

West Creek Direct Seeding project – Sept/Oct 2016

Swamp Scrub Species used on the direct seeding of the Carrs property at West Creek and amounts of seed in the mix.

Melaleuca ericifolia (Swamp Paperbark) 400g

Melaleuca squarrosa (Scented Paperbark) 200g

Leptospermum continentale (Prickly Tea Tree) 500g

Eucalyptus ovata (Swamp Gum) 100g

Eucalyptus obliqua (Messmate) 200g

Goodenia ovata (Hop Goodenia) 100g

Allocasuarina palludosa (Swamp She Oak) 450g

Acacia verticillata (Prickly Moses) 150g

Acacia melanoxylon (Blackwood) 400g

Cassinia aculeate (Dogwood) 500g

Olearia lirata (Snowy Daisy Bush) 500g

Total of Swamp Scrub Species - 3500g

Species used which come from a higher or drier EVC (what we have referred to as Northern Species) to allow for climate variation into the future.

Eucalyptus meulleriana (Yellow Stringy Bark) 80g

Eucalyptus melliodora (Yellow Box) 80g

Acacia genistifolia (Spreading Wattle) 80g

Pultenaea daphnoides (Large Leaf Pea Bush) 40g

Kunzea ericoides (Burgan) 100g

Eucalyptus regnans (Mountain Ash) 50g

Prostanthera lasianthos (Victorian Christmas Bush) 70g

Total of these species – 500g

A total of 4kg was put on to the site, being a rate of around 2kg per hectare of ground area.



DIRECT SEEDING IN SOUTH GIPPSLAND

*Interested in revegetating your property?
Have you considered direct seeding?*

*Direct Seeding is a fantastic way to revegetate
large areas in a short time at a
low cost.*

You can use direct seeding in most areas where you can drive a tractor – that is, areas that aren't too steep.

Direct seeding has proven very successful in South Gippsland, providing the necessary planning and site preparation is done. South Gippsland is in a high rainfall area that generates quick growth rates of both seeded plants and weeds. Weed control is therefore essential, to limit competition so the indigenous plants can survive and flourish.

GETTING STARTED

It is important to plan your direct seeding at least one year in advance. This ensures there is time to order or collect seed, and to prepare the site to remove as much weed competition as possible.

Greening Australia can help guide you through this process. For some sites we may also be able to cover the cost of seed, and hire machinery for use.

SITE PREPARATION--Weed control

Thorough weed control is critical to success. The first step is to identify the weeds of concern on site. To tackle these weeds it helps to understand their growing cycles. If your site has perennial grasses that actively grow in summer months (e.g.: Couch and Kikuyu) then weed control needs to commence the summer prior to sowing, and in extreme cases two years before.

Pasture grasses and other weeds are most effectively controlled if the first spray is applied after the rains begin in autumn, and the second spray 3 weeks before sowing.

A minimum of two sprays is recommended before direct seeding, however this can vary depending on the

weeds present at the site. A knockdown herbicide such as Glyphosate is sufficient in most cases although some weeds may require different treatments.

If you prefer not to use chemicals or you are certified organic there are still options with proven results. In situations where pastures have minimal weed coverage and are free of summer grasses such as couch, grading the site before seeding could be an option.

SITE PREPARATION--Pest control

A stock proof fence needs to be erected before seeding takes place if practical. Rabbits, hares and deer need to be controlled and a program should be developed the season before seeding to ensure adequate control. The red legged earth mite can also severely set back newly emerging trees. If you are in doubt as to whether Red Legged Earth Mites are in great numbers you can include a treatment with the last herbicide application before seeding.

SELECTING THE RIGHT PLANT SPECIES

It is recommended that you plant local indigenous plants that are suited to the soil type, aspect and other environmental factors of your site. Greening Australia can provide assistance and advice on the plants that suit your particular area. You will need to contact your local seed bank and order seed well in advance. In most cases they need to be informed the summer before seeding to guarantee seed supply of all species.



