

<b>Incident Name</b>	<b>Operational Period</b>	<b>IAP COVER SHEET</b> RF199
Pukaki Downs Fire	Date 31/08/20 Time 0700 - 1800	

## INCIDENT ACTION PLAN

The items checked below are included in the incident Action Plan

- SITUATION REPORT
- INCIDENT OBJECTIVES
- ORGANISATIONAL LIST
- SECTOR ASSIGNMENT
- AIR OPERATIONS PLAN
- COMMUNICATION PLAN
- SAFETY PLAN
- MEDICAL PLAN
- FIRE MAP
- WEATHER FORECAST AND MAP
- FIRE BEHAVIOUR FORECAST

<b>Approved by Incident Controller:</b>	<b>Signed</b>	<b>Date/Time</b>
<b>Name:</b> Rob Hands		



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<b>1. Incident Name</b> Pukaki Downs Fire	<b>2. Operational Period</b> Date 31/08/20 Time 0700 - 1800	<b>SITUATION REPORT</b> RF201
<b>3. Location</b> SH80, Pukaki	<b>4. Vegetation</b> Forest/Scrub/Grass/Slash	
<b>6. Assessment</b>  Started 1125 in the vicinity of the Baikie Hut Track. Driven by strong Norwest winds through tussock and wilding tree plantations. Total area of incident ground approx. 2,500ha within a 23km perimeter. Patchy areas within fire zone remaining unburnt.  A wide range of fuel types within the existing fire perimeter have been consumed.  There are 8 significant residential properties affected on the East side of SH80. Unfortunately, we have lost one of those properties. Currently carrying out property protection on the remaining properties, to be continued by nightshift.		
<b>7. Action taken</b> <ul style="list-style-type: none"> <li>• Aircraft – 2 fixed wing, 10 rotary buckets, plus air platforms.</li> <li>• Heavy machinery working at 1900: one 20ton digger creating fire break.</li> <li>• Multiple ground crews operating on structure protection and evacuating properties.</li> <li>• Command Unit onsite from Timaru. Will be unmanned overnight.</li> <li>• Set up welfare with the affected residents to reassure them we are doing everything possible to look after their properties.</li> <li>• Two evacuations out of Aoraki Mt Cook 30/8/20: Approx 140ppl (60 cars) in first and 23 cars in the second.</li> <li>• Overnight crews working throughout the night for property protection.</li> <li>• An additional three tankers brought in to support overnight crew.</li> <li>• Evacuated all affected properties.</li> <li>• Crews and IMT sourced for day time operations Monday 31 August. Commenced planning for night 31 August.</li> </ul>		
<b>8. Factors</b> <ul style="list-style-type: none"> <li>• Extreme fire behaviour occurring.</li> <li>• Power Grid Control Gate 18 threatened. This has the potential to have a significant effect on supply of power to whole of South Island.</li> <li>• Weather (high NW winds) and topography.</li> <li>• SH80 – link to Aoraki Mt Cook closed, SH8 closed at Tekapo and Omarama.</li> <li>• Prime assets – lavender farm and structures.</li> <li>• ? Stock in the area.</li> <li>• Significant areas within fire area remain unburnt.</li> </ul>		

**9. Predicted Incident Development**

Working to establish containment around 60% of the perimeter 31/8/20.

Multi day mop up and containment using helicopters, heavy machinery and ground crews.

**Fire behaviour for Monday expected to be worse than Sunday, with a significant easement from early Tuesday rain and potentially sub-zero temperatures.**

**10. Prepared by:** [REDACTED]

**Date/Time** 30/08/20 2200

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<b>1. Incident Name</b> Pukaki Downs Fire	<b>2. Operational Period</b> Date: 31/08/20 Time: 0700-1800	<b>INCIDENT OBJECTIVES</b> RF202
<b>3. Overall Incident Objectives</b> <ol style="list-style-type: none"> <li>1. Protect life and property at all times.</li> <li>2. Contain the fire within its existing perimeter by 1800hrs 31/08/20.</li> <li>3. Protect environmental assets.</li> <li>4. Protect structures, including the power grid Control Gate 18.</li> </ol>		
<b>4. Strategies for specified Operational Period</b> <ol style="list-style-type: none"> <li>1. Infrared scan around the threatened properties and perimeter.</li> <li>2. Increase perimeter security around individual properties threatened by fire using heavy machinery and air to support ground crews.</li> <li>3. Allocate resources to sectors depending on overnight fire activity: <ol style="list-style-type: none"> <li>a. 12 crews</li> <li>b. 17 helos</li> <li>c. 2 fixed wing</li> <li>d. 5 20ton diggers</li> <li>e. 7 appliances</li> <li>f. 3 tankers</li> </ol> </li> <li>4. Strengthen and extend existing containment lines.</li> <li>5. Establish contingency containment lines at northern extent of the fire line.</li> </ol>		
<b>5. Prepared by:</b> [REDACTED]	<b>Date/Time:</b> 30/08/20 2220	

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<b>1. Incident Name</b> Pukaki Downs Fire	<b>2. Operational Period</b> Date: 31/08/2020 Time: 0700-1800	<b>ORGANISATION ASSIGNMENT</b> RF203		
<b>3. Incident Control</b>		Phone	Cell Phone	Radio Ch
Incident Controller	Rob Hands		██████████	
Deputy IC	██████████		██████████	
Information Officer				
Safety Advisor	██████████		██████████	
Safety Officer	██████████		██████████	
Liaison Officer	██████████		██████████	
<b>4. Agency Representative</b>		Phone	Cell Phone	Radio Ch
Lead Agency	FENZ – Rob Hands		██████████	
Agency	DOC – ██████████		██████████	
Agency	MDC – ██████████		██████████	
Agency				
<b>5. Planning/Intell Section</b>		Phone	Cell Phone	Radio Ch
Planning/Intell Manager	██████████		██████████	
Plans	██████████		██████████	
Situations Unit	██████████ ██████████		██████████ ██████████	
Resources Unit				
Management Support Unit	██████████		██████████	
Information Unit				
Advance Planning Unit	██████████		██████████	
Technical Specialists Unit				
<b>6. Logistics Section</b>		Phone	Cell Phone	Radio Ch
Logistics Manager	██████████		██████████	
Supply Unit	██████████		██████████	
Catering Unit	██████████		██████████	
Facilities Unit				
Finance Unit	██████████			

Communications Unit	[REDACTED]		[REDACTED]	
Medical Unit	[REDACTED]		[REDACTED]	

