



New Zealand Seasonal Fire Danger Outlook 2017/18



ISSUE: South Island, November 2017

Current fire danger situation & outlook:

Low to moderate fire dangers and climate severities currently exist in most areas of the South Island (Figure 1 & 5), the exceptions being South Canterbury (M - H) and central Otago (H - VH). The current FWI System codes and indices indicate that fuel dryness is generally low, and at similar levels experienced in November last year (Figures 5-6 & 7-8). These low fire dangers across the South Island are the result of the significant rainfalls that have occurred over the past few months.

The major exception is Central Otago, which is experiencing on average, high to very high FWI, BUI, DC, DMC & FFMC values. This indicates that a fire could start easily and there could be some difficulty in suppression (in terms of mop-up). However, areas of low grass curing (green) would help suppression efforts by slowing or stopping a spreading fire.

October was a mixed bag for New Zealand. Monthly temperatures were above average for most regions of the country, rain events continued, but became less frequent as the month wore on. Western and southern regions experienced a significantly drier than normal October. It was extremely dry in central Otago. Rainfalls for northern and eastern coastlines were highly variable (patchy). Some locations, such as north Otago and north Canterbury, are wetter than normal.

The ENSO (El Niño-Southern Oscillation) outlook currently remains neutral. International forecast models indicate that we will likely transition towards a La Niña state between now and early 2018. However, it will likely be weak and short lived, with a return to neutral conditions over February-April 2018. Historically, late-developing and weak La Niña events have had mixed impacts on rainfall and temperature for New Zealand. During a La Niña, north-easterly and easterly winds are more frequent, warmer than normal temperatures are experienced, and rainfall over the northeast of the North Island is above

average but reduced in the south-west of the South Island.

The outlook for November is again for a full range of weather patterns to occur over New Zealand. Expect a mixture of low and high pressure systems, with temperature swings from cold spells to above average temperatures. Rainfall is also expected to be variable week to week. New Zealand is expected to receive near-normal November rainfall overall.

The outlook for the next three months is for more north-easterly to easterly winds. Temperatures are anticipated to be above average for all regions. Rainfall is predicted to be near normal in the north and east of the South Island, and either below normal or near normal in the west of the South Island. Soil moisture levels are most likely to be below normal in the west and east of the South Island, and near normal for the north of the South Island.

Fire dangers and severity for November are expected to be low for most of the South Island (Figures 1 & 5), with the exceptions of Central Otago, South Canterbury & Canterbury. The fire season years of 2016/17 & 2013/14 are potentially good indicators for what to expect this coming fire season (Figure 9). The weeks ahead will become drier and warmer for many, and as a result fire dangers will typically creep up, especially in eastern coastal and inland basin areas. However, major rain events will keep the fire danger and severity generally low.

As continued dry conditions in Central Otago and the Waitaki take their toll, they will remain the focus for increased fire activity. These two areas are currently experiencing, on average, high fire severities, and high to very high DC and BUI values. The deep South, lower Westland, Canterbury and Tasman may also exhibit increased activity if the month continues to provide warm dry weather. An increase in grass fire activity would occur as these areas start to dry out.

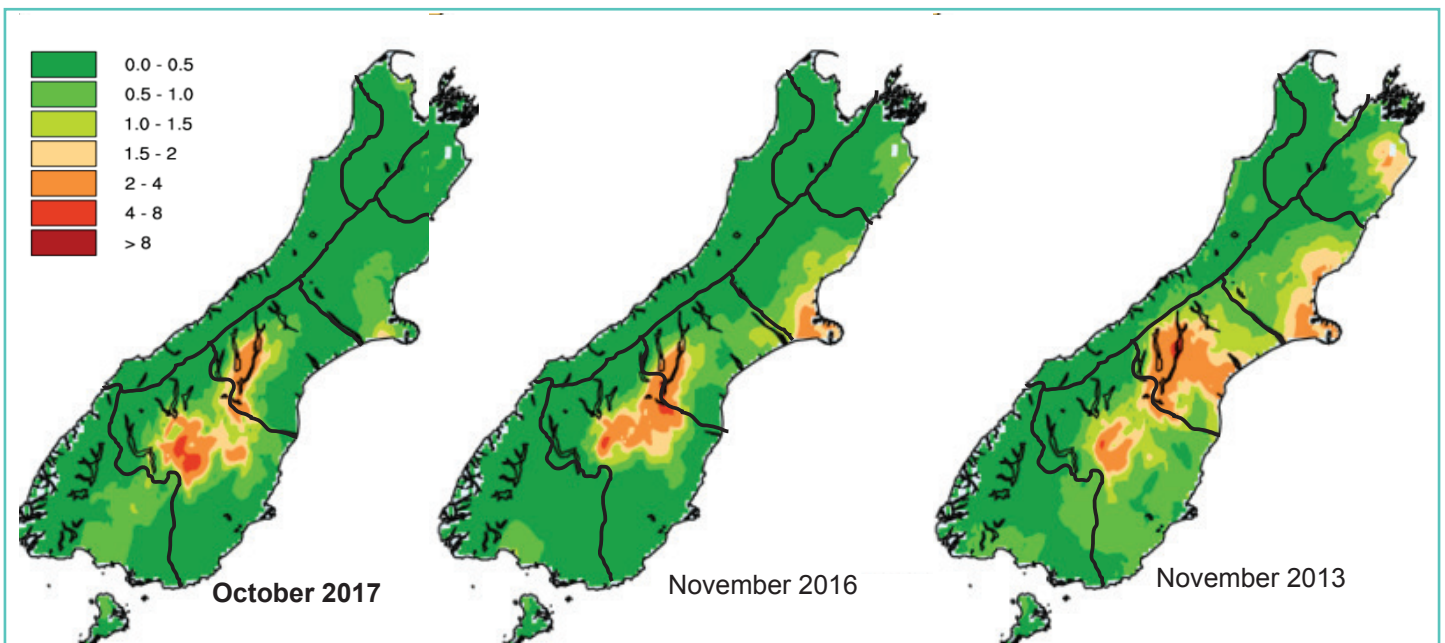


Figure 1. Monthly average Severity Rating for: current (left), last year (middle), 2013/14 Neutral year followed by a weak La Niña (right).

EXPECTED CLIMATE OUTLOOK:

The ENSO (El Niño-Southern Oscillation) outlook currently remains neutral; however as the tropical Pacific Ocean continues to cool between now and the end of the year, the likelihood of a La Niña forming is high. The tropical Pacific Ocean has consistent La Niña-like signals in both the ocean and atmosphere. Some of these signals have intensified since last month, making it increasingly likely that the tropical Pacific will transition towards a La Niña state.

The ENSO Outlook is now at a “La Niña watch” and climatologists will continue to monitor these developments. A “La Niña watch” is not a guarantee that a La Niña will occur; it is an indication that some of the signs for this event are occurring.

International forecast models indicate that there will be further cooling in the tropical Pacific for the next three months (November 2017 – January 2018). There is a 60-70% chance of a La Niña developing between now and early 2018. If it does develop, it will likely be weak and short lived, with a return to neutral conditions during February-April 2018. Historically, late-developing and weak La Niña events have had mixed impacts on rainfall and temperature for New Zealand.

