Rehabilitation of Landings and Extraction Tracks that have been Corded or Matted

Sustainable Forest Management Series

Department of Conservation and Land Management

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Cover photograph: Corded extraction track in Diamond block
(Taken by Geoff Stoneman)

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1 Background and context

1.1 Purpose

The Forest Management Plan 2004-2013 introduces a range of new requirements for the management of soil disturbance associated with timber harvesting in native forests. The intent of these requirements is to reduce the occurrence of soil damage by taking a more proactive approach to management of soils than under previous arrangements.

One of the options available to industry to assist the minimisation of soil disturbance in timber harvesting during moist soil conditions is the use of cording, matting or brushing on landings and extraction tracks. The purpose of this document is to outline the procedures to be used to rehabilitate areas where cording, matting or brushing has been used.

1.2 Scope

This document applies to State forest, timber reserves managed by the Department of Conservation and Land Management (CALM) and freehold land held in the name of the Department's Executive Director.

This document applies to all activities unless the activity is covered by an authority that overrides the *Conservation and Land Management Act 1984* or the *Forest Management Plan 2004-2013*.

1.3 Custodianship and management of this document

The custodian of this document is the Manager of the Policy and Practices Branch of the Sustainable Forest Management Division of CALM. The document will be reviewed in 2007 but may be reviewed earlier if information becomes available that warrants it.

This guideline is a controlled document that will be part of the Environmental Management System (EMS) for the Sustainable Forest Management output that covers all of the operational aspects of managing State forest and timber reserves for timber harvesting. Staff should refer to the EMS, when approved, for aspects of management that are not covered in this guideline. The division of responsibility between CALM and the Forest Products Commission for various aspects of this guideline will be contained within the EMS.

2 Definition of key terms

Brushing Natural material such as understorey shrubs or leaves and branches from the tree crowns that is used to cover an extraction track or landing to reduce soil disturbance or improve trafficability.

Cording Small diameter logs and branch material laid across the direction of traffic on extraction tracks or on landings to provide flotation for heavy vehicles and to protect the soil from being damaged by the repeated passage of vehicles.

Matting Material such as bark or wood chips that is used to cover an extraction track or landing, whether by itself or in addition to cording, to reduce soil disturbance, improve trafficability or reduce unevenness of cording to improve operator comfort.

3 Objectives for rehabilitation

The objectives for rehabilitation of landings or extraction tracks that have cording, matting or brushing on them are:

- To remove[1] the cording and / or matting material used in with timber harvesting operations from the soil on landings and extraction tracks;
- To undertake rehabilitation earthworks of the soil under the cording and matting to be undertaken;
- To minimise additional risk or complexity to silvicultural burning in coupes where cording and matting have been used; and
- To minimise damage to retained trees within or adjacent to the harvest area.

[1] Removal may include the recovery and transport from the site to another location within the coupe or to another coupe, or more often involve the lifting, aeration or stacking of this material to enable its consumption by fire during a subsequent tops disposal or regeneration burn.

4 General conditions

General conditions for the rehabilitation of landings or extraction tracks that have cording, matting or brushing on them are:

- All cording and matting is to be pulled up and aerated following the completion of harvesting and before the tops disposal or regeneration burn;
- All work associated with the removal of the cording or matting must be carried out in a way that is consistent with the requirement of the *Phytophthora cinnamomi* Management Plan for the area;
- All salvageable cording material should be removed and utilized where a suitable market exists;
- Cording material that is not salvaged must be heaped for burning, or lifted and aerated so that it will burn readily and be consumed in the silviculture burn;
- The lifting and heaping operation should be managed so that the machine starts at the back of the coupe and works along the primary and secondary extraction tracks towards the landing;
- The machine undertaking the rehabilitation should preferably stay on the corded surface while lifting and heaping. This is to avoid the need for the machine to travel back over the area where the cording / matting has been lifted;
- It is recommended that heaps of cord material, bark and other matting are given 6 months drying time before the area is burnt;
- Once the cording / matting has been lifted, the rehabilitation earthworks should be completed according to the soil rehabilitation requirements;
- Cording or matting material should be placed in small (< 5 metres in diameter at the base) discrete heaps, a minimum of 20 metres from the outside edge of the road;
- To facilitate a clean burn, heaps should be constructed to avoid the inclusion of soil;
- The set back of heaps from the road should be increased on steep slopes or where the landing adjoins high value assets or highly flammable fuels at the time of the intended burn; and
- Cording or matting material that is heaped in preparation for burning must be greater than 10 metres from any habitat element or standing trees that remain on the site.

