



UPPER RIVER TORRENS
LANDCARE GROUP

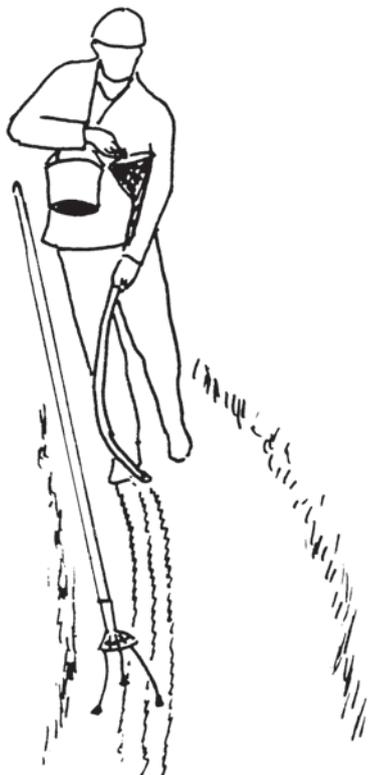


Seeding
Natives
Incorporated

Data Sheet

Direct Seeding of Native Species

This sheet looks principally at cost-effective and successful techniques of native species revegetation of watercourse batter and buffer zones.



Some sites will be sandy banks or rocky embankments. Much of this can be undertaken with tubestock planting, and hand seeding by one-person, a family, a Landcare group or a contractor.

The outer edge of the watercourse buffer zone and other areas including revegetation sites, paddocks, roadsides and boundary fence lines that are set up for wildlife corridors and wind breaks are more easily and quickly seeded with an appropriate direct seeding machine. Seeding undertaken with the familiar Sod Seeder or 'scalpline' seeders ([Greening Australia](#) or [State Flora](#)) are certainly quick, they can travel at an average of half-an-hour per hectare.*

(* our word -Ed.)

GOLDEN RULES FOR ESTABLISHMENT

1. Choose the right season - a in winter-sodden soils, spring.
- b on drier, sandy soils, late autumn to late winter.
2. The seed bed should be biomass free for good seed/soil contact.
3. Sow into a weed-free seedbed and follow-up with appropriate weed control.
4. Choose the right species for your site.

Information already exists for traditional Direct Seeding techniques. Two excellent information sheets come from Natural Resources N&Y (Direct Seeding) and Greening Australia (Direct Seeding, A Cost-Effective Way of Broadacre Revegetation).

In this sheet we briefly touch on Hand Direct Seeding procedures and report in more detail on the use of line seeding machines including the Rodden III scalpliner* (State Flora's machine) and the use of the Adelaide Hills farmers' friend, the Sod Seeder (historically used by the Landscape Section of the Department of Planning, Transport and Infrastructure (DPTI) from 1978 onwards). Another machine that has shown its ability to effectively sow native trees and shrubs out of the traditional lines and in a random fashion is the "Blue Devil" seeder engineered by Seeding Natives Inc. However, its primary purpose is to randomly sow a rich diversity of native grasses and companion species (A. Fairney 2020). Experimentation with other techniques or variations on the above are only limited by your inventive ability.

Yorke Peninsula farmer Horace McCauley (deceased) began decades ago planting kilometres of roadsides with a funnel and tube and a bag of seed around his neck. Wayne Brown (Environments by Design) extols the **principles** of direct seeding in simple demonstrations, using his trusty rake-hoe - one of many hand tools. Farmers all over the State have raided machinery sheds for ripper blades, moldboard ploughs, bait layers, grader blades, automated seed dispersal equipment and re-designed them to suit their needs.



Jeff Whittaker and Stephen Anderson operating a direct seeder



Germination. These seedlings were machine direct sown 6 months ago



Established lines of direct seeding 3-4 years after sowing and showing complexity of species and form

Rodden III 'Scalpliner*' Green machine 'Scalpliner'

- will result in a regular row look.
- easy to do follow-up broad leaf weed control.
- can't handle very uneven and rocky sites.
- is easy to transport between sites.

Setting up the machine

This machine arrived on site behind a 4-wheel drive vehicle. It was set up by the two operators.

We saw them:

1. Place our seed by size and type into the three- compartment seed box, each separately adjustable (1 kg/ha formula).
2. Set the scalping disc.
3. Set the depth gauge so that the seed is placed accurately into the seed bed made by the cultivating tynes - remote controlled from the vehicle.
4. The four-wheel drive was run at between 3 and 8 km per hour. The seed lines varied from 2-3 m apart.