This month: November 2017

Expect a full range of weather patterns to occur over New Zealand. Expect a mixture of low and high pressure systems, along with westerlies, easterlies, northerlies and southerlies. Intermittent high pressure is predicted to favour the South Island from about mid-month.

Extreme swings in temperatures are expected during November. Mild conditions, cold spells and above average temperatures are signalled. For the southern half of the South Island, we should see an unsettled first half of the month, followed by a somewhat quieter second half.

Rainfall is also forecast to be highly variable week-to-week for New Zealand regions. But overall, New Zealand is expected to receive near-normal November rainfall.

Further ahead: November 2017 - January 2018

For the next three months (November – January), we are expecting higher pressure than normal to the south-east of the country, and lower pressure than normal to the north. This will result in more north-easterly to easterly winds, which are typically observed during La Niña events. Coastal water temperatures around New Zealand are forecast to remain above average over the next three-month period, especially along the east coast of the South Island.

Temperatures are anticipated to be above average for

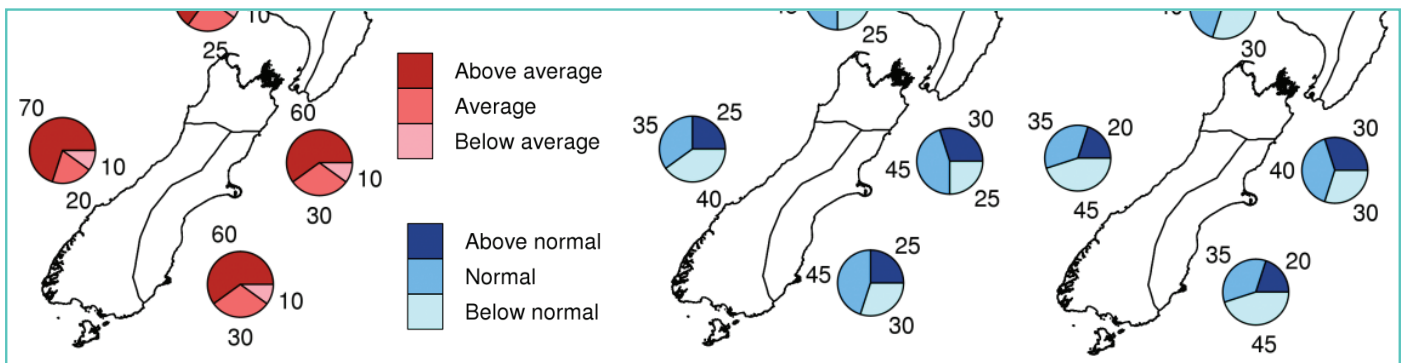


Figure 2. Outlook for Nov 2017- Jan 2018: air temperature (left), rainfall (middle), available soil moisture (right). Source: NIWA.

all regions. Rainfall is predicted to be near normal in the north and east of the South Island (45% chance), and either below normal or near normal in the west of the South Island (35-40% respectively). Soil moisture levels are most likely to be below normal (45% chance) in the west and east of the South Island, and near normal for the north of the South Island (40% chance).

Breakdown (Figure 2):

Temperatures are most likely to be:

- above average (60% chance) for Tasman, Nelson, Marlborough, Buller, Coastal Canterbury & east Otago.
- above average (70% chance) West Coast, Alps and foothills, inland Otago & Southland.

Rainfall totals are most likely to be:

- near normal (45% chance) for Tasman, Nelson, Marlborough, Buller, coastal Canterbury & east Otago.
- below normal (40% chance) or near normal (35% chance) for West Coast, Alps and foothills, inland Otago & Southland.

Soil moisture levels are most likely to be:

- near normal (40% chance) for Tasman, Nelson, Marlborough & Buller.
- below normal range (45% chance) for West Coast, Alps and foothills, inland Otago, Southland, coastal Canterbury & eastern Otago.

Last month: October 2017

A combination of spring westerlies and High pressure has brought a drier month to many areas, with subsequent drying of the soils. Exceptional rainfall accumulations were seen this in some regions. Intermittent fronts and lows still affected New Zealand, particularly around the 7th, 8th and 23rd. However these rain makers became less frequent as the month wore on. Western and southern regions of both Islands experienced a significantly drier than normal October.

Monthly temperatures were well above average for most regions of the country. The notable exception was along the eastern coastal fringe of both Islands, where temperatures were closer to average. A large area of high pressure took up residence east of New Zealand bringing warmth to many parts of the south Island.

Soils were saturated through early spring, however in the last fortnight, soil moistures have reduced in eastern regions of both Islands, as is common at this time of year under the traditional westerly regime. Soil moisture levels in western areas mostly remain in the near-saturation zone. Recent westerlies and High pressure has produced a brief, drier reprieve for most regions. Soil saturation has reduced somewhat in eastern regions.

It has already been a very dry month for lower South

Island, with some locations recording well below normal rainfall. It was extremely dry in central Otago, with only 4.8mm of rain recorded at Queenstown. Along the northern and eastern coastlines, in contrast, monthly rainfall totals were highly variable (patchy). Some locations, such as north Otago and north Canterbury, copped a wetter than normal October.

What does Neutral mean for New Zealand?

The El Niño-Southern Oscillation (ENSO) is a key natural cycle influencing New Zealand's climate. It operates over the Pacific Ocean and beyond, and causes fluctuations in the prevailing trade winds and in the strength of the subtropical high-pressure belt. Although ENSO events have an important influence on New Zealand's climate, they still only account for less than 25% of the year to year variance in seasonal rainfall and temperature.

When neither El Niño nor La Niña are present, weather patterns are said to be in a "neutral" or normal state. Neutral conditions encourage far more variability in weather patterns for New Zealand, whereas El Niño or La Niña tend to have more predictable patterns.

Neutral springs can lead to some extreme weather events for New Zealand, with snow storms one week followed by record-breaking warm temperatures, and floods the next. By November, the weather patterns will switch to mild and drier conditions, with westerlies fading as we head towards summer.

What would La Niña mean for New Zealand?

La Niña tends to warm the ocean surrounding New Zealand, which encourages frequent lows and sub-tropical storms for the north, occasionally stretching down as far as Canterbury. During a La Niña, north-easterly and easterly winds are more frequent, resulting in the risk of heavy rain and flooding. New Zealand is typically warmer than average during a La Niña, although there are regional and seasonal exceptions.

For the South Island, this means less westerly wind and reduced rainfall to the south and southwest in spring. The south and west of the country tends to dry out and have spectacular summers. Coastal Marlborough and Canterbury can be cloudier and cooler, with a chance of more rain than in non-La Niña years. During a La Niña summer, anticyclones are more frequent over southern New Zealand, bringing dry weather. Areas such as Central Otago and South Canterbury can experience drought in both El Niño and La Niña.

It's important to note that ENSO events have an important influence on New Zealand's climate, but account for less than 25% of seasonal rainfall and temperatures. With a weak La Niña expected, it means our 'local' climate players (the Southern Ocean southerlies and Tasman Sea lows) will continue to take turns ruling our weather. This is a good reminder that local climate patterns (blocking Highs over or near New Zealand, Lows over the Tasman Sea or to the north of the country, and the southern ocean storms) generally 'trump' climate patterns such as El Niño and La Niña.