<b>7. Operations Section</b>		Phone	Cell Phone	Radio Ch
Operations Manager	[REDACTED]		[REDACTED]	
Deputy Operations Manager	[REDACTED]		[REDACTED]	
Division One Commander				
Sector A Supervisor	[REDACTED]		[REDACTED]	
Sector B Supervisor	[REDACTED]			
Sector Y Supervisor	[REDACTED]		[REDACTED]	
Sector Z Supervisor	[REDACTED]		[REDACTED]	
Heavy Machinery	[REDACTED]		[REDACTED]	
Air Division Commander	[REDACTED]		[REDACTED]	VHF FIRE 4
Air Attack Supervisor	[REDACTED]		[REDACTED]	VHF FIRE 4
Air Attack Supervisor	[REDACTED]		[REDACTED]	VHF FIRE 4
Air Support Supervisor	[REDACTED]		[REDACTED]	VHF FIRE 4
<b>8. Prepared by:</b> [REDACTED]		<b>Date/Time</b> 30/08/2020 2215		

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<b>1. Incident Name</b> Pukaki Downs Fire		<b>2. Operational Period</b> Date: 31/08/20 Time: 0700-1800		<b>SECTOR ASSIGNMENT</b> RF204			
<b>3. Sector</b> Alpha		<b>4. Description</b> Ground crews		<b>5. Division Assigned</b>			
<b>6. Sector Supervisor</b> [REDACTED]		<b>Affiliation</b>		<b>Phone</b> [REDACTED]			
				<b>Radio Ch</b> VHF Fire1			
<b>7. Resources Assigned this period</b>							
<i>Resource/Crew</i>		<i>Leader</i>	<i># Persons</i>	<i>Transport Required</i>	<i>Drop-off Point/time</i>	<i>Pickup Point/time</i>	
<b>8. Sector Assignment / Special Instructions</b>							
Monitoring and patrol.							
Secure the perimeter.							
Aggressively suppress active fire near the perimeter where it is safe to do so, supported by heavy machinery and aviation where practical.							
<b>9. Sector Communications</b>				<b>Phone</b>		<b>Radio Ch</b>	
Division/Division Cmdr							
Air Attack Supervisor [REDACTED]				[REDACTED]		VHF FIRE 4	
Safety Officer							
<b>10. Prepared By:</b> [REDACTED]				<b>Date/Time:</b> 30/08/20 2320			

<b>1. Incident Name</b> Pukaki Downs Fire		<b>2. Operational Period</b> Date: 31/08/20 Time: 0700-1800		<b>SECTOR ASSIGNMENT</b> RF204	
<b>3. Sector</b> Bravo	<b>4. Description</b> Ground crews		<b>5. Division Assigned</b>		
<b>6. Sector Supervisor</b> [REDACTED]		<i>Affiliation</i>	<i>Phone</i>	<i>Radio Ch</i> VHF FIRE 2	
<b>7. Resources Assigned this period</b>					
<i>Resource/Crew</i>	<i>Leader</i>	<i># Persons</i>	<i>Transport Required</i>	<i>Drop-off Point/time</i>	<i>Pickup Point/time</i>
<b>8. Sector Assignment / Special Instructions</b>					
Work with aviation / heavy machinery to establish and strengthen containment.					
Consider retardant line.					
Identify a contingency containment line.					
<b>9. Sector Communications</b>				<i>Phone</i>	<i>Radio Ch</i>
Division/Division Cmdr					
Air Attack Supervisor [REDACTED]				[REDACTED]	VHF FIRE 4
Safety Officer					
<b>10. Prepared By:</b> [REDACTED]				<b>Date/Time:</b> 30/08/20 2320	



<b>1. Incident Name</b> Pukaki Downs Fire		<b>2. Operational Period</b> Date: 31/08/20 Time: 0700-1800		<b>SECTOR ASSIGNMENT</b> RF204	
<b>3. Sector</b> Yankie	<b>4. Description</b> Ground crews		<b>5. Division Assigned</b>		
<b>6. Sector Supervisor</b> [REDACTED]		<b>Affiliation</b>		<b>Phone</b> [REDACTED]	<b>Radio Ch</b> DOC 15
<b>7. Resources Assigned this period</b>					
<i>Resource/Crew</i>	<i>Leader</i>	<i># Persons</i>	<i>Transport Required</i>	<i>Drop-off Point/time</i>	<i>Pickup Point/time</i>
<b>8. Sector Assignment / Special Instructions</b>					
Work with aviation / heavy machinery to strengthen the existing firebreak.					
Establish a contingency firebreak with heavy machinery.					
<b>9. Sector Communications</b>				<b>Phone</b>	<b>Radio Ch</b>
Division/Division Cmdr					
Air Attack Supervisor		[REDACTED]	[REDACTED]	[REDACTED]	VHF FIRE 4
Safety Officer					
<b>10. Prepared By:</b> [REDACTED]				<b>Date/Time:</b> 30/08/20 2320	





<b>1. Incident Name</b> Pukaki Downs Fire		<b>2. Operational Period</b> Date: 31/08/20 Time: 0700-1800		<b>AIR OPERATIONS PLAN</b> RF208	
<b>3. Personnel and Communications</b>					
<b>Position</b>	<b>Name</b>	<b>Affiliation</b>	<b>Phone</b>	<b>Radio Chan</b>	
Air Div Commander	██████████		██████████	VHF FIRE 4	
Air Attack Supervisor	██████████		██████████	VHF FIRE 4	
Air Support Supervisor	██████████		██████████	VHF FIRE 4	
Lead Helicopter Pilot					
Lead Fixed-Wing Pilot					
<b>4. Air Resource Assignments</b>					
<b>Pilot Name/ Company</b>	<b>Aircraft Type</b>	<b>Reg or Call sign</b>	<b>Assignment</b>	<b>Tactical Freq/Chan</b>	<b>Telephone Numbers</b>
					Onboard: Company:
					Onboard: Company:
					Onboard: Company:
					Onboard: Company:
					Onboard: Company:
					Onboard: Company:
					Onboard: Company:
					Onboard: Company:
<b>5. Location of Filling Points/Service Areas</b>					
<b>Name</b>			<b>Grid Reference</b>		
<b>6. Safety Notes / Hazards / Radio Coverage Limitations</b>					
<ul style="list-style-type: none"> <li>• Powerline infrastructure</li> <li>• A ten metre high tower associated with a RAWS: <b>1366277.790E 5106630.360N</b></li> </ul>					
<b>7. Taskings</b>					
Reconnaissance, Thermal scan, PRU Positioning, Property Protection					
Prepare for retardant operations					
<b>8. Prepared By:</b>				<b>Date/Time</b>	

