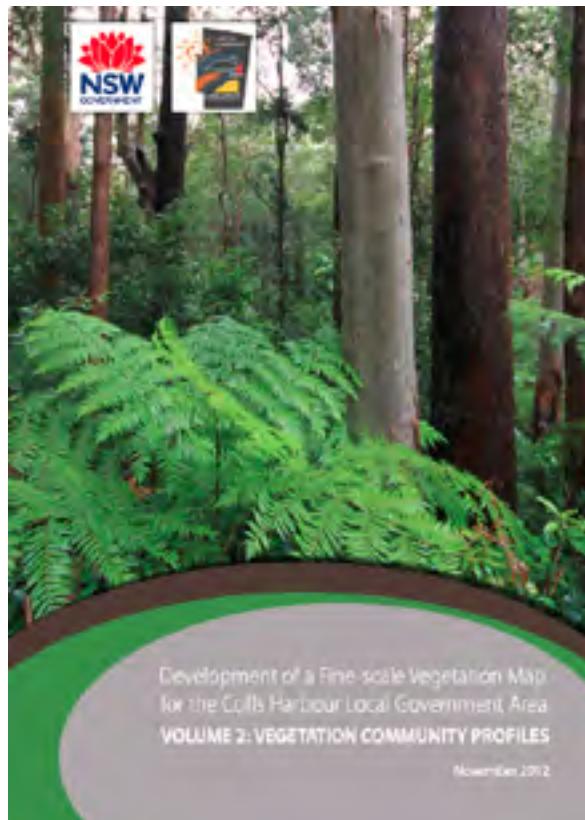
For further information on weed identification and control, contact Coffs Harbour Regional Landcare on 02 6651 1308 or www.coffsharbourlandcare.org.au

What to plant on your site

Coffs Harbour vegetation communities

The native vegetation communities referred in Section 2 of this guideline are based on the fine-scale vegetation mapping of the Coffs Harbour LGA undertaken by the NSW Office of Environment and Heritage in 2012 (OEH 2012). The fine-scale mapping identified 79 native vegetation communities within the Coffs Harbour LGA. Information on each of these communities can be found in *Development of a Fine-scale Vegetation Map for the Coffs Harbour Local Government Area, Volume 2: Vegetation Community Profiles* (OEH 2012).

For this revegetation guideline, similar fine-scale vegetation communities have been combined to create 24 broad vegetation types. Each of these broad vegetation types are described in the *Species Selection Tables* in Section 2 of the guideline.



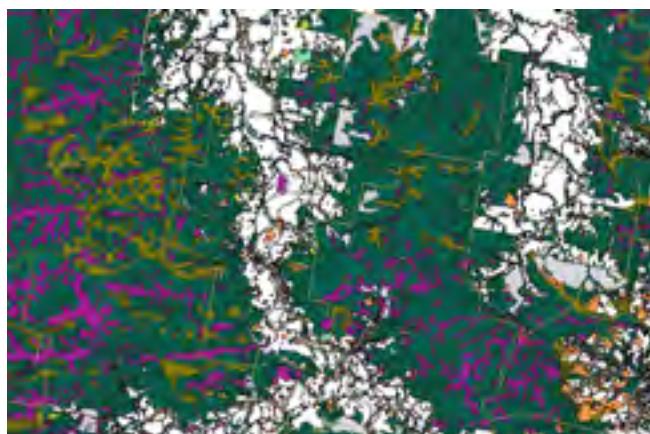
Community vegetation profiles for the 79 native vegetation communities occurring in the Coffs Harbour LGA are available on the Coffs Harbour City Council website.

What communities occur on my property?

When deciding what species to use in your revegetation project, it is best to refer to a nearby reference community. Sometimes this will be the vegetation that adjoins the area you plan to revegetate. For more disturbed sites you may have to look at nearby vegetation communities that occur on similar soils and with a similar aspect to the area you are working on.

Coffs Harbour City Council's fine-scale vegetation mapping can help you determine which vegetation communities occur on or near your property. This mapping can be accessed by going to Coffs Harbour City Council's Online Mapping Tool at www.coffsharbour.nsw.gov.au.

After deciding on a reference community for your site, use Section 2 of this guide to match the fine-scale vegetation community to one of the 24 broad vegetation types described in this guideline. Then refer to the relevant Species Selection Table for a list of potential revegetation species.



Fine-scale vegetation mapping of Coffs Harbour LGA can help you identify a reference vegetation community for your revegetation project.

Maximising the biodiversity benefits of your planting

General considerations when designing your revegetation project

Revegetation is one of the most commonly used techniques to restore or enhance the biodiversity values of highly degraded areas. Revegetation sites often start as a bare paddock and the ‘structural’ changes that occur when an area has been planted are easy to see, and can be dramatic on some sites. While this is often the case, careful planning can help improve your chances of success, and maximise the biodiversity and economic value of your revegetation project.



Rainforest communities are structurally complex and have high biodiversity values.

Diversity and density

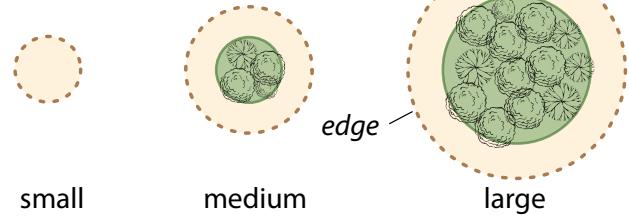
The diversity of species planted, and the density that they are planted at, are the two most important aspects of project design that an individual landholder can control. Undisturbed vegetation communities are often diverse and structurally complex. Using a diverse mix of species in your planting and including a variety of life forms (e.g. trees, shrubs, ground

covers) and functional traits (e.g. flower types, fleshy and dry fruits) will improve the biodiversity value of your revegetation project, and will more closely match the reference vegetation community. This is particularly important for some rainforest and wet sclerophyll communities that have high levels of diversity and a well-developed and complex structure.

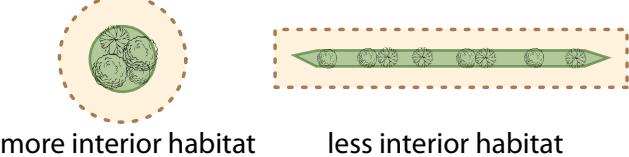
Size and shape

The size and shape of the planting site are also important considerations when designing your revegetation project. In general, larger plantings have a higher biodiversity value than smaller areas; and wide, block plantings tend to provide better habitat than thin, linear strips of vegetation. Small linear plantings will often be impacted by edge effects across a greater proportion of their area than larger, block plantings. Edge effects include changes in temperature, wind, light, predation etc. that occur along the exposed edges of vegetation. Edges are also prone to weed invasion, and will usually require more ongoing weed control than the interior areas of the planting.

Size



Shape

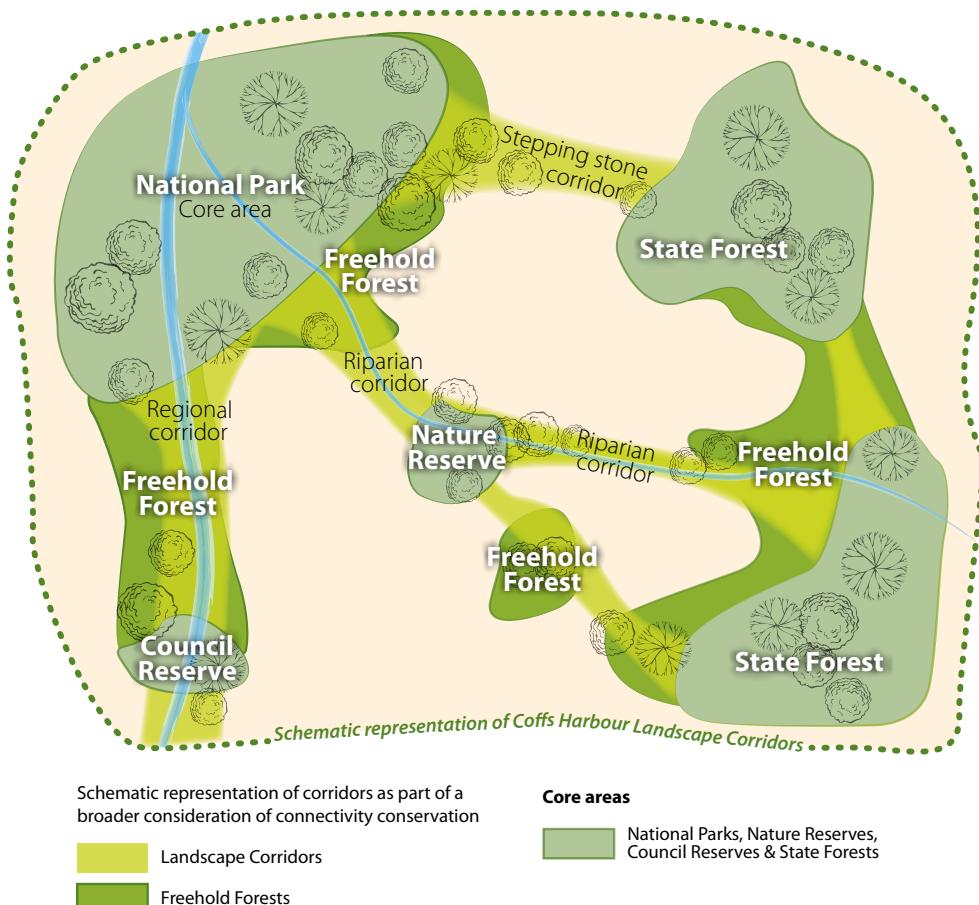


The size and shape of your planting can have a big influence on biodiversity values and the level of ongoing maintenance. Larger, non-linear plantings are best.

Landscape position

The position of your planting site in relation to existing areas of vegetation and other landscape features, such as rivers, will also influence the future biodiversity value of your site. Sites that adjoin or are located close to remnant patches of vegetation are more likely to be colonised by new species when compared to sites that are isolated. Plantings close to existing vegetation will also help buffer the remnant, reduce edge effects and enhance the biodiversity values of the remnant.

Planted areas can also provide important links, or stepping stones, between more consolidated areas of vegetation. These corridor connections can help animals move between existing patches of vegetation, and allow species to respond to future changes in climate.



Planted areas help build connectivity across the landscape and may improve biodiversity values over a large area.

Trees in productive landscapes

Most revegetation projects stem from a desire to improve the biodiversity values of an area; however, a well-designed planting can provide production benefits as well. These benefits are typically referred to as ecosystem services and can benefit the landholder undertaking the project (e.g. by providing shelter for stock) as well as the broader community (e.g. by improving water quality).

Shelterbelts and windbreaks

Shelterbelts and windbreaks are a particularly effective way to protect pasture, crops and livestock from infrequent, but damaging, high velocity hot winds and cold, drying winter winds. Well-designed windbreaks can also have significant biodiversity values.

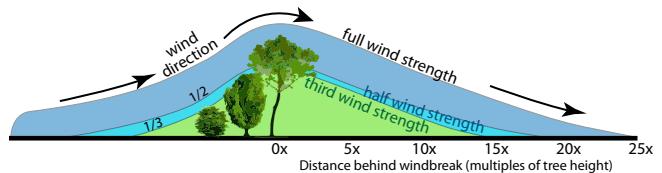


Windbreaks provide protection for stock and pasture while also improving biodiversity values.

Design considerations for shelterbelts and windbreaks

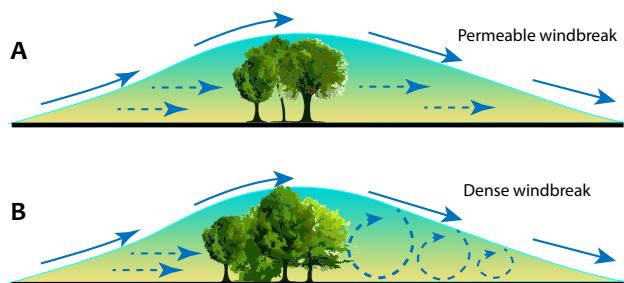
Species selection: A range of factors should be considered when selecting species for a windbreak. Growth form (height, width), foliage density, flowering times (important for supporting native pollinators), and the ability to grow in an exposed site are all worth considering. Nurseries that specialise in local provenance tube-stock should be able to help you select those species that are best suited to your site.

Height: Taller windbreaks protect a larger area compared to lower windbreaks. As a general guide, a windbreak will provide protection from wind over an area equal to 25 times the height of the windbreak. If protection from wind is one of your main objectives then you should consider including at least one or two rows of tall trees within a 4-row windbreak.



A well designed shelterbelt provides shelter up to 25 times its height downwind and 5 times its height upwind.

Density and permeability: Density, like height, has an effect on the area protected by the windbreak. Dense windbreaks tend to give a higher level of protection over a shorter distance, whereas less-dense windbreaks give a more moderate level of protection over a longer distance. Density should also be even throughout the windbreak because gaps will funnel the wind and create an area of increased wind velocity.



Permeable windbreaks (A) allow some wind through at ground level but result in minimal turbulence. Dense windbreaks (B) allow no wind through at ground level but result in turbulence both upwind and downwind of the planting.

The biodiversity benefit of a windbreak is also influenced by the density of the planting. Structurally complex windbreaks with plants occurring in the canopy, mid- and lower-canopy layers are better suited to providing habitat and protection to native animals, particularly birds. Dense plantings also provide better competition to weed species and often shade out weeds earlier than sparse plantings.

Length: Longer windbreaks are also more effective than shorter windbreaks because wind can funnel around the end of short windbreaks negating any benefits.

Width: Wide windbreaks often perform better than narrow windbreaks because it is often easier to achieve a uniform density throughout the windbreak when there are multiple rows of vegetation. When windbreak width is increased, the biodiversity value of the windbreak also increases. Generally, a minimum width of 10–15 m over 4 or 5 rows of plants

should be considered for a biodiverse, fauna-friendly windbreak.