Grass growth:

Climatic conditions during early spring (mild temperatures and high soil moistures) have favoured good grass growth, resulting in green lush landscapes for this time of the year. Normally, if a fire started in these fuels, fire spread would be difficult. Any burning will produce small

flame heights and low intensities for easy suppression.

In some areas, the presence of dead matted material from the previous season's growth (thatch) can contribute to the ease of a fire starting and spreading. This material is often hidden underneath lush green grass that appears to have low curing (30 - 50%). However, thatch can increase the ability of grass fuels to carry and sustain a fire. These fires will typically produce small flame heights and spread in a patchy manner.

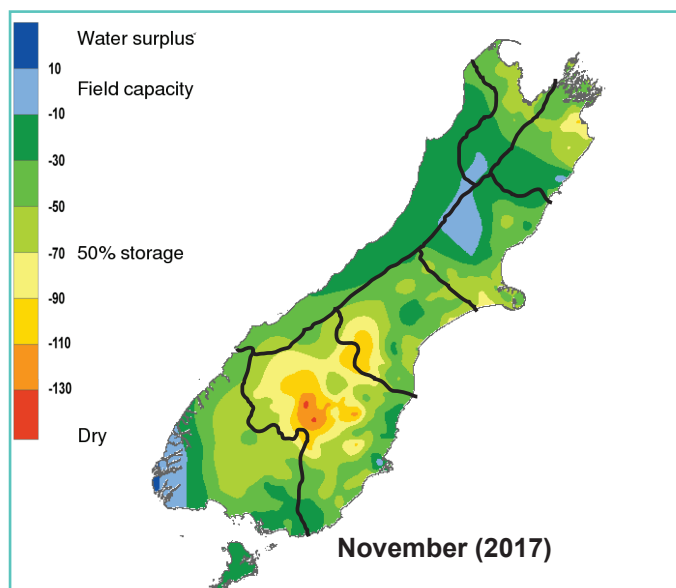


Figure 3. Soil moisture deficits as of 01/11/2017. Source: NIWA.

Note: Soil moisture deficit means the amount of water needed to bring the soil moisture content back to field capacity, which is the maximum amount of water the soil can hold.

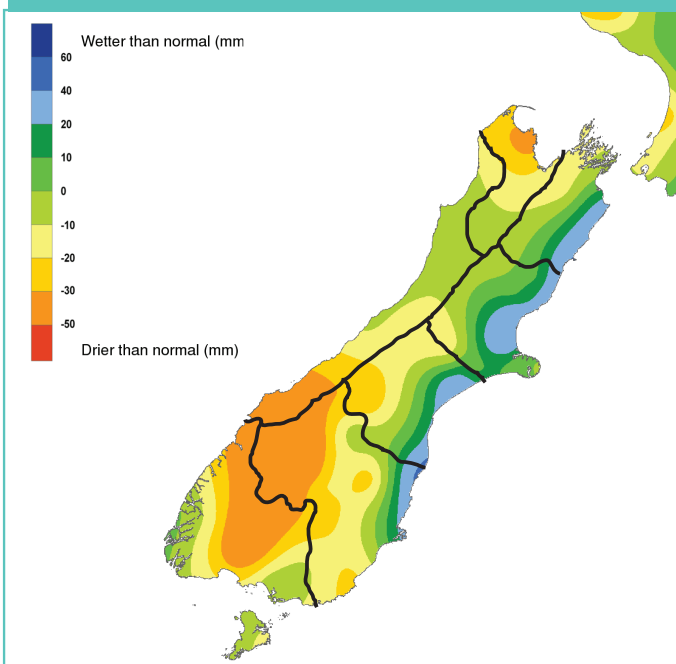


Figure 4. Soil moisture anomaly as of 01/11/2017. Source: NIWA.

Note: Soil moisture anomaly means the difference between the historical normal soil moisture deficit (or surplus) for a given time of year and actual soil moisture deficits.

Background info

The intention of these monthly outlooks is to provide a heads up on current and potential fire danger for the North and South Islands. This is not a detailed fire seasonal outlook for specific localities, nor does it summarise fire potential (which depends on fuel conditions (i.e. grass curing), risks of ignitions, recent fire history and fire management resources available in an area as well as weather and climate).

It should be used as a prompt for local and regional discussions/debates on fire potential, and where things are at, where it is heading, and to drive awareness about what this might mean in your patch and for your neighbours. Now is the chance to carry out your pre-planning if you haven't done so already.

Fine Fuel Moisture Code (FFMC)

An indicator of the relevant ease of ignition and flammability of fine fuels.

0 - 74	Difficult
75 - 84	Moderately easy
85 - 88	Easy
89 - 91	Very easy
92 +	Extreme easy

Duff Moisture Code (DMC) A rating of the average moisture content of loosely compacted organic soil layers (duff/humus) of moderate depth, and medium-sized woody material

0 - 10	Little mopup needs
11 - 20	Moderate
21 - 30	Difficult
31 - 40	Difficult & extended
41 +	Difficult & extensive

Drought Code (DC) A rating of the average moisture content of deep, compact, organic soil layers, and a useful indicator of seasonal drought effects on forest fuels and amount of smouldering in deep duff layers and large logs.

0 - 100	Little mopup needs
101 - 175	Moderate
176 - 250	Difficult
251 - 300	Difficult & extended
301 +	Difficult & extensive

Buildup Index (BUI)

Combines the DMC and DC, and represents the total amount of fuel available for combustion.

0 - 15	Easy control
16 - 30	Not difficult
31 - 45	Difficult
46 - 59	Very difficult
60 +	Extremely difficult

Initial Spread Index (ISI) Combines the effect of wind speed and the FFMC, providing a numerical rating of potential fire spread rate.

0 - 3	Slow rate of spread
4 - 7	Moderate fast
8 - 12	Fast
13 - 15	Very fast
16 +	Extremely fast

Fire Weather Index (FWI)

Combines the ISI and BUI to indicate the potential head fire intensity of a spreading fire (on level terrain).

0 - 5	Low fire intensity
6 - 12	Moderate
13 - 20	High
21 - 29	Very High
30 +	Extreme

Daily Severity Rating (DSR) A numerical rating of the daily fire weather severity at a particular station, based on the FWI. It indicates the increasing amount of work and difficulty of controlling a fire as fire intensity increases. The DSR can be averaged over any period to provide monthly or seasonal severity ratings.

0 - 1	Low fire behaviour potential
1 - 3	Moderate fire potential
3 - 7	High to very high fire potential
7 +	Extreme fire behaviour potential

Monthly Severity Rating (MSR) is the average of the DSR values over the month. DSR and MSR captures the effects of both wind and fuel dryness on potential fire intensity, and therefore control difficulty and the amount of work required to suppress a fire. It allows for comparison of the severity of fire weather from one year to another.

Acknowledgements:

Fire Danger interpretation was from information gathered from the Average Monthly Maps for: Severity Rating, FWI, BUI, ISI, DC, DMC, FFMC. These maps were obtained from the National Rural Fire Authority Fire Weather System powered by Eco Connect.

