

# Fire risk management

for rural land managers



**Publisher**

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New Zealand

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[www.mpi.govt.nz](http://www.mpi.govt.nz)

ISBN No: 978-1-991380-43-2 (online)

ISBN No: 978-1-991380-44-9 (print)

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# Introduction

This guide helps assess wildfire risk on rural properties and explains how to make a wildfire risk management plan.

This guide is helpful for owners, neighbours and managers of:

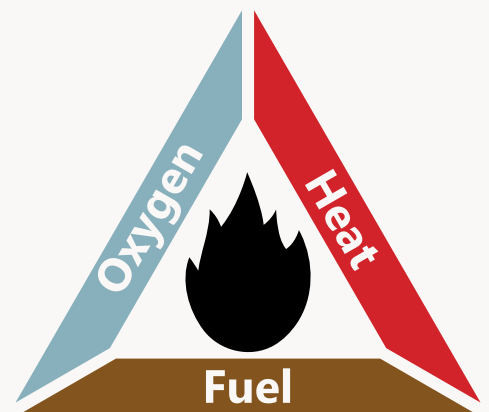
- small forests;<sup>1</sup>
- woodlots;
- farms;
- lifestyle blocks;
- reserves;
- restoration and rehabilitation plantings;
- other rural land uses.

## What is wildfire?

Wildfires are unwanted, uncontrolled fires. They can move rapidly across the landscape destroying vegetation, property and potentially life.

For a fire to start, it needs a source of fuel, a method of heating the fuel, and oxygen to feed the chemical reaction. If any of these elements are not present, a fire will not start. Nearly everything will burn with enough heat or oxygen.

There are around 5,000 wildfires in New Zealand every year. Most are caused by activities like sparking powerlines, rubbish piles or stubble (crop residue) fires and are brought under control quickly. In extreme cases, wildfires can last for days or months. Vegetation type, slope direction and steepness, wind direction, rainfall amounts, and frost intensity all contribute to how a fire behaves.



## About this guidance

**Fire and Emergency New Zealand has legislative responsibility to provide fire prevention, response and suppression services for unwanted fires in New Zealand. It is important to note that the landowner owns the risk.**

This guidance is intended to assist you in making decisions in relation to the risks of unwanted fires. This guidance does not contain legal advice and should not be read as replacing the relevant legislation. Readers must refer to the relevant fire safety provisions in the Fire and Emergency New Zealand Act 2017, be aware of current fire seasons and fire risk, be familiar with the Fire Plan for their District, and be aware that for specific situations or problems, it may be necessary to seek independent professional advice in order to ensure compliance with the relevant legislation. While care has been taken in preparing this guidance and it has been endorsed by Fire and Emergency, if there is any conflict or discrepancy between anything in this guidance and the relevant legislation, the legislation overrides this guidance.

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<sup>1</sup> Anything from a few trees to under 100 hectares, is considered a small forest.

## What is a wildfire fire risk management plan?

Having a wildfire risk management plan helps protect your assets and your family's safety. The occurrence of unwanted fire in New Zealand is increasing. Identifying and managing the risks helps to minimise the impact to you, your assets and your neighbours.

A wildfire fire risk management plan helps you identify and reduce fire risks on your land. This guide outlines what to include in your plan. It explains fire risks, how to manage them and other important things to consider.

## How this guide works

This guide is grouped into topics to consider when thinking about wildfire risk. Examples of topics include managing site access and checking for water supplies. Each topic has information, prompts or actions to help you plan.

### Impact scale – key and definition

We've colour coded each item you should include in your wildfire risk management plan. The colours show how much importance you should give to the item in your plan.

Low	Medium	High
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## How to use the wildfire risk management plan template

There's a template plan for you to use with this guide. The plan template matches the topics and prompts in this guide. It lets you:

- put your own notes and descriptions in the table;
- assign a due date to complete the action by;
- say whether it is a one-off action or ongoing task – weekly, monthly, seasonal.

