Forest Practice Guide

Non-Regulatory

Tracks
4.2 Track Rehabilitation

Track rehabilitation is undertaken to reduce soil erosion. *Decommissioning* (permanently closing the track) or installing well-located stormwater controls will reduce the potential for tracks to deliver *sediment* into sensitive areas, long after operations have been completed.

Significant soil movement may occur if rehabilitation is not undertaken in a timely manner.

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A Where and when to use

1. On all tracks.
2. On flat to gently rolling land forms, minor rehabilitation works such as spreading *slash*, installing *cut-offs*, water bars or soak holes is likely to be sufficient to control erosion and *sedimentation*.
3. On steeper slopes, rehabilitation can mean significant works to ensure that stormwater will be appropriately directed so it does not build up sufficient energy and volume to scour the track and create *sediment* problems. In some instances, this may involve restoring the site back to near-original land form and contour *(decommissioning)*.
4. The NES-PF requires tracks in any orange or red zone that are not required for harvesting within 12 months to be *stabilised* within 20 working days of their completion.

B Where not to use

Not applicable for this FPG.

C Design

1. Determine who is responsible for post-harvest rehabilitation. Set out and specify in works proposals whether it is to be completed by the:
   a. Harvesting contractor, or
   b. Earthworks contractor, or
   c. Both contractors. For example, the harvesting contractor may be required to leave the site with critical stormwater controls in place, followed by the earthworks contractor with an excavator that can construct the stormwater control measures better and more efficiently.
2. If the track is required for replanting operations, it should be rehabilitated and stormwater controls maintained after harvest and before replanting. Do not wait until after replanting is completed to undertake this work.

D Construction

Stormwater controls

1. Construct stormwater control measures even if tracks will have ongoing use such as for replanting. Use methods to control stormwater that allow vehicle access (where necessary), such as rolling water bars.
2. Construct stormwater control measures to last and to be self-clearing. Once *cut-outs* are completed they are hard to maintain. Access with machinery can damage the other control measures on the track.
3. *Cut-outs* are the most common stormwater control measure.

Track decommissioning

4. Consider rehabilitating tracks back to the original land form where long-term water control is difficult or tracks are close to sensitive areas (e.g. *rivers* or if there are concerns about visibility or other off-site effects). In some situations, track *decommissioning* should be anticipated and budgeted for as part of the operational cost.

E Maintenance

1. Maintenance is not generally required after rehabilitation has been completed. *Cut-outs* and *decommissioning* limit access. Some tracks may be left operational until replanting, after which the track may require additional rehabilitation.

F Other methods

1. *Slash* stabilisation. *Slash* is effective for slowing stormwater, reducing erosion, and trapping *sediment*. It can be used by itself or in conjunction with track *cut-outs*.
2. Compacted *slash* is also effective on steep slopes.

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G Technical specification guidelines

Cut-outs

1. Cut-outs are best constructed by a machine operator who understands the construction methods.
2. Locate and construct *cut-outs* using these criteria:
   a. Where possible, use natural track undulations or dips to locate *cut-outs*. *Cut-outs* must drain water off the track onto stable ground to limit *sediment* discharge into *water bodies*.
   b. Construct across the entire width of the track.
   c. Install *cut-outs* to drain and not pond water.
   d. Construct at an angle to the track to avoid ponding and to assist with directing stormwater to the exit point.
   e. *Cut-outs* must have a small *compacted bund* on the downhill side to stop water overtopping them.
   f. The *cut-out* must be deep enough so that water cannot bypass it, and so that it is effective for a long period. Depth should generally be greater than 300 mm.
   g. The *cut-out* exit point should not generate *sediment*. Channel any stormwater onto stable ground, into a *slash* filter, or *sediment* trap.
3. Construct *cut-outs* at regular intervals if the track is of consistent grade, the slope is even and other factors allow for consistent spacing. However, reduce *cut-out* spacing on steeper tracks and more erosion prone soil.
4. Around *fill* and *water bodies* it may be better to increase spacing, but do so in conjunction with other measures to slow stormwater flow, such as *slash* or *mulch*.
5. Spacing guide for *cut-outs*:

Minor tracking disestablishment

Gradient	Grade %	Erosion prone land	Non erosion prone land
1:20	5%	50 m	75 m
1:15	6.5%	40 m	60 m
1:12	8%	30 m	45 m
1:10	10%	25 m	35 m
1:8	12.5%	20 m	30 m
1:7	14%	15 m	22 m
1:6	16%	12 m	18 m
1:5	20%	10 m	15 m

National Environmental Standards for Plantation Forestry

Particular relevant provisions for tracks are Regulations 26 – 35.

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Examples

The angle helps direct stormwater off the track to a *sediment* trap.

This track has been smoothed, which will accelerate water *run-off*. The water bar is ineffective as there is no outlet for the water it catches.

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Closer spacing of *cut-outs* is required in pumice and granite soils as they are prone to severe erosion over short distances.

Well-spaced *cut-outs* used to rehabilitate the track.

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Contact

Forest Owners Association
Level 9, 93 The Terrace
Wellington 6143

www.nzfoa.org.nz

Other Practice Guides in this series

- 4.1 Track Construction and Use
- **4.2 Track Rehabilitation**

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