Information on the Expected Climate Outlook was gathered from:

- MetService, Rural Monthly outlooks: www.metservice.com/rural/monthly-outlook
- NIWA, Seasonal Climate outlook: www.niwa.co.nz/climate/sco
- Australian Bureau of Meteorology Climate outlooks <http://www.bom.gov.au/climate/ahead/?ref=fr>

Front Cover Image:

2017 Haybarn fire, Otago. (Kerry O'Neill, DPRFO).

If you are keen to submit a weather and fire related photo that will appear on the front page, please email:

- a high resolution image(s)
- with details on the location and the photographer's name and organisation.
- to: Veronica.Clifford@scionresearch.com

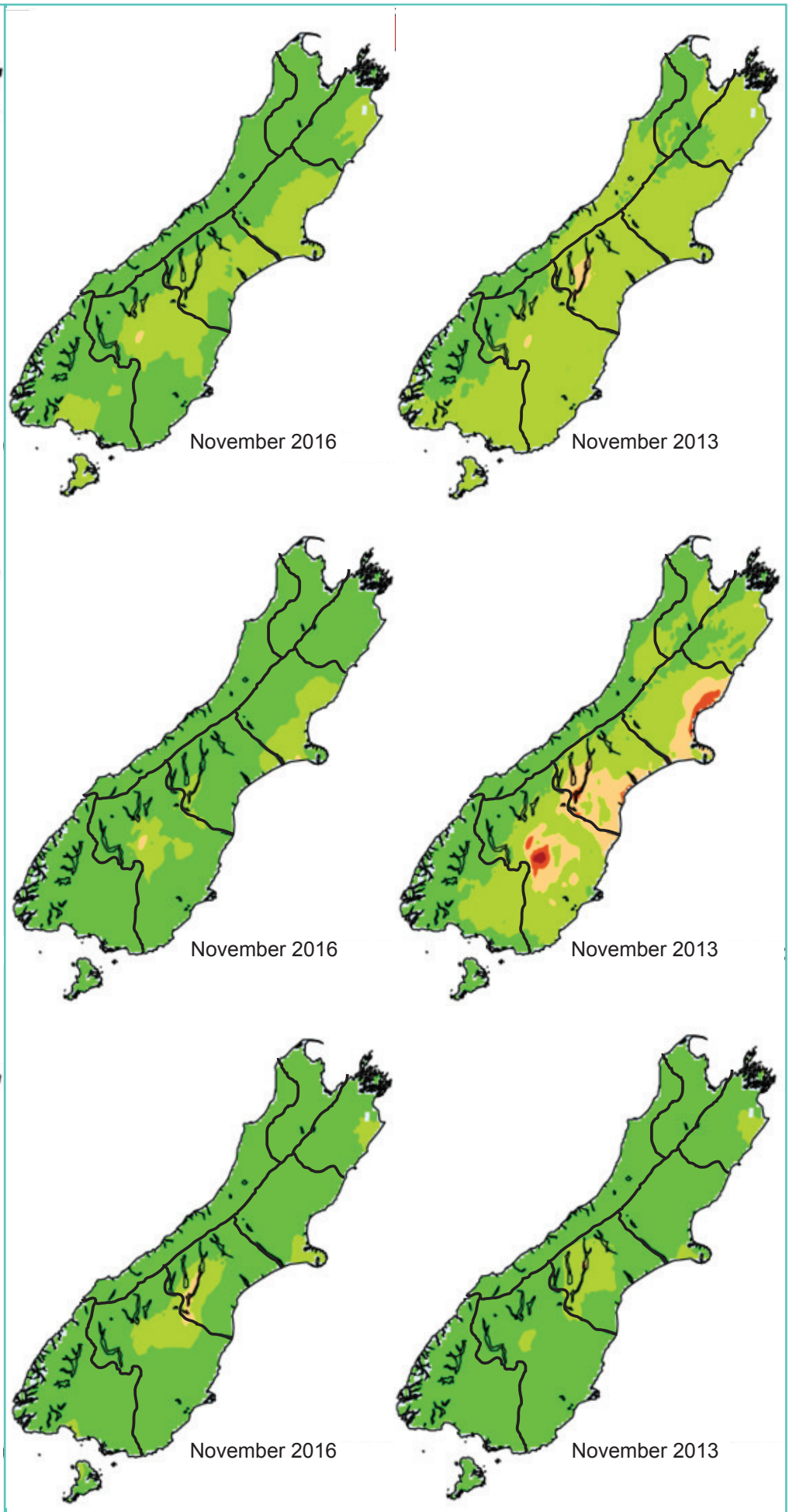
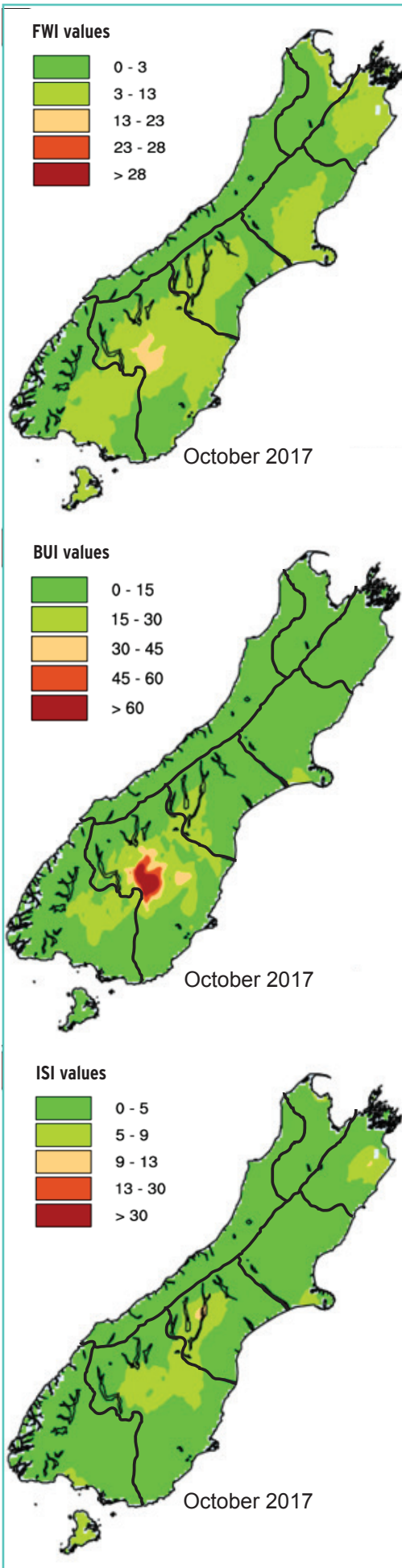


Figure 5. Current Monthly Average for the: Fire Weather Index (top), Buildup Index (middle) and Initial Spread Index (below).

Figure 6. Average Monthly values of: Fire Weather Index (top), Buildup Index (middle) and Initial Spread Index (below); for the previous year and during the 2013/14 Neutral year followed by a weak La Niña year.

