

# Fire Plan for Canterbury

2024–2027



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## Contents

|   |           |
|---|-----------|
| <b>Introduction</b> .....   | <b>5</b>  |
| How to use this document .....  | 5         |
| Why do we have fire plans? .....  | 5         |
| Content of the fire plans .....   | 5         |
| Describe local fire risk conditions.....  | 5         |
| Set out policy .....  | 5         |
| Set out procedures .....  | 6         |
| Take Fire and Emergency’s other requirements, agreements and policies into account..... | 6         |
| Cover the entire area .....   | 6         |
| Set out Fire and Emergency’s fire control powers .....                                  | 6         |
| Local area and zones .....  | 6         |
| Local area .....  | 6         |
| Zones .....   | 7         |
| Consultation .....  | 7         |
| Publish a notice .....  | 7         |
| Consider submissions .....  | 7         |
| Include a list of key stakeholders .....  | 7         |
| Review and amendment.....   | 7         |
| <b>4 Rs of emergency management</b> .....   | <b>8</b>  |
| Reduction .....   | 8         |
| Readiness.....  | 9         |
| Response .....  | 9         |
| Recovery .....  | 9         |
| <b>Our commitment to working with Māori as tangata whenua</b> .....                     | <b>10</b> |
| <b>National Framework for Fire Control</b> .....  | <b>10</b> |
| Our policies.....   | 11        |
| Fire risk conditions .....  | 12        |
| <b>Fire seasons</b> .....   | <b>13</b> |
| Open fire seasons .....   | 14        |
| Restricted fire seasons .....   | 14        |
| Prohibited fire seasons .....   | 15        |
| Trigger thresholds for changing fire seasons .....                                      | 15        |
| <b>Prohibiting fires in open air (section 52)</b> .....                                 | <b>16</b> |
| Trigger thresholds for prohibiting fire in open air.....                                | 16        |
| <b>Restricting and prohibiting activities (section 52)</b> .....                        | <b>16</b> |
| Trigger thresholds for restricting or prohibiting activities under section 52 .....     | 17        |
| Activities and risk mitigation .....  | 17        |
| Forestry operations .....   | 17        |
| Powerline auto-reclosers .....  | 18        |
| Hot works .....   | 18        |
| Retail fireworks and pyrotechnics.....  | 18        |
| <b>Communicating changes in fire seasons and restrictions or prohibitions</b> .....     | <b>19</b> |

|  |           |
|--|-----------|
| <b>Fire permits</b> .....  | <b>20</b> |
| Council by-laws, regional plans, legal covenants, or restrictions.....               | 20        |
| When a permit is needed .....  | 20        |
| Fire types .....   | 20        |
| Authorised fire types, descriptions and conditions in a restricted fire season.....  | 21        |
| Authorised fire types on public conservation land in a restricted fire season.....   | 24        |
| Authorised fire types, descriptions and conditions in a prohibited fire season ..... | 26        |
| Authorised fire types on public conservation land in a prohibited fire season .....  | 28        |
| Permits in prohibited fire seasons or during prohibitions under section 52 .....     | 28        |
| Applying for a permit.....   | 28        |
| Assessment.....  | 29        |
| Mandatory conditions .....   | 29        |
| <b>Firebreaks</b> .....  | <b>30</b> |
| <b>Fire hazard removal</b> .....   | <b>31</b> |
| Reporting fire hazards .....   | 31        |
| Assessment of fire hazards.....  | 31        |
| Initial review .....   | 31        |
| Risk assessment matrix .....   | 32        |
| Outcomes from the fire hazard assessment .....                                       | 32        |
| Powers of entry .....  | 33        |
| Fire hazard removal notice (section 65).....   | 33        |
| Imminent danger notice (section 68).....   | 34        |
| <b>Regulatory compliance</b> .....   | <b>34</b> |
| Fire and Emergency's role .....  | 34        |
| <b>Contact Fire and Emergency</b> .....  | <b>34</b> |
| General enquiries and questions.....   | 34        |
| Lodge a complaint .....  | 35        |
| Fire hazards .....   | 35        |
| Local contacts for this plan.....  | 35        |
| <b>Glossary</b> .....  | <b>36</b> |
| <b>Canterbury information</b> .....  | <b>38</b> |
| Area overview.....   | 39        |
| Schedule of stakeholders .....   | 43        |
| National-level stakeholders.....   | 43        |
| Area-level and zone-level stakeholders .....   | 45        |
| <b>Zone Information</b> .....  | <b>48</b> |
| Canterbury Hill and High Country .....   | 48        |
| Thresholds .....   | 52        |
| Canterbury Hill and High-Country Zone Map.....                                       | 54        |
| Canterbury Foothills .....   | 55        |
| Thresholds .....   | 58        |
| Canterbury Foothills Zone Map.....   | 61        |
| Kaikōura and Canterbury Plains .....   | 62        |
| Thresholds .....   | 66        |
| Kaikōura and Canterbury Plains Zone Map.....   | 69        |

|  |            |
|--|------------|
| Canterbury Coastal .....   | 70         |
| Thresholds .....   | 74         |
| Canterbury Coastal Zone Map .....  | 76         |
| Canterbury Production Forests .....  | 77         |
| Thresholds .....   | 80         |
| Canterbury Production Forests Zone Map .....   | 83         |
| Canterbury Urban/Peri-Urban Interface Areas .....  | 84         |
| Thresholds .....   | 89         |
| Canterbury Urban/Peri-Urban Interface Areas Map .....  | 92         |
| Public conservation land .....   | 93         |
| Note: Many moderate and large Wildfires were cross boundary events form one zone to another, and there are many important fires omitted here due to space restrictions. .... | 95         |
| Thresholds .....   | 95         |
| Public Conservation Land Map .....   | 97         |
| New Zealand Defence Force .....  | 98         |
| Scheduled Defence Areas .....  | 98         |
| Canterbury NZ Defence Zones Map .....  | 99         |
| <b>Appendix 1 – Fire risk guidelines for forestry operations .....</b>   | <b>100</b> |
| Rayonier Matariki Forests trigger levels .....   | 100        |
| Fire Danger Level 1, Low .....   | 100        |
| Fire Danger Level 2, Moderate .....  | 101        |
| Fire Danger Level 3, High .....  | 101        |
| Fire Danger Level 5, Extreme .....   | 103        |
| Port Blakely Forests trigger levels .....  | 105        |
| <b>Appendix 2 – Hot works triggers .....</b>   | <b>110</b> |
| Code Green .....   | 113        |
| Code Yellow .....  | 114        |
| Code Orange .....  | 116        |
| Code Red .....   | 118        |
| <b>Appendix 3 – Power line auto-recloser system triggers – fire risk guidelines .....</b>  | <b>119</b> |

**Document drafting information**

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**Approval**

Full Name: Brad Mosby

Title: Region Manager

Date:

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 Signature



## Introduction

### How to use this document

The front sections of this document cover:

- general information about fire plans
- the basics of Fire and Emergency New Zealand's fire control powers
- how we use these powers to reduce the risk of unwanted fires, particularly in the open air.

The back section, [Canterbury information](#), is for specific local information about this fire plan area. Fire plans must take the local fire risk conditions into account and not just apply a blanket standard across the country. All of our areas have different levels of risk, so what may be appropriate for one area of the country may not apply somewhere else.

### Why do we have fire plans?

Fire plans are required by [section 22](#) of the [Fire and Emergency New Zealand Act 2017](#) (the Act) and the [Fire and Emergency New Zealand \(Fire Plans\) Regulations 2018](#).

According to [Regulation 5](#) of the Regulations, the purpose of a fire plan is to:

- provide transparency and predictability in relation to the use of Fire and Emergency's fire control powers under sections [52 to 58](#) and [62 to 68](#) of the [Fire and Emergency New Zealand Act 2017](#) in each local area; and
- ensure that the particular fire risk conditions in each local area are considered by Fire and Emergency when it establishes policies and procedures for, and exercises fire control powers within, that local area.

This means that we need to explain how we:

- set locally appropriate triggers for changing fire seasons for outdoor fires to:
  - require permits
  - prohibit fires
  - restrict activities that may cause unwanted fires
- apply our other powers to manage fire hazards or require firebreaks.

These explanations help people to understand what to expect, how to plan for this and what they need to do to comply with any requirements.

### Content of the fire plans

Fire plans must do the following.

#### Describe local fire risk conditions

A fire plan must describe the particular fire risk conditions that exist or are likely to exist in the local area. This means that each fire plan:

- is accurate and relevant for its area
- can be broken down into specific zones within the area where fire risk conditions or control measures differ.

#### Set out policy

A fire plan must set out the policy for fire control in the local area. It must specify when and why we:

- restrict or prohibit fires in the outdoors

- restrict activities that may cause unwanted fires
- manage fire hazards
- require firebreaks.

### Set out procedures

A fire plan must set out fire control procedures for the local area. These include:

- details of the processes that Fire and Emergency will follow
- factors that Fire and Emergency will consider when deciding to:
  - issue notices of prohibitions or restrictions for fire control under [section 52](#) of the Act
  - declare a prohibited or restricted fire season in relation to the local area, or a part of that area, under [section 56](#) of the Act
  - issue notices in relation to firebreaks under [section 62](#) of the Act
  - issue notices to remove or destroy vegetation or other things on land under [section 65](#) of the Act.

This means that our communities understand how we have come to those decisions, and that we can show that they are evidence-based decisions that don't impact on recreational and economic activities unnecessarily.

### Take Fire and Emergency's other requirements, agreements and policies into account

A fire plan must be consistent with:

- Fire and Emergency's national strategy
- any local planning by Fire and Emergency for the local area
- any current operational service agreement and memorandum of understanding that Fire and Emergency has with other agencies or people relevant to the local area
- any relevant Fire and Emergency policies. The first part of this template highlights policies that impact our regulatory role, However, fire plans must comply with other Fire and Emergency internal policies, such as records management.

### Cover the entire area

A fire plan must cover the entire local area that it relates to, but we can break each area down into smaller zones to manage them individually. This ensures that each fire plan is relevant to everywhere within its area.

### Set out Fire and Emergency's fire control powers

Fire plans are not about how we fight fires in the local area, or the resources available to do so. This plan is about how, when and why Fire and Emergency will exercise its fire control powers to reduce the incidence of unwanted fires in the area.

## Local area and zones

### Local area

In these fire plans, local area is the area within each Local Advisory Committee's (LAC's) boundaries.

The Fire and Emergency New Zealand (Fire Plans) Regulations 2018 indicate that Fire and Emergency must prepare and issue a fire plan for each local area as soon as possible after the boundaries of the LAC for the local area are set.



In May 2019, the Board of Fire and Emergency New Zealand approved LAC boundaries aligned with the Civil Defence Emergency Management Group (CDEMG) boundaries as originally proposed and publicly consulted. There was one modification in the Hawke's Bay LAC area to include the Tararua District.

## Zones

When dividing a local area into zones, we consider factors such as climatic conditions, geographical features, land use or territorial authority.

We also look at previous analyses of the wildfire threat.

### Applying fire seasons to zones

When we apply fire seasons to a zone, we consider:

- whether they season make sense from a fire science point of view
- how we can communicate to the public where the boundaries are.

## Consultation

Before issuing a fire plan for a local area, or an amended fire plan, Fire and Emergency must do the following:

### Publish a notice

The notice should:

- outline the proposed plan
- say where you can see and read a copy of the plan
- say how you can make a submission on the plan and where to send your submissions
- give the closing date and time for submissions.

It must be published in the Gazette, or in a newspaper circulating in the local area, or a website.

### Consider submissions

Fire and Emergency New Zealand must consider every submission received by the closing date and time for submissions.

### Include a list of key stakeholders

A fire plan should include a list of key stakeholders in the local area and zone information. Stakeholders include those who:

- were involved in creating the plan
- should contribute to maintaining it and making relevant decisions.

### Record stakeholder engagement

Fire and Emergency will record stakeholder engagement and their inputs in the stakeholder engagement plan for the fire plan.

## Review and amendment

Fire and Emergency may amend a fire plan at any time.

However, we must review the fire plan for each local area at least once every 3 years, or if there are significant changes to the boundaries of the local area.

When we review the fire plan for a local area, we must either:

- confirm that the fire plan is still appropriate for that area
- amend the fire plan as necessary and consult on changes.

## 4 Rs of emergency management

The '4 Rs' sum up New Zealand's approach to emergency management – reduction, readiness, response and recovery.

Fire plans are a part of reduction space. Previous fire plans issued under the old rural fire authorities also included readiness and response. We now put that information in our other planning work and operational procedures.

The next sections outline the work Fire and Emergency does in each of the 4 Rs.



### Reduction

Reduction means:

- identifying and analysing long-term risks to human life and property
- taking steps to eliminate these risks if practicable
- if not, reducing their impact and the likelihood of them occurring.

The first of Fire and Emergency's principal objectives is to reduce unwanted fires.

For Fire and Emergency, this work includes

- our National framework for fire control. This framework includes:
  - these fire plans
  - our fire control powers for reducing the likelihood of unwanted fire from the use of fire in the open air
  - our fire control powers for reducing the likelihood of other causes of wildfire by setting fire seasons, requiring fire permits, firebreaks and fire hazard removal

- evacuation procedures and evacuation schemes for buildings
- input into building design for fire safety, and our part in the building consent application process
- the national automatic fire alarm system
- influencing policies within standard-setting bodies and with central and local government
- public education campaigns around escape planning, fire safety, and smoke alarms.

## Readiness

Readiness means developing operational systems and capabilities before an emergency occurs. These include self-help initiatives for the public, specific programmes for emergency services, lifeline utilities and other services.

For Fire and Emergency, this includes:

- establishing and maintaining our response capability (our fire stations and trained people) across the country
- the 111 call centre where the public can report fires and other emergencies
- contact lists and contracts with service providers that we can use in response
- tactical plans (how we plan to respond to a particular site or location)
- community planning
- work with local government around provision of water for firefighting

## Response

Response means:

- attending incidents
- taking any actions from the time our communications centres are notified until to the incident controller moves the incident to recovery phase.

For Fire and Emergency, this includes:

- firefighting
- responding to hazardous substance incidents
- rescuing trapped people
- urban search and rescue.

It can also include responding to:

- medical emergencies
- maritime incidents
- other rescues
- weather events and disasters
- incidents where substances present a risk to people, property or the environment
- any other situation where we can assist.

**Note:** This fire plan is not a response related plan.

## Recovery

Recovery means helping people who have suffered loss and trauma to receive the appropriate support. It involves coordinated efforts and processes to bring about the immediate, medium-term and long-term recovery of a community following a major emergency.

For Fire and Emergency, this includes:

- during our immediate actions at emergencies, following good incident management practices that minimise the short-term and long-term impact and consequences of the original event
- helping those immediately affected by the emergency get the support they need, including making sure people suffering loss and trauma receive appropriate support from the relevant agency.

In addition, as a precursor to recovery, we:

- support and encourage communities to pre-plan for major events
- support recovery/clean-up activities to strengthen community resilience following an incident.

## Our commitment to working with Māori as tangata whenua

Fire and Emergency recognises the status of Māori as tangata whenua and, as such, the importance of Māori communities as key stakeholders in Fire and Emergency's work.

We recognise:

- iwi and Māori as community leaders with an important role to play in preventing fires and other emergencies, building community resilience, and informing emergency response
- iwi as our partners in risk reduction as significant and growing land and forest owners
- Māori are disproportionately affected by unwanted fires, and that needs to change.

By committing to working with tangata whenua, we contribute to a safer environment not only for Māori but for all New Zealand communities.

We will do this by building strong relationships that enable us to engage with iwi and Māori as we design and deliver services. This will require us to engage in culturally appropriate ways. We will strengthen our cultural capability, diversity and inclusion, so that we better reflect and engage with the communities we serve.

## National Framework for Fire Control

Not all fires are unwanted. New Zealand has a long history of using fire as a tool, for land management, cooking, recreation, comfort, and warmth.

The National Framework for Fire Control consists of policies, procedures and tools that enable Fire and Emergency to manage fires. The framework supports people to use fire safely where appropriate and restricts or prohibits its use when there is a risk of unwanted fire.

The public face of the framework is:

- the [Checkitsalright.nz](https://www.checkitsalright.nz) website
- the [fire permit application system](#)
- these fire plans
- additional information on our public website – [fireandemergency.nz](https://www.fireandemergency.nz).

Fire and Emergency can apply a number of statutory fire control powers to reduce risk:

- Setting fire seasons
- Prohibiting fire in open air or revoking the prohibition
- Prohibiting or restricting activities or revoking the prohibition or restriction
- Fire permitting
- Control of firebreaks

- Fire hazard removal

## Our policies

This table sets out the current internal policies and supporting processes that guide our decisions and actions.

| Policy   | Detail  |
|--|---|
| Fire seasons, prohibitions and restrictions policy | Relates to sections <a href="#">52 to 58</a> of the Act and decisions to: <ul style="list-style-type: none"> <li>• declare or revoke a prohibited or restricted fire season</li> <li>• prohibit fire in open air or revoke a prohibition</li> <li>• prohibit or restrict activities that may cause a fire to start or spread and revoke prohibition or restriction.</li> </ul>  |
| Fire permitting policy                             | Supports the policy above and defines actions for: <ul style="list-style-type: none"> <li>• supporting a member of the public who is applying for a fire permit</li> <li>• assessing a fire permit application</li> <li>• granting or renewing a fire permit</li> <li>• refusing to grant or renew a fire permit</li> <li>• suspending or cancelling a fire permit</li> <li>• operational decisions when responding to an alarm of fire in open air.</li> </ul>   |
| Fire hazard removal policy                         | Relates to sections <a href="#">65 to 68</a> of the Act and decisions about what to do when: <ul style="list-style-type: none"> <li>• a potential fire hazard is reported to Fire and Emergency</li> <li>• we assess a potential fire hazard</li> <li>• we arrange for the removal or destruction of a confirmed fire hazard.</li> </ul>  |
| Regulatory compliance policy                       | Covers how we monitor and take action to identify and influence landowners and others to comply with the requirements of the Act and other relevant legislation. This covers activities which: <ul style="list-style-type: none"> <li>• reduce harm from unwanted fire</li> <li>• support the safe use of fire as a land management tool and reduce harm if fire escapes control</li> <li>• minimise avoidance of the Fire Emergency levy</li> <li>• reduce non-compliance with any legislation or regulations under which Fire and Emergency New Zealand has a compliance function.</li> </ul> |
| Firebreaks policy                                  | Relates to sections <a href="#">62 to 64</a> of the Act to support decisions and actions relating to requirements for landholders to: <ul style="list-style-type: none"> <li>• make and clear any firebreak on the landholder's land</li> <li>• remove any vegetation or other thing from an existing firebreak.</li> </ul>   |

## Fire risk conditions

The Act defines the circumstances where we can use our fire control powers to prohibit fire and or restrict other activities as when:

- fire risk conditions exist or are likely to exist in the area; and
- the prohibition or restriction is necessary or desirable for fire control.

We also take these into account when setting fire seasons.

The Act defines fire risk conditions Act as weather or other conditions that will, or are likely to, endanger persons or property by increasing the risk of the outbreak or spreading of fire.

Decision-makers must be satisfied that:

- fire risk conditions, and potential ignition sources exist, or are likely to exist in the area
- these will endanger people or property by increasing the risk of outbreak or spread of fire.

They make decisions based on evidence, not for the convenience of Fire and Emergency.

This table sets out other conditions we consider to be fire risk conditions for the purposes of exercising our fire control powers.

| Condition                                 | Description   |
|---|---|
| Fire weather science                      | The NZ Fire Danger Rating System includes measures such as: <ul style="list-style-type: none"> <li>• Build-up Index (BUI)</li> <li>• Initial Spread Index (ISI)</li> <li>• Fire Weather Index (FWI)</li> <li>• Grass curing percentage</li> <li>• Fine Fuel Moisture Code (FFMC)</li> <li>• Drought code (DC).</li> </ul> |
| Topography                                | Factors that influence how a fire spreads, including: <ul style="list-style-type: none"> <li>• steepness of slope</li> <li>• direction fire is facing, i.e. aspect</li> <li>• terrain features, e.g. gullies and chimneys.</li> </ul>   |
| Fuel behaviour models                     | The characteristics of fuel, or vegetation, that contribute to fire ignition and spread.  |
| History of fires                          | History of recent fires and their ignition sources in the area, based on available fire data.   |
| Socio-economic factors                    | Factors that influence the likelihood of fires being lit for cooking purposes and to dispose of rubbish in backyards, e.g. absentee owners and lifestyle blocks burning during holiday season.<br>Expectations of the public to be able to light certain types of fires, e.g. cultural cooking fires.                     |
| Time of year                              | Time of year, e.g. land clearing forestry, land clearing hill and high country, late winter to spring.  |
| Public knowledge – awareness of the risks | The expected public awareness of risks may be low, e.g. a large influx of visitors during summer holiday periods who may reasonably be expected to have little understanding of the risks of lighting fires in an area.   |
| Proximity to property or other values     | The closeness of property or other valuables to fire, for example:  |



| Condition   | Description   |
|---|---|
|   | <ul style="list-style-type: none"> <li>• life values, e.g. size of land parcels in an urban area</li> <li>• distance from commercial forestry.</li> </ul>   |
| Ability to respond effectively  | <p>Factors that contribute to our ability to respond to an out of control fire include:</p> <ul style="list-style-type: none"> <li>• availability of response resources, i.e. people and equipment</li> <li>• isolation</li> <li>• accessibility issues</li> <li>• availability of water supplies.</li> </ul> |
| Impacts from natural hazards  | Natural hazards impacts are likely to influence resource availability and the likelihood of fires.  |
| People  | The presence of people increases the risk of fire.  |
| Impact of other events that increase the risk of the outbreak or spread of fire | Events that increase the risk of potential fire, e.g. the rupture of an oil pipeline.   |

## Fire seasons

Fire seasons are used to:

- inform people about the requirements for or restrictions on lighting fires in the open air
- manage the use of fire to protect communities from the consequences of unwanted fire.

There may be other legal requirements and regulatory approvals needed for a fire under other legislation, such as the [Resource Management Act 1991](#), or Council by-laws. It is your responsibility to comply with all other legislation and get all other necessary approvals.

Fire and Emergency can declare or revoke a prohibited or restricted fire season in an area. We use our fire seasons, prohibitions and restrictions policy and associated processes to manage this.

Fire seasons are applied to geographic zones based on:

- the fire environment (fuel types, fuel condition (curing/dryness), weather, topography, historic trends)
- fire climatic zones
- topographical boundaries/features (rivers, roads, coastlines, forest and national park boundaries)
- fire control considerations.

There are three types of fire season is in force at any time in an area or zone:

### Open fire season



Open fire seasons are for periods when conditions enable people to safely use fire and manage the risks themselves. There is still a requirement to not cause or allow a fire to get out of control or leave a fire smouldering in a way that increases the likelihood of harm or damage arising from the start or spread of fire.

### Restricted fire season



Lighting a fire is riskier than usual and you must get a fire permit. This permit may also have specific conditions to make sure you can light a fire safely and it will remain under control.

### Prohibited fire season



Lighting fires in the open air is not permitted. Existing fire permits are suspended, though fire permits may still be granted in exceptional circumstances.

It is important that stakeholders know what the current fire season is and understand how they can comply with the requirements.

To see what the current fire season is within a local area (or zone within an area) go to [checkitsalright.nz](https://checkitsalright.nz).

## Open fire seasons

We use an open fire season when the fire danger is consistently low enough that Fire and Emergency does not need to apply additional controls on when people can light fires in the open air. To help you to use fire safely, we have a set of guidelines for fire types that you should follow even when there are no restrictions or prohibitions in place, see the [Authorised fire types, descriptions and conditions](#) table below for guidance.

Note that this does not mean that you can light fires anywhere you want to. You should still check the conditions at [checkitsalright.nz](https://checkitsalright.nz) and follow any advice provided.

Those lighting a fire have a duty of care to ensure that fire remains under control and is fully extinguished once complete. [Section 60 \(1\)](#) of the Act requires this: 'A person must not cause or allow a fire to get out of control and to spread to vegetation or property.'

Other legislation or regulatory requirements, such as local council or regional council by-laws or air quality plans, may apply additional restrictions, or not allow you to light a fire at all.

You must also have permission from the landowner or occupier to light a fire, even in an open fire season.

We still like to hear from you if you are lighting a large fire, e.g. for land management, so that we can share advice on how and when to light and use your fire safely. Go to our [Fire Permit website](#). Select Lighting a fire in an open season and complete the address info or use the map. Once the address information updates and confirms an Open fire season, select the Notify Us of your fire button at the bottom of the screen and complete the form.

This also helps us manage notifications about your fire that might be made by members of the public.

## Restricted fire seasons

We use restricted fire seasons when the fire danger has increased enough that we need more control over where, when and how people use fire.

Requiring permits for particular types of fires in the open air lets us know where and when fire is being used. This means our fire brigades don't need to respond unnecessarily.

It also gives us an opportunity to advise how to light and use the fire safely. We can also apply conditions about when the fire can be lit, how big it can be, or any other requirements that reduce the chance of the fire escaping control. Go to [firepermit.nz](https://firepermit.nz) to check and apply

**Note:** When you get a permit, you must read and follow the conditions of that permit.

## Prohibited fire seasons

When the fire danger reaches higher levels, we need to stop people from lighting fires that may escape. Fire behaviour during these conditions makes fires very difficult and dangerous to contain, control and extinguish.

Certain types of fires may still be used, but people need to be very careful with fire during these times. See the section on [Authorised fire types in a prohibited fire season](#).

## Trigger thresholds for changing fire seasons

The New Zealand Fire Danger Rating System and its component Fire Weather System are a consistent, scientific way to monitor the fire danger in an area.

Trigger thresholds are based on relevant fire weather measurements and values. They are set in consultation with stakeholders for declaring restricted and prohibited fire seasons within the fire plan area or fire season zone within that area. The trigger thresholds identify when prevailing weather conditions create ongoing potential for problem fires.

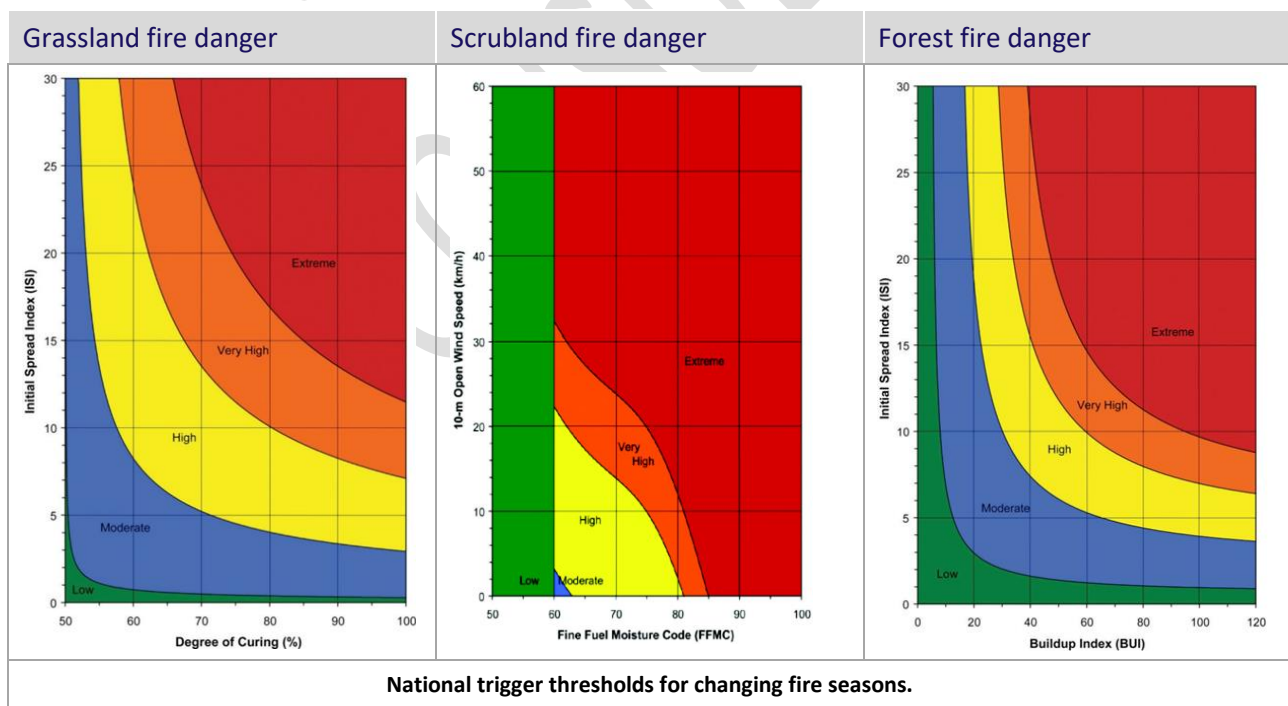
The trigger thresholds use:

- the Remote Automatic Weather Station (RAWS) climatology data for the fire plan area or zone.
- historical fire data for the fire plan area or zone.

Other factors, such as resource availability or other emergency events, may also influence a decision to declare or revoke a fire season earlier or later than the trigger threshold would indicate.

Forecast weather trends must be taken into consideration when declaring a change in fire season. An upcoming rain event may defer a change in fire season or forecast dry weather. Strong winds may indicate a need to change fire season days before the trigger threshold would otherwise be reached.

Locally agreed thresholds will be listed in the zone information in this document.



