NATIVE SEED COLLECTION & PLANTING GUIDE

KYEAMBA VALLEY AND SURROUNDS

Collecting and germinating local seed is a great way to grow plants for revegetation.
It is also a rewarding and enjoyable activity!

The information in this guide will give you some tips to get started. For further information, contact Kyeamba Valley Landcare Group to find out how you can get involved in the group's seed collection and propagation activities.

MURRUMBIDGEE Landcare INCORPORATED 25 Years+

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THE KYEAMBA VALLEY LANDCARE GROUP

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KYEAMBA VALLEY LANDCARE GROUP

The Kyeamba Valley Landcare group is a community volunteer organisation that was formed in 1989 by a group of Kyeamba Valley landholders with a common concern about the protection of our natural resources.

Kyeamba Valley was one of the first Landcare groups to establish in NSW and now has a membership of around 100 rural landholders.

Our community vision is: *Working toward a better future.*

Through education, field days, on-ground works and collaborative projects, we aim to achieve a viable, sustainable and productive environment through a planned approach to the rehabilitation of degraded land, water and vegetation, and the implementation of more sustainable land use practices.

For more information, or to find out how to get involved,
contact your Local Landcare Coordinator: bidgeesouth@mli.org.au,
or visit Murrumbidgee Landcare's website: www.mli.org.au.

NATIVE VEGETATION COMMUNITIES

Higher slopes and ridgelines: Tumbledown Gum and White Cypress Pine woodland

Trees

Allocasuarina verticillata (Drooping Sheoak)
Callitris glaucophylla (White Cypress Pine)
Eucalyptus albens (White Box)
Eucalyptus dealbata (Tumbledown Gum)
Eucalyptus goniocalyx (Long-leaf Box)
Eucalyptus macrorhyncha (Red Stringybark)
Eucalyptus polyanthemos (Red Box)

Shrubs

Acacia decora (Western Silver Wattle)
Acacia genistifolia (Spreading Wattle)

Shrubs (cont'd)

Acacia lanigera (Woolly Wattle)
Indigofera australis (Austral Indigo)
Pultenaea foliosa (Bush Pea)
Senna artemisioides (Punty Bush)

Groundcovers and Grasses

Burchardia umbellata (Milkmaids)
Hardenbergia violacea (Purple Coral Pea)
Hibbertia obtusifolia (Grey Guinea Flower)
Stypandra glauca (Nodding Blue Lily)

Mid to upper slopes: White Box woodland

Trees

Acacia doratoxylon (Currawang)
Acacia implexa (Hickory Wattle)
Allocasuarina verticillata (Drooping Sheoak)
Brachychiton populneus (Kurrajong)
Callitris glaucophylla (White Cypress Pine)
Eucalyptus albens (White Box)
Eucalyptus blakelyi (Blakely's Red Gum)
Eucalyptus melliodora (Yellow Box)
Eucalyptus polyanthemos (Red Box)
Eucalyptus sideroxylon (Red Ironbark)

Shrubs

Acacia buxifolia (Box-Leaf Wattle)
Acacia deanei (Deane's Wattle)

Callitris glaucophylla

Shrubs (cont'd)

Acacia decora (Western Silver Wattle)
Acacia paradoxa (Kangaroo Thorn)
Acacia pycnantha (Golden Wattle)
Acacia verniciflua (Varnish Wattle)
Bursaria spinosa (Sweet Bursaria)
Daviesia leptophylla (Slender Bitter-Pea)
Dodonaea viscosa (Hop Bush)
Pultenaea foliosa (Bush Pea)

Groundcovers and Grasses

Dianella longifolia (Smooth Flax-Lily)
Dianella revoluta (Spreading Flax-Lily)
Einadia nutans (Climbing Saltbush)
Glycine canescens (Silky Glycine)
Hardenbergia violacea (Purple Coral Pea)
Lomandra multiflora (Many-Flowered Mat Rush)
Themeda triandra (Kangaroo Grass)
Vittadinia cuneata (Fuzzweed)
Wahlenbergia stricta (Bluebell)
Xerochrysum viscosum (Sticky Everlasting)

Lower slopes: Grey Box woodland

Trees

Brachychiton populneus (Kurrajong)
Callitris glaucophylla (White Cypress Pine)
Eucalyptus albens (White Box)
Eucalyptus blakelyi (Blakely's Red Gum)
Eucalyptus melliodora (Yellow Box)
Eucalyptus microcarpa (Grey Box)
Eucalyptus polyanthemos (Red Box)

Shrubs

Acacia deanei (Deane's Wattle)
Acacia decora (Western Silver Wattle)
Acacia pycnantha (Golden Wattle)
Pultenaea foliosa (Bush Pea)

Groundcovers and Grasses

Aristida spp. (Wire Grasses)
Arthropodium strictum (Chocolate Lily)
Calotis cuneifolia (Purple Burr-Daisy)
Chrysocephalum apiculatum (Yellow Buttons)

Groundcovers and Grasses (cont'd)

Dianella longifolia (Smooth Flax Lily)
Dianella revoluta (Spreading Flax Lily)
Geranium solanderi (Austral Cranesbill)
Lomandra multiflora (Many-flowered Mat Rush)
Poa spp. (Tussock Grasses)
Xerochrysum viscosum (Sticky Everlasting)

Leptospermum continentale

Lower to mid slopes: Yellow Box and Blakely's Red Gum woodland

Trees

Acacia implexa (Hickory Wattle)
Allocasuarina verticillata (Drooping Sheoak)
Brachychiton populneus (Kurrajong)
Callitris endlicheri (Black Cypress Pine)
Callitris glaucophylla (White Cypress Pine)
Eucalyptus albens (White Box)
Eucalyptus blakelyi (Blakely's Red Gum)
Eucalyptus bridgesiana (Apple Box)

Gang-Gang Cockatoos

Trees (cont'd)

Eucalyptus macrorhyncha (Red Stringybark)
Eucalyptus melliodora (Yellow Box)
Eucalyptus microcarpa (Grey Box)
Eucalyptus polyanthemos (Red Box)

Shrubs

Acacia buxifolia (Box-Leaf Wattle)
Acacia deanei (Deane's Wattle)
Acacia decora (Western Silver Wattle)
Acacia genistifolia (Spreading Wattle)
Acacia paradoxa (Kangaroo Thorn)
Acacia pycnantha (Golden Wattle)
Acacia verniciflua (Varnish Wattle)
Calytrix tetragona (Common Fringe Myrtle)
Daviesia latifolia (Hop Bitter-Pea)
Dodonaea viscosa (Hop Bush)
Indigofera australis (Austral Indigo)
Kunzea parviflora (Violet Kunzea)
Pultenaea foliosa (Bush Pea)
Senna artemisioides (Punty Bush)