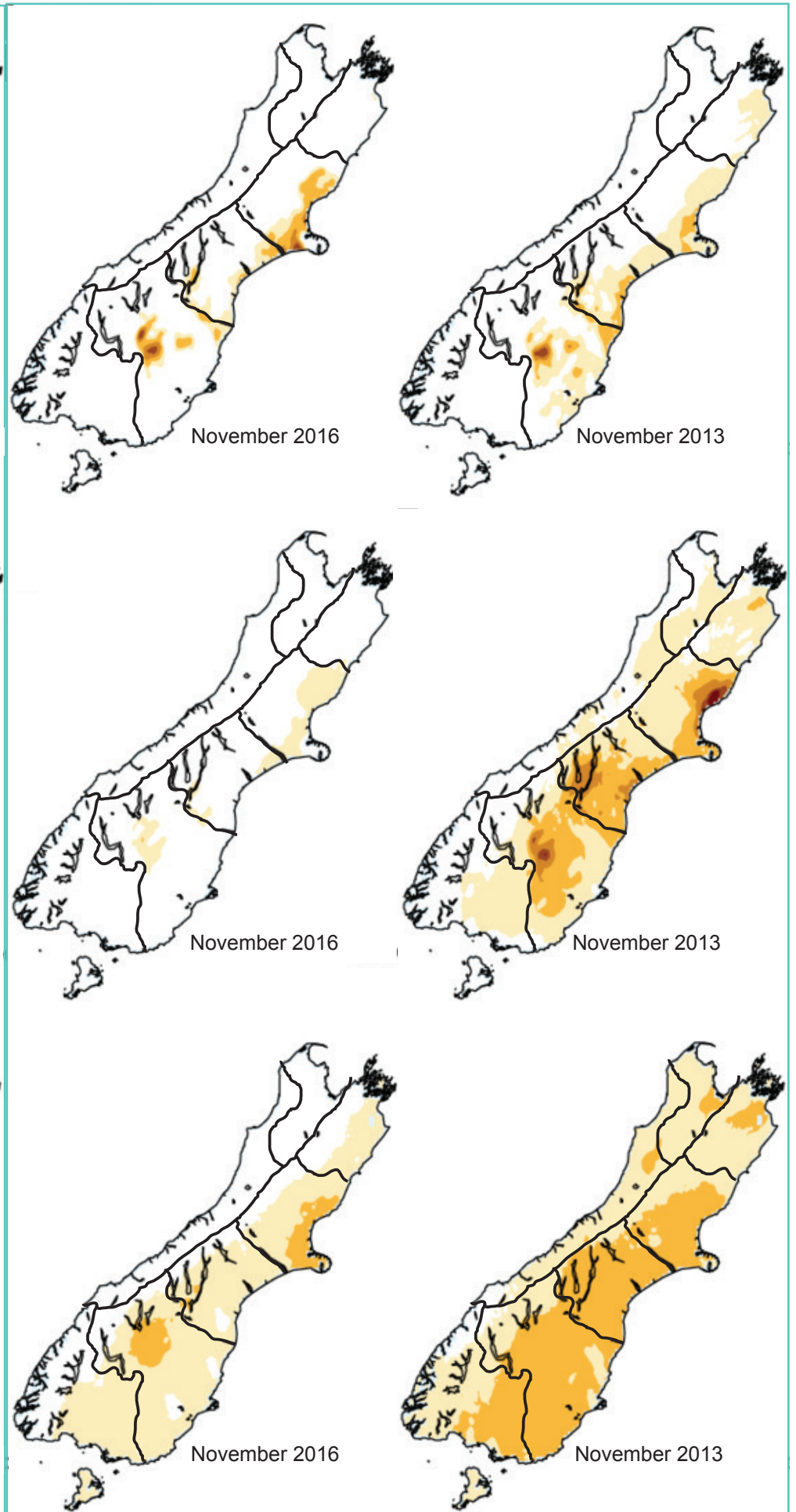
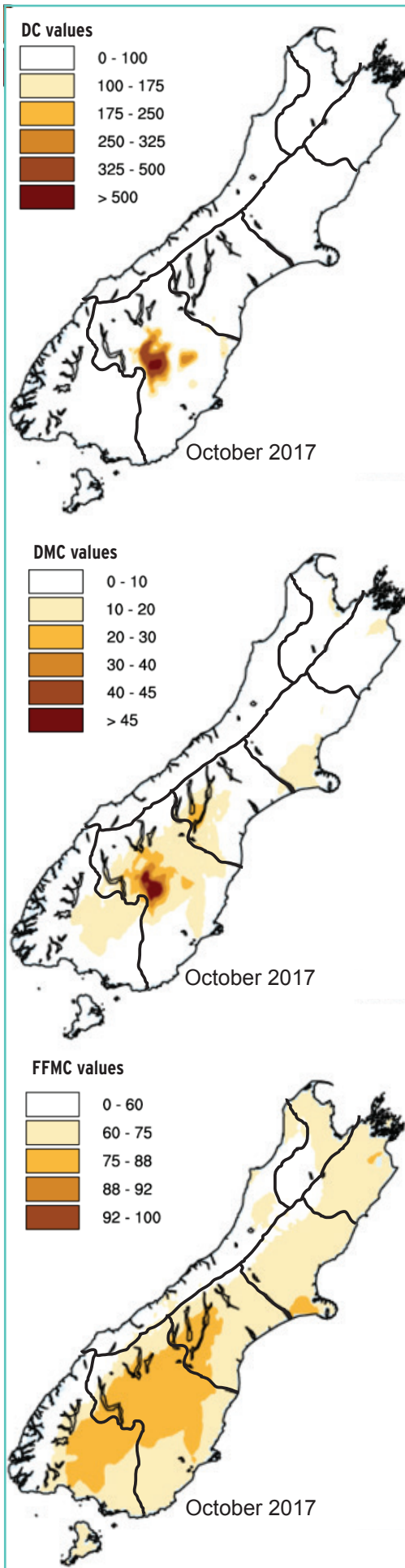


Figure 7. Current monthly average for the: Drought Code (top), Duff Moisture Code (middle) and the Fine Fuel Moisture Code (below).

Figure 8. Average monthly values of: Drought Code (top), Duff Moisture Code (middle) and Fine Fuel Moisture Code (below); for the previous year, and the 2013/14 Neutral year followed by a weak La Niña year.

