

Fire Plan for
Canterbury, Te Ihu
2021 –2024



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Status of this document

This document is issued by Fire and Emergency New Zealand.

Recommendations for change

The document, its content and specific processes are not to be altered except through Fire and Emergency New Zealand document management processes.

Requests or recommendations for changes to this material should be sent to Region Manager, Te Ihu

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Document information

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Approval

Full Name: Paul Henderson

Title: Region Manager

Date: 27 July 2021



Signature

Introduction

How to use this document

The front sections of this document contain information about fire plans in general, and the basics of Fire and Emergency New Zealand's fire control powers and how we use them to reduce the risk of unwanted fires, particularly around fires in the open air.

The back portion of this document contains the locally specific information relevant to this fire plan area, as these 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](#) 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, or to prohibit fires and even restrict activities that may cause unwanted fires, and how we apply our other powers to manage fire hazards or require firebreaks. This helps 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:

- 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, and the fire plan can be broken down into specific zones within the area where fire risk conditions or control measures differ.
- set out the policy for fire control in the local area. This sets out when and why we restrict or prohibit fires in the outdoors, or restrict activities that may cause unwanted fires, and manage fire hazards or require firebreaks
- set out the procedures to be followed for fire control in the local area, including details of the processes that Fire and Emergency will follow, and the 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.

A fire plan must be consistent with:

- Fire and Emergency's national strategy
- any local planning by Fire and Emergency in respect of 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.

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.

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 the context of these fire plans, local area is the area within each Local Advisory Committee'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 Local Advisory Committee in respect of the local area are set.

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

Zones

Zones within an area can be based on climatic conditions, geographical features or land use based on previous work on analysing the wildfire threat, or territorial authority, to enable fire seasons to be applied to the zone in a way that makes sense from a fire science point of view, and our ability to communicate where the boundaries are with the public.

Consultation

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

- publish a notice that:
 - gives an overview of the content of the proposed plan
 - states where you can see and read a copy of the plan
 - specifies how you can make a submission on the plan and where to send your submissions
 - specifies the closing date and time for submissions
- consider every submission received by the closing date and time for submissions.

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

Key stakeholders

A list of key stakeholders involved in the creation of the plan, those who should contribute to its maintenance and relevant decision making is included as the stakeholder schedules in the local area and zone information in this plan.

Review and amendment

Fire and Emergency may amend a fire plan at any time, but 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 confirm that the fire plan remains appropriate for that area; or amend the fire plan as necessary, and consult on changes.

This is the first time that fire plans of this nature have been developed under the new legislation. These plans may be reviewed and amended sooner than the 3 year time limit to ensure we can continue working with stakeholders to improve the plans.

4 Rs of emergency management

New Zealand's approach to emergency management can be described by the four areas of activity, known as the '4 Rs' – reduction, readiness, response and recovery.

Fire plans are a part of our work in the Reduction space. Previous fire plans under the old rural fire authorities also had components of Readiness and Response, and that information is now incorporated into other planning work and operational procedures.

Have a look at the range of work that Fire and Emergency does in each of the 4 Rs.



Reduction

Identifying and analysing long-term risks to human life and property; taking steps to eliminate these risks if practicable, and, 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, which includes these fire plans, and our fire control powers for reducing the likelihood of unwanted fire from the use of fire in the open air, and other causes of wildfire through 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

Developing operational systems and capabilities before an emergency occurs, including 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

Attending incidents and taking immediate action before, during or directly after an incident to protect and preserve life, prevent or limit injury, reduce damage to land or property, protect the environment and help people begin recovery.

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.

Recovery

Helping people who have suffered loss and trauma to receive the appropriate support. 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:

- 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
- ensuring 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 community pre-planning for major events and 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 work 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, or for cooking, comfort and warmth.

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

The public face of this is the [Checkitsalright.nz](https://www.checkitsalright.nz) website, the [fire permit application system](#), these fire plans, and additional information on our public website – [fireandemergency.nz](https://www.fireandemergency.nz).

Fire and Emergency has a number of statutory fire control powers that can be applied to help reduce risk, as follows:

- 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

The current internal policies and supporting processes that guide our decisions and actions are:

Policy	Detail
Fire seasons, prohibitions and restrictions policy	Relating to sections 52 to 58 of the Act and decisions to: <ul style="list-style-type: none"> • declare or revoke a prohibited or restricted fire season • prohibit fire in open air or revoke a prohibition • prohibit or restrict activities that may cause a fire to start or spread, and revoke prohibition or restriction.
Fire permitting policy	Supporting the policy above and also defining actions for: <ul style="list-style-type: none"> • supporting a member of the public who is applying for a fire permit • assessing a fire permit application • granting or renewing a fire permit • refusing to grant or renew a fire permit • suspending or cancelling a fire permit • operational decisions when responding to an alarm of fire in open air.

Policy	Detail
Fire hazard removal policy	<p>Relating to sections 65 to 67 of the Act and decisions about what to do when:</p> <ul style="list-style-type: none"> • a potential fire hazard is reported to Fire and Emergency • we assess a potential fire hazard • we arrange for the removal or destruction of a confirmed fire hazard.
Compliance and enforcement policy	<p>Covering 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:</p> <ul style="list-style-type: none"> • reduce harm from unwanted fire • support the safe use of fire as a land management tool and reduce harm if fire escapes control • minimise avoidance of the Fire Emergency levy • reduce non-compliance with any legislation or regulations under which Fire and Emergency New Zealand has a compliance function.

Note: work is also under way to define policy and guidance for both internal and stakeholder audiences, covering:

Policy	Detail
Firebreaks	<p>Relating to sections 62 to 64 of the Act to support decisions and actions relating to requirements for landholders to:</p> <ul style="list-style-type: none"> • make and clear any firebreak on the landholder's land • remove any vegetation or other thing from an existing firebreak.

Fire risk conditions

The circumstances where we can use our fire control powers to prohibit fire and or restrict other activities are defined in the Act 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.

Fire risk conditions are defined in the 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.

Other conditions, considered to be fire risk conditions for the purposes of exercising our fire control powers, include:

Condition	Description
Fire weather science	The NZ Fire Danger Rating System includes measures, such as: <ul style="list-style-type: none"> • Build-up Index (BUI) • Initial Spread Index (ISI) • Fire Weather Index (FWI) • Grass curing percentage • Fine Fuel Moisture Code (FFMC) • Drought code (DC).
Topography	Factors that influence how a fire spreads, including: <ul style="list-style-type: none"> • steepness of slope • direction fire is facing, i.e. aspect • terrain features, e.g. gullies and chimneys.
Fuel behaviour models	The characteristics of fuel, or vegetation, that contribute to fire ignition and spread.
History of fires	History of recent fires 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. 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: <ul style="list-style-type: none"> • life values, e.g. size of land parcels in an urban area • distance from commercial forestry.
Ability to provide an effective response	Factors that contribute to our ability to respond to an out of control fire include: <ul style="list-style-type: none"> • availability of response resources, i.e. people and equipment • isolation • accessibility issues • availability of water supplies.
Impacts from natural disasters	Natural disasters are likely to influence resource availability and the likelihood of fires.

Condition	Description
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, and to manage the use of fire to protect communities from the consequences of unwanted fire.

Fire and Emergency can declare or revoke a prohibited or restricted fire season in an area, and uses its 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, curing, weather, topography, historic trends)
- fire climatic zones
- topographical boundaries/features (rivers, roads, coast lines, forest and national park boundaries)
- fire control considerations.

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

Open fire season



Fires may be lit in open air, without restriction. Applies whenever there is not a prohibited or restricted fire season in place.

Restricted fire season



Lighting a fire is riskier than usual. A fire permit is required and may also have specific conditions to make sure fires can be safely lit and 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://www.fireandemergency.govt.nz/checkitsalright).

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.

Note that this does not mean that you can light fires anywhere you want to. Department of Conservation, local council or regional council bylaws 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 clearing or burning crop stubble, so that we can share advice on how and when to conduct your fire safely.

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 means that we can understand where and when fire is being used, so that our fire brigades don't need to respond unnecessarily.

It also gives us an opportunity to give advice about how the fire can be conducted safely, or we can apply conditions around when the fire can be lit, how big it can be, or any other requirements that reduce the chance of the fire escaping control.

Prohibited fire seasons

When the fire danger reaches higher levels, we need to stop people from lighting fires that may escape, as the 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 provide us with a consistent, scientific way to monitor the fire danger in an area.

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

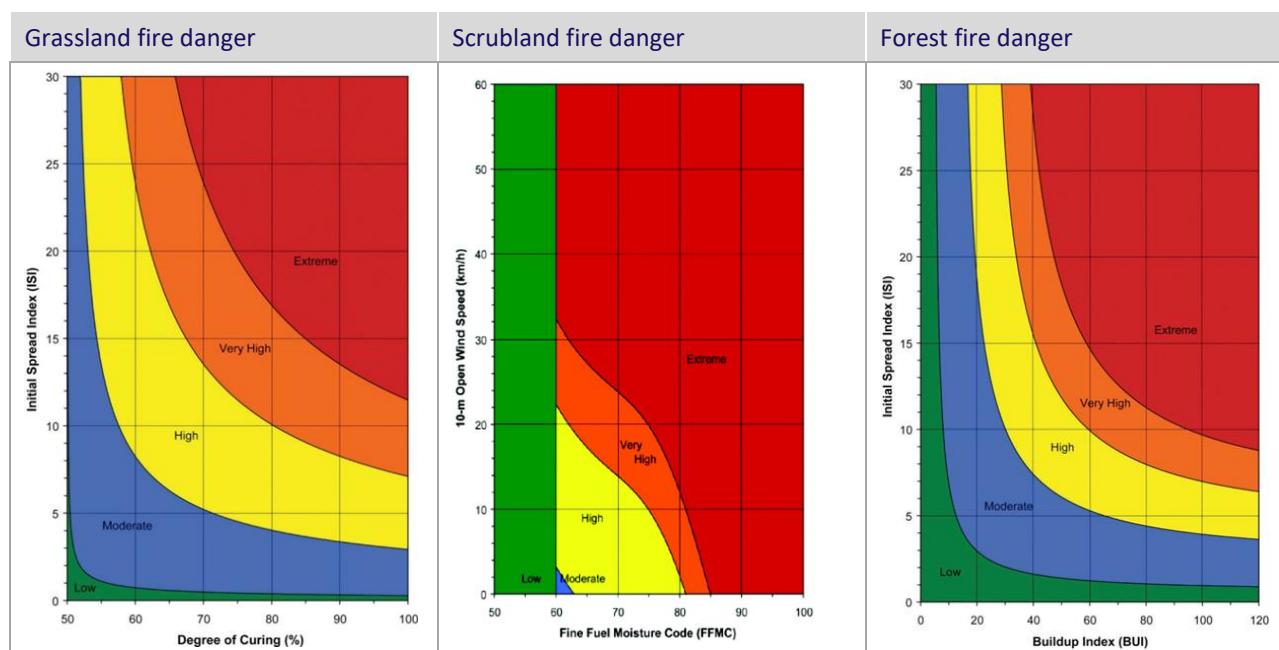
The trigger thresholds make use of:

- 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, other emergency events etc., may also feed into 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 and 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)

There are times when Fire and Emergency may need to prohibit fires in the open air, outside of the usual fire season changes. This control is used very rarely, in exceptional circumstances, for example when:

- large or multiple incidents occur that put firefighting resources under strain
- extreme fire weather conditions occur during a restricted fire season, e.g. strong dry winds, high temperatures associated with very low humidity
- emergency events occur, e.g. the 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 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 the Epidemic Preparedness (COVID-19) Notice 2020 is in force, without needing to consider fire risk conditions or other factors. This might happen if our response capabilities are affected by COVID, 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](#).

If someone breaches the ban, they can be charged under [section 54](#) of the Fire and Emergency New Zealand Act 2017.

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)

There are times when fire risk conditions are elevated to an extent that certain activities may cause a fire to start or spread. Examples of these activities include but are not limited to:

- roadside mowing
- cutting or welding operations outdoors that involve the use of portable gas, disc grinder or arc welding equipment that produces sparks, flames or heat, generally known as 'hot works'
- chainsaw thinning to waste/tree felling
- mowing, ploughing or harrowing fields
- use of fireworks and flying lanterns
- firing tracer bullets.

[Section 52](#) of the Act allows us to prohibit or restrict one or more activities in an area or areas, when our assessment is 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
- there is an inability to adequately mitigate the assessed risk.