Lower to mid slopes: Yellow Box and Blakely's Red Gum woodland (cont'd)

Groundcovers and Grasses

Aristida spp. (Wire Grasses)
Bothriochloa macra (Red-Leg Grass)
Bulbine bulbosa (Bulbine Lily)
Chrysocephalum apiculatum (Yellow Buttons)
Dianella revoluta (Spreading Flax Lily)
Dillwynia sericea (Showy Parrot Pea)
Geranium solanderi (Austral Cranesbill)
Hardenbergia violacea (Purple Coral Pea)
Hibbertia obtusifolia (Grey Guinea Flower)
Lomandra multiflora (Many-flowered Mat Rush)
Maireana microphylla (Eastern Cottonbush)
Microlaena stipoides (Weeping Grass)
Stypandra glauca (Nodding Blue Lily)
Themeda triandra (Kangaroo Grass)
Xerochrysum viscosum (Sticky Everlasting)

Creeklines and flats: Yellow Box and Blakely's Red Gum woodland

Trees

Acacia dealbata (Silver Wattle)
Eucalyptus blakelyi (Blakely's Red Gum)
Eucalyptus camaldulensis (River Red Gum)
Eucalyptus melliodora (Yellow Box)
Eucalyptus microcarpa (Grey Box)
Eucalyptus polyanthemos (Red Box)

Shrubs

Acacia decora (Western Silver Wattle)
Leptospermum continentale (Prickly Tea-Tree)

Groundcovers and Grasses

Carex spp. (Sedges)
Danthonia spp. (Wallaby Grasses)
Juncus spp. (Rushes)
Phragmites australis (Common Reed)
Poa spp. (Tussock Grasses)
Typha spp. (Cumbungi)

Creeklines and floodplains: River Red Gum woodland

Trees

Acacia dealbata (Silver Wattle)
Acacia melanoxylon (Blackwood)
Brachychiton populneus (Kurrajong)
Casuarina cunninghamiana (River Sheoak)
Eucalyptus blakelyi (Blakely's Red Gum)
Eucalyptus bridgesiana (Apple Box)
Eucalyptus camaldulensis (River Red Gum)

Shrubs

Acacia decora (Western Silver Wattle)
Acacia paradoxa (Kangaroo Thorn)
Acacia pycnantha (Golden Wattle)
Callistemon sieberi (River Bottlebrush)

Shrubs (cont'd)

Daviesia latifolia (Hop Bitter Pea)
Eremophila deserti (Turkey-Brush)
Leptospermum continentale (Prickly Tea-Tree)

Groundcovers and Grasses

Carex spp. (Sedges)
Geranium solanderi (Austral Cranesbill)
Lomandra multiflora (Many-Flowered Mat-Rush)
Phragmites australis (Common Reed)
Typha spp. (Cumbungi)
Vittadinia cuneata (Fuzzweed)
Wahlenbergia stricta (Bluebell)

Eucalyptus camaldulensis

SEED COLLECTION CALENDAR

This calendar is based on many years of seed collection, but it is important to remember that Australian plants are opportunists - they respond as much to rainfall and temperature as to day length and calendar. So be aware that seed may be found several months outside of the times shown here.

Spring & Summer

Acacia buxifolia (Box-Leaf Wattle): Dec
Acacia dealbata (Silver Wattle): Dec
Acacia deanei (Deane's Wattle): Dec
Acacia decora (Western Silver Wattle): Dec
Acacia doratoxylon (Currawang): Nov to Jan
Acacia genistifolia (Spreading Wattle): Dec
Acacia implexa (Hickory Wattle): Dec to Jan
Acacia lanigera (Woolly Wattle): Nov to Dec
Acacia melanoxylon (Blackwood): Jan to Feb
Acacia paradoxa (Kangaroo Thorn): Dec
Acacia pycnantha (Golden Wattle): Nov to Jan
Acacia verniciflua (Varnish Wattle): Nov to Dec
Allocasuarina verticillata (Drooping Sheoak): Jan
Arthropodium milleflorum (Vanilla Lily): Jan
Arthropodium strictum (Chocolate Lily): Dec to Jan
Bothriochloa macra (Red-Leg Grass): Feb
Brachychiton populneus (Kurrajong): Feb
Bulbine bulbosa (Bulbine Lily): Dec to Jan
Burchardia umbellata (Milkmaids): Dec to Jan
Bursaria spinosa (Sweet Bursaria): Jan to Feb
Callistemon sieberi (River Bottlebrush): Dec to Feb
Callitris endlicheri (Black Cypress Pine): Dec to Jan
Callitris glaucophylla (White Cypress Pine): Dec to Jan

Spring & Summer (cont'd)

Calytrix tetragona (Common Fringe Myrtle): Nov to Dec
Carex spp. (Sedges): Dec
Casuarina cristata (Belah): Dec to Jan
Casuarina cunninghamiana (River Sheoak): Jan to Feb
Chrysocephalum apiculatum (Yellow Buttons): Dec to Jan
Danthonia spp. (Wallaby Grasses): Dec to Feb
Daviesia latifolia (Hop Bitter-Pea): Dec
Daviesia leptophylla (Slender Bitter-Pea): Dec to Jan
Dianella longifolia (Smooth Flax Lily): Dec to Jan
Dianella revoluta (Spreading Flax Lily): Dec to Jan
Dillwynia sericea (Showy Parrot Pea): Nov to Dec
Dodonaea viscosa (Hop Bush): Nov to Dec
Eucalyptus albens (White Box): Jan to Feb
Eucalyptus blakelyi (Blakely's Red Gum): Jan to Feb
Eucalyptus bridgesiana (Apple Box): Jan to Feb
Eucalyptus dealbata (Tumbledown Gum): Jan to Feb
Eucalyptus macrorhyncha (Red Stringybark): Jan to Feb
Eucalyptus melliodora (Yellow Box): Feb
Eucalyptus microcarpa (Grey Box): Jan to Feb
Eucalyptus polyanthemos (Red Box): Feb
Eucalyptus sideroxylon (Red Ironbark): Dec to Feb
Grevillea alpina (Cat's Claws): Dec to Feb
Grevillea lanigera (Woolly Grevillea): Dec to Feb
Hardenbergia violacea (Purple Coral Pea): Dec
Hibbertia obtusifolia (Grey Guinea Flower): Dec
Indigofera australis (Austral Indigo): Nov to Jan
Juncus spp. (Rushes): Dec
Kunzea parviflora (Violet Kunzea): Dec
Leptospermum continentale (Prickly Tea-tree): Nov to Dec
Leptospermum obovatum (RiverTea-tree): Feb
Lomandra multiflora (Many-flowered Mat Rush): Dec
Microseris lanceolata (Yam Daisy): Oct
Pultenaea foliosa (Bush Pea): Dec to Jan
Senna artemisioides (Punty Bush): Dec to Jan
Stypandra glauca (Nodding Blue Lily): Nov
Themeda triandra (Kangaroo Grass): Dec to Jan
Vittadinia cuneata (Fuzzweed): Dec
Xerochrysum viscosum (Sticky Everlasting): Dec

