



PLANTATION PROCEDURE 98

Harvesting - Soil and Water Management



1. PURPOSE / OBJECTIVES

The purpose of this procedure is to ensure that the Authorised Officer has a clear understanding of the procedure for monitoring and managing soil and water disturbance during harvesting operations particularly working in duplex soils during the winter period 1st June – 30th September.

This procedure follows the general guidelines outlined in the [Code of Practice for Timber Harvesting in Western Australia \(CALM 1999\)](#) and the [Code of Practice for Timber Plantations in Western Australia \(FIFWA 2014\)](#).

The operational controls and management prescriptions to be undertaken by the Authorised Officer are outlined in [Work Instruction 43 Harvesting \(Soil and Water Management\)](#).

General management objectives are to:

- Maintain site productivity within operational areas through management of soil and erosion during harvesting;
- To minimise stream sedimentation and turbidity due to soil disturbance and surface erosion of exposed soil;
- To minimise soil damage resulting from harvesting operations within plantations; and
- To prevent the loss of soil through poor harvesting practices.

2. PROCEDURE

Soil damage principles

Soil productivity can be significantly affected by compaction and disturbance. Compaction reduces the amount of oxygen held in the soil, prevents penetration of water into the soil profile and restricts root growth of the next rotation. The surface of the soil (A horizon) holds a significant proportion of the organic matter and nutrients required by plants to grow. Mixing or removal of the top layer of soil with the lower horizon of the soil will affect plant growth and soil productivity.

Soil damage is specifically defined in the Timber Harvesting Manual as either:

- A horizon (top soil) removed;
- A horizon (top soil) mixed with the B horizon (subsoil usually containing clay);
- Severe compaction (meaning compaction which will affect future site productivity). This normally applies to all landings; and
- A combination of the above.

Water management principles

Uncontrolled harvesting operations can have a negative impact on water quality, through pollution by excessive soil particles, hydrocarbons, harvest debris and litter.

During harvesting operations measures must be taken to protect water from unnatural increases in:

- Sedimentation, siltation and turbidity



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The Authorised Officer must:

- Address the specific requirements identified in the Planning checklist for disturbance activities DPaWFEM 019 if on Crown land or the [Planning checklist for disturbance activities on Sharefarms \(FPC47\)](#) if on private land submitted under [Procedure 95 Approval for disturbance activities](#). Issues relating to:
 - management of soil disturbance (outlining the soil management measures to be used and the planned rehabilitation for damaged areas – refer [Work Instruction 43](#)),
 - spills management procedure,
 - acid sulphate soil disturbance,
 - approval by the Dept. of Water (DoW) if located in public drinking water supply area (PDWSA); with Water Corporation under localised Management Agreements and/or as specified in the planning approval checklists (DPaWFEM019 or FPC47).
- These issues will be identified during handover in the [Plantation Pre-Operation Hazard Identification and Site Handover Sheet \(FPC377\)](#)
- Specific Work Instructions and Operational Controls dealing with the damage assessment measurement process, the construction of erosion banks and repair of damaged harvest areas are outlined in more detail in the Plantation Harvesting [Work Instruction 43 \(Soil and Water Management\)](#)

3. MONITORING AND MEASUREMENT

Monitoring of soil damage and impacts to water bodies will occur through regular inspections during harvest operations in particular:

- The Harvesting Supervisor will complete a [Harvesting and Inspection Action Sheet \(Plantations\) \(FPC106\)](#) during site visits weekly including;
- [Completion of the Field Assessment of Soil Damage \(FPC108\). As required.](#)

The Authorised Officer has the authority to modify a harvest operation, move and/or close an operation based on the operational controls outlined in Plantation Harvesting [Work Instruction 43 \(Soil and Water Management\)](#).

4. LEGISLATION AND OTHER REQUIREMENTS

- Code of Practice for Timber Harvesting in Western Australia - CALM 1999)
- Code of Practice for Timber Plantations in Western Australia (FIFWA 2014)
- The Soil and Land Conservation Act (1945)
- Forest Management Plan 2014 – 2023