

Greater Wellington Regional Council

**Heat/spark hazardous activity controls
Stakeholder application guide**

Draft Operable

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Review

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1. Introduction

This is an abridged guideline outlining the application of the heat/spark hazardous activity controls that are contained within in the full activity controls guidelines relevant to each park or group of parks.

For production forest operations the relevant full guideline for a park will need to be referred to and use the section on Production Forestry Activity Controls.

2. Heat/spark hazardous activity controls

Use these triggers when undertaking heat/spark hazardous operations in grassland, scrub, other fine fuels, and indigenous forests.

2.1. Grassland, Scrubland, and other fine fuel

- a. First refer to Table 1 below and determine the applicable weather station (station name) for the park where work will be undertaken.
- b. Go to <https://fireweather.niwa.co.nz/> and on the launch page in the interactive map click the Wellington region area to activate the weather station zones.
- c. Use the right scroll bar to scroll down to the Wellington region weather station table list and find the applicable weather station in the column called 'Station Name'. Refer to the station's data line and determine the degree of curing percent (GC%) and the daily forecast and current FFMC indexes. Note these indexes are also available over a six-day forecast.
- d. Additionally, the weather station data can be found by clicking the tab 'National Indices' at the top of the launch page and scrolling down to find the Wellington Region. Regions are listed from north to south.
- e. Apply the indexes to the matrix at Table 2 below to determine the code level and then refer to the applicable code level table for activity controls (Tables 3 to 6).

2.2. Beech and Podocarp forest

- a. First refer to Table 1 and determine the applicable weather station for the park where works will be undertaken.
- b. Go to <https://fireweather.niwa.co.nz/> and find the weather station and determine the BUI and FWI indexes. Note these indexes are also available over a six-day forecast.
- c. For Beech and Podocarp forest do not use Table 2 to determine the code level. Refer instead to the relevant park Beech and Podocarp forest triggers in Section 3 Tables 7 and 8 to determine the code level.
- d. Apply the code level to the relevant table (Tables 3 – 6 in Section 2) for activity controls. Note: Apply the heat/spark hazardous code level green for Beech and Podocarp forest code level blue.

Table 1: Park specific weather stations

#	Park	Weather station (station name)
1	Queen Elizabeth	Paraparaumu AWS (MS)
2	Western Belmont and Battle Hill	Porirua (HV)
3	Whitireia	Porirua AWS (MS)
4	East Belmont, Akatarawa and Kaitoke	Belmont (HV)
5	Pakuratahi, Wainui and East Harbour	Remutaka Forest Park (HV)
6	Bearing Head	Bearing Head (NW)

Table 2: Matrix of Fine Fuel Moisture Code (FFMC) and grass curing values (GC%).

FFMC	Degree of Grass Curing (%)		
	<50	50-84	>84
<76	Code green- level 1	Code green- level 1	Code green- level 1
76-83	Code green- level 1	Code green- level 1	Code yellow - level 2
84-87	Code green- level 1	Code yellow - level 2	Code yellow - level 2
88-91	Code yellow - level 2	Code yellow - level 2	Code orange - level 3
92-95	Code yellow - level 2	Code orange - level 3	Code red - level 4
>96	Code red - level 4	Code red - level 4	Code red - level 4