Autumn & Winter

Bothriochloa macra (Red-leg Grass): Mar to Apr
Brachychiton populneus (Kurrajong): Mar
Bursaria spinosa (Sweet Bursaria): Mar
Calotis cuneifolia (Purple Burr Daisy): Apr
Casuarina cristata (Belah): Apr
Casuarina cunninghamiana (River Sheoak): Mar
Danthonia spp. (Wallaby Grasses): Mar
Dianella longifolia (Smooth Flax Lily): Apr
Einadia nutans (Climbing Saltbush): Apr
Eucalyptus albens (White Box): Mar
Eucalyptus blakelyi (Blakely's Red Gum): Mar
Eucalyptus bridgesiana (Apple Box): Mar
Eucalyptus camaldulensis (River Red Gum): Mar to May
Eucalyptus macrorhyncha (Red Stringybark): Mar to May
Eucalyptus melliodora (Yellow Box): Mar to Apr
Eucalyptus microcarpa (Grey Box): Mar to Apr
Eucalyptus polyanthemos (Red Box): Mar
Eucalyptus sideroxylon (Red Ironbark): Mar
Lomandra multiflora (Many-Flowered Mat Rush): Mar
Maireana microphylla (Eastern Cottonbush): Apr
Melaleuca lanceolata (Moonah): Jun to Aug
Phragmites australis (Common Reed): May to Jul
Pittosporum angustifolium (Butter Bush): Apr to May
Typha spp. (Cumbungi): Apr to May
Vittadinia cuneata (Fuzzweed): Apr
Wahlenbergia stricta (Bluebell): Apr

Monitor Lizard (Goanna)

SEED COLLECTION

Preparation

Before commencing any seed collection, determine which species you want to collect, and when these are likely to have seed ready (see the Seed Collection Calendar on pages 9 to 11 for approximate timings for a selection of local species).

Some of the equipment which may come in handy includes:

- Buckets
- Paper bags or envelopes
- Secateurs
- Long-handled pruner
- Gloves
- Pencil and paper.

If you are collecting from land belonging to another landholder (including private, Crown and State Forest land), you will need prior approval. You will also need a licence if you are collecting threatened species or from endangered ecological communities.

Be sure to record as much information as possible when collecting seeds. A useful resource is the Field Data Sheet, available at: http://mli.org.au/field-data-sheet.

Check the maturity of seeds before collecting - the seed should be brown, not green. Note that it is possible for maturity to vary from one plant to its neighbour, and even across a single tree, so check each time.

Collection

It is generally best to collect from a site with similar conditions to the site you would like to revegetate (eg soil type, aspect, climate, etc). However you may also like to include plants from further west and north, to prepare for future climate.

Some tips to maximise the genetic diversity and quality of seed collected include:

- Collect from a wide range of plants - at least 10 individuals of each species is recommended
- Only collect from healthy plants
- Collect from plants scattered throughout an area, rather than from adjacent plants
- Avoid collecting seed from isolated plants, as seed from these plants may be in-bred from self pollination
- Collect only as much seed as you need, and make sure you don't damage plants when taking seed
- Do not remove more than 10% of the fruit of any one plant, or more than 1% of the overall biomass.

To collect seed from tall trees, you may be able to reach lower branches using a long-handled pruner from the back of a ute. If possible, take advantage of fallen limbs, provided the seed has not already been released. Never cut down branches just to get the seed!

Seed and pods on small trees and shrubs can be hand-picked or cut with secateurs. You can also place a drop-sheet or tarpaulin under the plant, then shake the branches so seeds fall on it.

When collecting native grass seed, run your hand along the stem - ripe seed will come off, while unripe seeds will stay on the stem.

For species which release their seed very quickly upon ripening, it may be worthwhile to tie paper bags or nylon stockings around the branches before the seed pods ripen.

Collect seeds in paper envelopes or bags, and label with as much information as you can, including species, collection date, collection location, number of plants collected from, and the collection range.

Drying seed
After collecting seed, you need to ensure it is completely dry before storing it. To do this, you can simply place the paper bag containing the seed on a window sill in a sunny position. For larger volumes of seed, you can keep them in a bucket and just stir it around with your hands every few days until it dries out.

Cleaning seed
Once the seed is dried, clean your collection by separating the seeds from seed pods and any other material. Note that for native grass seed, it is best to keep the awns attached; when planted in soil with moisture, the awns will help the seed to hold the soil.

The easiest way to clean seed is to sieve it, using progressively smaller sieves, to separate out everything except the seeds. Kitchen sieves work fine, or you can purchase specialist seed sorting sieves. To get rid of chaff, gently blow it away from the seeds.

A good tip for all the leftover seed pods and chaff is to collect them and spread around a revegetation area - you may get some germination from it, so don't waste it!

Storing seed
Store your seed in a labelled jar, ziplock bag (double bagging helps prevent loss of seed to spills), or other airtight container. Be sure to remove all contaminants from your container by wiping it out with a cloth before use.

Use a funnel to pour the cleaned seed into your bag or container.

Store seed in a cool, dry and dark place where they are not likely to be reached by insects or mice. Most seed can be stored at temperatures up to 20°C for several years, although with some loss of viability. Certain species are best used fresh; this is noted for the relevant species in the information on pages 20 to 33.

SEED GERMINATION

Preparation
The best time to propagate is usually spring to early summer.

Cell containers, punnets, pots or shallow trays are all suitable for germinating seeds in.

Use either a commercial seed-raising mix which is free draining, or make your own. Some good seed-raising mixes are:

- Equal parts of coarse washed sand and vermiculite, or
- A 4:1 mix of washed sand and coir fibre.

Germination
Some species need to be pre-treated before germinating. Information on pre-treatment options is shown on pages 18 to 19, with details for specific species on pages 20 to 33.

To sow the seeds, put the potting mix in the trays or pots and wet it. Sprinkle the seeds on the surface, then cover lightly with sand or some potting mix.

Sit the trays/pots in a warm spot, and make sure they stay moist, which usually requires watering around once a day. Use a fine mist or spray. Most species should germinate within about 1 to 4 weeks, although a few take longer.

Themeda triandra

Bog method
For some wetland species, seeds germinate best when the soil is waterlogged. This can be achieved through a germination setup known as the bog method.

