

Land management options after wind fallen trees or a slip

Following a slip or large area of wind fallen trees on steep slopes, it is important to assess options and identify best land management practices to alleviate future slips and erosion.

Health and safety after a slip or wind fallen trees

Your life is more important than your property, so stay well away from unstable land and fallen trees. Ensure you update your farm or forest hazard register and put barriers in place if there's any risk of people getting too close to danger. Once these are in place, contact a local engineering contractor to provide advice on the next steps to mitigate further slips, or a forestry consultant on the best ways to remove hazardous logs. It is strongly recommended wind fallen trees are harvested using machines.

First 3 months post-slip – make sure the area is safe and apply grass seed as soon as possible

Assess the slip and ensure it is safe to walk near or on it. If it is not safe, do not proceed until it has been made safe through appropriate earthworks or remediation.

If the slope is safe to access and before a few days of rain, throw grass seed on to any bare soil on or around the landslide. The grass will not stop further large slips but will reduce more surface soil loss. This is an interim step before you make long term decisions on planting selection and source seedlings from a local nursery.

A dyed grass seed is recommended to deter birds from eating the seed prior to germination. It is also worth investing in a grass brand that is activated and contains insecticide, and fertiliser. If possible, remove stock from seeded area for 6 weeks after sowing.

Winter months late May to late August – planting

Slips and erosion are usually caused by large volumes of water which are absorbed into, or run over, the soil. To reduce the risk of further large slips, water needs to be reduced around the slip area.

Planting is the best way to reduce water on hillsides. Trees reduce soil saturation by providing a canopy (which reduces rain reaching the soil and the fall velocities of rain drops) and through their root system (which absorb water from the soil and provide a structural lattice to hold the soil together).

Planting should occur above the slip escarpment and through the body of the slip.

For more information, contact your local council land manager.

What to plant

Retain existing trees that are helping to stabilise the area. For less severe problems:

- Plant poplar or willow poles at 6-10 metre spacings (thin to 10-15 metre spacings once fully grown). These trees will require fencing from stock until well established.
- Plant forestry trees at 2-4 metre spacings.
- Plant or encourage the regeneration of native species. Plant at 1-1.5 metre spacings mānuka and kānuka are early coloniser species and are a hardy long term solution for healing the land following disturbance. These species are also used for Mātauranga Māori practices. This plantation guide covers uses and establishment of mānuka and kānuka <https://www.trc.govt.nz/assets/Documents/Guidelines/Land-infosheets/Manuka-plantation-guide-landcare-April2017.pdf>

For more severe problems, one or more of the following options may suit:

- Plant with poplar and/or willow poles at 2-4 metre spacings at the bottom of the slip/slump, and 6-10 metre spacings further up the slope. Fence out stock until trees are well established.
- Retire erosion-prone land from grazing for production forestry, where suitable. These areas will require fencing from stock and suitable species will depend on individual site conditions. Plant at spacings of 2-3 metres at the bottom of the slip/slump, and 6-8 metres further up. Thinning will be needed at some point for production timber.
- Retire from production. Plant as above or allow to regenerate in native forest species if conditions allow.

Planting tips

- Plant slips and slumps from the bottom up – most control is achieved in the bottom third of the slip.
- Plantings should extend to solid ground above, below and to the sides of the slip.
- Don't plant in cracks in the ground, as these will dry out and open during summer.
- Complete fencing before planting to protect the young trees from goats, horses, cattle and sheep.
- When planting poles, plant into damper depressions where water accumulates rather than hard slip faces and avoid stock tracks or compacted soils. This will greatly assist survival over the first couple of seasons.

- Plant poles deeply (at least 0.75 metres in depth) and ram well. Driving poles into the ground gives better survival rates. If grazing is to continue as trees grow and mature, some trees may need to be thinned to prevent the canopy closing over and creating bare areas through shading. Also use guards to protect trees from stock damage.
- For native plant cover, the main objective is to get quick canopy closure to exclude weeds and promote fast plant growth. Plant trees close together to achieve this.

Treating tunnel gully erosion

Tunnel gullies are formed when soil conditions allow a tunnel to develop below the land surface, which eventually collapses the soil surface, leaving a hole or series of holes down a slope connected by a tunnel.

It's difficult to predict where these holes will develop, but the roots of trees planted along the suspected line of the gully will help bind the soil. Poles should be angled out of the reach of stock or cut longer (four to five metres) to avoid browsing.

Where there is permanent running water, the tunnel gully should be treated as a gully and pair-planted with willows or poplars.

Planting following windthrow

Strong winds bring down trees in forests, on farms, in parks and gardens. When trees fall, they can provide a hazard and could slide down a slope or roll at any time. Prior to approaching any fallen tree, check for danger first. Windthrow should be harvested using machines. Look at how to safely deal with windthrow trees here: <https://safetree.nz/resources/windthrow/>

Following a windthrow event, there are three options for land treatment:

Option 1: Leave fallen trees on the ground to naturally rot away.

Option 2: Salvage fallen trees for harvesting or milling prior to remediation. Consult with a forest manager or contractor on the practicalities and potential obligations of recovery. Note that milling indigenous timber will require a milling statement from MPI (<https://www.mpi.govt.nz/dmsdocument/55801-Harvesting-and-milling-windthrown-trees>).

Option 3: Use a local firewood company or biofuel company to come and remove the trees.

All the above options will result in a break in the tree canopy which will likely cause increased weed presence. To alleviate weed infestation, spray the area and either plant in the canopy gap or let naturally regenerate (a local seed source is required for this to occur).

Post-planting care is required for all planting

After you have planted, you need to keep seedlings free of weed incursion and remove browsers such as stock and or feral pests (such as rabbits, possums, goats, deer) from the planted area.

ETS registered forests

Please use this link if your forest is registered in the ETS: [Temporary damage to your post-1989 forest in the ETS | NZ Government \(mpi.govt.nz\)](#)

The below links provide further information —

<https://www.canopy.govt.nz/plan-forest/why-plant-trees/soil-conservation/>

[NZ Farm Forestry - Plantation Forestry and Erosion \(nzffa.org.nz\)](#)

<https://www.hbrc.govt.nz/assets/Document-Library/Information-Sheets/Land/LMNT1.pdf> (NZ Native Plants for Erosion Control)

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