<b>1. Incident Name</b> Pukaki Downs Fire		<b>2. Operational Period</b> Date: 31/08/2020 Time: 0700-1800		<b>COMMUNICATIONS PLAN</b> RF205	
<b>3. Radio Channels Assigned To</b>		<b>Function</b>	<b>Channel</b>		
Sector A			VHF FIRE 1	143.8250	
Sector B			VHF FIRE 2	143.7875	
Sector Y			DOC 15	140.5500	
Sector Z			VHF FIRE 3	140.925	
Command Repeater			VHF REPEATER 1	143.2500/ 140.2500	ESB 180
<b>4. Telephone Assigned To</b>		<b>Landline</b>	<b>Cell phone</b>	<b>Fax</b>	<b>Comments</b>
<b>6. Other (e.g. email, Satphone, etc)</b>					
<b>7. Prepared by:</b> [REDACTED]				<b>Date/Time:</b> 30/08/20 2240	

<b>1. Incident Name</b> Pukaki Downs Fire	<b>2. Operational Period</b> Date: 31/08/2020 Time: 0700-1800	<b>SAFETY PLAN</b>  RF209
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**3. General Safety Points**

Everyone is to be signed in and out of the fire ground through the Incident Control Point for both safety check and payment records.

Maintain regular situation reports (containing all relevant information) via line supervisors.

LACES	Fire Orders	Watchouts
<b>L</b> - Lookout(s) <b>A</b> – Awareness – Anchor Point(s) <b>C</b> – Communication(s) <b>E</b> – Escape Route(s) <b>S</b> – Safety Zone(s)	<ol style="list-style-type: none"> <li>1. conditions and forecasts</li> <li>2. Know what your fire is doing at all times.</li> <li>3. Base all actions on current and expected fire behaviour of the fire.</li> <li>4. Identify escape routes and safety zones and make them known.</li> <li>5. <b>Post</b> lookouts when there is possible danger.</li> <li>6. <b>Stay</b> alert. Keep calm, Think clearly, act decisively.</li> <li>7. Maintain prompt communication with your crew/s, your supervisor and adjoining crews.</li> <li>8. Give clear instructions and ensure they are understood.</li> <li>9. Maintain control of your crew/s at all times.</li> <li>10. Fight fire aggressively having provided for safety first.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fire size is unknown (no size up).</li> <li>2. Unfamiliar territory</li> <li>3. Safety zones and escape routes not identified.</li> <li>4. Unfamiliar with weather and local factors influencing fire behaviour.</li> <li>5. No communications link with crew members or supervisor.</li> <li>6. Instructions and assignments not clear.</li> <li>7. Weather is getting hotter, drier and relative humidity dropping</li> <li>8. Wind increases and/or changes direction.</li> <li>9. Getting frequent spot fires across the line</li> <li>10. Working uphill or down wind of a fire</li> <li>11. Working on a steep slope</li> <li>12. Working in rugged terrain</li> <li>13. Can't see main fire</li> <li>14. In unburnt vegetation</li> <li>15. Walking through hot ashes</li> <li>16. Working alone</li> <li>17. Getting tired</li> <li>18. Working near power lines</li> <li>19. Working near machinery</li> <li>20. Working with aircraft</li> <li>21. Working around trees or spars</li> </ol>

**4. Specific Safety Points**

- Extreme fire behaviour with winds gusting to 115km/h, starting N, turning NW.
- Smokey conditions.
- Dangerous trees – potentially unstable.
- Uneven ground, variable topography.
- Lavender oil stocks at Lavender Farm.
- Confirm escape routes.
- COVID-19: illnesses, contact tracing, vehicle cleaning. Safety measures (hygiene and physical distancing), maintaining crew cohorts.
- A ten metre high tower associated with a RAWS: **1366277.790E 5106630.360N**

<b>5. Prepared By:</b> [REDACTED]	<b>Date/Time:</b> 30/08/20 2220
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<b>1. Incident Name</b> Pukaki Downs Fire		<b>2. Operational Period</b> Date: 31/08/2020 Time: 0700-1800		<b>MEDICAL PLAN</b> RF206				
<b>3. First Aid Station</b> <i>Name</i>		<i>Location</i>		<i>Phone/Radio Channel</i>		<i>Paramedics available at Station</i>		
FCP		Lavender Farm, SH80				None		
<b>4. Transportation</b> <i>Ambulance Service</i>		<i>Address</i>		<i>Phone/Radio Channel</i>		<i>Paramedics available with Ambulance</i>		
Twizel Ambulance		Mackenzie Drive				First Response only		
Aoraki Mt Cook Ambulance						First Response only		
<b>5. Hospitals</b> <i>Hospital Name</i>		<i>Address</i>		<i>Phone</i>	<u><i>Travel Time</i></u> <i>Road</i> <i>Air</i>		<i>Burn Unit</i>	<i>Heli Pad</i>
Timaru Hospital		Queen Street, Timaru		036872100	2hrs	40m	No	Yes
<b>6. Special Emergency Procedures</b>								
Any significant event, call 111 and ensure the Operations Manager and Deputy are informed								
<b>7. Prepared By:</b> [REDACTED]				<b>Date/Time:</b> 30/08/20 2220				
<b>8. Reviewed by Safety Advisor:</b>				<b>Date/Time</b>				