Table 3: Code green – level 1 activity controls

Code green – level 1			
Ignition source/activity	Risk control	Firefighting equipment	Equipment maintenance
<ul style="list-style-type: none"> • Lighting of fire for any reason • Working after dark unless expressly required 	Prohibited activity	NA	NA
Vehicles operating in vegetation areas	Parked in vegetation clear area	With vehicle <ul style="list-style-type: none"> • 900gm – 2kg dry powder extinguisher. Fit the larger capacity where feasible • Shovel (foldaway type is acceptable) 	Manufactures requirements for exhaust and some older vehicles that may require a spark arrestor
ATVs and motorbikes	<ul style="list-style-type: none"> • Fuel in vegetation clear area • Fitted with spark arrestor 	With vehicle <ul style="list-style-type: none"> • 300gm – 900gm dry powder fire extinguisher. Fit the larger capacity where feasible 	Manufactures requirements including exhaust and spark arrestor
Static motorised equipment including generators and pumps	Fuel and operate in a vegetation clear area with exhausting clear of vegetation	Close to operating equipment <ul style="list-style-type: none"> • 900gm dry powder extinguisher • Shovel (foldaway type is acceptable) 	Manufactures requirements including exhaust and spark arrestor
Handheld motorised equipment including chainsaws and scrub cutters (line and steel blade).	<ul style="list-style-type: none"> • Fuel in vegetation clear area • Restarted away from fuelling area 	Extinguisher with operator <ul style="list-style-type: none"> • 300gm dry powder extinguisher 	Manufactures requirements including exhaust and spark arrestor

Code green – level 1			
Ignition source/activity	Risk control	Firefighting equipment	Equipment maintenance
Motorised equipment – including light tracked or wheeled excavators, mowers, slashers, chippers, mulchers, and track power barrows	Fuel in vegetation clear area	Extinguisher with machine <ul style="list-style-type: none"> • 300gm – 900gm dry powder fire extinguisher. Fit the larger capacity where feasible 	Manufactures requirements including exhaust and spark arrestor
Motorised medium and heavy machinery >9,000kg including wheeled and tracked excavators, dozers, slashers, chippers, and mulchers	Fuel in vegetation clear area	Extinguisher with machine <ul style="list-style-type: none"> • 9kg dry powder extinguisher 	Manufactures requirements including exhaust and spark arrestor
Welding / Gas Cutting / Abrasive wheel cutting (Hot-works)	<ul style="list-style-type: none"> • Undertake work in a vegetation clear area • Have a 'Hot Works' permit system that covers all hot work operations. Operator to notify when work is to occur 	Very close to work being undertaken <ul style="list-style-type: none"> • 9kg dry powder extinguisher • 1 x full 15 or 20L backpack sprayer • Shovel (foldaway type is acceptable) 	Equipment maintained to regulation standard
Powerlines	Vegetation near or under overhead powerlines meets regulation setbacks	NA	NA

Table 4: Code yellow – level 2 activity controls

Code yellow - level 2			
Ignition source/activity	Risk control	Firefighting equipment	Equipment maintenance
<ul style="list-style-type: none"> • Lighting of fire for any reason • Working after dark unless expressly required 	Prohibited activity	NA	NA
Vehicles operating in vegetation areas	Parked in vegetation clear area	With vehicle <ul style="list-style-type: none"> • 900gm – 2kg dry powder extinguisher. Fit the larger capacity where feasible • 1 x full 15 or 20L backpack sprayer • Shovel (foldaway type is acceptable) 	<ul style="list-style-type: none"> • Manufactures requirements for exhaust and some older vehicles that may require a spark arrestor • Engine compartment, drive train and exhaust system checked daily and cleared of vegetation build up
ATVs and motorbikes	<ul style="list-style-type: none"> • Fuel in vegetation clear area • Fitted with spark arrestor 	With vehicle <ul style="list-style-type: none"> • 300gm – 900gm dry powder fire extinguisher. Fit the larger capacity where feasible 	<ul style="list-style-type: none"> • Manufactures requirements including exhaust and spark arrestor • Engine compartment, drive train and exhaust system checked daily and cleared of vegetation build-up
Static motorised equipment including generators and pumps	<ul style="list-style-type: none"> • Fuel and operate in a vegetation clear area with exhausting clear of vegetation • Fitted with spark arrestor 	Close to operating equipment <ul style="list-style-type: none"> • 900gm dry powder extinguisher • Shovel (foldaway type is acceptable) • Full 15 or 20L backpack sprayer • Shovel (foldaway type is acceptable) 	<ul style="list-style-type: none"> • Manufactures requirements including exhaust and spark arrestor