Simply sit the seed trays/pots in another tray which is filled with water. The water level in the surrounding tray should be kept just below the soil surface level in your seed trays/pots.

Capillary watering
This is an irrigation setup which can be very successful when germinating seed, particularly for species which have very fine seed, which can easily be washed around if watered with an overhead spray. Capillary watering can also help prevent 'damping off' (a fungal disease that can quickly kill affected seedlings), as it keeps the foliage dry and avoids over-watering the potting mix.

Germinating *Chloris truncata* seedlings

For a capillary watering setup, fill a large tray with sand to a depth of about 10 cm (make sure the tray has drainage holes). Before sowing your seeds, sit the seed tray/pots in the larger tray, and water them well, allowing the water to flow out and saturate the sand. This will set up the capillary process. Then sow your seed into the tray or pots as usual.

Your seed will now be kept moist through the capillary action of water moving from the wet sand into the pots. In order to keep the sand wet, it is helpful to set up a small reservoir to allow water to flow slowly into the sand. This can be achieved simply by standing an inverted drink bottle filled with water in the tray (you may need to use pots or ties to secure it in place). Check regularly to make sure the sand is moist, and refill the drink bottle with water as required.

Transplanting seedlings

Once the seedlings have grown big enough to be handled (at least 2 leaves), it's time to transfer them into individual tubestock pots or similar. If you germinated individual seedlings in separate pots, you don't need to transplant them.

Use native potting mix in the pots, either a commercial mix or make your own (eg a 3:2 mix of regular potting mix and washed sand). It helps to add a small amount of controlled-release native plant fertiliser to the potting mix before transplanting, but this is not essential.

Carefully remove each seedling using a flat knife or spatula, and place into a partly filled pot.

Gently firm potting mix around the seedling, and water with a light spray, such as from a spray bottle.

Keep the pots in a protected area for a few weeks, then harden them by gradually moving them to an area where full sun is available for at least part of the day. Make sure they don't dry out; you may like to use a tray of water under the pots, as with the bog method (see page 16).

Your seedlings should be ready to plant out in about 3 to 4 months. The best time to plant is usually winter.

A recently planted revegetation site

SEED PRE-TREATMENT METHODS

Boiling water
Before sowing, place the seeds in a cup and pour boiling water over them. Allow to stand for the recommended time for that species (this ranges from 30 seconds up to 24 hours). Following this time, viable seeds should have swollen; discard any seeds that are floating. Dry seeds before sowing, to prevent mould.

Hot water
Some species should be soaked in hot water, rather than boiling. For this treatment, place seeds in a cup and pour hot water (around 60 degrees Celsius) over them. Allow to stand for the recommended time for that species, then cool by running under cold water. Dry seeds before sowing, to prevent mould.

Soaking
Some seeds have a chemical inhibitor, which can be leached by soaking in water at room temperature. For this treatment, seeds should be placed in water for the recommended time for that species (usually around 8 to 12 hours). The water should be changed approximately every 4 hours.

Washing
Some species require removal of a chemical inhibitor from the seeds, which can be achieved by soaking or washing in water mixed with a small amount of laundry detergent.

Dry storage

Some species release seeds when they are still immature. These species have an after-ripening period, which is the time the seeds need to fully mature. To cater for this, store seeds in a dry place at room temperature for the recommended length of time for that species (this ranges from around 3 to 12 months).

Smoking

The germination of many native species occurs naturally following a bushfire. Treatment of the seed of these species with smoke water has been found to replicate these conditions, and promote germination.

To produce smoke water, create a small contained fire of burning plant material in a drum (or similar), and pump the smoke to a jerry can of water. The smoke should be bubbled through the water for 1 hour. Dilute the resultant smoke water to 10-20%, then soak the seeds in the water for 3 to 36 hours.

Scarification

Some species with hard seed coats can be scarified, to remove or abrade part of the seed coat. On individual seeds, a small part of the seed coat (around 1 mm square) can be removed by nicking it with a scalpel or razor blade. For larger quantities of seed, the same effect can be achieved by rubbing seeds between sandpaper to abrade the seed coat.

Cold stratification

Some species require exposure to cold conditions to break dormancy. To do this, sow seeds in trays or pots with potting mix (as described on page 15), and water with a fine mist. Make sure they do not become waterlogged.

Place the entire container in a plastic bag, and put it in the refrigerator for the recommended time (usually around 2 to 4 weeks, although it can be up to 3 months). Seeds should be kept moist, so spray with a fine mist if they start to dry out.

PROPAGATING LOCAL SPECIES

Acacia spp. (Wattles)

- Hand-pick seed pods when they are turning brown and brittle
- Collect pods in a bucket, and remove the seeds by splitting the pods open along the seam and shaking or gently scraping the seeds out
- Shake or sieve to clean the seeds
- Pre-treatment: Boiling water method, soaking for up to 24 hours
- Seeds take 1 to 3 weeks to germinate.

Casuarina cunninghamiana

Allocasuarina and _Casuarina_ spp. (Sheoaks)

- Collect cones by twisting off the branch when they are brown but valves are still closed
- Cones can be collected throughout the year, as they are retained on the tree indefinitely
- Collect a small amount of soil from under the parent plants when collecting cones, and mix this with the potting mix when germinating seeds. The soil should contain some mycelium and spores of the mycorrhizal fungi which forms a symbiotic relationship with the plant, and will help the seedlings achieve optimum growth
- Store cones in a paper bag in a warm, dry place until the valves open and the seeds are released. Shake or sieve to clean the seeds
- Seed is best used fresh, or stored in the fridge
- Seeds take 2 to 5 weeks to germinate.

***Aristida* spp. (Wire Grasses)**

- Harvest seed heads when they are reddish-purple by cutting stalks with secateurs
- Place stalks upside down inside paper bags, and store in a warm place to dry
- Mature seeds will fall off, but due to their three-branched awns the seeds will form a tangled mass. Thresh lightly, then shake or sieve to clean the seeds as much as possible
- Seeds take 2 to 4 weeks to germinate.

***Arthropodium* and *Bulbine* spp. (Lilies)**

- Harvest the papery seed capsules when they turn brown and brittle by cutting stalks with secateurs
- Place stalks upside down inside paper bags, and store in a warm, dry place until the capsules have opened. Thresh lightly, then shake or sieve to clean the seeds
- Pre-treatment: Dry storage method, storing seeds for 2 to 3 months before sowing
- Sow in autumn, as high temperatures inhibit germination
- Seeds need light to germinate, so sow at the surface
- Seeds take 4 to 8 weeks to germinate.