## Prohibiting fires in open air (section 52)

Fire and Emergency may sometimes need to prohibit fires in the open air outside the usual fire season changes. We only use this control very rarely, in exceptional circumstances – for example:

- during large or multiple incidents that put firefighting resources under strain
- when extreme fire weather conditions occur during a restricted fire season, e.g. strong dry winds, high temperatures associated with very low humidity
- when emergency events occur, e.g. a rupture of the Marsden Point fuel pipeline, increasing the fire hazard in a specific area.

We can only prohibit fires in the open air when fire risk conditions exist or are likely to exist that indicate that the prohibition or restriction is necessary or desirable for fire control.

Fire and Emergency may also prohibit fires in the open air while any pandemic support legislation, such as the [Epidemic Preparedness \(COVID-19\) Notice 2020](#), is in force. Fire and Emergency can do this without needing to consider fire risk conditions or other factors. This might happen if our response capabilities are affected by any pandemic, and we aren't able to respond effectively if there is an unwanted fire.

Fire and Emergency can create temporary zones that are smaller than the zones in this fire plan for the purposes of limiting the impact of prohibiting fires in open air under [section 52](#) of the Fire and Emergency New Zealand Act 2017.

If someone breaches the ban, they can be charged under [section 54](#) of the Act.

### Trigger thresholds for prohibiting fire in open air

We can use the same Fire Weather System trigger thresholds for prohibiting fires in the open air under [section 52](#) as we do for changing to a prohibited fire season, but use [section 52](#) when the fire risk conditions are not expected to last long enough to make changing to a prohibited fire season practical.

If Fire and Emergency has come to an agreement with stakeholders on other thresholds for when to implement a [section 52](#) prohibition of fire in open, these will be included in the zone information in this document.

## Restricting and prohibiting activities (section 52)

Sometimes fire risk conditions are so high that certain activities may cause a fire to start or spread. These activities include:

- roadside mowing
- 'hot works' – cutting or welding operations outdoors using portable gas, disc grinder or arc welding equipment that produces sparks, flames or heat
- chainsaw use or scrub-cutting
- mowing, ploughing or harrowing fields
- use of retail fireworks and, in certain conditions, pyrotechnics (See the [Retail fireworks](#) and [Pyrotechnics](#) sections below)

[Section 52](#) of the Act allows us to prohibit or restrict one or more activities in an area or areas when we assess that:

- the activity (including access to an area) may cause a fire to start or spread and adequate controls are not available
- [fire risk conditions](#) exist or are likely to exist in the area
- the prohibition or restriction is necessary or desirable for fire control purposes
- it's not possible to adequately mitigate the assessed risk.

This table defines prohibition and restriction.

| When an activity is... | It means the activity...  |
|------------------------|---|
| Prohibited             | must not be undertaken at all by any person while the prohibition is in effect (except if it is an excluded activity that relates to the carrying out of essential services in the area).       |
| Restricted             | can be undertaken subject to certain conditions, such as restrictions on: <ul style="list-style-type: none"> <li>the times of the day</li> <li>the manner in which it is undertaken.</li> </ul> |

If we have restricted or prohibited access to a location under [section 52](#), we can't prevent someone who lives or works in the location from entering. [Section 52](#) also doesn't prevent someone from carrying out essential services where it applies.

Essential services are:

- supplying and distributing of food, water, fuel, power, and other necessities
- maintaining transport and communication facilities that are essential to the well-being of the community
- maintaining the health of the community
- maintaining law and order, public safety, and the defence of New Zealand
- preserving property at immediate risk of destruction or damage.

Fire and Emergency can create temporary zones that are smaller than the zones in this fire plan for the purposes of limiting the impact of restricting or prohibiting activities under [section 52](#).

If someone fails to comply with the restriction or prohibition, they can be charged under [section 54](#) of the Fire and Emergency New Zealand Act 2017.

## Trigger thresholds for restricting or prohibiting activities under section 52

Some industries have their own restrictions that they place on themselves when fire risk increases. However, we will use [section 52](#) to apply the restrictions or prohibitions to everyone within the zone when either:

- these voluntary restrictions are not enough to reduce the risk of a fire starting or spreading, or
- we need to restrict or prohibit the public from the same high risk activities.

Our policy for fire seasons, prohibitions and restrictions says that we only prohibit or restrict activities if:

- we have engaged with stakeholders
- they are unable to satisfactorily mitigate the identified risks.

Legally restricting or prohibiting activities can have a significant economic impact, so we won't do it without due consideration.

If we've agreed with stakeholders on set thresholds for implementing a [section 52](#) restriction or prohibition, we'll include these in the zone information in this document.

## Activities and risk mitigation

### Forestry operations

The NZ Forest Owners Association's [Forest fire risk management guidelines](#) (2018) have trigger point tables and fire prevention actions at different fire danger levels. Fire and Emergency supports these guidelines.

If local trigger values have been set, they will be listed in the zone information in this document. NIWA's fire weather website [www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz) will be updated to display the levels decided locally.

### **Powerline auto-reclosers**

Most power companies use a computer-controlled auto recloser system. This attempts to reconnect the power up to three times after a fault, before they send a technician. If a downed wire caused the fault, this creates three potential sparking events.

If local trigger values have been set, they will be listed in the zone information in this document. NIWA's fire weather website [www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz) will be updated to display the levels decided locally.

To comply with the [Electricity \(Hazards from Trees\) Regulations 2003](#), power companies also take other risk reduction measures. These include trimming trees around power lines, reporting faults to the public, putting power lines underground, and giving guidance on tree planting.

### **Hot works**

This includes activities such as welding, grinding, and metal cutting.

If local trigger values have been set, they will be listed in the zone information in this document. NIWA's fire weather website [www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz) will be updated to display the levels decided locally.

Fire and Emergency will work with Waka Kotahi (NZTA) and local councils on roadside mowing issues during days with elevated fire danger and changing operations to suit conditions.

We will also work with Federated Farmers through the Land Management Forums to discuss the approach to fire measures, using machinery and equipment during high fire danger periods and the potential effect on local landholders.

### **Retail fireworks and pyrotechnics**

Fire and Emergency does not regulate the use of fireworks or pyrotechnics when fire risk conditions are not elevated.

The term 'firework' is reserved for retail fireworks that are specifically sold to the public. A display of 'fireworks' does not require written agreement from Fire and Emergency. However, pyrotechnics are classed as a hazardous substance and must be under the control of a person who holds a certified handler compliance certificate for the substances they are working with. This person must get written approval from Fire and Emergency before they hold a display.

When fire risk conditions are elevated, Fire and Emergency can restrict or prohibit the use of fireworks, and in certain circumstances, pyrotechnics, as an activity under [section 52](#) of the Fire and Emergency New Zealand Act 2017.

### **Fireworks**

Sale of fireworks is regulated by the [Hazardous Substances \(Fireworks\) Regulations 2001](#). Storage is regulated by the [Health and Safety at Work \(Hazardous Substances\) Regulations 2017](#).

Council by-laws may limit where and when fireworks may be used.

Whether fireworks should be banned is a decision for Government, and our work related to fireworks will continue to reflect decisions made by central Government.

Fire and Emergency is responsible for promoting fire safety, so we advise the public on using fireworks safely. We recommend people attend publicly organised displays where possible.

### **Pyrotechnics**

Applications for indoor and outdoor pyrotechnic displays need to comply with sections [9.35](#) and [9.43](#) of the Health and Safety at Works (Hazardous Substances) Regulations 2017.



The person in charge of a pyrotechnics display must get written agreement from Fire and Emergency before holding the display.

The exception to requiring written agreement is for a class 1 category G pyrotechnic display. This is where the pyrotechnics are used for special effects (e.g. film set) and there is no intention to display them to the public.

Fire and Emergency is not an enforcement agency for hazardous substances.

Fire and Emergency's agreement or otherwise to a specific pyrotechnic display proceeding will be determined in accordance with Fire and Emergency's policy and standard operating procedures relating to the same.

Sometimes, after we consider the relevant risk conditions in a particular area, we may decide that, even where the requirements of the Health and Safety at Work (Hazardous Substances) Regulations 2017 could be met in terms of controlling fires igniting within an exclusion zone, the risk to the surrounding area outside of any exclusion zone nevertheless requires a prohibition or restriction of pyrotechnic displays generally under [section 52](#). However we are only likely to do this in situations where, for example, the terrain, weather and substrate are such that there is a risk of a pyrotechnic display causing fire to ignite outside of any exclusion zone in the area.

## Communicating changes in fire seasons and restrictions or prohibitions

It's important that people planning to light fires in the open air know whether they can do so safely and legally. This means they need to know:

- the current fire season in the area
- whether any other prohibition applies
- whether a permit is required.

We notify our communities, stakeholders and partners of fire season changes and restrictions and prohibitions under [section 52](#) of the Act in several ways. These include:

- direct contact with our partners and stakeholders, including email
- local newspaper and radio ads
- social media and media
- email and text directly to permit holders
- on the Check It's Alright website [checkitsalright.nz](https://checkitsalright.nz)
- via information available by phoning 0800 658 628
- with fire danger or fire season signs – we change these to reflect season status by adding 'Fire by permit only', 'Total fire ban' or similar messaging.

During periods of elevated and extreme fire danger days, we increase our communication of fire safety and prevention messages. This is to build awareness of the dangers of wildfires and promote positive behaviour changes. Since fire danger/fire risk conditions are locally specific, Districts will make local decisions about the best ways to communicate this to their communities.

We can also target messaging using traditional and digital media, such as social media and on-demand video, at affected areas at the most effective times.

When a fire season change affects public conservation land (PCL), we must also notify the Department of Conservation (DOC) if we intend to declare or revoke a prohibited or restricted fire season on public conservation land. This must also be followed up with a written notification.

Department of Conservation informs visitors of the controls or bans on lighting fires, including for cooking, warmth and campground fires, through notices and advertising.

## Fire permits

The information included with a fire permit helps people understand how to light a fire safely and to reduce the risk of their fire burning out of control. Fire permits carry conditions which vary based on the type and size of the proposed fire, along with the current local fire risk conditions. To check and apply for a fire permit, visit [firepermit.nz](https://www.fireandemergency.govt.nz/firepermit).

Fire risk conditions vary by time and other factors such as fuel, weather and topography, so the acceptable conditions for burning are set for each fire permit.

We may also suspend or cancel fire permits in certain circumstances, such as:

- where fire risk conditions change
- for fire control purposes
- as fire seasons change or we imposed prohibitions.

Under [section 190\(8\)](#) of the Act, granting a fire permit does not impose any liability on Fire and Emergency.

## Council by-laws, regional plans, legal covenants, or restrictions

Fire and Emergency must only consider the fire risk conditions when issuing permits. We can't apply other organisations' requirements, so even if we've issued a fire permit, you may still not be allowed to light your fire due to other requirements.

Even if you don't need a fire permit from us, due to an open fire season etc., you may not be able to light fires in some places. You must also follow council by-laws and regional plan rules relating to smoke and air pollution.

Managing smoke nuisance comes under local government jurisdiction and not Fire and Emergency's, unless the smoke is an immediate threat to life. However, we will still promote good practice and suggest alternatives.

There may also be legal covenants or restrictions which restrict the ability to light a fire in some areas, regardless of the fire season – for example, if there are power pylons or other infrastructure nearby.

You will also need private landowner or occupier approval before lighting a fire, even if Fire and Emergency has issued a fire permit.

If there is signage in a location that says to light no fires or equivalent, then you must follow those instructions.

Where relevant, information about applicable bylaws and regional plans is included in the area overview of this document.

## When a permit is needed

The need for a fire permit is based on the:

- type of fire
- fire season, or restrictions or prohibitions on fires in the open air.

## Fire types

Some fire types may be allowed in restricted and prohibited fire seasons by making them:

- authorised (no permit required)
- permit required.

For more information on fire types, see [Open air fires – rules and permits](#) on the Fire and Emergency website [www.fireandemergency.nz](https://www.fireandemergency.govt.nz).

## Authorised fire types, descriptions and conditions in a restricted fire season

This table lists the fire types that are authorised in a restricted season and the conditions for using them. As long as people using these fire types in a restricted season meet these conditions, they don't need to get a fire permit, because Fire and Emergency doesn't consider them to be fires in open air.

| Fire type  | Description and conditions  |
|--|---|
| Gas-operated appliances  | <p>Manufactured gas-operated appliances, such as barbecues, outdoor fireplaces and outdoor gas heaters.</p> <p>Find out more about the safe use of <a href="#">Gas BBQs, cookers and heaters</a>.</p>   |
| Charcoal barbecues or grills                                   | <p>Barbecues or grills that use either charcoal briquettes or natural lump charcoal as their fuel source.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Don't use on an apartment balcony, deck, under a roof overhang or within other enclosed areas.</li> <li>• You must have a suitable way to extinguish the fire within easy reach – a maximum of 5 metres away.</li> <li>• You must not leave the fire unsupervised while burning</li> </ul> <p>If you cannot meet this condition, you must apply for a permit.</p>   |
| Open-top liquid fuel cooker                                    | <p>Examples include (but are not limited to) portable smokers.</p> <p>These are usually small portable cooking devices that are liquid-fuelled with an open fuel container either under or in the cooking device.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Must be on a non-combustible area/base.</li> <li>• You must have a suitable way to extinguish the fire within easy reach – a maximum of 5 metres away.</li> <li>• Don't light your fire within 3 metres of any part of a building, hedge, shelter belt or any other combustible material.</li> <li>• You must not leave the fire unsupervised while burning.</li> </ul> <p>If you cannot meet these conditions, you must apply for a permit.</p>            |
| Non-pressurised liquid-fuelled heaters                         | <p>Examples include (but are not limited to) frost pot, smudge pot, diesel heater.</p> <p>Usually fuelled by diesel, vegetable oil, kerosene or waste oil.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Must be at least 3 metres clear of any part of a building, hedge, shelter belt or any other combustible material.</li> <li>• Must be placed on a non-combustible surface, not directly on grass or wooden decks.</li> <li>• You must not use the heater in small, confined areas.</li> <li>• If refuelling, ensure heater has cooled down before refilling.</li> <li>• You must not leave the fire unsupervised while burning.</li> </ul> <p>If you cannot meet these conditions, you must apply for a permit.</p> |
| Permanent outdoor fireplace<br>Wood-fired pizza oven/wood oven | <p>Purpose-built or manufactured woodburning fireplace/wood oven with an open front and a vertical smoke vent/chimney.</p> <p>Generally constructed of concrete, concrete blocks, stone, or bricks, fixed in place (not mobile/movable).</p>  |

| Fire type   | Description and conditions  |
|---|---|
|   | <p>Usually in home outdoor entertaining areas.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Must have a non-combustible hearth or base that extends a minimum of 500 mm either side of the left and right edges and a minimum of 1 metre from the front edge of the fire box. This is to stop any burning material falling from the fire box landing onto anything combustible.</li> <li>• Smoke vent/chimneys must have a purpose-built manufactured cap, or maximum of 5 millimetre steel mesh fitted in the top to stop any hot ash or embers from escaping.</li> <li>• Firewood storage must be in areas not affected by heat from the fire and clear of any possible hot ash or ember-affected areas.</li> <li>• You must have a suitable way to extinguish the fire within easy reach – a maximum of 5 metres away.</li> <li>• You must not leave the fire unsupervised while burning, or</li> <li>• It must have a solid or mesh screen/door that prevents any burning material from escaping the fire box.</li> <li>• Fireplaces with external construction made of steel must be at least 1 metre clear of any part of a building, hedge, shelter belt or any other combustible material.</li> </ul> <p>If you cannot meet these conditions, you must apply for a permit.</p> |
| <p>Movable/<br/>portable free-standing<br/>front-loading fireplace.</p> | <p>Examples include (but are not limited to) <b>chiminea</b>.</p> <p>A freestanding front-loading fireplace or oven, usually with a bulbous body – usually has a vertical smoke vent or chimney.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Don't light your fire within 3 metres of any part of a building, hedge, shelter belt or any other combustible material.</li> <li>• You must have a suitable way to extinguish the fire within easy reach – a maximum of 5 metres away.</li> <li>• You must not leave the fire unsupervised while burning or</li> <li>• It must have a solid or mesh screen/door that prevents any burning material from escaping the fire box.</li> </ul> <p>If you cannot meet these conditions, you must apply for a permit.</p>   |
| <p>Cultural cooking fires</p>   | <p><b>Conditions</b></p> <p>Examples include hāngi, umu and lovo.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Your fire area must be less than 4 square metres.</li> <li>• Don't light your fire within 5 metres of any part of a building, hedge, shelter belt or any other combustible material.</li> <li>• You must have a suitable way to extinguish it within easy reach – a maximum of 5 metres from your cultural fire.</li> <li>• You must not leave the fire unsupervised while burning.</li> <li>• On completion of cooking or the purpose required for cooking food the fires must be extinguished.</li> </ul> <p>If you cannot meet these conditions, you must apply for a permit.</p> <p>Find out more about the safe use of <a href="#">Cultural cooking fires</a>.</p>   |

| Fire type                                     | Description and conditions  |
|---|---|
| Braziers<br>Fire pits/bowls<br>(Recreational) | <p>Brazier: a container for hot coals – usually an upright standing or hanging metal bowl or box.</p> <p>Fire pit/bowl: a pit dug in the ground, made from stone, brick or metal, or a bowl on an upright stand.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Your fire area must be less than 1 square metre.</li> <li>• Where hot embers/ash are able to escape, there must be a non-combustible base/tray that will contain these hot embers or ash, to prevent any risk of fire escaping.</li> <li>• Don't light your fire within 3 metres of any part of a building, hedge, shelter belt or any other combustible material.</li> <li>• You must have a suitable way to extinguish it within easy reach – a maximum of 5 metres from your brazier or fire pit/bowl.</li> <li>• You must not leave the fire unsupervised while burning.</li> </ul> <p>If you cannot meet these conditions, you must apply for a permit.</p> |
| Manufactured or drum incinerators             | <p>A drum or container, with a mesh or solid lid designed to prevent the escape of hot ash or fire, often with a vertical smoke vent or chimney; designed exclusively for incineration.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Don't light your fire within 5 metres of any part of a building, hedge, shelter belt or any other combustible material.</li> <li>• You must have a suitable way to extinguish it within easy reach – a maximum of 5 metres from your incinerator.</li> <li>• Smoke vent/chimneys must have a purpose-built manufactured cap or maximum of 5 millimetre steel mesh fitted in the top to stop any hot ash or embers from escaping.</li> </ul> <p>If you cannot meet these conditions, you must apply for a permit.</p>  |

## Authorised fire types on public conservation land in a restricted fire season

This table lists the fire types that are authorised on public conservation land (PCL) in a restricted fire season and the conditions for using them. As long as people using these fire types in a restricted season meet these conditions, they don't need to get a fire permit, because Fire and Emergency doesn't consider them to be fires in open air.

| Fire type                          | Description and conditions   |
|------------------------------------|--|
| Gas-operated appliances            | <p>Manufactured portable gas-operated appliances, such as butane tramping stoves, gas barbeques and outdoor gas heaters.</p> <p>Find out more about the safe use of <a href="#">barbeques and gas cylinders</a> and <a href="#">outdoor gas-operated appliances</a>.</p> <p><b>Conditions</b></p> <p>The gas-fire must not be:</p> <ul style="list-style-type: none"> <li>lit if the appliance is not in full operational condition in accordance with the manufacturer's specifications</li> <li>lit unless on a flat, level surface, stable and solid enough to support the weight of the appliance plus any containers and food used during cooking</li> <li>lit unless at least one metre clear of all combustible material</li> <li>lit in conditions where wind or other factors may cause the fire to spread to surrounding flammable material</li> <li>left unsupervised while flame is present.</li> </ul>  |
| Pressurised liquid appliances      | <p>Manufactured portable liquid cookers which use liquid under pressure to fuel the cooker. The type of liquid is not specific (e.g. White spirits, kerosene or methylated spirits) but the delivery mechanism is.</p> <p><b>Note:</b> This excludes <a href="#">cookers using an open top, non-pressurised system</a>.</p> <p><b>Conditions</b></p> <p>The pressurised liquid fire must not be:</p> <ul style="list-style-type: none"> <li>lit if the appliance is not in full operational condition in accordance with the manufacturer's specifications</li> <li>lit unless it is on a flat, level surface, stable and solid enough to support the weight of all the appliance parts plus any containers and food used during cooking</li> <li>lit unless at least one metre clear of all combustible material</li> <li>lit in conditions where wind or other factors may cause the fire to spread to surrounding flammable material</li> <li>left unsupervised while flame is present and/or the liquid is still turned on.</li> </ul> |
| Campfires in a permanent fireplace | <p>Positioned and constructed by the Department of Conservation (DOC) to minimise the threat of fire spread and located within formally established DOC overnight campsites or daytime amenity areas.</p> <p><b>Conditions</b></p> <p>The campfire in a permanent fireplace must not be:</p> <ul style="list-style-type: none"> <li>lit if the fireplace has any damage that could allow the fire, hot embers, or ash to escape and spread beyond the constructed fireplace</li> <li>within three metres of any combustible material</li> </ul>  |



| Fire type                 | Description and conditions   |
|---------------------------|--|
|                           | <ul style="list-style-type: none"> <li>• lit where notices and advertising are present which specifically prohibit the lighting of fires</li> <li>• lit during a prohibited fire season</li> <li>• lit in conditions where wind or other factors may cause the fire to spread to surrounding flammable material</li> <li>• left unsupervised while burning and without the ashes being fully extinguished</li> <li>• used to burn rubbish.</li> </ul>  |
| Cooking and warming fires | <p>Small, open outdoor wood-burning fires are only permitted to be lit on PCL in remote areas and only if required for essential cooking or survival purposes. As a guide, remote areas for this purpose are considered to be at least 3km from the nearest public road, public vehicle easement accessway or publicly accessible jetty or wharf.</p> <p>Additionally, fires must not be lit in locations fitting the freedom camping criteria, as defined in the <a href="#">Freedom Camping Act (2011)</a>.</p> <p><b>Conditions</b></p> <p>The cooking and warmth fire must not be:</p> <ul style="list-style-type: none"> <li>• more than 0.5 m diameter x 0.5 m height (including wood and flames)</li> <li>• within three metres of any tree or any place underneath overhanging vegetation; and</li> <li>• within three metres of any log or any dry vegetation</li> <li>• lit unless and until the ground surface within three metres of the site of the fire has been cleared of all combustible material</li> <li>• lit where notices and advertising are present which specifically prohibit the lighting of fires or specify the lighting of fires only in other types of receptacles or places</li> <li>• lit in National Parks which have bylaws prohibiting the lighting of wood burning fires in the open air</li> <li>• lit during a prohibited fire season</li> <li>• lit in conditions where wind or other factors may cause the fire to spread to surrounding flammable material</li> <li>• left unsupervised without the ashes being fully extinguished</li> <li>• used to burn rubbish.</li> </ul> <p><b>Note:</b> This only applies to small open fires (as described above). Solid fuel fires, front loaded portable fires, non-gas barbecues or chimineas are all <b>prohibited</b> fire types on Public Conservation Lands at all times.</p> <p>Find out more about the safe use of <a href="#">campfires</a>.</p> |

## Authorised fire types, descriptions and conditions in a prohibited fire season

This table lists the fire types that are authorised in a prohibited season and the conditions for using them. As long as people using these fire types in a prohibited season meet these conditions, they don't need to get a fire permit, because Fire and Emergency doesn't consider them to be fires in open air.

| Fire type                              | Description and conditions   |
|--|--|
| Gas-operated appliances                | <p>Manufactured gas-operated appliances, such as barbecues, gas outdoor fireplaces and outdoor gas heaters.</p> <p><b>Conditions</b></p> <p>Find out more about the safe use of <a href="#">Gas BBQs, cookers and heaters</a>.</p>   |
| Charcoal barbecues or grills           | <p>Barbecues or grills that use either charcoal briquettes or natural lump charcoal as their fuel source.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Don't use on an apartment balcony, deck, under a roof overhang or within other enclosed areas.</li> <li>• You must have a suitable way to extinguish the fire within easy reach – a maximum of 5 metres away.</li> <li>• You must not leave the fire unsupervised while burning.</li> </ul> <p>If you cannot meet these conditions, you must apply for a permit.</p>   |
| Open top liquid fuel cooker            | <p>Examples include (but are not limited to) portable smokers.</p> <p>These are usually small portable cooking devices that are liquid-fuelled with an open fuel container either under or in the cooking device.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Must be on a non-combustible area/base.</li> <li>• You must have a suitable way to extinguish the fire within easy reach – a maximum of 5 metres away.</li> <li>• Don't light your fire within 3 metres of any part of a building, hedge, shelter belt or any other combustible material.</li> <li>• You must not leave the fire unsupervised while burning.</li> </ul>  |
| Non-pressurised liquid-fuelled heaters | <p>Examples include (but are not limited to) frost pot, smudge pot, diesel heater.</p> <p>Usually fuelled by diesel, vegetable oil, kerosene or waste oil.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Must be at least 3 metres clear of any of any part of a building, hedge, shelter belt or any other combustible material.</li> <li>• Must be placed on a non-combustible surface, not directly on grass or wooden decks.</li> <li>• You must not use the heater in small, confined areas.</li> <li>• If refuelling, ensure heater has cooled down before refilling.</li> <li>• You must not leave the fire unsupervised while burning.</li> </ul> <p>If you cannot meet these conditions, you must apply for a permit.</p> |

| Fire type   | Description and conditions  |
|---|---|
| Permanent outdoor fireplace<br>Wood-fire pizza oven/wood oven | <p>Purpose-built or manufactured woodburning fireplace/wood oven with an open front and a vertical smoke vent/chimney.</p> <p>Generally constructed of concrete, concrete blocks, stone, or bricks, fixed in place (not mobile/movable).</p> <p>Usually in home outdoor entertaining areas.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Must have a non-combustible hearth or base that extends a minimum of 500 mm either side of the left and right edges and a minimum of 1 metre from the front edge of the fire box. This is to stop any burning material falling from the fire box landing onto anything combustible.</li> <li>• Smoke vent/chimneys must have a purpose-built manufactured cap, or maximum of 5 millimetre steel mesh fitted in the top to stop any hot ash or embers from escaping.</li> <li>• Firewood storage must be in areas not affected by heat from the fire and clear of any possible hot ash or ember-affected areas.</li> <li>• You must have a suitable way to extinguish the fire within easy reach – a maximum of 5 metres away.</li> <li>• You must not leave the fire unsupervised while burning, or</li> <li>• It must have a solid or mesh screen/door that prevents any burning material from escaping the fire box.</li> <li>• Fireplaces with external construction made of steel must be at least 1 metre clear of any of any part of a building, hedge, shelter belt or any other combustible material.</li> </ul> <p>If you cannot meet these conditions, you must apply for a permit.</p> |
| Movable/<br>portable free-standing front-loading fireplace.   | <p>Examples include (but are not limited to) <b>chiminea</b>.</p> <p>A freestanding front-loading fireplace or oven, usually with a bulbous body – usually has a vertical smoke vent or chimney.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Don't light your fire within 3 metres of any part of a building, hedge, shelter belt or any other combustible material.</li> <li>• You must have a suitable way to extinguish that will easily reach it, a maximum of 5 metres away.</li> <li>• You must not leave the fire unsupervised while burning or</li> <li>• It must have a solid or mesh screen/door that prevents any burning material from escaping the fire box.</li> </ul> <p>If you cannot meet these conditions, you must apply for a permit.</p>   |
| Cultural cooking fires  | <p>Examples include hāngi, umu and lovo.</p> <p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Your fire area must be less than 4 square metres.</li> <li>• Don't light your fire within 5 metres of any part of a building, hedge, shelter belt or any other combustible material.</li> <li>• You must have a suitable way to extinguish it within easy reach – a maximum of 5 metres from your cultural fire.</li> <li>• You must not leave the fire unsupervised while burning.</li> </ul>   |

| Fire type | Description and conditions  |
|-----------|---|
|           | <ul style="list-style-type: none"> <li>On completion of cooking or the purpose required for cooking food the fires must be extinguished.</li> </ul> <p>If you cannot meet these conditions, you must apply for a permit.</p> <p>Find out more about the safe use of cultural cooking fires – <a href="http://fireandemergency.nz">fireandemergency.nz</a> &gt; <a href="#">Traditional or cultural use of fire</a>.</p> |

### Authorised fire types on public conservation land in a prohibited fire season

This table lists the fire types that are authorised on public conservation land (PCL) in a prohibited fire season and the conditions for using them. As long as people using these fire types in a prohibited season meet these conditions, they don't need to get a fire permit, because Fire and Emergency doesn't consider them to be fires in open air.

| Fire type               | Description and conditions  |
|-------------------------|---|
| Gas-operated appliances | <p>Manufactured gas-operated appliances, such as barbeques, outdoor fireplaces and outdoor gas heaters.</p> <p>Find out more about the safe use of <a href="#">Gas BBQs, cookers and heaters</a>.</p> |

### Permits in prohibited fire seasons or during prohibitions under section 52

Fire and Emergency may grant permits:

- during a prohibited fire season, or
- when there is a prohibition under [section 52](#) of the Act but the fire or activity is necessary to prevent, reduce, or overcome any hazard to life or because of any other serious emergency.

We may grant fire permits during a prohibited fire season if weather or other conditions have temporarily reduced the fire hazard, so as to make it apparently safe to light a fire.

**Note:** Fire and Emergency may grant permits for the purposes of assisting compliance with other legislation such as Bio-security measures. For example:

The Management Agency for the American Foulbrood (AFB) Pest Management Plan implements the Biosecurity (National American Foulbrood Pest Management Plan) Order 1998.

- Where AFB is discovered, beekeepers have an obligation within 7 days of becoming aware of that case to destroy all honeybees, bee products, and appliances associated with that infected honeybee colony by burning.
- If it's a PROHIBITED fire season – Fire and Emergency New Zealand will promptly (24hrs) produce a District Manager-approved special Fire Permit to Burn during a prohibited season, under biosecurity emergency response status.