Code yellow - level 2			
Ignition source/activity	Risk control	Firefighting equipment	Equipment maintenance
Handheld motorised equipment including chainsaws and scrub cutters (line and steel blade)	<ul style="list-style-type: none"> Fuel in vegetation clear area Fitted with spark arrestor Restart away from fuelling area Avoid rocky areas where blade strike is likely Avoid work when wind speed is >30kph average 	<p>With operator</p> <ul style="list-style-type: none"> 300gm dry powder extinguisher 1 x empty foldaway 15 or 20L backpack sprayer at the vehicle if that is the closest water supply or staged at a nearby water supply Closest water supply identified (could be with vehicle) Shovel (foldaway type is acceptable) 	<ul style="list-style-type: none"> Manufactures requirements including exhaust and spark arrestor Regular clearing of vegetation build-up around exhaust and moving parts
Motorised equipment – including light tracked or wheeled excavators, mowers, slashers, chippers, mulchers, and track power barrows	<ul style="list-style-type: none"> Fuel in vegetation clear area Fitted with spark arrestor Avoid rocky areas where blade strike is likely Avoid work when wind speed is >30kph average 	<p>With machine</p> <ul style="list-style-type: none"> 300gm – 900gm dry powder fire extinguisher. Fit the larger capacity where feasible 1 x empty foldaway 15 or 20L backpack sprayer at the vehicle if that is the closest water supply or staged at a nearby water supply Closest water supply identified (could be with vehicle) Shovel (foldaway type is acceptable) 	<ul style="list-style-type: none"> Manufactures requirements including exhaust, spark arrestor, bearings, and blades Engine compartment, drive train, cutting bars, and exhaust system checked daily and cleared of vegetation build-up
Motorised medium and heavy machinery >9,000kg including wheeled and tracked excavators, dozers, slashers, chippers, and mulchers	<ul style="list-style-type: none"> Fuel in vegetation clear area Fitted with spark arrestor Avoid rocky areas where blade strike is likely Avoid work when wind speed is >30kph average 	<p>Extinguisher with machine others close by the work area</p> <ul style="list-style-type: none"> 9kg dry powder extinguisher 1 x full 15 or 20L backpack sprayer with 1 x 20L refill Shovel (foldaway type is acceptable) 	<ul style="list-style-type: none"> Manufactures requirements including exhaust and spark arrestor, bearings, and blades Engine compartment, drive train, cutting bars, and exhaust system checked daily and cleared of vegetation build-up Hydraulic hoses checked for damage or leaks

Code yellow - level 2			
Ignition source/activity	Risk control	Firefighting equipment	Equipment maintenance
Welding / Gas Cutting / Abrasive wheel cutting (Hot-works)	<ul style="list-style-type: none"> • Undertake work in a vegetation clear area and wet down 5m around work area • Use guards and traps to restrict or direct sparks and hot metal • Wait 30 minutes after work is completed • Avoid work when wind speed is >30kph average • Have a 'Hot Works' permit system that covers all hot work operations. Operator to notify when work is to occur 	Very close to work being undertaken <ul style="list-style-type: none"> • 9kg dry powder extinguisher • 15 or 20L backpack sprayer with 1 x 20L refill • Shovel (foldaway type is acceptable) 	Equipment maintained to regulation standard.
Powerlines	Vegetation near or under overhead powerlines meets regulation setbacks	<ul style="list-style-type: none"> • NA 	NA

