New Zealand Seasonal Fire Danger Outlook 2017/18

ISSUE: North Island, November 2017

Current fire danger situation & outlook:

Low to moderate fire danger and fire climate severities currently exist in most areas of the North Island (Figure 1 & 5). The current FWI System codes and indices indicate that fuel dryness is on average low (Figures 5-6 & 7-8). These low fire dangers across the North Island are the result of the significant rainfalls that have occurred over the past few months. This is currently not reflected in the soil moisture maps (Figure 3 & 4), where the soils are showing signs of dryness for Whangarei, Kaipara, Rodney, and the East Coast.

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. Rainfall totals for northern and eastern coastlines were highly variable (patchy). Some locations, such as Northland and Gisborne, are running drier than usual.

The ENSO (El Nino-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 either normal or above normal for the north and east of the North Island and near normal in the west. Soil moisture levels are most likely to be above normal in the east of the North Island, normal or above normal in the north of the North Island, and near normal for the western coast.

Fire dangers and severity for November are expected to remain low to moderate on average (Figures 1 & 5). The fire season years of 2016/17 & 2013/14 are potentially good indicators for what to expect this coming fire season (Figure 9). As the weeks ahead will become drier and warmer, fire dangers will typically creep up, especially in the north and eastern coastal areas. However, as with this time last year, any major rain events will keep the fire danger and severity generally low.

There are currently no areas of concern located in the North Island for November. However, if conditions continue to be warm and dry, especially for the north, Gisborne, Taranaki and the Kapiti coast, these areas will start to experience increased fire activity. An increase in grass fire activity would occur as these areas start to dry out.

