

Wildfire Reserve Closure Plan



*Note: All trigger points are based on the Fire and Emergency NZ (FENZ)
“Establish triggers for voluntary restrictions on high fire risk activities” (2022) publication.*

Version 2: 8 October 2024

Purpose

The purpose of this document is to create a standardised methodology that will be used to monitor wildfire risk in high exposure reserves and to implement reserve closures where necessary during periods of elevated wildfire danger. Closures mitigate the risk of fires starting by removing people and their associated activities that can start fires and prevent loss of life by removing people from harm's way if a fire were to occur.

Assessing trigger points to establish the Forest Fire Risk Management Code Level as tabled below should be used as a guideline.

The delegated responsibility to close a public reserve is with Queenstown Lakes District Council (QLDC).

Point of contact: parksrequest@qldc.govt.nz

The intended audience of this document is QLDC and long term users of the reserves, permit holders, leasees and the general public.

This document and further wildfire information can be sourced on QLDC's web page www.qldc.govt.nz/managing-wildfire-risk



Fire risk assessment

To assess the levels of wildfire risk to reserves, Queenstown Lakes District Council has adopted assessment protocols based on FENZ assessment publications for determining “Trigger Points”.

Reserve closures may be necessary during periods of elevated wildfire danger.

Closing a reserve will be enforced through QLDC legal powers under the Reserves Act 1977. QLDC will monitor and assess the changing levels of risk in consultation with FENZ.

The CEO or their designated authority (refer **QLDC Register of Delegations**) has accountability to activate a reserve closure. Refer to the responsibility matrix on page 4 for more detail.

Reserves identified as ‘high risk’

Reserves across the district have been prioritised for risk mitigation and listed below:

Site Name	Location	Risk Level
Te-Taumata-o-Hakitekura Ben Lomond	Queenstown	Extreme
Te Tapunui Queenstown Hill	Queenstown	Extreme
Mount Iron	Wānaka	Extreme

Maps showing reserve closure area to be found on www.qldc.govt.nz/community/managing-the-risk-of-wildfire



Closure approval and responsibility matrix

Forest Fire Risk Code Level	Experts / Advisors	QLDC Parks Team	QLDC Delegated Authority	QLDC Elected Members	FENZ	Impacted Stakeholders	Reserve Users
Monitor / Assessment of Code Levels							
Orange	C	R	A	I	S	I	I
Red	C	R	A	I	S	I	I
Purple	C	R	A	I	S	I	I

R – Responsible A – Accountable C – Consulted I – Informed S – Support

How we'll communicate a reserve closure

The fastest way for the public to find out about a reserve closure is to sign up for our 'e-txt' service. QLDC will send a txt message to inform when a reserve needs to close or has been reopened.

Sign up here and select either Queenstown or Wānaka as the location for reserve closures:



www.qldc.govt.nz/community/managing-the-risk-of-wildfire

We'll also:

- > Communicate directly with relevant leaseholders and groups such as business chambers and regional tourism organisations
- > Display onsite signage
- > Share the message with local news outlets via a media release
- > Update our webpage and publish an alert on the Council homepage
- > Share on social media channels

Please be aware that QLDC won't be staffing entrance points to reserves during the closure periods; entering a reserve while it's closed will be at people's own risk.

Forest Fire Risk Management Code Level

The identified trigger points for the Forest Fire Risk Management Code Level, are based on the FENZ fire weather indices and codes. The Build Up Index (BUI) is a measure of how much fuel is dried out and available to burn, and the Fire Weather Index (FWI) is a measure of fire intensity that indicates how damaging a fire may be and how hard it will be to control. Using the data below, a decision will be made by QLDC to determine a reserve closure. Closures could be for the entire reserve for a period of days, or for certain parts of reserves, or at peak times of fire risk during the day (often in the afternoons). See page 7 for case study data and page 8 for trigger point level fire behaviour.

Reserves should be closed in purple at all FWI values, and in orange and red if the FWI is over 30 and 25 respectively.

The table below identifies the Forest Fire Risk Management Code Level.