Site immediately after direct seeding with a Ripper Seeder



Greening Gippsland Biodiversity Project

DIRECT SEEDING IN SOUTH GIPPSLAND

It is important to use seed of local provenance, that is, seed which has been collected as close to the site as possible. This ensures the plants are adapted to the local growing conditions and are genetically consistent with local populations.

A direct seeding project should have between 10-40 different species in the mix, depending upon the number of plant species found naturally on site.

The seed mix should also include all of the different layers of vegetation - trees, shrubs and ground covers. Each seed mix will be different and be specifically made up by the seed bank to suit the conditions at your site. The local seed bank will pre-treat all seeds as required so they are ready to be sown immediately.

cast are methods that have proven successful in South Gippsland.

COMBINING DIRECT SEEDING AND PLANTING

Often a better result can be achieved using a combination of direct seeding and planted seedlings. Tubestock seedlings can be used for species that aren't reliable in direct seeding, or if seed is in short supply. The seedbank can provide advice as to which species are best suited to tubestock planting. Tubestock also needs to be ordered twelve months in advance.

MONITORING

It is a great idea to take photos of your site before and after seeding, and then at regular intervals so you can watch the changes. It is also important to monitor the site for new seedlings and weed infestations, and to carry out weed and insect pest control if necessary. Don't write off the site as a failure too early as indigenous seed can sit in the soil for years until the conditions are right. It may not look fantastic straight away, but give it time and you can get a great result.



Seedlings after six months

SOWING

In South Gippsland the optimal conditions for germination and growth are from August to early October.

The use of a Ripper Seeder or mould-board ploughing and hand broad



Successful plantings after six years

growing the future together

WHAT DOES THE GREENING GIPPSLAND BIODIVERSITY PROJECT OFFER LANDHOLDERS?

Help and advice is freely available in the development and implementation of projects that involve remnant vegetation protection, enhancement and restoration.

Greening Australia staff can provide expert advice and guidance in managing native vegetation on your property providing a holistic management approach to landscape:

- Projects have sites mapped and works planned including local seed collection and plant propagation to benefit key habitat identified in the local and regional context.
- Advice and support on local species requirements for tubestock planting and direct seeding.
- Financial incentives for fencing are given for remnant and revegetation works.
- Networks with regional Natural Resource Management agencies and local and state-wide experts in Flora and Fauna

THE GREENING GIPPSLAND BIODIVERSITY PROJECT is funded by the Commonwealth Government's Natural Heritage Trust (NHT). Greening Australia manages the project on behalf of the West Gippsland Catchment Authority (WGCMA).

Enquires should be directed to:

Greening Australia (Vic)
Leongatha (03) 5662 5201
Maffra (03) 5147 0854



INTEGRATING REVEGETATION INTO A DAIRY OPERATION

An interview with Lyn Mitchard, Nyora

The Mitchard's dairy farm provides a good example of direct seeding using mouldboard ploughing and the incorporation of revegetation into a working dairy operation. Fundamental to the success of the works at this property has been whole farm planning.

The Mitchard's purchased their farm in 1981 with the goal of creating a sustainable farming system. The original 140 hectare property had little vegetation. "The home and dairy were very exposed to winds from the south west and we knew trees were needed across the farm", Lyn said.

WHOLE FARM PLANNING

We used an aerial photo and whole farm planning to build onto what was already on the farm", Lyn explained. "We wanted to use indigenous plants for biodiversity but it's a bit of give and take...things like access to laneways for stock also had to be considered". The planning resulted in every second fence line being planted out where possible.

EARLY REVEGETATION: 1980s

The Mitchard's first revegetation efforts used tubestock and a Hamilton Treeplanter. Paddock boundaries were fenced, the pasture grasses spot sprayed with glyphosate and planted with locally native species. Individual trees were guarded with plastic tree guard sleeves and bamboo stakes for protection from hares. Remnants were also fenced to exclude stock and individual old trees incorporated into the revegetation. Hand planting enabled them to revegetate hard to access areas such as the remnants and creek line.