Table 5: Code orange - level 3 activity controls

Code orange - level 3			
Ignition source/activity	Risk control	Firefighting equipment	Equipment maintenance
<ul style="list-style-type: none"> • Lighting of fire for any reason • Working after dark unless expressly required 	Prohibited activity	NA	NA
Vehicles operating in vegetation areas	<ul style="list-style-type: none"> • Parked in vegetation clear area • Avoid access after 13:00hrs 	<ul style="list-style-type: none"> • 900gm – 2kg dry powder extinguisher. Fit the larger capacity where feasible • 1 x full 15 or 20L backpack sprayer with 2 x 20L refills • Shovel (foldaway type is acceptable) 	<ul style="list-style-type: none"> • Manufactures requirements for exhaust and some older vehicles that may require a spark arrestor • Engine compartment, drive train and exhaust system checked daily and cleared of vegetation build up
ATVs and motorbikes	<ul style="list-style-type: none"> • Fuel in vegetation clear area • Fitted with spark arrestor • No access after 13:00hrs 	With vehicle <ul style="list-style-type: none"> • 300gm – 900gm dry powder fire extinguisher. Fit the larger capacity where feasible 	<ul style="list-style-type: none"> • Manufactures requirements including exhaust and spark arrestor • Engine compartment, drive train and exhaust system checked daily and cleared of vegetation build-up
Static motorised equipment including generators and pumps	<ul style="list-style-type: none"> • Fuel and operate in a vegetation clear area with exhausting clear of vegetation • Fitted with spark arrestor • Someone always monitoring machinery • Wet down area around operation • Avoid use of machines after 13:00hrs 	Close to operating equipment <ul style="list-style-type: none"> • 900gm dry powder extinguisher • 1 x full 15 or 20L backpack sprayer with 3 x 20L refills • Shovel (foldaway type is acceptable) 	Manufactures requirements including exhaust and spark arrestor

Code orange - level 3			
Ignition source/activity	Risk control	Firefighting equipment	Equipment maintenance
Handheld motorised equipment including chainsaws and scrub cutters (line and steel blade).	<ul style="list-style-type: none"> Fuel in vegetation clear area Fitted with spark arrestor Restart away from fuelling area Avoid rocky areas where blade strike is likely Place an observer to monitor operations for fire No operations after 13:00hrs and/or when wind speed is >30kph average 	<p>With operator</p> <ul style="list-style-type: none"> 300gm dry powder extinguisher 1 x empty foldaway 15 or 20L backpack sprayer at the vehicle if that is the closest water supply or staged at a nearby water supply Closest water supply identified with at least 60L of useable water (could be with vehicle) Shovel (foldaway type is acceptable) 	<ul style="list-style-type: none"> Manufactures requirements including exhaust and spark arrestor Regular clearing of vegetation build-up around exhaust and moving parts
Motorised equipment – including light tracked or wheeled excavators, mowers, slashers, chippers, and mulchers and track power barrows	<ul style="list-style-type: none"> Fuel in vegetation clear area Fitted with spark arrestor Avoid rocky areas where blade strike is likely Place an observer to monitor operations for fire No operations after 13:00hrs and/or when wind speed is >30kph average 	<p>With machine</p> <ul style="list-style-type: none"> 300gm – 900gm dry powder fire extinguisher. Fit the larger capacity where feasible 1 x empty foldaway 15 or 20L backpack sprayer at the vehicle if that is the closest water supply or staged at a nearby water supply Closest water supply identified with at least 60L of useable water (could be with vehicle) Shovel (foldaway type is acceptable) 	<ul style="list-style-type: none"> Manufactures requirements including exhaust, spark arrestor, bearings, and blades Engine compartment, drive train, cutting bars, and exhaust system checked daily and cleared of vegetation build-up