***Bothriochloa macra* (Red-leg Grass)**

- Harvest seed heads when the spikelets at the tips are just beginning to fall off, and the stalks are turning red-purple
- Harvest by by cutting stalks with secateurs
- Place stalks upside down inside paper bags or buckets, and store in a warm place to dry
- Pre-treatment 1: Dry storage method, storing seeds for 3 to 6 months
- Pre-treatment 2: Smoking method
- Seeds take 2 to 5 weeks to germinate.

***Brachychiton populneus* (Kurrajong)**

- Hand pick the large woody fruit capsules before they open, and place in a paper bag in a warm, dry place until they open
- Once fruits open, seed can be tapped out, or eased out with a pencil
- Wear gloves and a mask to protect yourself from the hairs surrounding seeds
- Pre-treatment: Hot water method, soaking overnight
- Seeds take 2 to 4 weeks to germinate.

***Bulbine* spp. (Lilies)**

See *Arthropodium* spp. on page 21.

***Burchardia umbellata* (Milkmaids)**

- Hand-pick seed capsules when they turn red-brown and brittle
- If possible, collect a small amount of soil from under the parent plants when collecting the seeds, and mix this with the potting mix when germinating seeds. The soil fungi are thought to aid germination
- Place them in a paper bag and dry until the capsules have opened. Thresh lightly, then shake or sieve to clean the seeds

Burchardia umbellata

- Pre-treatment 1: Dry storage method, storing seeds for 2 to 3 months before sowing
- Pre-treatment 2: Smoking method
- Sow in autumn, as high temperatures inhibit germination
- Seeds take 4 to 8 weeks to germinate.

***Bursaria spinosa* (Sweet Bursaria)**

- Hand pick the ripe, papery capsules when they are rattling
- Seeds can be released quickly upon maturity, so if possible place a bag or nylon stocking around maturing pods, or a dropsheet under the capsules to catch seeds
- The seeds can be removed from the capsules by shaking or gently scraping the seeds out
- Use seeds fresh (don't store)
- Pre-treatment: Cold stratification method, leaving in the refrigerator for 28 days
- Seeds take 4 to 8 weeks to germinate
- Seedlings are prone to damping off, so use capillary watering
- It is recommended to sow directly into pots, rather than using trays.

***Callistemon* spp. (Bottlebrushes)**

- Hand-pick the woody seed capsules from the plant by running your fingers along the rows and collecting them in a bucket or paper bag
- The seeds usually remain within the capsules indefinitely, so they can be collected throughout the year
- It is best to pick capsules when they are at least 12 months old
- Place the capsules in a paper bag and store in a warm, dry place, then shake or sieve to clean the seeds
- Seeds take 2 to 4 weeks to germinate
- Use capillary watering due to the fine seeds.

***Callitris* spp. (Cypress Pines)**

- Hand pick cones just before they open
- Place cones in a paper bag, and store in a warm place to dry for a few weeks. The papery seeds should release easily, then shake or sieve to clean the seeds
- Use seed within 12 months
- Pre-treatment: Cold stratification method, leaving in the refrigerator for 14 to 28 days
- Seeds take 2 to 6 weeks to germinate.

***Calotis cuneifolia* (Purple Burr-Daisy)**

- Harvest the prickly seed ball and place in a paper bag in a warm place to dry
- Break up clustered seeds, and sieve to clean
- Seeds take 1 to 3 weeks to germinate.

***Calytrix tetragona* (Common Fringe Myrtle)**

- Hand-pick the seed capsules when they turn bronze and begin to fall
- Use seed fresh (don't store)
- Pre-treatment: Smoking method
- Seeds take 6 to 10 weeks to germinate
- Note: Germination from seed is unreliable; propagation by cuttings is recommended.

***Carex* spp. (Sedges)**

- Harvest the stalks when they are dry and golden-brown by cutting with secateurs
- Place stalks upside down inside paper bags, and store in a warm place to dry. Then rub the seed heads to extract the seed, wearing gloves to avoid cuts from sharp leaf margins
- Shake or sieve to clean the seeds
- Use the bog method for germination
- Seeds take 2 to 4 weeks to germinate.

Casuarina spp. (Sheoaks)

See _Allocasuarina_ spp. on page 20.

Chrysocephalum apiculatum (Yellow Buttons)

- Hand pick seed capsules when they are red-brown and brittle
- Place capsules inside a paper bag, and store in a warm place to dry. Then break up the seed heads by hand and shake or sieve to clean the seeds
- Pre-treatment: Dry storage method, storing seeds for around 6 months before sowing
- Seeds need light to germinate, so sow at the surface
- Seeds take 2 to 4 weeks to germinate.

Danthonia spp. (Wallaby Grasses)

- Harvest the stalks when the spikelets become fluffy white by cutting with secateurs
- Rub the seed heads between your hands (or two rubber car mats for large quantities) to extract seeds, then clean by sieving
- Pre-treatment: Dry storage method, storing seeds for at least 12 months before sowing
- Seeds take 2 to 4 weeks to germinate.

Daviesia, _Dillwynia_ and _Pultenaea_ spp. (Peas)

- Seeds can be released very quickly upon maturity, so if possible place a bag or nylon stocking around maturing pods, or a dropsheet under the capsules to catch seeds
- Hand-pick seed pods when they are light brown and rattling
- Collect a small amount of soil from under the parent plants when collecting seeds, and mix this with the potting mix when germinating seeds. This may help inoculate the seedlings with the microorganisms needed for fixing nitrogen
- Place seed capsules inside a paper bag, and store in a warm place to dry. Then thresh lightly, and shake or sieve to clean the seeds
- Pre-treatment: Boiling water method, soaking for up to 24 hours
- Seeds take 3 to 8 weeks to germinate
- Keep germinating seeds moist but not wet. Capillary watering may be beneficial.

***Dianella* spp. (Flax Lilies)**

- Hand-pick ripe fruits
- Soak fresh fruit in water to soften, then clean fruit from the seed with sieves
- Use seeds fresh (don't store)
- Pre-treatment 1: Use a combination of washing and soaking methods, soaking in soapy water for 24 hours
- Pre-treatment 2: Smoking method
- Seeds may take up to 6 months to germinate
- Note: Propagation by division is an easier option, best done in autumn or early winter.

***Dillwynia sericea* (Showy Parrot Pea)**

See *Daviesia* spp. on page 24.

***Dodonaea* spp. (Hop Bushes)**

- Seeds can be released very quickly upon maturity, so if possible place a bag or nylon stocking around maturing pods, or a dropsheet under the capsules to catch seeds
- Hand-pick the papery capsules when they become brittle and turn from red to light brown
- Place seed capsules inside a paper bag, and store in a warm place to dry. Then thresh lightly, and shake or sieve to clean the seeds
- Pre-treatment: Hot water method, soaking for 30 seconds
- Seeds take 2 to 4 weeks to germinate.

