

Revegetation Fact Sheet

Local native species

Wildlife corridors and buffer zones

MURRAY MALLEE



Local Action Planning Association Inc.

Local native species blocks

This option is for revegetation with local native species to establish a block of native vegetation. The aim is to establish long term, self-regenerating perennial vegetation that helps reduce groundwater recharge and soil erosion and provides shelter for crops and stock as well as a balanced habitat for native flora and fauna.

Wildlife corridors

This option is for revegetation with local native species to connect areas of existing scrub to improve biodiversity and also provide shelter to crops and stock. These are usually linear in shape but wider than typical windbreaks or shelterbelts. A wildlife corridor should not be longer than one kilometre, and should be at least 50 metres wide.

Buffer zones

This option is for revegetation with local native species adjacent to a patch of existing scrub to enlarge its size and improve its biodiversity and habitat value. The buffer zone provides a protective 'buffer' to the scrub and minimises destructive 'edge' effects such as weeds, soil movement and spray drift.

DESIGNS

Shape

These projects can be any shape however the wider the better as this means the largest area possible will be done with a minimum of fencing and the resulting shape is also better for biodiversity. For example, a square 100 metres x 100 metres has a 400 metres boundary/fence and will provide an area suitable for a wide range of fauna. However a rectangular 20 metres x 500 metres has a 1,040 metres boundary/fence and is a long narrow area with limited habitat value.



Direct seeded local native species block

Layout of rows

With the layout of the planting try to achieve a balance between a random 'natural' effect and practicality. It is convenient to do ground preparation, weed control, planting or direct seeding in straight lines but a popular option is to weave the rows, keeping them an even distance apart. This provides a practical way of reducing the unnatural 'planted in regimented lines' look. On sloping ground try and keep planting rows on the contour and on exposed or windy sites try to keep rows at right angles to the prevailing wind.

Plant spacing

When planting seedlings aim for an average spacing of 3 to 4 metres between seedlings, which will give between 600 to 800 plants per hectare. As a general guide, trees should be planted 4 to 6 metres apart, larger shrubs 3 to 4 metres apart and small shrubs, groundcovers and grasses can be planted as close as 2 to 3 metres apart.

Average plant spacing	Plants per hectare (approximate)
3 x 3 metres	1,100
4 x 3 metres	800
4 x 4 metres	600

For direct seeding sow the seed in rows approximately 4 metres apart. Seedlings will emerge at close spacings along the seeding row and usually more than 2,000 seedlings per hectare will be established with successful direct seeding. As the seedlings grow some will die due to competition. They will sort out their own final spacing. You will need approximately 400 to 600 grams of seed per kilometre of direct seeding or 1 to 1.5 kilograms per hectare depending on species mix used.

Clumping

Planting species in clumps, with gaps or open areas between the clumps can help improve the habitat value of the planting.

Species mix

Identify or find out the local native species that are growing, or would have originally grown, on your site (for contact details refer to the *Mallee Futures Program Resource Book*). Start with the dominant Eucalypt species (mallee trees) and major shrubs (for example, tea-trees and wattles).

These species are the starting point for preparing a site species list. Suppliers of seed or seedlings, and other sources of assistance, will be able to help you prepare a species list that will include the range of overstorey (trees and tall shrubs) and understorey (shrubs and ground covers) species suited to your area. A rough rule of thumb would be to try and achieve at least a 40:60 split of overstorey to understorey species. A basic planting should have at least 10 species.

If possible seed should be collected locally from sites with a similar soil type and the species you want. Native plants growing in your area are well adapted to the local soil and weather conditions and will be less susceptible to diseases and insect problems. You may be able to collect the seed yourself and help is available to do this, or you may wish to purchase the seed from a commercial seed collector (for contact details refer to the *Mallee Futures Program Resource Book*). If you intend to propagate seedlings from local seed, you will need to ensure that seed is collected early enough for seedlings to be ready when you want to plant them.

SITE PREPARATION

Weed control

Good weed control is essential for the success of revegetation projects. Control of annual weeds can usually be done just prior to planting. However, weed control in the year before planting is necessary for perennial or persistent species (for example, horehound, veldt grass and evening primrose).

Rabbit and kangaroo management

Rabbit control is essential and may need to be done up to two years ahead of revegetation works. If rabbit control is not done tree guards may have to be used and this will increase the cost of the project. Kangaroos may also destroy plantings so liaise with National Parks and Wildlife Service for their management.

Ripping

The ground should be ripped (up to a depth of 400 mm if possible) if the soil is heavy or too rocky near the surface to easily plant seedlings. Although, beware of pulling up rocks and making the site more difficult to manage. Ripping should be carried out several months in advance of work, and if possible in the year before, and should be track-rolled.

Cover crop

A cover crop, such as cereal rye or triticale, will help with weed control and provide protection for light soils. Prior to planting or direct seeding (see below) the cover crop should be sprayed and left as mulch. If possible, only spray out a 2 metre wide strip in which the revegetation is to be done. The unsprayed cover crop outside of these strips will protect the seedlings and soil from wind.