DIRECT SEEDING USING THE MOULDBOARD PLOUGH: 1990s

The Mitchard's first direct seeding used a Hamilton Direct Seeder. However, they had limited success probably due to the heavier soils, weed competition and possibly ants.

Mouldboard ploughing took-off as a vegetation establishment technique in the early

1990s and has been used with success in areas of high rainfall and heavier soils. The technique involves preparing a seedbed for hand sowing by completely turning over the soil and burying existing weed seed to provide a rough weed and grass free surface for seeding.

The Mitchard's saw the mouldboard plough in action at a local field day and decided to trial this technique.

In 1992, with information from the *Farmcare Program* and *Greening Australia*, the first of nine shelterbelts were successfully established on the property by mouldboard ploughing and this method is still used to date.

SOURCING SEED AND SPECIES MIX

Species chosen were predominantly locally native species with a mix of 20% Eucalypt, 40% *Acacia* and 40% understorey. Seed was



Left: Mouldboard ploughing involves preparing a seedbed for hand sowing by completely turning over the soil and burying existing weed seed to provide a rough weed and grass free surface for seeding. Photo K. Walsh.

Right: One of Lyn's shelterbelts established by the mouldboard ploughing technique. Photo K. Corr



either collected locally and from the property or purchased from the South Gippsland Indigenous Seedbank. It was treated prior to sowing as required.

Species included: Swamp Gum (*Eucalyptus ovata*), Narrow-leaved Peppermint (*Eucalyptus radiata*), Blackwood Wattle (*Acacia melanoxylon*), Swamp Paperbark (*Melaleuca ericifolia*), Scented Paperbark (*Melaleuca squarrosa*), Prickly Tea-tree (*Leptospermum continentale*), Common Cassinia, Dogwood (*Cassinia aculeata*) and Snowy Daisy-bush (*Olearia lirata*).

GROUND PREPARATION

Areas to be sown were fenced and sprayed with glyphosate preferably once in autumn and again in spring prior to mouldboard ploughing. The width of the shelterbelts were initially seven to eight metres but are now made ten metres wide.

SKILLED OPERATORS

Lyn uses a skilled ploughing contractor to ensure high quality preparation. Most of the ploughing has been undertaken during late October to November when the paddocks are dry enough to allow machinery access.

"Good mouldboard ploughing turns the soil over completely with no weeds showing. If it's done correctly it's a great way to control weeds", Lyn said.

SOWING

Sowing of a shelterbelt usually occurs on the day the site has been ploughed and can be completed within the hour. On average, Lyn sows 2.5 kilograms of mixed seed per hectare. Prior to sowing, Lyn mixes ten parts chicken crumble to one part seed. The chicken crumble acts as a bulking agent to assist coverage.

Lyn divvies up the seed to ensure that it will reach the other end of the bed and uses a grass fertiliser hand spreader for sowing. "Rather than sprinkling the seed out by hand, using a spreader provides more even distribution". However, fluffy seeds like *Olearia* and *Cassinia* that may block up the spreaders can be sown by hand.

AFTERCARE

Follow up weed control is necessary in all areas. "However it's important not to get too anxious about the sowing. You might think after the first year that you've had little success but a lot will come up over time", Lyn says. "The beauty of the direct seeding is that there aren't any guards to come off and the hares don't seem to bother them either".

RESULTS

"Overall we have seen good success with the mouldboard ploughing but there can be some seasonal variation", Lyn said. The eucalypts have been most prolific while the understorey species have posed more of a challenge. "Frosts have played their part in knocking out some of the understorey. *Melaleuca ericifolia* is an ideal species for windbreaks and one that we particularly wanted to come up but the ground needs to be wet enough for them to germinate".