Permits issued in a prohibited fire season (e.g. for biosecurity reasons) remain active when the fire season changes.

### Applying for a permit

To check if a fire permit is required, use the website [checkitsalright.nz](http://checkitsalright.nz). If you need a permit, this site will automatically take you to the fire permits website.

When you know you need a fire permit, you can apply:

- online through Fire and Emergency's fire permitting system – [firepermit.nz](http://firepermit.nz)
- over the phone – 0800 658 628. Your application is then completed in the online system on your behalf

- in person, by asking local Fire and Emergency fire permitting personnel for a fire permit
- by email or post, using the manual [fire permit application form](#). You can print and complete the form by hand or complete the editable pdf and send it back to us.

## Assessment

The fire permit assessors will make a risk-based decision about whether a desk-based assessment or an on-site inspection of the burn location is required before deciding to grant or refuse the fire permit.

**Note:** Where an application has multiple burn locations, they must consider each location.

The assessor must inspect a permit applications if:

- they have insufficient information to make a desk-based assessment, or
- where any of the following apply to the proposed fire:
  - it is during a prohibited fire season
  - it requires a burn plan
  - it is in a location where the predominant fuel type is considered to be of high flammability
  - it is in a location that is adjacent to areas of significant commercial or environmental values
  - it involves multiple fires burning at the same time in different locations on a property
  - it is located on steep or complex terrain
  - it involves burning large amounts of material unless the applicant has a history of successfully managing similar fires.

The follow additional factors can be considered to be fire risk conditions or relevant fire control matters:

- The environment around the burn site
- The actual site area and boundaries of the proposed burn
- Other property and/or values at risk from a possible escaped fire
- Other relevant hazards
- Time of ignition, light-up sequence and method of the proposed fire
- Potential fire behaviour and rate of fire spread
- Firebreaks around the area to be burnt
- Resources available to carry out the burn safely and effectively
- The applicant's understanding of the risks associated with the proposed fire, and their ability to manage those risks effectively.

Prescribed burn plans may be required for complex and higher-risk burns, e.g. land clearing. They help the person proposing to burn to:

- go through a planning process
- consider how to undertake the proposed fire safely.

The applicant is responsible for developing the [prescribed burn plan](#). However, we can advise them what the plan should contain to carry out the proposed fire safely.

## Mandatory conditions

Every permit must contain standard conditions that are required by the [Fire and Emergency New Zealand \(Fire Permits\) Regulations 2017](#) and cannot be removed. These are:

- You must not light a fire in fire risk conditions that make it likely that the fire will spread beyond the limits of the location or property specified in the permit as the location of the fire.
- If this permit was issued for a proposed fire in an area which is in a restricted fire season:

- it is suspended if we declare a prohibited fire season or prohibit fire in open air
- you must, immediately before lighting a fire, make reasonable efforts to confirm that, in the location of the fire:
  - no prohibited fire season is in place; and
  - no prohibition on the lighting of fires in open air is in place.

If the fire permit is issued when fire has been prohibited in open air ([section 52](#) (1) of the Act) the following condition must be included on the permit:

- immediately before lighting a fire you must make reasonable efforts to confirm that no restricted or prohibited fire season under [section 56](#) (1) of the Act is in place in the location of the fire. Use [Checkitsalright.nz](https://www.firepermit.nz).

The permit will also include a condition to notify the Communications Centre immediately before lighting the fire. For example:

- notify us before lighting the fire using the text code or email links provided or at <https://www.firepermit.nz/FENZ/Default.aspx>.
- call Southern fire communications on 03 341 0266.

For fire permits where the public are likely to notice the fire call 111, we prefer you notify us electronically.

For example, where the fire:

- is close to a road, or to other houses or buildings
- covers a large area, such as land clearing.

During an open fire season, you can notify us by contacting the [fire communications centre](#), or preferably by clicking **Need to notify us** on [firepermit.nz](https://www.firepermit.nz) and completing the **Permit Activation** form.

These notifications are flagged within the call centre system, so if they get a 111 call, it's clear there is a permitted/controlled fire.

## Firebreaks

Fire and Emergency has the authority under [section 62](#) of the Act to require landholders to make or clear firebreaks on the landholder's land, or keep them clear if we think it's needed for fire control. This can include green firebreaks or strips of lower flammability or removing all vegetation down to mineral earth.

Sections [63–68](#) of the Act explain appeal provisions and compliance pathways.

We use our [Firebreaks policy and guideline](#) to apply the relevant science-based calculation to check if a fire break is the right solution. The policy guides us on working closely with affected landholders to work towards a voluntary solution.

Fire and Emergency has powers to:

- require compliance
- make or clear any firebreak
- issue an infringement notice if compliance is not reached voluntarily.

**Note:** This power relates to making and clearing firebreaks outside of incident response – before a fire happens. Our powers during response in [section 43](#) allow us to create firebreaks as needed to prevent the spread of fire.

## Fire hazard removal

Sometimes, Fire and Emergency reasonably considers that vegetation, or some other thing, is a fire hazard, meaning that it is likely to endanger people or property by increasing the risk of outbreak or spread of fire. In these situations, we can require that the vegetation or thing be removed or destroyed.

We will work with affected people to fix the issue first, but we're authorised under [section 65](#) of the Act to legally require action. You then have one month to fix the problem, although you can appeal against the requirement. You must appeal within 14 days and your appeal will be handled through Fire and Emergency's dispute resolution scheme.

Our fire hazard removal powers apply to anything on the land, but not to anything on or inside a building. Local councils have the authority to address fire risk related to buildings, such as hoarding.

If it's urgent (an imminent danger) we can tell you, and immediately fix the problem ourselves to keep people and property safe.

## Reporting fire hazards

Anyone who becomes aware of a fire hazard, or is worried that something is a fire hazard, can report it to Fire and Emergency.

To do this:

1. Go to [Fire hazards in your community](#).
2. Scroll down the page and choose **Submit a Fire Hazard Assessment Request**.
3. At the bottom of the page, under **Report a Potential Fire Hazard**, click **Start process**.
4. Complete the 'Potential Fire Hazard Advice' form.

## Assessment of fire hazards

Fire and Emergency will assess whether there is a potential for the fuel to harm people or damage property if a fire starts. We will assess the likelihood of a fire starting and the consequences in terms of risk to human life, structures and other values.

We use an assessment tool to provide a structured framework for determining whether:

- it is appropriate for us to exercise our fire hazard removal powers under [sections 65–68](#) of the Act
- it is more appropriate to educate the complainant or occupier/owner of the location of the potential fire hazard on how to mitigate risks from fires
- to refer the matter to another jurisdiction
- no further action is required.

## Initial review

The assessor starts by answering four key questions:

- Is the potential hazard:
  - trees close to power lines, or
  - hoarding inside a building?
 If yes, then the hazard is referred to the relevant lines company or local council for action.
- Is the material involved likely to pose a risk to life or property through ignition without spreading? This covers fuel types that are likely to endanger adjacent or downwind properties (either through creating significant health concerns or possible contamination damage), without spreading. This could be due to smoke toxicity or high intensity of burning.



- Is there sufficient material of appropriate type and composition to support a fire spreading to adjacent property or values? This captures the spread potential, taking into consideration the physical properties of the fuel as well as the general topography and onsite conditions. That includes continuity, size and shape, fuel load and flammability, as well as likely direction of fire travel.
- Is the burning material likely to produce enough heat to cause damage to property? Gives consideration to the fire having sufficient energy to actually cause damage to property if spread to it, or to compromise the health of property users.

### Risk assessment matrix

If it's appropriate, we then use a risk assessment matrix. This involves:

- assigning a risk of ignition rating, where 'rare' is a low rating and 'almost certain' is a high rating
- assigning a likely consequence rating for each component, and using the highest value of:
  - human life at risk
  - structure at risk
  - other values at risk
- using the risk of ignition and likely consequence ratings to determine the risk assessment score in the matrix

|                         |   | Likely consequence (highest consequence rating) |    |    |    |    |
|-------------------------|---|---|----|----|----|----|
|                         |   | 1   | 2  | 3  | 4  | 5  |
| Risk of ignition rating | 5 | 5   | 10 | 15 | 20 | 25 |
|                         | 4 | 4   | 8  | 12 | 16 | 20 |
|                         | 3 | 3   | 6  | 9  | 12 | 15 |
|                         | 2 | 2   | 4  | 6  | 8  | 10 |
|                         | 1 | 1   | 2  | 3  | 4  | 5  |

- using the risk assessment matrix score to determine the next course of action.

| Score   | Next course of action   |
|---------|---|
| 1-5     | No further action.  |
| 6, 8, 9 | Consider providing information/education to occupier/owner/complainant on how to mitigate risks from fire.  |
| 10, 12  | Provide information/education to occupier/owner/complainant on how to mitigate risks from fire.   |
| 15, 16  | Consider issuing a <i>Fire hazard removal notice (s 65)</i> , otherwise provide information/education to the occupier/owner /complainant on how to mitigate risks from fire.  |
| 20, 25  | May issue a voluntary compliance letter citing a timeframe to meet that compliance. Failure to comply means the assessor must issue a <i>Fire hazard removal notice (s 65)</i> . Consider if an <i>Imminent danger notice (s 68)</i> is appropriate |

### Outcomes from the fire hazard assessment

The assessment will recommend one of the following courses of action:

1. No further action, because the vegetation or other thing does not present a fire hazard, or imminent danger. The matter may be referred to another agency, such as the local council if appropriate, e.g. hoarding or vermin infestation.

2. Providing education and information to the occupier or owner of the land, and/or to the complainant, on how to mitigate any risks from fire. We would do this where the notice threshold has not been reached but the assessment indicates that proactive action would be helpful.
3. Giving the occupier or owner of the land the opportunity to voluntarily mitigate the risk within an appropriate time period. We would do this if the threshold for issuing a Fire hazard removal notice ([section 65](#)) has been met. If the occupier or owner won't do this voluntarily, we will issue them with a Fire hazard removal notice ([section 65](#)). This notice gives them one month to remove or destroy the vegetation or other thing increasing the risk of the outbreak or spread of fire.
4. Give the owner or occupier of the land verbal notice that we are taking immediate action to remove or destroy any vegetation or other thing on the land that is a source of imminent danger under [section 68](#). We would only use this power when there is an 'almost certain' likelihood of a fire starting or spreading at any moment that would put life or property at risk.

**Note:** We will use this power very rarely.

## Powers of entry

We will not enter private property without permission from the occupier other than to knock on the front door or other entry point to find and speak with an occupier.

If the occupier doesn't give us permission or we can't find them, we will attempt to assess the potential fire hazard from outside of the property. For example, we might view it from the roadside or from a neighbouring property if the neighbour consents to us entering their property.

If we need to, a Fire and Emergency inspector can enter and inspect land that is not a home or marae (or a building associated with a marae) to determine whether certain materials (including timber, dry plant cuttings and other flammable material) are being stored outside a building in a way that creates a fire hazard to the building, another building, or to any road or other public place (see [regulation 13\(4\)](#) of the [Fire and Emergency New Zealand \(Fire Safety, Evacuation Procedures, and Evacuation Schemes\) Regulations 2018](#)).

A Fire and Emergency inspector must obtain a warrant to enter and inspect land that is a home or marae (or a building associated with a marae).

We can take photographs of private land (or things on private land) from public land as long as we don't take pictures of an area or thing that a person can reasonably expect to be private (e.g. a photo that includes a view into a shower or a secluded area where someone is sunbathing).

## Fire hazard removal notice (section 65)

A fire hazard removal notice ([section 65](#)) is formal written notification under [section 65](#) of the Act to an occupier or owner of land that they must remove or destroy the 'vegetation or other thing' that we've assessed as meeting the threshold for issuing a notice.

The notice:

- describes the vegetation or other thing that must be removed or destroyed, including a map if practicable identifying the specific location or extent of the vegetation or other thing
- explains the risk that Fire and Emergency reasonably considers that the vegetation or other thing presents
- specifies the actions that must be taken to mitigate the fire hazard risk, e.g. how much vegetation must be removed or destroyed.

Before we issue a fire hazard removal notice, we will always try to negotiate with the occupier or owner to give them an opportunity to fix the issue voluntarily.

The occupier of the land where the fire hazard is located is primarily responsible for removing or destroying it. If the land is unoccupied, then the responsibility passes to the owner of the land.

Occupier, in relation to any place or land, means any person in lawful occupation of that place or land; and includes any employee or other person acting under the authority of any person in lawful occupation of that place or land.

## Imminent danger notice (section 68)

An Imminent danger notice is verbal notification under [section 68](#) of the Act to an occupier or owner of land that Fire and Emergency is going to enter the land and remove or destroy any vegetation or other thing on land that we consider is a source of imminent danger from fire to life, property, or any road.

Anyone receiving the verbal notice should be able to understand:

- that Fire and Emergency has decided that [description of fire hazard] is a source of imminent danger to [life, property, and/or road]
- why the fire hazard is a source of imminent danger
- that Fire and Emergency has arranged for the [removal or destruction] of the fire hazard under [section 68](#) of the Act by [name of contractor] on [date]
- any arrangements for the storage of items removed from the land, and the terms under which the owner/occupier can retrieve those items.

In the event of an actual fire, we can use all of our powers to deal with the emergency, including [sections 42 and 43](#) to remove vegetation or material without telling you.

## Regulatory compliance

### Fire and Emergency's role

The Act gives Fire and Emergency compliance and enforcement responsibilities, and powers to support interventions in cases of non-compliance. In line with this, we have developed a comprehensive [Risk Reduction Strategy](#), supported by a Regulatory compliance policy. Our [Regulatory compliance guide](#) has details of our approach to compliance.

Our compliance activities generally focus on education and awareness first, followed by issuing warnings. If compliance is still an issue, then we may use more formal enforcement powers.

If there are cases of serious or repeated non-compliance, we may use infringement notices or prosecute. For more information on our regulatory compliance policies and procedures and other relevant topics, visit [Regulatory compliance](#).

## Contact Fire and Emergency

### In case of an emergency please call 111

#### General enquiries and questions

- Recruitment/volunteering
- Fire safety information
- Fire permits and seasons
- Evacuation schemes
- Request for access to the site of an emergency.

[Submit a general enquiry or question](#) or call 04 496 3600.

### **Lodge a complaint**

<https://www.fireandemergency.nz/contact-us/complaints/>

### **Fire hazards**

- Complete [this online form](#)
- You can also call the Regulatory Compliance Group on 0800 336 942.

### **Local contacts for this plan**

Local contacts specific to this fire plan are included with the area information in this document.

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## Glossary

**4Rs** – Reducing risk, ensuring response readiness, providing emergency response and making coordinated efforts to enable recovery following an emergency.

**Build-up Index (BUI)** – A component of the Fire Weather System. This index shows the amount of fuel available for combustion, indicating how the fire will develop after the initial spread. It is calculated using the Duff Moisture and Drought Code.

**Duff Moisture Code (DMC)** – A numerical rating of the average moisture content of loosely compacted organic layers of moderate depth. This code gives an indication of fuel consumption in moderate duff layers and medium-size woody material.

**Firebreak** – A natural or artificial physical barrier against the spread of fire from or into any area of continuous flammable material – e.g., a track bulldozed clear of all vegetation.

**Fire control** – Preventing, detecting, controlling, and putting out fire, and protecting persons and property from fire.

**Fire control powers** – Our ability to legally require people to stop doing things that increase the risk of a fire – e.g. restricting where and when they can use fire, requiring vegetation to be removed to prevent the spread of fire, etc.

**Fire danger** – A rating of how difficult a fire will be to control once it starts – e.g. low to extreme: low being easy to contain, extreme very difficult to contain.

**Fire Danger Rating System** - A relative class denoting the potential rates of spread, or suppression difficulty for specific combinations of temperature, relative humidity, drought effects and wind speed, indicating the relative evaluation of fire danger.

**Fire environment** – The surrounding conditions, influences, and modifying forces of topography, fuel, and weather that determine fire behaviour.

**Fire hazard** – Vegetation or other thing on the land that Fire and Emergency reasonably considers likely to endanger persons or property by increasing the risk of the outbreak or spread of fire.

**Fire in open air** – Fire that isn't in a fireplace in a building or structure or isn't in something else that Fire and Emergency says is not in the open air.

**Fire risk conditions** - Weather or other conditions that will, or are likely to, endanger persons or property by increasing the risk of the outbreak or spread of fire.

**Fire seasons** – Period when we restrict or prohibit the use of fire in the open air. Areas that are not in a Restricted or Prohibited fire season are in an Open fire season. Can also refer to the October to May period when fires are more likely.

**Fire weather** – Weather conditions which influence fire ignition, behaviour and suppression.

**Fire Weather System** – Numerical values that indicate weather and fuel conditions that influence fire behaviour, which feeds into the Fire Danger Rating System.

**Grass curing (GC)** – A component of the Fire Weather System. Grass goes through a natural process where after flowering/seeding it changes colour as it dies off. This process is known as 'curing.' The degree of curing (%) is the portion of dead grass vs live. Dead grass allows fire to spread easily.

**Important Bird Areas (IBAs)** – Sites recognised as internationally important for bird conservation and known to support key bird species and other biodiversity. Legal protection, management and monitoring of these crucial sites are all important targets for action. Many bird species may be effectively conserved by these means.

**Land cover** – What covers the land – trees, grasslands, scrub, residential property.

**Land use** – How the land is used – e.g. primary production (farming), forestry, residential, industrial.

**Local area** – The area within the boundaries of a local advisory committee that are set in accordance with [section 16](#) of the Act.

**Primary production** – Livestock farming for dairy, meat and wool. Horticulture, including kiwifruit, apples, avocados, grapes for wine production, vegetables, arable and seed crops, other horticultural crops, cut flowers, and other animal products. Also includes forestry, but this is dealt with separately in fire plans.

**Public conservation land (PCL)** – Land used for conservation purposes, including National Parks and forest parks. Often managed by Department of Conservation or the regional council.

**Remote Automatic Weather Station (RAWS)** – Weather station that automatically provides the data used to determine weather and fuel conditions. Results are available from <https://fireweather.niwa.co.nz> and products such as Eco Connect.

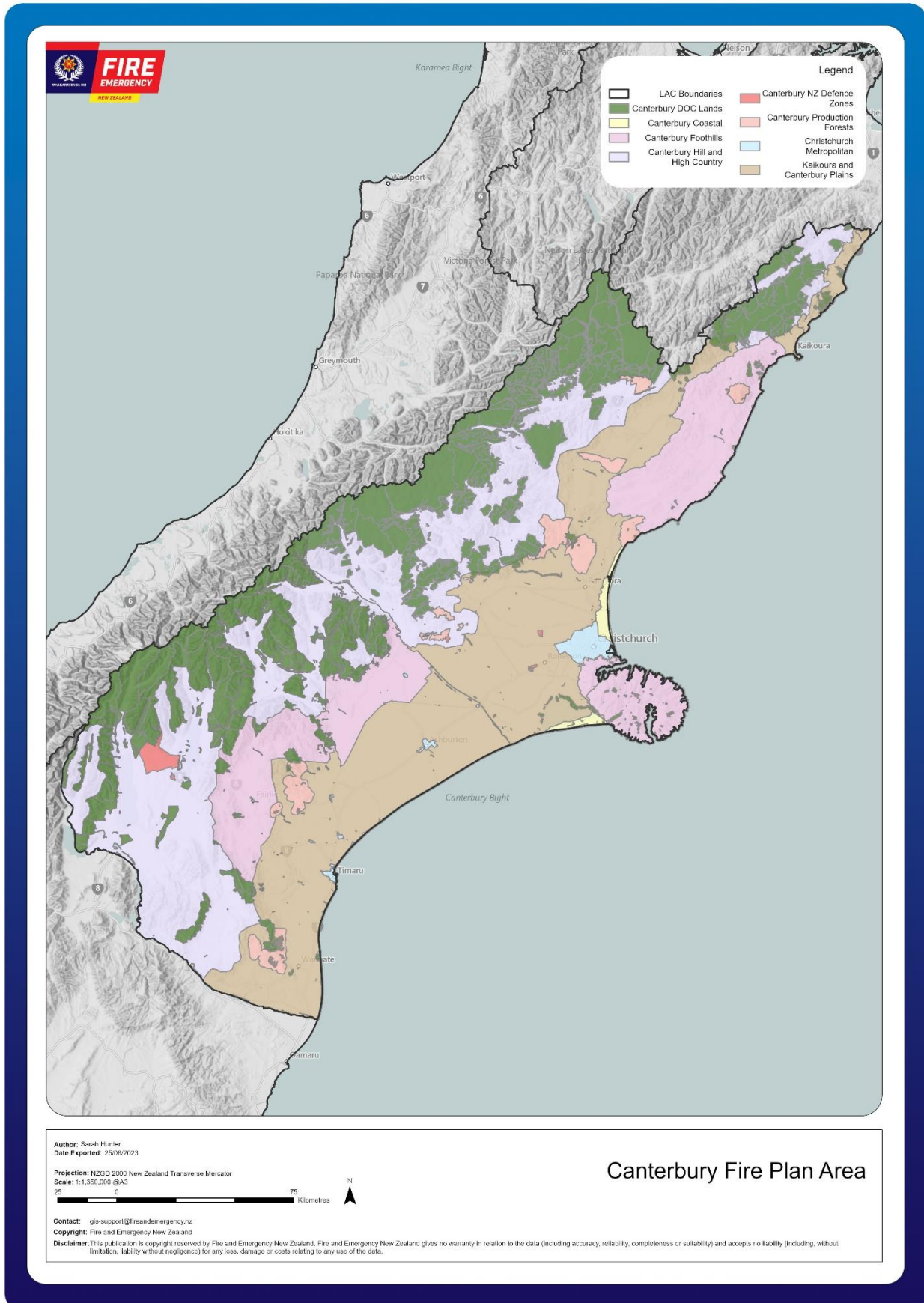
**Scientific Reserves** – Per the [Reserves Act 1977](#), the principal purpose of these reserves is the protection and preservation in perpetuity of areas for scientific study, research, education and the benefit of the country.

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## Canterbury information

This section contains the information specific to this fire plan area, including an overview of the area as a whole, and more detailed information for each of the zones within the area.





## Area overview

### Geography

The Canterbury local area encompasses the lands from Kekerengu north of Kaikōura, the Seaward Kaikōura, Range, west to the main divide at Mount Lyford Village, and follows the Southern Alps to the headwaters of the Waitaki catchments, before following the Waitaki River eastwards to the sea.

### Demographics

Demographics help us understand how our communities use fire, and the type of support they might need and how we communicate with them.

Across the Canterbury area, the estimated resident population (Statistics NZ, June 2020) is 645,900, making Canterbury the most populous region in the South Island and the second most populous area in New Zealand after Auckland. 82% of Canterbury's estimated resident population lives in Greater Christchurch, Waimakariri and Selwyn Districts. The population of Canterbury is estimated to grow by, on average, 1.0% per year between 2013 and 2043 (Statistics NZ).

Canterbury has a highly mobile population driven by seasonal work, school holidays and recreation trends. This movement represents a shifting risk profile throughout the year that needs attending with regards to emergency management.

The Canterbury area is administered by the following nine territorial authorities (TAs):

- [Christchurch City Council \(CCC\)](#)
- [Ashburton District Council](#)
- [Hurunui District Council](#)
- [Kaikōura District Council](#)
- [Mackenzie District Council](#)
- [Selwyn District Council](#)
- [Timaru District Council](#)
- [Waimakariri District Council](#)
- [Waimate District Council](#)

The highest populated centres throughout the nine TAs are:

- Christchurch City, CCC – population 400,300
- Timaru City, Timaru DC – population 25,900
- Ashburton, Ashburton DC – population 18,000
- Rolleston, Selwyn DC – population 16,300
- Rangiora, Waimakariri DC – population 20,000
- Kaiapoi, Waimakariri DC – population 11,800
- Lincoln, Selwyn DC – population 6,510
- Methven, Ashburton DC – population 1900
- Rakaia, Ashburton DC – population 1500
- Geraldine, Timaru DC – population 2800
- Temuka, Timaru DC – population 4,600
- Waimate, Waimate DC – population 8,240
- Kaikōura, Kaikōura DC – population 2,400
- Twizel, Mackenzie DC – population 1,455

## Zones

Because of the different fire risk conditions that exist in different parts of the fire plan area, the area is divided into a number of different fire season zones to allow for appropriate fire control measures to be applied locally:

- [Canterbury Hill and High Country](#)
- [Canterbury Foothills](#)
- [Kaikōura and Canterbury Plains](#)
- [Canterbury Coastal](#)
- [Canterbury Production Forests](#)
- [Canterbury Urban/Peri-Urban Interface Areas](#) (city and rural towns)
- [Public conservation land](#)
- [Canterbury New Zealand Defence Zones](#)

Each zone is described and its relevant trigger thresholds and other factors for changing fire seasons are listed in the [zone information](#).

## Frequency of elevated fire danger

| Weather station    | Days @ extreme last 20 years | Range of days/yr @ extreme | Days @ very high last 5 years | Range of days/yr @ very high |
|--------------------|------------------------------|----------------------------|-------------------------------|------------------------------|
| Motukarara         | 262                          | 8–16                       | 55                            | 1–15                         |
| Le Bons Bay        | 205                          | 6–11                       | 51                            | 1–3                          |
| Waihaorunga        | 217                          | 8–14                       | 62                            | 1–5                          |
| Tara Hills         | 244                          | 5–12                       | 85                            | 1–5                          |
| Cannington         | 198                          | 5–10                       | 72                            | 1–4                          |
| Pukaki Aero        | 216                          | 6–11                       | 78                            | 8–14                         |
| Tekapo             | 251                          | 6–13                       | 70                            | 1–6                          |
| Lees Valley        | 246                          | 8–14                       | 72                            | 1–5                          |
| Snowdon            | 209                          | 7–10                       | 59                            | 1–3                          |
| Balmoral           | 239                          | 6–13                       | 74                            | 1–4                          |
| Christchurch       | 250                          | 3–5                        | 61                            | 0–1                          |
| Timaru Coastal     |                              |                            |                               |                              |
| Timaru Aero        | 192                          | 5–8                        | 72                            | 1–3                          |
| Bottle Lake Forest | 180                          | 1–8                        | 64                            | 1–3                          |

## Fire history

The known fire history for this zone for wildfires or fires caused by activities regulated by our fire control powers includes:

| Year           | Fire              | Cause           |
|----------------|-------------------|-----------------|
| September 2023 | Pukaki Downs fire | Undetermined    |
| August 2020    | Pukaki Downs fire | Gas camp cooker |

|               |                                    |                                     |
|---------------|------------------------------------|-------------------------------------|
| January 2020  | Stanton Station fire               | Wind event, tree over powerlines    |
| August 2019   | Myers Pass fire                    | Escaped controlled burn             |
| 2019          | Porters Pass fire                  | Burning of stolen vehicle           |
| August 2019   | Wainui/Foveran Stations fire       | Escaped controlled burn             |
| 2019          | Broken River fire                  | Unknown                             |
| 2018          | Cornishmans Rise                   | Track grinding                      |
| 2017          | Broken River viaduct fire          | Train                               |
| 2017          | Port Hills fires                   | Unknown                             |
| August 2016   | Macaulay fire                      | Rubbish fire                        |
| July 2016     | Mount Studholme fire               | Firearm discharge                   |
| February 2016 | Mystery Lake fire                  | Motorcycle                          |
| 2016          | Hanmer fire – Gorge Bridge         | Sparks from machinery               |
| 2016          | Homebush fire                      | Escaped burn                        |
| 2015          | Craigieburn Cutting fire           | Undetermined                        |
| 2015          | Flock Hill fire                    | Exhaust sparks from tractor on road |
| 2011          | Staircase fire – Waimakariri River | Train                               |
| 2010          | Waimate fire                       | Wind event, tree over powerlines    |
| 2008          | Mount Cook Station fire            | Sparks from chainsaw                |
| 2006          | Bottle Lake fire                   | Suspected arson                     |
| 2004          | Dunsandel fire                     | Unknown                             |
| 2004          | Mount Somers fire                  | Unknown                             |
| 2001          | Slovens Creek rail fires           | Train                               |
| 2001          | Cora Lynn fire                     | Escaped burn                        |

### Historical plans and documents

Between 2006 and 2015 the Northern South Island Regional Rural Fire Committee embarked on an ambitious project to initially carry out a comprehensive wildfire threat analysis for the whole Canterbury Region, and then use the data from that analysis to create a set of strategic tactical fire management plans (STFMPs) for the region. This project was implemented as a means of complying with the National Rural Fire Authority's audit requirements with regard to identification of risk and achieving timely response to fires.

This multi-year project was undertaken by Canterbury Rural Fire Authority's permanent staff and contractors and was/is considered world leading in wildfire management.

These plans contain a wealth of relevant fire hazard and risk information, and a comprehensive list of actions to mitigate those risks. These documents should be considered alongside this fire plan.

