

Revegetation Practicalities

This Note provides practical information on how to prepare, plant and monitor your revegetation site. It follows on from *Land for Wildlife Note V3 - Revegetation Principles* which outlines:

- Site selection and planning - choosing the best and most manageable site.
- Site monitoring - recording before and after images.
- Plant selection - choosing appropriate plants for your site and micro-climates.
- Plant spacing - determining the most suitable plant layout for the site.
- When to plant - determining the best time to plant.

Practical steps for revegetation

There are a number of steps to follow when implementing a revegetation project to maximise success.

Step 1. Budget

Revegetation projects should be costed before work commences, so you can consider the most suitable and cost effective options before you start work. The budget should be based on the cost of site preparation works, plants, equipment hire or purchase, ongoing maintenance costs and payments for any contractors involved.

Step 2. Basic requirements

Following are a range of options that you will need to consider when planning your revegetation project.

Tree guards

Individual tree guards offer increased protection from animals, wind and mild frosts. A range of tree guards are commercially available including those that hold and slowly release water. These are more expensive than regular guards, but may be suitable for small-scale plantings in dry locations. Most tree guards are UV resistant, so they can be reused on other revegetation sites once the plants have established. Be aware that if your site is prone to higher temperatures, tree guards can create a hot and humid micro-climate that increases the possibility of fungal disease.



This planting in the Mount Barney area is designed to create a corridor for Koalas.



Tree guards offer increased protection from grazing animals, wind and mild frosts. Pink tree guards are designed to concentrate sunlight to help photosynthesis and speed up growth. Photo by Simon Brown.

Stakes

Stakes are generally used for larger plants and if you are using tubestock, you are unlikely to require them.

Mulch

Mulching helps to insulate the soil from temperature extremes, protect the soil surface, conserve soil moisture, suppress weeds and contribute organic matter to the soil, reducing maintenance and improving plant health. A range of materials can be used such as woodchips, hay, sugar cane, straw or purpose manufactured weed mats. Mulching to a radius of 60-100 cm around seedlings is recommended. A general rule of thumb is to apply mulch to a depth of 10 cm, remembering to leave a 10 cm space around the stem of the plant to avoid fungal infections. Ensure that the mulch has come from a weed-free source.

Water crystals

Water crystals act as reservoirs of water in the soil and may be useful for plants where there is limited soil moisture (e.g. sandy soils) or limited access to water. Use of water crystals can reduce the frequency of watering. Be sure to follow the manufacturer's instructions as applying too many water crystals can cause the soil to swell and may push the tubestock out of the ground.

Nutrients

Early growth rates of native plants can be enhanced by the use of a suitable fertiliser. The type and quantity of fertiliser used depends on the species being planted, soil types and conditions present at the site. Fertilisers containing nitrogen (N) and phosphorus (P) are suitable to use. Never place fertiliser directly onto the roots of the plant as this can burn them. Care needs to be taken when fertilising, as many native plants are adapted to growing in low fertility soils and may be harmed if over-fertilised.

Fencing

Fencing may be required to protect a revegetation site from domestic, native or feral animals. This can take the form of permanent, temporary or electric fences. Electric fencing or a star picket and plain wire fence will often suffice for stock exclusion. Stock should be excluded from the site until the plants are well established (e.g. at least 5 m high). Wire netting can be used to exclude native marsupials and herbivores (e.g. wallabies and hares) from small scale revegetation sites; however, this may not be practical for larger revegetation sites. In some instances, temporary fences may be necessary until the plants are established when they can be removed and re-used on other revegetation sites.

Step 3. Site preparation

Good preparation of a planting site is important for successful revegetation. It can also make the job a lot easier and reduce the amount of maintenance needed after planting. Site preparation needs to be well-planned and executed to achieve optimal plant growth and involves activities such as:

Weed control

Young plants are susceptible to competition for moisture and nutrients from weeds, particularly grasses. A weed free area should be created at the preparation phase prior to planting and maintained around each plant until the majority of trees are over 3 m high. Ideally this weed free area should be at least 1 m wide at planting and can be increased to 2-3 m wide as the plant grows.

Weeds can be controlled with herbicides, manual removal, slashing or a combination of all methods (refer to *Land for Wildlife Note - EW2 Weed Control Methods*). Two types of herbicides can be used - **broad spectrum** ones such as glyphosate that control virtually all plants and **residual** herbicides that are more selective and can prevent the establishment of certain types of plants, such as grasses, for a period of time. It is essential to read the manufacturer's instructions prior to applying any chemicals and to follow all safety and application instructions.



