Forest Practice Guide

Non-Regulatory

Harvest Slash
6.3 Managing Slash in and around Rivers

Large quantities of *slash* are undesirable in *rivers* and may have significant adverse effects on instream ecology, channel stability and infrastructure in and outside the forest boundary. *Slash* must be managed where it could enter a *river*.

Small amounts of stable *slash* can provide instream benefits (e.g. food and shelter for insects and fish, and by reducing post-harvest fluctuations in *stream* temperature).

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. Try to avoid or minimise *slash* entering *rivers* where there is an identified risk of:
   a. Blocking or damming a *water body*, contributing to bank erosion or a debris flow.
   b. Damaging downstream infrastructure or *water bodies*.
   c. It being difficult or impossible to manually extract (e.g. from steep sided *rivers*).

B Where not to use

Not applicable for this FPG

C Design

1. Assess the terrain, *river* type, values, and risk associated with inputs of *slash*.
2. Undertake a *water body* risk assessment to identify the likelihood and severity of effects if *slash* did move off site. In the assessment consider:
   a. Likelihood of high intensity rainfall events, and their frequency.
   b. *Catchment* size – bigger *catchments* often have higher energy flows and this can be exacerbated by the cumulative effects of harvest in the same catchment.
   c. Topography – steep land sheds water more quickly. High energy water flows will mobilise *slash*.
   d. Receiving environment. For example, does a high energy *river* deliver into a high-volume *river*, or one with stop-banks? This increases the risk that *slash* could be transported long distances.
   e. *Water body* ecological values. Identify species present and their rarity. Refer to the NES-PF Fish Spawning Indicator[1].
   f. Social effects of *slash* moving off site. How close is it to neighbouring properties – houses, fences, water supply intakes, beaches, recreational areas etc?
   g. In-forest and off-site infrastructure (e.g. roads, *culverts*, bridges, state highways).
   h. *Riparian areas* and remaining forest. These can be operational risks or benefits (e.g. standing/live tree *slash* traps) or, depending on the situation, riparian width and vegetation type can prevent *slash* movement by forming a barrier.
3. Decide how to manage *slash* after the risk assessment has been completed. Harvest methods should minimise the amount of *slash* and length of *stream* damage where practicable (e.g. bridle to a fixed skyline and pull through strategically located narrow corridors).
4. Risk mitigation strategies. If it is not possible to remove *slash* from *rivers*, install *slash* traps at strategic locations downstream. This could be on an adjoining property. Larger traps may need resource consent – seek engineering or specialist advice. Be prepared to clean these out on a regular basis.
5. Be aware that areas of significant *windthrow* will increase the quantity of *slash* that could be in and around *streams*.

1 http://www.mpi.govt.nz/growing-and-harvesting/forestry/national-environmental-standards-for-plantation-forestry/fish-spawning-indicator/

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D Operational controls

1. Minimise the amount of *slash* that is deposited in the *river* by using directional felling, extracting away from rivers, or other measures where possible.
2. Consider measures that limit stem breakage during falling and extraction.
3. Minimise damage to *riparian vegetation areas*. These protect *water bodies*, help reduce erosion and *sedimentation*, and may have important ecological values.
4. Follow a *slash* management plan. Remove as much *slash as* needed to meet the plan's performance standards.
5. It is often better to remove *slash* from or adjacent to *water bodies* before a line shift.
6. Ensure that *slash* left adjacent to a *water body* is not in a position where it could be picked up by large flood flows (e.g. a one in 20-year event), where possible.
7. Consider extracting non-merchantable smaller dimension stems and heads above *water bodies* with steep convex slopes (steeper closer to the *water body*).

National Environmental Standards for Plantation Forestry

Particular relevant provisions for managing *slash* are Regulations 20, 69, 83 – 92.

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Examples

Unacceptable *slash* loading in a small *river*.

Minimal *slash* removed from a *river* therefore posing a risk of blocking or damming the *river* or damaging downstream infrastructure.

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Trees have been left standing, where extraction would have been difficult and added non-retrievable *slash* into the *river*. Harvesting trees from either side of the *river* also minimises damage to the *riparian margins*.

Contact

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