**Local contacts**

Email: [firepermit.canterbury@fireandemergency.nz](mailto:firepermit.canterbury@fireandemergency.nz)

[firepermit.midsouthcanterbury@fireandemergency.nz](mailto:firepermit.midsouthcanterbury@fireandemergency.nz)

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DRAFT FOR  
CONSULTATION

## Schedule of stakeholders

This schedule of stakeholders includes those who should be involved in the creation of these fire plan and their amendments, or consulted before making use of the powers of section 52 of the Fire and Emergency New Zealand Act 2017, or notified when this happens.

| When we say...                 | What we mean is...   |
|--------------------------------|--|
| Consult while amending plan    | You will have the opportunity for input into the fire plan before it is released for public consultation. Can include workshops and other opportunities to contribute.<br><b>Note:</b> not all or any inputs are guaranteed to be used. Fire and Emergency New Zealand reserves the right to determine the best outcome for all communities. |
| Public consultation            | You will have the opportunity to comment during the 4-week public consultation period.   |
| Consult during decision making | The plan to change to a prohibited fire season or use section 52 will be discussed with you before it is implemented.  |
| Notify of decision             | You will be contacted directly when there is a change to a prohibited fire season, or when section 52 is implemented.  |
| Notify using public channels   | You will find out about the change in fire season etc. the same way as other members of the public.  |

## National-level stakeholders

Stakeholders who have an interest in this fire plan area but are managed at national level.

| Stakeholder                        | Fire plan development         | Fire plan amendment         | Changing fire season to prohibited | Section 52 fire prohibitions   | Section 52 restrictions/prohibitions on activities |
|------------------------------------|-------------------------------|-----------------------------|------------------------------------|--------------------------------|--|
| Department of Conservation         | Consulted while creating plan | Consult while amending plan | Consult during decision making     | Consult during decision making | Consult during decision making                     |
| New Zealand Defence Force          | Consulted while creating plan | Consult while amending plan | Consult during decision making     | Consult during decision making | Consult during decision making                     |
| Environmental Protection Authority | Consulted while creating plan | Consult while amending plan | Notify using public channels       | Notify using public channels   | Notify using public channels                       |

| Stakeholder   | Fire plan development         | Fire plan amendment         | Changing fire season to prohibited | Section 52 fire prohibitions   | Section 52 restrictions/prohibitions on activities |
|---|-------------------------------|-----------------------------|------------------------------------|--------------------------------|--|
| Federated Farmers NZ  | Public consultation           | Consult while amending plan | Consult during decision making     | Consult during decision making | Consult during decision making                     |
| Toitū Te Whenua – Land Information New Zealand  | Consulted while creating plan | Consult while amending plan | Notify using public channels       | Notify using public channels   | Notify using public channels                       |
| Taituarā - Local Government Professionals Aotearoa  | Consulted while creating plan | Consult while amending plan | Notify using public channels       | Notify using public channels   | Notify using public channels                       |
| Local Government New Zealand (LGNZ)   | Consulted while creating plan | Consult while amending plan | Notify using public channels       | Notify using public channels   | Notify using public channels                       |
| Forest Owners Association   | Consulted while creating plan | Consult while amending plan | Consult during decision making     | Consult during decision making | Consult during decision making                     |
| Ministry for Primary Industries <ul style="list-style-type: none"> <li>Te Uru Rākau New Zealand Forest Service</li> <li>Crown Forestry</li> </ul> | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision             | Consult during decision making                     |
| NZ Farm Forestry Association  | Public consultation           | Consult while amending plan | Consult during decision making     | Consult during decision making | Consult during decision making                     |
| Te Puni Kōkiri  | Public consultation           | Consult while amending plan | Notify using public channels       | Notify using public channels   | Notify using public channels                       |
| Ngā Whenua Rāhui  | Public consultation           | Consult while amending plan | Notify using public channels       | Notify using public channels   | Notify using public channels                       |
| Waka Kotahi NZ Transport Agency   | Public consultation           | Consult while amending plan | Notify using public channels       | Notify using public channels   | Consult during decision making                     |
| Nga Pirihimana O Aotearoa New Zealand Police  | Public consultation           | Public consultation         | Notify of decision                 | Notify using public channels   | Notify using public channels                       |

If your organisation should be involved in fire plans at a national level, please contact us.

## Area-level and zone-level stakeholders

This list is for stakeholders who have an interest in the fire plan area or in specific zones. Fire and Emergency undertakes to consult as indicated for each zone's stakeholders.

| Stakeholder  | Fire plan development         | Fire plan amendment         | Changing fire season to prohibited | Section 52 fire prohibitions | Section 52 restrictions/prohibitions on activities |
|--|-------------------------------|-----------------------------|------------------------------------|------------------------------|--|
| Department of Conservation                           | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| NZ Defence Force – Burnham, West Melton, Lake Tekapo | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Consult during decision making                     |
| Te Rūnanga o Ngāi Tahu                               | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Te Rūnanga o Arowhenua                               | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Environment Canterbury                               | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Ashburton District Council                           | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Christchurch City Council                            | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Hurunui District Council                             | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Kaikōura District Council                            | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Mackenzie District Council                           | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Selwyn District Council                              | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |



| Stakeholder                  | Fire plan development         | Fire plan amendment         | Changing fire season to prohibited | Section 52 fire prohibitions | Section 52 restrictions/prohibitions on activities |
|------------------------------|-------------------------------|-----------------------------|------------------------------------|------------------------------|--|
| Timaru District Council      | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Waimakariri District Council | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Waimate District Council     | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Farm Forestry Association    | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Port Blakely Ltd             | Consulted while creating plan | Consult while amending plan | Consult during decision making     | Notify of decision           | Notify of decision                                 |
| Rayonier Matariki Forests    | Consulted while creating plan | Consult while amending plan | Consult during decision making     | Notify of decision           | Notify of decision                                 |
| New Zealand Redwood Company  | Consulted while creating plan | Consult while amending plan | Consult during decision making     | Notify of decision           | Notify of decision                                 |
| Te Uru Rākau Forestry NZ     | Consulted while creating plan | Consult while amending plan | Consult during decision making     | Notify of decision           | Notify of decision                                 |
| Federated Farmers            | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Alpine Energy                | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| EA Networks (Ashburton)      | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Genesis Energy               | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |

| Stakeholder                     | Fire plan development         | Fire plan amendment         | Changing fire season to prohibited | Section 52 fire prohibitions | Section 52 restrictions/prohibitions on activities |
|---------------------------------|-------------------------------|-----------------------------|------------------------------------|------------------------------|--|
| MainPower                       | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Meridian Energy                 | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Orion                           | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Transpower                      | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Waka Kotahi NZ Transport Agency | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| KiwiRail                        | Consulted while creating plan | Consult while amending plan | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Lyttelton Port Company          | Public consultation           | Public consultation         | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Timaru Port Company             | Public consultation           | Public consultation         | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Christchurch Airport Company    | Public consultation           | Public consultation         | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Timaru Airport                  | Public consultation           | Public consultation         | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Ministry for Primary Industries | Public consultation           | Public consultation         | Notify of decision                 | Notify of decision           | Notify of decision                                 |
| Te Tau Ihu                      | Public consultation           | Public consultation         | Notify via public channels         | Notify via public channels   | Notify via public channels                         |
| Public                          | Public consultation           | Public consultation         | Notify via public channels         | Notify via public channels   | Notify via public channels                         |

If your organisation should be involved in fire plans and has an interest across the whole fire plan area or in a specific zone, please contact us about being added to this list.

## Zone Information

### Canterbury Hill and High Country

#### Geography

Apart from the rugged and mountainous Seaward Kaikōura Range at 2600 m, this zone is predominated by the high mountain lands adjacent to, and including the Southern Alps where Aoraki Mount Cook lies – the highest mountain in New Zealand. As this area is in close proximity to the Southern Alps, it experiences the Foehn winds which drive most of our high fire danger days.

Dry eastern beech forests predominate in the middle and north (mountain, black, hard and silver beech) with some unique stands of mountain podocarp forest of tōtara, mataī, rimu and some cedar. Further south within this zone tussock grasslands and shrublands dominate, with mixed broadleaf/podocarp forest common in the higher rainfall areas nearer the Main Divide.

Extensive tussock grasslands are also a significant feature in valley floor and above tree line environments.

#### Demographics

At Fire and Emergency New Zealand, we have an in-depth knowledge of the demographics for each of the communities we serve. These demographics help us to understand the type of support each of our communities might need and how we communicate with them.

We use this knowledge in all aspects of our work, including our delivery of the 4Rs of emergency management and for fire control measures, such as declaring the beginning and end of fire seasons, prohibiting and restricting the use of fire, and issuing fire permits.

There is a low population within this zone, with mostly high-country stations with some tourist lodges. However, seasonally there are pockets of higher population, mainly based around recreational opportunities, and are relevant to the activities available, e.g. skiing, boating, windsurfing, New Year's Eve celebrations. Significant populated areas are:

- Twizel, Mackenzie District – population 1,455
- Mackenzie Lakes, Mackenzie District – population 1,182
- Hanmer Springs, Hurunui District – population 960

Additional to these permanent populations there are other smaller communities of more transient populations, particularly at Mt Lyford, Castle Hill and Lake Clearwater.

#### Climate/weather

Westerly driven weather systems predominate, with often extremely high rainfall and high winds at the divide, and then ever lessening precipitation spill to the east.

Snowfall occurs quite frequently in Western Canterbury with mountain terrain receiving snowfall in late autumn through to early summer, but potentially at any time of the year.

'Dry spell' occurrence is common in the high country when persistent blocking anticyclones (high pressure system) become established over the South Island – Lake Tekapo, for example, where they have had the longest dry spell of 49 days recorded on three separate occasions (NIWA – National Institute of Water and Atmospheric Research). Frost curing, where plant moisture is sublimated away from all finer foliage plants such as grasses and shrubs in sub-zero temperatures,

creates fuels with very low moisture contents which are receptive to fire. With low winter relative humidity, extreme fire behaviour is not uncommon in winter high country wildfires.

#### Land cover/ land use

- Public conservation lands (DOC) lands (including National Parks at Aoraki and Arthur's Pass), indigenous forests, grasslands and at higher altitude – alpine tussocks and herb fields
- High country pastoral farming
- Tourism activities such as scenic flights, climbing, tramping, skiing, hunting and fishing.

#### Industry

| Industry               | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|------------------------|---|--|--|
| Tourism                | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Sheep and beef farming | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |

#### Lifeline utilities/other infrastructure

| Lifeline utility/ other infrastructure  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|---|---|--|--|
| The Midland Rail line is the prime heavy freight mover (other than trucking) to the Coast (and return) with coal.                   | <input checked="" type="checkbox"/>                           | <input type="checkbox"/>                 | <input type="checkbox"/>                             |
| The main north-west power infrastructure runs NW across this zone at Hanmer/Clarence.   | <input checked="" type="checkbox"/>                           | <input type="checkbox"/>                 | <input type="checkbox"/>                             |
| Power generation infrastructure is in this zone as well: Lake Coleridge, Lake Tekapo, Pukaki, Ōhau and Benmore hydro schemes/canals | <input checked="" type="checkbox"/>                           | <input type="checkbox"/>                 | <input type="checkbox"/>                             |
| Local airfields (Lake Tekapo, Pukaki and Mount Cook) for tourism and recreation purposes  | <input checked="" type="checkbox"/>                           | <input type="checkbox"/>                 | <input type="checkbox"/>                             |

#### Recreational locations

- Craigieburn Forest Park
- Korowai/Torlesse Tussocklands Park
- Hakatere Conservation Park
- Medbury Reserve
- Arthur's Pass National Park
- Mount Cook National Park

- Lake Tennyson bogland endemics
- Rakaia cedar forests
- Public conservation land

### Cultural and recreational activities and events

Tangata whenua have very strong ties to their whenua (land) and culture, and value being able to use their whenua without unnecessary restrictions.

We will consult with tangata whenua and consider the needs of iwi when making decisions about implementing restrictions or prohibitions with our fire control powers. The relevant iwi for this zone are listed as stakeholders.

Large scale events that might be cancelled because a restriction on activities can have a significant economic impact.

Restrictions or prohibitions on fire hazardous activities should not impose any unreasonable restrictions on people living and enjoying recreational activities in this zone.

The Canterbury Hill and High Country zone experience a vast influx of transient population, particularly during holiday periods.

Recreational activities/locations that could be affected directly or indirectly by Fire and Emergency exercising its fire control powers include (but are not limited to):

| Cultural and recreational activities and events                                      | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using of fire control measures |
|--|---|--|---|
| Mackenzie Highland A&P show (Easter)   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                                |
| Twizel Salmon and Wine Festival (February)   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                                |
| Numerous adventure races, multi-sport challenges, running and cycle races            | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                                |
| Maadi Cup – rowing on Lake Ruataniwha (biannually, October - March)                  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                                |
| Local fireworks events   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                                |
| Parks, trails and camping grounds  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                                |
| Motorsport including (but not limited to): 4-wheel-driving, jet boating, motor-cross | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                                |
| Matariki cultural celebrations   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                                |
| Hill and high county tourism activities  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                                |

Two sections of the Alps to Ocean Cycle Trail are included in this zone (including a 10 km section from Jollie River – Chop Creek/Tasman Point, and the 8 km section along the Lake Pukaki foreshore), the Coast-to-Coast multi-sport event and the

Calvalcade all pass through areas of high fire danger. Sections of these trails/routes are likely to be closed in the event of a fire in the vicinity.

### Special risk areas

| Special risk area               | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using of fire control measures |
|---------------------------------|---|--|---|
| Public Conservation Land        | <input type="checkbox"/>                                      | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                     |
| Historic & archaeological sites | <input type="checkbox"/>                                      | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                     |

Public conservation land / DOC lands maintain a restricted fire season 365 days a year unless moved to prohibited (refer to [Public conservation land](#) below).

### Known fire hazards

Build-up of fuel:

- Pastoral lease land that has been surrendered to the Crown through Tenure Review and is no longer grazed, resulting in increased fuel loadings
- Wilding tree infestations – notably in the Craigieburn, Hanmer Springs
- Mackenzie basins and red and tall tussock grasslands, i.e. the Mackenzie Country

**Note:** There are no long-term fire hazards listed in this zone in the Fire Hazard Removal Case Management System.

### Frequency of elevated fire danger

On average, this zone experiences:

- 10 days per year of extreme fire danger
- 3 days per year of very high fire danger

| Weather station | Days @ extreme last 20-24 years | Range of days/yr @ Extreme | Days @ very high last 20-24 years | Range of days/yr @ very high |
|-----------------|---------------------------------|----------------------------|-----------------------------------|------------------------------|
| Pukaki Aero     | 216                             | 6 - 11                     | 78                                | 8 – 14                       |
| Tekapo          | 251                             | 6 - 13                     | 70                                | 1 - 6                        |
| Lees Valley     | 246                             | 8 - 14                     | 72                                | 1 - 5                        |

### Fire history

The known fire history for this zone for significant wildfires or fires caused by activities regulated by our fire control powers includes:

| Year        | Fire                     | Cause                       |
|-------------|--------------------------|-----------------------------|
| August 2020 | Pukaki Downs fire        | Gas camp cooker             |
| August 2016 | Macaulay fire            | Rubbish fire                |
| 2015        | Flock Hill fire          | Sparks from exhaust on road |
| 2001        | Slovens Creek rail fires | Rail                        |
| 2001        | Cora Lynn fire           | Escaped burn                |

### Predominant fuel type

The predominant fuel type in this zone is mixed grass, scrub, native forest.

## Thresholds

### Fire seasons

Build-up Index and the degree of grass curing (GC%) are the most relevant fire weather indices to monitor where there is a mixture of forestry and grasslands as the predominant fuel types.

| Grass Curing (GC%)<br>(%) | Build Up Index (BUI) |            |            |
|---------------------------|----------------------|------------|------------|
|                           | 0–40                 | 40–60      | >80        |
| 0–50                      | Open                 | Open       | Restricted |
| 50–80                     | Open                 | Restricted | Prohibited |
| >80                       | Restricted           | Restricted | Prohibited |

### Interpreting this matrix:

|                       |  |
|-----------------------|--|
| Open                  | Open fire season   |
| Open/Restricted       | Open fire season but we may move to a restricted season earlier if forecast conditions support this.   |
| Restricted            | Restricted fire season   |
| Restricted/prohibited | Restricted Fire Season but we may move to a prohibited season earlier if forecast conditions support this or stay in a prohibited season longer if grasses remain dry and cured. |
| Prohibited            | Prohibited fire season   |

### Prohibition on fires in open air (section 52)

We can use the same Fire Weather System trigger thresholds for prohibiting fires in the open air under section 52 as we do for changing to a prohibited fire season but use section 52 when the fire risk conditions are not expected to last long enough to make changing to a prohibited fire season practical.

Other local thresholds have not been set.

### Prohibitions or restrictions on activities (section 52)

Localised trigger thresholds for applying section 52 to activities have not yet been developed, however there are some local mitigations used to reduce the need to implement it.

Advice is available through Checkitsalright.nz for when to avoid certain activities that may be of risk for causing a wildfire. Noting these are voluntary restrictions – it is envisaged the majority of public will follow this. Where there is an elevated risk or public are not following this advice, imposing prohibitions or restrictions on activities is a tool available to us.

Where practicable we will endeavour to consult with partners and stakeholders on the effects of restrictions and prohibitions before implementing them. For example, Department of Conservation will want a more cautious approach to managing some sites of high value such as Medbury Reserve, and high-use areas such as Godley Head – despite perhaps what fire indices might indicate.

### Forestry operations

We have historically consulted with all the relevant forestry companies to ensure that they are aware of the triggers and mitigations and have worked closely with them to develop these (see [Appendix 1](#)). We intend to continue to liaise with these companies to further develop the triggers due to the changing nature of our climate.



### Roadside mowing

Some roadside mowing contractors are aware of the hot work fire weather indices available on [www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz) and monitor them during high fire danger times. They will generally cease roadside mowing when conditions get extreme. We intend to work with relevant agencies, such as Waka Kotahi NZTA and local councils, so that their contractors used for roadside moving are fully aware of the hot work fire weather indices.

### On farm harvesting, haymaking and cultivation practices

We will consult with Federated Farmers through the Land Management Forum to determine our approach to these fire measures, the use of machinery and equipment during high fire danger periods and the potential effect on local landowners.

### Hot works

Hot works activities are managed through the fire permitting system. Local councils are also consulted. (see [Appendix 2](#)).

### Powerline auto-reclosers

Historically Christchurch City Council have had arrangements with Orion to turn off the auto-reclosers once a restricted fire season was imposed. Fire and Emergency has also consulted with Alpine Energy, MainPower and Electricity Ashburton, and intend to consult with all power suppliers, (some of whom have already progressed protocols for fire safety actions).

There is guidance on the NIWA fire weather system ([www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz)) which identifies the daily and forecast risk associated with powerline activities which electricity distribution agencies (EDA) can use to manage daily operations (see [Appendix 3](#)).

### Rail

KiwiRail are currently working collaboratively with Fire and Emergency to develop a KiwiRail National Fire Mitigation Plan. The plan will include an all-of-business approach. This includes track maintenance, locomotives servicing and maintenance - including the locomotive exhaust systems. The business will monitor the fire weather index system / fire dangers and carry out vegetation management with enhanced vegetation control nationally and throughout the district. Once this plan is completed it will become an appendix to this fire plan.

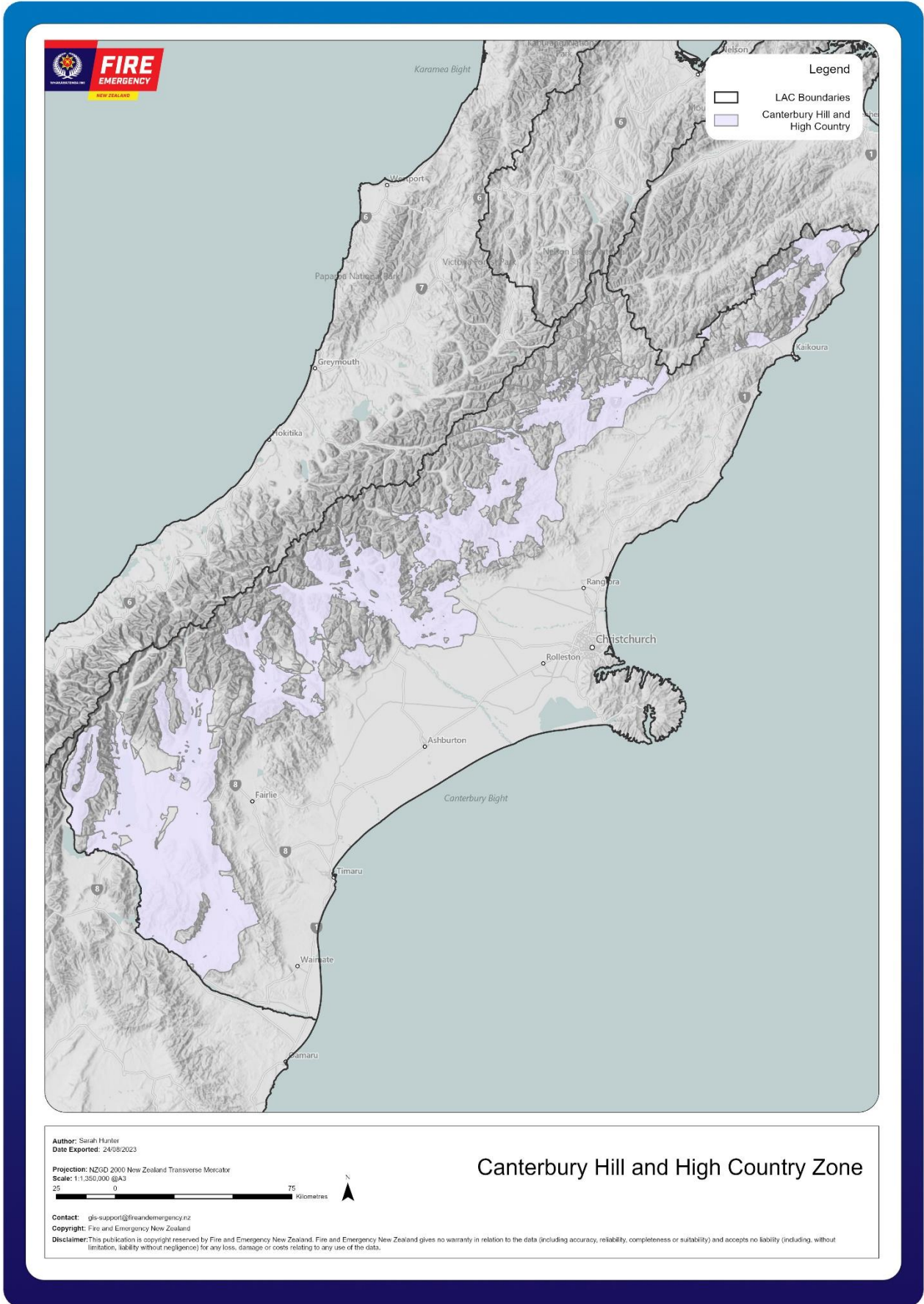
#### Representative Remote Automated Weather Stations

The Remote Access Weather Stations (RAWS) used to determine whether we have reached the trigger thresholds are:

|                |             |                                       |
|----------------|-------------|---------------------------------------|
| Upper Clarence | Hanmer      | Lees Valley                           |
| Cass           | Glenaan     | Hakatere                              |
| Mesopotamia    | Pukaki aero | Tekapo                                |
| Cattle Creek   | Glentanner  | Otematata (used for boundary weather) |

We will consider the forecast for these locations when declaring or revoking a fire season.

### Canterbury Hill and High-Country Zone Map



## Canterbury Foothills

### Geography

The location of the Canterbury Foothills marks the transition zone from the flat Canterbury Plains, low hills to the adjacent topographically higher mountains/Southern Alps mountain range.

The foothills rise gently from the plains at 150–200 metres and begin at around 350–400 metres.

Frequently, foothills consist of alluvial fans, combined mass alluvial fans and sharp eroded hilly slopes.

### Demographics

Demographics help us understand how our communities use fire, and the type of support they might need and how we communicate with them.

This zone has a medium population with numerous small service towns for primary production and high-country communities.

Highest populated areas in this zone are:

- Loburn, Waimakariri District – population 2,175
- Methven, Ashburton District – population 1,779
- Geraldine, Timaru District – population 2,800
- Waimate, Waimate District – population 8,200

### Climate/weather

Orographic influences (the position and formation of mountains and hills) creating a Foehn effect on the weather in Canterbury are very strong.

Westerly airflows bring rainfall/cloudiness along the Main Divide, but reduced rainfall and increased sunshine hours further east. Conversely, an easterly airflow often results in rainfall and cloudiness along the plains and coast but reduced rainfall and sunshine hours further west towards the Main Divide.

The Foothills and Hill and High-Country areas of Canterbury are most likely to experience a high frequency of strong gusty winds, given their proximity to mountain ranges.

Mean rainfall is 1100 mm per annum.

### Land cover/ land use

- Conservation lands through Tenure Review (providing easement access to higher altitudes), pockets of indigenous forests, grasslands and at higher altitude, alpine tussocks and herbs.
- The Foothills primary production includes intensive and semi-intensive farming. There are deer, sheep and cattle (both beef and dairy) farms on the hills and flats and forestry blocks (commercial and private) throughout.
- Tourism activities such as lodge accommodation, walking, tramping, skiing, hunting, mountain biking, boating and fishing. A significant number of local residents also use these areas for recreation.

**Industry**

| Industry   | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|--|---|--|--|
| Primary production (on farm fires for rubbish disposal, crop residue burning, land clearing) | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Tourism (campfires, lack of understanding of local fire risk)                                | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Roadside mowing and hot works  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Forestry hot works, chainsaws  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |

**Lifeline utilities/other infrastructure**

| Lifeline utility/ other infrastructure   | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|--|---|--|--|
| Transpower national grid/substations (arcing and short circuits during wind events)                                  | <input checked="" type="checkbox"/>                           | <input type="checkbox"/>                 | <input type="checkbox"/>                             |
| SH inland road bridge systems across braided river gorges (Waiau, Waimakariri, Rakaia, Rangitata and Waitaki Rivers) | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |

**Recreational locations**

The Canterbury Foothills zone is well known as an outdoor playground where both locals and holidaymakers can experience a range of recreational activities.

Ashley Forest, Mount Grey, Mount Thomas, and the Okuku Pass areas are restricted to hunters.

**Cultural and recreational activities and events**

| Cultural and recreational activities and events  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|--|---|--|--|
| Numerous adventure races, multi-sport challenges, running and cycle races  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Fireworks <ul style="list-style-type: none"> <li>• Use may be prohibited during high fire danger</li> <li>• Pyrotechnics managed by other approvals</li> </ul> | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |
| Hunting blocks, conservation parks and camping grounds   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |

|  |                                     |                                     |                                     |
|--|-------------------------------------|-------------------------------------|-------------------------------------|
| <ul style="list-style-type: none"> <li>campfires, gas cookers, barbecues</li> </ul>  |                                     |                                     |                                     |
| Motorsport including (but not limited to): 4-wheel-driving, jet boating, motor-cross, rally driving <ul style="list-style-type: none"> <li>hot exhausts, exhaust sparks, fuel spills, crashes</li> </ul> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Matariki cultural celebrations   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Maraes (use of hāngī)  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Field days, rodeos and A&P shows   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

**Special risk areas**

| Special risk area   | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|---|---|--|--|
| Fire and Emergency has a continuous Restricted Fire Season within 1 km of Geraldine and Waimate Forests <ul style="list-style-type: none"> <li>on farm fires for crop residue burning, rubbish disposal or land clearing</li> </ul> | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Public conservation lands <ul style="list-style-type: none"> <li>campfires, gas cookers, barbecues, recreational vehicles</li> </ul>  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |

Public conservation land / DOC lands are in a restricted fire season 365 days a year unless moved to prohibited (refer to the zone information for [public conservation land](#)). It is likely at certain times of the year that the fire season status on public conservation land may vary from that for the rest of the zone.

**Known fire hazards** There are no long-term fire hazards listed in this zone in the Fire Hazard Removal Case Management System.

**Frequency of elevated fire danger**

| Weather station | Days @ extreme last 20-24 yrs | Range of days/yr @ Extreme | Days @ very high last 20-24 yrs | Range of days/yr @ very high |
|-----------------|-------------------------------|----------------------------|---------------------------------|------------------------------|
| <b>Snowdon</b>  | 209                           | 7 - 10                     | 59                              | 1 - 3                        |

**Fire history**

The known fire history for this zone for significant wildfires or fires caused by activities regulated by our fire control powers includes:

| Year | Fire          | Cause        |
|------|---------------|--------------|
| 2016 | Homebush fire | Escaped burn |

**Predominant fuel type**

The predominant fuel type in this zone is mixed grass and scrub small plantation and shelter belts, and during summer, some cereal and other crops.

**Thresholds****Fire seasons**

Build-up Index and the degree of grass curing (GC%) are the most relevant fire weather indices to monitor where there is a mixture of forestry and grasslands as the predominant fuel types.

| Grass Curing (GC%) | Build Up Index (BUI)  |                 |                       |
|--------------------|-----------------------|-----------------|-----------------------|
|                    | (%)                   | 0–40            | 40–80                 |
| 0–50               | Open                  | Open/Restricted | Restricted/Prohibited |
| 50–70              | Open/Restricted       | Restricted      | Prohibited            |
| >70                | Restricted/Prohibited | Prohibited      | Prohibited            |

**Interpreting this matrix**

|                       |  |
|-----------------------|--|
| Open                  | Open fire season   |
| Open/Restricted       | Open fire season but we may move to a restricted season earlier if forecast conditions support this.   |
| Restricted            | Restricted fire season   |
| Restricted/prohibited | Restricted Fire Season but we may move to a prohibited season earlier if forecast conditions support this or stay in a prohibited season longer if grasses remain dry and cured. |
| Prohibited            | Prohibited fire season   |

**Prohibition on fires in open air (section 52)**

We can use the same Fire Weather System trigger thresholds for prohibiting fires in the open air under section 52 as we do for changing to a prohibited fire season but use section 52 when the fire risk conditions are not expected to last long enough to make changing to a prohibited fire season practical.