Orientation: Windbreaks should be positioned at right angles to the prevailing wind or a particular problem wind that has the largest effect on pasture and livestock health (e.g. a hot, drying wind). If shading of pasture is an issue, windbreaks should be positioned on a north–south axis. This will still provide adequate shade for stock but will also allow sufficient light for good pasture growth. When possible, windbreaks should be planted along existing fences as this will minimise the amount of fencing that will be needed to protect the planting.

Fencing: New windbreaks will need to be fenced on properties with livestock. At a minimum, fencing will need to be in place until the planting is mature enough that stock browsing and rubbing no longer damage the plants (typically 4–10 years, depending on the species and site conditions). If possible, permanent, wildlife-friendly fencing should be considered because stock exclusion will allow for the development of a windbreak with a uniform density and a well-developed understorey and ground layer. This will also result in a windbreak with better biodiversity values and, once established, less weed management issues.

Paddock trees

While larger areas of vegetation are preferred, individual trees within a cleared paddock should also be protected and encouraged.

Why are paddock trees important?

Isolated paddock trees and small patches of vegetation within a grazing system provide valuable shade and protection for stock. They can also reduce wind speeds across a paddock which in turn improves pasture growth.

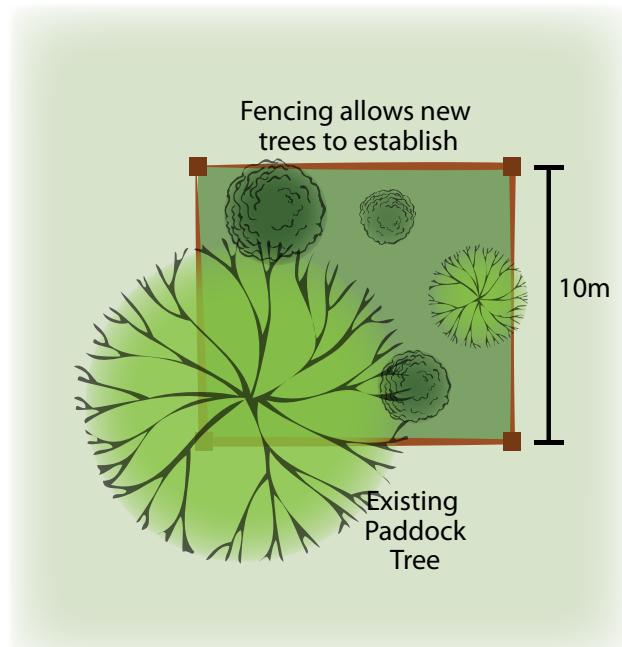
Paddock trees are also important for the management of biodiversity across the landscape. Many animals, particularly birds and insects, rely on the food and nesting resources that these keystone structures provide. Paddock trees can also contribute to the viability of entire plant and animal populations by increasing the connectivity between remnant patches of vegetation.



Paddock trees provide important habitat across cleared farmland.

Managing paddock trees on your property

The biggest long-term threat faced by existing paddock trees is a lack of recruitment. This means that when isolated paddock trees die, there are no younger trees to replace them. The best way to address this problem is to erect a fence around existing paddock trees to allow for natural regeneration. These fenced areas should be a minimum of 10 m x 10 m to allow for the development of an understorey and to allow younger trees to establish under the canopy of the existing tree. To maximise the stock shade provided by the tree this fenced area can be offset from the established tree. The control of weeds within the fenced area will also be required, although this need should decrease as the native vegetation establishes.



By off-setting fences around paddock trees, you can maximise the amount of shade created for stock.

By protecting plants regenerating around the paddock tree, a number of potential replacement trees will be available when the main tree dies. Although many trees are long-lived, planning for their replacement is an important part of managing the biodiversity on your property and maintaining the production benefits provided by paddock trees.

Establishing new paddock trees on your property

If you want to establish new paddock trees on your property a similar approach can be used to that outlined above. In general, new paddock plantings should be placed in an area that will maximise future shade potential, while also limiting any production impacts. Many properties have areas of unproductive land, for instance boggy spots or areas with large exposed rocks. These areas are often good areas to revegetate as the production benefits more easily outweigh any potential production losses.

Pollination

There are approximately 2000 species of native bees in Australia as well as several naturalised exotic species, such as the European Honeybee (*Apis mellifera*). Pollination by bees is beneficial to many crop and pasture species, as poor pollination often results in reduced seed set and lower levels of fruit production. This occurs not only in horticultural crops (e.g. Blueberries), but also in common pasture species such as Clover (*Trifolium* spp.) where seed set may be up to 30 times greater in pollinated flowers. If you consider the habitat needs of pollinators, you can maximise this free source of pollination on your property.



Effective pollination results in higher levels of fruit set and increased fruit size in blueberries.

Design considerations for native bees

Native bees require access to nectar and pollen as well as suitable nesting sites. If you want to maximise the habitat value of your revegetation project for native bee species there are a few design factors you will need to consider.

Forage species: Regular yields of quality nectar and pollen are required for healthy and diverse native bee populations. Species selection should consider both pollen and nectar production, as well as flowering time. In general, a diverse mix of species will help ensure forage availability throughout the year and will provide a rich and varied diet for native bees. Eucalypt (*Eucalyptus*, *Corymbia*, *Angophora* and *Lophostemon* spp.) and Melaleuca species (tea-trees and bottlebrushes) are important forage plants, especially when combined with a diverse flowering ground layer (e.g. *Dianella*, grass trees and *Hibbertia*, among others). For information on species that provide good bee forage, refer to the *Habitat Values* column of the *Species Selection Tables* in Section 2 of the guideline.



A native Lasioglossum bee foraging on a *Dillwynia* shrub.

Nesting sites: Native bees also require access to suitable nesting sites. Most Australian native bees are solitary, meaning that they nest individually or in small congregations. Solitary bees are either ground nesting (either burrowing into the soil or using existing holes) or will nest in dead and decaying trees. To maximise nesting sites on your property try to maintain decaying wood on the ground and provide access to bare patches of ground. Mature trees and stags (dead standing trees) also provide valuable nesting habitat for semi-social stingless bees and unmanaged European Honeybees colonies.

You may also consider providing artificial nesting sites for native bees. Mudbricks, timber blocks and hollow bamboo all provide excellent bee homes if properly prepared (see www.aussiebee.com.au for more information).



Artificial nest sites can be used to help support a greater diversity of native bees on your property.

Remediation of steep lands

The management of steep lands is a challenging task for many rural land managers in Coffs Harbour. Large areas of the Coffs Coast were cleared for the cultivation of bananas in the early 1900s, with many of these areas now abandoned or being used for alternative uses. These sites are often highly degraded, have minimal topsoil, and actively eroding gullies are common.

When undertaking a revegetation project on an ex-banana property or other areas of steep land, consider the current conditions on the site and how they may affect the success of your revegetation project. Often, only the most hardy revegetation species will be suitable, and site access may limit the materials that can be brought onto the site. Generally a reduced mix of hardy plant species planted at a low density is the best approach to revegetating these sites. In this way, more effort can be focussed on establishing a limited number of plants which will improve site conditions for future remediation works. Species such as Sally Wattle (*Acacia melanoxylon*), Tallowwood (*Eucalyptus microcorys*), Brushbox (*Lophostemon confertus*), Small-fruited Grey Gum (*Eucalyptus propinqua*), Forest Oak (*Allocasuarina torulosa*) and White Mahogany (*Eucalyptus acmenoides*) have been found to be highly suitable for these areas.

Revegetation techniques

What type of plant material should I use?

While direct seeding is commonly used in woodland areas, the intense competition from invasive grasses and annual weeds usually makes this approach unsuitable for subtropical coastal areas in northern New South Wales, like Coffs Harbour. There are several nurseries on the Coffs Coast that specialise in growing plants for environmental plantings. These nurseries use best practice seed collection methods to ensure that their stock is of suitable provenance (seed collected from a similar habitat or geographical location) and harden off their plants to improve plant survival. The majority of these plants are grown in 50 mm forestry tubes (tube-stock) and sell for \$2–\$4 per plant for trees and shrubs, and \$0.50–\$2 per plant for grass species such as *Lomandra hystrix*, a common riparian plant. Tube-stock generally establish well, require only small holes to be dug and are often less likely to dry out. A small number of nurseries also sell advanced stock in 100–150 mm pots for \$5–\$7 per plant. These advanced plants may be more suitable for slow growing species or in areas where follow-up weed control will be difficult.

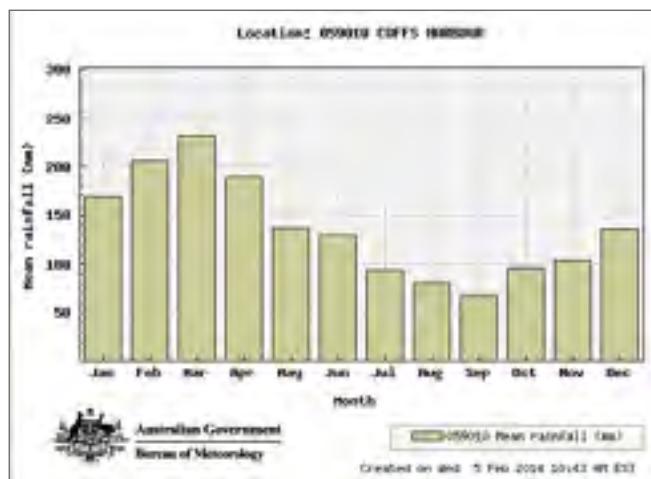
Contact your local Landcare network to find out what nurseries occur in your area.

Timing

Planting should be timed to coincide with a period of reliable rainfall. On the Coffs Coast this is generally from late February to April. Planting at this time of year will minimise the amount of hand watering required and will allow the plants to establish before the onset of cold weather.

Ground preparation and fertilisers

Ground preparation requirements are usually minimal when planting tube-stock. In areas where there is a dense ground layer of competitive grasses, some pre-planting spot spraying may be required. This should be carried out 3–4 weeks before you plan to start planting. Use a non-selective herbicide, such as glyphosate, to spray a 1 m diameter circle where each plant will be placed.



On the Coffs Coast the most reliable rainfall, and the best time for planting, is from late February to April. (Source: Australian Government Bureau of Meteorology)

When the grass has died and started to break down, a small post-hole shovel or purpose-made planting shovel can be used to make a hole approximately twice the size of the pot containing the plant. Loosen any of the soil material remaining in the hole, incorporate a small handful of slow release fertiliser and place the plant deep enough in the hole so that the top of the root ball is covered. On coastal sites or in dry exposed areas, a small amount of water crystals should also be added to the soil in the hole. There are a number of specially designed blends, such as those marketed by Terracottem®, that contain both water retaining gels and nutrients, and these have been found to be particularly effective. All plants should be well-watered directly before, and just after planting. If conditions after planting are dry, ongoing watering may be required during the first year.

Mulch

The use of biodegradable weed matting or a natural mulch is essential to help your plants establish quickly. A thick mulch layer will minimise weed competition and help retain soil moisture.

Thick jute mat or cardboard squares are well suited for large plantings or sites where access is difficult, while wood chip or mulch is preferred when access is good. In general, a thick layer of mulch will provide the best results and will help improve the soil in the process.

Plant protection

Revegetation sites are often exposed to direct sunlight, drying winds and frost. In addition, many native animals will browse on new plant growth and may completely defoliate the plant. Tree guards are commonly used to protect young plants and there are many different types available. Guards made from plastic sleeves or corflute are the most commonly used type and these are available from many rural supplies stores or from specialist horticultural suppliers. If wallaby browsing is likely to occur, then a larger guard made from stiff wire or plastic mesh should be used. These guards should be securely staked and must be at least 1–1.2 m high to stop wallabies from reaching over the top.



Small plastic guards are only suitable where browsing is unlikely.

If your revegetation project is large, you should consider undertaking it in stages so that the guards from year 1 can be reused in year 3 or 4. Regardless of whether you will be reusing your guards, all tree guards should be removed and disposed of appropriately when the tree has established (2–3 years).

While the use of tree guards is often beneficial to plant growth, this may not be the case on all sites. On sites subject to moderate velocity flooding, tree guards may result in increased plant damage during floods and will often be washed away causing pollution downstream. Plastic tree guards can also increase humidity around the plant and may result in an increased incidence of Myrtle Rust on some species.

When the use of tree guards is not appropriate, try to maintain some protection around the plant through the temporary retention of protective weed species such as Wild Tobacco. If necessary, these can be removed once the native plants have established. There are also a number of commercially available frost protectants and browsing deterrents that can be sprayed onto the plant at regular intervals.

Site maintenance

It is often said that a successful revegetation project is 20% planting and 80% weed control. Site maintenance during the first 2–3 years will have the largest impact on the success of your revegetation project. Competitive weeds growing close to the plant will result in competition for water and light, resulting in reduced plant growth and in some cases the loss of the plant. Weeds around the base of the plant may be controlled through regular mulching or the use of a non-selective herbicide such as glyphosate. When using chemical weed control methods, plan to spray a 30–50 cm buffer around each plant every 2–3 months, depending on the rate of weed growth. Be careful not to accidentally spray your plants.

Costs

Planting costs will vary significantly and depend on the revegetation approach you use and the level of plant protection you provide. The following breakdown gives an approximation of the costs of a typical planting. Costs may also vary depending on the quantity ordered and the conditions on the site.

Item	Approximate cost *
Plant	\$2.50 (forestry tube) \$5.00 (advanced)
Tree guard	\$1.00 (900 mm plastic) \$2.50 (700 mm corflute) \$4.50 (1.2 m high mesh)
Stakes (up to 3 required depending on the type of guard used)	\$1.00 (timber) \$0.50 (bamboo)
Mulch	\$1.00 (jute mulch mat) \$0.50 (wood chip)
Fertiliser/water crystals	\$0.50

* Costs are exclusive of GST and based on 2015 prices.

