



Plants

Habitat

TUBESTOCK PLANTS FOR REVEGETATION

The aim of this set of notes is to provide some practical help with organising tubestock plants for a revegetation project.

For help with ground preparation, planting, plant protection and maintenance see *notes for the tree planter* No 2 - 5.

SPECIES SELECTION

Local environmental conditions, that is, the local microclimate, soil type and slope aspect will influence what plant species are suitable for your site.

If you are trying to re-create what was once there: be aware that conditions change over time. On a global scale average temperatures and extreme events (e.g. droughts) are on the increase. More importantly however, on a local scale conditions on your site may have changed drastically. For example, your gully or rocky knoll may have been part of a whole forest ecosystem before the land was cleared. The site may now receive more sunlight, higher temperatures and the full force of hot/cold winds. Also, many organisms (e.g. bacteria, fungi, insects, spiders, birds and bandicoots to name a few) that played an important part in maintaining the balance of the original ecosystem may have disappeared.

Some of the plant species that once grew naturally on your site require the shelter of the original forest and / or the balanced biological conditions that once existed there, below and above the soil. Some of these plants may be added in the future when a new framework, that can provide suitable physical and biological conditions, is established.

Today, plants that exist on cleared / modified sites are either hardy survivors or pioneer species that can tolerate existing conditions.

Start with those local native plants that are able to withstand the current conditions. Talk to your neighbours / peers / local landcarers. Learn from

successful projects in your area that are at least 3-5 years old. Observe which are the natural survivors in nearby disturbed and undisturbed bushland.

What are the main reasons for revegetating? If for example erosion control, windbreak / shelter, salinity control are primary or important secondary reasons, make sure you choose wisely. Seek some expert advice if you are not confident.

If the main reason is wildlife habitat and / or aesthetics then choose a wide range but rely more on your survivor / pioneer species. As a rough guide start with 10 to 30 species, 30% trees, 40% shrubs, 30% groundcovers / tussocks.

PROVENANCE SELECTION

The provenance of a species is its geographic source. Many species grow over a wide range of environmental conditions. For example, Blackwoods, *Acacia melanoxylon* grow:

- on the rock cliffs above the highway near Burnie;
- in the waterlogged 'Dismal Swamp' near Smithton;
- in sheltered, moist but well drained gullies on the Western Tiers;
- in dry, open windswept, frosty plains of the Northern Midlands;

in each case the species has evolved over time to cope with local conditions. So provenance is to do with genetics and it's as important with plants for revegetation as it is with cattle or crops.

Seed from near your site (with similar conditions) or from further afield where conditions are similar, are best suited to your project.

BUYING PLANTS

Once the species mix, provenance and quantity requirements are established it's time to order plants. When to order ?

At 'Habitat Plants' we stock a wide range of Tasmanian native plants for revegetation. Of the more commonly used species we also stock 2 or more provenance selections. Demand for different

species varies from year to year and once sold out it takes 6 - 12 months (up to 18 months in some cases) to produce the next batch We can generally fill orders at short notice but **it pays to plan and order in advance to ensure that you can purchase the species and provenance required for your project. It's also cheaper to order in advance.**

Sample timeline for ordering plants (some species may require even more lead time):

seed collection season Summer - Autumn	propagation season Spring	planting season Autumn – Winter - Spring
Example: Nov. 09 – March. 10	Aug. 09 – Dec. 09	May 10 – Oct 10
if the seed has yet to be collected (i.e. for a particular provenance) order by Nov. 2009 to have plants ready for the 2011 planting season	if the seed is to be taken out of seed storage (for best match provenance) order plants by Aug. / Sept. 2009 to have plants for 2010 planting season	take a chance - pick up plants the day before planting time

QUALITY – WHAT TO LOOK FOR:

SIZE:

Small plants are cheaper to buy, transport and plant, and if everything goes according to plan they tend to grow with minimum set-back into good adult plants. However, small plants are more at risk to succumb to grazing damage, competition and frost or drought damage. The degree of this risk varies depending on the species used, site conditions and preparation. For very well planned larger projects planting **small plants** grown in **cell-tray units** (35 cm³ root volume) or **'hiko' trays** (93 cm³ root volume) can be the most cost effective method. **Larger plants** are more costly but are better able to cope with (the above mentioned) adverse conditions. For most small to medium sized projects plants grown in **'Slimline'** or **'Forestry' tubes** (250 cm³ root volume) have proven to be very cost effective (particularly trees and shrubs).

APPEARANCE:

The plants you buy should be **strong, healthy** and have an acceptable **root to shoot ratio**. This means, the plants should be free of pests, diseases or mechanical damage and they should have a well developed root system that is able to support a correspondingly well developed shoot (stems and leaves).

HARDINESS:

Quite separate from provenance the plants should be hardened-off before they are planted out. This means, the plants should spend the last weeks / months (of their life in pots) **exposed to environmental conditions similar to what they can expect to get when planted on site.**

Don't be deceived by glossy lush looking plants. A slightly thicker and somewhat woody stem can make all the difference when it comes to surviving a heavy frost. The coldest air is just above ground level and a thicker stem has a better insulating bark, more thermal inertia, more food reserves and dormant buds to help the plant recover from an extreme event.

At 'Habitat Plants' we grow our plants outdoors at Liffey, where they are exposed to cold winds blowing off the Western Tiers and to progressively colder night time temperatures during the autumn months.

For plants going to extremely frosty sites we have strategies to further harden plants before they are planted out, please seek advice.

HANDLING PLANTS:

Damage to plants during transport / storage before they are planted is a very common problem. Overheating, drying-out and wind damage or a combination of these are the most common problems. The plants, particularly their **roots must be kept cool and moist until planting time**. Transporting plants on the back of an open ute for longer distances and at greater speed than going down the back paddock is a recipe for disaster. Organise a covered-in mode of transport or arrange delivery.

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happy planting