***Einadia nutans* (Climbing Saltbush)**

- Hand-pick berries when they turn red and soft, and store in a plastic bag until the single black seed in each fruit is released
- The flesh can be left on the seed, but should be thoroughly dried soon after collection to avoid becoming mouldy. Alternatively, seed can be soaked to remove attached fruit flesh
- Seed is best used fresh (don't store)
- Seeds take 2 to 4 weeks to germinate.

Dodonaea viscosa

***Eremophila deserti* (Turkey-Brush)**

- Hand-pick the fruit, and store in a paper bag in a warm place to dry completely
- To extract the seeds from the fruit, place the dried fruit in a small vice, and tighten until the nut cracks; the seed should drop out intact
- Sow seed fresh (don't store)
- Seeds may take many months to germinate
- Note: Germination from seeds is unreliable; propagation by cuttings is recommended instead.

***Eucalyptus* spp. (Boxes and Gums)**

- Hand-pick seed capsules (gumnuts) when they are brown
- The seeds usually remain within the capsules, so they can be picked throughout the year

Eucalyptus bridgesiana

- It is best to pick capsules when they are at least 12 months old
- Place the gumnuts in a paper bag and store in a warm place until the seeds are released (2 to 3 days), then shake or sieve to clean the seeds
- Gumnuts will contain both seeds and a large amount of chaff. It is not necessary to separate the seeds from the chaff; simply sow both together, with the chaff becoming part of the propagating mix
- Seeds take 2 to 4 weeks to germinate
- Capillary watering may be beneficial for seeds in trays.

***Geranium solanderi* (Austral Cranesbill)**

- Hand-pick the fruits when they are well developed
- Leave fruit to dry in a warm, airy spot, then separate seeds from fruit
- Pre-treatment: Hot water method, soaking for 30 minutes
- Seeds need light to germinate, so sow at the surface
- Seeds take 1 to 4 weeks to germinate.

***Glycine canescens* (Silky Glycine)**

- Seeds can be released quickly upon maturity, so if possible place a bag or nylon stocking around maturing pods, or a dropsheet under the plants to catch seeds
- Hand-pick the seedpods when they turn brown
- Place seed capsules inside a paper bag, and store in a warm place to dry. Then thresh lightly, and shake or sieve to clean the seeds
- Pre-treatment: Boiling water method, soaking for a few hours
- Seeds take 3 to 4 weeks to germinate.

***Grevillea* spp. (Grevilleas)**

- Seeds can be released quickly upon maturity, so if possible place a bag or nylon stocking around maturing fruit
- Harvest fruit when they turn brown
- Use seed fresh, or store in the refrigerator
- Pre-treatment 1: Hot water method, soaking for 24 hours. Include a fungicide in the water
- Pre-treatment 2: Smoking method
- Seeds take 4 to 6 weeks to germinate.

***Hakea leucoptera* (Needlewood)**

- Harvest seedpods using secateurs and gloves when they turn dark brown/black
- Place seedpods inside a paper bag and store in a warm place to dry. They should crack open to reveal the winged seeds
- Seeds take up to 3 months to germinate
- Keep germinating seeds moist but not wet. Capillary watering may be beneficial.

***Hardenbergia violacea* (Purple Coral Pea)**

- Hand-pick seedpods when they turn brown
- Place seed capsules inside a paper bag and store in a warm place to dry. Then thresh lightly, and shake or sieve to clean the seeds
- Pre-treatment: Boiling water method, soaking for a few hours
- Seeds take 3 to 4 weeks to germinate.

Glycine canescens

***Hibbertia obtusifolia* (Grey Guinea Flower)**

- Seed is difficult to collect, due to a combination of low seed production and regular consumption of seeds by insects
- The after-ripening period can vary widely (thought to be a tactic for survival in natural conditions, with staggered germination)
- Note: Propagation by cuttings is recommended instead.

***Indigofera australis* (Austral Indigo)**

- Seeds can be released quickly upon maturity, so if possible place a bag or nylon stocking around maturing pods, or a dropsheet under the plants to catch seeds
- Hand-pick the seedpods when they are ripening
- Place pods inside a paper bag, and store in a warm place to dry. Then thresh lightly, and shake or sieve to clean the seeds
- Pre-treatment: Boiling water method, soaking for 30 seconds
- Seeds take 3 to 4 weeks to germinate.

***Juncus* spp. (Rushes)**

- Seeds can be released quickly upon maturity, so if possible place a bag or nylon stocking around maturing pods, or a dropsheet under the plants to catch seeds
- Hand-pick seed heads when they are fully formed and brown
- Place seed heads in paper bags, and store in a warm place to dry. Then sieve to clean the seeds
- Seeds take 2 to 4 weeks to germinate
- Use bog method for germination.

***Kunzea parviflora* (Violet Kunzea)**

- Seeds can be released quickly upon maturity, so if possible place a bag or nylon stocking around maturing fruit, or a dropsheet under the plants to catch seeds
- Place fruit in a paper bag, and store in a warm place to ripen, then extract the seeds
- Seeds need light to germinate, so sow at the surface
- Seeds take 3 to 5 weeks to germinate
- Use capillary watering, due to the fine seeds.

***Leptospermum* spp. (Tea-Trees)**

- Hand-pick the woody seed capsules from the plant by running your fingers along the rows and collecting them in a bucket or paper bag
- The seeds usually remain within the capsules indefinitely, so they can be collected throughout the year
- It is best to pick capsules when they are at least 12 months old
- Place the capsules in a paper bag and store in a warm, dry place, then shake or sieve to clean seed
- Pre-treatment: Smoking method
- Seeds take 2 to 4 weeks to germinate
- Keep germinating seeds moist but not wet. Capillary watering may be beneficial.

***Lomandra* spp. (Mat Rushes)**

- Harvest the yellow seed heads by cutting the stalks with secateurs, wearing gloves to avoid being cut by the spines
- Place stalks upside down inside paper bags or buckets, and store in a warm place until they dry and open to release the seeds. Thresh lightly, then shake or sieve to clean the seeds
- Use seeds fresh (don't store)
- Pre-treatment: Hot water method, soaking for 24 hours
- Seeds take 8 to 10 weeks to germinate
- Note: Propagation by division is another easy option.

***Maireana microphylla* (Eastern Cottonbush)**

- Collect seed heads when they turn dark brown and start to dry out
- Place the seed heads in a paper bag and store in a warm place to dry, then shake or sieve to clean seeds
- Use seeds within 12 months
- Pre-treatment 1: Soaking method, soaking for 12 hours
- Pre-treatment 2: Smoking method
- Seeds take 2 to 4 weeks to germinate.

Lomandra spp.