Further information on specific vegetation types

Coastal dunes

Coastal dune revegetation projects are usually undertaken with the aim of stabilising the dune front from wind- and wave-generated erosion and, in the process, protecting hind dune vegetation. On sites where erosion is not the main concern, revegetation works may be aimed at improving biodiversity values or rehabilitating areas that have been subject to past disturbances, such as sand mining. In general, these exposed coastal environments provide planting conditions that are extreme, and consequently planting techniques need to be adapted to address these conditions.

Some specific techniques worth considering for sandy coastal soils are:

- Seedling bundles — After removing the seedling from the pot, wrap the root ball, some potting mix, water crystals and slow release fertiliser in several layers of newspaper. Soak in water and then plant into the prepared hole.
- Mushroom compost — Prior to planting, incorporate several handfuls of mushroom compost into the loosened soil in the planting hole then plant the seedling directly into the prepared hole.
- Soil conditioner — The use of soil conditioners, such as Terracottem®, can significantly improve the survival rate of coastal plantings.

Additional resources:

Kidd, R 2001, *Coastal Dune Management: A manual of coastal dune management and rehabilitation techniques*, NSW Department of Land and Water Conservation, Sydney, available at www.planning.nsw.gov.au/rdaguidelines/documents/Coastal%20Dune%20Management%20Manual.pdf.



Coastal environments can be extreme and planting techniques need to be adapted to address these conditions.

Rainforests

Revegetation has been used in rainforest restoration for many decades and consequently a considerable knowledge base relating to planting techniques and biodiversity outcomes has been developed. There are several excellent publications on the subject and this guideline does not aim to replicate these previous works, but rather provide a brief overview of recommended practices.

Rainforests are defined by their diversity, density and structural complexity. These factors should be a key consideration when designing your revegetation project. To help achieve this, rainforest plantings are usually closely spaced (approx. 1.8 m apart) and include a diverse range of species (20–50 different species). The species mix should include a variety of life forms and fruit types to help provide an approximation of the structural and functional diversity found in the reference community.

Further advice on improving the biodiversity value of your rainforest planting can be found in the following sections of this guideline: *Maximising the biodiversity benefits of your planting* and *Revegetation techniques*.

Additional resources:

Peel, B 2010, *Rainforest Restoration Manual for South-Eastern Australia*, CSIRO Publishing, Canberra.

BSRLG, 2005, ‘Subtropical Rainforest Restoration’, Big Scrub Rainforest Landcare Group, Lismore.

Catterall, C & Kanowski, J 2010, *Rainforest Restoration: Approaches, costs and biodiversity outcomes*, Griffith University, Brisbane, available at www.griffith.edu.au/environment-planning-architecture/environmental-futures-research-institute/publications/materials-for-environmental-managers.

Moran, C 2011, *The Important Role of Birds and Bats in Rainforest Regeneration*, Griffith University, Brisbane, available at www.griffith.edu.au/environment-planning-architecture/environmental-futures-research-institute/publications/materials-for-environmental-managers.

Kanowski, J & Catterall, C 2007, *Converting Stands of Camphor Laurel to Rainforest: What are the costs and outcomes of different control methods?*, Griffith University, Brisbane, available at www.griffith.edu.au/environment-planning-architecture/environmental-futures-research-institute/publications/materials-for-environmental-managers.

Dry forests

Many of the dry forest communities occurring in the Coffs Harbour LGA are dominated by species from the *Eucalyptus*, *Corymbia*, *Angophora* and *Lophostemon* genera. These communities typically contain a lower diversity of species when compared to rainforest and wet sclerophyll communities and are often adversely affected by excess soil nutrients. Planting density is usually around 800–1000 plants per hectare (i.e. approx. 4 m apart), and plantings consist of a few dominant canopy species and fast growing mid-storey pioneers. Additional plantings of ground layer species may also be undertaken to increase the diversity and biodiversity value of the site.

Excess soil nutrients can be a major cause of weed infestation in dry forest communities and some researchers have also suggested depleting soil nutrients prior to replanting. The physical harvesting and removal of established weeds may help to remove these excess nutrients.

Additional resources:

These resources focus on woodland communities but are still generally applicable to the dry sclerophyll communities of the mid north coast.

Greening Australia (n.d.), *A Revegetation Guide for Eucalypt Woodlands*, Greening Australia, Norman Park, QLD, available at www.greeningaustralia.org.au/uploads/knowledgeportal/Eucalypt_Woodlands_Case_Study_FINAL.pdf.

Munro, N & Lindenmayer, D 2011, *Planting for Wildlife: A practical guide to restoring native woodlands*, CSIRO Publishing, Collingwood.

Freshwater wetlands

Freshwater wetlands are widespread throughout the Coffs Harbour LGA and occur in a variety of environments. Freshwater wetlands are often threatened by land clearing, the diversion or drainage of water, and grazing. Addressing these impacts is an essential first step in revegetating your wetland. Wetland plants may also be hard to source from local nurseries necessitating different approaches to collecting plant material.

Specific techniques suitable for freshwater wetland revegetation include:

- Adding a seed-bank — If a suitable ‘donor site’ can be found, soil and seed can be moved from one wetland to another. To use this technique, walk across each major zone of the wetland (e.g. above the water, along the water’s edge and below the water line) and collect a trowel-full of soil for every step you take and store in a separate bucket for each zone. Mix the contents of the bucket well and then dry the soil in the sun (this will help break the dormancy of some seeds). When the soil is dry, spread the soil mix in lines through the appropriate zone in the recipient wetland.
- Transplanting plants from a donor wetland — Transplanted plants need to be harvested and replanted as quickly as possible to avoid losses. When collecting plants, note the zone where the plant was collected (e.g. above the water, along the water’s edge and under the water) and replant in the same zone.

Several freshwater wetlands are listed as Endangered Ecological Communities and the collection of plants or soil material from these sites will require a permit. If you are unsure of the legality of collecting plants for your project you should discuss your plans with one of Council’s Biodiversity Officers.

Additional resources:

Romanowski, N 2009, *Planting Wetlands and Dams: A practical guide to wetland design, construction and propagation*, CSIRO Publishing, Canberra.

Brock, MA & Casanova, MT 2000, *Are there Plants in your Wetland? Revegetating wetlands*, Land and Water Research and Development Corporation, Canberra.

Estuarine communities

Estuarine vegetation communities include mangrove and saltmarsh communities that are subject to inundation by saline (salty) or brackish water. These communities can be subject to wave action as well as run-off, sedimentation, grazing and weed infestation. Different revegetation techniques are needed to deal with these impacts and the effects of saltwater inundation and wave action.

Mangroves: Mangroves typically occur between the mid- to high-tide mark of rivers and creeks that are subject to tidal influence. Mangroves are unique in that their seed germinates on the parent tree before falling to the ground and being dispersed to a suitable site by the movement of water. The most commonly used species for revegetation is the widely distributed Grey Mangrove (*Avicennia marina*). Seedlings of this species are not commercially available and must be collected from an adjoining site or may be found floating in the water in December. After collection, seedlings should be planted immediately by pushing them into the mud in a site protected from wave action. Planting density should reflect those found in naturally regenerating stands (approx. 0.5–1 m apart).

Artificial and natural structures may also be used to encourage the natural settlement of seeds and to protect the growing seedlings from wave action. Rock fillets and coir logs are commonly used for this purpose.



Mangrove planting along the Shoalhaven River.
(Photo: Allan Lugg)

Due to the fragile nature of mangroves, please discuss your plans with your local NSW Department of Primary Industries Fisheries Conservation Officer before starting works.

Saltmarsh: Coastal saltmarsh is a listed Endangered Ecological Community under the NSW Threatened Species Conservation Act and consequently all works undertaken in this community should be discussed with an officer from your local NSW Office of Environment and Heritage. Saltmarsh planting often relies on sourcing material grown from cutting or transplanting plugs taken from a donor site. Both of these methods have been shown to be successful although progress is often slow. Transplanting of material from another saltmarsh may also have a detrimental effect on the donor site and this should be considered when planning your project.

Additional resources:

Stewart, M & Fairfull, S 2008, *Primefact 746: Mangroves*, NSW Department of Primary Industries, Sydney, available at www.dpi.nsw.gov.au/_data/assets/pdf_file/0020/236234/mangroves.pdf.

DECC 2008, *Saltwater Wetlands Rehabilitation Manual*, NSW Department of Environment and Climate Change, Sydney, available at www.environment.nsw.gov.au/wetlands/saltwetlandsrehabmanual.htm.

Sainty, G, Hosking, J, Carr, G & Adam, P 2012, ‘Estuary Plants and What’s Happening to them in South-East Australia’, Sainty and Associates Pty Ltd, Potts Point NSW.

DECC 2008, *Best Practice Guidelines for Coastal Saltmarsh*, Department of Environment and Climate Change, Sydney, available at www.environment.nsw.gov.au/resources/threatenedspecies/08616coastsaltmarshbpg.pdf.

SECTION 2

Species Selection Tables

The native vegetation communities identified in Coffs Harbour City Council's Fine-scale Vegetation Mapping have been grouped into 24 broad vegetation types that sit within 7 vegetation groupings (see Table 1). The broad vegetation types align closely with the Keith (2006) classification of NSW vegetation and better meet the requirements of landholders undertaking revegetation projects.

The following table shows the relationship between the broad vegetation types used in this guideline and the vegetation communities identified in Coffs Harbour City Council's Fine-scale Vegetation Mapping.

For example, the North Coast Dry Sclerophyll Forest broad vegetation types encompasses the following fine-scale vegetation communities: CH DOF01, CH DOF02, CH DOF04, CH DOF05, CH DOF06 and CH DOF10 (see Volume 2: Vegetation Community Profiles for a description of each of these communities).

Sixteen native vegetation communities identified in the fine-scale mapping have been excluded from the guideline due to their highly restricted distributions.

Table 1: Vegetation groupings and broad vegetation types used in this guideline

Vegetation grouping	Broad vegetation community type (as used in this guideline)		Fine-scale vegetation community code
Coastal Dunes and Headlands	Coastal Incipient Foredune Complex	p 21	CH Go1
	Coastal Banksia Hind Dune Complex	p 21	CH Ho1
	Coastal Wattle Foredune Complex	p 22	CH Ho2
	Coastal Headland Themeda Grassland	p 22	CH Ho3
	Coastal Headland Banksia Shrubland	p 22	CH Ho6
	Coastal Headland Red Gum Forest	p 23	CH WSF14
	Coastal Dune Littoral Rainforest ^{p 23}		CH RF07
			CH RF08
			CH RF13
Dry Open Forests	North Coast Dry Sclerophyll Forest	p 25	CH DOF01 CH DOF02 CH DOF04 CH DOF05 CH DOF06 CH DOF10
	Coastal Dune Dry Sclerophyll Forest	p 26	CH DoF08 CH DOF09

Vegetation grouping	Broad vegetation community type (as used in this guideline)		Fine-scale vegetation community code
Wet Sclerophyll Forests	North Coast Wet Sclerophyll Forest	p 28	CH WSF02 CH WSF03 CH WSF05 CH WSF08 CH WSF09 CH WSF10 CH WSF11 CH WSF12 CH WSF13 CH WSF15 CH WSF17
	Northern Escarpment Wet Sclerophyll Forest	p 30	CH WSF06 CH WSF07
	Northern Hinterland Wet Sclerophyll Forest	p 32	CH WSF18
Rainforests	Cool Temperate Rainforest	p 33	CH RF01 CH RF02
	Warm Temperate Rainforest	p 33	CH RF03 CH RF12
	Lowland Subtropical Rainforest	p 35	CH RF09 CH RF11
Riparian Communities	Orara River Riparian Forest	p 38	CH FrWo7
	Dorrigo Plateau Riparian Forest	p 40	CH FrWo8
	Coastal Flooded Gum Riparian Forest	p 41	CH WSF01
Freshwater Wetlands	Coastal Swamp Forested Wetland	p 41	CH FrWo1 CH FrWo2 CH FrWo3 CH FrWo4 CH FrWo5 CH FrWo6
	Coastal Heath Swamp	p 44	CH FrWo9 CH FW06 CH FW01 CH FW02 CH FW03 CH FW04 CH FW05
	Coastal Freshwater Lagoon Wetland	p 45	CH FW08
Estuarine Communities	Mangrove Forest	p 46	CH SW01
	Coastal Floodplain Estuarine Wetland	p 46	CH SW02 CH FrW10 CH FrW11
	Saltmarsh	p 47	CH SW03 CH SW04 CH SW05 CH SW06 CH SW07

Species Selection Tables

Each Species Selection Table below lists a number of suitable revegetation species and, for each species, includes:

- a brief description of the species
- information on plant height, growth rate and frost susceptibility
- general comments on habitat values and planting requirements.

Due to the breadth of vegetation types included in this guideline, it is likely that some of the species listed in these tables may not be readily available or may have to be grown to order. For other species, our knowledge of germination techniques, hardiness and frost susceptibility may be limited or non-existent. If in doubt, seek advice from your local native tube-stock nursery or Coffs Harbour Regional Landcare.