Prohibition or restriction means:

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"> • the times of the day • the manner in which it is undertaken.

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:

- for the supply and distribution of food, water, fuel, power, and other necessities
- for the maintenance of transport and communication facilities that are essential to the well-being of the community
- for the maintenance of the health of the community
- for the maintenance of law and order, public safety, and the defence of New Zealand
- for the preservation of 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, when 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, then we will use [section 52](#) to apply the restrictions or prohibitions to everyone within the zone.

Our policy for fire seasons, prohibitions and restrictions says that we only prohibit or restrict activities if we have engaged with stakeholders and they are unable to satisfactorily mitigate the identified risks.

Legally restricting or prohibiting activities can have a significant economic impact, so should not be done without due consideration.

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

Activities and risk mitigation

Forestry operations

The NZ Forest Owners Association have developed the [Forest fire risk management guidelines](#) (2018) which contains trigger point tables and what fire prevention actions are required during different fire danger levels. These guidelines are supported by Fire and Emergency.

If local trigger values have been set, they will be listed in the zone information in this document. NIWA's website will be updated to display the levels decided locally.

Powerline auto-reclosers

Most power companies use a computer-controlled auto recloser system which attempts to reconnect the power up to three times following a fault before a technician needs to be sent. If the fault was the result of a downed wire(s), 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 website will be updated to display the levels decided locally.

Power companies also make use of other reduction activities, following the [Electricity \(Hazards from Trees\) Regulations 2003](#), such as trimming trees around power lines, providing fault reporting to public, undergrounding power lines, and providing tree planting guidance.

Hot works

This includes activities such as welding, grinding, chain sawing, metal cutting, mowing and railway track maintenance.

If local trigger values have been set, they will be listed in the zone information in this document. NIWA's website 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, the use of machinery and equipment during high fire danger periods and the potential effect on local landholders.

Fireworks

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

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

Council bylaws may limit where and when fireworks may be used.

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

This prohibition does not include pyrotechnics displays as these are permitted activities that are assessed by risk management staff as part of their application for approval of the pyrotechnics display.

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, and provides advice to the public to promote the safe use of fireworks. We recommend people attend publicly organised displays where possible.

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, so they need to know what the current fire season is in the area, whether any other prohibition applies, and whether a permit is required.

Fire season changes, and restrictions and prohibitions under [section 52](#) of the Act, are publicly notified to our communities, stakeholders and partners in a number of ways.

Modes of communication can include, but are not limited to:

- 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
- Check It's Alright website www.checkitalright.nz or information available by phoning 04 496 3600
- Fire danger or fire season signs – these are changed to reflect season status with additions of “Fire by permit only” or “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 to build awareness of the dangers of wildfires and promote positive behaviour changes.

Messaging using traditional and digital media, such as social media and on-demand video can be targeted at affected areas at effective times.

When a fire season change affects public conservation land (PCL), we must also notify the Department of Conservation (DOC) of any intention 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 current local fire risk conditions.

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.

Fire permits may also be suspended or cancelled in certain circumstances, such as: where fire risk conditions change, for fire control purposes, or as fire seasons change/prohibitions are imposed.

No liability is imposed on Fire and Emergency because of the granting of a fire permit, under [section 190\(8\)](#) of the Act.

Council bylaws, 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 when issuing permits, so even if Fire and Emergency has issued a fire permit, you may not be allowed to light your fire due to other requirements.

Even if a fire permit is not required from us, due to an open fire season etc., you may not be able to light fires in some places.

Council bylaws and regional plan rules relating to smoke and air pollution must also be followed.

Managing smoke nuisance comes under local government jurisdiction and not Fire and Emergency, 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:

- type of fire
- the 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.

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

Authorised fire types in a restricted fire season, i.e. those fire types not requiring a fire permit because they are not considered 'fires in open air' are listed below:

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 barbeques and gas cylinders and outdoor gas-operated appliances.</p>
Charcoal barbeques or grills	<p>Barbeques or grills that use either charcoal briquettes or natural lump charcoal as their fuel source.</p> <p>Condition:</p> <ul style="list-style-type: none"> • Don't use on an apartment balcony, deck, under a roof overhang or within other enclosed areas. <p><i>If you cannot meet this condition, you must apply for a permit.</i></p>
Wood-fire pizza oven	<p>Also known as wood ovens, these are ovens that use wood fuel for cooking.</p> <p>Conditions:</p> <ul style="list-style-type: none"> • Don't light your fire within three metres of any part of a building, hedge, shelter belt or any combustible material. • In case your fire gets out of control, you must have a suitable way to extinguish it within five metres of your pizza-oven, such as a water hose, mechanical digger, or water sprayer. <p><i>If you cannot meet these conditions, you must apply for a permit.</i></p>
Chiminea	<p>A freestanding front-loading fireplace or oven with a bulbous body, and usually has a vertical smoke vent or chimney.</p> <p>Conditions:</p> <ul style="list-style-type: none"> • Don't light your fire within three metres of any part of a building, hedge, shelter belt or any combustible material. • In case your fire gets out of control, you must have a suitable way to extinguish it within five metres of your chiminea, such as a water hose, mechanical digger, or water sprayer. <p><i>If you cannot meet these conditions, you must apply for a permit.</i></p>
Hāngī, umu, braai and lovo cultural cooking fires	<p>Conditions:</p> <p>Your fire area must be less than two square metres.</p> <ul style="list-style-type: none"> • Don't light your fire within three metres of any part of a building, hedge, shelter belt or any combustible material. • In case your fire gets out of control, you must have a suitable way to extinguish it within five metres of your cultural fire, such as a water hose, mechanical digger, or water sprayer. <p>Find out more about the safe use of cultural fires.</p> <p><i>If you cannot meet these conditions, you must apply for a permit.</i></p>

Fire type	Description and conditions
Braziers	<p>A container for hot coals – usually an upright standing or hanging metal bowl or box.</p> <p>Conditions:</p> <ul style="list-style-type: none"> • Your fire area must be less than 0.5 square metres. • Don't light your fire within three metres of any part of a building, hedge, shelter belt or any combustible material. • In case your fire gets out of control, you must have a suitable way to extinguish it within five metres of your brazier, such as a water hose, mechanical digger, or water sprayer. <p><i>If you cannot meet these conditions, you must apply for a permit.</i></p>
Fire pits/bowls	<p>A pit dug in the ground made from stone, brick or metal or a bowl on an upright stand, for recreational use.</p> <p>Conditions:</p> <ul style="list-style-type: none"> • Your fire area must be less than 0.5 square metres. • Don't light your fire within three metres of any part of a building, hedge, shelter belt or any combustible material. • In case your fire gets out of control, you must have a suitable way to extinguish it within five metres of your fire pit/bowl, such as a water hose, mechanical digger, or water sprayer. <p><i>If you cannot meet these conditions, you must apply for a permit.</i></p>
Open drum and manufactured incinerators	<p>A drum or container with a mesh or solid lid designed to prevent the escape of hot ash or fire, and designed exclusively for incineration.</p> <p>Conditions:</p> <ul style="list-style-type: none"> • Don't light your fire within five metres of any part of a building, hedge, shelter belt or any combustible material. • In case your fire gets out of control, you must have a suitable way to extinguish it within five metres of your incinerator, such as a water hose, mechanical digger, or water sprayer. <p><i>If you cannot meet these conditions, you must apply for a permit.</i></p>

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

Authorised fire types on public conservation land (PCL) in a restricted fire season, i.e. those fire types not requiring a fire permit because they are not considered 'fires in open air' are listed below:

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 barbeques and gas cylinders and outdoor gas-operated appliances.</p>
Pressurised liquid cookers	Small cookers that use kerosene or other similar liquids as fuel.
Campfires in a permanent fireplace	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.
Cooking and warming fires	<p>Fires lit in the backcountry (over one-hour walking time from the nearest road end) of public conservation land.</p> <p>Conditions:</p> <p>The fire must not be:</p> <ul style="list-style-type: none"> • within three metres of any tree or any place underneath overhanging vegetation; and • within three metres of any log or any dry vegetation; and • lit unless and until the ground surface within three metres of the site of the fire has been cleared of all combustible material; and • 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; and • lit during a prohibited fire season; and • lit in conditions where wind or other factors may cause the fire to spread to surrounding flammable material. <p>Find out more about the safe use of campfires.</p>

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

Authorised fire types in a prohibited fire season, i.e. those fire types not requiring a fire permit because they are not considered 'fires in open air' are listed below

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 barbeques and gas cylinders and outdoor gas-operated appliances.</p>
Charcoal barbeques or grills	<p>Barbeques or grills that use either charcoal briquettes or natural lump charcoal as their fuel source.</p> <p>Condition:</p> <p>Don't use on an apartment balcony, deck, under a roof overhang or within other enclosed areas.</p> <p><i>If you cannot meet this condition, you must apply for a permit.</i></p>
Wood-fire pizza oven	<p>Also known as wood ovens, these are ovens that use wood fuel for cooking.</p> <p>Conditions:</p> <ul style="list-style-type: none"> • Don't light your fire within three metres of any part of a building, hedge, shelter belt or any other combustible material. • In case your fire gets out of control, you must have a suitable way to extinguish it within five metres of your pizza-oven, such as a water hose, mechanical digger, or water sprayer. <p><i>If you cannot meet these conditions, you must apply for a permit.</i></p>
Chiminea	<p>A freestanding front-loading fireplace or oven with a bulbous body, and usually has a vertical smoke vent or chimney.</p> <p>Conditions:</p> <ul style="list-style-type: none"> • Don't light your fire within three metres of any part of a building, hedge, shelter belt or any other combustible material. • In case your fire gets out of control, you must have a suitable way to extinguish it within five metres of your chiminea, such as a water hose, mechanical digger, or water sprayer. <p><i>If you cannot meet these conditions, you must apply for a permit.</i></p>
Hāngī, umu, and lovo and cultural cooking fires	<p>Conditions:</p> <p>Your fire area must be less than two square metres.</p> <p>Don't light your fire within three metres of any part of a building, hedge, shelter belt or any other combustible material.</p> <p>In case your fire gets out of control, you must have a suitable way to extinguish it within five metres of your cultural fire, such as a water hose, mechanical digger, or water sprayer.</p> <p>Find out more about the safe use of cultural fires.</p> <p><i>If you cannot meet these conditions, you must apply for a permit.</i></p>

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

Authorised fire types on public conservation land in a prohibited fire season, i.e. those fire types not requiring a fire permit because they are not considered ‘fires in open air’ are listed below:

Fire type	Description and conditions
Gas-operated appliances	Manufactured gas-operated appliances, such as barbeques, outdoor fireplaces and outdoor gas heaters. Find out more about the safe use of barbeques and gas cylinders and outdoor gas-operated appliances .
Pressurised liquid cookers	Small cookers that use kerosene or other similar liquids as fuel

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, when 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.

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

Applying for a permit

When a fire permit is required, or if you’d like to check whether you need a permit, you can apply:

- Online through Fire and Emergency’s fire permitting system – 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, each location must be considered.

Permit applications must be inspected if the assessor has 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; or
- it involves burning large amounts of material unless the applicant has a history of successfully managing similar fires.

Additional factors that can be considered to be fire risk conditions or relevant fire control matters when assessing a fire permit application are:

- 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 and consider how to undertake the proposed fire safely.

Developing the [prescribed burn plan](#) is the responsibility of the applicant, however we can provide help and support on what the plan should contain in order to undertake 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:

- You must, immediately before lighting a fire, 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.

The permit must also include a condition to notify the Communications Centre immediately prior to lighting the fire, with the relevant phone number, for all fire permits where the fire is likely to be noticed by the public and reported as a 111 call, e.g. where the fire is close to a road or to other houses or buildings, or the fire covers a large area such as land clearing.

When our Communication Centre receives the notification from the fire permit holder they are able to flag the location in their system so that if a 111 call is received it is clear there is a permitted 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 of strips of low-flammability vegetation, or removing all vegetation down to mineral earth.

We plan to develop a guideline to provide clarity around the times and circumstances when applying this power may be necessary. Our approach is to work with affected landholders to try to reach a voluntary solution before we would use our powers to require firebreaks.

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

If Fire and Emergency reasonably consider 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, we can require that the vegetation or thing be removed or destroyed.