5 Special burn security conditions

The special conditions to improve burn security to be used in the rehabilitation of landings or extraction tracks that have cording, matting or brushing on them are:

- Where the landing is located on an external boundary of a coupe, or is adjacent to an informal reserve or fauna habitat zone within a harvest cell, then to provide the minimum level of burn security for ground fuels, the heaps of cording or matting material must be a minimum of 20 metres from the outside edge of the batter of the road, or from the demarcated boundary of the reserve;
- Where heaps are likely to be "under" retained crowns then the set back distance may need to be increased to prevent severe crown damage or tree death;
- Where a landing is located on an internal boundary of a coupe and is not adjacent to an informal reserve or fauna habitat zone then there are no burn security setback requirements for heaps of cording or matting material;
- Where an extraction track is within 20 metres of an informal reserve or fauna habitat zone then the heaps of cording or matting material must be a minimum of 20 metres from the edge of the reserve or zone;
- Where a corded track crosses an informal reserve, then the heaps of cording or matting material must be removed to a distance of a minimum of 20 metres from the edge of the reserve; and
- Landings that contain significant amounts of bark may cause problems after the silviculture burn if the bark is damp at the time of ignition in spring, and is still alight at the start of the "Prohibited season". Bark heaps will need to be extinguished as a condition of the "extension" of the restricted burning season.

6 Removal of cording, matting and brushing

The requirements for removal of cording, matting and brushing are:

Cording

- Lifting and heaping of cording should generally be undertaken when the SDI > 500;
- Lifting and heaping of cording may be approved when SDI < 500 following an on-site inspection of the local soil conditions by CALM SFM staff and the subsequent approval by the CALM Regional Manager;

Matting

- Bark matting should be removed / heaped no longer than 10 months after the completion of harvesting, while it is easy to move and before it rots *in situ*;
- Bark should be lifted and stacked in small (< 5 metres in diameter at the base) aerated conical heaps, to facilitate burning;
- Bark heaps should be closely spaced (touching at the base), as they are likely to burn better in close proximity to each other;
- Bark heaps should not include waste wood or cording material, unless this is light material placed at the bottom to assist with aeration;
- Wood chips that have been carted in, and used as matting should be stacked in small (< 5 metres in diameter at the base) aerated conical heaps. The heaps may be created using a blade or bucket, but particular care should be taken not to scalp the "A" soil horizon when doing this;
- Bark and wood chips that have been used for matting should not be spread along extraction tracks because they could form a mat and may not burn during silvicultural burns;
- Understorey scrub and small diameter crown material / tops that have been used for matting on landings must be lifted and aerated so that they will burn readily; and
- Understorey scrub and small diameter crown material / tops may be lifted and broadcast in the coupe or along extraction tracks prior to burning.

Brushing

- Brushing may be left in place without rehabilitation unless advised by a CALM SFM officer that rehabilitation is required.

7 General rehabilitation requirements

The following general rehabilitation requirements apply:

- Ripping of the extraction track will generally be required following the removal of the cording or matting;
- The machinery and techniques used to remove, lift or heap cording or matting material, should not increase the level of moderate, severe or very severe soil disturbance within a harvested cell;
- Work to remove, lift or heap cording or matting material, should not increase the amount or severity of damage to crop or other trees in the cell;
- The recommended SDI limits for each of the earthwork components are:
  - Removal of chips on cording - SDI > 250;
  - Lifting of cording / matting - SDI > 500;
  - Contouring of extraction tracks - SDI > 500;
  - Scarifying of extraction tracks - SDI > 500;
  - Ripping of extraction tracks or landings - SDI > 500 in Autumn, SDI > 1000 in Spring; and
  - Contouring / spreading topsoil - SDI > 500 in Autumn, SDI > 1000 in Spring;
- Exceptions to these limits are subject to approval on a case-by-case basis by the Regional Manager of CALM.

8 Recycling of material used for cording or matting

Where wood chips are used in conjunction with cording, it may be possible to recover much of this material for reuse on other landings before the cording is lifted. The following requirements for recycling of material used for cording and matting apply:

- The recycling operation should aim to recover chips with as little soil as possible included. To achieve this it may be necessary to leave some material behind, which will require heaping; and
- Where this type of recycling is planned it is essential to ensure that disease status of the used material is consistent with the hygiene requirements of the destination.

9 Useful reading

Allwright, T. 2003. Heap that and smoke it. *Forest Practices News* **5** (4). Forest Practices Board, Hobart, Tasmania.

Poynter, M. 2004. Management of Landings, Bark, and Extraction Tracks. *Native Forest Silviculture Guideline No.11*, Forestry Victoria, Department of Sustainability and Environment, East Melbourne, Victoria. Draft