Explanation of codes:

Growth rate:

F	fast
M	moderate
S	slow

Frost:

T	tolerant of frost
R	resists mild frosts
S	susceptible to frost

Toe of Bank

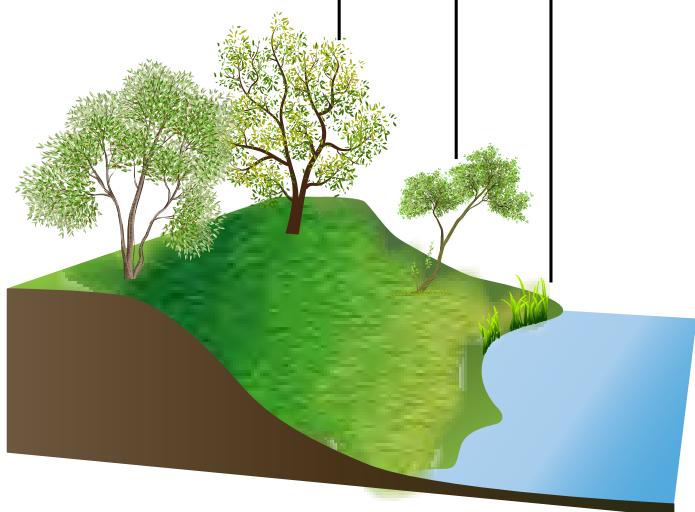
Low growing, multi trunked plants with matted roots to bind the toe. Best species for erosion control and can withstand inundation and fast flowing water.

Middle Bank

Topmost part of the face of the bank. Medium sized plants with good root systems and large canopies which shade the stream.

Upper Bank

Flat or mostly level section. Trees with deep root systems.



Species Selection Tables

Table 1. Coastal Dunes and Headlands						
Potential regeneration species	Common name	Description	Height	Growth rate	Habitat values/comments	
Coastal Incipient Foredune Complex - CH Go1						
<i>Carpobrotus glaucescens</i>	Pigface	Prostrate succulent found on coastal sand dunes. Flower petals pink with a white base.	0.1 m		Helps stabilise incipient dunes and foredunes. Grows from cuttings.	
<i>Ipomoea brasiliensis</i>	Beach Morning Glory	Common low growing coastal dune species.	0.5 m	F	Helps stabilise incipient dunes and foredunes.	
<i>Spinifex sericeus</i>	Coastal Spinifex	Important dune stabilising species with running stolons.	0.5 m	F	Responds well to nitrogenous fertiliser. Grows from cuttings.	
<i>Vigna marina</i>	Dune Bean	A prostrate vine with yellow flowers commonly used for dune stabilisation works.	0.3 m	F		
Coastal Banksia Hind Dune Complex - CH Ho1						
<i>Acacia longifolia</i> subsp. <i>sophorae</i>	Coastal Wattle	Prostrate shrub, widespread along the coast. Common dune stabilisation species.	0.5-3 m	F	Helps improve habitat complexity. Excellent coloniser of exposed sand. Nitrogen fixing, improves soil quality.	
<i>Acronychia imperforata</i>	Logan Apple	Shrub of small tree from lowland or littoral rainforest.	9 m	M		
<i>Alectryon coriaceus</i>	Beach Alectryon, Beach Birds Eye	Common coastal shrub with large glossy leaves and bird attracting fruit.	6 m	M	Red aril around seed eaten by a number of birds.	
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	Common on coastal dunes. Good coastal species for revegetation works.	5 m	F	Very important nectar source for birds in winter. Seed cones eaten by Yellow-tailed Black Cockatoos. May need protection from salt spray when young.	
<i>Cryptocarya triplinervis</i>	Three-veined Laurel	Common coastal species with dense foliage and purple/black drupes.	15 m	F	Purple drupes attractive to frugivorous birds. Germination reliable but slow.	
<i>Cupaniopsis anacardioides</i>	Tuckeroo	Common medium sized tree with a dense crown. Fruits a yellow capsule - seeds black with fleshy aril.	6 m	M	Fleshy seed arils are bird attracting. Important winter nectar source for native bees.	
<i>Lomandra longifolia</i>	Mat Grass	Easy to grow, large, clumping grass.	1 m	F	Helps improve habitat complexity.	
<i>Syzygium australe</i>	Brush Cherry	Attractive shrub to small tree with flaky bark, fine white flowers and red, fleshy fruits.	10 m	F	The fruit is eaten by Wompoo Fruit-dove, Satin Bowerbird, Figbird. Susceptible to Myrtle Rust.	

Table 1. Coastal Dunes and Headlands						
Potential regeneration species	Common name	Description	Height	Growth rate	Habitat values/comments	
Coastal Wattle Foredune Complex - CH Ho2						
<i>Acacia longifolia</i> subsp. <i>sophorae</i>	Coastal Wattle	Prostrate shrub, widespread along the coast. Common dune stabilisation species.	0.5–3 m	F	Helps improves habitat complexity. Excellent coloniser of exposed sand. Nitrogen fixing, improves soil quality.	
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	Common on coastal dunes. Good coastal species for revegetation works.	5 m	F	Very important nectar source for birds in winter. Seed cones eaten by Yellow-tailed Black Cockatoos. May need protection from salt spray when young.	
<i>Dianella congesta</i>	Coastal Flax Lily	Tufted, mat forming herb with yellow flowers and fleshy blue fruits	0.5 m	F	Flowers attract a number of native bee species. Fruit eaten by a variety of birds. Grows easily from seed and by division.	
<i>Spinifex sericeus</i>	Coastal Spinifex	Important dune stabilising species with running stolons.	0.5 m	F	Responds well to nitrogenous fertiliser. Grows from cuttings.	
Coastal Headland Themeda Grassland - CH Ho3						
<i>Hibbertia vestita</i>	Hairy Guinea Flower	Low growing shrub with attractive yellow flowers.	0.5 m	M	Propagate by cuttings.	
<i>Pimelea linifolia</i>	Slender Rice Flower	Small shrub with small, white, clustered flowers.	0.5 m	F	Propagate by cuttings.	
<i>Pultenaea maritima</i>	Coastal Bush-pea	Prostrate shrub with yellow/orange ‘pea’ flowers.	0.5 m	M	Endangered.	
<i>Themeda australis</i>	Kangaroo Grass	Tufted grass with purple-tinged seed heads. The coastal form of Kangaroo Grass is a low growing groundcover.	0.5 m	F	Plugs' of Kangaroo Grass can be transplanted onto revegetation sites.	
<i>Zoysia macrantha</i>	Prickly Couch	Common coastal grass with a running habit and thick sward.	0.3 m	F		
Coastal Headland Banksia Shrubland - CH Ho6						
<i>Acacia longifolia</i> subsp. <i>sophorae</i>	Coastal Wattle	Prostrate shrub, widespread along the coast. Common dune stabilisation species.	0.5–3 m	F	Helps improves habitat complexity. Excellent coloniser of exposed sand. Nitrogen fixing, improves soil quality.	
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	Common on coastal dunes. Good coastal species for revegetation works.	5 m	F	Very important nectar source for birds in winter. Seed cones eaten by Yellow-tailed Black Cockatoos. May need protection from salt spray when young.	

Table 1. Coastal Dunes and Headlands

Potential regeneration species	Common name	Description	Height	Growth rate	Habitat values/comments
<i>Casuarina glauca</i>	Swamp Oak	Common tree along coastal streams. Common in brackish areas.	20 m	F	Woody seed cones are an occasional food source for Glossy Black Cockatoos.
<i>Cryptocarya triplinervis</i>	Three-veined Laurel	Common coastal species with dense foliage and purple/black berries.	15 m	F	Purple berries attractive to frugivorous birds. Germination reliable, but slow.
<i>Glochidion ferdinandi</i>	Cheese Tree	Shrub to small tree with attractive foliage. Common and hardy pioneer species.	10 m	F	Small red seeds are consumed by a number of birds.
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	Widespread and common wetland tree species. Large white 'bottlebrush' flowers.	12 m	F	Flowers in autumn-spring. Provides an important winter nectar source for birds, bats and native bees. Susceptible to Myrtle Rust.

Coastal Headland Red Gum Forest - CH WSF14

<i>Cupaniopsis anacardioides</i>	Tuckeroo	Common medium sized tree with a dense crown. Fruits a yellow capsule - seeds black with fleshy aril.	6 m	F	Fleshy seed arils are bird attracting. Important winter nectar source for native bees.
<i>Eucalyptus siderophloia</i>	Grey Ironbark	Tall eucalypt with persistent, grey/black 'ironbark'.	40 m	M	Koala food tree. Flowers in spring. Source of nectar for insects birds and flying foxes. Slightly susceptible to Myrtle Rust.
<i>Eucalyptus tereticornis</i>	Forest Red Gum	Tall tree with smooth, white/grey bark. Suitable for shelterbelts and as a shade tree.	50 m	F	Important winter nectar and pollen resource for a range of animals, birds and insects. Koala food tree. Susceptible to Myrtle Rust.
<i>Lophostemon confertus</i>	Brush Box	Common and widespread tall tree with dense foliage.	30 m	F	
<i>Pittosporum undulatum</i>	Native Daphne, Sweet Pittosporum	Hardy large shrub to small tree. Can become weedy on high nutrient sites.	10 m	F	Orange fruit split to expose a mass of sticky seeds eaten by a variety of birds. Can become weedy on high nutrient sites.

Coastal Dune Littoral Rainforest - CH RF07, CH RF08, CH RF13

<i>Acronychia imperforata</i>	Logan Apple	Shrub or small tree from lowland or littoral rainforest.	9 m	M	May need to be propagated from cuttings.
<i>Alectryon coriaceus</i>	Beach Alectryon, Beach Birds Eye	Common coastal shrub with large glossy leaves and bird attracting fruit.	6 m	M	Red aril around seed eaten by a number of birds.

Table 1. Coastal Dunes and Headlands

Potential regeneration species	Common name	Description	Height	Growth rate	Habitat values/comments
<i>Corymbia intermedia</i>	Pink Bloodwood	Tall tree, common in a number of dry and wet sclerophyll communities along the north coast of NSW. Flowers heavily with white creamy flowers.	30 m	F	Flowers in summer. Important nectar resource for insects, birds and arboreal animals. Older trees readily develop hollows.
<i>Cupaniopsis anacardioides</i>	Tuckeroo	Common medium sized tree with a dense crown. Fruits a yellow capsule - seeds black with fleshy aril.	6 m	M	Fleshy seed arils are bird attracting. Important winter nectar source for native bees.
<i>Diospyros pentamera</i>	Myrtle Ebony, Grey Persimmon	Small to medium sized rainforest tree with small reddish berries.	30 m	S	Fruit attractive to frugivorous birds.
<i>Drypetes deplanchei</i>	Yellow Tulipwood	Hardy, medium sized tree, common in dry and littoral rainforests.	20 m		Host plant for larvae of the Common or Yellow Albatross Butterfly (<i>Appias paulina ega</i>).
<i>Dysoxylum mollissimum</i> subsp. <i>molle</i>	Red Bean	Medium to large tree common in subtropical and littoral rainforest.	20 m	F	Fleshy seed arils are bird attracting. Fresh seed germinates readily.
<i>Endiandra sieberi</i>	Hard Corkwood	Small to medium tree with hard corky bark. Fruit a large (20mm), purple/black, single-seeded drupe.	25 m	S	Fruit eaten by frugivorous pigeons. Very slow to germinate.
<i>Eucalyptus robusta</i>	Swamp Mahogany, Swamp Messmate	Medium sized eucalypt with persistent, fibrous bark.	25 m	F	Koala food tree. Flowers in winter providing an important nectar source for birds, bats and native bees. Susceptible to Myrtle Rust.
<i>Ficus rubiginosa</i>	Rusty Fig, Port Jackson Fig	Small to large tree found in a variety of vegetation communities. Common in coastal rainforest communities.	12 m	F	Very important year round food resource. Fruits are consumed by a number of birds.
<i>Glochidion ferdinandi</i>	Cheese Tree	Shrub to small tree with attractive foliage. Common and hardy pioneer species.	10 m	F	Small red seeds are consumed by a number of birds.
<i>Guioa semiglaucia</i>	Guioa	Common and widespread medium sized shrub. Hardy species - good for revegetation sites.	10 m	F	Fleshy orange seed aril eaten by some frugivorous birds. Excellent pioneer species for revegetation sites.
<i>Litsea australis</i>	Brown Bolly Gum	Medium sized tree with attractive foliage. Fruit a black, egg-shaped, drupe (15 mm).	20 m	M	Fruits eaten by a number of frugivorous birds.
<i>Lophostemon confertus</i>	Brush Box	Common and widespread tall tree with dense foliage.	30 m	F	

Table 1. Coastal Dunes and Headlands

Potential regeneration species	Common name	Description	Height	Growth rate	Habitat values/comments
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	Widespread and common wetland tree species. Large white 'bottlebrush' flowers.	12 m	F	Flowers in autumn-spring. Provides an important winter nectar source for birds, bats and native bees. Susceptible to Myrtle Rust.
<i>Mischocarpus pyriformis</i> subsp. <i>pyriformis</i>	Yellow Pear-fruit	Medium sized tree with attractive foliage. Fruit a yellow capsule with a red, aril enclosed seed.	10 m	S	Red aril around seed eaten by some birds.
<i>Notelaea longifolia</i>	Large Mock-olive, Large-leaved Olive	Large shrub with blueish/black, olive-like fruit (15 mm).	4 m	M	Fruit eaten by a variety of frugivorous birds.
<i>Syzygium luehmannii</i>	Small-leaved Lilly Pilly, Riberry	Attractive shrub to small tree with dense foliage, fine white flowers and red, fleshy fruits.	10 m	F	The fruit is eaten by Wompoo Fruit-dove, Satin Bowerbird, Figbird. Susceptible to Myrtle Rust.
<i>Syzygium oleosum</i>	Blue Lilly Pilly	Attractive shrub to small tree with flaky bark, fine white flowers and red, fleshy fruits.	8 m	F	The fruit is eaten by Wompoo Fruit-dove, Satin Bowerbird, Figbird. Susceptible to Myrtle Rust.
<i>Trochocarpa laurina</i>	Tree Heath	Medium sized shrub with attractive foliage. Hardy in full sun or part-shade.	5 m	S	Fruit eaten by a variety of fruit eating birds.