**1. Incident Name**

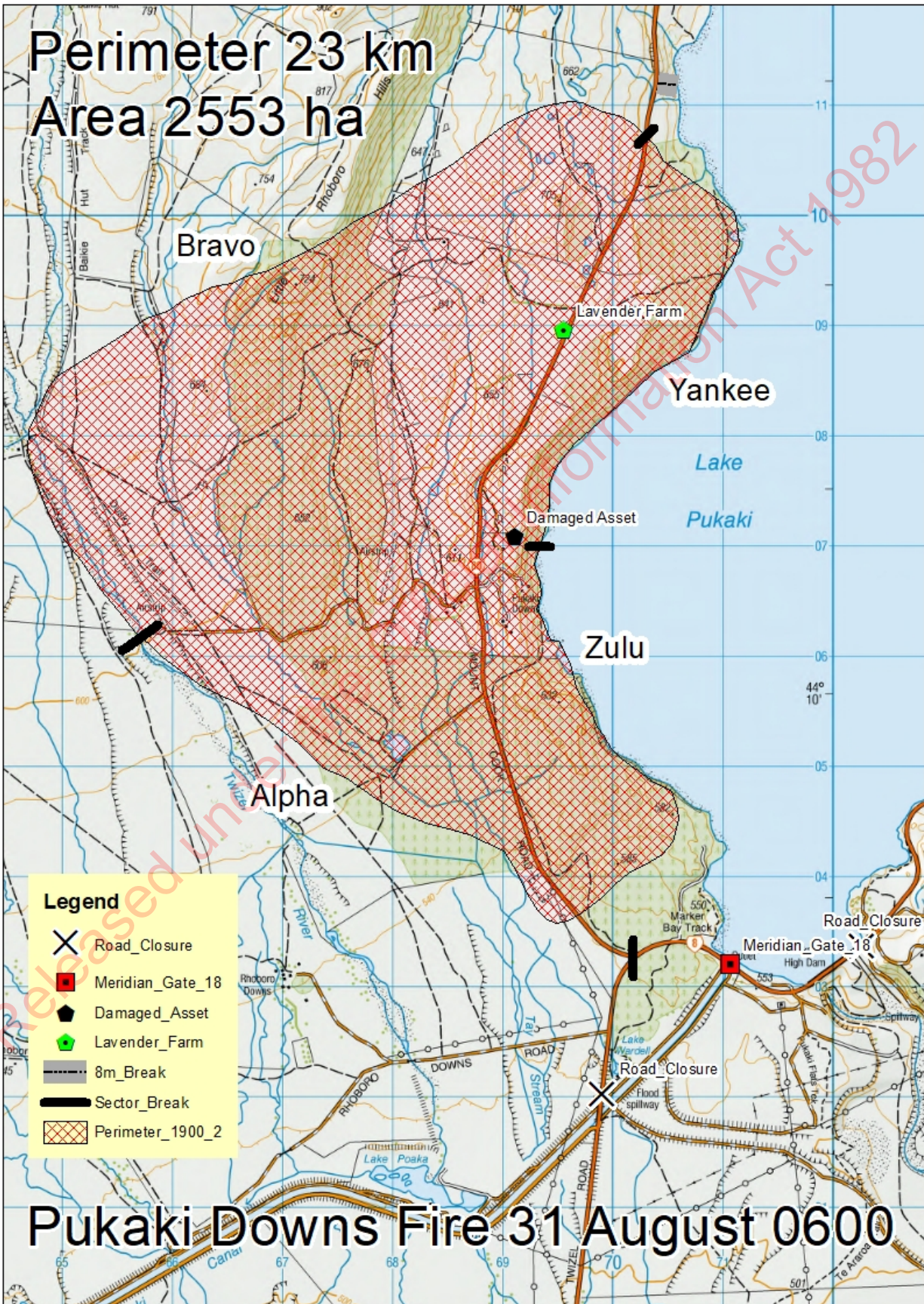
Pukaki Downs Fire

**2. Operational Period**

Date 31/8/20

Time 0700 - 1800

**FIRE MAP**

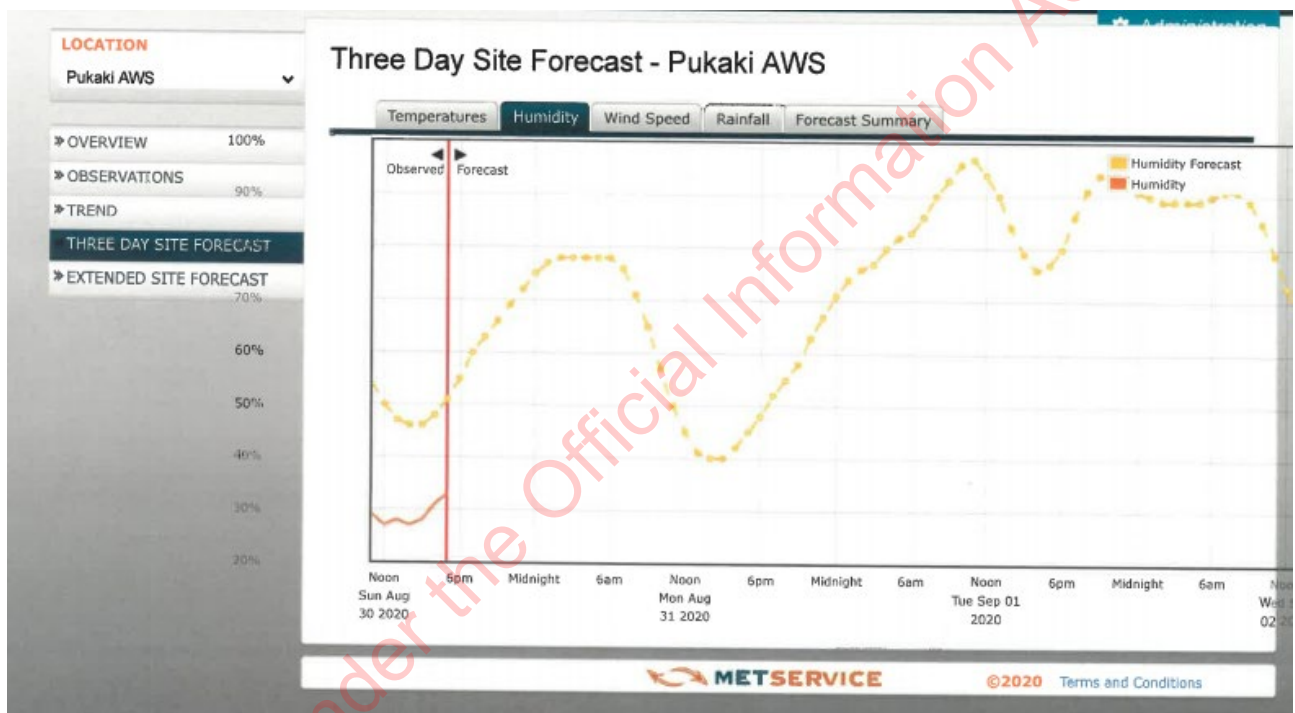




<b>1. Incident Name</b> Pukaki Downs Fire	<b>2. Operational Period</b> Date 31/8/20 Time 0700 - 1800	<b>WEATHER FORECAST</b>
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31/08/2020: The northwest picks up steadily from early hours. Watch for break-through of strong winds from around dawn (and esp. after sun gets up). Risk of mean speeds 60 to 75 km/h by mid-morning – and gusts speeds 120 km/h. Temps rise into the mid-teens and RH falls into the high 30s/low 40s. Expect the strong wind conditions to last into the night. Temp/RH conditions moderate from later pm/evening.