Ripping

Cultivating or deep ripping along contour lines to a depth of at least 30 cm prior to planting can improve growth rates by increasing water and root penetration, nutrient release and can also make planting easier. It can also increase the potential for erosion, so ripping is not recommended on sandy, loamy or erosion-prone soils, or on steep slopes, near gullies, creeks or near existing trees. Ripping may be appropriate for heavy or compacted soils or for large scale plantings. For more information about site preparation, contact your Land for Wildlife Officer.

Preparation of planting holes

There are a number of methods that can be used to create holes for planting tubestock:

- **Long-nosed pick** - suitable for most soil types, except very sandy soils. Creates a rough sided hole with a pointed bottom for accumulating water and encouraging good taproot development.
- **Mattocks and shovels** - suitable for most soil types. In heavier soils, shape the base of the hole to form a hollow (a flat-bottomed hole may be detrimental to good root development, causing taproots to assume an L-shape).
- **Post-hole digger or auger** - useful for larger scale plantings saving labour and time, generally fitted to a tractor. Best used on lighter soils. In clay or heavy soils, the sides of the hole must be roughed up prior to planting to overcome potential 'glazing' of the sides of the hole which may prove impenetrable to plant roots, causing them to grow around in circles.
- **Ripping or cultivation** - useful for large scale planting on compacted soils. Care needs to be taken that this is not done when soil conditions are too wet as you can cause additional problems of soil compaction. Plants should be placed along rip lines or at the intersection of rip lines. If direct seeding, seed into the rip lines using a mechanical seeder or hand broad-cast and then rake over.

Step 4. Planting

The following are a few simple steps that can be undertaken to improve the survival rate of your tubestock.

Planting out method

1. To prepare the site, remove or control grass and weeds. Dig hole slightly deeper than the plant container and twice as wide.
2. Fill the hole with water and allow to drain. Do this step the day before if the soil is a heavy clay.
3. Dunk the potted plant in a bucket of water until the bubbles stop.
4. To remove plant, invert the container and strike firmly on the base until the plant slides out.
5. Place plant in hole. Replace soil and firm around plant, creating a shallow saucer approx. 1 metre in diameter. Ensure potting mix is covered by 2-3 cm of soil.
6. Mulch to a depth of 10 cm, but not against the stem. Water thoroughly. Follow up with watering and weeding.

Watering in

Successful plant establishment is dependent upon adequate moisture levels and nutrients being present. If planting conditions are dry, watering prior to planting (up to a week beforehand) with at least 20 litres per hole will assist the plants in getting off to a good start. Additional watering of at least four litres per plant immediately after planting will help settle the soil around the plant and ensure good contact between the plant roots and the soil. Additional watering may be necessary and will depend on the season. Less frequent deep watering (e.g. once a week) is much more beneficial than repeated superficial watering (e.g. every second day). Over-watering encourages plants to develop shallow root systems making them more susceptible to dry conditions.



Revegetation site on a Land for Wildlife property in the Numinbah Valley, Gold Coast hinterland, 18 months after planting.

Step 5. Monitoring and maintenance

Once you have finished planting your revegetation site you will need to monitor and maintain it for the best results.

- Document what was planted and the date. This will enable you to monitor the success and/or failure of species allowing you to modify your practices for future revegetation sites. Take regular site photos, this will allow you to monitor the changes on your site e.g. habitat developing, seasonal changes, impacts from fire, flood or drought.
- Monitor weeds and control them as required. Weed control should be undertaken for at least the first 12 months to reduce competition with establishing plants.
- Water as required.
- Replace dead plants if required.

What you can do

- ✓ Prepare a revegetation plan.
- ✓ Obtain good technical advice.
- ✓ Identify sources of local provenance plants.
- ✓ Undertake good site preparation.
- ✓ Only plant when conditions are suitable.
- ✓ Monitor - keep good records - both written and photographic.
- ✓ Celebrate your successes.

Other relevant notes

Land for Wildlife Note V3 - Revegetation Principles.

Land for Wildlife Note G4 - Wildlife Friendly Fencing and Netting.

Land for Wildlife Note EW2 - Weed Control Methods.



This riparian revegetation project uses electric tape fencing to keep out stock.



This photopoint monitoring site (a simple star-picket in the ground) ensure that photographs can be taken from the same location to measure the progress of this revegetation project.

Land for Wildlife is a voluntary program that encourages and assists landholders to provide habitat for wildlife on their properties. For more information about Land for Wildlife South East Queensland, or to download *Land for Wildlife Notes* free of charge, visit www.lfwseq.org.au
Citation: Land for Wildlife Queensland (2011) *Note V4: Revegetation Practicalities.*

Information in *Land for Wildlife Notes* is not necessarily endorsed by any of the supporting agencies, nor should it be taken to constitute professional advice or a recommendation of land management.

Land for Wildlife Notes are produced by SEQ Catchments, through funding from the Australian Government's National Landcare Programme, and the following 11 Local Governments of South East Queensland. Reprinted 2016.

