Mallee Futures Program

Revegetation Fact Sheet

Wood and Products

Woodlots, product blocks and timberbelts

MURRAY MALLEE Local Action Planning Association Inc.

This option is for revegetation with species to establish blocks or belts of deep rooted perennial vegetation for the purpose of producing wood or other products (e.g. broombush, flowers, oil, bush tucker etc) as well as providing groundwater recharge reduction, shelter, erosion control and limited habitat for wildlife. Biodiversity value is low, but can be significantly improved if local understorey plants are incorporated into plantings.

Changes of landuse, which result in a direct financial benefit, may require permission from the local council. Please check with your council before undertaking any works.

DESIGNS and SPECIES SELECTION

Woodlot or timberbelt
Timber species are generally slow growing in the Mallee. Trees for firewood, either for sale or personal use, may be the best option. Timber or wood trees can constitute the 'high' component of a shelterbelt and 'product' species can be used as the shrub components.

Biodiversity value can be significantly improved if local plants, including understorey are incorporated into plantings. Specialist advise should be sought to match species selection to site types but species that may be suitable for firewood in the Mallee are the local species such as the mallee trees (which are slow growing), black box and river red gums or non-local native species such as sugar gums, blue gums, flat-topped yate, Dundas blackbutt and salmon gum.

Product block
Apart from Broombush there is little information about productive native plants specifically for the Murray Mallee. However, there is increasing general information available for sandalwood, quandongs and oil mallees, which have potential for use in the Murray Mallee.

Woodlot for firewood production

Examples of product blocks include:

- Broombush (*Melaleuca uncinata*) for brush fence (refer to Bulman et al 1998 'Growing Broombush for Profit and Land Protection', PIRSA);
- Sandalwood (*Santalum spicatum*) for nuts and timber;
- Quandong (*Santalum acuminatum*) for fruit;
- The local red mallee (*Eucalyptus oleosa*) or the non-local blue mallee (*Eucalyptus polybractea*) for Eucalyptus oil, plus other species have potential for oil production.

SHAPE

Woodlot
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 management and biodiversity. For example, a square 100 metres x 100 metres has a 400 metre boundary/fence. However one hectare that is 20 metres x 500 metres has a 1,040 metre boundary/fence and is a long narrow area that has limited habitat value. Woodlots should be located and designed to ensure that access is possible at harvest.

Product blocks
Product blocks can be any size or shape and they are often designed around the areas of land available of suitable soil and other conditions for the particular product.

Timberbelts
Timberbelts refers to 3 or more rows of trees planted as a belt, which can double as a strategically located windbreak if a shrub row is also planted.

PLANT SPACING

Woodlots & timber blocks
Specialist advise should be sought for plant spacing but for growing trees without irrigation in the mallee it is likely that the spacing would be at least 4 metres between seedlings, with some sites requiring up to 5 to 6 metre spacing. An average spacing of 4 metre gives 625 plants per hectare. Gaps from plant deaths should be filled the following planting season.

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Product blocks
Spacings will vary widely and depend on the species and management requirements. For example, broombush could be established at 2 metres row spacing but quandongs might require 3 to 4 metres spacing.

Timberbelt
In a timberbelt, space the trees 4 to 6 metres between rows and within rows.
To determine the number of seedlings required calculate the distance of the timberbelt then divide that distance by the chosen plant spacing for the rows to determine the number of seedlings required for each row, then multiply by the number of rows. For example, for a 4 row timberbelt 600 metres long, with trees 5 metres apart.
Number of seedlings: 600/5 x 4 rows = 480 trees

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 the revegetation works is necessary if there are perennial weeds or other weeds that may be a problem in the year of planting (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 make the project very expensive and possibly not viable. 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 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 the most reliable method of establishment for economic plantations. Some species, including broombush are available at a low cost as 'speedlings' which can also be quickly and easily planted by machine (up to 20,000 per day). 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 seedlings per day. Sandalwood and quandongs are only available as larger tubestock and planting will be slower. (Refer to the *Mallee Futures Program Resource Book* for contractor details).

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 contractor details).

Timeline
In the year of planting the weed control, planting and seeding should 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. It will ensure survival and improve growth rates, and may be essential for productivity of some products. However, the cost of delivering water to seedlings should be estimated to assess its economic viability. Dripper systems are the most efficient way of watering, however if watering is done using a water-cart a small basin to contain the water will be needed around each seedling.

Broombush plantation

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. 'Eucmix' is a granular herbicide registered for follow up weed control for some woodlot species.

Insect control

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

Pest animals

Be prepared for ongoing control of rabbits and hares.

Firebreaks

Plan and maintain firebreaks and tracks.

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 enhancing remnants;
- A copy of the *Mallee Futures Program Resource Book*, which contains additional contact details for further advice about enhancing remnants.

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.

Although the Murray Mallee Local Action Planning Association has taken all reasonable care in preparing this information, neither the Association or its officers accept any liability resulting from the interpretation or use of the information.

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

Pull out of planting if it is still too dry