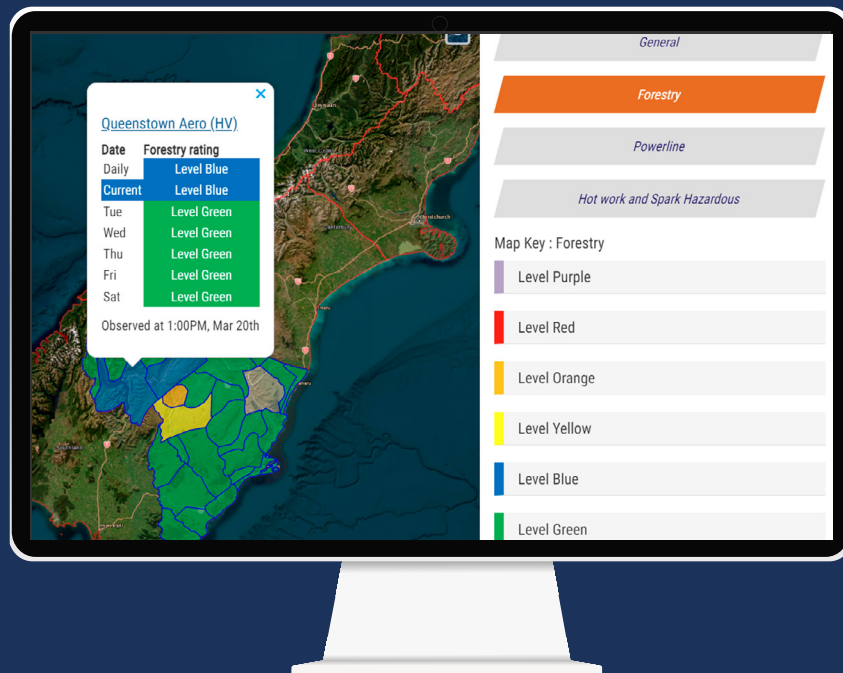
Forest Fire Risk Management Code Level	BUI range	Fire Weather Index (FWI) code calibration of BUI Range
Green	<40	Reserve open
Blue	40.1-60	Reserve open
Yellow	60.1-80	Reserve open
Orange	80.1-100	If FWI >30 close reserve
Red	100.1-120	If FWI >25 close reserve
Purple	>120	Close reserve

(No colour code can elevate up more than one level. I.e. if the Forest Fire Risk Management Code Level is in yellow and the FWI is over 25, then it would elevate to orange. If the FWI is still over 25 it would not then elevate to red. If the FWI was then over 30, it would trigger a reserve closure.)

NIWA/FENZ Fire Weather Website to establish indices (BUI and FWI)

Disclaimer: This link is to the FENZ / NIWA fire weather website. The link was accurate on the date of publication of this document, over time the web page format and information may change and you may have to search for the correct information.

1. Go to the NIWA/FENZ fire weather site fireweather.niwa.co.nz/region/Otago to determine the 'Forestry' code level or forecasted and daily BUI and FWI figures.
2. Click on the 'Forestry' tab, located on the right-hand side.
3. Click on the map at the appropriate location to see daily, current and forecast levels.



4. The table below the map indicates where to find BUI and FWI. Note for Queenstown Reseves use the "Aero (HV) site" and for Mount Iron in Wānaka use the "Hāwea Flat (HV) site".

STATION NAME	FOREST	SCRUB	GRASS	FFCM	DMC	DC	ISI	BUI	FWI	TEMP	RH	DIR	WSP	RN24	GC%
Mueller Hut (NW)	L	L	L	42.8	0	2	0.1	0	0	-2.6	96	0	0	0	40
Tara Hills Aws (MS)	L	L	L	9.4	6.4	5.1	0	5.9	0	4.2	92	221	3.6	11	60
Otematata (HV)	L	L	L	7.8	17.1	216.7	0	28.6	0	5.9	94	79	9.4	11.4	70
Hāwea Flat (HV)	L	L	L	5.1	6.8	30.5	0	8.7	0	4.8	96	151	2.2	13.8	40
Wanaka Aws (MS)	L	L	L	6.6	7	27.7	0	8.6	0	4.5	97	128	3.6	13.2	40
Mt Larkins (NW)								0	0.5						60
Damaru North (HV)	L	L	L	12.7	16.5	226.1	0	27.8	0	7.6	88	216	8.6	9.6	50
Damaru Airport Aws (MS)	L	L	L	7.8	17.1	158.5	0	26.9	0	7.5	95	254	11.2	11.2	50
Naseby Forest (HV)	L	L	L	7.4	15.1	87	0	21.1	0	2.3	100	279	5.8	11	50
Windsor (NW)	L	L	L	8.1	29	297.4	0	46.6	0	7.1	95	266	2.5	10.4	50
Queenstown Aero (HV)	L	L	L	12.2	6	35.6	0	8.5	0	5.1	98	42	4.7	9.6	40
Queenstown Aws (MS)	L	L	L	12.3	5.5	26.1	0	7.2	0	5.1	95	5	3.6	10.4	40

Go to page 7 to see list of acronyms explained!

