

Vegetation to Manage Erosion

5.1 Grassing



Grassing (grass seeding) can be used to protect bare earth from raindrop impact, sheet erosion or minor *rill* erosion in the medium to long term. It can also be used as a *stabilisation* tool to minimise *sediment* entering water.

Hand or machine applied grass and legume seed can produce a dense grass cover.



A good example of grassing to protect road edges from raindrop impact.

This guide is provided as a reference document and does not constitute a statutory obligation under the Resource Management Act 1991 or the National Environmental Standards for Plantation Forestry.

Please refer to the 'how to use' section of the introduction at <http://docs.nzfoa.org.nz/forest-practice-guides/> for advice on how to use this guide.

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A Where and when to use

1. Apply seed on sites that are suitable for retaining seed, germinating and growing grass. Apply seed on critical sites, to reduce the risk of erosion and the effects of *sedimentation*.
2. When used in conjunction with hay *mulch*, the periods for successful germination can be extended into both early summer and early winter months.
3. Where practicable, retain and use topsoil as cover for erosion prone *fill* areas to improve and sustain grass growth.

B Where not to use

1. Sun baked, *compacted fills* – these often have a hard crust and poor fertility which makes grass establishment difficult.
2. Forestry sites and soils are generally low in fertility, so need resilient or pioneering grass species and some sites may need fertiliser and / or lime to lift pH.
3. Dry sites (e.g. steep cut banks and earthworks with dry aspects).
4. Sites where needle ice and frost heave occur in winter.
5. Cut *batters* where only exposed *mineral soils* or rock remain.

C Design

1. Use local knowledge or seek assistance from an experienced seed merchant to get the seed mix appropriate to the site.
2. Germination is most successful during spring or autumn when soil moisture is higher or where rainfall is evenly distributed.

D Application

1. Distribute seed evenly to achieve best results, by hand, hand-held seed spreader, or aerial application.
2. Where practicable, hand seed and fertilise (if necessary) earthworks sites daily (i.e. while earthworks are underway), before the surface develops a crust.

E Maintenance

1. Prepare a routine maintenance plan including heavy rainfall response measures.
2. Inspect regularly for the first two months to assess strike rate and growth.
3. Reapply seed and fertiliser in autumn where there is a poor strike, if necessary.

F Technical specification guidelines

1. The sites need to be of moderate pH (not below 5), good fertility (or be fertilised), not so steep the seed will wash off, nor on earthworks sites that are heavily *compacted*.
2. Roughened surfaces will improve results if slopes are steeper.
3. Lime is best spun onto fresh earthworks using a mini spinner mounted on a small excavator if necessary.
4. When deciding on the type of seed mix, consider:
 - a. Whether it is adaptable to the local soil type(s) and environment.
 - b. The associated logistics of getting lime and fertiliser to the site.

Two seed mixes suitable for disturbed sites are:

	Seed mix A	Seed mix B
Lotus Major 'Maku'	10%	5%
Annual ryegrass 'Moata'	25%	20%
Yorkshire fog 'Massey Basyn'	25%	15%
Cocksfoot	5%	15%
White cover	10%	15%
Subterranean clover	10%	20%
Suckling clover	10%	5%
Browntop	5%	5%

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F Technical specification guidelines

continued

5. Seed requires moisture, correct soil temperature and sunlight for germination and growth. Early autumn is often best as soil temperatures are ideal and there is good soil moisture.
6. Apply lime if the pH is low (less than 5) – rates of up to 5 tonnes per hectare may be needed on acid soils of volcanic parent material. Add fertiliser to the seed mix if the site/soil fertility is poor.
7. Make sure legumes are inoculated with the correct Rhizobium bacteria. Seed can be purchased pelleted (with fertiliser) and inoculated.
8. Use higher percentages of Yorkshire fog in coarse ash or pumice soils.

National Environmental Standards for Plantation Forestry

Particular relevant regulations for soil stabilisation are 32, 55, 60.

Contact



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Other Practice Guides in this series



5.1 Grassing



5.2 Hydro-seeding



5.3 Applying Mulch



5.4 Slash

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