01/09/2020: Wind ease rapidly soon after midnight Mon and turn southerly (25 to 35 km/h for a time). Expect rain from soon after midnight Mon., the turns to snow Tues morning. Risk of 5 to 10 cm accumulation.



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**LOCATION**  
Pukaki AWS

- OVERVIEW 4.0mm
- OBSERVATIONS
- TREND
- THREE DAY SITE FORECAST**
- EXTENDED SITE FORECAST

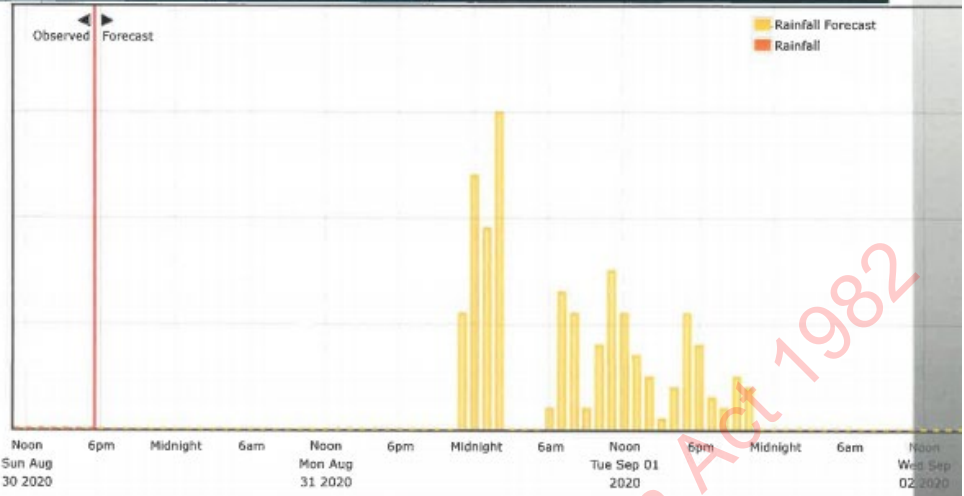
2.0mm

1.0mm

0.0mm

### Three Day Site Forecast - Pukaki AWS

Temperatures Humidity Wind Speed **Rainfall** Forecast Summary



**LOCATION**  
Pukaki AWS

- OVERVIEW 20.0°C
- OBSERVATIONS 18.0°C
- TREND 16.0°C
- THREE DAY SITE FORECAST**
- EXTENDED SITE FORECAST

12.0°C

10.0°C

8.0°C

6.0°C

4.0°C

2.0°C

0.0°C

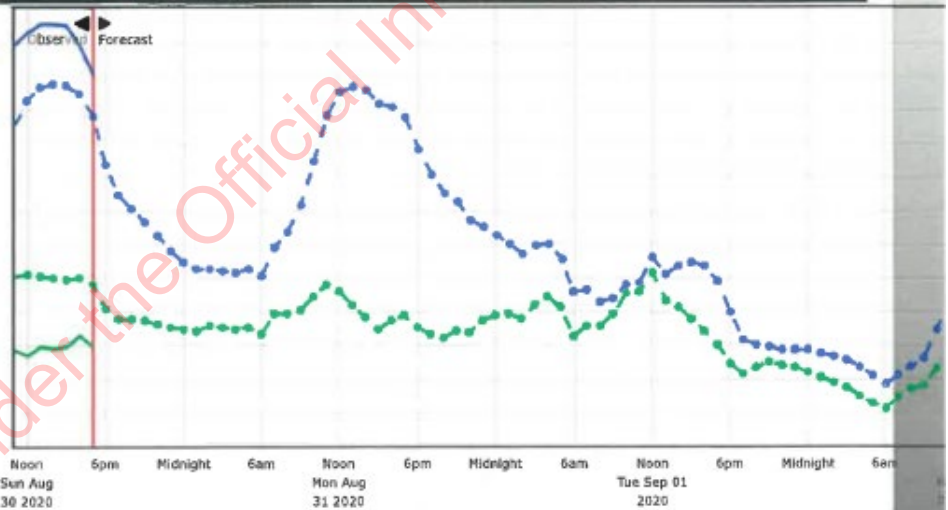
-2.0°C

-4.0°C

-6.0°C

### Three Day Site Forecast - Pukaki AWS

Temperatures **Humidity** Wind Speed Rainfall Forecast Summary



**Legend**

Forecasts (Dashed line)

- Dew Point Temperature Forecast
- Air Temperature Forecast

Observations (Solid line)

- Dew Point Temperature
- Air Temperature

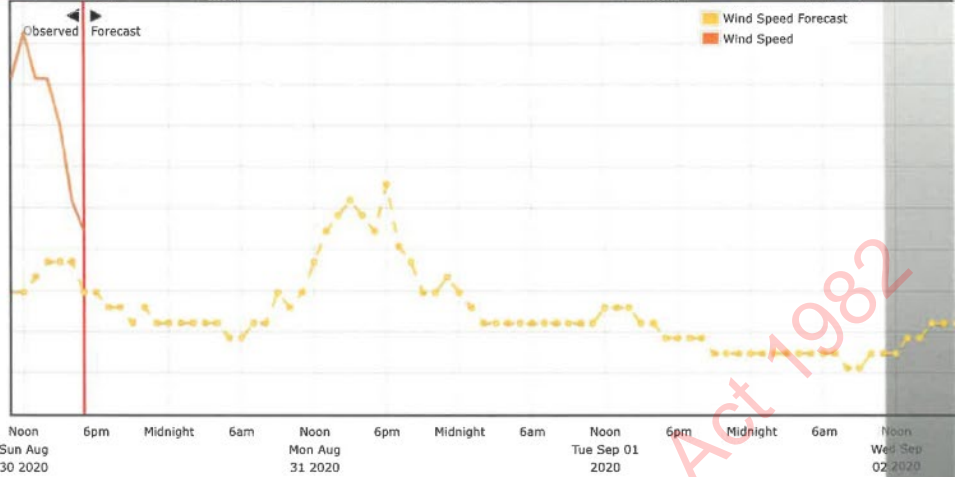
LOCATION

Pukaki AWS

- OVERVIEW 50km/h
- OBSERVATIONS 45km/h
- TREND 40km/h
- THREE DAY SITE FORECAST** 35km/h
- EXTENDED SITE FORECAST 30km/h