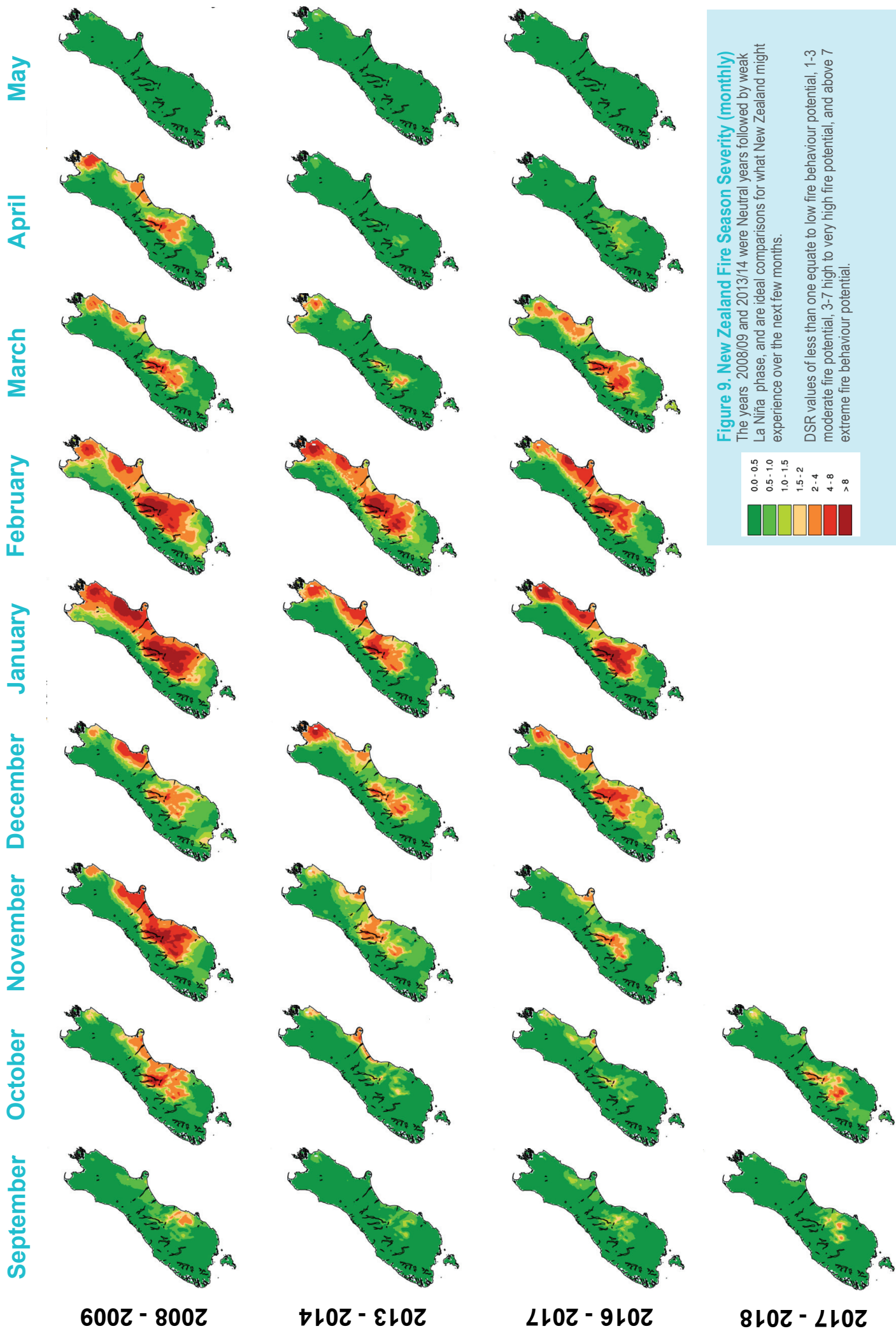
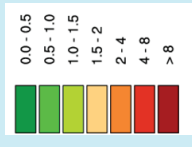


Figure 9. New Zealand Fire Season Severity (monthly)

The years 2008/09 and 2013/14 were Neutral years followed by weak La Niña phase, and are ideal comparisons for what New Zealand might experience over the next few months.

DSR values of less than one equate to low fire behaviour potential, 1-3 moderate fire potential, 3-7 high to very high fire potential, and above 7 extreme fire behaviour potential.



Regional Summaries

Tracking of trends in BUI, DC and CDSR:

Comparisons of fire dangers for individual indicator stations for different regions are shown overleaf due to increasing fire activity and an increasing likelihood for fire danger and severity across the country. This is in tabular format.

Trends for Drought Code (DC), Buildup Index (BUI) and Cumulative Daily Severity Rating (CDSR) are provided for all stations in a PDF format. For those who are interested in tracking fire season trends for all your weather stations on a more frequent basis (as opposed to the monthly analysis done here), you can download the summary PDF graphs and Excel sheets, and R scripts (to make the pdfs) using the link to the right: [\(or click here\)](#)

Link: <https://www.dropbox.com/sh/1qy0b1rauv0t6g4/AAC4ziYCv9FUP6a5o7R-HHjna?dl=0>

The more detailed regional outlooks highlight where Buildup Index (BUI), Drought Code (DC) and Cumulative Daily Severity Rating (CDSR) values sit in comparison with previous fire seasons. The graphs display:

- Bold red line is the current fire season
- Bold black line is the long-term average
- Light grey shaded areas indicate the range based on historical max and mins
- We've also colour coded the 2013/14 Neutral year followed by a weak La Niña season blue.

Northern South Island:

Nelson-Tasman

Soil moisture:

- Soil moisture deficits (Figure 3) are lower (closer to field capacity) in southern locations and are showing signs of drying in the north. This is drier than the same time last year.
- The soil moisture anomaly (Figure 4) shows soils are drier than normal in the Nelson region, and about normal in south.

Fire weather codes and indices:

- Stations that are worthy of watching are: Dovedale, Nelson Aero (Raws & Aws), Hira, Big Pokororo
- However, as with this time last year, any major rain events will provide some added relief.
- Currently BUIs are ranging between 10 - 30. This indicates that heavy and medium fuels are starting to become available for combustion, but that the difficulty of control will generally be easy.
- Maximum BUIs typically peak between 110 – 160 in late February or March.
- All stations are recording BUI values above the average and also above levels seen in the weak La Niña fire season of 2013/14.
- Currently DC's are generally around 25 – 100, indicating little difficulty for mop-up.
- Maximum DC values typically reach a peak (350) near the end of February or March.
- DC values are either above or on trend with average, and also levels seen in the weak La Niña fire season of 2013/14.
- CDSRs are generally trending with the average and the 13/14 season.
- Current fire severity (Figure 1) and fire danger (Figure 5) are, on average, low to moderate for the region.
- Expect fire dangers and fire climate severity to increase across the Nelson-Tasman region over the next few months.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2013/14	vs. average	vs. 2013/14	vs. average	vs. 2013/14
Hill and High country						
Big Pokororo	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Dovedale	above	above	above	above	below	slightly below
Western Boundary	slightly above	above	above	above	on trend	slightly above
Murchison	above	above	below	on trend	well below	on trend
St Arnaud	slightly above	above	above	above	well below	well below
Coastal						
Takaka Aerodrome	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Hira	above	above	on trend	on trend	below	slightly below
Nelson Creek	above	above	below	below	below	on trend
Nelson Aero	above	above	slightly above	above	on trend	slightly above

Marlborough-Kaikoura

Soil moisture:

- Soil moisture levels (Figure 3) are about normal for most of the region, slightly higher (drier) for Blenheim, and at field capacity in the south of the region.
- The soil moisture anomaly map (Figure 4) shows wetter than normal soils along the coast, and drier than normal soils in the west (inland).

