

NZ Forest Road Engineering Manual and Operator's Guide

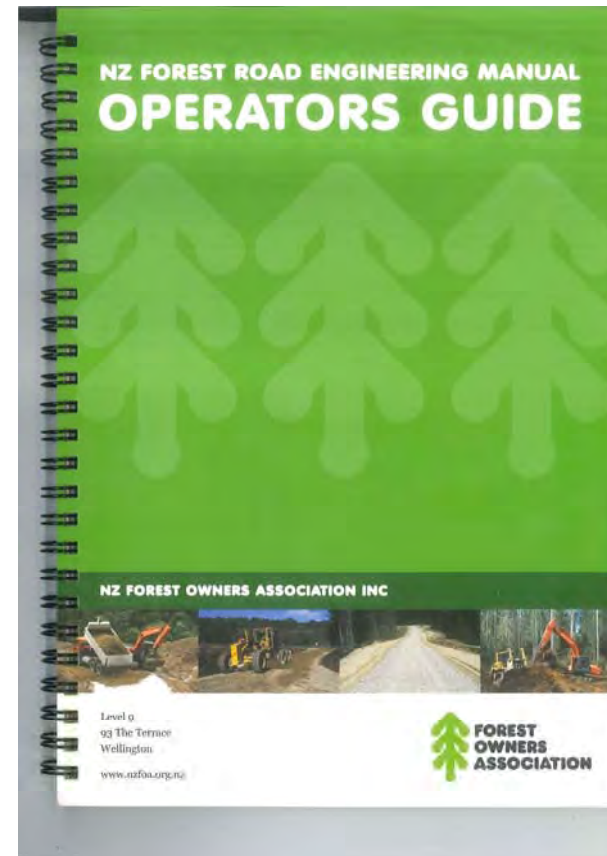
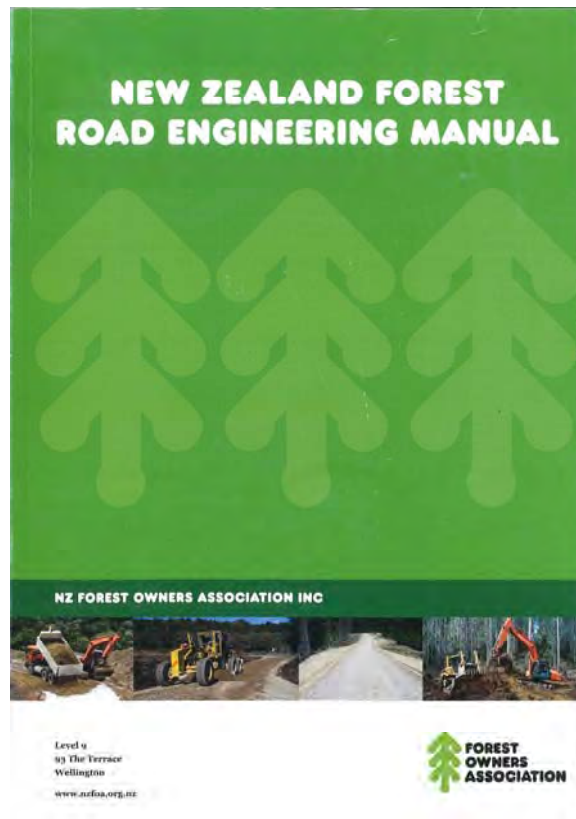
New publications that aim to improve practice

In 10 minutes.....

- Show what has been done
- Explain what we did and why
- Cover how the uptake is going



What We've Produced In The Last Couple Of Years

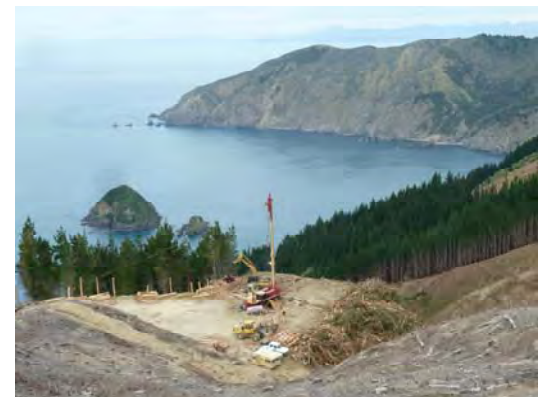


What We Wanted To Achieve

- **Create a widely supported and used road engineering resource**
 - Councils, companies, contractors
- **Improvement**
 - Road stds, consistency, env performance, risk mgmt, communication
- **Be seen to be tackling our industry problems**
 - Demonstrate to councils and Govt that we are proactive and can work with others
 - Address our members challenges



Who Was Involved?