We will work with affected people to fix the issue first, but Fire and Emergency has the authority under [section 65](#) of the Fire and Emergency New Zealand Act 2017 to legally require action. You then have one month to fix the problem, although you can appeal against the requirement. Any appeal must be made within 14 days and will be handled through Fire and Emergency's dispute resolution scheme.

Our fire hazard removal powers apply to 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 threat) we can tell you, and immediately fix the problem ourselves in order to keep people and property safe.

Reporting fire hazards

Anyone who becomes aware of a fire hazard or is worried about the potential of something being a fire hazard can report it to Fire and Emergency – see [Submit a Fire Hazard Assessment Request](#) at www.fireandemergency.nz/at-home/fire-hazards-in-your-community/ for the Potential Fire Hazard Advice form.

Assessment of fire hazards

Fire and Emergency will assess whether there is a potential for the fuel to cause harm or damage to people or 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
- providing education to the complainant or occupier/owner of the location of the potential fire hazard on how to mitigate risks from fires is more appropriate
- the matter should be referred 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
20, 25	Must issue a <i>Fire hazard removal notice (s 65)</i> . Consider if an <i>Imminent danger notice (s 68)</i> is appropriate.
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.
10, 12	Provide information/education to occupier/owner/complainant on how to mitigate risks from fire.
6, 8, 9	Consider providing information/education to occupier/owner/complainant on how to mitigate risks from fire.
1–5	No further action.

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. 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, where the notice threshold has not been reached but the assessment indicates that proactive action would be helpful.
3. Providing the occupier or owner with the opportunity to voluntarily mitigate the risk within an appropriate time period, as the threshold for issuing a Fire hazard removal notice ([section 65](#)) has been met. If they won't do this voluntarily, we will issue a Fire hazard removal notice ([section 65](#)) to the occupier or owner of the land. The 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. Providing verbal notice to the owner or occupier of the land 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](#). This power would only be used where there is an 'almost certain' likelihood of a fire starting or spreading at any moment, which would put life or property at risk. Note: This power will be used very rarely.

Powers of entry

We will not enter a property (other than going to the front door) without permission from the occupier.

If permission is not granted or an occupier cannot be located, we will assess the potential fire hazard from outside of the property or speak with the occupier of the neighbouring property to request access to better view the potential fire hazard.

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) in order 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, so 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)

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 has been 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.

We will always attempt to negotiate with the occupier or owner to give them an opportunity to fix the issue voluntarily, before we go with issuing a fire hazard removal notice.

The occupier of the land where the fire hazard is located is primarily responsible for its removal or destruction. 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 [Compliance and enforcement policy](#).

Compliance activities generally focus on education and awareness, followed by issuing warnings. If compliance is still an issue, then more formal enforcement powers may be used.

If there are cases of serious or repeated non-compliance, Fire and Emergency may use infringement notices or prosecute. For more information on Fire and Emergency's regulatory compliance policies and procedures and other relevant topics, visit www.fireandemergency.nz/about-us/compliance-and-enforcement.

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 Fire Information Unit 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.

Glossary

4R's - 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 an 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 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 spreading 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. 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.

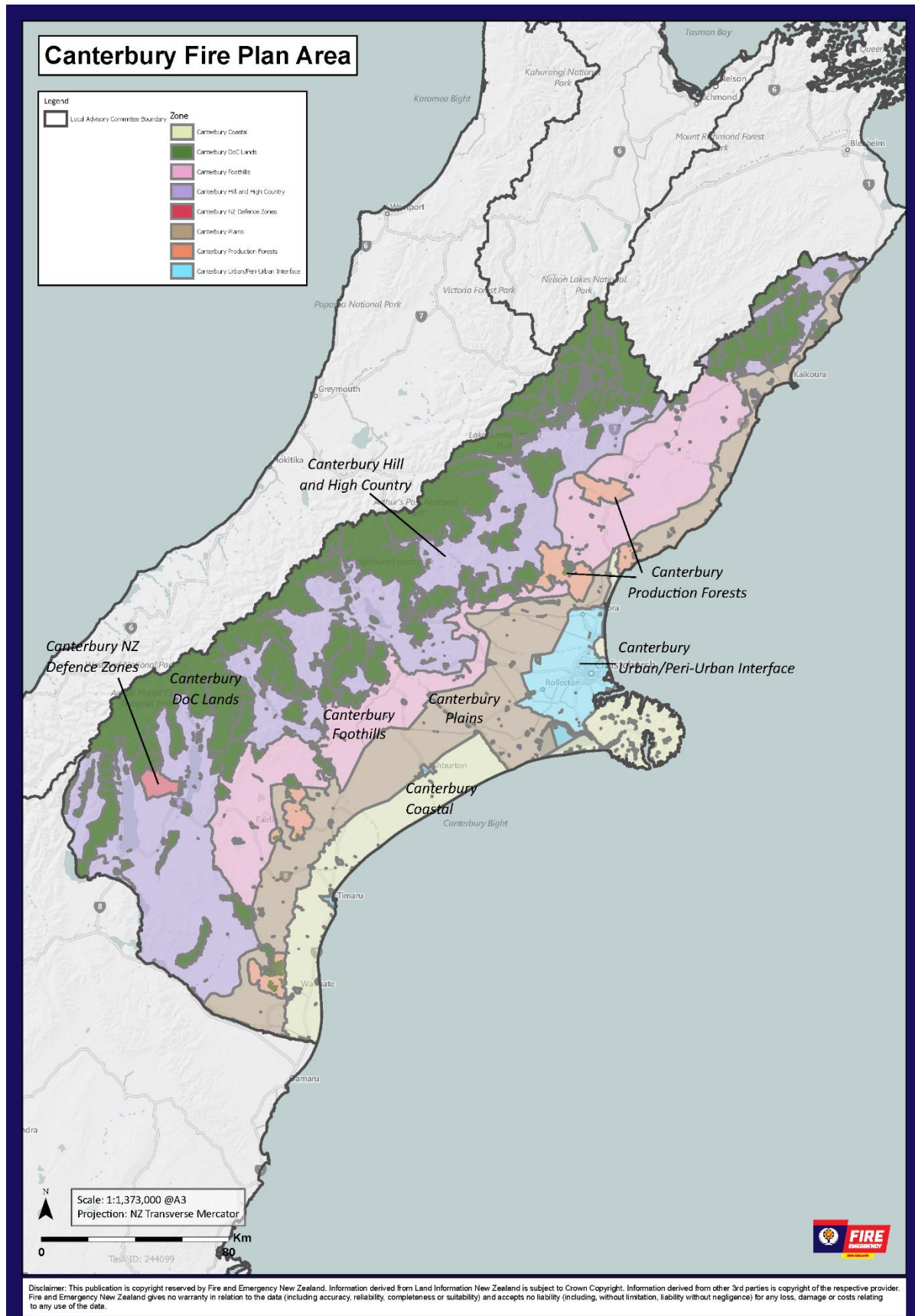
Public conservation land (PCL) – land used for conservation purposes, including National Parks and forest parks. Often managed by Department of Conservation or the regional council.

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.

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 Kaikoura, the Seaward Kaikoura Mountains, west to the main divide at 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](#)
- [Kaikoura 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
- Kaikoura, Kaikoura 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](#)
- [Canterbury Plains](#)
- [Canterbury Coastal](#)
- [Canterbury Production Forests](#)
- [Canterbury Urban/Peri-urban interface areas \(city and rural towns\)](#)
- [Canterbury NZ Defence Zones](#)
- [Public conservation land](#)

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

New Zealand Defence Force

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 Range
- Glentunnel Defence Ammunition Depot
- Tekapo Military Training Area

A map of these locations is included in the [NZ Defence Zone information](#)

Any New Zealand Defence Force activities, including training activities, in other Defence Areas 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 area(s) and applicable fire controls is available through www.nzdf.mil.nz/nzdf/contact-us.

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 Aero	192	5 - 8	72	1 - 3

Weather station	Days@ extreme last 20 years	Range of days/yr@ extreme	Days@ very high last 5 years	Range of days/yr@ very high
Bottle Lake Forest	180	1 - 8	64	1 - 3

Fire history

Some of the more significant fires within the Canterbury Plan area include:

Year	Fire	Cause
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
August 2019	Wainui/Foveran Stations fire	Escaped controlled burn
2017	Port Hills fires	Unknown
August 2016	Macaulay Fire	Rubbish fire
July 2016	Mt Studholme Fire	Firearm discharge
February 2016	Mystery Lake Fire	Motor cycle
2016	Hanmer Fire – Gorge Bridge	Sparks from machinery
2016	Homebush Fire	Escaped burn
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	Mt Cook Station Fire	Sparks from chainsaw
2006	Bottle Lake Fire	Suspected arson
2004	Dunsandel Fire	Unknown
2004	Mt 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 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.christchurch@fireandemergency.nz

firepermit.northcanterbury@fireandemergency.nz

firepermit.midsouthcanterbury@fireandemergency.nz

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. Zone-level stakeholders are listed with each zone description.

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.
Public consultation	You will have the opportunity to comment during the 6-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
NZ 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
Federated Farmers NZ	Public consultation	Consult while amending plan	Consult during decision making	Consult during decision making	Consult during decision making

Stakeholder	Fire plan development	Fire plan amendment	Changing fire season to prohibited	Section 52 fire prohibitions	Section 52 restrictions/prohibitions on activities
Land Information NZ	Consulted while creating plan	Consult while amending plan	Notify using public channels	Notify using public channels	Notify using public channels
Taituarā - Local Govt Professionals Aotearoa (SOLGM)	Consulted while creating plan	Consult while amending plan	Notify using public channels	Notify using public channels	Notify using public channels
Local Government NZ	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 - Te Uru Rākau and Crown Forestry	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
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 stakeholders

This list is for stakeholders who have an interest across the fire plan area. Stakeholders that have a particular interest in a zone are included in the relevant zone information.

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
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
Kaikoura 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
Timaru 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
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	Consulted while creating plan	Consult while amending plan	Consult during decision making	Notify of decision	Notify of decision
Matariki / Rayonier	Consulted while creating plan	Consult while amending plan	Consult during decision making	Notify of decision	Notify of decision
NZ Redwoods	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
Main Power	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

Stakeholder	Fire plan development	Fire plan amendment	Changing fire season to prohibited	Section 52 fire prohibitions	Section 52 restrictions/prohibitions on activities
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
Lyttleton 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
Papatipu Rānaka	Public consultation	Public consultation	Notify via public channels	Notify via public channels	Notify via public channels
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 have an interest across the whole fire plan area, please contact us about being added to this list.

Zone information

Canterbury Hill and High Country

Geography

Apart from the rugged and mountainous Seaward Kaikoura Range at 2600 m, this zone is dominated by the high mountain lands adjacent to, and inclusive of the Southern Alps. Because of this area's proximity to the Southern Alps it experiences the Föhn winds which drive most of Canterbury's high fire danger days.

Dry eastern beech forests dominate in the middle and north of the region (mountain, black, hard and silver beech) with some unique stands of mountain podocarp forest of tōtara, mataī, rimu and some cedar. Further south, 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, mid slope and above tree line environments.

Demographics

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

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

- Twizel, Mackenzie District – population 1,455
- Lake Clearwater, Ashburton District – population up to 3000 during busy holiday periods
- Mackenzie Lakes, Mackenzie District – population 1,182
- Castle Hill Village, Selwyn District – population 500+ at peak times
- Hanmer Springs, Hurunui District – population 960
- Mt Lyford Village, Hurunui District – population ?

Climate/weather

Westerly driven weather systems predominate, with often extremely high rainfall and high winds at the divide, and then ever lessening precipitation spillover 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, experienced the longest dry spell of 49 days recorded on three separate occasions.

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 (including National Parks at Aoraki and Arthur's Pass), indigenous forests, grasslands and at higher altitude – alpine tussocks and herb fields
- High Country Pastoral Lease and other primary production land
- 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
Primary production, including horticulture and agriculture <ul style="list-style-type: none"> • use of machinery – sparks • use of fire for land management • relevant operations affected 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tourism and recreation <ul style="list-style-type: none"> • People unfamiliar with local fire risk and rules • Access to locations may be restricted 	<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. <ul style="list-style-type: none"> • exhaust sparks and brake/wheel bearing failures 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The main north-west power infrastructure runs NW across this zone at Hanmer/Clarence and Acheron/Molesworth <ul style="list-style-type: none"> • arcing and short circuits during wind events 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Power generation infrastructure is in this zone as well: Lake Coleridge, Lake Tekapo, Pukaki, Ohau and Benmore hydro schemes/canals <ul style="list-style-type: none"> • arcing and short circuits during wind events 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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
Local airfields (Lake Tekapo, Pukaki and Mt Cook) for tourism and recreation purposes <ul style="list-style-type: none"> aircraft crashes Requirement for notification and permission for burns in flight path, under CAA rules Protected by own controls on use of fire and other activities in vicinity 	☒	☒	☐

Recreational locations

- The Canterbury Hill and High Country
- Craigieburn Forest Park
- Arthur's Pass National Park
- Korowai/Torlesse Tussocklands Park
- Hakatere Conservation Park
- Mt Cook National Park,
- Other public conservation lands

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.