Recorded Reserve Closures

Table 1

Days per year that reserves were closed since Wildfire Reserve Closure plan implemented.

Year	Queenstown	Wānaka (half days)	Wānaka (full days)
2023/24	0	3	0

Case studies of potential closure days based on historical data

(1 December 2018 to 15 March 2023)

Table 2

Forestry Levels: Predicted days per year that reserve closures would have occurred (BUI over 120 or combination of BUI over 60 and FWI over 30).

Year	Queenstown (mainly afternoons)	Wānaka (mainly full days)
2019	2	4
2020	5	17
2021	0	10
2022	6	14
2023	11	29
Total Average	5 per year	15 per year

Acronyms list

Temp	Temperature
RH	Relative humidity
FFMC	Fine fuel moisture code

DMC	Duff moisture code
DC	Dry chemical
BUI	Build up index



Fire behaviour assumptions for reserve closure

Reserve closures occur at code purple at all FWI values, and code orange or red with an FWI over 30. (BUI over 120, or a combination of BUI over 60 and FWI over 30. (yellow is BUI 60-80 with an increase to orange if FWI over 25 means closures can occur with a BUI above 60)).

Based on the above values a fire starting at the base of Te-Taumata-o-Hakitekura Ben Lomond, could reach the base building (approx. 800m) in around 20 minutes with an intensity of 35,000kw (well above the 10,000kw aircraft suppression level).

For Mt Iron, a fire starting off Aubrey Road, could reach the top of the mountain (approx. 1000m) in around 20 minutes with an Intensity of 50,000kw.

The QLDC trigger points are based around uncontrollable fires, that allow around 20 minutes warning for people at the top of Bobs Peak or the top of Mt Iron to escape or prepare for a fires impact. Despite the many extreme fire danger days over the past 15 years, there has not been a fire that has burnt to the top of either site.

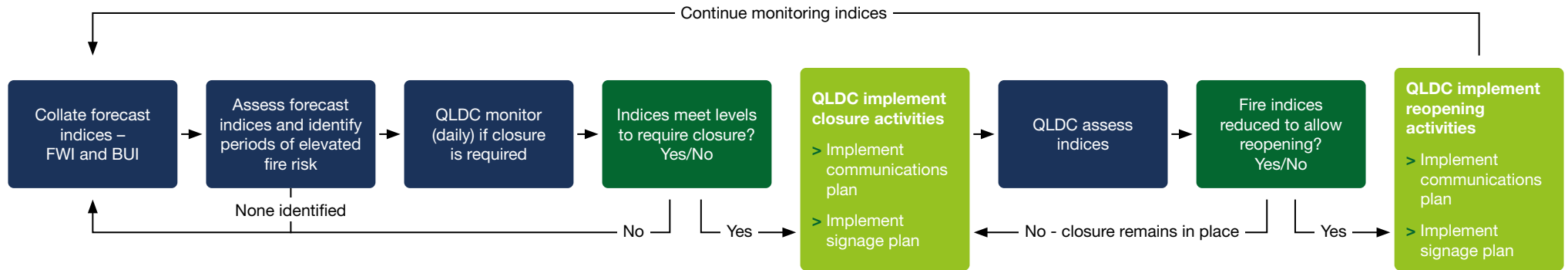
The trigger points have been created as guidelines to recognise the fire danger of the reserves in this area and to balance this against the many users of the reserves both privately and commercially. If QLDC wishes to increase the amount of time for people to be warned or escape a fire, the trigger levels will need to be reduced.

Fire weather inputs- Temp 30, RH 35, Wind 15km/hr, FFMC 91, DMC 50, DC 500, BUI 80- Queenstown Mature Pines at 35 deg slope, Wānaka Scrub Manuka/ Kanuka 3m high on 10 deg slope. Fires obtaining 90% of equilibrium in 30 mins. EXTREME fire danger.

Go to page 7 to see list of acronyms explained!

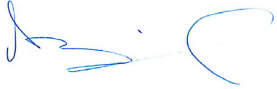


Reserve closure flowchart



Document Control

Version 2

Date:	8 October 2024
Approver:	Kenneth Bailey, General Manager Community Services
Approvers signature:	
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