- **Lots of people**
 - Councils, companies, training organisations, contractors, experts
- **Collaboration rather than telling/informing**
 - It was as much about the journey as the outcome
 - We all learnt along the way
 - Gained a better understanding of other's views



Examples

- Important environmental values and sensitive areas should be identified and appropriate mitigation measures determined to protect these before an operation starts.
- All construction personnel should be aware of and understand the environmental values and the required mitigation measures.
- Equipment operation or earthworks activity should operate behind a buffer zone and must not migrate outside the intended zone into sensitive or protected areas such as streams, wetlands, or archaeological sites.
- Temporary drainage and sediment control should be established and maintained during and after the earthworks construction period until the site has stabilised.
- Stable earthworks fills should be constructed and creation of unstable cut slopes avoided.
- Handling of fuels, oils, construction material, waste and possible weed seed transfer should be managed so as to minimise the risk of contaminating the site.

Well marked road clearing limits (top photo) and poor marking (bottom photo) where the clearing limits are too narrow so trees have been partially buried during formation

Getting the right roadside salvage clearing width is important! Too little and the road construction team will not have enough room to establish the cut and fill slopes. This may lead to trees being buried or more expensive construction. If the clearing limits are too wide it may lead to windthrow or increase the harvest setting's logging rate. The clearing distance is the horizontal distance, so on steep slopes what appears to be a significant clearing width can ultimately be too narrow.

3.4 MARKING CLEARING WIDTHS


Identifying the top of the cut and the bottom of the fill along the proposed road location is an important first step in the road construction process. It sets the scene for the following operational steps as it helps define the working area for the construction crew.

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CLEARING AND STRIPPING

Top soil, roots and branches don't compact and must be removed. Water can move through this material causing erosion. Rotting wood can cause slumps.

- Good roadside salvage
- Trees have been cleared to the correct distance from the road
- Poor roadside salvage. More trees should have been removed
- Standing trees should not have been buried. They will cause road stability issues when they rot, and are less safe to log
- The most valuable part of the tree is buried!

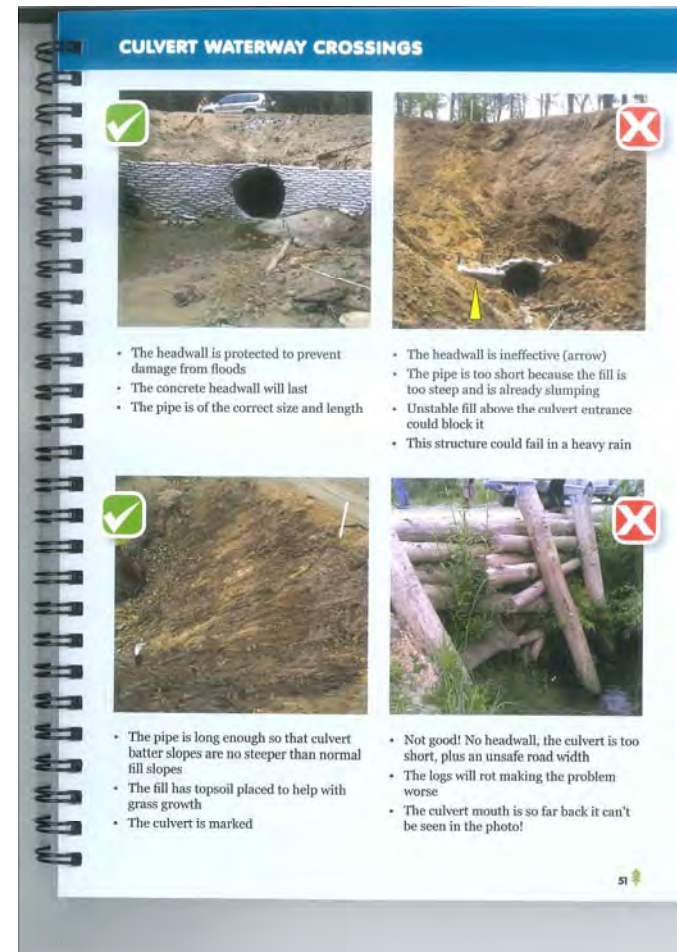



- Topsoil and wet clay are being removed
- Stumps have been left in an unsafe position for harvesting operations