### Wildfire risk management plan template

To get the wildfire risk management plan template to fill out, scan this QR code. Or download the plan template using this link:

[canopy.govt.nz/assets/content-blocks/downloads/Wildfire-risk-management-plan.pdf](https://canopy.govt.nz/assets/content-blocks/downloads/Wildfire-risk-management-plan.pdf)



## Tips

- Share your plan with neighbours and local Fire and Emergency New Zealand staff in case of unwanted fire.
- Include a map with your plan to show people where everything is in case of an emergency. It could be a simple hand drawn sketch, a Google map or a more detailed map.
- Review your wildfire risk management plan regularly to ensure it remains current and adapts to changing situations.



# Before planting new trees, plants or crops

If you're planting new trees, plants or crops, it is important to think about wildfire risk when you're planning, regardless of the size of the planting. All vegetation and forest types may burn in the right conditions.

Your planning should include:

- understanding the fire history of your area;
- learning about weather and its impacts on fire risk;
- choosing the right species for the right site and the right purpose;
- planning roading access to the site for contractors, harvesting, and fire appliances;
- knowing the neighbouring activities and what risk they might pose to your plantings, for example power lines, hunting, stubble burns, bee keepers;
- making sure there is access to water for firefighting (it may be on a neighbouring property);
- managing access to the site;
- understanding the flammability of the species you choose;
- keeping plantings clear of buildings.

## The relative flammability of some common native and exotic species

Does not burn well					Average burn			Burns well		
0	1	2	3	4	5	6	7	8	9	10
Douglas fir					Pinus radiata			Eucalyptus sp.		
Tasmanian blackwood								Cypress Sp.		
Kōtukutuku (fuchsia)			Kamahī		Tawa		Totara		Kānuka	
Broadleaf (Griselinia)			Ngaio		Rimu		Tree ferns		Mānuka	
								Hakea, Gorse		
Lower fire risk								High fire risk		



# Your wildfire risk management plan

The first step in identifying the risk of wildfire is knowing what fuel you have. This includes the tree or vegetation type, how big the planted area is, the age of the plantings and how you manage them. It is also important to understand the neighbouring risks (for example, vegetation types surrounding your planting). These factors build a picture of how much and what type of fuel is likely to be in your planting block. This is critical information for responding firefighters.

## Important information to record

Details	Explanation
<b>Location and features</b>	<p>Include a map of your site with your plan, and other details such as:</p> <ul style="list-style-type: none"><li>• physical location and RAPID<sup>22</sup> or supply number;</li><li>• roads/tracks, gates, bridges;</li><li>• fire/fuel breaks;</li><li>• a description of the land (flat or hilly);</li><li>• water supply;</li><li>• power lines.</li></ul>
<b>Type of planting</b>	<p>Different species provide different amounts of fuel. Identify the species on your site. This might include:</p> <ul style="list-style-type: none"><li>• trees, shrubs or agricultural crops;</li><li>• leaves, needles, grass;</li><li>• evergreen, deciduous, seasonal;</li><li>• native or exotic;</li><li>• understorey of grass or a nurse crop.</li></ul>
<b>Block size (hectares)</b>	<p>The planting size and layout influences fuel amount and how it will burn. Describe your site, include:</p> <ul style="list-style-type: none"><li>• block type: long and skinny block or a compact block;</li><li>• size: how many hectares;</li><li>• planting purpose: restoration, rehabilitation, regeneration or rotational harvest;</li><li>• surrounding land uses: stand alone or next to other forests, plantings or crops;</li><li>• surrounding vegetation: surrounded by grass or other vegetation types, or right beside another big fuel source.</li></ul>
<b>Age/year planted</b>	<p>It is important to know how big the vegetation grows as this influences the amount of fuel available over time.</p>
<b>Management regime or purpose</b>	<p>How you manage the vegetation influences the amount and layout of fuels. Describe your regime or site purpose:</p> <ul style="list-style-type: none"><li>• commercial forestry rotation, permanent carbon or annual harvested crop;</li><li>• native protection, restoration, regeneration or commercial harvest;</li><li>• pruned or not pruned, thinned to waste or thinned (when);</li><li>• harvest season.</li></ul>



If you have many different blocks or types of plantings, you may wish to do a separate wildfire risk management plan for each block. This helps to capture different species, block sizes, ages and purposes.