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 fire control measures
Mackenzie Highland A&P Easter Show <ul style="list-style-type: none"> steam engines public activity 	☒	☒	☒
Twizel Salmon and Wine Festival (February)	☒	☒	☒

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Maadi-cup – Rowing on Lake Ruataniwha (biannually, October - March) • camp fires	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fireworks • Use may be prohibited during high fire danger • Pyrotechnics managed by other approvals	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Parks, trails and camping grounds • camp fires	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Motorsport including (but not limited to): 4 wheel-driving, jet boating, motor-cross • hot exhausts and exhaust sparks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Matariki cultural celebrations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hill and high county tourism activities • camp fires, gas cookers, barbecues	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Two sections of the Alps to Ocean Cycle Trail are included in this zone (including a 10km section from Jollie River – Chop Creek/Tasman Point, and the 8km section along the Lake Pukaki foreshore), the 'Coast to Coast' multi-sport event and the 'Cavalcade' 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 fire control measures
DOC managed public conservation lands • camp fires, rec. vehicles	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Densely populated holiday sites, e.g. Mt Lyford, Lake Clearwater, Castle Hill Village, Lake Alexandrina Huts • camp fires, recreational vehicles	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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
Historic & archaeological sites	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Lake Tennyson bogland endemics <ul style="list-style-type: none"> Globally significant plant species 	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Rakaia Cedar forests <ul style="list-style-type: none"> Nationally significant plant species 	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

We also need to consider the build-up of fuel:

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

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
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 includes:

Year	Fire	Cause
2021	Broken River fire	Campfire escape
August 2020	Pukaki Downs Fire	Gas camp cooker
2019?	Craigieburn Cutting fire	Tractor exhaust
2019	Porters Pass fire	Burning of stolen vehicle
August 2019	Myers Pass fire	Escaped burnoff
August 2019	Wainui Station fire	Escaped burnoff
2017	Mt Horrible fire	unknown
2017	Broken River viaduct fire	Train
August 2016	Macaulay Fire	Rubbish fire

Year	Fire	Cause
July 2016	Mt Studholme fire	Firearm discharge
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, tussock grassland, 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%)	Build Up Index (BUI)		
	0–40	40–60	>80
(%)			
0–50	Open	Open	Restricted
50–80	Open	Restricted	Prohibited
>80	Restricted	Restricted	Prohibited

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 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 land owners.

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) 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

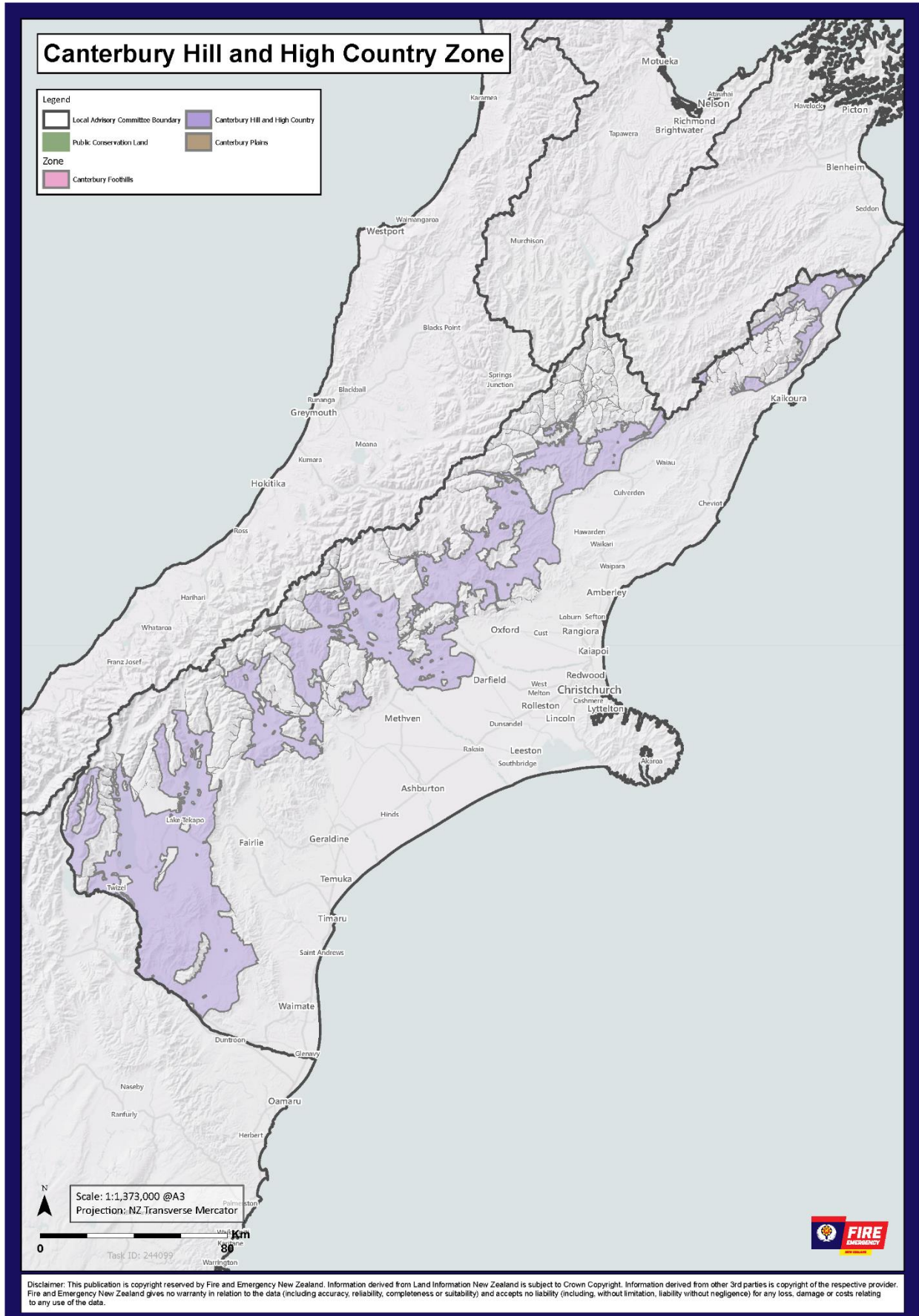
A network of Remote Automated Weather Stations (RAWS) across Canterbury are used to determine whether the trigger thresholds for changing fire season status have been reached. These stations all have public access (www.fenz.harvest.com) and farmers and others are encouraged to use them as a tool when considering outdoor burning.

The stations within this zone are:

Pukaia Aero	Glenaan Station
Tekapo	Lees Valley
Cattle Creek	Hanmer
Glentanner	Cass
Hakatere	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 Hill and High Country 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
Te Rūnanga O Ngāi Tahu	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
Hurunui District Council	Consulted while creating plan	Consult while amending plan	Notify of decision	Notify of decision	Notify of decision
Kaikoura 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
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

Stakeholder	Fire plan development	Fire plan amendment	Changing fire season to prohibited	Section 52 fire prohibitions	Section 52 restrictions/prohibitions on activities
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
Main Power	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
Ministry for Primary Industries	Public consultation	Public consultation	Notify of decision	Notify of decision	Notify of decision
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 have an interest in this zone, please contact us about being added to this list.

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.

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 2800
- Waimate, Waimate District – population 8200

Climate/weather

Orographic influences (the position and formation of mountains and hills) creating a föhn 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 toward 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 (camp fires, lack of understanding of local fire risk)	<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) Roadside mowing and hot works)	<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"> • Use may be prohibited during high fire danger • Pyrotechnics managed by other approvals 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hunting blocks, conservation parks and camping grounds <ul style="list-style-type: none"> • camp fires, gas cookers, barbecues 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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
Motorsport including (but not limited to): 4 wheel-driving, jet boating, motor-cross, rally driving <ul style="list-style-type: none"> hot exhausts, exhaust sparks, fuel spills, crashes 	<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 Hangi)	<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"/>
Hill and high country tourism activities <ul style="list-style-type: none"> camp fires, gas cookers, barbecues 	<input checked="" 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 1km of Geraldine and Waimate Forests <ul style="list-style-type: none"> on farm fires for crop residue burning, rubbish disposal or land clearing 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Public conservation lands <ul style="list-style-type: none"> camp fires, gas cookers, barbecues, recreational vehicles 	<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
Snowdon	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	40–60	>80
(%)			
0–50	Open	Open	Restricted
50–80	Open	Restricted	Prohibited
>80	Restricted	Restricted	Prohibited

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 4](#)). 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 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 land owners.

Hot works

Hot works activities are managed through the fire permitting system. Local councils are also consulted. (see [Appendix 5](#)).

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) 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 6](#)).

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.

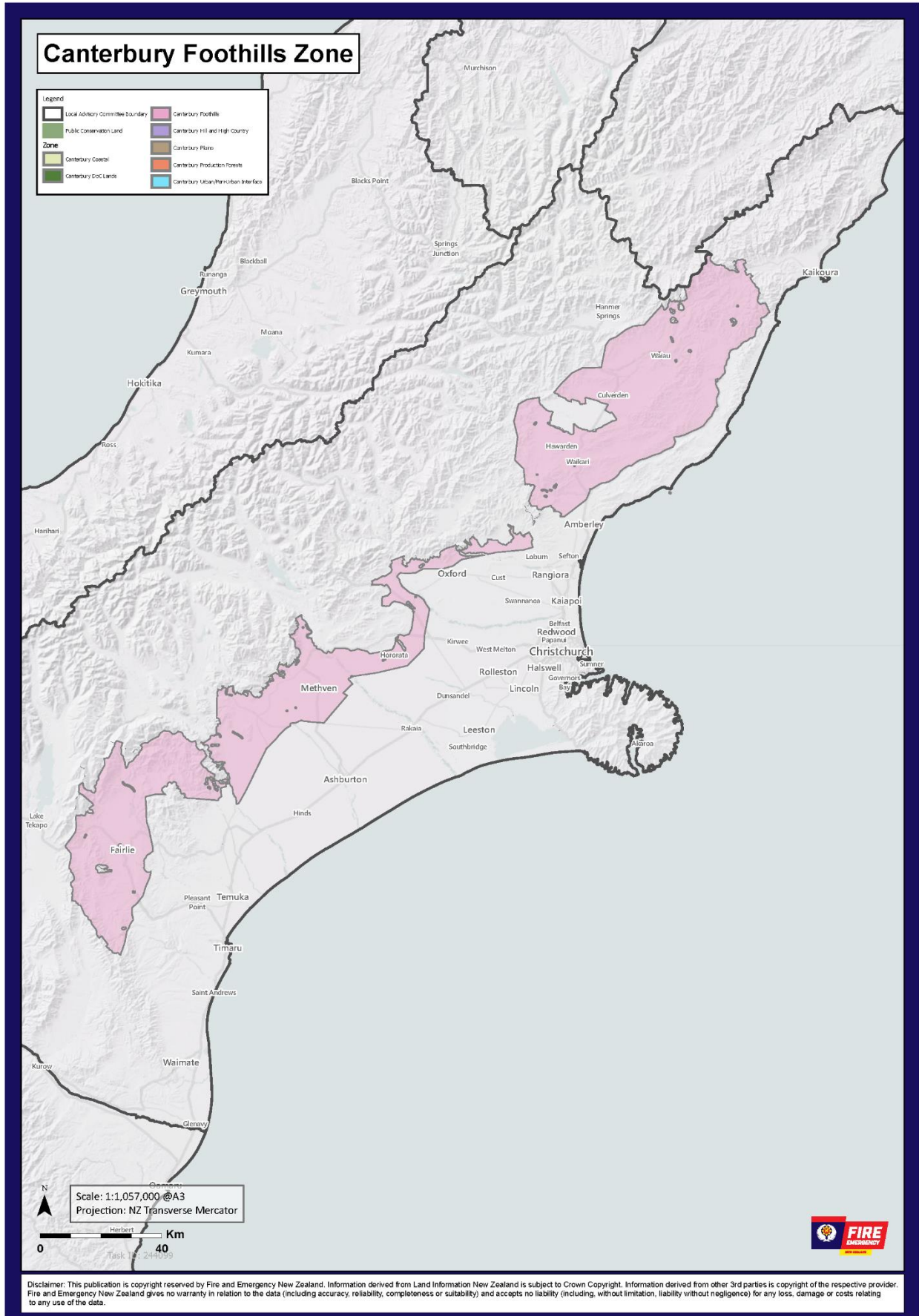
Representative remote automated weather stations

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

Cheviot	Te Oka	Snowdon
Omihi	Mt Somers	Oxford 2
Early Valley	Albury	Clayton

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

Canterbury Foothills zone map



Canterbury Foothills 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
Te Rūnanga O Ngāi Tahu	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
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Waimakariri 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
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

Stakeholder	Fire plan development	Fire plan amendment	Changing fire season to prohibited	Section 52 fire prohibitions	Section 52 restrictions/prohibitions on activities
Genesis Energy	Consulted while creating plan	Consult while amending plan	Notify of decision	Notify of decision	Notify of decision
Main Power	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
Ministry for Primary Industries	Public consultation	Public consultation	Notify of decision	Notify of decision	Notify of decision
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 have an interest in this zone, please contact us about being added to this list.