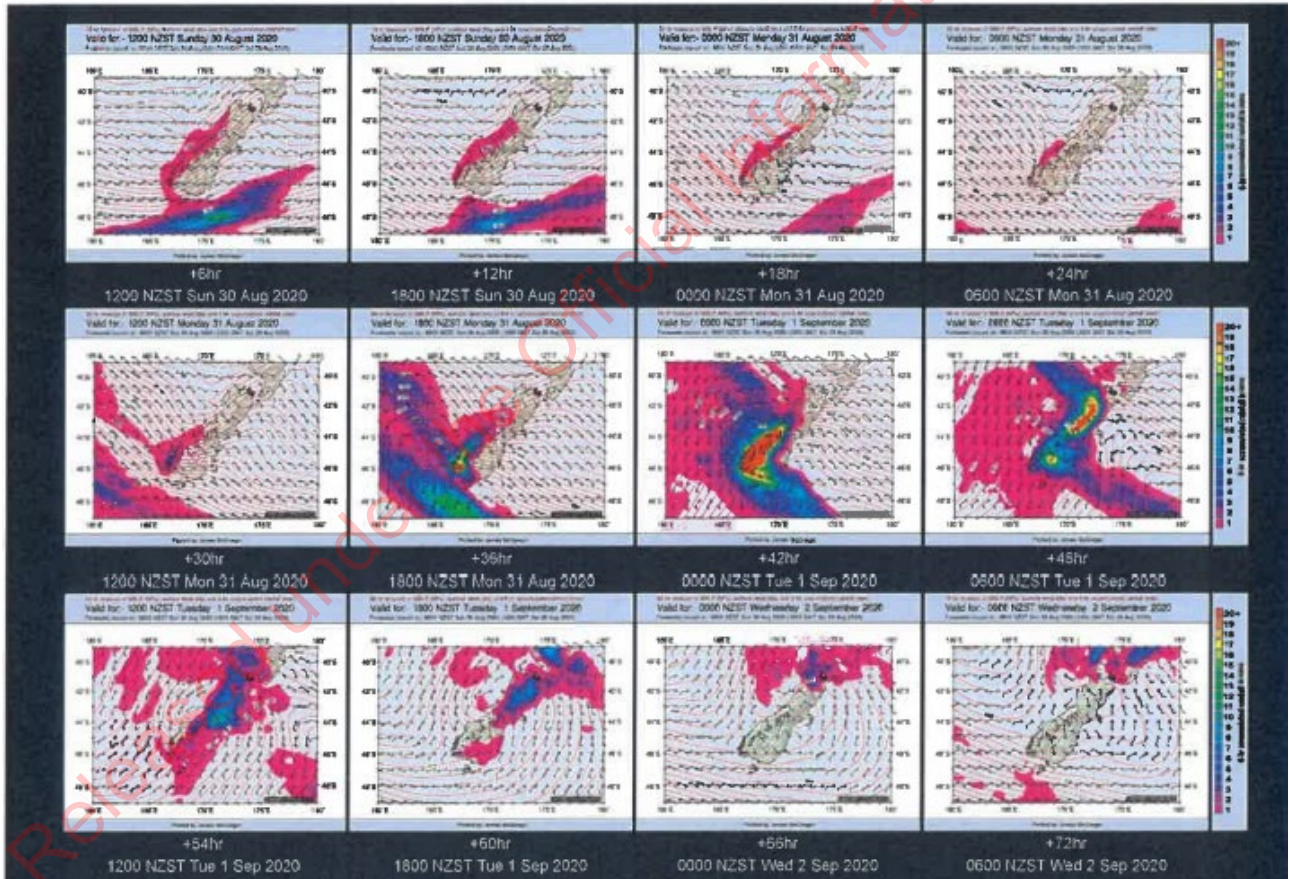
### Three Day Site Forecast - Pukaki AWS

