



NRM Plan

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Direct seeding

What is direct seeding?

Direct seeding involves the sowing of seeds directly into the soil to achieve germination and establishment. It can be achieved mechanically or by hand to recreate virtually any mix of vegetation. It can be used as an alternative to planting nursery grown seedlings or the two revegetation techniques can be used in conjunction.

Why choose direct seeding?

Direct seeding is designed to mimic natural processes and in many cases it has distinct advantages over planting pots.

- Trees and shrubs grow healthier root systems.
- Direct seeding is more efficient for large areas of revegetation.
- Planting can be done at a lower cost.
- It is relatively easy to establish a diversity of species.

However, some sites may not be suitable for direct seeding such as rocky sites (sheet limestone), very steep sites, sites with desirable vegetation and sites under intense grazing pressure. In these cases planting pots or hand broadcasting seed may be more suitable.


















Good planning is crucial to the success of direct seeding projects. When planning a project many aspects must be taken into account well in advance of the first seed hitting the soil.

Site preparation

- Ripping can be done up to a year in advance to ensure the previous years rain penetrates deep into the soil. Deep ripping may be appropriate where the soil is rocky, however, this must be levelled to ensure the seeder runs smoothly over the surface.
- Avoid preparation works that may damage existing desirable vegetation e.g. spraying native grasses or ripping near existing trees.
- Avoid cultivation of light soils as this leads to rapid drying out in late spring. Firm soils hold moisture for a longer period of time which leads to greater survival rates.
- Poor weed control will lead to competition. Weeds must be controlled in the lead up to seeding. This can be up to a year in advance to control both summer and winter active weeds. Be wary of the use of residual herbicides which may have an impact on your seedlings.



Direct seeding calendar








	January	February	March	April	May	June	July	August	September	October	November	December	Year 2
Seed collecting													
Weed control						250-400mm rainfall							
Rabbit control													
Insect control								400mm+ rainfall →					
Direct seeding					← Earlier in some years	250-400mm rainfall		400mm+ rainfall →					

Implementing the calendar

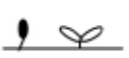

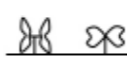

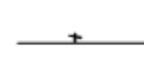
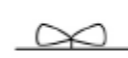










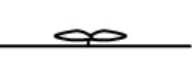









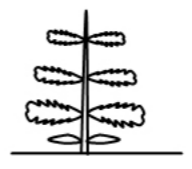



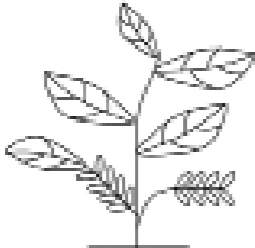
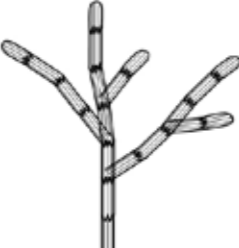




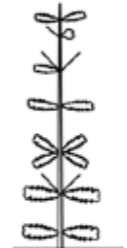



Use this calendar in conjunction with the other tips included in this fact sheet to implement your direct seeding project. The exact timing of these events can fluctuate from year to year depending on the extremity of the season. In warm/dry years seed collection, weed control and predator control may need to be brought forward. In wet/cooler years the opposite may be true.

Sowing should be implemented after the break of the season when soil moisture is adequate.

Key

						
Red-legged Earth Mite control	Snail control	Rabbit control	Summer weed control	Winter weed control	Seed collection	Direct seeding

What to look for after sowing

	Acacia	Allocasuarina	Eucalyptus	Callitris	Melaleuca	Senna	Bursaria	Hakea	Dodonaea	Enchylaena
2 - 4 weeks										
4 - 8 weeks										
2 - 4 months										
> 4 months										



Species selection and seeds

- Choose plants that suit the soil type, aspect and rainfall of the site. Seeds from the local area are most likely adapted to the conditions of the project site.
- Try to include a diverse range of local species that will create good shelter and habitat as well as being self sustaining.
- Consider the rate of seed sowing and the likely outcome. Creating dense rows may cause competition between seedlings.
- Ensure healthy, ripe seed is used otherwise germination may be poor (see Seed Collection Fact Sheet). Avoid using old seed where possible.
- Ensure correct pre-treatment is applied to seeds before sowing. This can include soaking, scarifying, stratifying, leaching or smoke treatments.

Implementation

- There are several different machines that can be used for direct seeding depending on your situation. These include the 'V blade seeder' which clears weeds and creates a wide scalp which collects water and the 'disc seeder' which creates a shallower groove to collect water. The best results are achieved with purpose built machinery although reasonable results can be obtained using modified farm machinery.
- Be aware of the soil conditions if scalping is being used. Don't scalp too deep as the lack of healthy soil may affect germination and in sandy soils the walls may collapse over the seed. This can also lead to erosion problems.

- Sowing doesn't have to be in straight lines. It will look more natural if irregular patterns are used. When seeding on slopes try to work along the contour to avoid rains washing seed away and to maximise moisture retention.

Follow up

- Be patient, some species will germinate within two weeks, others may take up to six months or longer. Secondary germination can also occur after summer rains or in subsequent years.
- Try to minimise grazing on the project site after sowing. This includes sheep, cattle, goats, kangaroos, rabbits and hares as well as insects such as locusts, snails and Red-legged earth mites. It may be worth considering fencing and other control options in the lead up to the project. Grazing can also be discouraged by using prickly plant species in the project.



Further information

Bonney, N. (2003).
What seed is that?
Finsbury Press.

Dalton, G. (1993).
Direct seeding of trees and
shrubs. PIRSA.

Other N&Y NRM factsheets

Seed collection
Plant propagation
Plant identification

Help and assistance

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