Other local thresholds have not been set.

**Prohibitions or restrictions on activities (section 52)**

Localised trigger thresholds for applying section 52 to activities have not yet been developed, however there are some local mitigations used to reduce the need to implement it.

Where practicable we will endeavour to consult with partners and stakeholders on the effects of restrictions and prohibitions before implementing them. For example, Department of Conservation will want a more cautious approach to managing some sites of high value such as Medbury Reserve, and high-use areas such as Godley Head – despite perhaps what fire indices might indicate.

**Forestry operations**

We have historically consulted with all the relevant forestry companies to ensure that they are aware of the triggers and mitigations and have worked closely with them to develop these (see [Appendix 1](#)). We intend to continue to liaise with these



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companies to further develop the triggers due to the changing nature of our climate.

### **Roadside mowing**

Some roadside mowing contractors are aware of the hot work fire weather indices available on [www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz) and monitor them during high fire danger times. They will generally cease roadside mowing when conditions get extreme. We intend to work with relevant agencies, such as NZTA and local councils, so that their contractors used for roadside moving are fully aware of the hot work fire weather indices.

### **On farm harvesting, haymaking and cultivation practices**

We will consult with Federated Farmers through the Land Management Forum to determine our approach to these fire measures, the use of machinery and equipment during high fire danger periods and the potential effect on local landowners.

### **Hot works**

Hot works activities are managed through the fire permitting system. Local councils are also consulted. (see [Appendix 2](#)).

### **Powerline auto-reclosers**

Historically Christchurch City Council have had arrangements with Orion to turn off the auto-reclosers once a restricted fire season was imposed. MainPower was also consulted and an auto-recloser protocol agreed to. We have also consulted with Alpine Energy, MainPower and Electricity Ashburton, and intend to consult with all power suppliers going forward.

There is guidance on the NIWA fire weather system ([www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz)) which identifies the daily and forecast risk associated with powerline activities which electricity distribution agencies (EDA) can use to manage daily operations (see [Appendix 3](#)).

### **Rail**

KiwiRail are currently working collaboratively with Fire and Emergency to develop a KiwiRail National Fire Mitigation Plan.

The plan will include an all-of-business approach. This includes track maintenance, locomotives servicing and maintenance – including the locomotive exhaust systems. The business will monitor the fire weather index system / fire dangers and carry out vegetation management with enhanced vegetation control nationally and throughout the district.

Once this plan is completed it will become an appendix to this fire plan.

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**Representative  
remote automated  
weather stations**

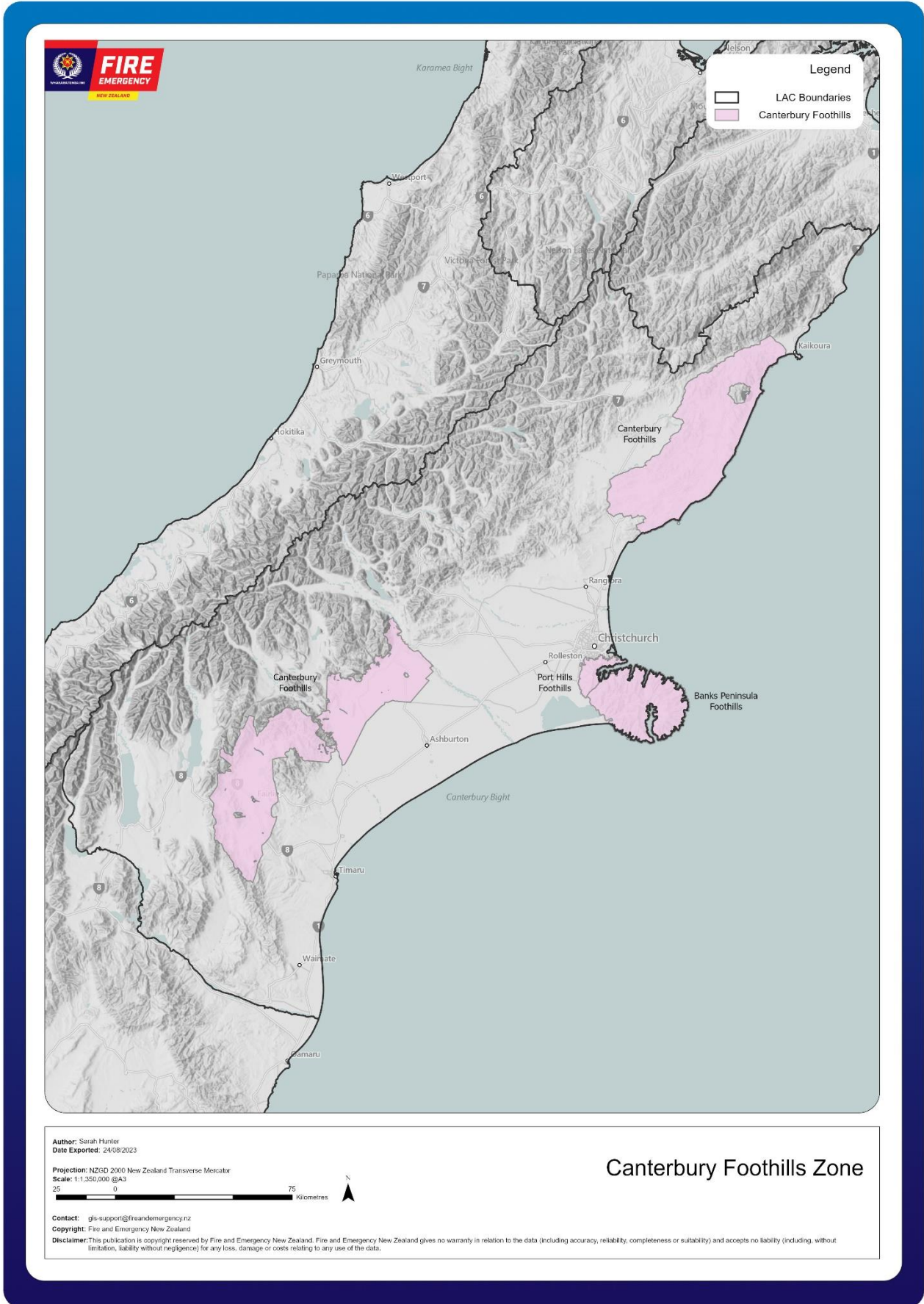
The Remote Automated Weather Stations (RAWS) used to determine whether trigger thresholds have been reached are:

|                     |              |              |
|---------------------|--------------|--------------|
| Cheviot             | Te Oka       | Snowdon      |
| Omihi               | Mount Somers | Oxford 2     |
| Early Valley        | Albury       | Clayton      |
| Panama Rd (Le Bons) | Hundalees    | Greta Valley |
| Island Hills        | Motukarara   | Godley Head  |
| Glenveigh           |              |              |

We will consider the forecasts for these locations when declaring or revoking a fire season.

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# Canterbury Foothills Zone Map



## Kaikōura and Canterbury Plains

### Geography

The Canterbury Plains extend from Waimate to Waipara and were formed from moraine gravels deposited during glacial periods approximately 10,000 to 3 million years ago. The alluvial gravels were then reworked as shingle fans on several of the larger rivers, notably the Waimakariri, the Rakaia, the Selwyn, and the Rangitata.

A major earthquake on 4 September 2010 revealed a previously unknown geological fault beneath the Canterbury Plains and created a surface rift that offset features by as much as four metres in places.

### Demographics

Demographics help us understand how our communities use fire, and the type of support they might need and how we communicate with them.

Most of the population of Canterbury Plains lives in a series of large and small towns arranged northeast to southwest along the plains, connected by State Highway 1 and the Main South railway line.

### Climate/weather

- Heavily influenced by the Southern Alps, which create disturbed pressure and westerly airflow patterns over the terrain.
- Westerly airflows bring rainfall/cloudiness along the Main Divide, but reduced rainfall and increased sunshine hours further east. Conversely, an easterly airflow often results in rainfall and cloudiness along the plains and coast. Strong diurnal variation in wind strength is complicated by a cool sea breeze – resulting in higher wind speed mid-afternoon before decreasing overnight.
- The land is suitable for moderately intensive livestock primary production, but is prone to droughts, especially when the prevailing wind comes from the northwest. At these times, the weather phenomenon known as the Nor'west arch can be seen across much of the plains, signalling the imminent onset of Nor-West winds.
- The Main Divide of the Southern Alps – acting as the barrier to prevailing westerlies, can have an extreme effect on the Canterbury climate – for example, the Canterbury nor 'wester bringing strong, hot, dry winds which can play a major role in intermittent drought when there is reduced rainfall and North West wind days under these conditions. Temperatures can reach 30°C in summer during these hot dry periods.
- The average rainfall for this zone is at least 750 mm.

### Land cover/ land use

Modified into pasture, cropping and dairy production which is increasing. Viticulture is popular in some South Canterbury plain areas, but more predominantly in North Canterbury.

### Industry

| Industry  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|---|---|--|--|
| Primary production, including horticulture and agriculture <ul style="list-style-type: none"> <li>• use of machinery – sparks</li> <li>• use of fire for land management</li> </ul> | ☒   | ☒  | ☒  |

|  |   |  |  |
|--|---|--|--|
| <ul style="list-style-type: none"> <li>relevant operations affected</li> </ul>   |   |  |  |
| <b>Industry</b>  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
| Tourism and recreation <ul style="list-style-type: none"> <li>People unfamiliar with local fire risk and rules</li> <li>Access to locations may be restricted</li> </ul> | ☒   | ☒  | ☒  |

There is much arable farming in this zone, and it is common practice to burn the crop residue from cereal production. This results in several thousand controlled stubble burn-offs each summer/autumn, with the inherent possibility of fire escape.

These are located mainly on the edges of rural communities but are also located in isolated areas which may mean a delayed Fire and Emergency response.

In many of these isolated areas, limited water supplies are prioritised against the need for domestic potable water and stock water, possibly ahead of other uses (including firefighting).

#### Lifeline utilities/other infrastructure

| Lifeline utility/ other infrastructure  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|---|---|--|--|
| Emergency services communications equipment <ul style="list-style-type: none"> <li>protect by applying controls to surrounding areas</li> </ul>   | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | ☒  |
| Road and rail links including State Highways, roading infrastructure including multiple bridges over the main rivers <ul style="list-style-type: none"> <li>roadside mowing, roading associated hot works, exhaust stack sparks and brake/wheel bearing failures</li> </ul> | ☒   | ☒  | ☒  |
| Telecommunications networks <ul style="list-style-type: none"> <li>protect by applying controls to surrounding areas</li> </ul>   | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | ☒  |
| Electricity transmission lines <ul style="list-style-type: none"> <li>Sparking during high winds</li> </ul>   | ☒   | ☒  | <input type="checkbox"/>                             |

|  |                          |                          |                                     |
|--|--------------------------|--------------------------|-------------------------------------|
| <ul style="list-style-type: none"> <li>• Use of auto-reclosers limited in high fire danger</li> <li>• Recommended vegetation mitigation practices</li> </ul> |                          |                          |                                     |
| Marae  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Irrigation water schemes <ul style="list-style-type: none"> <li>• Protect by applying controls to surrounding areas</li> </ul>                               | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

### Recreational locations

The Canterbury plains zone is well known for its recreational activities. A lot of these activities are either in or on the edge of towns, with other activities being more widespread and isolated across the zone.

Freedom camping is allowed in Canterbury, which is popular amongst residents and visitors, and can generate issues concerning fire control.

### Cultural and recreational activities and events

Tangata whenua have very strong ties to their whenua (land) and culture, and value being able to use their whenua without unnecessary restrictions.

We will consult with tangata whenua and consider the needs of iwi when making decisions about implementing restrictions or prohibitions with our fire control powers. The relevant iwi for this zone are listed as stakeholders.

Large scale events that might be cancelled because a restriction on activities can have a significant economic impact.

Placing restrictions or prohibitions on fire hazardous activities should not impose any unreasonable restrictions on people living and enjoying recreational activities in this zone.

Across this zone, public events and cultural activities are popular with communities, including iwi and the diverse migrant/ethnic communities. Fire and Emergency work closely with territorial authorities and other event organisers to assist with fire control at e.g. Matariki cultural celebrations, field days, A&P shows.

| Cultural and recreational activities and events   | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|---|---|--|--|
| Matariki cultural celebrations  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |
| Field days (machinery)  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |
| A&P shows (machinery)   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |
| Fireworks (Use may be prohibited during high fire danger)<br>Pyrotechnics managed through other approvals | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |

**Special risk areas**

| Special risk area  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|--|---|--|--|
| Public conservation lands (campfires, gas cookers, barbecues, recreational vehicles) | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Cultural heritage areas  | <input type="checkbox"/>                                      | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |

Public conservation land / DOC lands are in a restricted fire season 365 days a year unless moved to prohibited (refer to [public conservation land zone information](#)). It is likely at certain times of the year that the fire season status on public conservation land may vary from that for the rest of the zone.

Across the plains zone, there are several different vegetation fuel types and there is an area of continuous fuel types such as cropping, etc.

Where the plains natural environment meets the built interface, areas could be affected by fire control.

**Known fire hazards**

There are no long-term fire hazards listed in this zone in the Fire Hazard Removal Case Management System.

**Frequency of elevated fire danger**

| Weather station | Days @ extreme last 20-24 yrs. | Range of days/yr. @ extreme | Days @ very high last 20-24 yrs. | Range of days/yr. @ very high |
|-----------------|--------------------------------|-----------------------------|----------------------------------|-------------------------------|
| Balmoral        | 239                            | 6 - 13                      | 74                               | 1 – 4                         |
| Christchurch    | 250                            | 3 - 5                       | 61                               | 0 - 1                         |

Note: this zone often triggers very high indices but is often negated by a high level of fuel reduction through grazing and cropping as well as extensive irrigation.

**Fire history**

The known fire history for this zone for significant wildfires or fires caused by activities regulated by our fire control powers includes:

| Year        | Fire          | Cause        |
|-------------|---------------|--------------|
| August 2016 | Macaulay Fire | Rubbish fire |
| 2004        | Dunsandel     | Unknown      |

**Predominant fuel type**

The predominant fuel type in this zone is grassland and forest.

## Thresholds

### Fire seasons

Build-up Index (BUI) and the degree of grass curing (GC%) are the most relevant fire weather indices to monitor where there is a mixture of forestry and grasslands as the predominant fuel types.

| Grass Curing (GC%) | Build Up Index (BUI)  |                 |                       |
|--------------------|-----------------------|-----------------|-----------------------|
|                    | (%)                   | 0–40            | 40–80                 |
| 0–50               | Open                  | Open/Restricted | Restricted/Prohibited |
| 50–70              | Open/Restricted       | Restricted      | Prohibited            |
| >70                | Restricted/Prohibited | Prohibited      | Prohibited            |

### Interpreting this matrix

|                       |  |
|-----------------------|--|
| Open                  | Open fire season   |
| Open/Restricted       | Open fire season but we may move to a restricted season earlier if forecast conditions support this.   |
| Restricted            | Restricted fire season   |
| Restricted/prohibited | Restricted Fire Season but we may move to a prohibited season earlier if forecast conditions support this or stay in a prohibited season longer if grasses remain dry and cured. |
| Prohibited            | Prohibited fire season   |

### Prohibition on fires in open air (section 52)

We can use the same Fire Weather System trigger thresholds for prohibiting fires in the open air under section 52 as we do for changing to a prohibited fire season but use section 52 when the fire risk conditions are not expected to last long enough to make changing to a prohibited fire season practical.

Other local thresholds have not been set.

### Prohibitions or restrictions on activities (section 52)

Localised trigger thresholds for applying section 52 to activities have not yet been developed, however there are some local mitigations used to reduce the need to implement it.

Where practicable we will endeavour to consult with partners and stakeholders on the effects of restrictions and prohibitions before implementing them. For example, Department of Conservation will want a more cautious approach to managing some sites of high value such as Medbury Reserve, and high-use areas such as Godley Head – despite perhaps what fire indices might indicate.

### Forestry operations

We have historically consulted with all the relevant forestry companies to ensure that they are aware of the triggers and mitigations and have worked closely with them to develop these (see [Appendix 1](#)). We intend to continue to liaise with these companies to further develop the triggers due to the changing nature of our climate.



### Roadside mowing

Some roadside mowing contractors are aware of the hot work fire weather indices available on [www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz) and monitor them during high fire danger times. They will generally cease roadside mowing when conditions get extreme. We intend to work with relevant agencies, such as Waka Kotahi NZTA and local councils, so that their contractors used for roadside moving are fully aware of the hot work fire weather indices.

### On farm harvesting, haymaking and cultivation practices

We will consult with Federated Farmers through the Land Management Forum to determine our approach to these fire measures, the use of machinery and equipment during high fire danger periods and the potential effect on local landowners.

### Hot works

Hot works activities are managed through the fire permitting system. Local councils are also consulted, (see [Appendix 2](#)).

### Powerline auto -reclosers

Historically Christchurch City Council have had arrangements with Orion to turn off the auto-reclosers once a restricted fire season was imposed. MainPower was also consulted and an auto-recloser protocol agreed to. We have also consulted with Alpine Energy, MainPower and Electricity Ashburton, and intend to consult with all power suppliers going forward.

There is guidance on the NIWA fire weather system ([www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz)) which identifies the daily and forecast risk associated with powerline activities which electricity distribution agencies (EDA) can use to manage daily operations (see [Appendix 3](#)).

### Rail

KiwiRail are currently working collaboratively with Fire and Emergency to develop a KiwiRail National Fire Mitigation Plan.

The plan will include an all-of-business approach. This includes track maintenance, locomotives servicing and maintenance – including the locomotive exhaust systems. The business will monitor the fire weather index system / fire dangers and carry out vegetation management with enhanced vegetation control nationally and throughout the district.

Once this plan is completed it will become an appendix to this fire plan.

### Representative remote automated weather stations

The Remote Automated Weather Stations (RAWS) used to determine whether trigger thresholds have been reached are:

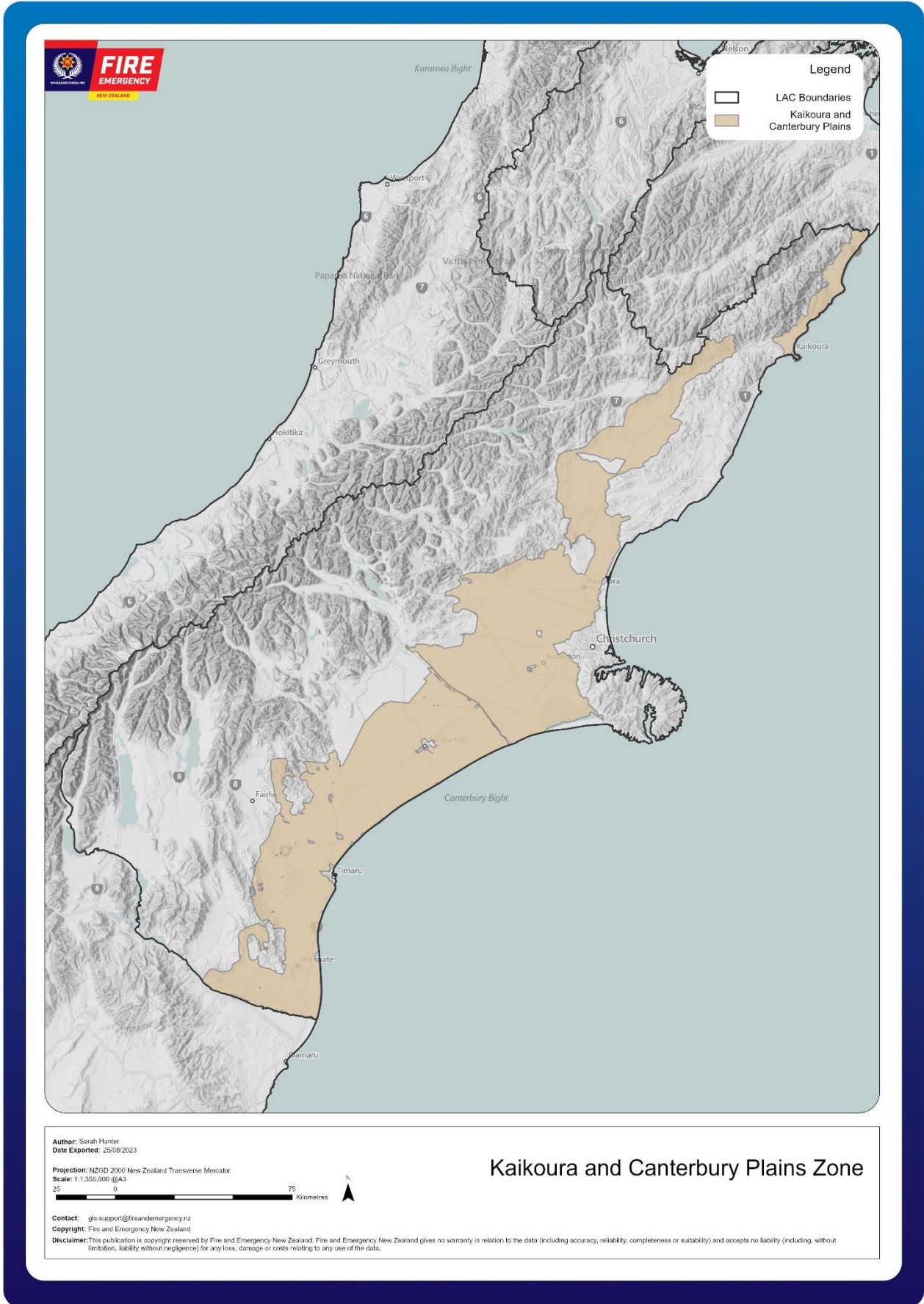
|                  |                      |                 |
|------------------|----------------------|-----------------|
| Waimate plains   | Saltwater Creek      | Diamond Harbour |
| Ashburton plains | Whitecliffs          | Motukarara      |
| Forest plains    | West Melton          | Leeston         |
| Oxford           | Christchurch Airport | Southbridge     |
| Bottle Lake      | Cust                 | Te Pirita       |
| Ashley           | Burnham              | Greta Valley    |

We will consider the forecasts for these locations when declaring or revoking a fire season.

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# Kaikōura and Canterbury Plains Zone Map



## Canterbury Coastal

**Geography** This zone covers across the coastal section of Canterbury with a variety of geography from flat riverbed areas to coastal Primary production areas, to rolling coastal areas, to the steep hill areas of Banks Peninsula which rises to 919 metres at Mount Herbert.

**Demographics** Demographics help us understand how our communities use fire, and the type of support they might need and how we communicate with them.

The demographic across this Coastal Zone is a mixture of small villages, primary production communities and seaside communities made up of permanent residences or holiday homes/huts. Several of these small communities are isolated.

**Climate/weather** All aspects of the climate of Canterbury are dominated by the influence of the Southern Alps on the prevailing westerly airflows and the exposure to the coastal environments, therefore the Coastal Zone is affected by several interacting weather systems.

These seasonal variations in wind speed are matched by a strong diurnal variation, whereby north-easterly winds are strongest in late afternoon and lightest in early morning, a typical feature of coastal environments.

The variance of rainfall is between 600 mm in the south at Timaru and 1200 mm in the north with Akaroa's annual rainfall averaging 970 mm, being much heavier due to the hills and topography features of Banks Peninsula.

**Land cover/land use** Pasture lands, wetlands and coastal lakes fed by the groundwater system, which is in turn fed by rainfall on the plains and into rivers.

| <b>Industry</b> | <b>Industry</b>  | <b>Contributes to increased risk of fire in high risk conditions</b> | <b>Affected by use of fire control measures</b> | <b>Needs to be protected by using fire control measures</b> |
|-----------------|--|--|---|---|
|                 | Primary production (on farm fires for crop residue burning, rubbish disposal or land clearing) | ☒  | ☒   | ☒   |
|                 | Tourism (campfires, lack of understanding of local fire risk)                                  | ☒  | ☒   | ☒   |

**Lifeline utilities/other infrastructure**

| Lifeline utility/ other infrastructure   | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|--|---|--|--|
| Road and rail links including State Highways, roading infrastructure (roadside mowing, roading associated hot works, train exhaust stack sparks, brake/wheel bearing failures) | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Several towns and villages in this zone have limited road access with many having one way in/out.<br>(Protect by applying controls to surrounding areas.)                      | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input checked="" type="checkbox"/>                  |
| Emergency services communications equipment  | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input checked="" type="checkbox"/>                  |
| Electricity supply networks (arcing and short circuits during wind events)   | <input checked="" type="checkbox"/>                           | <input type="checkbox"/>                 | <input checked="" type="checkbox"/>                  |
| Irrigation water schemes<br>(Protect by applying controls to surrounding areas.)   | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input checked="" type="checkbox"/>                  |
| Telecommunications networks including community Wi-Fi networks in isolated areas<br>(Protect by applying controls to surrounding areas.)                                       | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input checked="" type="checkbox"/>                  |

There is much arable farming in this zone, and it is common practice to burn the crop residue from cereal production. This results in several thousand controlled stubble burn-offs each summer/autumn, with the inherent possibility of fire escape. This risk is well managed via comprehensive fire permit conditions which are derived from an agreed burning protocols from Fire and Emergency's predecessors.

**Recreational locations**

The zone is used for a range of recreational activities, but no specific locations will be affected by restricting access under section 52.

**Cultural and recreational activities and events**

Tangata whenua have very strong ties to their whenua (land) and culture, and value being able to use their whenua without unnecessary restrictions.

We will consult with tangata whenua and consider the needs of iwi when making decisions about implementing restrictions or prohibitions with our fire control powers. The relevant iwi for this zone are listed as stakeholders.

Large scale events that might be cancelled because a restriction on activities can have a significant economic impact.

Placing restrictions or prohibitions on fire hazardous activities should not impose any unreasonable restrictions on people living and enjoying recreational activities in this zone.

This Coastal Zone contains many naturally occurring features which hold high cultural and historical significance to Māori and Iwi as a source of kai (traditional food) and other food sources.

Canterbury has a significant number of migrant and ethnic communities; a number of these people have English as a second language and they may not understand the New Zealand fire risk or legislation.

Across this Coastal Zone, several large public events occur, Fire and Emergency work closely with territorial authorities and other event organisers to assist with fire control.

Canterbury is allowed freedom camping which is popular amongst residents and visitors; freedom camping can generate issues concerning fire control.

| Cultural and recreational activities and events  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|--|---|--|--|
| Campfire/bonfire <ul style="list-style-type: none"> <li>• fire escapes</li> <li>• lack of understanding of local fire risk</li> </ul>  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |
| Cultural fires – hāngī, umu, lovo, braai <ul style="list-style-type: none"> <li>• fire escapes</li> </ul>  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |
| Fireworks, including sky lanterns <ul style="list-style-type: none"> <li>• Use may be prohibited during high fire danger</li> <li>• Pyrotechnics managed by other approvals</li> </ul> | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |
| Horse-riding/walking/cycling <ul style="list-style-type: none"> <li>• Access may be restricted during high fire danger</li> </ul>  | <input type="checkbox"/>                                      | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |

### Special risk areas

| Special risk area  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|--|---|--|--|
| DOC managed public conservation lands <ul style="list-style-type: none"> <li>• campfires, gas cookers, barbecues, recreational vehicles</li> </ul> | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |

|  |   |   |   |
|--|---|---|---|
| Coastal hut settlements<br>• rubbish fires, hot ash disposal | ☒ | ☒ | ☒ |
| Spencer Park, Bottle Lake<br>• recreational activity         | ☒ | ☒ | ☒ |
| Coastal reserves – old man pines<br>• recreational activity  | ☒ | ☒ | ☒ |
| Dunelands<br>• recreational activity, recreational vehicles  | ☒ | ☒ | ☒ |

Several of these isolated communities have limited communications with several areas having no cell networks.

Public conservation land / DOC lands are in a restricted fire season 365 days a year unless moved to prohibited (refer to [public conservation land zone information](#)). It is likely at certain times of the year that the fire season status on public conservation land may vary from that for the rest of the zone.

The coastal vegetation in several areas pose a risk and this is increased when the public use these areas as part of recreational activities

In some areas of the Coastal Zone there are isolated communities or properties that due to their location would see significant fire spread before the arrival of Fire and Emergency New Zealand.

**Known fire hazards** There are no long-term fire hazards listed in this zone in the Fire Hazard Removal Case Management System.

**Frequency of elevated fire danger**

| Weather station    | Days @ extreme last 20-24 yrs. | Range of days/yr. @ extreme | Days @ very high last 20-24 yrs. | Range of days/yr. @ very high |
|--------------------|--------------------------------|-----------------------------|----------------------------------|-------------------------------|
| Timaru Aero        | 192                            | 5 - 8                       | 72                               | 1 - 3                         |
| Bottle Lake Forest | 180                            | 1 - 8                       | 64                               | 1 - 3                         |

**Fire history**

The known fire history for this zone for significant wildfires or fires caused by activities regulated by our fire control powers includes:

| Year     | Fire   | Cause   |
|----------|--------|---------|
| May 2019 | Temuka | Unknown |

**Predominant fuel type**

The predominant fuel type in this zone is dune scrub and grass types, cabbage trees (Ti), flax (harakeke), considerable dune stabilisation plantings of P. radiata and grazed pasture scrub.