2. RAPID stands for Rural Address Property Identification. It gives every rural residential property a road number. RAPID is useful for emergency services such as police, fire, ambulance and civil defence.

## Ongoing factors to be aware of

Certain factors can help you understand fire risks specific to your local area. Some of these include fire danger periods, wildfire history and understanding local weather patterns.

Factors	Explanation
Local fire danger	<ul style="list-style-type: none"> <li>When is it usually Open, Restricted or Prohibited for fire permits.</li> </ul>
Wildfire history	<ul style="list-style-type: none"> <li>History of fires in the area, when and how they started.</li> </ul>
Rainfall (annual/monthly)	<ul style="list-style-type: none"> <li>How much rain falls and when.</li> </ul>
Local weather patterns	<ul style="list-style-type: none"> <li>Wind direction and speed, frost (drying), seasonal patterns.</li> </ul>
Surrounding land uses	<ul style="list-style-type: none"> <li>Power lines, hunting, stubble burns, apiarists, public access, forestry.</li> </ul>

## Access

Good access to your site is important to allow for planting, maintenance, harvest, and emergency response.

Action	Explanation
Create and maintain 4m x 4m vehicle access	<p>Fire trucks and logging trucks are big vehicles. Fire and Emergency recommends that access to your property is 4 metres x 4 metres (see picture) and free of overhanging vegetation. Consider using low flammability plants along vehicle accessways.</p> <p>Avoid steep gradients or turns and provide space to turn around.</p> <p>Ensure clearly marked access off public roads.</p>
Display bridge weight limits, RAPID numbers	<p>Fire trucks, harvesting equipment and logging trucks are heavy vehicles (20 tonne+). Clearly signpost bridge weight limits and RAPID or supply numbers so they can access the property safely.</p>
Padlocked gates	<p>It is helpful for responders and neighbours to know where to find the key in case you are not on site. Does someone need to meet them at the gate? Is there a radio channel system operating?</p>
Consider 2 access ways or share with neighbours	<p>Access to another road or through a neighbouring property may be useful in an emergency situation.</p>



Make sure emergency services can access your site. Fire and Emergency recommend making sure your driveway or site access is at least 4 metres high and 4 metres wide.

## Water supply

Water supply is critical for rural properties. If the property is not on a reticulated water supply (usually council supply) then the landowner is responsible for their own water supply. Some councils require rural properties to install alternative firefighting water sources (including taps or couplings) as a building or resource consent condition.

Action	Explanation
Create or identify a water supply for fire suppression	For example, a reservoir, dam, water tank, swimming pool, pond, river, sea. A neighbouring water supply may be available, with permission. Ensure they are well signposted.
Ensure fire trucks can access water supply	Vehicle and/or helicopter access to water is vital to enable firefighting actions. Water tanks may need Fire and Emergency recommended taps (couplings).
Create space for pumps within 7 metres of water supply	A flat surface for a fire truck or portable pump to use. Water volume and pressure is important to the initial firefighting response. Try to replenish water supplies after the event.
Consider sharing water supply with neighbours	A water supply does not have to be on the property, but you should identify one and make sure it is accessible.

A typical forestry water supply on a rural site. In an emergency, fire and emergency services might use water supplies on or near your property.



## Identify risks

Below are some practical actions to reduce or minimise the risk of wildfire starting or moving onto your land or into your trees and assets.