Fire weather codes and indices:

- Stations that are worthy of watching are: Kenepuru Head, Rai Valley, Onamalutu, Landsdowne, Tor Darroch, Mid Awatere Valley, Upper Clarence
- However, as with this time last year, any major rain events will provide some added relief.
- Currently, BUIs are ranging between 20 and 45. This indicates medium and heavy fuels are becoming available for combustion, and difficulty of control will be moderate to difficult.
- Stations across the region typically peak at 110 – 260 in February or March.
- Stations are recording BUI values on trend or above the historical average, and most are on or above the conditions seen in the weak La Niña fire season of 2013/14.
- Currently, DC's are ranging between 80 and 120, indicating moderate difficulty for mop-up.
- Maximum DC values typically reach a peak (600 - 1200) near the end of February or March.
- DC values across the region range from above or below that of the historical average, but are on trend or above the levels observed during the 2013/14 fire season.
- CDSRs are below or trending with the long term average and the levels seen in 2013/14 the region.
- Fire severity and danger (Figure 1 & 5) are currently, on average, low to moderate.
- Expect fire dangers and fire severity to continue to increase this month.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2013/14	vs. average	vs. 2013/14	vs. average	vs. 2013/14
Sounds						
Kenepuru Head	above	above				
Rai Valley	above	above				
Koromiko Raws	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Opua Bay	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Hill and High country						
Onamalutu	well above	well above				
Landsdowne	well above	NA				
Tor Darroch	well above	NA	above	NA	below	NA
Ward	slightly below	NA	below	NA	well below	NA
Mid Awatere Valley Raws	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Molesworth	slightly above	above	on trend	slightly above	below	slightly below
Upper Clarence Raws	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Glenveigh	below	NA	below	NA	well below	NA
Plains						
Lower Wairau	on trend	NA				
Blenheim Aero	slightly above	above				
Awatere Valley	on trend	on trend				
Coastal						
Cape Campbell	on trend	above				
Kaikoura	slightly below	below	below	on trend	below	below

Central South Island:

West Coast

Soil moisture:

- Soil moisture deficits (Figure 3) are close to field capacity for the region, and are slightly drier than this time last year.
- The soil moisture anomaly (Figure 4) shows soils are much drier than normal for lower Westland, and about normal for the north.

Fire weather codes and indices:

- There are no stations considered recording exceptional FWI values currently. However, Lower Westland is an area to watch due to the drier than normal soils recorded.
- Currently BUIs are ranging between 2 and 15. This indicates that heavy and medium fuels are not as readily available for combustion and the difficulty of control will generally be easy.
- Maximum BUIs typically peak in early March, reaching values of 40 - 100.
- Most BUI levels are above the historical average, and the levels observed during the weak La Niña 2013/14 fire season.
- Currently DC's are ranging between 0 and 5, indicating no or little mop-up requirement.
- Maximum DC values typically reach a peak (325 - 425) near the end of January and February.
- Rainfall has resulted in current DC values being below the historical average, and the levels seen in 2013/14.
- CDSRs are at normal levels for this time of the year.
- Fire severity and danger for this region is currently, on average, low (Figure 1 & 5).
- However, if La Niña conditions do eventuate, fire dangers and fire climate severity could increase over the next few months due to lower than normal rainfalls in the west.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2013/14	vs. average	vs. 2013/14	vs. average	vs. 2013/14
Hill and High country						
Reefton	above	above	below	below	slightly below	slightly above
Nelson Creek	above	above	below	below	below	on trend
Coastal						
Westport Aero	above	above	below	well below	below	below
Hokitika Aero	above	above	below	well below	below	on trend
Haast	well above	well above	well below	well below	below	below
Charleston	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Canterbury

(includes Selwyn, Christchurch, Waimakariri and Hurunui).

Soil moisture:

- Soil moisture deficits (Figure 3) are at field capacity in the high country, but remain normal in North Canterbury, Waimakariri and Selwyn districts. However they are not as dry as at the same time last year.
- The soil moisture anomaly map (Figure 4) indicates that soils are wetter than normal along the east coast, and about normal or slightly drier than normal in the high country.

Fire weather codes and indices:

- Stations that are worthy of watching are: Snowdon & Bottle Lake Forest
- Currently, BUIs are typically ranging between 25 and 75. These indicate that medium and heavy fuels are readily available for combustion, and that difficulty of control will be moderately to very difficult.
- BUIs usually peak around January - February (170).
- In general, BUI levels are either on trend or above the historical average, and above levels observed in the weak La Niña fire season of 2013/14.
- Currently DC's are generally ranging between 75 and 125. These indicate that deep organic layers and heavy fuels are drying out, and there will be moderately difficult mop-up requirements.
- Maximum DC values typically reach a peak (600 - 800) near the end of February or March.
- DC vales are generally on trend with the historical average and values during the 2013/14 season. The exception is: Bottle Lake Forest (above average).
- CDSRs are generally below the historical average. The exceptions are: Snowdon & Bottle Lake Forest (considerably above average).
- Fire severity and danger (Figure 1 & 5) are currently, on average, moderate.
- Expect fire dangers and fire climate severity to continue to increase over the next month.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2013/14	vs. average	vs. 2013/14	vs. average	vs. 2013/14
Northern Canterbury						
Hanmer Forest	above	above	slightly above	above	below	below
Balmoral	below	on trend	below	slightly below	below	on trend
Ashley	slightly above	above	slightly above	above	below	on trend
Hill and High country						
Lees Valley	on trend	slightly above	on trend	slightly above	below	on trend
Oxford	above	above	on trend	above	below	on trend
Snowdon	well above	well above	slightly above	above	well above	well above
Plains						
Forest Plains	slightly below	slightly above	below	slightly above	below	slightly above
Christchurch Aero	slightly below	slightly below	below	below	well below	well below
McLeans	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Burnham	on trend	slightly above	on trend	on trend	below	below
Coastal						
Bottle Lake Forest	well above	well above	above	above	above	above
Motukarara	slightly above	above	slightly below	on trend	below	below
Le Bons Bay	below	below	on trend	below	well below	well below
Leeston	on trend	slightly above	slightly below	slightly above	well below	below
Diamond Harbour	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Godley Head	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

South Canterbury

(Includes the Rakaia river south (i.e. Ashburton & SCRFA).

Soil moisture:

- Soil moistures (Figure 3) across the region are about normal, the exception being in southern locations in the Waitaki that are showing slightly drier soils, which is similar to this time last year.
- The soil moisture anomaly map (Figure 4) shows soils are wetter than normal along the east coast, and drier than normal in the east.

Fire weather codes and indices:

- Stations that are worthy of watching are: Mt Cook, Tekapo, Pukaki Aero.
- However, as with this time last year, any major rain events will provide some added relief.
- BUIs across the region currently range from 5 – 50. This indicates that, in some places, medium and heavy fuels will be available for combustion and there will be a level of difficulty for control.
- Maximum BUIs typically peak end of Feb and March (some in January), reaching values of 40 - 150.
- BUI levels across the region are generally on trend or above the historical average.
- Current DC values across the region range between 0 and 200. This indicates that deep organic layers and heavy fuels are drying in some locations, and there will be moderately difficult mop-up requirements.
- Maximum DC values typically peak during February or March (225 - 900).
- Across the region, DC values are generally on trend with the historical average. The exceptions are: Waihaorunga, Cannington (below average).
- CDSRs are generally on track or below the historical average for this time of the year.
- Fire severities and danger for South Canterbury (Figure 1 & 5) are currently, on average, moderate to high.
- Expect fire dangers and fire severity to continue to rise over this month.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2013/14	vs. average	vs. 2013/14	vs. average	vs. 2013/14
Hill and High country						
Gleanaan Station	above	NA	on trend	NA	slightly below	NA
Hakatere	above	above	on trend	slightly above	below	on trend
Mount Somers	on trend	slightly above	slightly above	slightly above	below	below
Mount Cook	well above	well above	below	well below	slightly above	above
Clayton	slightly above	NA	slightly below	NA	well below	NA
Tekapo	above	above	slightly above	above	on trend	on trend
Geraldine Forest	above	NA	on trend	NA	well below	NA
Pukaki Aero	above	above	on trend	above	slightly below	slightly above
Cattle Creek	slightly below	NA	well below	NA	well below	NA
Waihaorunga	below	on trend	below	on trend	well below	well below
Plains						
Ashburton Plains 2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Ashburton Aero	above	NA	well below	NA	well below	NA
Cannington	below	on trend	below	on trend	below	slightly below
Waimate Forest	on trend	NA	slightly below	NA	well below	NA
Coastal						
Timaru Coastal*	below	NA	well below	NA	well below	NA
Timaru Aero*	slightly below	below	slightly below	on trend	below	below

