Forest Practice Guide

Non-Regulatory

Vegetation to Manage Erosion 5.4 Slash

Slash for the purposes of this Forest Practice Guide refers to branches, tree tops, slovens, bark and other woody residue created during harvesting operations.

Slash is plentiful and can be useful for reducing erosion and *sediment* discharged from new construction, exposed soil generated during harvesting operations, and for post-harvest site rehabilitation. When it is spread over *fill* slopes during construction, or more commonly for post-harvest track rehabilitation, it is a form of *mulch*. It is an effective tool for trapping a wide range of *sediment* particle sizes.

Slash cover on track to minimise *sediment* movement.

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.

Version 2.0, January 2020

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A Where and when to use

1. Use *slash as a mulch*:
    a. Where an instant barrier is required to reduce surface erosion on critical sites, such as soil disturbance close to flowing water.
    b. To assist in getting a vegetative cover back on sites where the soil is *compacted*, such as tracks, as it can help to retain soil moisture.
    c. On steep and exposed areas where wind and rain may blow or wash hay *mulch* away.
    d. When seasonal timing does not allow conventional sowing or hydro-seeding.
    e. On new construction *fill* slopes, after road or *landing* water control, and erosion and *sediment* control measures are completed.
    f. Where machinery is on site or readily available for application.
2. To reduce water velocity and to trap *sediment* outside of any watercourse.
3. *Slash* can form an effective *bund* when placed at the base of earthworks *fill* slopes, or at the exits of *water table* drainage *culverts*, *cut-outs*, *flumes*, and *sediment* traps and ponds.
4. To reduce the impact of logging machinery on tracks during wet weather, by laying *slash* over harvest tracks. This acts to spread the machinery load across a wider footprint, and reduces water *run-off* velocity and volume. It also acts as a partial barrier to reduce mud coming to the surface.
5. To trap *sediment* on tracks and in *water tables* with low gradients, by laying *slash* in and over tracks and *compacting* it.

B Where not to use

1. Where it can mobilise and block *culverts* and *cut-outs* or be transported off site.
2. Slash can effectively dissipate the energy of a concentrated flow, but do not rely on coarse *slash bunds* to intercept *sediment* from concentrated flows (e.g. a storm flow path or *culvert* discharge).

C Application

1. Ensure the contractor knows where and how to use *slash* as *mulch*. Train earthworks and harvesting contractors on the use of *slash*, as they will be the likely applicators.

Slash used with water table drainage culverts, cut-outs, flumes, sediment traps and ponds

2. Place *slash* by hand or machine at the outlets of *water table* drainage *culverts*, *cut-outs*, *flumes*, *sediment* traps and ponds.
3. Match the *slash* material and size to the job.
4. At drainage *culvert*, *cut-out* and *flume* exits use medium to smaller branches. The aim is to primarily reduce water speed then use the *slash* as a filter. Bark tends to mobilise with the water so it is not so suitable.
5. Spread the *slash* in the drainage pathway several metres below the structure.
6. Where the stormwater control measure exits drain directly onto *slash* in a cut-over – this effectively filters without additional work.
7. Use finer *slash* as a filter below the outlet of *sediment* traps and ponds.

Slash as a road or landing bund

8. When clearing and stripping, use *slash* to form a *bund* downslope of the toe of the *fill* as a *sediment* trap.

Slash and track rehabilitation

9. Apply on logging tracks for post-harvest rehabilitation.
10. Place *slash* on *fill* faces to minimise bare earth.

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D Maintenance

1. Slash typically does not require maintenance. However, check slash filters around sediment traps and ponds after heavy rain and storms. If slash has become sediment laden, add more slash so that it can keep slowing incoming water and acting as a filter.

E Other methods

1. For instant soil surface protection, mulch or apply hydro-seed.
2. Grassing.
3. For *sediment* control on tracks refer to FPGs Tracks #1 – Track Construction and #2 – Track Rehabilitation.
4. Polymers can also be applied to lock soil particles together and therefore prevent erosion of the surface.

National Environmental Standards for Plantation Forestry

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

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Examples

Examples of *slash* being used to rehabilitate ground-based logging tracks.

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Sediment at a road *culvert* drain trapped by *slash.*

A *slash bund* intercepts *sediment* before it reaches the *river*.

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Slash has been used like hay *mulch* as an instant *stabiliser*.

Slash on an extraction track – effectively trapping *sediment*.

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Contact

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