## Thresholds

### Fire seasons

Build-up Index and the degree of grass curing (GC%) are the most relevant fire weather indices to monitor where there is a mixture of scrub and grasslands and forest as the predominant fuel types.

| Grass Curing (GC%) | Build Up Index (BUI)  |                 |                       |
|--------------------|-----------------------|-----------------|-----------------------|
|                    | (%)                   | 0–40            | 40–80                 |
| 0–50               | Open                  | Open/Restricted | Restricted/Prohibited |
| 50–70              | Open/Restricted       | Restricted      | Prohibited            |
| >70                | Restricted/Prohibited | Prohibited      | Prohibited            |

### Interpreting this matrix

|                       |  |
|-----------------------|--|
| Open                  | Open fire season   |
| Open/Restricted       | Open fire season but we may move to a restricted season earlier if forecast conditions support this.   |
| Restricted            | Restricted fire season   |
| Restricted/prohibited | Restricted Fire Season but we may move to a prohibited season earlier if forecast conditions support this or stay in a prohibited season longer if grasses remain dry and cured. |
| Prohibited            | Prohibited fire season   |

### Prohibition on fires in open air (section 52)

We can use the same Fire Weather System trigger thresholds for prohibiting fires in the open air under section 52 as we do for changing to a prohibited fire season but use section 52 when the fire risk conditions are not expected to last long enough to make changing to a prohibited fire season practical.

Other local thresholds have not been set.

### Prohibitions or restrictions on activities (section 52)

Localised trigger thresholds for applying section 52 to activities have not yet been developed, however there are some local mitigations used to reduce the need to implement it.

Where practicable we will endeavour to consult with partners and stakeholders on the effects of restrictions and prohibitions before implementing them. For example, Department of Conservation will want a more cautious approach to managing some sites of high value such as Medbury Reserve, and high-use areas such as Godley Head – despite perhaps what fire indices might indicate.

### Forestry operations

We have historically consulted with all the relevant forestry companies to ensure that they are aware of the triggers and mitigations and have worked closely with them to develop these (see [Appendix 1](#)). We intend to continue to liaise with these companies to further develop the triggers due to the changing nature of our climate.

### Roadside mowing

Some roadside mowing contractors are aware of the hot work fire weather indices available on [www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz) and monitor them during high fire danger times. They will generally cease roadside mowing when conditions get extreme. We intend to work with relevant agencies, such as Waka Kotahi NZTA and local councils, so that their contractors used for roadside moving are fully aware of the hot work fire weather indices.

### On farm harvesting, haymaking and cultivation practices

We will consult with Federated Farmers through the Land Management Forum to determine our approach to these fire measures, the use of machinery and equipment during high fire danger periods and the potential effect on local landowners.

### Hot works

Hot works activities are managed through the fire permitting system. Local councils are also consulted. (see [Appendix 2](#)).

### Powerline auto-reclosers

Historically Christchurch City Council have had arrangements with Orion to turn off the auto re-closers once a restricted fire season was imposed. MainPower was also consulted and an auto-recloser protocol agreed to. We have also consulted with Alpine Energy, MainPower and Electricity Ashburton, and intend to consult with all power suppliers going forward.

There is guidance on the NIWA fire weather system ([www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz)) which identifies the daily and forecast risk associated with power line activities which electricity distribution agencies (EDA) can use to manage daily operations (see [Appendix 3](#)).

### Rail

KiwiRail is currently working collaboratively with Fire and Emergency to develop a KiwiRail National Fire Mitigation Plan.

The plan will include an all-of-business approach. This includes track maintenance, locomotives servicing and maintenance - including the locomotive exhaust systems. The business will monitor the fire weather index system / fire dangers and carry out vegetation management with enhanced vegetation control nationally and throughout the district.

Once this plan is completed it will become an appendix to this fire plan.

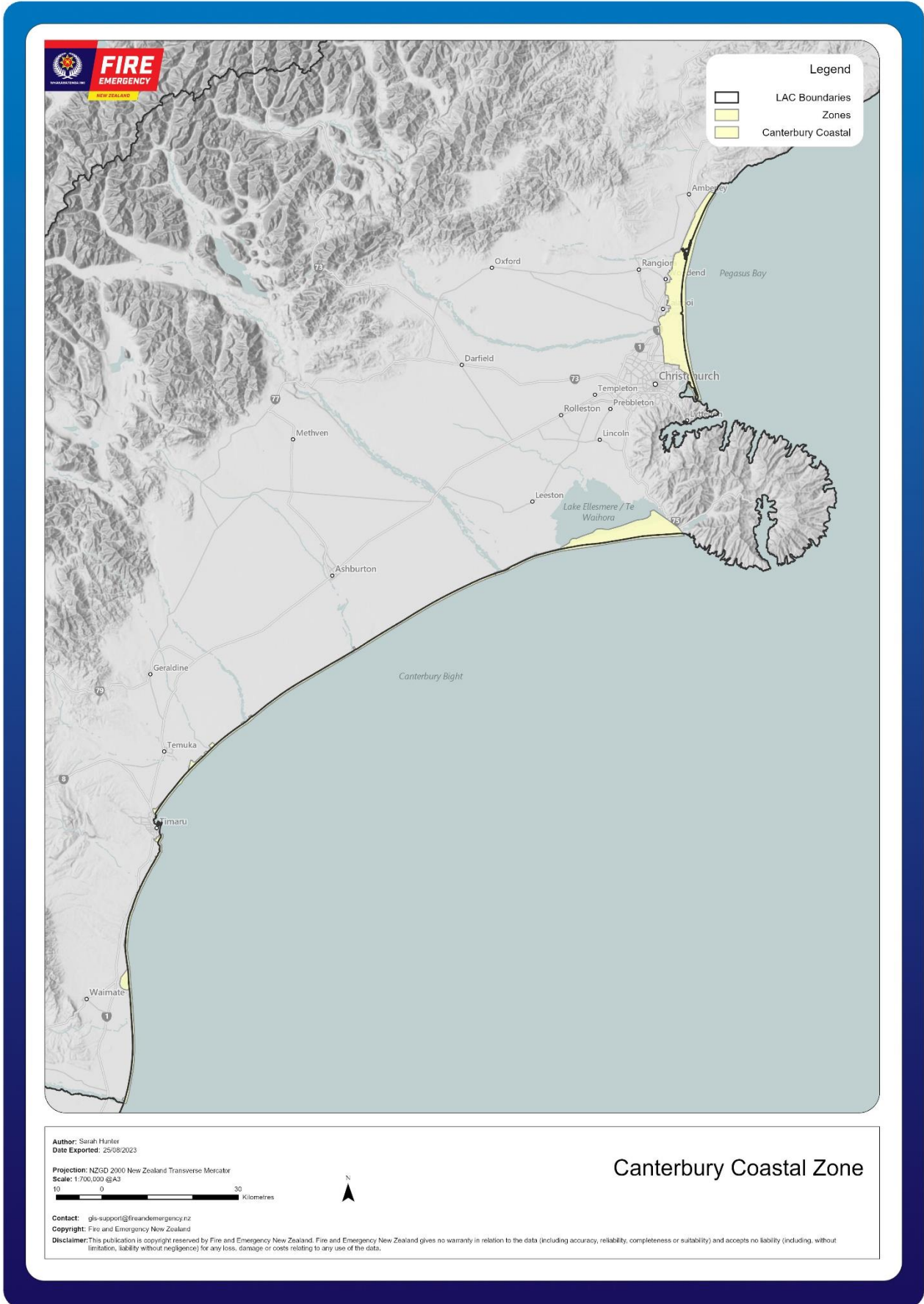
### Representative remote automated weather stations

The Remote Automated Weather Stations (RAWS) used to determine whether trigger thresholds have been reached are:

|                 |                 |             |
|-----------------|-----------------|-------------|
| Ashburton Aero  | Godley Heads    | Bottle Lake |
| Timaru Aero     | Saltwater Creek |             |
| Waimate Coastal | Motukarara      |             |

We will consider the forecasts for these locations when declaring or revoking a fire season.

### Canterbury Coastal Zone Map



## Canterbury Production Forests

### Geography

- Steep dissected hill and high country (Redwood Forests – Kaikōura)
- Rolling hill country – Matariki Forests on Mount Thomas, Oxford, Dalethorpe, Ashley, Okuku, Hanmer, Ōmihi, Lowmount, Balmoral – plus extensive privately-owned forests. Port Blakely Forests around Geraldine and Waimate. Numerous larger private forest blocks in Te Moana and Rangitata Gorge (Forest Creek).
- Additionally Environment Canterbury (ECan) have extensive exotic plantations across Canterbury, mostly for river and waterway protection, but also for timber production.

### Demographics

The demographic of this zone is mainly non-populated or lightly populated Primary production communities; this includes farm worker accommodations and homestay accommodation.

### Climate/weather

- Hot, dry, strong northwest wind patterns and long hot summers. Winter can bring frost curing and low relative humidity to create extreme fire dangers, with equinox wind events being common in the pre and post winter shoulder seasons.
- Weather ranges from wet to extremely dry, with extreme (crossover) fire behaviour on a regular basis.
- Rainfall – 1100 mm (hill country) to 600 mm (coastal).

### Land cover/ land use

- Broadscale agricultural economy – including stock, crop growing/harvesting, viticulture, limited orcharding and, of course, production forestry for timber, paper and carbon sequestering
- Large forestry sector, substantial wilding pine issue inland. Note also large areas of privately owned forests are found throughout Canterbury (300+ ha)
- Massive changes to infrastructure, zoning, land use, etc., due to earthquakes
- *Pinus radiata*, Douglas fir, and Redwoods (*Sequoia sempervirens*) predominate.

### Industry

| Industry  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|---|---|--|--|
| Primary production, including horticulture and agriculture <ul style="list-style-type: none"> <li>• use of machinery – sparks</li> <li>• use of fire for land management</li> <li>• relevant operations affected</li> </ul> | ☒   | ☒  | ☒  |
| Forestry <ul style="list-style-type: none"> <li>• use of machinery – sparks</li> <li>• relevant operations affected</li> <li>• use of firebreaks</li> </ul>   | ☒   | ☒  | ☒  |

| Lifeline utilities/other infrastructure         | Lifeline utility/ other infrastructure  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|---|---|---|--|--|
|   | Throughout the forested areas across Canterbury, several power lines are running either through or adjacent to the forests. <ul style="list-style-type: none"> <li>• arcing and short circuits during wind events</li> </ul>                            | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
|   | Most of the production forests areas have roads running either through or adjacent to forests. <ul style="list-style-type: none"> <li>• hot exhausts, exhaust sparks</li> </ul>   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
|   | Several areas in this zone have KiwiRail railway running either through or adjacent to forests. <ul style="list-style-type: none"> <li>• exhaust stack sparks and brake/wheel bearing failures</li> </ul>   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| <b>Recreational locations</b>                   | Production forest areas with high recreational use and increased life-risk should be assessed and potentially a plan developed to ensure the safe evacuation of the public from these areas. (e.g. Hanmer and Bottle Lake, Christchurch Adventure Park) |   |  |  |
| Cultural and recreational activities and events | Cultural and recreational activities and events   | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|   | Campfire/bonfire  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
|   | Cultural fires – hāngī, umu, lovo   | <input checked="" type="checkbox"/>                           | <input type="checkbox"/>                 | <input checked="" type="checkbox"/>                  |
|   | Fireworks <ul style="list-style-type: none"> <li>• Use may be prohibited during high fire danger</li> <li>• Pyrotechnics managed by other approvals</li> </ul> Fireworks  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |
|   | Cooking fires   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |
|   | Motorsport/Motocross <ul style="list-style-type: none"> <li>• Car fires or sparks from malfunctioning vehicles</li> </ul>   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |

|  |                                     |                                     |                          |
|--|-------------------------------------|-------------------------------------|--------------------------|
| Mountain biking  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Firewood collection <ul style="list-style-type: none"> <li>Sparks or hot exhaust from chainsaw</li> </ul>                              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Tramping/hunting <ul style="list-style-type: none"> <li>Campfires</li> <li>Access may be restricted during high fire danger</li> </ul> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

The Production Forests Areas across Canterbury are used for a variety of recreational activities. Some of these activities allow a significant number of the public into forested areas for recreational activities which increases the ignition potential in terms of fire control. This in turn increases any life risk from subsequent fires.

Throughout the Canterbury area, several different cultural activities are popular with all of our people including Iwi and our diverse migrant/ethnic communities.

In the Canterbury Production Forests zone, limited cultural activities occur; the main risk is in forest areas that allow camping/picnicking activities.

Canterbury has a significant number of migrants and ethnic communities, with a number of these people having English as a second language and limited knowledge of the New Zealand fire risk or legislation.

It is unlikely for pyrotechnics to be used in this zone, but if pyrotechnics are to be used for an event these are permitted activities that are assessed by risk management staff as part of their application for approval of the pyrotechnics display.

Under section 52 of the Fire and Emergency Act, the use of fireworks has can be prohibited to assist with fire control.

Section 52 fireworks bans will be reviewed across all production forest areas to assist with fire control.

### Special risk areas

| Special risk area                              | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|--|---|--|--|
| Bottle Lake – 660 ha – Rayonier Matariki owned | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Chaney's – 400+ ha – Rayonier Matariki owned   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Eyrewell – 88 ha                               | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| McVicar's                                      | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| McCleans Island – ECAN                         | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| MacDonald Downs – Te Oka 1000 ha – private     | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Blythe   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |

|  |   |   |   |
|--|---|---|---|
| Marble Point   | ☒ | ☒ | ☒ |
| Te Moana – 1000 ha – private   | ☒ | ☒ | ☒ |
| Rangitata Gorge – 800 ha – private   | ☒ | ☒ | ☒ |
| High-value historic, archaeological and cultural sites                         | ☒ | ☒ | ☒ |
| High-use areas such as the Port Hills Adventure Park, Hanmer Forest area, etc. | ☒ | ☒ | ☒ |

The table above lists either private or company-owned forests that are large enough (>50 ha) to be significant from a fire management perspective.

This list is not exhaustive and needs further work and mapping.

**Known fire hazards** There are no long-term fire hazards listed in this zone in the Fire Hazard Removal Case Management System, though we need to consider spontaneous combustion of slash piles/skid sites in forest.

**Frequency of elevated fire danger**

On average, this area experiences:

- 5 days per year of extreme fire danger
- 16 days per year of very high fire danger

| Weather station    | Days @ extreme last 20-24 yrs. | Range of days/yr. @ extreme | Days @ very high last 20-24 yrs. | Range of days/yr. @ very high |
|--------------------|--------------------------------|-----------------------------|----------------------------------|-------------------------------|
| Balmoral           | 239                            | 6–13                        | 74                               | 1–4                           |
| Bottle Lake Forest | 180                            | 1–8                         | 64                               | 1–3                           |

**Fire history** The known fire history for this zone includes:

| Year | Fire                    | Cause                |
|------|-------------------------|----------------------|
| 2008 | Mount Cook Station fire | Sparks from chainsaw |

**Predominant fuel type** The predominant fuel type in this zone is exotic forest species.

**Thresholds**

**Fire seasons** For setting fire seasons, Build-up Index (BUI) is the most relevant fire weather index to monitor.

| Build Up Index (BUI) |            |            |
|----------------------|------------|------------|
| 0–60                 | 60–80      | >80        |
| Open                 | Restricted | Prohibited |



**Interpreting this matrix**

|            |                        |
|------------|------------------------|
| Open       | Open fire season       |
| Restricted | Restricted fire season |
| Prohibited | Prohibited fire season |

There is the ability to impose a restricted fire season 365 day a year if Fire and Emergency in consultation with forest management agree that the potential risk related to the value is such that it requires all year-round protection

**Prohibition on fires in open air (section 52)**

We can use the same Fire Weather System trigger thresholds for prohibiting fires in the open air under section 52 as we do for changing to a prohibited fire season but use section 52 when the fire risk conditions are not expected to last long enough to make changing to a prohibited fire season practical.

Other local thresholds have not been set.

**Prohibitions or restrictions on activities (section 52)**

Localised trigger thresholds for applying section 52 to activities have not yet been developed, however there are some local mitigations used to reduce the need to implement it.

Where practicable we will endeavour to consult with partners and stakeholders on the effects of restrictions and prohibitions before implementing them. For example, Department of Conservation will want a more cautious approach to managing some sites of high value such as Medbury Reserve, and high-use areas such as Godley Head – despite perhaps what fire indices might indicate.

**Forestry operations**

We have historically consulted with all the relevant forestry companies to ensure that they are aware of the triggers and mitigations and have worked closely with them to develop these (see [Appendix 1](#)). We intend to continue to liaise with these companies to further develop the triggers due to the changing nature of our climate.

**Roadside mowing**

Some roadside mowing contractors are aware of the hot work fire weather indices available on [www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz) and monitor them during high fire danger times. They will generally cease roadside mowing when conditions get extreme. We intend to work with relevant agencies, such as Waka Kotahi NZTA and local councils, so that their contractors used for roadside moving are fully aware of the hot work fire weather indices.

**On farm harvesting, haymaking and cultivation practices (adjacent to Forests)**

We will consult with Federated Farmers through the Land Management Forum to determine our approach to these fire measures, the use of machinery and equipment during high fire danger periods and the potential effect on local landowners.

**Hot works**

Hot works activities are managed through the fire permitting system. Local councils are also consulted, (see [Appendix 2](#)).

### Powerline auto-reclosers

Historically Christchurch City Council have had arrangements with Orion to turn off the auto-reclosers once a restricted fire season was imposed. MainPower was also consulted and an auto-recloser protocol agreed to. We have also consulted with Alpine Energy, MainPower and Electricity Ashburton, and intend to consult with all power suppliers going forward.

There is guidance on the NIWA fire weather system ([www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz)) which identifies the daily and forecast risk associated with power line activities which electricity distribution agencies (EDA) can use to manage daily operations (see [Appendix 3](#)).

### Rail

KiwiRail are currently working collaboratively with Fire and Emergency to develop a KiwiRail National Fire Mitigation Plan.

The plan will include an all-of-business approach. This includes track maintenance, locomotives servicing and maintenance – including the locomotive exhaust systems. The business will monitor the fire weather index system / fire dangers and carry out vegetation management with enhanced vegetation control nationally and throughout the district.

Once this plan is completed it will become an appendix to this fire plan.

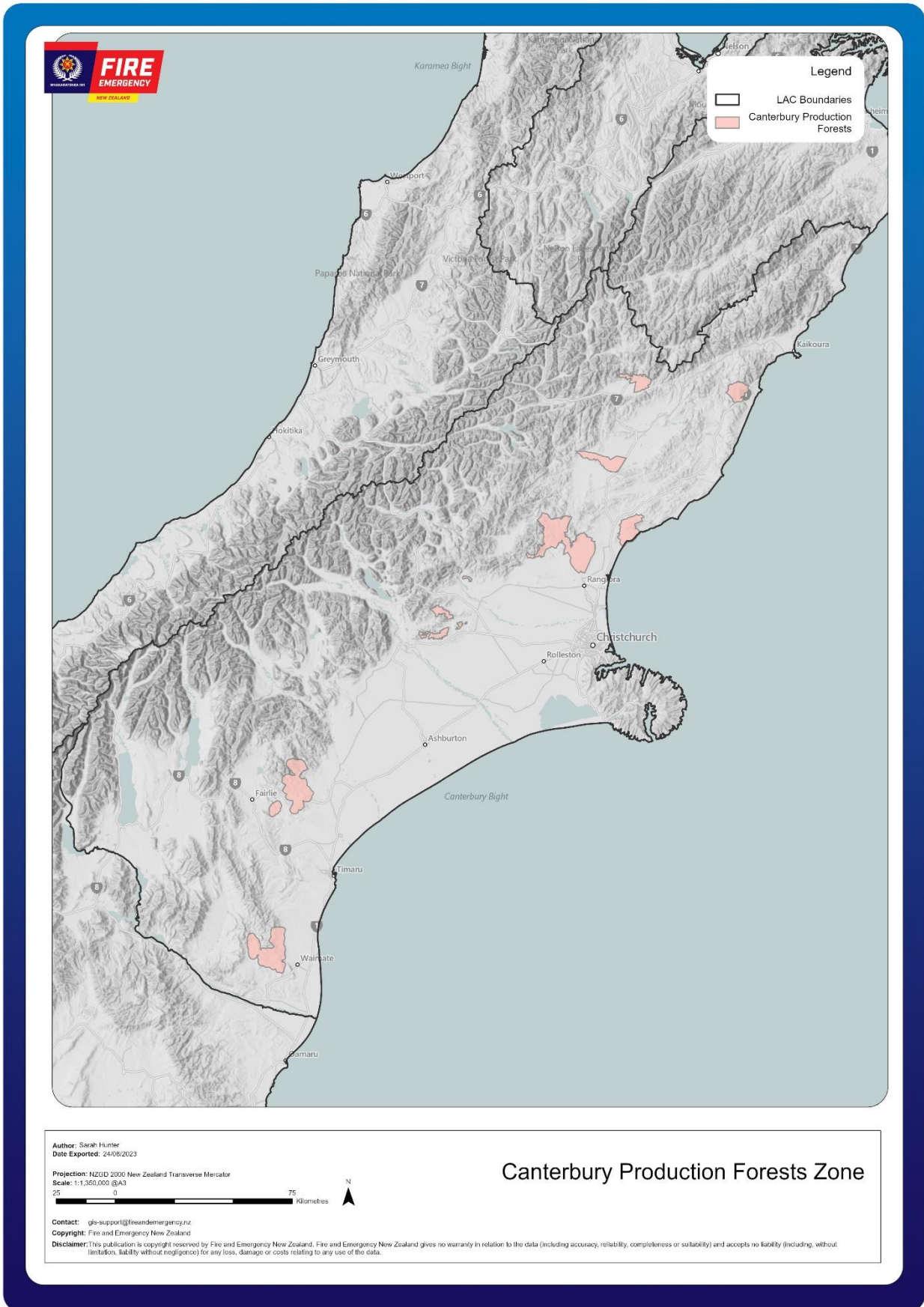
### Representative remote automated weather stations

The Remote Automated Weather Stations (RAWS) used to determine whether trigger thresholds have been reached are:

|                  |             |              |
|------------------|-------------|--------------|
| Waimate Forest   | Balmoral    | Early Valley |
| Geraldine Forest | Bottle Lake |              |
| Ashley           | Omihi       |              |
| Forest Plains    | Oxford      |              |

We will consider the forecast for these locations when declaring or revoking a fire season.

# Canterbury Production Forests Zone Map



## Canterbury Urban/Peri-Urban Interface Areas

**Geography** This zone covers all the urban/peri-urban interface (denoting or located in an area immediately adjacent to a city or urban area) areas of the Canterbury Region. As there are urban/peri-urban areas scattered throughout Canterbury, the scope of the geography spans across the descriptors for all zones, and ranges from places such as Twizel in the Mackenzie Basin, through to Hanmer Springs in the North, to the more expansive Eastern areas within and around Christchurch, Timaru, Ashburton and Rangiora, and elsewhere for the smaller towns and villages on the Plains and around Banks Peninsula.

**Demographics** Demographics help us understand how our communities use fire, and the type of support they might need and how we communicate with them.

The population numbers for this zone include:

- Christchurch City, CCC – population 400,300
- Ashburton, Ashburton District Council – population 18,000
- Timaru, Timaru District Council – population 25,900
- Rangiora, Waimakariri District Council – population 20,000

The density of housing across this zone ranges from high density living, around the cities and towns, to lifestyle properties on the outskirts of the zone.

**Climate /weather** Christchurch/Canterbury coast and plains have a maritime climate, with dry warm summers. The mean average daily air temperatures are 22.5°C in January, and 11.3°C in July. In winter it is common for the temperature to fall below 0°C at night. There are on average 70 days of ground frost per year. Snow falls occur on average once or twice a year in the hill suburbs and about once or twice every two years on the plain.

Canterbury is well known for being affected by strong north-westerly winds. In the summer months, these north-west winds can have a major effect on fire control. The north-west wind is frequently followed by a south-westerly wind change that often brings some moisture.

The coastal areas of Canterbury are often affected by an onshore wind from the east/northeast direction, this wind often combats the north-westerly wind.

The warmest month is January with an average maximum temperature of 22°C. Over recent years, temperatures in the mid to high thirties have been recorded over multiple days.

The coldest month and wettest month is July with an average maximum temperature of 10°C.

The towns and villages in the high country experience a different climate, as described in the [Hill and High Country](#) section of this plan.

**Land cover/land use** Within the Canterbury Urban/Peri-Urban Interface zone there are four main land use/activity types, these being residential, lifestyle, rural and industrial areas. Post-earthquake and as a result of population growth in residential areas, there has been a gradual development of rural land into residential or lifestyle properties.

In several areas, there are pockets of rural land surrounded by urban residential areas. These peri-urban interface areas and isolated rural areas can create issues in terms of fire control.

Since the Canterbury earthquakes, the development of land has seen a significant increase and spread to rural areas.

Industrial activities are located across several areas in the Christchurch/Canterbury area; several of these are located in industrial parks with multiple businesses forming small and large business communities. Amongst these industrial businesses are several significant national businesses and distribution hubs providing key supplies to the country.

Amongst the industrial areas across the districts are several pockets of vegetation including large areas of undeveloped land which may pose a fire risk.

**Industry**

| Industry  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|---|---|--|--|
| Primary production, including horticulture and agriculture <ul style="list-style-type: none"> <li>• use of machinery – sparks</li> <li>• use of fire for land management</li> <li>• relevant operations affected</li> </ul> | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Quarries <ul style="list-style-type: none"> <li>• hot works, explosives</li> </ul>  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |

The agricultural industry across Canterbury is widespread. This can cause issues in terms of fire control including the risk of ignitions, escaped controlled burns and other activities contributing to fires.

**Lifeline utilities/other infrastructure**

| Lifeline utility/ other infrastructure  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|---|---|--|--|
| Fuel and natural gas distribution networks <ul style="list-style-type: none"> <li>• Leaks</li> <li>• Protected by own controls on use of fire and other activities in vicinity</li> </ul> | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Lyttelton Port<br>Timaru Port <ul style="list-style-type: none"> <li>• Protect by applying controls to surrounding areas</li> </ul>   | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input checked="" type="checkbox"/>                  |

| Lifeline utility/ other infrastructure  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|---|---|--|--|
| Christchurch International Airport<br>Timaru Airport<br>Airways navigation (Cass Peak) <ul style="list-style-type: none"> <li>Requirement for notification and permission for burns in flight path, under CAA rules</li> <li>Protected by own controls on use of fire and other activities in vicinity</li> </ul> | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input type="checkbox"/>                             |
| Roading network <ul style="list-style-type: none"> <li>Sparks from vehicle malfunction, discarded cigarettes</li> <li>Spark causing activities during road maintenance and mowing</li> </ul>  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |
| Emergency Services Communications Equipment and Centres <ul style="list-style-type: none"> <li>Protect by applying controls to surrounding areas</li> </ul>   | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input checked="" type="checkbox"/>                  |
| Electricity transmission lines <ul style="list-style-type: none"> <li>Sparking during high winds</li> <li>Use of auto-reclosers limited in high fire danger</li> <li>Recommended vegetation mitigation practices</li> </ul>   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input type="checkbox"/>                             |
| Water systems (potable water, storm water and sewerage) <ul style="list-style-type: none"> <li>Protect by applying controls to surrounding areas</li> </ul>   | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input checked="" type="checkbox"/>                  |
| Telecommunications network <ul style="list-style-type: none"> <li>Protect by applying controls to surrounding areas</li> </ul>  | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input checked="" type="checkbox"/>                  |
| Kate Valley Landfill <ul style="list-style-type: none"> <li>Use of machinery – sparks</li> <li>Disposal of heat or spark producing materials</li> </ul>   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |



## Recreational locations

- Parks that may be closed
- Sporting locations that may be impacted:
  - motorsport
  - cycling
  - mountain biking
  - walking
  - tramping
  - fishing
  - surfing
  - golfing
  - multi-sport events
- freedom camping, which is popular amongst residents and visitors, but can generate issues concerning fire control.

## Cultural and recreational activities and events

Tangata whenua have very strong ties to their whenua (land) and culture, and value being able to use their whenua without unnecessary restrictions.

We will consult with tangata whenua and consider the needs of iwi when making decisions about implementing restrictions or prohibitions with our fire control powers. The relevant iwi for this zone are listed as stakeholders.

Large scale events that might be cancelled because a restriction on activities can have a significant economic impact.

Placing restrictions or prohibitions on fire hazardous activities should not impose any unreasonable restrictions on people living and enjoying recreational activities in this zone.

Christchurch/Canterbury have a significant number of migrants and ethnic communities, with a number of these people not understanding the New Zealand fire risk and legislation.

| Cultural and recreational activities and events  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using of fire control measures |
|--|---|--|---|
| Cultural cooking, e.g. hāngī   | ☒   | ☒  | <input type="checkbox"/>                                |
| Fireworks <ul style="list-style-type: none"> <li>• Use may be prohibited during high fire danger</li> <li>• Pyrotechnics managed by other approvals</li> </ul> | ☒   | ☒  | <input type="checkbox"/>                                |



**Special risk areas**

| Special risk area                                   | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|---|---|--|--|
| Mount Lyford Village                                | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Hanmer Springs                                      | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Castle Hill Village                                 | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Tekapo  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Twizel  | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Towns/villages on Banks Peninsula, including Akaroa | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Canterbury earthquake red zones                     | <input checked="" type="checkbox"/>                           | <input type="checkbox"/>                 | <input type="checkbox"/>                             |
| McLeans Island                                      | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Port Hills area including Godley Head Reserve       | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |

The Canterbury earthquakes have generated several special risks; these include but are not limited to:

- Christchurch red zone, Port Hills red zone land, Brooklands and Kaiapoi red zones
- Earthquake rockfall risk

These areas pose a risk in terms of fuel management and firefighting access risk due to the rockfall risk.