Code orange - level 3			
Ignition source/activity	Risk control	Firefighting equipment	Equipment maintenance
Motorised medium and heavy machinery >9,000kg including wheeled and tracked excavators, dozers, slashers, chippers, and mulchers	<ul style="list-style-type: none"> Fuel in vegetation clear area Fitted with spark arrestor Avoid rocky areas where blade strike is likely Place an observer to monitor operations for fire No operations after 13:00hrs and/or when wind speed is >30kph average 	Extinguisher with machine others close by the work area <ul style="list-style-type: none"> 9kg dry powder extinguisher 1 x full 15 or 20L backpack sprayer with 2 x 20L refill Shovel (foldaway type is acceptable) 	<ul style="list-style-type: none"> Manufactures requirements including exhaust and spark arrestor, bearings, and blades Engine compartment, drive train, cutting bars, and exhaust system checked daily and cleared of vegetation build-up Hydraulic hoses checked for damage or leaks
Welding / Gas Cutting / Abrasive wheel cutting (Hot-works)	<ul style="list-style-type: none"> Undertake work in a vegetation clear area and wet down 6m around work area Use guards and traps to restrict or direct sparks and hot metal Wait 30 minutes after work is completed No operations after 13:00hrs and/or when wind speed is >30kph average Have a 'Hot Works' permit system that covers all hot work operations. Operator to notify when work is to occur 	Very close to work being undertaken <ul style="list-style-type: none"> 9kg dry powder extinguisher 1 x full 15 or 20L backpack sprayer with 5 20L refill or >100L water supply with pressure pump Shovel (foldaway type is acceptable) 	Equipment maintained to regulation standard.
Powerlines	Vegetation near or under overhead powerlines meets regulation setbacks	NA	NA

Table 6: Code red - level 4 activity controls

Code red - level 4			
Ignition source/activity	Risk control	Firefighting equipment	Equipment maintenance
<ul style="list-style-type: none"> • Lighting of fire for any reason • Working after dark unless expressly required 	Prohibited activity	NA	NA
Vehicles operating in vegetation areas	No access	NA	NA
ATVs and motorbikes	No access	NA	NA
Static motorised equipment including generators and pumps	Do not operate machines	NA	NA
Handheld motorised equipment including chainsaws and scrub cutters (line and steel blade).	No work – total shutdown	NA	NA
Motorised equipment – including light tracked or wheeled excavators, mowers, slashers, chippers, and mulchers and track power barrows	No work – total shutdown	NA	NA
Motorised medium and heavy machinery >9,000kg including wheeled and tracked excavators, dozers, slashers, chippers, and mulchers	No work – total shutdown	NA	NA
Welding / Gas Cutting / Abrasive wheel cutting (Hot-works)	No welding, gas cutting or grinding	NA	NA
Powerlines	Vegetation near or under overhead powerlines meets regulation setbacks	NA	NA

3. Beech and Podocarp forest triggers

There are 2 Beech and Podocarp forest trigger tables on the next pages, one that covers Queen Elizabeth, Western and Eastern Belmont, Whitireia and Akatarawa Parks and the other for Pakuratahi Park. In the absence of Beech and Podocarp forest at Bearing Head there is no table required.

Based on where work operations are being undertaken, select the relevant trigger table below and determine the applicable Beech and Podocarp forest code level. Using this code level apply it to the heat/spark hazardous activity control tables in Section 2, Tables 3 to 6. Note code blue in the Beech and Podocarp forest translates to code green in heat/spark hazardous tables.

3.1. Queen Elizabeth, Western and Eastern Belmont, Whitireia, Battle Hill, Akatarawa and Kaitoke parks

Table 7: Queen Elizabeth, Western and Eastern Belmont, Whitireia, Battle Hill, Akatarawa and Kaitoke parks - Beech and Podocarp forest