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](#). 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.

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 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 NW days under these conditions. Temperatures can reach 30 degrees Celsius in summer during these hot dry periods.

The average rainfall for this zone is at least 750mm.

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"> • use of machinery – sparks • use of fire for land management • relevant operations affected 	☒	☒	☒

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 and recreation <ul style="list-style-type: none"> • People unfamiliar with local fire risk and rules • Access to locations may be restricted 	<input checked="" type="checkbox"/>	<input checked="" 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 burnoffs 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"> • protect by applying controls to surrounding areas 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Road and Rail links including State Highways, roading infrastructure including multiple bridges over the main rivers <ul style="list-style-type: none"> • roadside mowing, roading associated hot works, exhaust stack sparks and brake/wheel bearing failures 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Telecommunications networks <ul style="list-style-type: none"> • protect by applying controls to surrounding areas 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Electricity transmission lines <ul style="list-style-type: none"> • Sparking during high winds • Use of auto-reclosers limited in high fire danger Recommended vegetation mitigation practices	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Marae	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Irrigation water schemes <ul style="list-style-type: none"> • Protect by applying controls to surrounding areas 	<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 take part either in or on the edge of towns, with other activities being more wide spread 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.

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

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. 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) 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 (camp fires, gas cookers, barbecues, recreational vehicles)	<input 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 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	40–60	>80
0–50	Open	Open	Restricted
50–80	Open	Restricted	Prohibited
>80	Restricted	Restricted	Prohibited

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 4](#)). 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 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 land owners.

Hot works

Hot works activities are managed through the fire permitting system. Local councils are also consulted. (see [Appendix 5](#)).

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) 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 6](#)).

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.

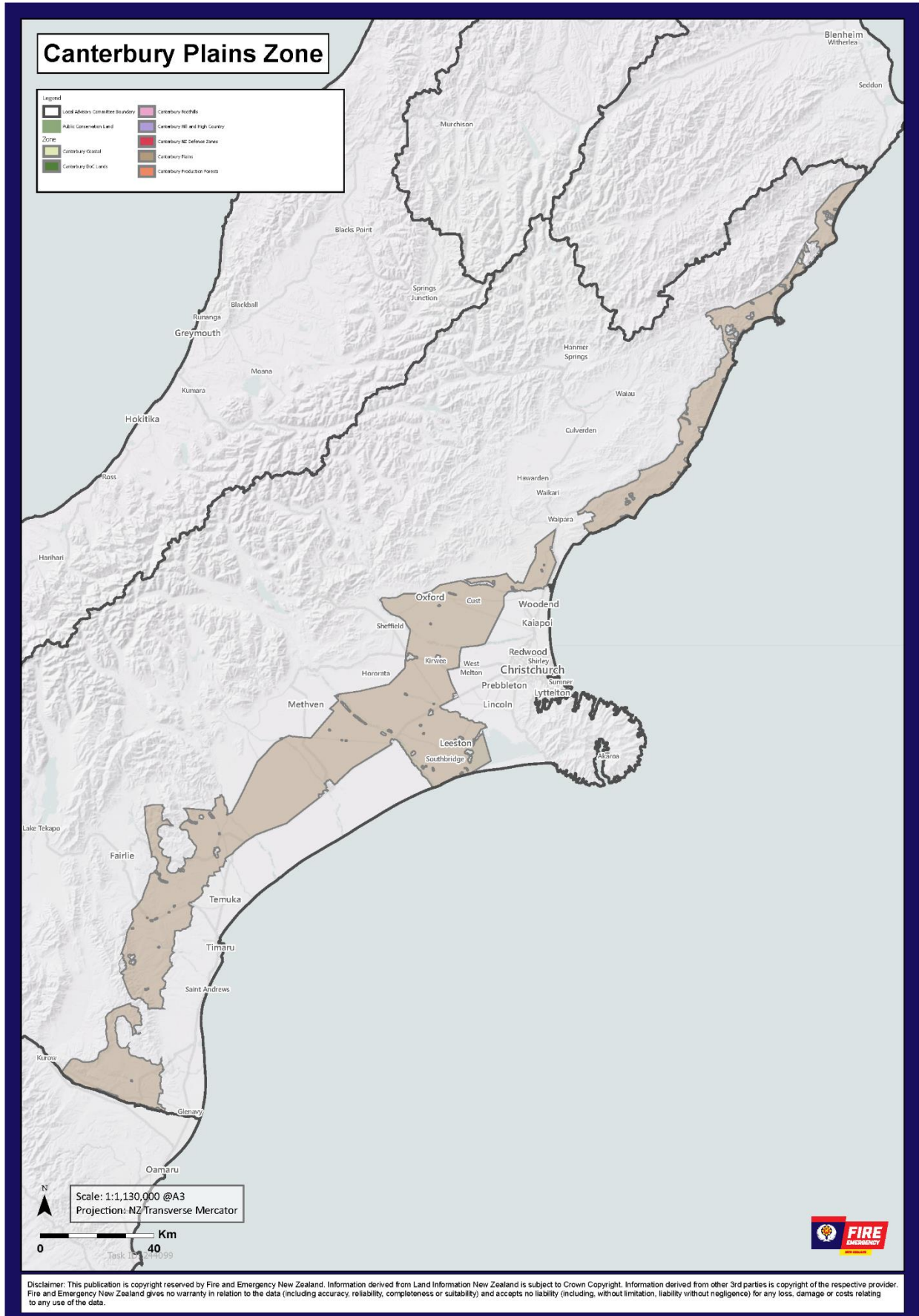
**Representative
remote automated
weather stations**

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

Waimate plains	Saltwater Creek	Diamond Harbour
Ashburton plains	McLeans	Motukarara
Forest plains	West Melton	Leeston
Balmoral	Christchurch Airport	Southbridge.
Ashley	Burnham	

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

Canterbury Plains zone map



Canterbury Plains 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
Te Rūnanga O Ngāi Tahu	Consulted while creating plan	Consult while amending plan	Notify of decision	Notify of decision	Notify of decision
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Waimakariri District Council	Consulted while creating plan	Consult while amending plan	Notify of decision	Notify of decision	Notify of decision
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Stakeholder	Fire plan development	Fire plan amendment	Changing fire season to prohibited	Section 52 fire prohibitions	Section 52 restrictions/prohibitions on activities
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Genesis Energy	Consulted while creating plan	Consult while amending plan	Notify of decision	Notify of decision	Notify of decision
Main Power	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
Ministry for Primary Industries	Public consultation	Public consultation	Notify of decision	Notify of decision	Notify of decision
Public	Public consultation	Public consultation	Notify via public channels	Notify via public channels	Notify via public channels

Canterbury Coastal

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

Banks Peninsula and the coastal strip north of Amberley experience relatively mild winters, and rather high annual rainfall. The variance of rainfall is between 600mm in the south at Timaru and 1200mm in the north with Akaroa's annual rainfall averaging 970mm – 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.

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 crop residue burning, rubbish disposal or land clearing)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tourism (camp fires, lack of understanding of local fire risk)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Lifeline utilities/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"/>

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
Several towns and villages in this zone have limited road access with many having one way in/out. (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 (Protect by applying controls to surrounding areas)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Telecommunications networks including community WIFI networks in isolated areas (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 burnoffs 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 Maori 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"> fire escapes lack of understanding of local fire risk 	☒	☒	☐
Cultural fires – hangi, umu, lovo, braii <ul style="list-style-type: none"> fire escapes 	☒	☒	☐
Fireworks, including sky lanterns <ul style="list-style-type: none"> Use may be prohibited during high fire danger Pyrotechnics managed by other approvals 	☒	☒	☐
Horse-riding/walking/cycling <ul style="list-style-type: none"> Access may be restricted during high fire danger 	☐	☒	☒

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"> camp fires, gas cookers, barbecues, recreational vehicles 	☒	☒	☒
Coastal hut settlements <ul style="list-style-type: none"> rubbish fires, hot ash disposal 	☒	☒	☒
Spencer Park, Bottle Lake <ul style="list-style-type: none"> recreational activity 	☒	☒	☒
Coastal reserves - old man pines <ul style="list-style-type: none"> recreational activity 	☒	☒	☒
Dunelands <ul style="list-style-type: none"> 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 forestry and grasslands as the predominant fuel types.

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

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 4](#)). 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 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 land owners.

Hot works

Hot works activities are managed through the fire permitting system. Local councils are also consulted. (see [Appendix 5](#)).

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) 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 6](#)).

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.

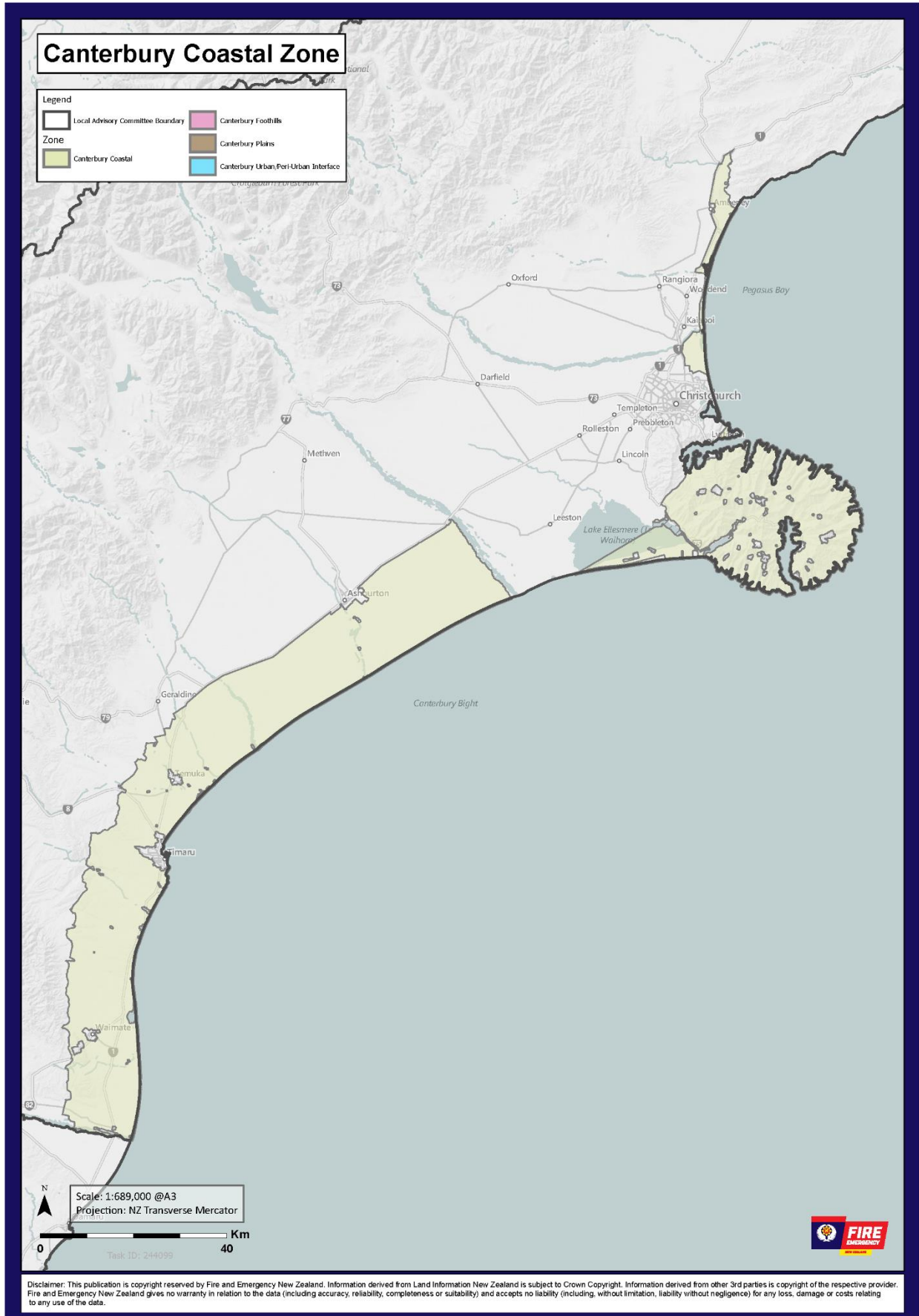
**Representative
remote automated
weather stations**

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

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

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

Canterbury Coastal zone map



Canterbury Coastal 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
Te Rūnanga O Ngāi Tahu	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
Mackenzie District Council	Consulted while creating plan	Consult while amending plan	Notify of decision	Notify of decision	Notify of decision
Timaru 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
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

Stakeholder	Fire plan development	Fire plan amendment	Changing fire season to prohibited	Section 52 fire prohibitions	Section 52 restrictions/prohibitions on activities
Genesis Energy	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
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
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 have an interest in this zone, please contact us about being added to this list.