Temperatures Humidity **Wind Speed** Rainfall Forecast Summary

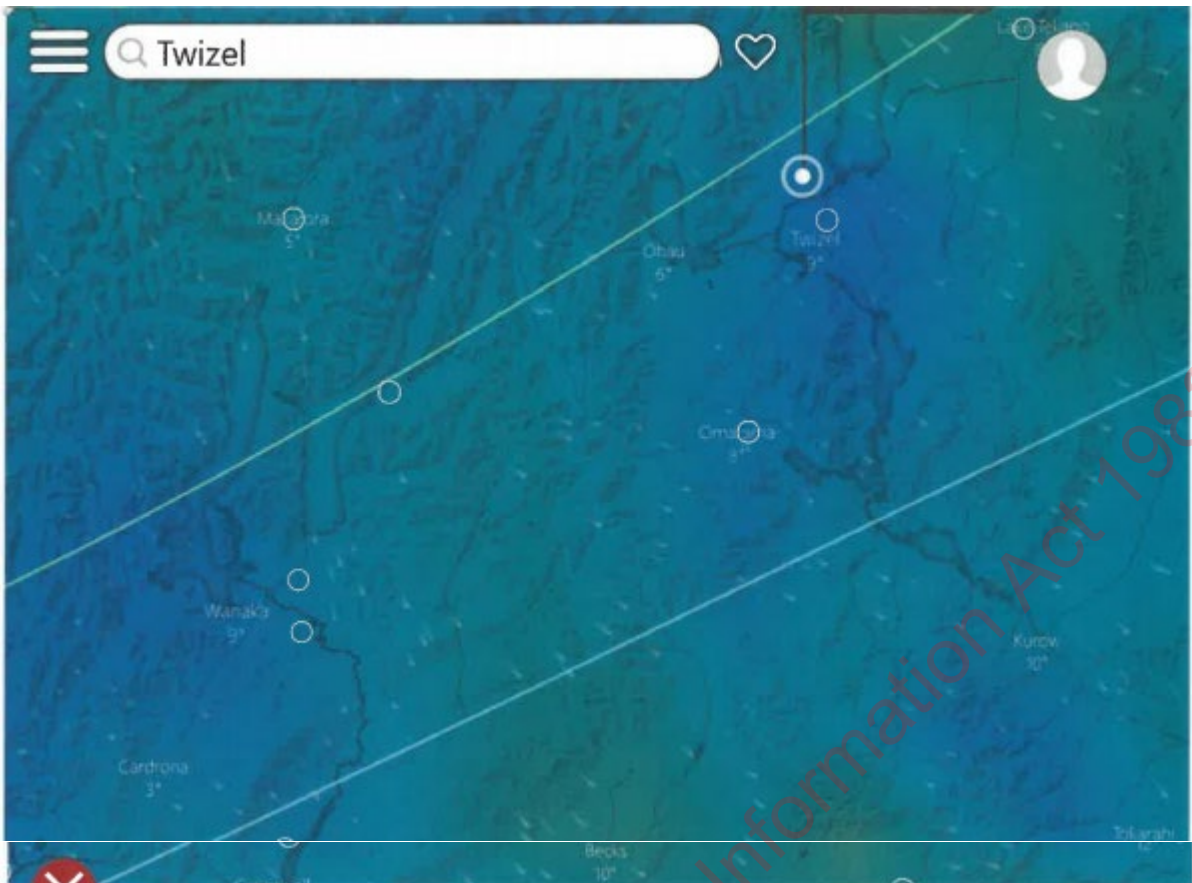


METSERVICE

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GFS 22km

	Monday 31									Tuesday 1									
Hours	3AM	6AM	9AM	0AM	3AM	6AM	9AM	12PM	3PM	6PM	9PM	0AM	3AM	6AM	9AM	12PM	3PM	6PM	9PM
Temperature °C	7°	4°	3°	2°	2°	2°	5°	7°	7°	5°	5°	4°	4°	1°	0°	0°	1°	-1°	-3°
Wind km/h	13	13	13	13	13	13	13	13	13	13	13	10	4	14	12	6	3	1	
Wind dir	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
Rain mm												1.1	11	12	2CM	3CM	2CM	0.9CM	0.6CM

ECMWF 9km

	Monday 31									Tuesday 1									
Hours	3AM	6AM	9AM	0AM	3AM	6AM	9AM	12PM	3PM	6PM	9PM	0AM	3AM	6AM	9AM	12PM	3PM	6PM	9PM
Temperature °C	10°	8°	7°	6°	6°	5°	7°	10°	10°	8°	7°	6°	4°	3°	1°	1°	1°	0°	-1°
Wind km/h	8	5	2	3	2	2	2	7	0	12	5	5	4	7	4	1	4	6	
Wind dir	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
Rain mm										0.2	4.9	21	2.8	6CM	5CM	5CM	0.9CM	0.4CM	

METEOBLUE

	Monday 31									Tuesday 1									
Hours	3AM	6AM	9AM	0AM	3AM	6AM	9AM	12PM	3PM	6PM	9PM	0AM	3AM	6AM	9AM	12PM	3PM	6PM	9PM
Temperature °C	12°	9°	7°	5°	5°	5°	8°	11°	11°	9°	8°	8°	6°	4°	2°	3°	4°	2°	0°
Wind km/h								30	37			12	5	11	11	9	9	6	
Wind dir	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
Rain mm												7	4.1	5CM	4.3	4.4			

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FIRE WEATHER FORECAST for Mount Cook Fire Service

For location: Lake Pukaki near intersection SH80

Issued by MetService at 17:28 30-Aug-2020 NZST

Valid from 18:00 30-Aug-2020 NZST to 18:00 02-Sep-2020 NZST

Wind:

Northwest 20 to 30km/h rising to 50 to 60km/h gusting 110km/h Monday afternoon. Southerly change 5 to 10km/h early Tuesday morning. Winds dying out Wednesday.

Precipitation:

Rain is expected to develop Monday night, turning to sleet then possible snow Tuesday morning. Clearing Tuesday evening. Fine on Wednesday.

Temperature:

Temperatures in the high teens on Monday, but cooling to single digits on Tuesday. Cooling below zero early Wednesday morning, but warming to about 6 to 8 degrees Wednesday afternoon.

Humidity:

Below 50% humidity until Monday night, then rising to above 90% Tuesday morning. Remaining above 50% for the remainder of the period.

Remark:

A wind warning is likely to be may be issued for Monday:

Outlook:

Fine Thursday. Northwesterlies returning.

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## Three Day Site Forecast - Pukaki AWS

[Temperatures](#)
[Humidity](#)
[Wind Speed](#)
[Rainfall](#)
[Forecast Summary](#)

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	Air (°C) <sup>1</sup>	Dew Point (°C) <sup>1</sup>	Humidity (%) <sup>1</sup>	Wind Dir <sup>2</sup>	Wind Speed (km/h) <sup>1</sup>	Rainfall Acc (mm) <sup>2</sup>
30						
Aug 4.0	-1.8	66	NNW	11	-	
0600						
0700 5.2	-0.4	67	N	11	0.0	
0800 7.3	1.6	67	NNE	15	0.0	
0900 9.1	2.6	64	calm	13	0.0	
1000 11.2	3.6	59	NNW	15	0.0	
1100 13.1	4.1	54	NW	15	0.0	
1200 14.5	4.2	50	WNW	15	0.0	
1300 15.3	4.0	47	W	17	0.0	
1400 15.5	3.9	46	WNW	19	0.0	
1500 15.4	3.8	46	NW	19	0.0	
1600 14.9	3.9	48	WNW	19	0.0	
1700 13.6	3.6	51	WNW	15	0.0	
1800 10.7	2.1	55	WNW	15	0.0	
1900 8.9	1.5	60	NW	13	0.0	
2000 8.1	1.5	63	NW	13	0.0	
2100 7.3	1.4	66	NW	11	0.0	
2200 6.5	1.2	69	NW	13	0.0	

<sup>1</sup> - the one minute average value

<sup>2</sup> - the accumulated value for the preceding hour

Released under the Official Information Act 1982

	Air (°C) <sup>1</sup>	Dew Point (°C) <sup>1</sup>	Humidity (%) <sup>1</sup>	Wind Dir <sup>2</sup>	Wind Speed (km/h) <sup>1</sup>	Rainfall Acc (mm) <sup>2</sup>
2300	5.6	1.0	72	NW	11	0.0
31						
Aug	4.9	0.9	75	NW	11	0.0
0000						
0100	4.5	0.8	77	NW	11	0.0
0200	4.5	1.1	78	NNW	11	0.0
0300	4.4	1.0	78	NW	11	0.0
0400	4.3	0.9	78	NW	11	0.0
0500	4.5	1.0	78	NNW	9	0.0
0600	4.1	0.6	78	NNW	9	0.0
0700	5.8	1.8	76	N	11	0.0
0800	6.7	1.8	71	NE	11	0.0
0900	8.3	2.0	65	NNE	15	0.0
1000	10.9	2.8	57	N	13	0.0
1100	13.6	3.5	50	NNW	15	0.0
1200	15.0	3.1	45	NW	19	0.0
1300	15.3	2.3	41	NNW	22	0.0
1400	15.1	1.6	40	NNW	24	0.0
1500	14.3	0.9	40	NNW	26	0.0
1600	14.1	1.4	42	NNW	24	0.0
1700	13.5	1.7	45	NW	22	0.0
1800	11.6	1.0	48	NW	28	0.0
1900	10.1	0.6	52	NW	20	0.0
2000	9.0	0.4	55	NW	19	0.0
2100	8.5	0.8	58	NW	15	0.0
2200	7.4	0.7	63	NW	15	0.0
2300	7.0	1.4	67	NW	17	1.1
1						
Sep	6.5	1.7	71	NW	15	2.4
0000						
0100	6.0	1.8	74	NW	13	1.9
0200	5.4	1.5	76	WNW	11	3.0
0300	5.9	2.3	77	WNW	11	0.0