Code	FWI triggers		Public access (A)	Recreation activity controls										Restrictions (Res)
	Beech forest	Podocarp forest		Walk, hike, tramp, run, overnight camping	Horse riding, pig hunting	Hunting (firearms)	Mountain biking	Mountain biking (electric)	Camping stoves and ovens	Motorised recreation 4x4	Motorised recreation ATV and motorbikes	Drones	Open fire	
Green	BUI ≤20 FWI >25 escalate 1 code level	BUI ≤20 FWI >25 escalate 1 code level	Open	Yes	Yes	Res	Yes	Yes	Yes	Yes	Res	Yes	No	<ul style="list-style-type: none"> No tracer ammunitions Motorised recreation ATV and motorbikes require spark arrestor and no vegetation around exhaust
Blue	BUI 20.1 – 70 FWI ≥30 escalate 1 code level	BUI 20.1 – 80 FWI ≥30 escalate 1 code level	Open	Yes	Yes	Res	Yes	Yes	Yes	Yes	Res	Yes	No	
Yellow	BUI 70.1 – 100 FWI ≥30 escalate 1 code level	BUI 80.1 – 100 FWI ≥30 escalate 1 code level	Open	Yes	Yes	Res	Yes	Yes	Res	Res	Res	Yes	No	<ul style="list-style-type: none"> No tracer ammunitions Motorised recreation ATV and motorbikes require spark arrestor and no vegetation around exhaust 4x4 vehicles carry first aid firefighting equipment, full 20L backpack sprayer, shovel and minimum 2kg dry powder fire extinguisher Stoves and camp ovens operated with extreme care in vegetation clear area
Orange	BUI 100.1 – 120 FWI ≥30 escalate 1 code level	BUI 100.1 – 120 FWI ≥30 escalate 1 code level	Warning signs to go early and avoid the afternoon and early evening	A	A	A Res	A	A	Res	No	No	No	No	
Red	BUI ≥ 110 when ISI trend is 10 - 14 FWI ≥30 escalate 1 code level	BUI ≥ 110 when ISI trend is 11 – 15 FWI ≥30 escalate 1 code level	Closed	No	No	No	No	No	No	No	No	No	No	
Purple	BUI ≥ 110 and when ISI trend is ≥15	BUI ≥ 110 and when ISI trend is ≥16	Closed	No	No	No	No	No	No	No	No	No	No	

3.2. Pakuratahi, Wanui and East Harbour parks

Table 8: Pakuratahi, Wanui and East Harbour parks - Beech and Podocarp forest

Code	FWI triggers		Public access (A)	Recreation activity controls										Restrictions (Res)
	Beech forest	Podocarp forest		Walk, hike, tramp, run, overnight camping	Horse riding, pig hunting	Hunting (firearms)	Mountain biking	Mountain biking (electric)	Camping stoves and ovens	Motorised recreation 4x4	Motorised recreation ATV and motorbikes	Drones	Open fire	
Green	BUI ≤20 FWI ≥30 escalate 1 code level	BUI ≤20 FWI ≥30 escalate 1 code level	Open	Yes	Yes	Res	Yes	Yes	Yes	Yes	Res	Yes	No	<ul style="list-style-type: none"> No tracer ammunitions Motorised recreation ATV and motorbikes require spark arrestor and no vegetation around exhaust
Blue	BUI 20.1 - 100 FWI ≥30 escalate 1 code level	BUI 20.1 - 110 FWI ≥30 escalate 1 code level	Open	Yes	Yes	Res	Yes	Yes	Yes	Yes	Res	Yes	No	
Yellow	BUI 100.1 – 120 FWI ≥30 escalate 1 code level	BUI 110.1 – 120 FWI ≥30 escalate 1 code level	Open	Yes	Yes	Res	Yes	Yes	Res	Res	Res	Yes	No	<ul style="list-style-type: none"> No tracer ammunitions Motorised recreation ATV and motorbikes require spark arrestor and no vegetation around exhaust 4x4 vehicles carry first aid firefighting equipment, full 20L backpack sprayer, shovel and minimum 2kg dry powder fire extinguisher Stoves and camp ovens operated with extreme care in vegetation clear area
Orange	BUI >120 FWI ≥30 escalate 1 code level	BUI >120 FWI ≥30 escalate 1 code level	Warning signs to go early and avoid the afternoon and early evening	A	A	A Res	A	A	Res	No	No	No	No	<ul style="list-style-type: none"> No tracer ammunitions Stoves and camp ovens operated with extreme care in vegetation clear area
Red	BUI ≥ 120 when ISI trend is 12 - 15 FWI ≥30 escalate 1 code level	BUI ≥ 120 when ISI trend is 12 – 15 FWI ≥30 escalate 1 code level	Closed	No	No	No	No	No	No	No	No	No	No	
Purple	BUI > 120 and ISI trend is ≥16	BUI ≥ 120 when ISI trend is ≥16	Closed	No	No	No	No	No	No	No	No	No	No	