Action	Explanation
<b>Reduce or manage fuel</b>	
<b>Remove or minimise weeds within plantings</b>	Consider grazing or mowing, or release spraying of grass and weeds under and around plantings. One of the highest fire risk periods is when there is a mix of grass and young trees 1-5 years old (until canopy closure).
<b>Reduce thinning and logging slash</b>	For forestry plantings, thinning, pruning and edge pruning reduces the amount of live fuel and the ability of fire to climb the trees (ladder fuels). Land preparation, thinning and logging slash can cause many issues. Like compost heaps, large piles can heat up and burn or smoulder. Minimise large piles and compaction and remove metal waste to limit slash pile fires.
<b>Create a buffer between neighbouring crops, trees and rank grass</b>	A fire/fuel break will not always stop a wildfire, but may slow it down, and provide access for firefighters. Green breaks such as closely mown grass or less flammable species can also slow or stop fire advancing.  Cut dry grass under electric fences to avoid arcing.
<b>Remove gorse, volatile weeds and scrub around the neighbourhood</b>	Unmanaged weeds are a highly flammable fuel source and an entry point into your plantings. Consider managing them by mowing, spraying, grazing or over-sowing. Consider controlling them further afield in the neighbourhood, for example on roadsides and walking tracks.
<b>Machinery use and maintenance</b>	
<b>Do not use machinery in very high or extreme fire danger conditions</b>	Check fire weather ( <a href="http://fireweather.niwa.co.nz">fireweather.niwa.co.nz</a> ) and Fire and Emergency advice ( <a href="http://checkitsalright.nz">checkitsalright.nz</a> ) in your district before using machinery. Consider limiting or stopping activities in the middle of the day when conditions are hot and dry. Mowing, discing, harvesting, chainsaws, scrub-bars, welding and exhaust systems all create sparks or heat that can start a fire. This includes both combustion and battery powered machinery.
<b>Keep firefighting equipment on hand when using machinery</b>	Have: <ul style="list-style-type: none"> <li>• a shovel and fire extinguisher on hand and know how to use them;</li> <li>• water in a backpack or vehicle mounted sprayer;</li> <li>• an operating radio or cell phone;</li> <li>• an escape route.</li> </ul>
<b>Clean and maintain machinery regularly</b>	Remove material that builds up in, around and under machinery, including exhaust systems and screens, and spark arrestors. Check for bird nests.  Ensure cleaning, fuel storage and refuelling is done on designated "safe" sites.
<b>Attach a spark arrestor to machinery if appropriate</b>	Ensure all fire suppression and fire safety systems are in place and maintained before fire season: spark arrestors, exhaust screens, extinguishers, sprinklers.
<b>Local community</b>	
<b>Risk from neighbouring property uses</b>	For example, new plantings, crop or stubble burns, hunting, camping, illegal activities, roadside mowing, power lines and pylons, bonfires, burn pits.
<b>Consider a neighbourhood early warning system</b>	Like a rural neighbourhood watch system: <ul style="list-style-type: none"> <li>• know your neighbours;</li> <li>• know who is around (security cameras);</li> <li>• have a contact system (phone tree, emails, texts, WhatsApp);</li> <li>• share your risk reduction plans;</li> <li>• be a good neighbour – get fire permits, don't create a smoke hazard, let them know if you are planning a burn.</li> </ul>

## Co-ordinate with Fire and Emergency New Zealand

Liaising with your local fire brigade or local Fire and Emergency staff provides you with valuable information. Letting them know what is on your property and in the neighbourhood helps their understanding and planning. It can reduce response times should a fire start or spread into the area.

Action	Explanation
<b>Find out who to contact in case of a wildfire</b>	111 is always the first point of emergency contact. Where is your nearest fire brigade located?
<b>Liaise with Fire and Emergency over local fire history, risk reduction and response</b>	Fire and Emergency is the fire authority. They have wildfire specialists and fire risk and reduction staff to talk to. Know how to get fire danger and fire season information. <a href="https://checkitsalright.nz">checkitsalright.nz</a> What is the fire history of the local area? See if they want a copy of your risk reduction plan and map. Check your access and water supply are suitable.