Table 2. Dry Open Forests

North Coast Dry Sclerophyll Forest - CH DOF01, CH DOF02, CH DOF04, CH DOF05, CH DOF06, CH DOF10						
Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
<i>Acacia irrorata</i>	Green Wattle	Medium tree to small shrub, often near watercourses. Usually flowering between November and January.	4–12 m	F	R	Flowers following good rain providing nectar for insects. Sap eaten by Sugar Gliders. Fast growing hardy tree, well suited to revegetation sites. Fast growing hardy tree, well suited to revegetation sites.
<i>Allocasuarina torulosa</i>	Forest Oak	Slender tree occurring on coastal hills and ranges.	12 m	M	R	Cones a major food source for the Glossy Black Cockatoo
<i>Angophora costata</i>	Smooth-barked Apple	Large spreading tree with smooth bark and white showy flowers.	25 m	F	R	Older trees readily develop hollows. Flowers late spring/early summer. Important nectar resource for insects, birds and arboreal animals.

Table 2. Dry Open Forests

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
<i>Breynia oblongifolia</i>	Coffee Bush	Widespread small shrub with orange to pink berries.	3 m	F		Pollinated by a single species of moth from the family Gracillariidae. Food plant for the Large Grass Yellow Butterfly. Ripe berries eaten by a range of birds.
<i>Corymbia intermedia</i>	Pink Bloodwood	Tall tree, common in a number of dry and wet sclerophyll communities along the north coast of NSW. Flowers heavily with white creamy flowers.	30 m	F	R	Flowers in summer. Important nectar resource for insects, birds and arboreal animals. Sap provides food resource for Sugar Gliders. Older trees readily develop hollows.
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	Shrub or small tree with attractive foliage, flowers and blue coloured berries.	12 m	M	S	Blue berries attractive to a range of frugivorous birds. Germination is difficult. Often grown from cuttings.
<i>Eucalyptus pilularis</i>	Blackbutt	Tall eucalypt with skirt of rough bark up to the first branches. Very common species on the north coast of NSW.	60 m	F	T	Important nectar and pollen resource for a range of animals, birds and insects. Older trees have many hollows. Slightly susceptible to Myrtle Rust.
<i>Eucalyptus planchoniana</i>	Needlebark Stringybark	Medium sized tree with bark persistent to the smaller branches.	25 m	F		Flowers in spring providing an important nectar source for insects and birds.
<i>Eucalyptus pyrocarpa</i>	Large-fruited Blackbutt	Medium sized eucalypt with persistent bark on trunk and large branches.	30 m		T	Important nectar and pollen resource for a range of animals, birds and insects. Older trees have many hollows. Slightly susceptible to Myrtle Rust.
<i>Eucalyptus resinifera</i> <i>subsp. Hemilampra</i>	Red Mahogany	Medium sized tree with an open crown. Persistent, fibrous bark to the smaller branches.	45 m		T	Important nectar and pollen resource for a range of animals, birds and insects. Koala food tree.
<i>Glochidion ferdinandi</i>	Cheese Tree	Shrub to small tree with attractive foliage. Common and hardy pioneer species.	10 m	F	T	Small red seeds are consumed by a number of birds. Excellent pioneer species for revegetation sites.
<i>Leucopogon lanceolatus</i>	White Beard	Medium sized shrub with attractive white flowers.	3 m	S		Small red fruit eaten by birds. Very difficult to germinate but cuttings strike.
<i>Persoonia stradbrokeana</i>	Geebung	Shrub with dense foliage and small yellow flowers.	5 m	F	T	Often pollinated by native short-tongued Leioproctus bees. Fruits eaten by a variety of birds. Difficult to propagate.
<i>Pultenaea villosa</i>	Hairy Bush-pea	Small shrub with masses of yellow/orange 'pea' flowers.	2 m			Germinates and restores soil nitrogen after fire.
<i>Syncarpia glomulifera</i>	Turpentine	Common and widespread medium sized tree.	20 m		T	Flowers in spring. Nectar resource for insects and birds. Young growth very susceptible to Myrtle Rust.

Table 2. Dry Open Forests

Coastal Dune Dry Sclerophyll Forest - CH DoFo8, CH DOFo9						
Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coastal Banksia	Common on coastal dunes. Good coastal species for revegetation works.	5 m	F	R	Important nectar source for honeyeaters over winter.
<i>Breynia oblongifolia</i>	Coffee Bush	Widespread small shrub with orange to pink berries.	3 m	F		Pollinated by a single species of moth from the family Gracillariidae. Food plant for the Large Grass Yellow Butterfly. Ripe berries eaten by a range of birds.
<i>Callistemon salignus</i>	Willow Bottlebrush	Attractive bottlebrush with attractive creamy white flowers followed by pink new growth.	4–10 m	F	R	Attractive to native bees and birds. Susceptible to Myrtle Rust.
<i>Corymbia intermedia</i>	Pink Bloodwood	Tall tree, common in a number of dry and wet sclerophyll communities along the north coast of NSW. Flowers heavily with white creamy flowers.	30 m	F	R	Flowers in summer. Important nectar resource for insects, birds and arboreal animals. Sap provides food resource for Sugar Gliders. Older trees readily develop hollows.
<i>Cupaniopsis anacardioides</i>	Tuckeroo	Common medium sized tree with a dense crown. Fruits a yellow capsule - seeds black with fleshy aril.	6 m	M		Fleshy seed arils are bird attracting. Important winter nectar source for native bees.
<i>Glochidion ferdinandi</i>	Cheese Tree	Shrub to small tree with attractive foliage. Common and hardy pioneer species.	10 m	F	T	Small red seeds are consumed by a number of birds. Excellent pioneer species for revegetation sites.
<i>Guioa semiglauc</i> a	Guioa	Common and widespread medium sized shrub. Hardy species - good for revegetation sites.	10 m	F		Fleshy orange seed aril eaten by some frugivorous birds. Fast growing hardy tree, well suited to revegetation sites.
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	Widespread and common wetland tree species. Large white 'bottlebrush' flowers.	12 m	F		Flowers autumn to winter. Important nectar source for birds, bats and native bees, especially in winter. Susceptible to Myrtle Rust.
<i>Persoonia stradbrokensis</i>	Geebung	Shrub with dense foliage and small yellow flowers.	5 m	F	T	Often pollinated by native short-tongued Leioproctus bees. Fruits eaten by a variety of birds. Difficult to propagate.

Table 3. Wet Sclerophyll Forests

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
North Coast Wet Sclerophyll Forest - CH WSF02, CH WSF03, CH WSF05, CH WSF08, CH WSF09, CH WSF10, CH WSF11, CH WSF12, CH WSF13, CH WSF15, CH WSF17						
<i>Acacia irrorata</i>	Green Wattle	Medium tree to small shrub, often near watercourses. Usually flowering between November and January.	4–12 m	F	R	Flowers following good rain providing nectar for insects. Sap eaten by Sugar Gliders.
<i>Acacia melanoxylon</i>	Blackwood, Sally Wattle	Small to medium sized tree. Common pioneer, although often short lived on the coast.	6–25 m	F	R	Seeds eaten by a number of birds. Excellent pioneer species for revegetation sites.
<i>Allocasuarina torulosa</i>	Forest Oak	Slender tree occurring on coastal hills and ranges.	12 m	M	R	Cones a major food source for the Glossy Black Cockatoo.
<i>Angophora costata</i>	Smooth-barked Apple	Large spreading tree with smooth bark and white showy flowers.	25 m		R	Older trees readily develop hollows. Flowers late spring/early summer. Important nectar resource for insects, birds and arboreal animals.
<i>Archontophoenix cunninghamiana</i>	Bangalow Palm	Tall palm growing in coastal rainforest communities. Flowers in autumn.	25 m	F	S	Ripe fruit an important food source for the Wompoo Pigeon.
<i>Breynia oblongifolia</i>	Coffee Bush	Widespread small shrub with small pink to black berries.	3 m	M		Pollinated by a single species of moth from the family Gracillariidae. Food plant for the Large Grass Yellow Butterfly. Ripe berries eaten by a range of birds.
<i>Caldcluvia paniculosa</i>	Soft Corkwood, Rose-leaf Marara	Medium sized pioneer tree with attractive foliage and white flowers.	10 m	M	S	
<i>Callicoma serratifolia</i>	Callicoma	Common pioneer species with attractive and fragrant white flowers in October to November.	12 m	M	S	Young plants have high moisture requirements.
<i>Cordyline stricta</i>	Narrow-leaved Palm Lily, Slender Palm Lily	Small, palm-like plant with narrow strappy leaves and purple to black coloured berries.	5 m		S	Adaptable species growing on swampy as well as well drained sites.
<i>Cryptocarya glaucescens</i>	Jackwood	Common medium sized tree with glossy green leaves and dark, purple-black drupe.	20 m	S	R	Purple-black drupes attract numerous frugivorous birds.
<i>Cryptocarya rigida</i>	Forest Maple	Common shrub to small tree with attractive red/brown new growth. Large dark, purple/black drupe.	10 m	S	S	Purple-black fruit eaten by some rainforest pigeons. Plant in semi-shade.

Table 3. Wet Sclerophyll Forests

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	Shrub or small tree with attractive foliage, flowers and blue coloured berries.	12 m	M	S	Blue berries attractive to a range of frugivorous birds. Germination difficult, often grown from cuttings.
<i>Eucalyptus acmenoides</i>	White Mahogany	Tall eucalypt with rough, persistent bark. Flowers cream coloured.	30 m	M	R	Flowers late spring/early summer. Important nectar and pollen resource for a range of animals, birds and insects.
<i>Eucalyptus dunnii*</i> Eastern Dorrigo foothills only.	White Gum	Tall eucalypt with rough, brown, flaky bark. Common timber species. Good shade and shelter tree in open sites.	40 m	F	T	
<i>Eucalyptus grandis*</i> Rich lowland soils only.	Flooded Gum, Rose Gum	Very tall, smooth barked eucalypt with a skirt of rough bark at the base. Common on fertile soils on lower slopes.	50 m	F	T	Flowers in autumn. Reasonable source of nectar.
<i>Eucalyptus microcorys</i>	Tallowwood	Tall, dense crowned eucalypt with rusty coloured stringy bark – hardy.	30 m	F	T	Important Koala food tree. Important spring nectar resource for insects, birds and arboreal animals. Needs protection from browsing when young.
<i>Eucalyptus pilularis</i>	Blackbutt	Tall eucalypt with skirt of rough bark up to the first branches. Very common species on the north coast of NSW.	60 m	F	T	Important nectar and pollen resource for a range of animals, birds and insects. Older trees have many hollows. Slightly susceptible to Myrtle Rust.
<i>Eucalyptus saligna</i>	Sydney Blue Gum	Common, smoothed barked eucalypt found on moist, moderate fertility soils.	40 m	F	R	Important nectar and pollen resource for a range of animals, birds and insects. Koala food tree. Generally only occurs in moister sites where it co-dominates the canopy with <i>E. pilularis</i> and <i>E. microcorys</i> .
<i>Guioa semiglaucia</i>	Guioa	Common and widespread medium sized shrub. Hardy species - good for revegetation sites.	10 m	F	S	Fleshy orange seed aril eaten by some frugivorous birds. Fast growing hardy tree, well suited to revegetation sites.
<i>Homalanthus populifolius</i>	Bleeding Heart	Hardy pioneer shrub with heart shaped leaves turning red before falling.	6 m	F	R	Fruit sought after by a variety of native birds. Fruits October to December.
<i>Lophostemon confertus</i>	Brush Box	Common and widespread tall tree with dense foliage.	30 m	F	T	Young plants have high moisture requirements.

Table 3. Wet Sclerophyll Forests

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
<i>Myrsine variabilis</i>	Muttonwood, Variable Muttonwood	Shrub or small tree with shiny leaves, small white flowers and small fleshy fruits.	10 m	S		Larval food plant of the White-banded Line-blue butterfly. Fruits eaten by a variety of birds.
<i>Polyscias elegans</i>	Celerywood	Common pioneer species. Sparingly branched with large bipinnate leaves.	15 m	F	S	Host plant for larvae of Dark Pencilled-blue butterfly.
<i>Polyscias murrayi</i>	Pencil Cedar	Common pioneer species. Sparingly branched with large bipinnate leaves.	10 m	F	S	Very fast growing species highly suitable for revegetation.
<i>Syncarpia glomulifera</i>	Turpentine	Common and widespread medium sized tree.	20 m	M	T	Flowers in spring. Nectar resource for insects and birds. Young growth very susceptible to Myrtle Rust.
<i>Synoum glandulosm</i>	Scentless Rosewood	Shrub or small tree with fragrant flowers and orange, globular fruit capsules.	7 m	M	R	Orange fruit ripen when other food sources are scarce. Plant in semi-shade.
<i>Trochocarpa laurina</i>	Tree Heath	Medium sized shrub with attractive foliage. Hardy in full sun or part-shade.	5 m	S	S	Fruit eaten by a variety of fruit eating birds. Propagation difficult.
<i>Wilkiea huegeliana</i>	Veiny Wilkiae	Common rainforest understorey shrub or small tree.	6 m	S		Food plant of rare Regent Skipper Butterfly. Plant in shade or semi-shade.