***Melaleuca lanceolata* (Moonah)**

- Hand-pick the woody seed capsules from the plant by running your fingers along the rows and collecting them in a bucket or bag
- The seeds usually remain within the capsules indefinitely, so they can be collected throughout the year
- It is best to pick capsules when they are at least 12 months old
- Place the capsules in a paper bag and store in a warm place to dry, then shake or sieve to clean seeds
- Pre-treatment: Smoking method
- Seeds need light to germinate, so sow at the surface
- Seeds take 2 to 4 weeks to germinate
- Use capillary watering due to the fine seeds.

***Microlaena stipoides* (Weeping Grass)**

- Seeds can be released quickly upon maturity, so if possible place a bag or nylon stocking around the seed head to catch seeds
- Harvest seeds by holding the stem over a bucket or bag, and running the stem lightly between your fingers to remove seeds
- Shake or sieve to clean seeds
- Seeds need light to germinate, so sow at the surface
- Seeds take 2 to 5 weeks to germinate.

***Microseris lanceolata* (Yam Daisy)**

- Hand pick the fluffy seed capsules
- Place the capsules in a paper bag and store in a warm place to dry. Then thresh lightly and sieve to clean seeds
- Seeds are best used within 6 months
- Pre-treatment: Cold stratification method, leaving in refrigerator for 3 weeks
- Seeds take 2 to 4 weeks to germinate.

***Phragmites australis* (Common Reed)**

- Separate seed from seedhead before sowing
- Pre-treatment: Dry storage method, storing seeds for up to 6 months before sowing
- Seeds need warmth and light to germinate, so sow at the surface
- Seeds take 1 to 2 weeks to germinate
- Use bog method
- Note: Propagation by division is another option, best done in spring.

***Pittosporum angustifolium* (Butter Bush)**

- Hand-pick the berries
- Place the berries in a paper bag and store in a warm place to dry, then remove seeds from fruit
- Use seeds fresh (don't store)
- Pre-treatment 1: Washing method
- Pre-treatment 2: Scarification method
- Seeds may take 2 to 3 months to germinate
- Keep germinating seeds moist but not wet. Capillary watering may be beneficial.

***Poa* spp. (Tussock Grasses)**

- Harvest seed heads when they turn from green to light brown, by cutting stalks with secateurs
- Place stalks upside down inside paper bags or buckets, and store in a warm place to dry
- Rub the seedheads between your hands (or two rubber car mats for large quantities) to extract seeds, then sieve to clean seeds
- Pre-treatment 1: Dry storage method, storing seeds for 3 months before sowing
- Pre-treatment 2: Cold stratification method, leaving in refrigerator for 3 weeks
- Seeds need light to germinate, so sow at the surface
- Seeds take 2 to 6 weeks to germinate.

***Pultenaea foilosa* (Bush Pea)**

See *Daviesia* spp. on page 24.

***Senna artemisoides* (Punty Bush)**

- Seeds can be released quickly upon maturity, so if possible place a bag or nylon stocking around maturing fruit, or a dropsheet under the plants to catch seeds
- Place seed heads in a paper bag, and store in a warm place to dry completely, then thresh lightly and sieve to clean seeds
- Pre-treatment: Boiling water method, soaking for 24 hours
- Seeds take 1 to 2 weeks to germinate.

Pittosporum angustifolium

Stypandra glauca (Nodding Blue Lily)

- Hand-pick the black, leathery-like fruit as it approaches maturity
- Place fruit in a paper bag, and store in a warm place to dry completely. Sieve to clean the seeds
- Pre-treatment: Smoking method
- Best results are achieved when seed is sown directly into the soil in autumn
- Seeds take 3 to 4 weeks to germinate, although it has been known to take several months
- Note: Germination from seeds is unreliable; propagation by division is recommended instead.

Stypandra glauca

Themeda triandra (Kangaroo Grass)

- Hand-pick seedheads when they are dark, and can be pulled off very easily
- Pre-treatment 1: Dry storage method, storing seeds for 6 to 12 months before sowing
- Pre-treatment 2: Cold stratification method, leaving in refrigerator for 28 days
- Seeds take 2 to 4 weeks to germinate.

Typha spp. (Cumbungi)

- Harvest the large flower spike when it changes from light brown to dark brown/ black, by cutting with secateurs
- Place the entire spike upside down inside paper bags, and store in a warm place until the many thousands of fluffy seeds release naturally
- Sieve to clean the seeds
- Use bog method
- Note: *T. latifolia* is introduced and is a weed in many places. Ensure you only propagate the native species, *T. domingensis* (Narrow Leaf Cumbungi) or *T. orientalis* (Broadleaf Cumbungi).

***Vittadinia cuneata* (Fuzzweed)**

- Hand-pick the entire seed heads and store in a paper bag to dry
- Break up seed heads by hand, or rub against fine wire screens, and sieve to clean
- Store seeds with the fluffy pappus attached
- Pre-treatment 1: Dry storage method, storing seeds for 6 months before sowing
- Pre-treatment 2: Cold water method, soaking for 10 days
- Seeds need light to germinate, so sow at the surface
- Seeds take 1 to 3 weeks to germinate.

***Wahlenbergia stricta* (Bluebell)**

- Harvest the papery seed capsules when they change from green to light brown and become brittle, by cutting the stalks with secateurs
- Place stalks upside down inside paper bags, and store in a warm place until they dry. Then thresh lightly or crush capsules to release the fine red-brown seed, and sieve to clean the seeds
- Pre-treatment 1: Dry storage method, storing seeds for at least 6 months before sowing
- Pre-treatment 2: Cold stratification method, leaving in refrigerator for 3 months
- Seeds need light to germinate, so sow at the surface
- Seeds take 3 to 4 weeks to germinate.

***Xerochrysum viscosum* (Sticky Everlasting)**

- Hand-pick the whole flower head when the florets become darker in colour
- Place the florets in a paper bag and store in a warm place to dry, then lightly thresh and sieve to clean the seeds
- Pre-treatment: Cold stratification method
- Seeds take 1 to 4 weeks to germinate.

Xerochrysum viscosum

PREPARING & PLANTING FOR REVEGETATION

Winter to Summer

The year before you plant

Select and order plants

- Locally indigenous species are always recommended, as they are most suited to the local conditions and climate. Where possible, use seedlings grown from seed collected locally
- If you are purchasing seedlings, order plants before Christmas (February at the absolute latest) to help guarantee supply.

Control weeds

- Poor weed control accounts for most planting failures, due to their competition for light, moisture and nutrients
- Before spraying, check if there is good native groundcover to preserve; if there is, use targeted spot spraying for weeds
- Eliminate weeds early, before they use up stored water – ideally, keep the planting area free of weeds for a year or more prior to planting
- If using chemical control, apply a knockdown herbicide like glyphosate well before planting (at least 2 weeks, in good growing conditions), so the chemical has time to be absorbed and become metabolically active.