Production forests

Geography

Steep dissected hill and high country (Redwood Forests – Kaikoura)

Rolling hill country – Matariki Forests on Mt Thomas, Oxford, Dalethorpe, Ashley, Okuku, Hanmer, Omihi, 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 ECAN have extensive exotic plantations across Canterbury, mostly for river and waterway protection, but also for timber production

Demographics

The demographics 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 North West 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
- Massive changes to infrastructure, zoning, land use, etc., due to earthquakes
- Pinus radiata, Douglas fir, 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"> • use of machinery – sparks • use of fire for land management • relevant operations affected 	☒	☒	☒
Forestry <ul style="list-style-type: none"> • use of machinery – sparks • relevant operations affected • Use of firebreaks 	☒	☒	☒

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"> • arcing and short circuits during wind events 	<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"> • hot exhausts, exhaust sparks 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Several areas in this zone have KiwiRail railway running either through or adjacent to forests. <ul style="list-style-type: none"> • exhaust stack sparks and brake/wheel bearing failures 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Recreational locations

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.

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 – hangi, umu, lovo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fireworks <ul style="list-style-type: none"> • Use may be prohibited during high fire danger • Pyrotechnics managed by other approvals 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"> • Car fires or sparks from malfunctioning vehicles 	<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"> • Sparks or hot exhaust from chainsaw 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tramping/hunting <ul style="list-style-type: none"> • Campfires • Access may be restricted during high fire danger 	<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 increase the ignition potential in terms of fire control. This in turn increases any life risk from subsequent fires.

By allowing increased public and recreational activities into forested areas increases the risk of ignition in the plantation areas

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	☒	☒	☒
Chaney's – 400+ ha – Rayonier/Matariki owned	☒	☒	☒
Eyrewell – 88 ha	☒	☒	☒
McVicar's	☒	☒	☒
McCleans Island – ECAN	☒	☒	☒
McDonald Downs – Te Oka 1000 ha – private	☒	☒	☒
Blythe	☒	☒	☒
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 (>50ha) 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	Mt Cook Station Fire	Sparks from chainsaw

Predominant fuel type

The predominant fuel type in this zone is 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%)	Build Up Index (BUI)		
	(%)	0–40	40–60
0–50	Open	Open	Restricted
50–80	Open	Restricted	Prohibited
>80	Restricted	Restricted	Prohibited

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 4](#)). 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 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 land owners.

Hot works

Hot works activities are managed through the fire permitting system. Local councils are also consulted. (see [Appendix 5](#)).

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) 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 6](#)).

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.

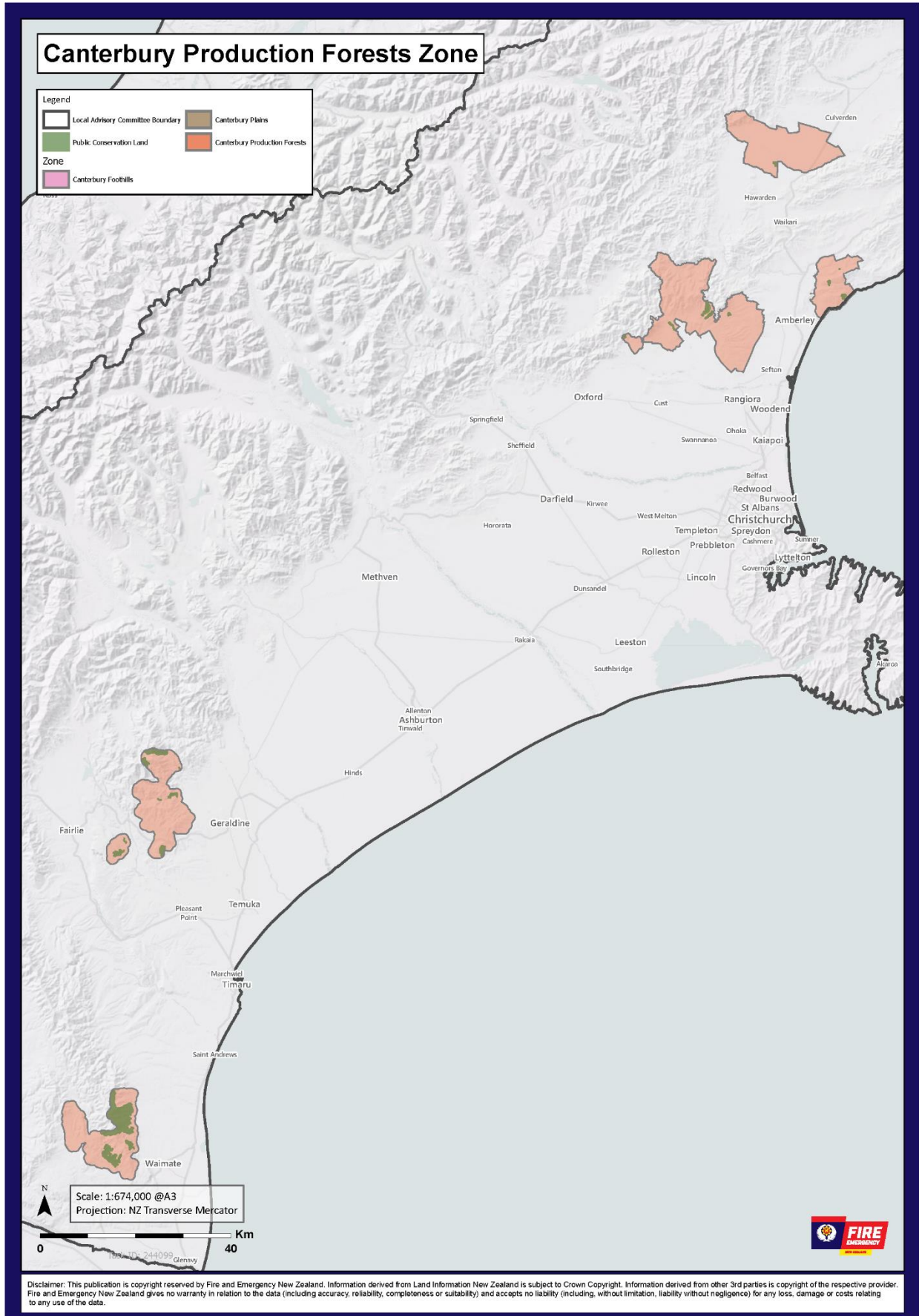
**Representative
remote automated
weather stations**

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

Waimate Forest	Ashely	Oxford
Geraldine Forest	Balmoral	Early Valley
Ashely	Bottle lake	
Forest plains	Omihi	

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

Canterbury Production Forests zone map



Production Forests 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
Te Rūnanga O Ngāi Tahu	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
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
Kaikoura 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
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	Consulted while creating plan	Consult while amending plan	Consult during decision making	Notify of decision	Notify of decision
Matariki / Rayonier	Consulted while creating plan	Consult while amending plan	Consult during decision making	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
NZ Redwoods	Consulted while creating plan	Consult while amending plan	Consult during decision making	Notify of decision	Notify of decision
Te Uru Rakau 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
Genesis Energy	Consulted while creating plan	Consult while amending plan	Notify of decision	Notify of decision	Notify of decision
Main Power	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
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
Ministry for Primary Industries	Public consultation	Public consultation	Notify of decision	Notify of decision	Notify of decision
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 have an interest in this zone, please contact us about being added to this list.

Urban/Peri-Urban Interface Areas

Geography

This zone covers all the urban/peri-urban interface 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 Mt Cook Village, Twizel and Tekapo in the Mackenzie Basin, through to Castle Hill Village, Hanmer Springs and Mt Lyford Village 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 has 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 area 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"> • use of machinery – sparks • use of fire for land management relevant operations affected	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Quarries <ul style="list-style-type: none"> • hot works, explosives 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The agricultural industry across Canterbury is wide spread, 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"> • leaks • Protected by own controls on use of fire and other activities in vicinity 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Lyttelton Port Timaru Port <ul style="list-style-type: none"> • Protect by applying controls to surrounding areas 	<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 Timaru Airport Airways navigation (Cass Peak) <ul style="list-style-type: none"> Requirement for notification and permission for burns in flight path, under CAA rules Protected by own controls on use of fire and other activities in vicinity 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roading network <ul style="list-style-type: none"> Sparks from vehicle malfunction, discarded cigarettes Spark causing activities during road maintenance and mowing 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Emergency Services Communications Equipment and Centres <ul style="list-style-type: none"> Protect by applying controls to surrounding areas 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Electricity transmission lines <ul style="list-style-type: none"> Sparking during high winds Use of auto-reclosers limited in high fire danger Recommended vegetation mitigation practices 	<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"> Protect by applying controls to surrounding areas 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Telecommunications network <ul style="list-style-type: none"> Protect by applying controls to surrounding areas 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Kate Valley Landfill <ul style="list-style-type: none"> use of machinery – sparks Disposal of heat or spark producing materials 	<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:
 - Mountain biking
 - 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 checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fireworks <ul style="list-style-type: none"> • Use may be prohibited during high fire danger • Pyrotechnics managed by 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
Mt 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"/>
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
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/ Kaikoura 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 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 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 forestry and grasslands as the predominant fuel types.

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

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 4](#)). 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 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 land owners.

Hot works

Hot works activities are managed through the fire permitting system. Local councils are also consulted. (see [Appendix 5](#)).

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) 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 6](#)).

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.