Note: Weed control is vital.

We had sprayed our sites two months before seeding. Weed control in the previous year would have helped reduce weed germination.

Charges:

The cost of direct seeding will vary depending on the site, machinery used, etc. So those contemplating sowing should negotiate directly with the appropriate contractor

Sod Seeder

A two-person operation

- will result in a more natural, haphazard look.
- difficult to do follow-up broad leaf weed control.
- needs a relatively level surface.

Setting up the machine

No adaptations are necessary, although some sod seeders have an additional fine seed box. This can be helpful. The fertiliser box is not required.

1. Adjust dispersal gauge for 1 kg to the hectare for fine seed. Remember some seeds need pre-treatment to break their seed coating for germination.
2. Set for minimum placement.
3. Use dry bulking agent (fine washed river sand or sawdust) to mix with seeds. This is done because our volumes of seed are under the 1 kg formula and the seeds disperse better in the box and through the tube.
4. Block off or close some seeding tubes if seed volumes or spacings are inadequate.
5. Run the tractor at a walking pace.

The seed operator will need to check the flow of the seed throughout the operation. Ensure too, that the fine seed is being deposited on the surface.

Note:

If using a 'Baker Boot' drill, the seed dispersal tubes should be disconnected and tied behind the tyne.

Preliminary weed control should be very thorough, including site treatment in the year prior to sowing. There will be little chance of follow-up spraying after germination.



Front box is the normal seed box. Rear box is the normal fertiliser box (not required). Though Kym Gladigau and Peter Fairbrother are preparing here for pasture seeding, two operators could just as easily be loading the box with native plant species



All or any combination of the seed tubes can be used - eg box in only the two outside tubes, one for shrubs, the other for trees; or a first run can deposit the larger seeds just below the surface, and a second run the fine seed on top

Establishment Strategy

Site Preparation (for hand or machine sowing)

The Aim: To present a relatively clean soil surface.



Do this by raking with either a rake-hoe/fire rake or converted garden tool (right); grazing heavily with sheep; sweeping the area with trailing chain harrows or turning the soil with a moldboard plough on dense litter sites.

Pest control awareness:

Pest control requires implementing an integrated pest management plan.

Pests may include but not limited to:

Red-legged earth mite - Rabbits/hares - Ants - Wingless grasshoppers - Deer and Goat

Survival of seed sown:

Not all seed will germinate in the first season. A second germination is often seen the following season. As a bonus, your local old Red River Gums will cash in on your weed free site dense litter sites. **Ensure that you have:**

1. identified the nature of the soil (sand, clay, loam).
2. assessed possible problems (rock, erosion).
3. selected species to suit the purpose of the revegetation.
4. an effective plan for weed control.

Weed Control (for hand or machine sowing)

The Aim: To eliminate competing seasonal weeds.

If weed problems, including perennial grasses, are severe, take time to bring them under control; over autumn- spring-autumn if necessary (i.e. 18 months prior to planting).

Usually, however, most of our planting sites have probably been grazed and this, in conjunction with grass and broadleaf weed herbicide treatment, will be ample control.

In the AMLR region, this operation is done after good weed germination following the opening rains (i.e. late autumn).

Assess the weed problem (if any) about three weeks before starting the seeding. If weeds have invaded, apply the appropriate herbicide to the site again.

Follow-up weed control of grasses can be undertaken with grass selective herbicides applied in a manner and at the rate stipulated on the label.

A *weed-free* site is a requirement for the initial growing season.

Note:

Smaller Sites: Ground-level mowing and/or hand weeding and even mulching around seedlings will provide sufficient weed control. The Bradley Technique of weed eradication could be a viable option to follow.

A bare area will probably alter the nature of the weed spectrum. Usually one or more weeds, not dominant before, will tend to over-run the area.

“What if I don’t get a forest on my first attempt?”

Try again. It’s cheap enough, so you can. Anyway, this is probably the time to broaden your species range with supplementary plantings of tubestock of species that did not survive, or of rare species that you have acquired.

Tubestock planters are available from suppliers including Arborgreen in Mount Barker SA.

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- **Wayne Brown**, Environments by Design
- **Paul Moran**, formerly State Tree Centre.

References

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Contacts

- Arborgreen, Mount Barker SA: <https://www.arborgreen.com.au/>
- Seeding Natives Incorporated, Mt Pleasant SA: <https://www.seedingnatives.org.au>