Fence the site

- Fencing should be used to protect seedlings from stock for at least the first three years
- Fencing also preserves the leaf litter at ground level, and protects low leafy shoots.

Autumn

The year you are planting

Prepare the ground

- Deep ripping the soil helps root development, as it improves aeration and infiltration of water. This allows deeper penetration and faster growth of plant roots
- Rip before the autumn break, while the ground is hard and dry, to optimise shattering of the soil
- Rip planting lines 4 to 5 m apart, to a depth of at least 45 cm, if possible 60 cm or more
- It is good practice to rip three close parallel lines and plant in the centre rip line
- On slopes, rip along contours to reduce erosion risk
- Don't rip under the drip-line of existing trees
- If ripping brings up big clods or creates large open cracks in the soil, break them up and compress by driving over them with the tractor wheels, or use a rotary hoe, to prevent deep drying of the subsoil.

Control weeds

- If Phalaris and/or Cocksfoot are present, spray one month after the autumn break, when the plants are actively growing (before frost, but 10 days after rain). These plants are very hard to kill so seek appropriate advice on sprays and rates.

A site ready for planting, with rip lines and good weed control

Winter

Planting time!

Control weeds

- Apply a residual herbicide such as Simazine one month prior to planting, but before the end of July. This will control competition from weeds throughout spring
- If weeds have emerged since the first spray, spray with a knockdown herbicide in conjunction with the residual.

A seedling being planted with a Pottiputki plantier

Plant the seedlings

- Plant from mid-July to utilise winter rains and allow seedlings to establish slowly over the cooler months, enabling quick growth as soil temperatures warm up
- Ideally, time your planting with forecast rain to avoid the need to water at planting
- Give seedlings a good soaking in their pots the day before planting
- Fertiliser is generally not necessary for natives
- Plant seedlings between the rips. Where a single rip line is used, plant seedlings on the shoulder of the ripline, as those planted in the bottom of the ripline can get waterlogged in wet years (although this can be beneficial in dry years)
- Recommended spacing between seedlings varies, but generally trees should be spaced around 10 m apart. Smaller trees and shrubs can be spaced 3 to 4 m apart, while grasses and groundcovers can be planted in groups of 3 or 4, or spaced at around 1 m. Aim for a maximum of 625 seedlings/ha
- Consider planting dense native grasses and herbs if the site is heavily covered in weeds

Winter (cont'd)

- To plant tubestock, dig a hole slightly larger than the tube, then remove the seedling from the tube, trying to minimise root disturbance
- Place the seedling in the hole, with the base of the seedling's stem just below the surface
- Place the soil back around the hole, and firm down to collapse any air pockets and give good root to soil contact
- A Pottiputki planter can be used to more easily plant mini hiko cell tubes, while a Hamilton tree planter can be used to plant hiko cell tubes or standard forestry tubes
- If no rain is forecast and the soil is particularly dry, one litre of water (or more) poured slowly around each seedling will help overcome transplant shock and remove air pockets. In most cases, no further watering should be required.

Guard your seedlings

- Placing guards around your seedlings can help prevent grazing by rabbits, hares and kangaroos, protects seedlings from wind, and maintains a warm, moist environment
- The cheapest guards are milk cartons held in place by two bamboo stakes. Another common guard is a plastic sleeve, held in place by three hardwood stakes.

Check your site

- In the first week after planting, check your site for vermin or stock damage, to ensure you are able to deal with any interference as quickly as possible.

Spring

After planting

Check your site

- Make sure there are no weeds within 0.5 m of plants through spring and early summer
- If the summer is especially hot and dry, seedlings may benefit from watering; one litre per seedling should be sufficient, and watering should be limited to once a month at most, so as not to weaken the seedlings
- Watch regularly for grasshoppers, particularly in dry years – spray if they are causing damage.

DIRECT SEEDING

An alternative method to revegetating a site by planting tubestock is to use direct seeding. This involves directly placing the seed into the prepared planting area.

Direct seeding can involve simply spreading seed by hand, then raking over it to cover with soil. For large areas, a mechanical seeder is essential. These machines scalp the soil, then drop and cover the seeds in a single pass.

This can be a very cost-effective method of planting, however the results can be less reliable than with planting tubestock.

You may find seeds germinate in patches, creating a high density of plants in some areas and little coverage in others. This can be dealt with through infill plantings, and thinning of dense patches if required, to even out the coverage.

As with revegetation by tubestock, preparation of the site is essential, especially weed control. Prepare your site following the same basic steps as outlined on pages 34 to 37.

When broadcasting seed, either by hand or machine, include seed from a mix of suitable species, together with a bulking agent. The bulking agent can be anything from sawdust or sand through to the chaff you collected when sifting seed you have collected.

Where seeds require a pre-treatment, be sure to complete this prior to sowing.

While sowing rates will vary, a good rule of thumb is that 300-400 g of seed per kilometre should produce around 1 plant per metre. So for a site that is one kilometre long and 25 metres wide, with four rows, you would need around 1.2 kg of seed to cover the 2.5 hectares.

In terms of timing, it is always best to sow into moist soil if possible. Sowing in early spring can help avoid potential loss of germinating seedlings to late winter frosts. However in lower rainfall areas, you may need to sow in winter to ensure the site receives sufficient rain after sowing. In either case, weed control through spring and the following years is vital.

Dillwynia sericea

Species suitable for direct seeding

The following species are some of those that are suitable for direct seeding:

Acacia spp. (Wattles)
Allocasuarina spp. (Sheoaks)
Bothriochloa macra (Red-Leg Grass)
Brachychiton populneus (Kurrajong)
Callitris spp. (Cypress Pines)
Casuarina spp. (Sheoaks)
Danthonia spp. (Wallaby Grasses)
Daviesia latifolia (Hop Bitter Pea)
Dillwynia sericea (Showy Parrot Pea)
Dodonaea viscosa (Hop Bush)
Einadia nutans (Climbing Saltbush)
Eucalyptus spp. (Boxes and Gums)
Leptospermum spp. (Tea-Trees)
Microlaena stipoides (Weeping Grass)
Poa spp. (Tussock Grasses)
Senna artemisoides (Punty Bush)
Themeda triandra (Kangaroo Grass)
Vittadinia cuneata (Fuzzweed)

REGIONAL NURSERIES

AUSTRALIAN NATIVE FARM FORESTRY

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Westringia spp.

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NATIVE SEED COLLECTION & PLANTING GUIDE

KYEAMBA VALLEY AND SURROUNDS

THE KYEAMBA VALLEY LANDCARE GROUP

Authors: Nicole Maher and Jade Auldist (2022). Published by Murrumbidgee Landcare Inc

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