

Best practice forest management – trees and transmission lines

Trees are managed near high voltage transmission lines for the safety of the public and forest workers and to prevent damage to property (transmission assets, forests and private property).

This information sheet outlines what is best practice for planting and harvesting trees near transmission lines. Best practice reduces risk and costs and increases management efficiency.

MANAGEMENT OF FORESTS NEAR TRANSMISSION LINES

If trees make electrical contact with high voltage conductors (or wires) by touching or coming too close to high voltage conductors, then a major electrical discharge may occur to the tree. This discharge could cause trees to ignite and serious injury or death to bystanders. Tree or forest fires destroy property and threaten people's and animals' lives.

Vegetation management is essential around high voltage transmission lines because of the threat to:

- public safety when hazardous voltages make electrical contact with trees;
- worker safety, for people harvesting or working on trees near our lines;
- the reliability of the electricity supply (due to loss of supply through tree fall or electrical contact); and
- transmission assets, forests and private property, caused by vegetation making electrical contact with lines and subsequently catching fire.

Best practice forest management assists with compliance with the Electricity (Hazards from Trees) Regulations 2003 (the Tree Regulations), the Health and Safety at Work Act 2015, and maintaining access to structures.

The Tree Regulations specify minimum separation distances between trees and overhead lines that must be complied with.

The Tree Regulations also:

- specify who is responsible for ensuring separation distances are maintained; and
- place potential liability on tree owners if the Tree Regulations are breached.

Fall distance trees are not controlled by the Tree Regulations (apart from trees identified as a hazard). Fall distance trees are addressed by best practice forest management.

SAFE SETBACKS – AFFORESTATION, REPLANTING AND CORRIDOR MANAGEMENT

The key components of best practice forest management around transmission lines include:

- safe setbacks at planting time; and
- corridor management for existing forests.



INFORMATION SHEET

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A safe setback means planting trees where they can safely grow to maturity without potentially coming into contact with or falling onto/too close to transmission lines – see Figure 1 below. It is also the simplest, most cost-effective way to reduce fire risk to the forest and reduce maintenance costs. Safe setbacks assist with regulatory compliance, minimise risk to workers and maintain security of electricity supply.

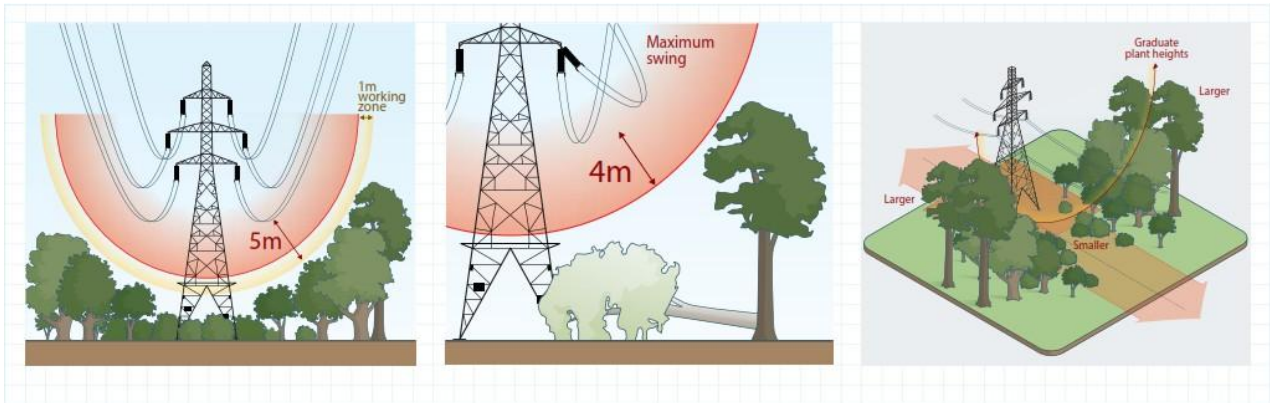


Figure 1: Safe and unsafe setback areas from transmission lines

Corridor management includes removing unstable trees and wilding pines, trimming trees in accordance with the Tree Regulations and undertaking patrols to check separation distances.

SAFE HARVESTING – EXISTING FOREST

Harvesting within two tree lengths of transmission lines adds a significant risk to forestry workers and must be closely managed. These trees must not be felled until a felling plan has been agreed between the line owner, the forest owner/manager and the contractor. Refer to the Ministry of Business Innovation and Employment [Approved code of Practice for Safety and Health in Forest Operations](#) (December 2012) for further information.

You can find information about what should be included in the harvest plan (felling plan) in [Electrical Safety for Forestry and Woodlot Logging Operations \(PDF\)](#), which is available to purchase from the EEA website or you can use the [free templates available on the Safetree website](#). Transpower can help you develop this plan.

Fall distance trees must be felled with machine assistance or winching methods. A Transpower Service Provider must also be on site as an Electrical Safety Observer. This can significantly increase the cost of harvesting in the fall distance zone.

SAFE HARVESTING – REMOVING LINES FROM SERVICE DURING HARVESTING (OUTAGES)

WorkSafe expects the electrical risk to be eliminated for harvesting where possible. Elimination can only be achieved by removing the circuit or lines from service (an outage). You must consider planning your harvest during one of Transpower's available outages. Outages are planned well in advance and will not always be possible, especially at short notice.

Transpower's outage planning team can visit large forestry owners and managers to help coordinate available outages and forestry work.

MAPPING

Transpower can provide mapping generated from aerial laser surveys (ALS) to show where trees can be planted to safely grow to maturity. The analysis is based on terrain, mature tree height plus a 4m buffer and movement of the lines in strong winds.