Northern Escarpment Wet Sclerophyll Forest - CH WSF06, CH WSF07

<i>Acacia melanoxylon</i>	Blackwood, Sally Wattle	Small to medium sized tree. Common pioneer, although often short lived on the coast.	6–25 m	F	R	Seeds eaten by a number of birds. Well suited to revegetation sites.
<i>Allocasuarina torulosa</i>	Forest Oak	Slender tree occurring on coastal hills and ranges.	12 m	M	R	Cones a major food source for the Glossy Black Cockatoo.
<i>Alphitonia excelsa</i>	Red Ash	Medium sized tree, common pioneer in sheltered gullies and on the margin of rainforest.	12 m	F	S	Seed eaten by a number of birds. Well suited to revegetation sites.
<i>Archirhodomyrtus beckleri</i>	Rose Myrtle	Medium to large shrub with fleshy, yellow to orange fruits.	6 m	S	R	Ripe fruit eaten by a range of birds. Susceptible to Myrtle Rust.
<i>Callicoma serratifolia</i>	Callicoma	Common pioneer species with attractive and fragrant white flowers in October to November.	12 m	F	S	Young plants have high moisture requirements.
<i>Ceratopetalum apetalum</i>	Coachwood	Medium sized rainforest tree with mottled grey-white bark.	25 m	M	S	

Table 3. Wet Sclerophyll Forests

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
<i>Cryptocarya glaucescens</i>	Jackwood	Common medium sized tree with glossy green leaves and dark, purple-black drupes.	20 m	S	R	Purple-black drupes attract numerous frugivorous birds.
<i>Cryptocarya microneura</i>	Murrogon	Common shrub to small tree with small black drupes.	8 m	S	S	Black drupes attract numerous frugivorous birds. Plant in semi-shade.
<i>Cryptocarya rigida</i>	Forest Maple	Common shrub to small tree with attractive red/brown new growth. Large dark, purple-black drupes.	10 m	S	S	Purple-black drupes attract numerous frugivorous birds.
<i>Eucalyptus grandis</i>	Flooded Gum, Rose Gum	Very tall, smooth barked eucalypt with a skirt of rough bark at the base. Common on fertile soils on lower slopes.	50 m	F	T	Flowers in autumn. Reasonable source of nectar.
<i>Eucalyptus microcorys</i>	Tallowwood	Tall, dense crowned eucalypt with rusty coloured stringy bark – hardy.	30 m	F	T	Important Koala food tree. Important spring nectar resource for insects, birds and arboreal animals. Needs protection from browsing when young.
<i>Eucalyptus pilularis</i>	Blackbutt	Tall eucalypt with skirt of rough bark up to the first branches. Very common species on the north coast of NSW.	60 m	F	T	Important nectar and pollen resource for a range of animals, birds and insects. Older trees have many hollows. Slightly susceptible to Myrtle Rust.
<i>Eucalyptus saligna</i>	Sydney Blue Gum	Common, smoothed barked eucalypt found on moist, moderate fertility soils.	40 m	F	R	Important nectar and pollen resource for a range of animals, birds and insects. Koala food tree.
<i>Litsea reticulata</i>	Bolly Gum	Tall tree with buttressed trunk. Fruit a black, egg-shaped, drupe (15 mm).	40 m	M	S	Fruits irregularly. Fruit eaten by a number of frugivorous birds.
<i>Lophostemon confertus</i>	Brush Box	Common and widespread tall tree with dense foliage.	30 m	F	T	Young plants have high moisture requirements.
<i>Persoonia media</i>	Geebung	Shrub with dense foliage and small yellow flowers.	5 m	M	T	Often pollinated by native short-tongued Leioproctus bees. Fruits eaten by a variety of birds. Difficult to propagate.
<i>Pilidiostigma glabrum</i>	Plum Myrtle	Medium sized shrub with pink/white flowers and small purple/black fleshy fruit.	5 m	S	S	Purple-black fruits attract numerous frugivorous birds. Susceptible to Myrtle Rust.
<i>Schizomeria ovata</i>	Crabapple, White Birch	Medium sized tree with hard, corky bark.	20 m		S	Succulent, creamy fruit eaten by a variety of birds.
<i>Synoum glandulosm</i>	Scentless Rosewood	Shrub or small tree with fragrant flowers and orange, globular fruit capsules.	7 m	M	R	Orange fruit ripen when other food sources are scarce. Plant in semi-shade.

Table 3. Wet Sclerophyll Forests

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
<i>Trochocarpa laurina</i>	Tree Heath	Medium sized shrub with attractive foliage. Hardy in full sun or part-shade.	5 m	S		Fruit eaten by a variety of fruit eating birds. Propagation difficult.
Northern Hinterland Wet Sclerophyll Forest - CH WSF18						
<i>Caldcluvia paniculosa</i>	Soft Corkwood, Rose-leaf Marara	Medium sized pioneer tree with attractive foliage and white flowers.	10 m	F	S	
<i>Callicoma serratifolia</i>	Callicoma	Common pioneer species with attractive and fragrant white flowers in October to November.	12 m	F	S	Young plants have high moisture requirements
<i>Cryptocarya rigida</i>	Forest Maple	Common shrub to small tree with attractive red/brown new growth. Large dark, purple-black drupes.	10 m	S		Purple-black drupes attract numerous frugivorous birds.
<i>Doryphora sassafras</i>	Sassafras	Widespread tall tree in warm-temperate and cool temperate rainforests. Attractive tree with a dense crown and fragrant white flowers.	40 m	M	T	Major food plant of the Macleay Swallowtail Butterfly.
<i>Drymophila moorei</i>	Orange Berry	Attractive, glossy leaved ground cover, common in coastal rainforests.	0.3 m			Needs moist, shaded site.
<i>Eucalyptus campanulata</i>	New England Blackbutt	Tall eucalypt with persistent, fibrous bark. Common on the escarpment ranges.	30 m		R	
<i>Eucalyptus carnea</i>	Thick-leaved Mahogany	Tall eucalypt with persistent, fibrous bark. Common in dry and wet sclerophyll communities.	30 m		T	
<i>Eucalyptus pilularis</i>	Blackbutt	Tall eucalypt with skirt of rough bark up to the first branches. Very common species on the north coast of NSW.	60 m	F	T	Important nectar and pollen resource for a range of animals, birds and insects. Older trees have many hollows. Slightly susceptible to Myrtle Rust.
<i>Orites excelsus</i>	Prickly Ash	Medium tree with deeply lobed, serrated leaves.	20 m	M	T	Flower spikes with cream flowers in spring. Nectar source for insects.
<i>Pilidiostigma glabrum</i>	Plum Myrtle	Medium sized shrub with pink/white flowers and small purple/black fleshy fruit.	5 m	S	S	Purple-black fruits attract numerous frugivorous birds. Susceptible to Myrtle Rust.

Table 4. Rainforests

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
Cool Temperate Rainforest - CH RFo1, CH RFo2						
<i>Acacia melanoxylon</i>	Blackwood, Sally Wattle	Small to medium sized tree. Common pioneer, although often short lived on the coast.	6–25 m	F	R	Seeds eaten by a number of birds. Well suited to revegetation sites.
<i>Backhousia myrtifolia</i>	Grey Myrtle, Ironwood	Widespread and common in warmer rainforest and wet sclerophyll communities. White flowers attractive to beetle pollinators,	20 m	M	S	Susceptible to Myrtle Rust. Good species for rocky sites, particularly streambanks.
<i>Cryptocarya meisneriana</i>	Thick-leaved Laurel	Shrub to small tree with attractive glossy green leaves and dark, purple-black drupes.	8 m	M	S	Fruit eaten by a variety of frugivorous birds. Best planted in semi-shade.
<i>Doryphora sassafras</i>	Sassafras	Widespread tall tree in warm-temperate and cool temperate rainforests. Attractive tree with a dense crown and fragrant white flowers.	40 m	M	T	Major food plant of the Macleay Swallowtail Butterfly.
<i>Lophostemon confertus</i>	Brush Box	Common and widespread tall tree with dense foliage.	30 m	F	T	Flowers a good nectar and pollen source.
<i>Neolitsea dealbata</i>	White Bolly Gum, Hairy Leaved Bolly Gum	Shrub to medium sized tree with broad glossy leaves and small fleshy fruits.	10 m	S	S	Fruit eaten by a variety of frugivorous birds. Best planted in semi-shade.
<i>Nothofagus moorei</i>	Antarctic Beech	Attractive tree with red-tinged new foliage and serrated leaves.	20 m	S	T	Seeds hard to find but cuttings are easy to strike.
<i>Tasmannia insipida</i>	Dorrido Pepper	Medium sized shrub with red-tinged leaves and seeds that taste like pepper.	2 m	S	T	Best planted in semi-shade.
Warm Temperate Rainforest - CH RFo3, CH RF12						
<i>Acacia melanoxylon</i>	Blackwood, Sally Wattle	Small to medium sized tree. Common pioneer, although often short lived on the coast.	6–25 m	F	R	Seeds eaten by a number of birds. Well suited to revegetation sites.
<i>Acacia melanoxylon</i>	Blackwood, Sally Wattle	Small to medium sized tree. Common pioneer, although often short lived on the coast.	6–25 m	F	R	Seeds eaten by a number of birds. Fast growing hardy tree, well suited to revegetation sites.
<i>Acadenia euodiiformis</i>	Yellow Satinheart	Small to medium tree found within, or on the margins of rainforest.	15 m	M	S	
<i>Araucaria cunninghamii</i>	Hoop Pine	Tall tree occurring as an emergent in some rainforest communities.	50 m	M	R	Specific host of several epiphytic orchid species.

Table 4. Rainforests

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
<i>Atractocarpus benthamianus</i>	Native Gardenia	Shrub to small tree with fragrant white flowers.	8 m		R	Plant in shade or semi-shade site.
<i>Callicoma serratifolia</i>	Callicoma	Common pioneer species with attractive and fragrant white flowers in October to November.	12 m	F	S	Some people may be allergic to the pollen from this species.
<i>Ceratopetalum apetalum</i>	Coachwood	Medium sized rainforest tree with mottled grey-white bark.	25 m	M	S	
<i>Cinnamomum oliveri</i>	Oliver's Sassafras	Medium sized tree with dense crown and attractive green foliage.	20 m	S	S	Bird attracting fruit. Commonly associated with the Blue Triangle Butterfly (<i>Graphium sarpedon</i>). Needs moist, protected, shade or semi-shade site.
<i>Cryptocarya meisneriana</i>	Thick-leaved Laurel	Shrub to small tree with attractive glossy green leaves and dark, purple-black drupes.	8 m	M	S	Fruit eaten by a variety of frugivorous birds. Best planted in semi-shade.
<i>Doryphora sassafras</i>	Sassafras	Widespread tall tree in warm-temperate and cool temperate rainforests. Attractive tree with a dense crown and fragrant white flowers.	40 m	M	T	Major food plant of the Macleay Swallowtail Butterfly.
<i>Litsea reticulata</i>	Bolly Gum	Tall tree with buttressed trunk. Fruit a black, egg-shaped, drupe (15 mm).	40 m	M	S	Fruits irregularly. Fruit eaten by a number of frugivorous birds.
<i>Lophostemon confertus</i>	Brush Box	Common and widespread tall tree with dense foliage.	30 m	F	T	
<i>Neolitsea dealbata</i>	White Bolly Gum, Hairy Leaved Bolly Gum	Shrub to medium sized tree with broad glossy leaves and small fleshy fruits.	10 m	S	S	Fruit eaten by a variety of frugivorous birds. Best planted in semi-shade.
<i>Orites excelsus</i>	Prickly Ash	Medium tree with deeply lobed, serrated leaves.	20 m	M	T	Creamy-white flowers attract insects and honeyeaters.
<i>Polyosma cunninghamii</i>	Featherwood	Small tree with glossy, serrated leaves.	10 m		S	Fruit eaten by birds. Best planted in semi-shade.
<i>Sarcopteryx stipata</i>	Steelwood	Small to medium, bushy tree with showy, red fruit.	8 m	S	T	Fruits are eaten by a number of birds.
<i>Triunia youngiana</i>	Spice Bush, Native Honeysuckle, Red Nut	Medium shrub to small tree with attractive Grevillea type flower.	4 m	S	S	Fruit is very poisonous if eaten. Needs a moist, shaded to semi-shade site.
<i>Trochocarpa laurina</i>	Tree Heath	Medium sized shrub with attractive foliage. Hardy in full sun or part-shade.	5 m	S	S	Fruit eaten by a variety of fruit eating birds.

Table 4. Rainforests

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
Lowland Sub-tropical Rainforest - CH RF11, CH RF09						
<i>Acacia irrorata</i>	Green Wattle	Medium tree to small shrub, often near watercourses. Usually flowering between November and January.	4–12 m	F	R	Flowers following good rain providing nectar for insects. Sap eaten by Sugar Gliders.
<i>Acacia melanoxylon</i>	Blackwood, Sally Wattle	Small to medium sized tree. Common pioneer, although often short lived on the coast.	6–25 m	F	R	Seeds eaten by a number of birds. Well suited to revegetation sites.
<i>Akania bidwillii</i>	Turnipwood	Widespread but uncommon tree to 12 m with large, paripinnate leaves.	12 m	S		Plant in protected, moist semi-shade sites.
<i>Atractocarpus benthamianus</i>	Native Gardenia	Shrub to small tree with fragrant white flowers.	8 m	S	R	Plant in shade or semi-shade site.
<i>Cordyline petiolaris</i>	Broad-leaved Palm Lily	Small, palm-like plant with broad strappy leaves and brilliant red coloured berries.	5 m	S	S	Needs moist, protected, shade or semi-shade site. Good nectar and pollen resource.
<i>Cordyline stricta</i>	Narrow-leaved Palm Lily, Slender Palm Lily	Small, palm-like plant with narrow strappy leaves and purple to black coloured berries.	5 m	S	S	Good nectar and pollen resource.
<i>Cryptocarya glaucescens</i>	Jackwood	Common medium sized tree with glossy green leaves and dark, purple-black drupes.	20 m	S	R	Purple-black drupes attract numerous frugivorous birds.
<i>Cyathea australis</i>	Rough Tree Fern	Common, tall tree fern common in wet forests and rainforest. Hardy under a range of conditions.	10 m	F	R	
<i>Cyathea leichhardtiana</i>	Prickly Tree Fern	Tree fern common in wet forests and rainforest.	5 m	F	R	Needs moist, protected, shade or semi-shade site.
<i>Daphnandra micrantha</i>	Socketwood	Small to medium sized tree commonly found near streams.	25 m		S	
<i>Diospyros pentamera</i>	Myrtle Ebony, Grey Persimmon	Small to medium sized rainforest tree with small reddish berries.	30 m	S	S	Fruit attractive to many species of frugivorous birds.
<i>Diploglottis cunninghamii</i>	Native Tamarind	Widespread and common rainforest and wet sclerophyll tree. Has large compound leaves and three seeded fruit capsules with bird attracting seed.	30 m	F	S	Flesh aril attached to seed is attractive to numerous birds.