Fencing

Choose the style of fencing that best suits your needs, that keeps stock out and reduces the movement of kangaroos and rabbits. Where it is necessary to fence on highly erodible sand dunes, avoid sharp corners that may promote wind erosion.

ESTABLISHMENT OPTIONS

Seedling planting

Seedling planting is more reliable than direct seeding in the low rainfall areas of the mallee. However it will require more effort and expense. A wide range of local native seedlings is available at a low cost (for example, 'speedling'), if ordered in advance. With proper ground preparation and by planting speedlings with modern hand planting tools such as a 'Pottiputki' one person can plant between 1,000 to 3,000 speedlings per day. Tubestock seedlings can be used but they are more expensive and slower to plant. Machinery planting is the fastest planting method if it suits your application.

Direct seeding

Direct seeding is cheaper and easier than planting seedlings, but timing and weed control is more critical. Direct seeding germinants tend to cope better with kangaroos and rabbits (in low numbers) than seedlings. Direct seeding in low rainfall areas and on non-wetting soils has been most successful using a V-blade machine that prepares a V-shape in which the seed is sown. Refer to the *Mallee Futures Program Resource Book* for the availability of direct seeding machines and contractors.



Direct seeded local native species block using a V-blade

Combining seedling planting and direct seeding

A combination of seedling or seedling planting and direct seeding is often used because of the difficulty establishing some species with direct seeding. Direct seeding is most reliable in the mallee using wattles (*Acacia*), cassias (*Senna*), hop-bushes (*Dodonaea*) and native apricot (*Pittosporum*). Some mallees (*Eucalyptus*), native pine (*Callitris*), sheoak (*Allocasuarina*) and tea-trees (*Melaleuca*) are often best established with planted seedlings or speedlings. Species that are not easily grown from seed but are grown from cutting propagation will have to be planted as seedlings, these include species like emu bush (*Eremophila*), native fuchsia (*Correa*) and sugarwood (*Myoporum*). The seed of some species such as needlebush (*Hakea*) and rarer plants is too expensive to use broadscale with direct seeding so these species are best propagated and planted as seedlings.

TIMELINE

In the year of planting the weed control, planting and seeding should be done as soon as possible after the break of the season and generally no later than the end of July. Delay planting in frost prone areas, but not weed control.

MAINTENANCE

Watering

Watering of seedlings may be necessary in low rainfall areas of the mallee if there are extended periods of two months or more without significant rain. If watering is done using a water-cart a small basin to contain the water will be needed around each seedling.

Infill planting

Be prepared for the possibility of infill planting in the following year. Direct seeding results are sometimes 'patchy' and it may be necessary to follow up with supplementary seedling planting in the following years. Be aware that it may take 18 months to obtain a clear picture of direct seeding results so do not begin infill planting immediately.

Weed control

Controlling weeds throughout the spring and summer after planting will help the survival of seedlings and boost their growth. It is common to spray the weeds either side of the seedlings while protecting the seedlings from spray drift using a shielded sprayer.

Insect control

Check regularly for red-legged earthmites after planting and spray an appropriate insecticide if necessary. Direct seeded germinants are vulnerable to attack by red-legged earthmites.

Pest animals

Be prepared for ongoing control of rabbits and hares.

Fire breaks

Plan and maintain fire breaks and tracks.

Feral predators

Control feral predators like foxes and cats. This will improve lambing rates and at the same time will improve the habitat value of plantings for a wider range of native birds and animals.

	Jan	Feb	Mch	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Preparation year							Begin weed control (if necessary)	Ripping (if necessary)			Order seed and seedlings	Collect seed
Planting year	Collect seed	Feral animal control		Ripping (if necessary)	Sow cover crop	Weed control, planting and seeding	Check direct seeding for red-legged earth mite	Follow-up weed control (if necessary)	Fencing finished		Monitor and plan for infill planting	
Follow-up year		Watering if needed				Infill planting	Follow-up weed control					

Pull out of planting if it is still too dry

Financial incentives and technical support

Contact the Murray Mallee Local Action Planning Association Inc for:

- Information about the availability of financial incentives and technical support to assist with the costs of establishing local native species;
- A copy of the *Mallee Futures Program Resource Book*, which contains additional contact details for further advice about establishing local native species.

Ph 08 8531 2066, Fax 08 8532 5300,
email mmlap@lm.net.au

Project Planning Checklist

- Calculate the area to be planted in hectares.
- Calculate the spacings for seedlings and the number of seedlings required and/or calculate the total direct seeding distance in kilometres and the rate of seed planned in grams per kilometre.
- Determine the most suitable species to be planted and where seed can be collected locally.
- Determine the length of fencing required.
- Plan a weed and vermin control program.
- Plan a maintenance program.
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