Lower South Island:

Otago

Soil moisture:

- Soil moisture deficits (Figure 3) are higher (drier) than normal in central inland areas, and normal elsewhere. This is slightly worse than conditions seen at the same time last year.
- The soil moisture anomaly map (Figure 4) shows drier than normal soils across the region (especially in the west in the Queenstown Lakes district), and wetter than normal soils along the east coast.

Fire weather codes and indices:

- Stations that are worthy of watching are: Cromwell, Queenstown Aero, Clyde, Butchers Dam & Waipahi.
- However, as with this time last year, any major rain events will provide some added relief.
- Current BUI values across the region are ranging from 10 - 125. These indicate that medium and heavy fuels will be available for combustion and there will be a level of difficulty for control.
- Maximum BUIs typically peak end of February or March (some locations January or April), reaching values of 60 – 200.
- BUI values across the region are either above or on track with the historical average and the weak La Niña 2013/14 fire season. The exceptions are: Oamaru Aero, Windsor and Bucklands (all below average).
- Current DC values across the region range between 50 - 630. These indicate that, for some locations, there will be very dry deep organic layers and heavy fuels, that would require difficult and extended mop-up.
- DCs typically peak during February or March (300 - 800).
- DC values observed across the Otago region are generally above average levels. The exceptions are: Tara Hills, Oamaru, Windsor, Dansey Pass and Rock & Pillar (all well below average).
- CDSRs are generally on trend or below the historical average across the region. The exceptions are: Cromwell, Queenstown Aero, Clyde, Butchers Dam (above the historical average).
- Fire severities and fire danger (Figure 1 & 5) across the region currently range, on average, from high to very high.
- Expect fire dangers to continue to increase this month.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2013/14	vs. average	vs. 2013/14	vs. average	vs. 2013/14
Waitaki						
Tara Hills	slightly above	above	slightly below	slightly above	below	slightly above
Oamaru	below	on trend	below	on trend	below	on trend
Windsor	below	below	below	below	well below	well below
Oamaru Aero	below	below	well below	well below	below	below
Herbert	slightly below	on trend	below	on trend	well below	well below
Macrae's	below	on trend	below	slightly above	below	on trend
Queenstown lakes						
Wanaka Aero	well above	well above	slightly above	above	above	above
Hawera Flats	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Queenstown Aero SY	well above	well above	above	above	well above	well above
Queenstown Aero (raws)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Central Otago						
Naseby Forest	slightly below	above	above	above	slightly above	above
Otematata	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Cromwell	well above	well above	well above	well above	above	above
Dansey Pass	on trend	above	below	on trend	below	on trend
Lauder	above	above	above	above	on trend	slightly above
Ranfurly	slightly above	above	above	above	on trend	slightly above
Clyde 2	well above	well above	well above	well above	well above	well above
Butchers Dam	well above	well above	well above	well above	above	above
Rock and Pillar	below	on trend	below	below	below	slightly below
Glendhu	slightly above	above	slightly above	slightly above	slightly below	slightly above
Dunedin						
Bucklands	below	<i>below</i>	below	<i>on trend</i>	well below	<i>well below</i>
Traquair	well above	well above	above	above	below	on trend
Dunedin Aero	above	above	on trend	on trend	slightly below	on trend
Clutha						
Tapanui	slightly above	slightly above	slightly above	above	on trend	slightly above
Waipahi	well above	NA	well above	NA	well above	NA
Glenledi	slightly above	slightly below	on trend	on trend	below	below
Nugget Point	well above	well above	well above	well above	slightly below	below

Southland

Soil moistures:

- Soil moisture levels (Figure 3) are at capacity in the west and east, and about normal inland. This is drier than observed at the same time last year.
- The soil moisture anomaly map (Figure 4) shows drier than normal levels for the central inland locations, and about normal soil moisture in the east and west of the region.

Fire weather codes and indices:

- Stations that are worthy of watching are: Wilderness, Manapouri Aero, Barnhill, Lumsden, Blackmount, Otama, Tanner Road, Wreys Bush, Tuatapere, Gore, Tisbury, South West Cape.
- However, as with this time last year, any major rain events will provide some added relief.
- Currently, BUIs are ranging between 10 and 50. This indicates that there is drying of the medium and heavy fuels for some locations, and difficulty of control will be moderate to difficult.
- Max BUIs ranges between 40 and 125 during end of January or February.
- BUIs recorded across this region are generally above the historical average, and those observed during the 2013/14 weak La Niña season.
- Current DC values across the region range between 0 and 200. These indicate that, for some locations, deep organic layers and heavy fuels are dry, resulting in more difficult mop-up.
- DCs typically peak during February and March (200 – 500).
- DC values are generally above the average and for the 2013/14 weak La Niña fire season for this time of the year.
- CDSRs are generally on trend or above the historical average for this time of the year.
- Fire severity and fire danger (Figure 1 & 5) across the region are, on average, moderate to low.
- Expect fire dangers over the next few months to continue to increase over much of the region, especially as soils continue to dry in central locations.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2013/14	vs. average	vs. 2013/14	vs. average	vs. 2013/14
Eastern Southland						
Gore	well above	well above	well above	well above	slightly above	slightly above
Slopedown	above	above	on trend	on trend	slightly above	above
Central Southland						
Garston	above	above	well above	well above	slightly below	slightly above
Barnhill	well above	well above	well above	well above	on trend	slightly above
Lumsden	well above	well above	well above	well above	above	above
Otama	NA	NA	NA	NA	NA	NA
Tanner Road	NA	NA	well above	NA	slightly above	NA
Wreys Bush	well above	well above	well above	well above	slightly above	above
Tuatapere	above	above	slightly above	below	below	below
Invercargill Aero	well above	well above	slightly above	slightly above	slightly above	slightly above
Tisbury	well above	NA	above	NA	well above	NA
Western Southland						
Secretary Island	well above	well above	below	well below	well below	on trend
Wilderness	well above	NA	well above	NA	well above	NA
Manapouri Aero	well above	well above	well above	well above	well above	well above
Blackmount	well above	well above	well above	well above	well above	well above
Stewart Island						
Stewart Island raws	NA	NA	NA	NA	on trend	NA
South West Cape	well above	well above	slightly below	slightly below	below	below