Public conservation land / DOC lands are restricted 365 days a year for the purposes of fire control unless moved to prohibited (refer to [Public conservation land](#) below). It is likely at certain times of the year that the fire season status on public conservation land may vary from that for the rest of the zone that is not public conservation land.

**Known fire hazards**

Across this zone, in Christchurch/Canterbury there are several areas of known fire hazards. These areas are mainly in the peri-urban interface areas with residential housing areas or are recreational areas with high public use.

Examples of these are:

- Areas adjacent to beaches
- Recreational areas and mountain bike parks
- Suburbs with significant slope factors adjacent to public lands or recreational areas
- McLeans Island recreation area

The Canterbury/Kaikōura earthquakes have generated several fire hazard issues, with some quake-affected land having limited access for vegetation removal.

### Frequency of elevated fire danger

On average, this area experiences various times of elevated fire dangers that align to the surrounding landscapes fire weather at any given time:

- 2 days per year of extreme fire danger
- 8 days per year of very high fire danger

| Weather station    | Days @ extreme last 20-24 yrs. | Range of days/yr. @ extreme | Days @ very high last 20-24 yrs. | Range of days/yr. @ very high |
|--------------------|--------------------------------|-----------------------------|----------------------------------|-------------------------------|
| Balmoral           | 239                            | 6–13                        | 74                               | 1–4                           |
| Bottle Lake Forest | 180                            | 1–8                         | 64                               | 1–3                           |
| Pukaki Aero        | 216                            | 6–11                        | 78                               | 8–14                          |
| Timaru Aero        | 192                            | 5–8                         | 72                               | 1–3                           |

### Fire history

The known fire history for this zone includes:

| Year | Fire       | Cause   |
|------|------------|---------|
| 2017 | Port Hills | Unknown |

#### Causes of wildfires across the Christchurch/Canterbury District:

- **Accidental fires** – electrical infrastructure, building and construction activities, mechanical machinery failures, escaped land clearing operations, inexperienced lifestyle property burn-offs.
- **Incendiary fires** – Christchurch/Canterbury area has a history of arson incidents, particularly in the peri-urban interface area and isolated pockets of vegetation close to residential areas.
- **Stolen mobile property** being set on fire is also a common cause of fire spread to vegetation causing wildfires.

### Predominant fuel type

The predominant fuel type in this zone is mixed grass and scrub.

### Thresholds

#### Fire seasons

Build-up Index (BUI) and the degree of grass curing (GC%) are the most relevant fire weather indices to monitor where there is a mixture of scrub and grasslands as the predominant fuel types.

| Grass Curing (GC%) | Build Up Index (BUI)  |                 |                       |
|--------------------|-----------------------|-----------------|-----------------------|
| (%)                | 0–40                  | 40–80           | >80                   |
| 0–50               | Open                  | Open/Restricted | Restricted/Prohibited |
| 50–70              | Open/Restricted       | Restricted      | Prohibited            |
| >70                | Restricted/Prohibited | Prohibited      | Prohibited            |

**Interpreting this matrix**

|                       |  |
|-----------------------|--|
| Open                  | Open fire season   |
| Open/Restricted       | Open fire season but we may move to a restricted season earlier if forecast conditions support this.   |
| Restricted            | Restricted fire season   |
| Restricted/prohibited | Restricted Fire Season but we may move to a prohibited season earlier if forecast conditions support this or stay in a prohibited season longer if grasses remain dry and cured. |
| Prohibited            | Prohibited fire season   |

**Prohibition on fires in open air (section 52)**

We can use the same Fire Weather System trigger thresholds for prohibiting fires in the open air under section 52 as we do for changing to a prohibited fire season but use section 52 when the fire risk conditions are not expected to last long enough to make changing to a prohibited fire season practical.

Other local thresholds have not been set.

**Prohibitions or restrictions on activities (section 52)**

Localised trigger thresholds for applying section 52 to activities have not yet been developed, however there are some local mitigations used to reduce the need to implement it.

Where practicable we will endeavour to consult with partners and stakeholders on the effects of restrictions and prohibitions before implementing them. For example, Department of Conservation will want a more cautious approach to managing some sites of high value such as Medbury Reserve, and high-use areas such as Godley Head – despite perhaps what fire indices might indicate.

**Forestry operations**

We have historically consulted with all the relevant forestry companies to ensure that they are aware of the triggers and mitigations and have worked closely with them to develop these (see [Appendix 1](#)). We intend to continue to liaise with these companies to further develop the triggers due to the changing nature of our climate.

**Roadside mowing**

Some roadside mowing contractors are aware of the hot work fire weather indices available on [www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz) and monitor them during high fire danger times. They will generally cease roadside mowing when conditions get extreme. We intend to work with relevant agencies, such as Waka Kotahi (NZTA) and local councils, so that their contractors used for roadside moving are fully aware of the hot work fire weather indices.

**On farm harvesting, haymaking and cultivation practices**

We will consult with Federated Farmers through the Land Management Forum to determine our approach to these fire measures, the use of machinery and equipment during high fire danger periods and the potential effect on local landowners.

### Hot works

Hot works activities are managed through the fire permitting system. Local councils are also consulted. (see [Appendix 2](#)).

### Powerline auto-reclosers

Historically Christchurch City Council have had arrangements with Orion to turn off the auto-reclosers once a restricted fire season was imposed. MainPower was also consulted and an auto-recloser protocol agreed to. We have also consulted with Alpine Energy, MainPower and Electricity Ashburton, and intend to consult with all power suppliers going forward.

There is guidance on the NIWA fire weather system ([www.fireweather.niwa.co.nz](http://www.fireweather.niwa.co.nz)) which identifies the daily and forecast risk associated with power line activities which electricity distribution agencies (EDA) can use to manage daily operations (see [Appendix 3](#)).

### Rail

KiwiRail are currently working collaboratively with Fire and Emergency to develop a KiwiRail National Fire Mitigation Plan.

The plan will include an all-of-business approach. This includes track maintenance, locomotives servicing and maintenance, including the locomotive exhaust systems. The business will monitor the fire weather index system / fire dangers and carry out vegetation management with enhanced vegetation control nationally and throughout the district.

Once this plan is completed it will become an appendix to this fire plan.

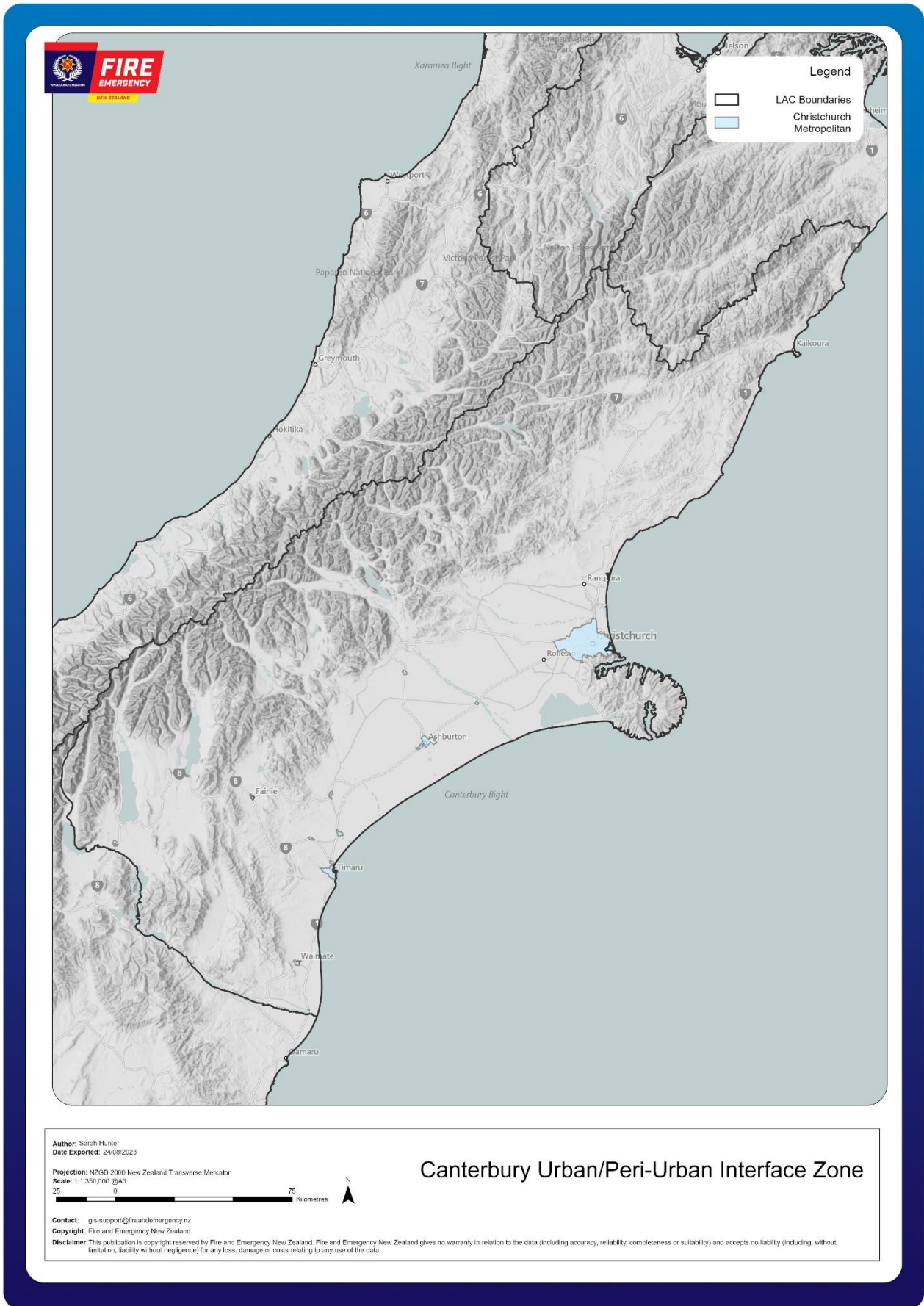
### Representative remote automated weather stations

The Remote Automated Weather Stations (RAWS) used to determine whether we have reached the trigger thresholds are:

|              |                 |               |
|--------------|-----------------|---------------|
| Timaru       | Oxford 2        | Forest Plains |
| Pukaki Aero  | Diamond Harbour | Ashley        |
| Early Valley | Cheviot         |               |
| West Melton  | Balmoral        |               |
| Bottle Lake  | Hanmer          |               |

We will consider the forecast for these locations when declaring or revoking a fire season.

# Canterbury Urban/Peri-Urban Interface Areas Map



## Public conservation land

### Geography

Public Conservation Land is not managed independently for the purposes of fire control but is included in the surrounding relevant zones. However, the Department of Conservation is a key player in regard to consultation when setting fire seasons.

The conservation lands within this Canterbury Fire plan are bounded in the north by the Kekerengu River, to the west by the Southern Alps and to the south by the Waitaki River and follow the Ahuriri River from Lake Benmore to its source.

The Department of Conservation manages its public conservation land through field centre bases located in Rangiora, Christchurch/Mahaanui, Raukapuka/Geraldine, Te Manahuna/Twizel and Aoraki/Mount Cook. Field centres are located in Hanmer and Arthur's Pass, and Duvauchelle on Banks Peninsula.

Significant areas of public conservation land include National Parks at Aoraki Mount Cook and Arthur's Pass, numerous scenic reserves, national reserves, wilderness areas, scientific reserves, nature reserves, forest parks and conservation parks.

### Climate/weather

All aspects of the climate of Canterbury are dominated by the influence of the Southern Alps on the prevailing westerly airflows. This provides for more frequent high fire danger days. Five main climate zones can be distinguished:

1. The plains, with prevailing winds from the north-east and south-west, low rainfall, and a relatively large annual temperature range by New Zealand standards.
2. The eastern foothills, with cooler and wetter weather, and a high frequency of north-westerlies.
3. The high country near the main divide, with prevailing north-west winds, abundant precipitation, winter snow and some glaciers particularly towards the south.
4. Banks Peninsula and the coastal strip north of Amberley, with relatively mild winters, and rather high annual rainfall with a winter maximum.
5. The inland basins and some sheltered valleys, where rainfall is low with a summer maximum, and diurnal and annual temperature ranges are large.

Main source – NIWA, the climate and weather of Canterbury, 2<sup>nd</sup> edition, G.R Macara

### Land cover

- Aoraki Mount Cook and Arthur's Pass National Parks feature higher elevation montane through to sub-alpine beech forests closer to the Main Divide.
- The majority of hill and high country and foothill Conservation Areas in Canterbury are remnant beech and podocarp forests that once covered the inland foothills, and tussock grasslands and shrub lands.
- Wilding pine exists on Conservation lands within Craigieburn Forest Park and Ruataniwha Conservation Park in the hill and high country.
- A number of important scenic reserves and strategic conservation sites (e.g. for kōwaro (Canterbury mudfish)) exist in and around modified environments since human settlement.



- Significant tussock lands and inland basins that hold national significance through identity and post-glacial features, such as landform, flora and fauna.

### Special risk areas

Areas of higher value that need special attention in all aspects of fire management:

| Special risk area  | Contributes to increased risk of fire in high risk conditions | Affected by use of fire control measures | Needs to be protected by using fire control measures |
|--|---|--|--|
| Te Manahuna Aoraki Project   | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Medbury Reserve  | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input type="checkbox"/>                             |
| Castle Hill  | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input type="checkbox"/>                             |
| Lake Tennyson  | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input type="checkbox"/>                             |
| All scientific reserves  | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input type="checkbox"/>                             |
| All cedar forests  | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input type="checkbox"/>                             |
| All biodiversity project areas such as black stilt and kākāriki areas  | <input type="checkbox"/>                                      | <input type="checkbox"/>                 | <input type="checkbox"/>                             |
| 4WD access for public conservation land back country recreation <ul style="list-style-type: none"> <li>• campfires, recreational vehicles</li> </ul> | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |
| Other high use recreation areas <ul style="list-style-type: none"> <li>• campfires, recreational vehicles</li> </ul>                                 | <input checked="" type="checkbox"/>                           | <input checked="" type="checkbox"/>      | <input checked="" type="checkbox"/>                  |

### Known fire hazards

Wilding tree infestations treated through spraying in the Mackenzie and Craigieburn areas

### Fire history

The known fire history in public conservation lands includes:

| Year        | Fire                               | Cause                       |
|-------------|------------------------------------|-----------------------------|
| August 2020 | Pukaki Downs fire                  | Gas camp cooker             |
| 2017        | Port Hills                         | Unknown                     |
| August 2016 | Macaulay fire                      | Rubbish fire                |
| 2016        | Hanmer fire – Gorge Bridge         | Sparks from machinery       |
| 2016        | Homebush fire                      | Escaped burn                |
| 2015        | Flock Hill fire                    | Sparks from exhaust on road |
| 2011        | Staircase fire – Waimakariri River | Train                       |



| Year | Fire                     | Cause                            |
|------|--------------------------|----------------------------------|
| 2010 | Waimate fire             | Wind event, tree over powerlines |
| 2006 | Bottle Lake              | Suspected arson                  |
| 2004 | Dunsandel                | Unknown                          |
| 2001 | Slovens Creek rail fires | Rail                             |
| 2001 | Cora Lynn fire           | Escaped burn                     |

**Note:** Many moderate and large Wildfires were cross boundary events form one zone to another, and there are many important fires omitted here due to space restrictions.

## Thresholds

### Restricted seasons year round

Due to the values at risk, public conservation lands are kept in a restricted fire season when they are not in a prohibited fire season. Even when the surrounding zone goes to an open fire season, public conservation land will remain in a restricted fire season.

### Thresholds

Build-up Index (BUI) and the degree of grass curing (GC%) are the most relevant fire weather indices to monitor where there is a mixture of indigenous forest, scrub and grasslands as the predominant fuel types.

| Grass Curing (GC%) | Build Up Index (BUI)  |            |                       |
|--------------------|-----------------------|------------|-----------------------|
| (%)                | 0–40                  | 40–80      | >80                   |
| 0–50               | Restricted            | Restricted | Restricted/Prohibited |
| 50–70              | Restricted            | Restricted | Prohibited            |
| >70                | Restricted/Prohibited | Prohibited | Prohibited            |

The degree of grass curing (GC%) is the most relevant fire weather data to monitor for where grassland is the predominant fuel type.

| Grass Curing (GC%) |            |            |
|--------------------|------------|------------|
| 0–60               | 60–80      | >80        |
| Restricted         | Restricted | Prohibited |

### Interpreting this matrix

|                       |  |
|-----------------------|--|
| Open                  | Open fire season   |
| Open/Restricted       | Open fire season but we may move to a restricted season earlier if forecast conditions support this.   |
| Restricted            | Restricted fire season   |
| Restricted/prohibited | Restricted Fire Season but we may move to a prohibited season earlier if forecast conditions support this or stay in a prohibited season longer if grasses remain dry and cured. |

**Prohibited**

Prohibited fire season

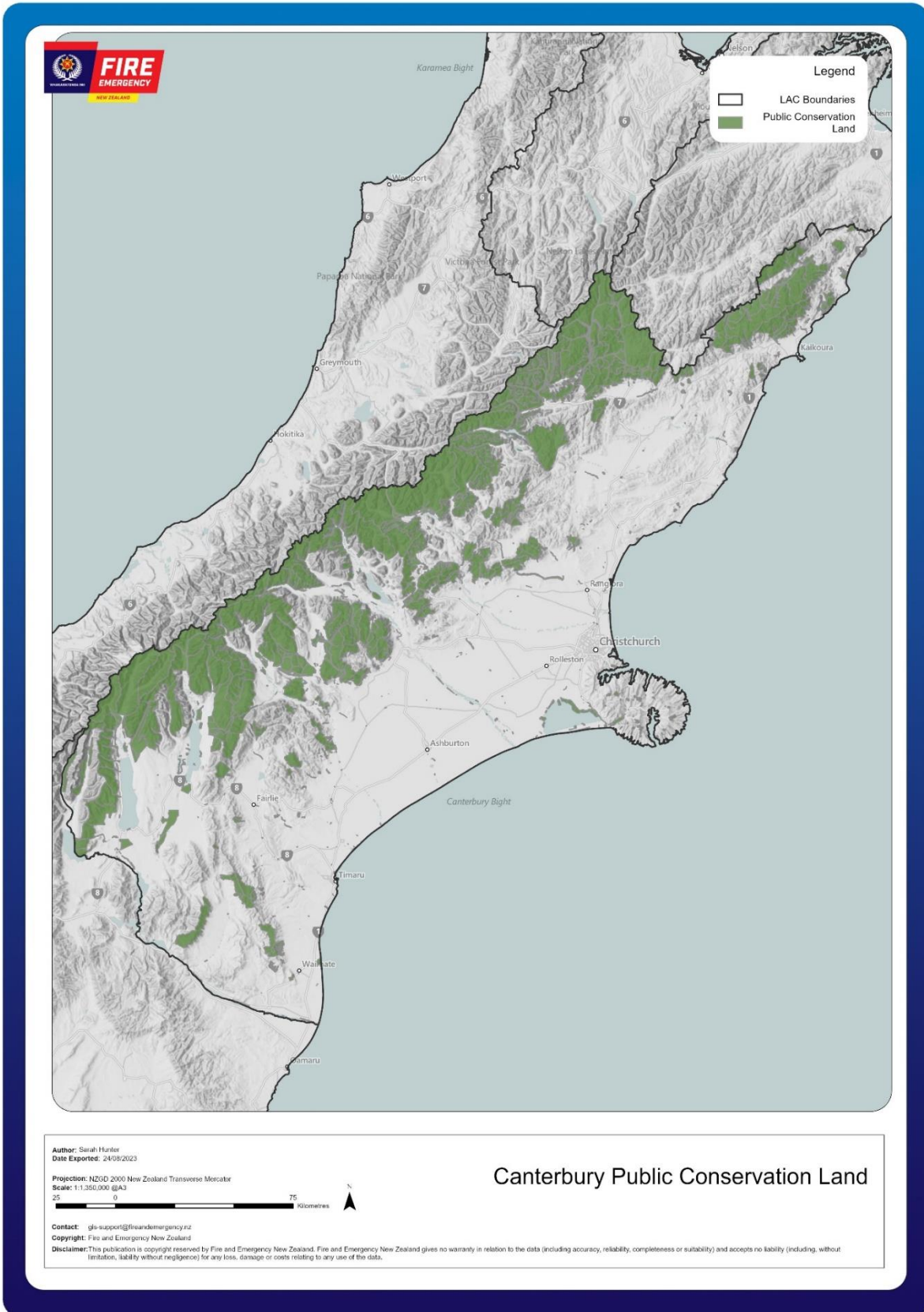
**Representative  
Remote  
Automated  
Weather Stations**

The Remote Automated Weather Stations (RAWS) used to determine whether trigger thresholds have been reached are all stations through the districts adjacent to Conservation area in question

The forecasts for these locations will be considered when declaring or revoking a fire season.

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### Public Conservation Land Map



## New Zealand Defence Force

### Scheduled Defence Areas

Fire and Emergency has entered into an operational service agreement with the New Zealand Defence Force. The New Zealand Defence Force exercises fire control powers in relation to certain Defence Areas listed in a schedule to the agreement, where they have their own fire plans.

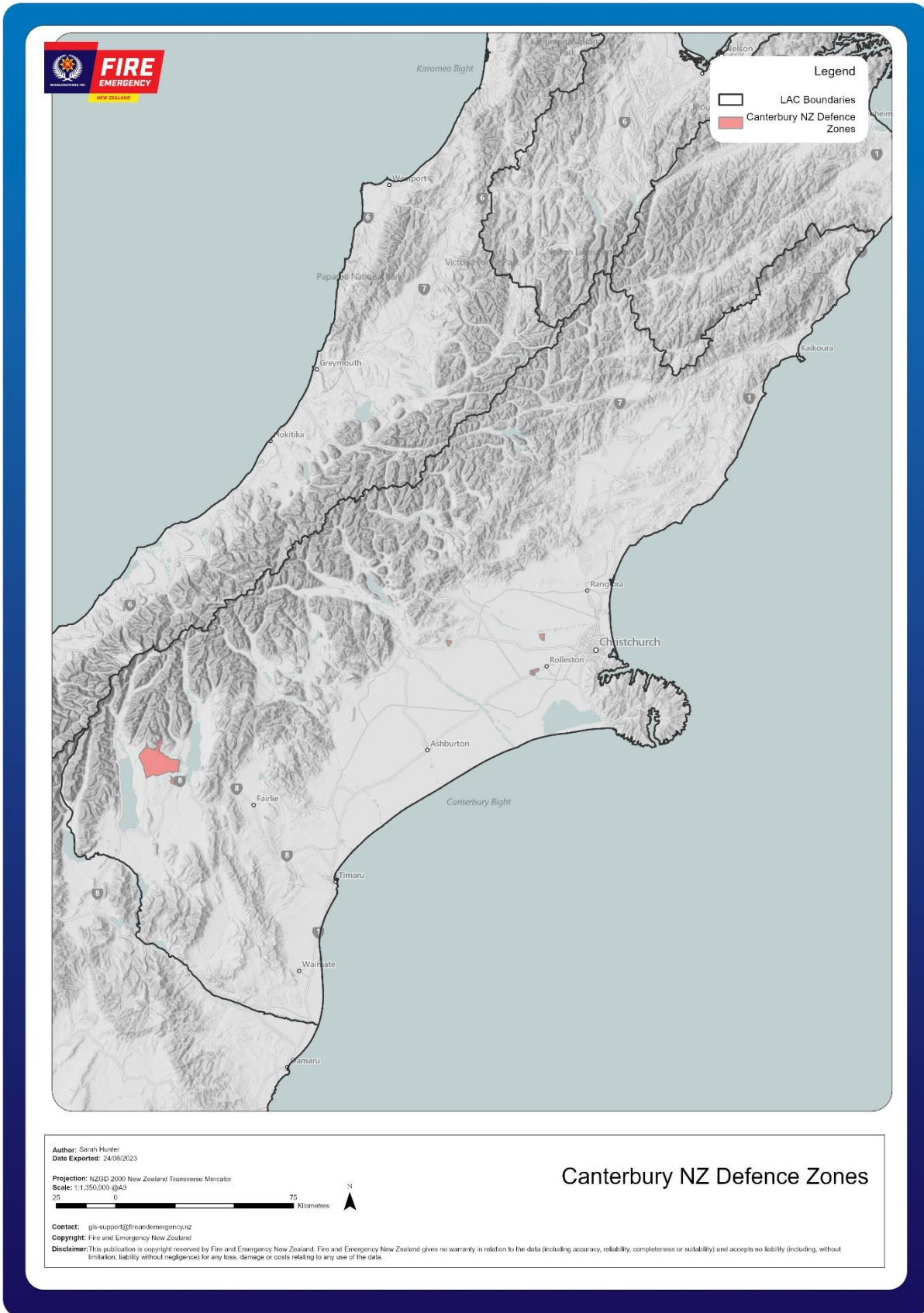
Within the Canterbury local area, activities in the following Defence Areas are subject to New Zealand Defence Force fire control powers, including fire permit requirements:

- Burnham Military Camp
- West Melton Rifle Range
- Glentunnel Defence Ammunition Depot
- Tekapo Military Training Area

Any New Zealand Defence Force activities, including training activities, in other Defence Areas in Canterbury are subject to Fire and Emergency's fire permit requirements, though not our other fire control powers.

Further information about the boundaries of the defence areas and applicable fire controls is available through [www.nzdf.mil.nz/nzdf/contact-us](http://www.nzdf.mil.nz/nzdf/contact-us)

### Canterbury NZ Defence Zones Map



## Appendix 1 – Fire risk guidelines for forestry operations

The following trigger point protocols for forest management and fire protection form guidelines for Rayonier Matariki Forests Canterbury and Port Blakely Forests in the Canterbury Region to conduct their business. Any alterations to these protocols need to be in discussion and approval by the District Manager/Group Manager and the forest companies' managers at the time.

Discussion with forest managers is essential to implementing the correct level of actions from both a commercial and fire safety consideration.

As the trigger points for each of the forest owners are customised for their respective companies, each forest owner's trigger points are included separately here.

**Note:** Any time the ISI is above 11 you will need to recalculate the fire danger level and apply the appropriate preparedness level.

The following tables for Rayonier – Matariki and Port Blakley Forests have been lifted directly out of the respective Forest management guidelines for each company.