<sup>1</sup> - the one minute average value

<sup>2</sup> - the accumulated value for the preceding hour

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	Air (°C) <sup>1</sup>	Dew Point (°C) <sup>1</sup>	Humidity (%) <sup>1</sup>	Wind Dir <sup>2</sup>	Wind Speed (km/h) <sup>1</sup>	Rainfall Acc (mm) <sup>2</sup>
0400	6.0	2.8	80	WNW	11	0.0
0500	5.1	2.2	82	WNW	11	0.0
0600	3.1	0.5	83	W	11	0.2
0700	3.2	1.1	86	WNW	11	1.3
0800	2.5	1.1	90	W	11	1.1
0900	2.7	1.8	93	SSW	11	0.2
1000	3.5	3.0	96	SSW	11	0.8
1100	3.6	3.1	97	S	11	1.5
1200	5.1	4.2	94	S	13	1.1
1300	4.1	2.6	90	SSE	13	0.7
1400	4.6	2.2	84	SSE	13	0.5
1500	4.8	1.5	79	S	11	0.1
1600	4.6	0.8	76	SE	11	0.4
1700	3.7	0.0	77	ENE	9	1.1
1800	1.9	-1.1	80	NE	9	0.8
1900	0.3	-1.7	86	NNE	9	0.3
2000	0.0	-1.3	91	N	9	0.2
2100	-0.1	-1.0	94	N	7	0.5
2200	-0.3	-1.2	94	NNW	7	0.4
2300	-0.3	-1.3	93	NNW	7	0.0
2						
Sep 0000	-0.3	-1.6	91	NW	7	0.0
0100	-0.5	-1.9	90	NW	7	0.0
0200	-0.7	-2.2	89	NW	7	0.0
0300	-0.9	-2.5	89	WNW	7	0.0
0400	-1.3	-3.0	89	WNW	7	0.0
0500	-1.8	-3.4	89	WNW	7	0.0
0600	-2.3	-3.7	90	WNW	7	0.0
0700	-1.8	-3.1	91	WNW	7	0.0
0800	-1.3	-2.6	91	W	6	0.0
0900	-0.8	-2.4	89	WSW	6	0.0

<sup>1</sup> - the one minute average value

<sup>2</sup> - the accumulated value for the preceding hour

	Air (°C) <sup>1</sup>	Dew Point (°C) <sup>1</sup>	Humidity (%) <sup>1</sup>	Wind Dir <sup>2</sup>	Wind Speed (km/h) <sup>1</sup>	Rainfall Acc (mm) <sup>2</sup>
1000	0.9	-1.4	85	WSW	7	0.0
1100	2.6	-0.7	79	WSW	7	0.0
1200	4.3	-0.1	73	WSW	7	0.0
1300	5.0	-0.8	66	WNW	9	0.0
1400	5.6	-1.2	61	NW	9	0.0
1500	6.3	-1.3	58	NW	11	0.0
1600	5.2	-2.4	58	NNW	11	0.0
1700	4.2	-3.0	60	N	11	0.0

<sup>1</sup> - the one minute average value

<sup>2</sup> - the accumulated value for the preceding hour



<b>1. Incident Name</b>  Pukaki Downs Fire	<b>2. Operational Period</b> Date 31/8/20 Time 0700 - 1800	<b>FIRE BEHAVIOUR FORECAST</b>
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## Weather/Fire Behaviour Forecast

### Fire Behaviour Supplement

**PREDICTION for Day 31/8/2020**

**Fire Name:** Pukaki Downs

**Prediction For:** 0600 - 1800

**Area:** Twizel

**Time & Date Update Issued:** 2300hrs 30<sup>th</sup> August 2020

**Prepared by:** [REDACTED]

### Parameters:

- The Pukaki Aero RAWS used for start-up values and observed values.
- Grass curing input @85%
- The three fuel types of Forest, Grass and Scrub assume Fire Danger Class standard fuel properties.
- Wilding Pine likely to respond more as scrub fuel.

### Weather Summary:

A northwest flow covers the South Island. From early Mon the northwest flow gets very strong ahead of a cold front. This front is due to reach the Canterbury region early Tues.

### Weather Parameters:

**Temperature** 10° rising to 13°.

**RH** 54% lowering to 44%.

**Wind speed/direction.** North to Northwest 45kph early morning rising to 63kph 1700 with max gusts 115kph

**Rain** No rain

### Fire Behaviour General:

All fuels are expected to burn with severe intensity and extremely rapid rates of spread that will be beyond standard direct attack methods. This is a serious hazard to fire fighter safety – refer to safety considerations. Expect medium range spotting during periods of high to extreme fire behaviour.

While the wind direction is more from the north there will escape pressure on the western flank in sector Alpha. When the wind direction is northwest the escape pressure will be on the south eastern end of the fire in sectors Alpha and Zulu.

Scrub Fuel (includes wilding pine). Fuel load est 20 – 30 t/ha. Head fire intensity up to 45,000 KW/m and rates of spread 4,500 m/h.

Grass Fuel. Fuel load est 7t/ha at 85% curing. Head fire intensity up to 8,000 KW/m and rates of spread 4,500 m/h

Standard Forest. Fuel load est 20t/ha. Head fire intensity 2,000KW/m and rates of spread 1,200m/h.

**Safety Considerations:**

- 1) With very high to extreme intensities and rapid fire spread crews must ensure they have identified safety zones and scouted escape routes.
- 2) The strong and gusty north to northwest winds may topple trees or break limbs.
- 3) Smoke is likely to stay low limiting visibility and making operations difficult
- 4) Strong and very gusty winds may affect air operations throughout the day.
- 5) Smoke may pose issues to road traffic.

**Forecast chart issued 1300hrs 30<sup>h</sup> August 2020**