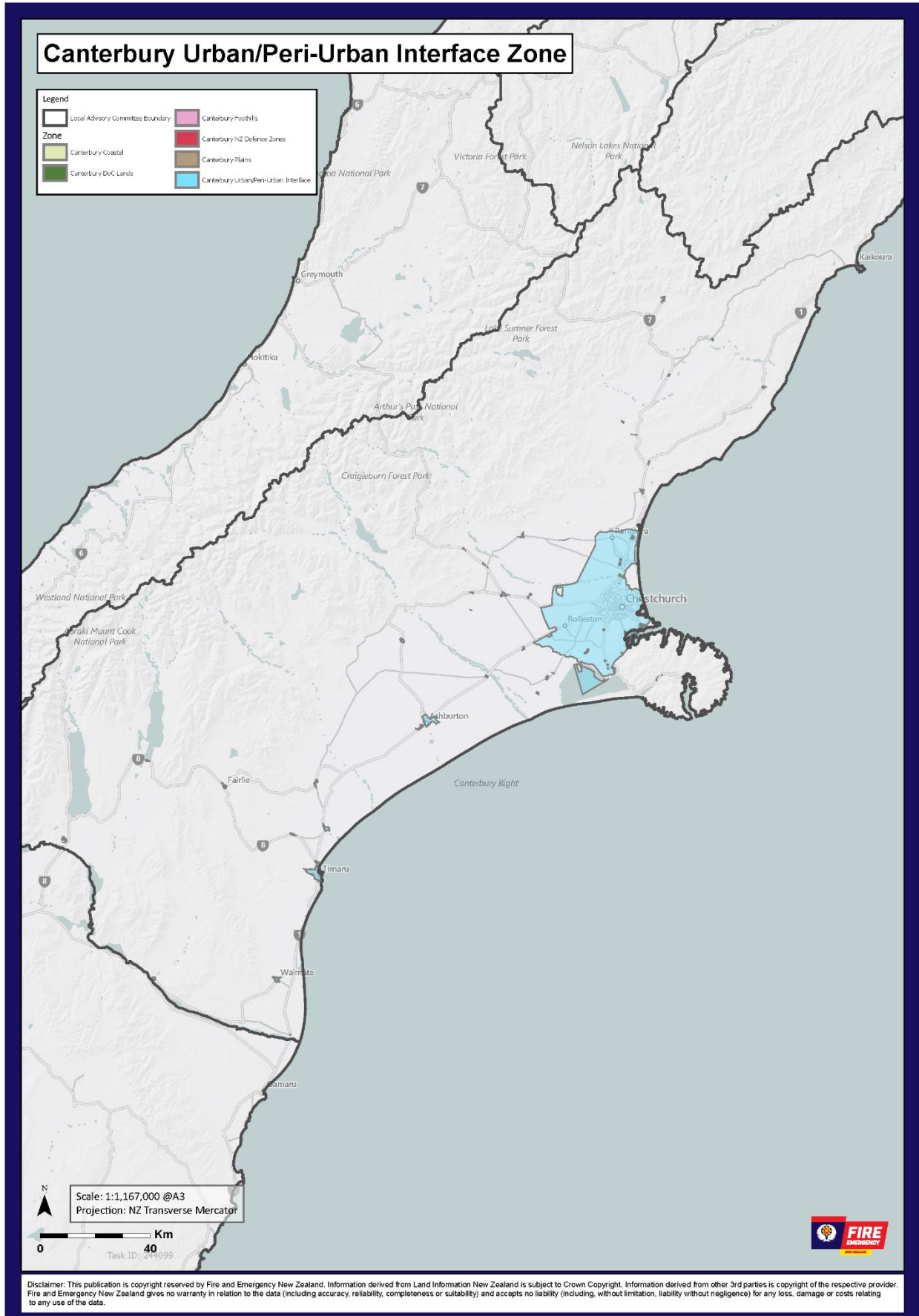
Representative remote automated weather stations

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



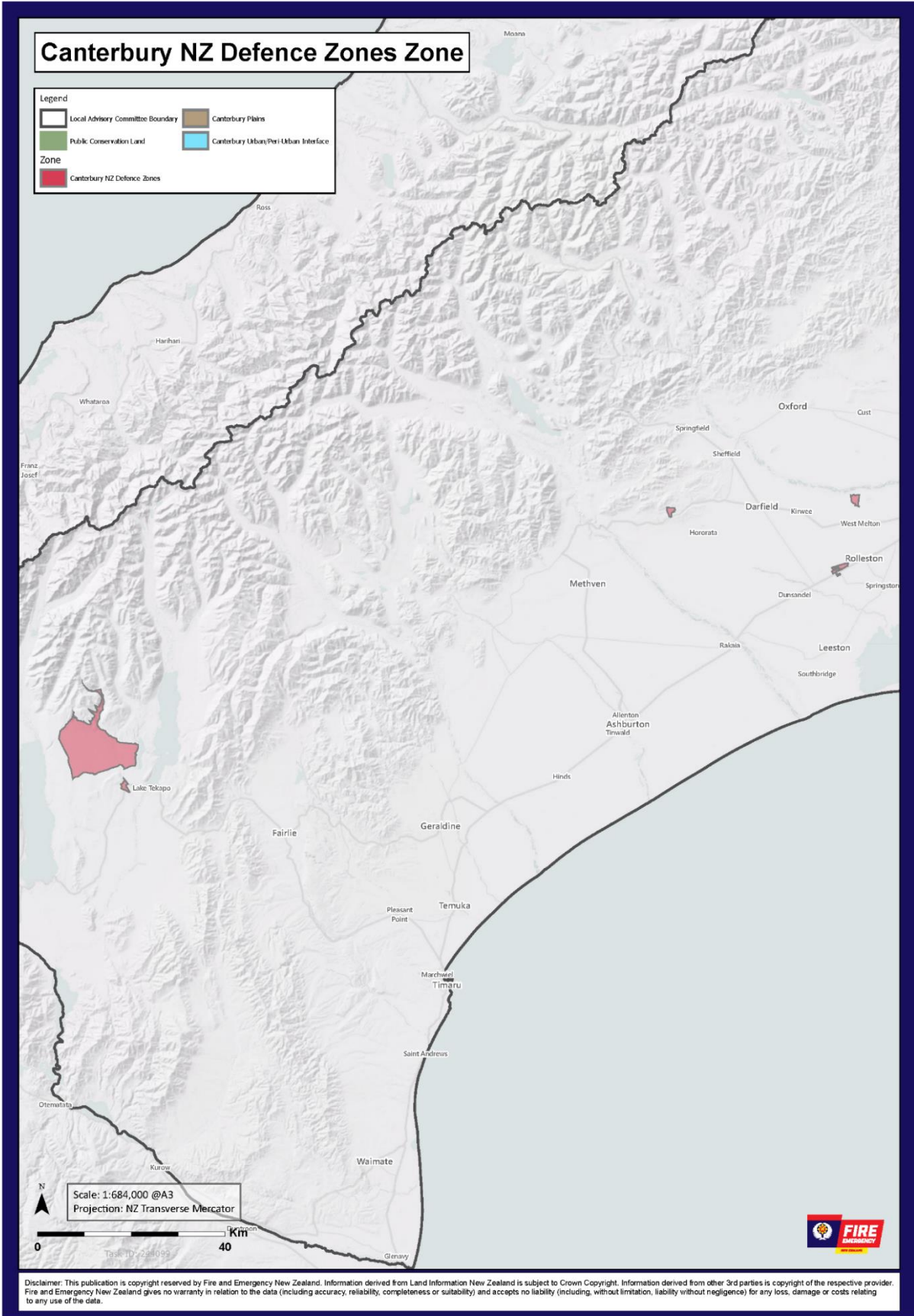
Urban/Peri-urban Interface Areas stakeholders

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
Te Rūnanga O Ngāi Tahu	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
Christchurch City 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
Federated Farmers	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
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

Stakeholder	Fire plan development	Fire plan amendment	Changing fire season to prohibited	Section 52 fire prohibitions	Section 52 restrictions/prohibitions on activities
Christchurch Airport Company	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
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 have an interest in this zone, please contact us about being added to this list.

New Zealand Defence Force



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 Conway 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/Mahaahui, Raukapuka/Geraldine, Te Manahuna/Twizel and Aoraki Mt Cook. Field centres are located in Hanmer and Arthurs Pass, and Duvauchelle (Banks Peninsula).

Significant areas of public conservation land are: National Parks at Aoraki Mt Cook and Arthurs 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 northeast 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, 2nd edition, G.R Macara

Land cover

Aoraki Mt Cook and Arthurs Pass National Parks feature higher elevation montane through to sub alpine beech forests being closer to the main divide.

The majority of hill and high country and foothill Conservation Areas in Canterbury being 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 (example - The Canterbury Mudfish, kowaro) exist in and around modified environments since human settlement.

Significant Tussockland Parks and inland basins of tussock drylands that hold national significance through identity and post-glacial feature cover – sweeping unobstructed views in the Mackenzie and Ashburton Lakes (Conservation Parks of Te Kahui Kaupeka, Hakatere and Ruatahiwha).

Special risk areas

Areas of high value that might adjust the appetite for risk:

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 type="checkbox"/>	<input checked="" type="checkbox"/>
4WD access for public conservation land back country recreation <ul style="list-style-type: none"> camp fires, recreational vehicles 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other high use recreation areas <ul style="list-style-type: none"> camp fires, recreational vehicles) 	<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
2010	Waimate Fire	Wind event, tree over powerlines
2006	Bottle Lake	Suspected arson
2004	Dunsandel	Unknown

Year	Fire	Cause
2001	Slovens Creek Rail Fires	Rail
2001	Cora Lynn Fire	Escaped burn

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

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

Build Up Index(BUI)		
0–50	50–80	>60
Restricted	Restricted	Prohibited

Representative Remote Automated Weather Stations

The Remote Automated Weather Stations (RAWS) used to determine whether trigger thresholds have been reached are Pukaki Aero, Tekapo cattle creek Hakatere, Glenaan Station, Lees Valley, Hanmer (stations and zones relative to where the public conservation land is located).

The forecasts for this/these location(s) will be considered when declaring or revoking a fire season.

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.

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

Build Up Index(BUI)		
0–50	50–80	>60
Restricted	Restricted	Prohibited

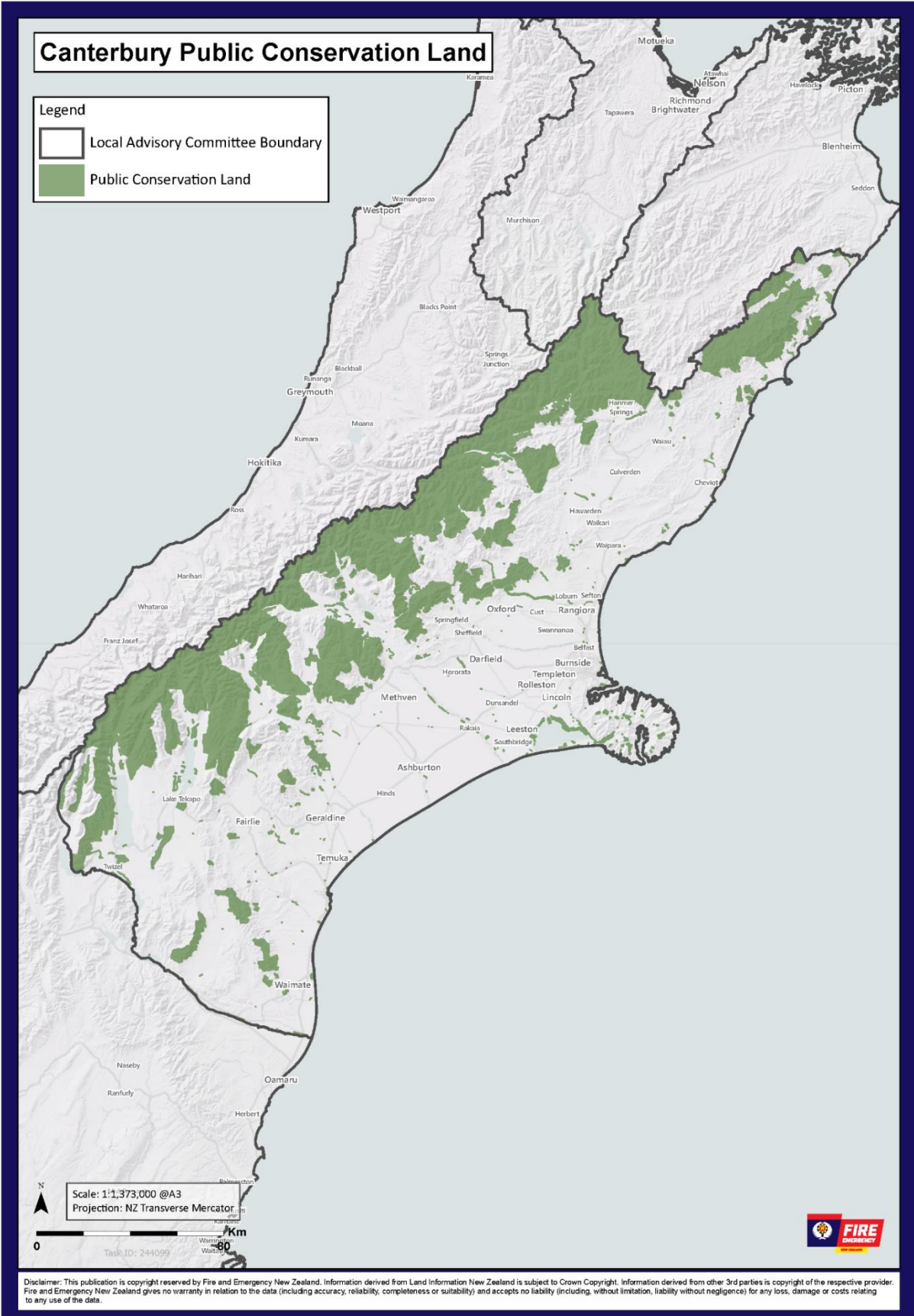
Representative Remote Automated Weather Stations