Lyn likes the natural looking results produced by direct seeding and its effi-



Above: Lyn tags the shelterbelts with the paddock number and year of seeding or planting. Photo K. Corr



Above: Rather than sprinkling the seed out by hand, Lyn uses a spreader to provide more even distribution. Photo: K. Corr

Bottom left and cover photo top: Lyn has fenced remnants to exclude stock and enable the establishment of understorey beneath. Photos: K. Corr

ciency compared to planting and guarding. She has also found that the direct seeded sites establish quicker than the tubestock plantings. More than four hectares of windbreaks have now been established across the farm with multiple benefits: "The condition of the stock has improved and there's more bird life. We might have taken out farming land to have the trees but it certainly hasn't reduced productivity."

FOR MORE INFORMATION:

Kate Walsh
Greening Australia Victoria
(03) 5662 5201

Mouldboard Ploughing
David Ziebell
Department of Primary Industries
Native Vegetation Officer
(03) 5662 9920

Greening Australia Victoria state office
(03) 9450 5300 www.gavic.org.au

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Top left: Mountain Pepper.

Top right: Grass Tree flower.

Bottom left: Pomadour's Elliptica.

Bottom right: The fruit of Muttonwood, Rananea tessellata, a local rainforest tree.



South Gippsland Seed Bank

18-20 Ashendon Street (in Leongatha's industrial estate)

Correspondence: PO Box 419, Leongatha 3953

Phone: 5662 2453 (messages checked every Thursday)

Email: sgseeds@hotmail.com

Website: www.sgseedbank.com.au

Open: 9am to 12 noon Thursday mornings.

Are you interested in?

- Becoming a collector and selling seed to the South Gippsland Seed Bank.
- Buying seed to grow seedlings from local indigenous plant species.
- Direct seeding in South Gippsland.
- Becoming a member of the Seed Bank Committee of Management.
- Becoming a volunteer.

The South Gippsland Seed Bank receives support from the following organisations.



Environment,
Land, Water
and Planning



South Gippsland Seed Bank

Left: Grass Ingger plant meadow.

This image: Rainring postmark.

Right circled: Grass tree with parrot.



Wattle seed.

Supplying South and West Gippsland with seed from local remnants of native vegetation.

Supporting revegetation works and restoration of vegetation communities from the coast to the forest of the Strzelecki Ranges.



The South Gippsland Seed Bank

is a non-profit enterprise with a community based committee of management. It is looked after by a group of volunteers dedicated to promoting the seed industry and biodiversity.

Seed collected from over 100 local indigenous plant species occurs primarily in the summer to autumn period.

The seed from most Eucalypts and some other species may also be collected right throughout the year. Collectors are paid according to species and weight of seed.

Sales of seed peak in early spring as direct seeding takes place and continues into summer as nurseries buy seed for the next years tube stock.

Direct Seeding

The South Gippsland Seed Bank provides ready-made seed mixes of indigenous species suited for direct seeding in many different site conditions.

Clients include Landcare, Greening Australia and VicRoads. There are many landowners interested in direct seeding as a cost effective and easy method of revegetation.



Direct seeding project October 2009



Same site October 2011



Rippa Seeder machine used to prepare sites for direct seeding. Use of this machine can be organised through the Seed Bank.

Community engagement

The South Gippsland Seed Bank also provides an important source of information for the community in areas such as:

- Developing revegetation projects.
- Collection of seed from indigenous plants.
- Direct seeding and revegetation advice.
- The application of improved techniques.
- Community training projects.

Services provided

- Buying and selling large quantities of seed from local native vegetation species in south and west Gippsland.
- Supply of direct seeding mixes and advice based on site conditions and original vegetation types.
- Community training and education.
- Seed supplied for nursery orders.
- Providing advice for landholders on direct seeding projects.
- Large scale revegetation of vegetation communities from the coast to the forest of the Strzelecki Ranges.
- Species identification.

Images at top - left to right: She-oak cones, cossum? it? eucalypt hollow, seed head of Gannia Sieberiana, koalas prefer Eucalyptus Viminalis, Prickly Moses, Gahnia seeds