Table 4. Rainforests

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
<i>Endiandra muelleri</i>	Green Leaved Rose Walnut	Tall tree with broad leaves. Fruit a large black berry (20 mm).	30 m	S	S	Large fruit attractive to a number of large gapped frugivorous birds. Fresh fruit germinated readily.
<i>Ficus coronata</i>	Sandpaper Fig	Very common fig species with rough, 'sandpaper', leaves.	5 m	M	S	Fruits are consumed by a number of birds. Caterpillars from the Purple Moonbeam butterfly feed on the leaves. Excellent species for streambank revegetation.
<i>Geissois benthamiana</i>	Red Carabeen	Medium to large sized rainforest tree with buttressed roots.	18 m	M	S	
<i>Heritiera actinophylla</i>	Black Booyong	Large rainforest tree with prominent buttressing. Seeds are winged and spiral away from the parent tree when ripe.	25 m	M	S	
<i>Heritiera trifoliolata</i>	White Booyong	Large rainforest tree with prominent buttressing. Seeds are winged and spiral away from the parent tree when ripe.	25 m	M	S	
<i>Homalanthus populifolius</i>	Bleeding Heart	Hardy pioneer shrub with heart-shaped leaves turning red before falling.	6 m	F	R	Fruit sought after by a variety of native birds. Fruits October to December.
<i>Jagera pseudorhusvar. pseudorhus</i>	Foambark	Hardy, medium sized tree with rusty hairy leaves and attractive orange fruit.	15 m	M	T	Plant in protected, well-drained site.
<i>Linospadix monostachya</i>	Walking Stick Palm	Attractive small understorey palm with bright red fruits.	2 m	S	S	Fruits are eaten by a number of birds.
<i>Litsea reticulata</i>	Bolly Gum	Tall tree with buttressed trunk. Fruit a black, egg-shaped, drupe (15 mm).	40 m		S	Fruits only irregularly. Fruits eaten by a number of frugivorous birds.
<i>Lophostemon confertus</i>	Brush Box	Common and widespread tall tree with dense foliage.	30 m	F	T	
<i>Mischocarpus pyriformis</i>	Yellow Pear-fruit	Medium sized tree with attractive foliage. Fruit a yellow capsule with a red, aril enclosed seed.	10 m	S	S	Fleshy red seed aril eaten by a number of bird species.
<i>Neolitsea dealbata</i>	White Bolly Gum, Hairy Leaved Bolly Gum	Shrub to medium sized tree with broad glossy leaves and small fleshy fruits.	10 m	S	S	Fruit eaten by a variety of frugivorous birds. Best planted in semi-shade.
<i>Polyosma cunninghamii</i>	Featherwood	Small tree with glossy, serrated leaves.	10 m		S	Fruit eaten by birds. Best planted in semi-shade.

Table 4. Rainforests

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
<i>Polyscias elegans</i>	Celerywood	Common pioneer species. Sparingly branched with large bipinnate leaves.	15 m	F	S	Host plant for larvae of Dark Pencilled-blue butterfly.
<i>Polyscias murrayi</i>	Pencil Cedar	Common pioneer species. Sparingly branched with large bipinnate leaves.	10 m	F	S	Very fast growing species highly suitable for revegetation.
<i>Sarcopteryx stipata</i>	Steelwood	Small to medium, bushy tree with showy, red fruit.	8 m	S	T	Fruits are eaten by a number of birds. Best planted in semi-shade.
<i>Sloanea australis</i>	Maiden's Blush	Medium sized rainforest tree preferring shady, sheltered locations.	15 m		T	Fruit eaten by many birds. Plant in protected, moist semi-shade sites.
<i>Sloanea woollsii</i>	Yellow Carabeen	Medium to tall rainforest tree with masses of attractive yellow/white flowers.	30 m		T	Fruit eaten by many birds.
<i>Synoum glandulosm</i>	Scentless Rosewood	Shrub or small tree with fragrant flowers and orange, globular fruit capsules.	7 m	M	R	Provide an important food resource for birds when fruit is scarce. Best planted in semi-shade.
<i>Tasmannia insipida</i>	Dorrigo Pepper	Medium sized shrub with red-tinged leaves and seeds that taste like pepper.	2 m	S	T	Best planted in semi-shade.

Table 5. Riparian Communities

Potential regeneration species	Common name	Brief description	Position	Height	Growth rate	Frost	Habitat values/comments
Orara River Riparian Forest - CH FrWo7							
<i>Ficus coronata</i>	Sandpaper Fig	Very common fig species with rough, 'sandpaper', leaves.	Toe	5 m	F	S	Fruits are consumed by a number of birds. Caterpillars from the Purple Moonbeam butterfly feed on the leaves. Excellent species for streambank revegetation.
<i>Lomandra hystrix</i>	Mat Rush	Easy to grow, large, clumping grass. Important stream bank stabiliser.	Toe	1 m	F	T	Helps add structural complexity. Provides habitat for small birds. Very hardy species. Excellent for erosion control.
<i>Tristaniopsis laurina</i>	Water Gum	Shrub or small tree with smooth flaky bark and golden yellow flowers.	Toe	15 m	F	T	Roots provide in-stream habitat. Hardy species. Excellent for erosion control.
<i>Acacia melanoxylon</i>	Blackwood, Sally Wattle	Small to medium sized tree. Common pioneer, although often short lived on the coast.	Middle/Upper	6–25 m	F	T	Seeds eaten by a number of birds. Excellent pioneer species for revegetation sites.
<i>Archontophoenix cunninghamiana</i>	Bangalow Palm	Tall palm growing in coastal rainforest communities. Flowers in autumn.	Middle/Upper	25 m	F	S	Ripe fruit an important food for the Wompoo Pigeon.
<i>Backhousia myrtifolia</i>	Grey Myrtle, Ironwood	Widespread and common in warmer rainforest and wet sclerophyll communities. White flowers attractive to beetle pollinators.	Middle/Upper	20 m	S	S	White flowers attractive to beetle pollinators. Susceptible to Myrtle Rust. Good species for rocky sites, particularly stream-banks.
<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	River She-oak	Common riparian tree with needle-like foliage.	Middle/Upper	20 m	F	R	Important riparian revegetation species
<i>Cryptocarya glaucescens</i>	Jackwood	Common medium sized tree with glossy green leaves and dark, purple-black drupes.	Middle/Upper	20 m	S	T	Purple drupes attract numerous frugivorous birds.
<i>Cryptocarya meisneriana</i>	Thick-leaved Laurel	Shrub to small tree with attractive glossy green leaves and dark, purple-black berries.	Middle/Upper	8 m	S	S	Fruit eaten by a variety of frugivorous birds. Plant in semi-shade.
<i>Cryptocarya microneura</i>	Murrogon	Common shrub to small tree with small black berries.	Middle/Upper	8 m	S	S	Black drupes attract numerous frugivorous birds. Plant in semi-shade.

Table 5. Riparian Communities

Potential regeneration species	Common name	Brief description	Position	Height	Growth rate	Frost	Habitat values/comments
<i>Cryptocarya obovata</i>	Pepperberry	Medium sized tree with broad, prominently veined leaves and purple/black fleshy fruit.	Middle/ Upper	25 m	S	S	Purple drupes attract numerous frugivorous birds.
<i>Cryptocarya rigida</i>	Forest Maple	Common shrub to small tree with attractive red/brown new growth. Large dark, purple/black berries.	Middle/ Upper	10 m	S	S	Purple-black drupes attract numerous frugivorous birds.
<i>Glochidion ferdinandi</i>	Cheese Tree	Shrub to small tree with attractive foliage. Common and hardy pioneer species.	Middle/ Upper	10 m	F	R	Fruits are consumed by a number of birds. Excellent pioneer species for revegetation sites.
<i>Guioa semiglaucia</i>	Guioa	Common and widespread medium sized shrub. Hardy species - good for revegetation sites.	Middle/ Upper	10 m	F	R	Fleshy orange seed aril eaten by some frugivorous birds. Excellent pioneer species for revegetation sites.
<i>Homalanthus populifolius</i>	Bleeding Heart	Hardy pioneer shrub with heart shaped leaves turning red before falling.	Middle/ Upper	6 m	F	R	Fruit sought after by a variety of native birds. Fruits October to December.
<i>Polyscias elegans</i>	Celerywood	Common pioneer species. Sparingly branched with large bipinnate leaves.	Upper	15 m	F	S	Host plant for larvae of Dark Pencilled-blue butterfly.
<i>Polyscias murrayi</i>	Pencil Cedar	Common pioneer species. Sparingly branched with large bipinnate leaves.	Upper	10 m	F	S	Very fast growing species highly suitable for revegetation.
<i>Syzygium smithii</i>	Lilly Pilly	Widespread medium to large tree in rainforest communities. Creamy, white flowers with fleshy fruits.	Middle/ Upper	10–20 m	M	T	Fruit attractive to frugivorous birds. Susceptible to Myrtle Rust.
<i>Toona ciliata</i>	Red Cedar	Medium to large sized deciduous rainforest tree.	Upper	25 m	F	T	Terminal buds of young plants frequently attracted by the Red Cedar Tip Moth.
<i>Alphitonia excelsa</i>	Red Ash	Medium sized tree, common pioneer in sheltered gullies and on the margin of rainforest.	Upper	12 m	F	S	Seeds eaten by a number of birds. Excellent pioneer species for revegetation sites.

Table 5. Riparian Communities

Potential regeneration species	Common name	Brief description	Position	Height	Growth rate	Frost	Habitat values/comments
Dorriga Plateau Riparian Forest - CH FrWo8							
<i>Blechnum nudum</i>	Fish-bone Water Fern	Clumped fern found in along watercourses.	Toe	1 m	F	S	
<i>Callistemon sieberi</i>	River Bottlebrush	Shrub to small tree with attractive creamy white flowers.	Toe	3 m	M	T	Nectar attracts honeyeaters. Hardy species. Common in rocky areas. May be direct seeded.
<i>Juncus usitatus</i>	Common Rush	Common and widespread rush species. Found on stream banks and freshwater wetlands.	Toe	1 m			
<i>Lomandra hystrix</i>	Mat Rush	Easy to grow, large, clumping grass. Important stream bank stabiliser.	Toe	1 m	F	T	Helps add structural complexity. Provides habitat for small birds. Very hardy species. Excellent for erosion control.
<i>Tristaniopsis laurina</i>	Water Gum	Shrub or small tree with smooth flaky bark and golden yellow flowers.	Toe Middle	15 m	F	T	Roots provide in-stream habitat. Hardy species. Excellent for erosion control.
<i>Leptospermum polygalifolium</i>	Tantoon Tea-tree	Medium sized, multi-branched shrub with attractive white flowers. A common riverbank species on the Dorriga Plateau.	Toe to Middle	5 m	F	T	Nectar source for a number of native beetle and bee species. Hardy species. Excellent for erosion control. Can be direct seeded.
<i>Acacia melanoxylon</i>	Blackwood, Sally Wattle	Small to medium sized tree. Common pioneer, although often short lived on the coast.	Middle	6–25 m	F	T	Seeds eaten by a number of birds. Excellent pioneer species for revegetation sites.
<i>Backhousia myrtifolia</i>	Grey Myrtle, Ironwood	Widespread and common in warmer rainforest and wet sclerophyll communities.	Middle	20 m	S	S	White flowers attractive to beetle pollinators. Susceptible to Myrtle Rust. Good species for rocky sites, particularly streambanks.
<i>Cryptocarya meisneriana</i>	Thick-leaved Laurel	Shrub to small tree with attractive glossy green leaves and dark, purple-black drupe.	Middle	8 m	M	S	Fruit eaten by a variety of frugivorous birds. Best planted in semi-shade.
<i>Ceratopetalum apetalum</i>	Coachwood	Medium sized rainforest tree with mottled grey-white bark.	Upper	25 m	M	S	

Table 5. Riparian Communities

Potential regeneration species	Common name	Brief description	Position	Height	Growth rate	Frost	Habitat values/comments
<i>Doryphora sassafras</i>	Sassafras	Widespread tall tree in warm-temperate and cool temperate rainforests. Attractive tree with a dense crown and fragrant white flowers.	Upper	40 m	M	T	Major food plant of the Macleay Swallowtail Butterfly.
Coastal Flooded Gum Riparian Forest - CH WSF01 Use for all short coastal catchments. For lower reaches subject to tidal influence refer to estuarine and wetland communities.							
<i>Ficus coronata</i>	Sandpaper Fig	Very common fig species with rough, 'sandpaper', leaves.	Toe	5 m	F	S	Fruits are consumed by a number of birds. Caterpillars from the Purple Moonbeam butterfly feed on the leaves. Excellent species for streambank revegetation.
<i>Lomandra hystrix</i>	Mat Rush	Easy to grow, large, clumping grass. Important stream bank stabiliser.	Toe	1 m	F	T	Helps add structural complexity. Provides habitat for small birds. Very hardy species. Excellent for erosion control.
<i>Tristaniopsis laurina</i>	Water Gum	Shrub or small tree with smooth flaky bark and golden yellow flowers.	Toe	15 m	F	T	Roots provide in-stream habitat. Hardy species. Excellent for erosion control.
<i>Acacia melanoxylon</i>	Blackwood, Sally Wattle	Small to medium sized tree. Common pioneer, although often short lived on the coast.	Middle	6–25 m	F	T	Seeds eaten by a number of birds. Excellent pioneer species for revegetation sites.
<i>Archontophoenix cunninghamiana</i>	Bangalow Palm	Tall palm growing in coastal rainforest communities. Flowers in autumn.	Middle	25 m		S	Ripe fruit an important food for the Wompoo Pigeon.
<i>Backhousia myrtifolia</i>	Grey Myrtle, Ironwood	Widespread and common in warmer rainforest and wet sclerophyll communities. White flowers attractive to beetle pollinators.	Middle	20 m	S	S	White flowers attractive to beetle pollinators. Susceptible to Myrtle Rust. Good species for rocky sites, particularly stream-banks.
<i>Callicoma serratifolia</i>	Callicoma	Common pioneer species with attractive and fragrant white flowers in October to November.	Middle	12 m	F	S	
<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	River She-oak	Common riparian tree with needle-like foliage.	Middle	20 m	F	T	Important riparian revegetation species.