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

Pukaki Aero	Hakatere	Hanmer
Tekapo	Glenaan Station	
Cattle Creek	Lees Valley	

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

Public conservation land map



Appendix 1 – Fire risk guidelines for forestry operations

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

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

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

Fire Danger Level 1 Low	Permit issue	Standby	Proactive work practice	Access restrictions	Restrictions on activities	
					Forest operations	Recreational activities
Trigger Points Canterbury Regional Fire Season average ISI is 8 – 11 BUI ≤ 15 G/C %15 to 60 FWI6 to 12	<ul style="list-style-type: none"> Issue permits Verbal global authority 	Duty RFO in Pager/Cell contact	As per normal work	No	No	No
Fire Danger Level 2 Moderate	Permit issue	Standby	Proactive work practice	Access restrictions	Restrictions on activities	
					Forest operations	Recreational activities
Trigger Points Canterbury Regional Fire Season average ISI is 8 -11 BUI15 to 30 G/C %50 to 60 FWI6 to 12	<ul style="list-style-type: none"> Issue permits Verbal global authority 	Duty RFO in Pager/Cell contact	As per normal work	No	No	No

Fire Danger Level 3 Moderate	Permit issue	Standby	Proactive work practice	Access restrictions	Restrictions on activities	
					Forest operations	Recreational activities
Trigger Points Canterbury Regional Fire Season average ISI is 8 – 11 BUI30 to 55 G/C %60 to 75 FWI13 to 20	<ul style="list-style-type: none"> Issue permits but maintain a watch on drying trends with a mind to tightening special burning conditions BUI > 50 Inspections only 	Duty RFO in Pager/Cell contact and able to respond within 10 minutes	As per normal work 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. Consider restrictions for Silvicultural operations	No
Fire Danger Level 4 Very high	Permit issue	Standby	Proactive work practice	Access restrictions	Restrictions on activities	
					Forest operations	Recreational activities
Trigger Points Canterbury Regional Fire Season average ISI is 8 and 11 BUI55 to 90 G/C %75 to 100 FWI21 to 29	<ul style="list-style-type: none"> Prohibited fire season at BUI 80 and G/C 80% Once prohibited benchmark met permits to be cancelled and no more issued until conditions ease Cancel land clearing fires at 55 BUI and G/C 75% 	Duty RFO in Pager/Cell contact and able to respond within 10 minutes All RFO's to carry pagers	High awareness of workers to fire issues Consider patrol in high hazard areas or trouble spots and at peak fire danger times Balmoral Camping ground and Waimakariki River	BUI 90 close all Hanmer Public access easements Hanmer Covenant area may be managed separately BUI 90 Close Cramptons Bush Road BUI > 60 All non-operational access to vacate forest by 1.00pm	Harvesting operations 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.	BUI 60 Consider suspending strategic or high risk public recreational use (i.e. car rally's) BUI 80 Suspend all public recreational use

Fire Danger Level 4 Very high	Permit issue	Standby	Proactive work practice	Access restrictions	Restrictions on activities	
					Forest operations	Recreational activities
	<ul style="list-style-type: none"> Issue permits for specific burning with strong specific conditions 			(Beekeepers Etc. i.e. Licensees)	Plan to move crews into lower fire danger area. Ensure service agents visits and fuel deliveries are carried out before 1:pm Have crews carry out fire drills Silvicultural Operations BUI > 80 Chainsaw waste thinning banned in gorse and scrub areas, suspend mulching/mowing operations Consider restricting land prep, grading & tree-trimming	
		Half hour site inspections to ensure no fires then vacate forest Vacate forest by 4.00pm				

Fire Danger Level 5 Extreme	Permit issue	Standby	Proactive work practice	Access Restrictions	Restrictions on activities	
					Forest operations	Recreational activities
<p>Trigger points Canterbury regional fire season average ISI is 8 – 11 BUI > 90 G/C %100 FWI > 29</p>	<ul style="list-style-type: none"> Prohibited fire season in place. Fire permits are suspended and no more issued until conditions ease. May Issue permits for special burning with strong special conditions Hot work permits with very tight special conditions attached 	<ul style="list-style-type: none"> Duty RFO in Pager / cell Contact and able to Respond within 10 minutes All RFO's to carry pagers 	<ul style="list-style-type: none"> High awareness of workers to fire issues Consider patrols in high hazard areas or trouble spots and at peak fire danger times Balmoral Camping ground and Waimakariri River 	<ul style="list-style-type: none"> All public easements Closed <p>BUI > 100</p> <ul style="list-style-type: none"> All non-operational access to vacate forest by 10am (Beekeepers etc. i.e. Licensee's) 	<p>Harvesting Operations</p> <p>BUI > 100</p> <ul style="list-style-type: none"> Fire appliance onsite at strategic harvesting areas Felling and Extraction machines to start earlier in the morning and cease felling and extraction at 1pm Log processing and cartage as normal Non-strategic harvesting operations and slash grinding to stop work at 1pm <p>BUI > 150</p> <ul style="list-style-type: none"> Tighten restrictions further. Manned fire appliance onsite at strategic harvesting areas. 	<p>BUI > 100</p> <p>Suspend all recreational use until conditions ease</p>

Fire Danger Level 5 Extreme	Permit issue	Standby	Proactive work practice	Access Restrictions	Restrictions on activities	
					Forest operations	Recreational activities
					<p>All other operations stopped</p> <p>Silvicultural Operations</p> <p>BUI > 100</p> <ul style="list-style-type: none"> • Chainsaws waste thinning • banned in non-gorse & scrub areas. • Site prep as per Felling and Extraction machines, in a location within 1 road km of a harvesting crew. • Grading & Tree trimming only permitted with smoke chaser or appliance on-site <p>BUI > 250</p> <ul style="list-style-type: none"> • All operations halted 	
<p>IMMEDIATE CESSATION ON BEING NOTIFIED BY A RAYONIER EMPLOYEE</p> <p>Half an hour site inspection to ensure no fires then vacate forest</p> <p>Vacate forest by 4:00 pm</p>						

Appendix 2 – Hot work 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, 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 (Hotworks) 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 –

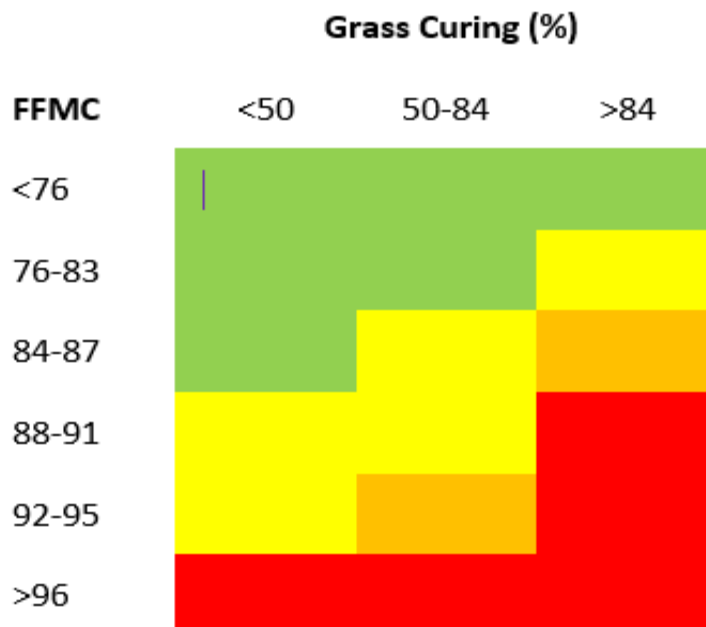
- Use the method described below for a site-specific assessment. You will need to have a basic understanding of fire science to understand how to do this.
- Use the code produced and emailed out each day by Fire and Emergency NZ.












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

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**

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	Shovel	
Welding / Grinding / Gas cutting	2kg dry powder	9 litre pressurised water extinguisher or full 15 litre knapsack	Shovel	
Crop Harvesting machine / site, includes crop trimming	2kg dry powder	9 litre pressurised water extinguisher or full 15 litre knapsack	Shovel	
Mechanical pasture / scrub development /discing / ploughing / cultivating	2kg dry powder	9 litre pressurised water extinguisher or full 15 litre knapsack	Shovel	
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	
Use electric fences				
Chainsaws, chippers, steel scrub cutters		9 litre pressurised water extinguisher or full 15 litre knapsack	Shovel	

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

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. 100 litres available under pressure within 5 minutes.	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.	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.	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.	Shovel	Radio to base or cell phone with coverage
Use electric fences				
Chainsaws, chippers, steel scrub cutters	2kg dry powder	9 litre pressurised water extinguisher or full 15 litre knapsack.	Shovel	Radio to base or cell phone with coverage

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

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. 300 litres available under pressure with at least 60m hose within 2 minutes.	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. 300 litres available under pressure with at least 60m hose within 2 minutes.	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. 300 litres available under pressure with at least 60m hose within 2 minutes.	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. 300 litres available under pressure with at least 60m hose within 2 minutes.	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. 300 litres available under pressure with at least 60m hose within 2 minutes.	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>Have an observer behind operation or where all work area can be seen.</p> <p>Restricted hours of work to when FFMC less than 83 (generally no work 12:00pm – 7:00pm)</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>Consider having an observer watching for fires from where all the work area can be seen</p> <p>Check and if necessary clean machine daily</p>
Mechanical pasture / scrub development /discing / ploughing / cultivating	<p>Consider restricted hours of work to when FFMC greater than 83 (generally no work 12:00pm – 7:00pm)</p> <p>Consider having an observer watching for fires from where all the work area can be seen</p> <p>Check and if necessary clean machine daily</p>
Tracked and digging machines on grass / dead vegetation (Includes civil contracting and quarrying)	<p>Consider restricted hours of work to when FFMC greater than 83 (generally no work 12:00pm – 7:00pm)</p> <p>Consider having an observer watching for fires from where all the work area can be seen</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>Consider restricted hours of work to when FFMC greater than 83 (generally no work 12:00pm – 7:00pm)</p> <p>Consider having an observer watching for fires from where all the work area can be seen</p> <p>Check and if necessary clean machine daily</p> <p>Stop use Steel Scrub Bars</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

Equipment Requirements				
Requirements for....	Extinguishers	Water	Handtools	Communication
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 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. 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. 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. 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. 1000 litres available under pressure with at least 60m hose within 2 minutes.	Shovel	Radio to base or cell phone with coverage

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

Activity Requirements	
Requirements for....	
Road side and pasture/ gorse / scrub mowing and mulching.	Stop roadside mowing
Welding / Grinding / Gas cutting sites	Not permitted above vegetation. Only on bare earth / non-flammable surface Wet down area 4m around work site before commencing Patrol for 30 minutes after completion
Crop Harvesting machine / site, includes crop trimming	No work 12:00pm – 7:00pm. If FWI >25 stop work. FWI can be found on the website listed under how to use this guide. Have an observer watching for fires from where all the work area can be seen. Check and if necessary clean machine daily
Mechanical pasture / scrub development /discing / ploughing / cultivating	No work 12:00pm – 7:00pm. If FWI >25 stop work. FWI can be found on the website listed under how to use this guide. Have an observer watching for fires from where all the work area can be seen. Check and if necessary clean machine daily
Tracked and digging machines on grass / dead vegetation (Includes civil contracting and quarrying). (Does not include machine working on bare earth surfaces)	No work 12:00pm – 7:00pm. If FWI >25 stop work. FWI can be found on the website listed under how to use this guide. Have an observer watching for fires from where all the work area can be seen Check and if necessary clean machine daily
Use electric fences	Turn off farm mains units between 12:00pm and 7:00pm where grass under wire is more than 50% cured / dead and on fences essential to stock containment use low power portable battery unit.
Chainsaws, chippers, steel scrub cutters	No work 12:00pm – 7:00pm. If FWI >25 stop work. FWI can be found on the website listed under “how to use this guide”. Check and if necessary clean machine daily Stop use Steel Scrub Bars

Appendix 3 – Power line auto re-closer 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).