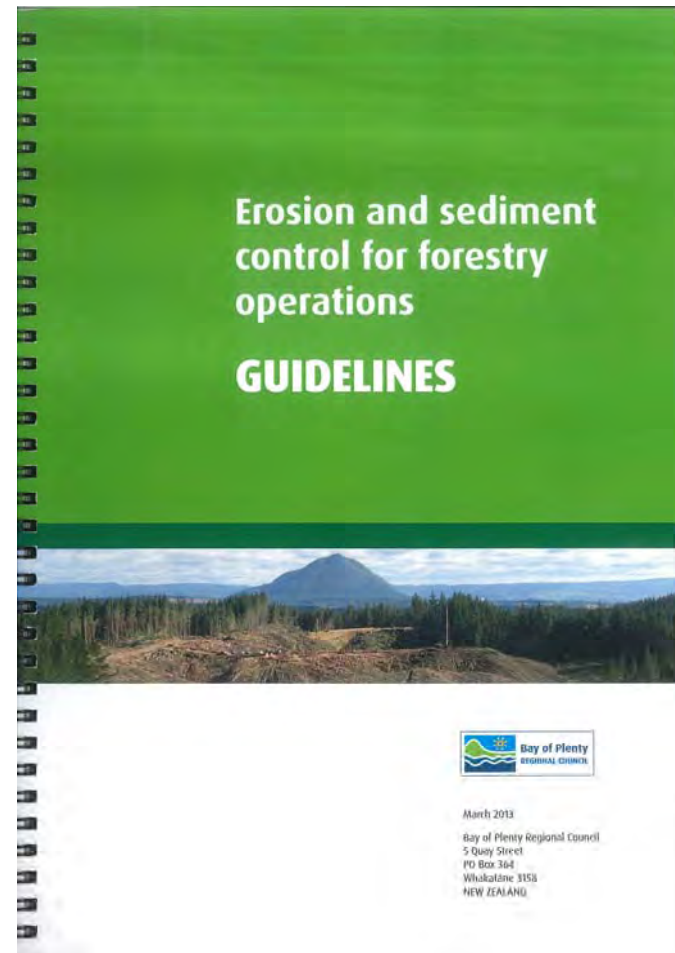
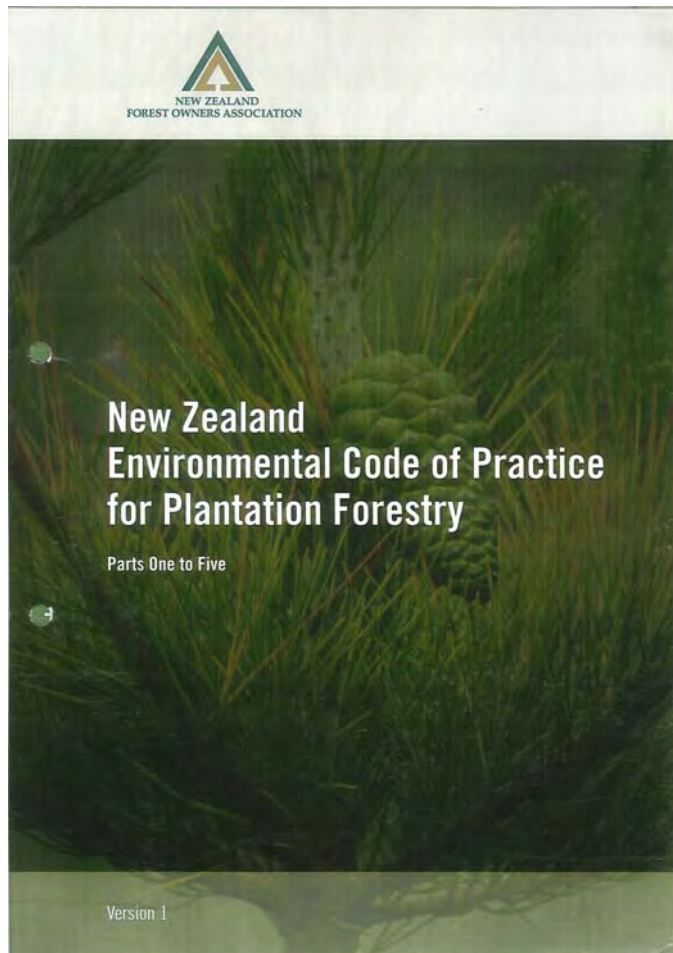
STOP IF THE SALVAGE CORRIDOR IS NOT WIDE ENOUGH, MORE TREES MUST BE CLEARED

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Examples



Links With Other Resources



What's Been the Uptake?

- **Excluding published copies:**
 - Roading manual 2900 downloads
 - Ops guide 500 downloads
- **Many forestry companies expect staff, contractor's and operators to have them on-site**