Table 5. Riparian Communities

Potential regeneration species	Common name	Brief description	Position	Height	Growth rate	Frost	Habitat values/comments
<i>Cryptocarya glaucescens</i>	Jackwood	Common medium sized tree with glossy green leaves and dark, purple-black drupes.	Middle	20 m	S	T	Purple drupes attract numerous frugivorous birds.
<i>Cryptocarya microneura</i>	Murrogun	Common shrub to small tree with small black berries.	Middle	8 m	S	S	Black drupes attract numerous frugivorous birds. Plant in semi-shade.
<i>Cryptocarya obovata</i>	Pepperberry	Medium sized tree with broad, prominently veined leaves and purple/black fleshy fruit.	Middle	25 m	S	S	Purple drupes attract numerous frugivorous birds.
<i>Cryptocarya rigida</i>	Forest Maple	Common shrub to small tree with attractive red/brown new growth. Large dark, purple/black berries.	Middle	10 m	S	S	Purple-black drupes attract numerous frugivorous birds.
<i>Diploglottis cunninghamii</i>	Native Tamarind	Widespread and common rainforest and wet sclerophyll tree. Has large compound leaves and three seeded fruit capsules with bird attracting seed.	Middle	30 m	F	S	Flesh aril attached to seed is attractive to numerous birds.
<i>Glochidion ferdinandi</i>	Cheese Tree	Shrub to small tree with attractive foliage. Common and hardy pioneer species.	Middle	10 m	F	R	Fruits are consumed by a number of birds. Excellent pioneer species for revegetation sites.
<i>Guioa semiglaucia</i>	Guioa	Common and widespread medium sized shrub. Hardy species - good for revegetation sites.	Middle	10 m	F	R	Fleshy orange seed aril eaten by some frugivorous birds. Excellent pioneer species for revegetation sites.
<i>Jagera pseudorhus</i> var. <i>pseudorhus</i>	Foambark	Hardy, medium sized tree with rusty hairy leaves and attractive orange fruit.	Middle	15 m	F	T	Plant in protected, well-drained site.
<i>Synoum glandulosm</i>	Scentless Rosewood	Shrub or small tree with fragrant flowers and orange, globular fruit capsules.	Middle	7 m	F	R	Orange fruit ripen when other food sources are scarce. Plant in semi-shade.
<i>Trochocarpa laurina</i>	Tree Heath	Medium sized shrub with attractive foliage. Hardy in full sun or part-shade.	Middle	5 m			Fruit eaten by a variety of fruit eating birds.

Table 5. Riparian Communities

Potential regeneration species	Common name	Brief description	Position	Height	Growth rate	Frost	Habitat values/comments
<i>Alphitonia excelsa</i>	Red Ash	Medium sized tree, common pioneer in sheltered gullies and on the margin of rainforest.	Middle Upper	12 m	F	S	Seeds eaten by a number of birds. Excellent pioneer species for revegetation sites.
<i>Eucalyptus acmenoides</i>	White Mahogany	Tall eucalypt with rough, persistent bark. Flowers cream coloured.	Upper	30 m	F	T	Important nectar and pollen resource for a range of animals, birds and insects.
<i>Eucalyptus grandis</i>	Flooded Gum, Rose Gum	Very tall, smooth barked eucalypt with a skirt of rough bark at the base. Common on fertile soils on lower slopes.	Upper	50 m	F	T	
<i>Eucalyptus microcorys</i>	Tallowwood	Tall, dense crowned eucalypt with rusty coloured stringy bark – hardy.	Upper	30 m	F	T	Koala food tree. Flowers in spring. Source of nectar for insects birds and flying foxes. Protect young plants from browsing.
<i>Eucalyptus pilularis</i>	Blackbutt	Tall eucalypt with skirt of rough bark up to the first branches. Very common species on the north coast of NSW.	Upper	60 m	F	T	Important nectar and pollen resource for a range of animals, birds and insects. Older trees have many hollows. Slightly susceptible to Myrtle Rust.
<i>Eucalyptus saligna</i>	Sydney Blue Gum	Common, smoothed barked eucalypt found on moist, moderate fertility soils.	Upper	40 m	F	T	Important nectar and pollen resource for a range of animals, birds and insects. Koala food tree.
<i>Homalanthus populifolius</i>	Bleeding Heart	Hardy pioneer shrub with heart shaped leaves turning red before falling.	Upper	6 m	F	S	Fruit sought after by a variety of native birds. Fruits October to December.
<i>Lophostemon confertus</i>	Brush Box	Common and widespread tall tree with dense foliage.	Upper	30 m	F	T	
<i>Polyscias elegans</i>	Celerywood	Common pioneer species. Sparingly branched with large bipinnate leaves.	Upper	15 m	F	R	Host plant for larvae of Dark Pencilled-blue butterfly.
<i>Polyscias murrayi</i>	Pencil Cedar	Common pioneer species. Sparingly branched with large bipinnate leaves.	Upper	10 m	F	S	Very fast growing species highly suitable for revegetation.
<i>Syncarpia glomulifera</i>	Turpentine	Common and widespread medium sized tree.	Upper	20 m		T	Flowers in spring. Reasonable source of nectar. Very susceptible to Myrtle Rust.

Table 6. Freshwater Wetlands

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
Coastal Swamp Forested Wetland - CH FrWo1, CH FrWo2, CH FrWo3, CH FrWo4, CH FrWo5, CH FrWo6						
<i>Callistemon salignus</i>	Willow Bottlebrush	Attractive bottlebrush with attractive creamy white flowers followed by pink new growth.	4–10 m	F	T	Attractive to native bees and birds. Susceptible to Myrtle Rust. Good in seasonally swampy sites.
<i>Casuarina glauca</i>	Swamp Oak	Common tree along coastal streams. Dominates canopy in brackish areas often with a dense ground layer of Twig Rush (<i>Baumea juncea</i>).	20 m	F	T	Woody seed cones are an occasional food source for Glossy Black Cockatoos.
<i>Eucalyptus robusta</i>	Swamp Mahogany, Swamp Messmate	Medium sized eucalypt with persistent, fibrous bark.	25 m	F	T	Koala food tree. Flowers in winter providing an important nectar source for birds, bats and native bees. Susceptible to Myrtle Rust.
<i>Gahnia clarkei</i>	Tall Saw Sedge	Tall tussock forming sedge. Fruit an attractive, dark red nut.	1.5 m	F		Food source for the Swordgrass Brown Butterfly.
<i>Melaleuca nodosa</i>	Prickly-leaved Paperbark	Attractive small shrub with cream coloured clustered flowers.	3 m	F		
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	Widespread and common wetland tree species. Large white ‘bottlebrush’ flowers.	12 m	F	T	Flowers in autumn-spring. Provides an important winter nectar source for birds, bats and native bees. Susceptible to Myrtle Rust.
<i>Melaleuca sieberi</i>	Sieber’s Paperbark	Medium sized shrub with short, white ‘bottlebrush’ flowers.	5 m	F	S	Birds and native bees are attracted to the nectar. Susceptible to Myrtle Rust.
<i>Xanthorrhoea fulva</i>	Grass Tree	Low-growing grass tree common in water-logged sites.	1 m			Flowers after fire. Birds and native bees are attracted to the nectar.
Coastal Heath Swamp - CH FWo1, CH FWo2, CH FWo3, CH FWo4, CH FWo5, CH FW o6 and CH FrWo9						
<i>Banksia oblongifolia</i>	Dwarf Banksia	Hardy, small, multi-stemmed shrub.	3 m	M	T	Attractive to honeyeaters.
<i>Banksia spinulosa</i> var. <i>collina</i>	Hairpin Banksia	Fine leaved, multistemmed Banksia. Widespread in heath and dry sclerophyll forests	3 m	M	T	Attractive to honeyeaters.
<i>Callistemon pachyphyllus</i>	Wallum Bottlebrush	Dense small shrub with red or green bottlebrush flowers.	2 m	M	R	Birds and native bees are attracted to the nectar.
<i>Gahnia sieberiana</i>	Red-fruit Saw Sedge	Very large tussock forming sedge with sharply serrated leaf blades. Fruit an attractive, orange/red nut.	1.5 m	F		Food source for the Swordgrass Brown Butterfly.

Table 6. Freshwater Wetlands

Potential regeneration species	Common name	Brief description	Height	Growth rate	Frost	Habitat values/comments
<i>Hakea actites</i>	Mulloway Needle Bush, Wallum Hakea	Small to medium sized shrub commonly found in coastal heaths and swamps.	5 m	F		Nectar resource for birds.
<i>Leptospermum polygalifolium</i>	Tantoon Tea-tree	Medium sized shrub with attractive white flowers.	5 m	F	T	Nectar source for a number of native beetle and bee species.
<i>Leucopogon lanceolatus</i>	White Beard	Medium sized shrub with attractive white flowers.	3 m	S		Small red fruit eaten by birds. Very difficult to germinate but cutting will strike.
<i>Melaleuca nodosa</i>	Prickly-leaved Paperbark	Attractive small shrub with cream coloured clustered flowers.	3 m	F		
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	Widespread and common wetland tree species. Large white 'bottlebrush' flowers.	12 m	F	T	Flowers in autumn-spring. Provides an important winter nectar source for birds, bats and native bees. Susceptible to Myrtle Rust.
<i>Melaleuca sieberi</i>	Sieber's Paperbark	Medium sized shrub with short, white 'bottlebrush' flowers.	5 m			Birds and native bees are attracted to the nectar. Susceptible to Myrtle Rust.
<i>Melaleuca sieberi</i>	Sieber's Paperbark	Medium sized shrub with short, white 'bottlebrush' flowers.	5 m	F		Birds and native bees are attracted to the nectar. Susceptible to Myrtle Rust.
<i>Pultenaea villosa</i>	Hairy Bush-pea	Small shrub with masses of yellow/orange 'pea' flowers.	2 m	F		Germinates and restores soil nitrogen after fire.
<i>Xanthorrhoea fulva</i>	Grass Tree	Low-growing grass tree common in water-logged sites.	1 m			Flowers after fire. Birds and native bees are attracted to the nectar.

Coastal Freshwater Lagoon Wetland - CH FWo8

<i>Eleocharis acuta</i>	Common Spike Rush	Common and widespread wetland rush. Prefers shallow water.	0.6 m			
<i>Eleocharis sphacelata</i>	Tall Spike Rush	Tall wetland rush species forming large swards of foliage.	1.5 m			
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	Widespread and common wetland tree species. Large white 'bottlebrush' flowers.	12 m	F	T	Flowers in autumn-spring. Provides an important winter nectar source for birds, bats and native bees. Susceptible to Myrtle Rust.

Table 7. Estuarine Communities

Potential regeneration species	Common name	Description	Height	Growth rate	Habitat values/comments
Mangrove Forest - CH SW01					
<i>Aegiceras corniculatum</i>	River Mangrove	Medium sized shrub usually occurring with <i>Avicennia marina</i> but extending further upstream.	4 m		Found in the mid to upper reaches of the estuary. Seedlings not commonly available. Collect seeds and push them into the mud.
<i>Avicennia marina</i> subsp. <i>australisica</i>	Grey Mangrove	Grows in saltwater swamps and estuaries. Most common and widespread mangrove.	8 m		Found in the lower to mid reaches of the estuary. Seedlings not commonly available. Collect seeds and push them into the mud.
<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	River She-oak	Common riparian tree with needle-like foliage.	20 m	F	Common species in the upper estuary above the tidal zone. Important riparian revegetation species.
<i>Casuarina glauca</i>	Swamp Oak	Common tree along coastal streams. Common in brackish areas.	20 m	F	Woody seed cones are an occasional food source for Glossy Black Cockatoos. Common directly above the tidal zone.
<i>Crinum pedunculatum</i>	Swamp Lily, River Lily	Attractive 'lily' with large white flowers.	1 m	M	Occurs in the mid to upper estuary at the tidal limit.
Coastal Floodplain Estuarine Wetland - CH SW02, CH FrW10, CH FrW11					
<i>Baumea juncea</i>	Bare Twig-rush	Common, spreading sedge in brackish areas.	1 m		
<i>Casuarina glauca</i>	Swamp Oak	Common tree along coastal streams. Common in brackish areas.	20 m	F	Woody seed cones are an occasional food source for Glossy Black Cockatoos.
<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush	Large clumping rush with extensive rhizome system. Common in saline or brackish wetlands.	1 m		
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	Widespread and common wetland tree species. Large white 'bottlebrush' flowers.	12 m	F	Flowers in Autumn-Spring. Provides an important winter nectar source for birds, bats and native bees. Susceptible to Myrtle Rust.
<i>Phragmites australis</i>	Common Reed	Common, tall aquatic reed.	4 m	F	

Saltmarsh - CH SW03, CH SW04, CH SW05, CH SW06, CH SW07					
<i>Baumea juncea</i>	Bare Twig-rush	Common, spreading sedge in brackish areas.	1 m		
<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush	Large clumping rush with extensive rhizome system. Common in saline or brackish wetlands.	1 m		
<i>Sporobolus virginicus</i>	Marine Couch, Sand Couch	Hardy running coastal grass.	0.5 m		