## Actions you can take now to reduce the risk of fire to your property



What risk factors on your property can you identify immediately?

What actions can you take to reduce some of those risks today?

Start thinking about longer-term actions that will need planning, scheduling or neighbour support.

## Useful resources

**Fire and Emergency New Zealand** has the statutory responsibility to promote fire safety, provide fire prevention, response and suppression services for most properties in New Zealand. Their website has resources to help property owners identify and manage risk, apply for fire permits and prepare in case of fire.

- [fireandemergency.nz](https://fireandemergency.nz)
- [checkitsalright.nz](https://checkitsalright.nz)
- [fireandemergency.nz/outdoor-and-rural-fire-safety/](https://fireandemergency.nz/outdoor-and-rural-fire-safety/)

**NIWA** provide fire weather data and predictions that are available through their website.

- [fireweather.niwa.co.nz/](https://fireweather.niwa.co.nz/)

**Forest Owners Association** represents owners of commercial plantation forests. Their website has resources for forest growers.

- [nzfoa.org.nz/resources/file-libraries-resources/fire/831-rural-fire-guidelines-managing-the-risks/file](https://nzfoa.org.nz/resources/file-libraries-resources/fire/831-rural-fire-guidelines-managing-the-risks/file)
- [nzfoa.org.nz/resources/file-libraries-resources/standards-and-guidelines/670-forest-fire-risk-management-guidelines/file](https://nzfoa.org.nz/resources/file-libraries-resources/standards-and-guidelines/670-forest-fire-risk-management-guidelines/file)

**New Zealand Farm Forestry Association** is a community of people growing trees in NZ. They support anyone who is keen to get more trees in the ground. Their website has a wide range of tree growing advice.

- [nzffa.org.nz](https://nzffa.org.nz)

**Te Uru Rākau – New Zealand Forest Service** is the agency within the Ministry for Primary Industries that is responsible for the New Zealand forestry sector.

- [mpi.govt.nz/forestry/protecting-forests-from-summer-wildfires](https://mpi.govt.nz/forestry/protecting-forests-from-summer-wildfires)
- [canopy.govt.nz](https://canopy.govt.nz)

**Scion** is a crown research institute that focuses on forestry and specialises in wildfire research.

- [ruralfireresearch.co.nz](https://ruralfireresearch.co.nz)

### The Electricity (Hazards from Trees) Regulations 2003

(the regulations) set out the obligations of tree owners and lines owners. The Regulations prescribe the minimum safe distances for trees and vegetation growing near electrical conductors (power lines), prescribe responsibility for breaches and provide an arbitration system to resolve disputes. When lines owners detect trees growing too close to power lines they must notify the owner of the tree and ensure that the trees are cut-back.

- [www.worksafe.govt.nz/laws-and-regulations/regulations/electrical-regulations/electricity-hazards-from-trees-regulations-2003/](https://www.worksafe.govt.nz/laws-and-regulations/regulations/electrical-regulations/electricity-hazards-from-trees-regulations-2003/)

### Getting insurance

Fire insurance for trees is becoming difficult to get and unaffordable.

Fire insurance helps to offset the cost of a disaster. Insurance can cover fire and other disasters including public liability – in case a wildfire spreads from your property to neighbouring properties. Ensure contractors get public liability insurance cover for all work on your property, especially during harvest periods. The contract may require specific risk reduction actions to be undertaken as part of the contract.

## Acknowledgements

This resource was produced with assistance and photographs from New Zealand Forest Growers Levy Trust, Fire and Emergency New Zealand, New Zealand Farm Forestry Association, Federated Farmers, Department of Conservation, Scion, Forest Owners Association, Trevor Mitchell, Kevin Ihaka and Murray Dudfield.



New Zealand Farm Forestry Association  
Oranga Rākau Aotearoa



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