### Rayonier Matariki Forests trigger levels

#### Fire Danger Level 1, Low

| Fire Danger<br>Level 1<br>Low                     | Hot Works<br>Permit<br>issue | Standby                       | Proactive<br>Work practice | Access<br>Restrictions | Restrictions on activities |                            |
|---|------------------------------|-------------------------------|----------------------------|------------------------|----------------------------|----------------------------|
|   |                              |                               |                            |                        | Forest<br>Operations       | Recreational<br>Activities |
| Trigger Points                                    | Issue<br>Permits             | Regional staff if<br>required | As per normal<br>work      | No                     | No                         | No                         |
| The Canterbury<br>Regional Fire Season<br>average |                              |                               |                            |                        |                            |                            |
| ISI 8 - 11  |                              |                               |                            |                        |                            |                            |
| BUI ≤ 15  |                              |                               |                            |                        |                            |                            |
| G/C % 15 - 60                                     |                              |                               |                            |                        |                            |                            |
| FWI 0 - 5   |                              |                               |                            |                        |                            |                            |

**Note:** Any time the ISI is above 11 the fire danger level will need to be recalculated and the appropriate preparedness level applied



**Fire Danger Level 2, Moderate**

| Fire Danger<br>Level 2<br>Moderate   | Hot Works<br>Permit issue | Standby                    | Proactive<br>Work<br>practice | Access<br>Restrictions | Restrictions on activities |                            |
|--|---------------------------|----------------------------|-------------------------------|------------------------|----------------------------|----------------------------|
|  |                           |                            |                               |                        | Forest<br>Operations       | Recreational<br>Activities |
| Trigger Points<br><br>The Canterbury<br>Regional Fire<br>Season average<br><br>ISI      8 - 11<br><br>BUI      15 to 30<br><br>G/C %    50 to 60<br><br>FWI      6 to 12 | Issue Permits             | Regional staff if required | As per normal work            | No                     | No                         | No                         |

**Note: Any time the ISI is above 11 the fire danger level will need to be recalculated and the appropriate preparedness level applied**

**Fire Danger Level 3, High**

| Fire Danger<br>Level 3<br>High  | Hot Works<br>Permit issue  | Standby   | Proactive<br>Work<br>practice | Access<br>Restrictions | Restrictions on activities  |                            |
|---|--|---|-------------------------------|------------------------|---|----------------------------|
|   |  |   |                               |                        | Forest<br>Operations  | Recreational<br>Activities |
| Trigger Points<br><br>The Canterbury<br>Regional Fire<br>Season average<br><br>ISI      8 - 11<br><br>BUI      30 to 55<br><br>G/C %    60 to 75<br><br>FWI      13 to 20 | RM or PM to<br>sign off Hot<br>Works permit<br>requests.<br><br>BUI > 50<br>Inspections only | Regional staff made aware ensuring they' re cell phone/radio contact and able to respond within 10 minutes. | Avoid any hot works           | No                     | Ensure there is onsite suppression equipment during spark hazardous operations and when possible, restrict them to the earlier part of the day.<br><br>Consider restrictions for Silvicultural operations | No                         |

**Note: Any time the ISI is above 11 the fire danger level will need to be recalculated and the appropriate preparedness level applied**



## Fire Danger Level 4, very high

| Fire Danger<br>Level 4<br>Very high   | Hot Works<br>Permit issue                                    | Standby  | Proactive<br>Work practice  | Access<br>Restrictions  | Restrictions on activities  |  |
|---|--|--|---|---|---|--|
|   |  |  |   |   | Forest<br>Operations  | Recreational<br>Activities   |
| <p>Trigger Points</p> <p>The Canterbury<br/>Regional Fire Season<br/>average</p> <p>ISI      8 - 11</p> <p>BUI      55 to 90</p> <p>G/C %    75 to 100</p> <p>FWI      21 to 29</p> | Hot work permits with very tight special conditions attached | <p>Either two of the Regional Manager, Production Manager, District Forester or Rooding/ Harvest Planner Manager shall be in Cell contact and able to respond within 10 minutes.</p> <p>Liaise with regional FENZ staff.</p> <p>Regional Staff to be become familiar with the FENZ document, "Triggers for high fire risk activities".</p> | <p>High awareness of workers to fire issues</p> <p>Consider patrol in high hazard areas or trouble spots and at peak fire danger times.</p> | <p>BUI 90 close all Hanmer Public access easements</p> <p>Hanmer Covenant area may be managed separately.</p> <p>BUI 90 close Cramptons Bush Road</p> <p>BUI &gt; 60</p> <p>All non-operational access to vacate forest by 1.00pm</p> <p>(Beekeepers Etc, i.e. Licensees)</p> | <p><b>Harvesting Operations</b></p> <p>Increased onsite suppression equipment. Plan to have onsite fire appliances at strategic harvesting sites and prepare crews for early starts in anticipation of extreme conditions. Plan to move crews into lower fire danger area.</p> <p>Ensure service agents visits and fuel deliveries are carried out before 1:pm</p> <p>Have crews carry out fire drills</p> <p><b>Silvicultural Operations</b></p> <p><b>BUI &gt; 80</b><br/>Chainsaw waste thinning banned in gorse and scrub areas, suspend mulching/mowing operations</p> <p>Consider restricting land prep, grading &amp; tree-trimming.</p> | <p><b>BUI 60</b></p> <p>Consider suspending strategic or high risk public recreational use (i.e. car rally's)</p> <p><b>BUI 80</b></p> <p>Suspend all public recreational use.</p> |
| <p>Half hour site inspections to ensure no fires then vacate forest.</p> <p>Vacate forest by 4.00pm</p>   |  |  |   |   |   |  |

**Note: Any time the ISI is above 11 the fire danger level will need to be recalculated and the appropriate preparedness level applied**

## Fire Danger Level 5, Extreme

| Fire Danger<br>Level 5<br>Extreme   | Hot Works<br>Permit issue                                    | Standby   | Proactive<br>work practice  | Access<br>Restrictions  | Restrictions on activities   |  |
|---|--|---|---|---|--|--|
|   |  |   |   |   | Forest<br>Operations   | Recreational<br>Activities   |
| <p>Trigger points</p> <p>The Canterbury regional fire season average</p> <p>ISI        8 - 11</p> <p>BUI        &gt; 90</p> <p>G/C %    100</p> <p>FWI        &gt; 29</p> | Hot work permits with very tight special conditions attached | <p>All staff to be on standby and be readily contactable.</p> <p>Liaise with regional FENZ staff.</p> | <p>High awareness of workers to fire issues</p> <p>Consider patrols in high hazard areas or trouble spots and at peak fire danger times</p> | <p>All public easements Closed</p> <p><b>BUI &gt; 100</b></p> <p>All non operational access to vacate forest by 10am</p> <p>(Beekeepers etc i.e., Licences)</p> | <p><b>Harvesting Operations</b></p> <p><b>BUI &gt; 100</b></p> <p>Fire appliance onsite at strategic harvesting areas</p> <p>Felling and Extraction machines to start earlier in the morning and cease felling and extraction at 1pm</p> <p>Log processing and cartage as normal</p> <p>Nonstrategic harvesting operations and slash grinding to stop work at 1pm</p> <p><b>BUI &gt; 150</b></p> <p>Tighten restrictions further.</p> <p>Manned fire appliance onsite at strategic harvesting areas. All other operations stopped.</p> <p><b>Silvicultural Operations</b></p> <p><b>BUI &gt; 100</b></p> <p>Chainsaws waste thinning banned in non-gorse &amp; scrub areas.</p> <p>Site prep as per Felling and Extraction</p> | <p><b>BUI &gt; 100</b></p> <p>Suspend all recreational use until conditions ease</p> |

|  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|
|  |  |  |  |  | <p>machines, in a location within 1 road km of a harvesting crew.</p> <p>Grading &amp; Tree trimming only permitted with smoke chaser or appliance on-site.</p> <p><b>BUI &gt; 250</b></p> <p><b>All operations halted</b></p> |  |
|  | <p><b>IMMEDIATE CESSATION ON BEING NOTIFIED BY A RAYONIER EMPLOYEE</b></p> <p>Half an hour site inspection to ensure no fires then vacate forest.</p> <p><b>Vacate forest by 4:00 pm</b></p> |  |  |  |  |  |

**Note: Any time the ISI is above 11 the fire danger level will need to be recalculated and the appropriate preparedness level applied**

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## Port Blakely Forests trigger levels

### Level One: Code Green—LOW

Fire Weather Index (FWI) 0—5 (FFMC < 86, ISI < 10 BUI < 40 )

Undertake Maintenance Checks and Notification Procedures

#### Instructions for all personnel to follow:

##### 1. Physical Checks and Sign Off

- Daily physical inspection of all hauler blocks, ropes and surrounding areas for clearance from slash, binding and fire hazards.
- Weekly physical inspection of all fire equipment (including fire extinguishers).

##### 2. Maintenance and Cleaning

- Chainsaw —high standard of maintenance.
- Machinery — high standard of cleanliness.

##### 3. Notification

- **Report any fire no matter of size through 111 system ( Fire and Emergency NZ ) - FENZ**
- Notify forest owner of fire.
- Notify Forest Manager / Forest Supervisor of any welding.
- The fire danger level recorded at 10:00 each day during fire season or when conditions are elevated—these will be the level used for the restrictions.

Typically Fire season is from 1st Oct - 31st March

The notified level is for the duration of the day or until changed by Port Blakely, Venture Forestry or FENZ

**At any time if the FWI increases beyond 5 implement “Level 2—Code Blue”**

## Level Two: Code Blue - Moderate

Fire Weather Index (FWI) 6—12 (FFMC < 86, ISI < 10, BUI < 40)

Introduce Emergency Plans and Increase Maintenance/Checking

### Additional Instructions for all personnel to follow:

1. Physical Checks and Sign Off

- Daily physical inspection of all hauler blocks, ropes and surrounding areas for clearance from slash, binding and other fire hazards.
- Weekly physical inspection of all fire equipment (including fire extinguishers).

2. Maintenance and Cleaning

- As per Level 1—Green Code

3. Notification

- As per level 1—Green Code— *Plus*

Notify Forest Managers / Supervisors of weekend work and any [Welding / Gas cutting or Abrasive wheel cutting](#)

**At any time if the FWI increases beyond 12 implement “Level 3—Code Yellow”**

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## Level Three: Code Yellow

Fire Weather Index (FWI) 13 - 20 (FFMC > 86, ISI > 10 or BUI > 40)

### Introduce Work Restrictions on Forest Operations

#### Additional Instructions for all personnel to follow:

1. **Physical Checks and Sign Off** As per Level 2 - Code Blue - *Plus*  
All crew and service agents vehicles are to be checked for the required fire equipment by the contractor.
2. **Maintenance and Cleaning** As per Level 2 — Code Blue
3. **Emergency Planning** As per Level 2 — Code Blue - *Plus*
  - Water Points Identify and inspect two nearest reliable water points
  - Escape routes Establish two escape routes from the forest. All crew members to participate.  
Use Tool Box meetings to review plans
  - Refuelling Sites Shovel and knapsack sprayers on each site. Crew to continually scan work site for visible signs of likely fire starts. Contractor Fire appliances to be run weekly .
- Work Restrictions** As per Level 2 - Code Blue —*Plus*
  - Thinning to waste Review risks and high risk sites ( fuel type )
  - Smoking **No smoking within the forest. Unless permitted by contractor smoking is only allowed in work vehicle only. May be reviewed only after significant rainfall**
  - Fire Patrol One person for each operational site to remain for 30 minutes after all operations cease and completes site inspection before leaving.
  - Access Forest Owner to review forest permits and general access agreements
  - Roading Review road side mowing operations
5. **Notification** As per Level 2—Code Blue - *Plus* **All hot-works (Welding, Gas cutting, Abrasive wheel cutting) to be approved by PBL Protection Forester**  
**At any time if the FWI increases beyond 20 Implement Level 4-Code Orange**

## Level Four: Code Orange

Fire Weather Index (FWI) 20—29 (FFMC > 86, or ISI > 10 and BUI > 40)

### Introduce Work Restrictions on Forest Operations

#### Instructions for all personnel to follow:

1. **Physical Checks and Sign Off** As per Level 3 - Code Yellow - *Plus*  
 Diary: Record in a diary  
 Hauler: Consider providing water and or shovel/Rega at each block
2. **Maintenance and Cleaning** As per Level 3 – Code Yellow - *Plus*  
Weekly— record in Diary actions taken ex— hosing down of machinery
3. **Emergency Planning** As per Level 3 - Code Yellow - *Plus*
  - Silviculture Crews Have hand held /cell communications with them at all times.
  - Standby Staff and Contractors to be available for emergency calls
  - All Crews Preparedness, Attack and Evacuation plans to be established.
  - Tail Blocks Inspect and cleaned around after each shift.
4. **Work Restrictions** As per level 3 Yellow - *Plus*
  - Roadside Mowing/Trimming Operations cease.
  - Thinning to waste Low risk areas only determined by Forest Manager. Plan alternative work
  - Fire Breaking and Root Raking Low risk areas only determined by Forest Manager.
5. **Harvesting** Forest Manager to evaluate potential risk from ignition and any operational restrictions. Contractor to remain on site 30 minutes after ceasing work.
6. **Extended Hours** **No extended hours unless agreed with by Forest Company**
7. **Notification** As per Level 3—Code Yellow

**At any time if the FWI increases beyond 29 implement Level 5—Code Red**



# Level Five: Code Red

Fire Weather Index (FWI) 30 +

Introduce Work Restrictions and Fire response Contingency Plans

## Instructions for all personnel to follow:

- |    |                              |  |
|----|------------------------------|--|
| 1. | Physical Checks and Sign Off | As per 'Level 4—Code Orange  |
| 2. | Maintenance and Cleaning     | As per 'Level 4— Code Orange   |
| 3. | Work Restrictions            | As per level 4—Code Orange - <i>Plus</i>   |
|    | - Harvesting Operations      | All chainsaw work and extraction to <b>STOP 1300 Hours</b><br><b>All log processing STOP 1300 Hours.</b><br>Loading out of trucks can continue if stock present<br><i>Consider stopping log truck movements between 1300 and 1900hrs</i> |
|    | - Thinning                   | NO chainsaw operations   |
|    | - Security                   | Increase patrols and location of company fire equipment  |
|    | - All Other Operations       | <b>STOP 1300 HOURS</b><br>Forest Company can override this restriction at any time and close<br>Forests.   |
| 4. | Extended Hours               | <b>No extended hours unless agreed with by Operations Manager / Regional Manager</b>   |
| 5. | Emergency Planning           | As per Level 4—Code Orange   |

**ALL OPERATIONS ARE TO STOP IMMEDIATELY IF:**

Requested by Port Blakely Ltd, Venture Forestry or by

**FENZ**

## Appendix 2 – Hot works triggers

### Spark Hazardous industry activities with grass and scrub fuels fire risk potential:

1. Roadside and pasture/ gorse / scrub mowing and mulching
2. Welding, grinding, gas cutting
3. Crop harvesting including harvesters and transport vehicles
4. Land preparation including tractors and implements that strike or move through the ground
5. Tracked machine operation
6. Use of electric fences
7. Use of scrub bars, chainsaws, chippers

### Grass Fuels:

- At low **grass curing** values, the proportion of dead grass fuel present is low and there is little fuel to be ignited. Potential for fire spread is also low and any fire will only spread slowly, if at all, and with lower fire intensity so that control is more easily achieved.
- At high **grass curing** values, the proportion of dead grass fuel present is higher meaning fire will develop and spread faster with higher intensity making control more difficult.
- At low **FFMC (Fine fuel moisture code)** values, grass fuels are moister so that the likelihood of ignition is low, and fire spread is impeded.
- At high **FFMC (Fine fuel moisture code)** values, grasses are drier and are easily ignited, and fire will develop fast and spread rapidly.

### Scrub Fuels:

Scrub fuels particularly manuka and gorse have a high loading of fine fuels that dry out rapidly often within days after rain. Hot, dry and windy days will dry scrub out and make it available to burn rapidly. Fires are easily ignited, develop and spread quickly and burn with high intensity making control difficult.

### Heat and Spark Hazardous Operations (Hot works) Fire Prevention Guideline

As well as grass mowing when the grass or scrub is dry, cutting, grinding and activities where metal may strike metal or stone have a history of starting fires. These typically ignite grass and scrub fuels. Grass curing and FFMC (Fine Fuel Moisture Code) are the major factors in determining fire risk ignition potential from sparks. High wind speeds will escalate fire spread and growth once ignition has occurred.

### How to use this guide

There are two ways to use this guide –

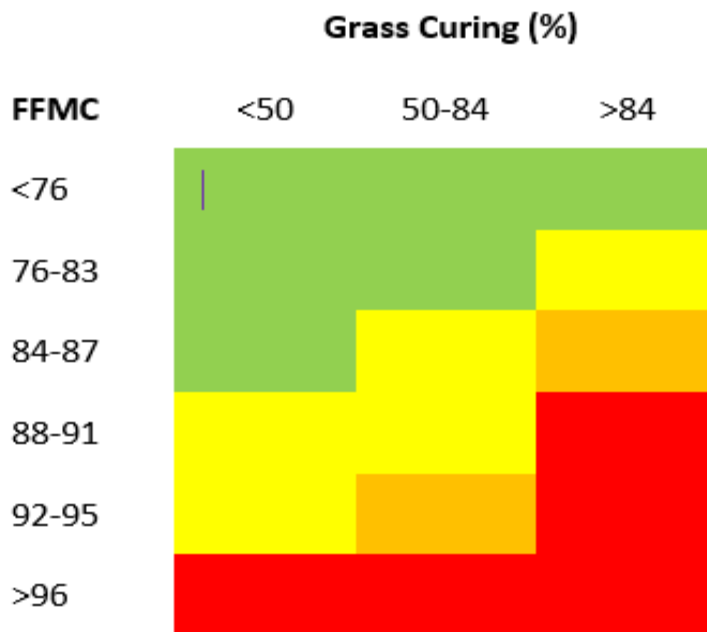
- Use the method described below for a site-specific assessment. You will need to have a basic understanding of fire science to understand how to do this.
- Use the code produced and emailed out each day by Fire and Emergency NZ.












**Site specific assessment procedure**

1. Use the grass curing guide on the next page to help determine grass curing level
2. Determine the FFMC by
  - a. FFMC Level Guidelines can be viewed at <https://fireweather.niwa.co.nz/region/Canterbury> scroll down to the table and the FFMC level for your nearest weather station can be read or
  - b. Or refer to the daily broadcast provided by Fire and Emergency New Zealand
3. Use this matrix below to identify the relevant risk by cross matching the onsite grass curing level with the FFMC for the day / time. Where these two indices cross provides the “Colour Code” risk level for the site. Look up the applicable “Colour Code” in the table below to determine equipment requirements and timing restrictions for your activity

If the equipment requirements are impractical, e.g. an individual working at distance from a vehicle may find it impractical to carry 15L of water for any length of time, consider moving hours of work to when there are cooler temperatures and higher humidity, such as early morning while there is still dew present.

**Grass curing guide**



|  |            |                     |   |
|--|------------|---------------------|---|
| From early growth to start of seed head development                | <b>0</b>   | <b>GREEN PHASE</b>  |    |
| Seed heads formed and flowering                                    | <b>10</b>  |                     |    |
| Seed heads maturing and changing colour                            | <b>20</b>  |                     |    |
| Yellowing becoming apparent in leaves                              | <b>30</b>  |                     |    |
| Slightly more than half green                                      | <b>40</b>  | <b>YELLOW PHASE</b> |    |
| Half green and half yellow, half of stems have dropped their seeds | <b>50</b>  |                     |   |
| Slightly more than half yellow                                     | <b>60</b>  |                     |  |
| Yellow dominating landscape, some green visible                    | <b>70</b>  | <b>DRY PHASE</b>    |  |
| Lower third of stalk may be green                                  | <b>80</b>  |                     |  |
| Very little green in landscape, all seeds dropped                  | <b>90</b>  |                     |  |
| No green in landscape, stalks fully cured and break easily         | <b>100</b> |                     |  |

When estimating the amount of cured or dead grass, ensure that you take into account the amount of thatch that may be under the top

**Code Green****NB: Any items in Bold indicate the requirement has been introduced at that Colour Code level**

| <b>Equipment Requirements</b>   |                       |   |                  |                      |
|---|-----------------------|---|------------------|----------------------|
| <b>Requirements for....</b>   | <b>Extinguishers</b>  | <b>Water</b>  | <b>Handtools</b> | <b>Communication</b> |
| Road side and pasture/ gorse / scrub mowing and mulching.   | <b>2kg dry powder</b> | <b>9 litre pressurised water extinguisher or full 15 litre knapsack</b> | <b>Shovel</b>    |                      |
| Welding / Grinding / Gas cutting  | <b>2kg dry powder</b> | <b>9 litre pressurised water extinguisher or full 15 litre knapsack</b> | <b>Shovel</b>    |                      |
| Crop Harvesting machine / site, includes crop trimming  | <b>2kg dry powder</b> | <b>9 litre pressurised water extinguisher or full 15 litre knapsack</b> | <b>Shovel</b>    |                      |
| Mechanical pasture / scrub development /discing / ploughing / cultivating                                   | <b>2kg dry powder</b> | <b>9 litre pressurised water extinguisher or full 15 litre knapsack</b> | <b>Shovel</b>    |                      |
| Tracked and digging machines on grass / dead &/or dry vegetation (Includes civil contracting and quarrying) | <b>2kg dry powder</b> | <b>9 litre pressurised water extinguisher or full 15 litre knapsack</b> | <b>Shovel</b>    |                      |
| Use electric fences   |                       |   |                  |                      |
| Chainsaws, chippers, steel scrub cutters  |                       | <b>9 litre pressurised water extinguisher or full 15 litre knapsack</b> | <b>Shovel</b>    |                      |

| <b>Activity Requirements</b>                   |   |
|--|---|
| <b>Requirements for....</b>                    |   |
| Welding / Gas Cutting / Abrasive Wheel Cutting | <b>Only on bare earth / non-flammable surface</b> |

## Code Yellow

**NB: Any items in Bold indicate the requirement has been introduced at that Colour Code level**

| Equipment Requirements  |                |   |           |  |
|---|----------------|---|-----------|--|
| Requirements for....  | Extinguishers  | Water   | Handtools | Communication                                    |
| Road side and pasture/ gorse / scrub mowing and mulching.   | 2kg dry powder | 9 litre pressurised water extinguisher or full 15 litre knapsack.<br><b>100 litres available under pressure within 5 minutes.</b> | Shovel    | <b>Radio to base or cell phone with coverage</b> |
| Welding / Grinding / Gas cutting  | 2kg dry powder | 9 litre pressurised water extinguisher or full 15 litre knapsack.<br>within <b>5m of worksite</b>                                 | Shovel    | <b>Radio to base or cell phone with coverage</b> |
| Crop Harvesting machine / site, includes crop trimming  | 2kg dry powder | 9 litre pressurised water extinguisher or full 15 litre knapsack.   | Shovel    | <b>Radio to base or cell phone with coverage</b> |
| Mechanical pasture / scrub development /discing / ploughing / cultivating                                   | 2kg dry powder | 9 litre pressurised water extinguisher or full 15 litre knapsack.   | Shovel    | <b>Radio to base or cell phone with coverage</b> |
| Tracked and digging machines on grass / dead &/or dry vegetation (Includes civil contracting and quarrying) | 2kg dry powder | 9 litre pressurised water extinguisher or full 15 litre knapsack.   | Shovel    | <b>Radio to base or cell phone with coverage</b> |
| Use electric fences   |                |   |           |  |
| Chainsaws, chippers, steel scrub cutters  | 2kg dry powder | 9 litre pressurised water extinguisher or full 15 litre knapsack.   | Shovel    | <b>Radio to base or cell phone with coverage</b> |

| <b>Activity Requirements</b>  |  |
|---|--|
| <b>Requirements for....</b>   |  |
| Road side and pasture/ gorse / scrub mowing and mulching.   | <b>Ensure mower head bearings are in good condition</b><br><b>Ensure engine compartment is clean</b>   |
| Welding / Grinding / Gas cutting  | <b>Not permitted above vegetation. Only on bare earth / non-flammable surface</b><br><b>Wet down area 4m around work site before commencing</b><br><b>Patrol for 30 minutes after completion</b> |
| Crop Harvesting machine / site, includes crop trimming  | <b>Check and if necessary clean machine daily</b>  |
| Mechanical pasture / scrub development /discing / ploughing / cultivating                                   | <b>Check and if necessary clean machine daily</b>  |
| Tracked and digging machines on grass / dead &/or dry vegetation (Includes civil contracting and quarrying) | <b>Check and if necessary clean machine daily</b>  |
| Use electric fences   | <b>Check fences and mains feed lines for shorts - weekly</b>   |
| Chainsaws, chippers, steel scrub cutters  | <b>Check and if necessary clean machine daily. Avoid using scrub bars where contact with rock or steel may occur</b>   |



## Code Orange

**NB: Any items in Bold indicate the requirement has been introduced at that Colour Code level**

| Equipment Requirements  |                |  |           |   |
|---|----------------|--|-----------|---|
| Requirements for....  | Extinguishers  | Water  | Handtools | Communication                             |
| Road side and pasture/ gorse / scrub mowing and mulching.   | 2kg dry powder | 9 litre pressurised water extinguisher or full 15 litre knapsack.<br><b>300 litres available under pressure with at least 60m hose within 2 minutes.</b> | Shovel    | Radio to base or cell phone with coverage |
| Welding / Grinding / Gas cutting  | 2kg dry powder | 9 litre pressurised water extinguisher or full 15 litre knapsack within 5m of worksite   | Shovel    | Radio to base or cell phone with coverage |
| Crop Harvesting machine / site, includes crop trimming  | 2kg dry powder | 9 litre pressurised water extinguisher or full 15 litre knapsack.<br><b>300 litres available under pressure with at least 60m hose within 2 minutes.</b> | Shovel    | Radio to base or cell phone with coverage |
| Mechanical pasture / scrub development /discing / ploughing / cultivating                                   | 2kg dry powder | 9 litre pressurised water extinguisher or full 15 litre knapsack.<br><b>300 litres available under pressure with at least 60m hose within 2 minutes.</b> | Shovel    | Radio to base or cell phone with coverage |
| Tracked and digging machines on grass / dead &/or dry vegetation (Includes civil contracting and quarrying) | 2kg dry powder | 9 litre pressurised water extinguisher or full 15 litre knapsack.<br><b>300 litres available under pressure with at least 60m hose within 2 minutes.</b> | Shovel    | Radio to base or cell phone with coverage |
| Use electric fences   |                | Consider using low power portable units and turning off farm mains units.  |           |   |
| Chainsaws, chippers, steel scrub cutters  | 2kg dry powder | 9 litre pressurised water extinguisher or full 15 litre knapsack.<br><b>300 litres available under pressure with at least 60m hose within 2 minutes.</b> | Shovel    | Radio to base or cell phone with coverage |

| Activity Requirements  |   |
|--|---|
| Requirements for....   |   |
| Road side and pasture/ gorse / scrub mowing and mulching.  | <p>Ensure mower head bearings are in good condition</p> <p>Ensure engine compartment is clean</p> <p><b>Have an observer behind operation or where all work area can be seen.</b></p> <p><b>Restricted hours of work to when FFMC less than 83 (generally no work 12:00pm – 7:00pm)</b></p>                       |
| Welding / Grinding / Gas cutting   | <p>Not permitted above vegetation. Only on bare earth / non-flammable surface</p> <p>Wet down area 4m around work site before commencing</p> <p>Patrol for 30 minutes after completion</p>  |
| Crop Harvesting machine / site, includes crop trimming   | <p>Consider restricted hours of work to when FFMC greater than 83 (generally no work 12:00pm – 7:00pm)</p> <p><b>Consider having an observer watching for fires from where all the work area can be seen</b></p> <p>Check and if necessary clean machine daily</p>  |
| Mechanical pasture / scrub development /discing / ploughing / cultivating                          | <p><b>Consider restricted hours of work to when FFMC greater than 83 (generally no work 12:00pm – 7:00pm)</b></p> <p><b>Consider having an observer watching for fires from where all the work area can be seen</b></p> <p>Check and if necessary clean machine daily</p>   |
| Tracked and digging machines on grass / dead vegetation (Includes civil contracting and quarrying) | <p><b>Consider restricted hours of work to when FFMC greater than 83 (generally no work 12:00pm – 7:00pm)</b></p> <p><b>Consider having an observer watching for fires from where all the work area can be seen</b></p> <p>Check and if necessary clean machine daily</p>   |
| Use electric fences  | <p>If strong wind over 25km/h turn off fence or use low power portable unit</p>   |
| Chainsaws, chippers, steel scrub cutters   | <p><b>Consider restricted hours of work to when FFMC greater than 83 (generally no work 12:00pm – 7:00pm)</b></p> <p><b>Consider having an observer watching for fires from where all the work area can be seen</b></p> <p>Check and if necessary clean machine daily</p> <p><b>Stop use Steel Scrub Bars</b></p> |

Note: when conditions are Code Red, only essential work should be undertaken. Ignition is very easy and any fire will develop and spread rapidly making control very difficult

## Code Red

**NB: Any items in Bold indicate the requirement has been introduced at that Colour Code level**

| <b>Equipment Requirements</b>  |                      |  |                  |   |
|--|----------------------|--|------------------|---|
| <b>Requirements for....</b>  | <b>Extinguishers</b> | <b>Water</b>   | <b>Handtools</b> | <b>Communication</b>                      |
| Road side and pasture/ gorse / scrub mowing and mulching.  |                      | Operation stopped  |                  |   |
| Welding / Grinding / Gas cutting   | 2kg dry powder       | 9 litre pressurised water extinguisher within 5m of work site<br>1000 litres available under pressure with at least 60m hose within 2 minutes of site. | Shovel           | Radio to base or cell phone with coverage |
| Crop Harvesting machine / site, includes crop trimming   | 2kg dry powder       | 9 litre pressurised water extinguisher.<br>1000 litres available under pressure with at least 60m hose within 2 minutes of site.                       | Shovel           | Radio to base or cell phone with coverage |
| Mechanical pasture / scrub development /discing / ploughing / cultivating                          | 2kg dry powder       | 9 litre pressurised water extinguisher.<br>1000 litres available under pressure with at least 60m hose within 2 minutes of site.                       | Shovel           | Radio to base or cell phone with coverage |
| Tracked and digging machines on grass / dead vegetation (Includes civil contracting and quarrying) | 2kg dry powder       | 9 litre pressurised water extinguisher.<br>1000 litres available under pressure with at least 60m hose within 2 minutes of site.                       | Shovel           | Radio to base or cell phone with coverage |
| Use electric fences  |                      | Check all fences and feeds daily for shorts  |                  |   |
| Chainsaws, chippers, steel scrub cutters   | 2kg dry powder       | 9 litre pressurised water extinguisher or full 15 litre knapsack.<br>1000 litres available under pressure with at least 60m hose within 2 minutes.     | Shovel           | Radio to base or cell phone with coverage |

## Appendix 3 – Power line auto-recloser system triggers – fire risk guidelines

Computer-controlled power restarts after electrical faults have put a line off the grid have the potential to start fires from sparking electrical current if the line is severed and lying on the ground in ignition-receptive fuels. The objective is to minimise the risk of fire starts from the automatic switching of power by using triggers to identify when auto-reclosing should be switched off.

The main fuel type beneath power lines along roadsides and in adjacent agricultural lands into which fires could spread is grass. Again, this is a spark-hazardous activity, and Wakelin et al.'s (2010) grass ignition thresholds for metal sparks can be used.

- Faults often caused by high winds (line arcing, contacts or breakage)
- Often ignite rank roadside grass beneath lines (mod/high grass fuel load)
- Ignition is dependent on presence of dead fuels (**grass curing**) and grass moisture content (from **FFMC**)
- Fire spread (and intensity) is also dependent on grass curing and ISI
- Matrix of FFMC and Grass Curing, with additional Wind Speed trigger retained to capture both wind effects on line breakage potential and fire spread
- The Wind Speed trigger has been set at WS <40 km/h (which equates to gusts of 60-80 km/h) to take account of likely line breakage above this level of wind speed
- The range of conditions under which the Level 2 Wind Speed condition applies has also been expanded to include lower FFMC levels across all curing levels (up one step in each case).
- Fire spread (and intensity) also dependent on Grass Curing and ISI
- Wind speed is used as an indicator of when power failures are likely to be caused by line breakage (lines snapping directly or being broken by fallen branches in high winds), and therefore to come into contact with the ground and fuels where they could ignite a fire, in high winds (as opposed to other faults or false alarms)

Wind speed also governs the rate of fire spread potential following ignition

Separating out FFMC and wind speed better reflects the separate fuel moisture and wind speed influences. It also avoids instances where a high wind speed but low FFMC results in a high ISI that might otherwise have triggered higher level auto-re-closure controls, but ignition is highly unlikely (due to wet fuels at the low FFMC).