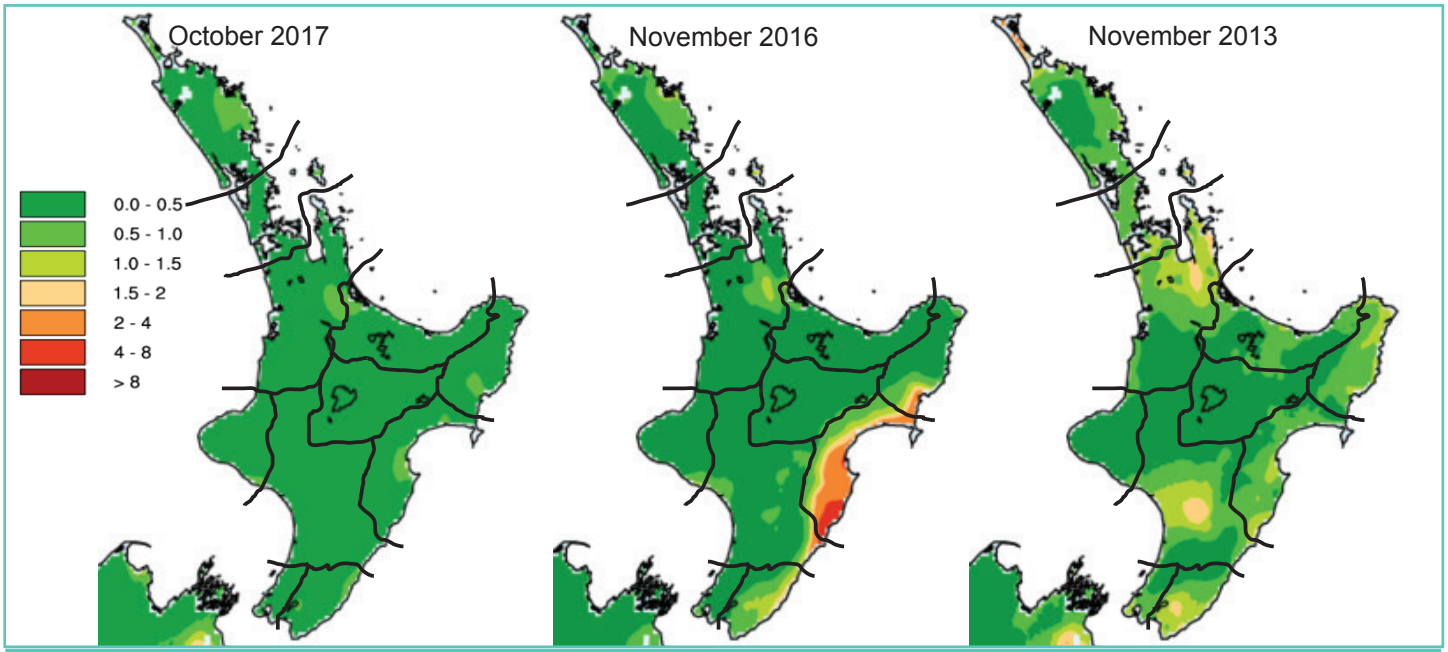

Figure 1. Monthly average Severity Rating for: current (left), last year (middle), and the 2013/14 Neutral to weak La Nina year (right).

EXPECTED CLIMATE OUTLOOK:

The ENSO (El Nino-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.

Extreme swings in temperatures are expected during November. Mild conditions, cold spells and above average temperatures are signalled.

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

Breakdown (Figure 2):

Temperatures are most likely to be:

- above average (60% chance) for Northland, Auckland, Waikato & Bay of Plenty.
- above average (65% chance) for Central North Island, Taranaki, Whanganui, Manawatu, Wellington, Gisborne, Hawkes Bay & Wairarapa.

Rainfall is most likely to be:

- above normal (40% chance) or near normal (35% chance) for Northland, Auckland, Waikato & Bay of Plenty.
- near normal range (40-45% chance) for Central North Island, Taranaki, Whanganui, Manawatu, & Wellington.
- above normal (40% chance) or near normal (35% chance) for Gisborne, Hawkes Bay & Wairarapa.

Soil moistures are most likely to be:

- above normal (35% chance) or near normal (35% chance) for Northland, Auckland, Waikato & Bay of Plenty.
- near normal range (40-45% chance) for Central North Island, Taranaki, Whanganui, Manawatu, & Wellington.
- above normal (45% chance) for Gisborne, Hawkes Bay & Wairarapa.

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 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.

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 been dry along northern and eastern coastlines, with Northland and Gisborne running drier than usual.

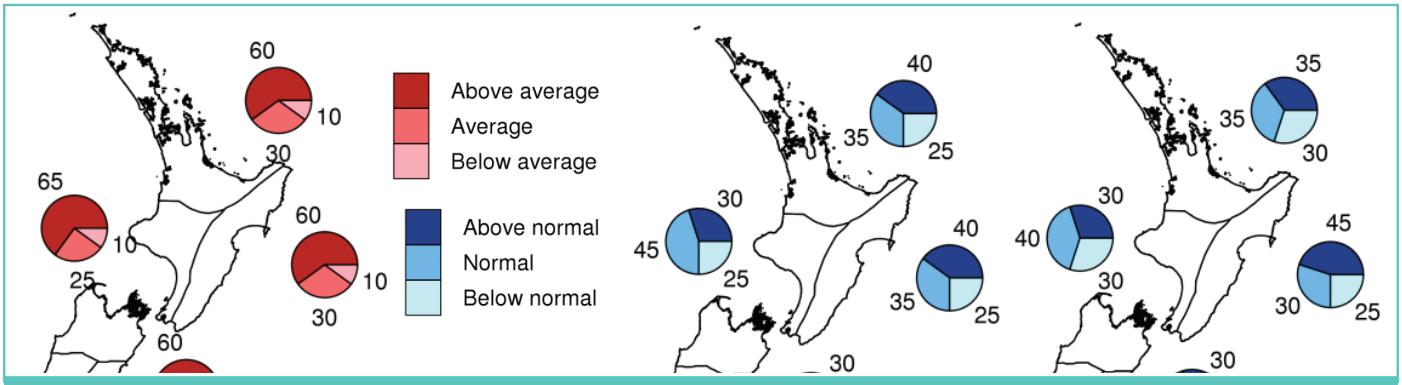

Figure 2. Outlook for Nov 2017- Jan 2018: air temperature (left), rainfall (middle), available soil moisture (right). Source: NIWA.

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.

La Niña typically brings more storms, clouds, humidity and rain to the north and east of New Zealand. For the North Island, this means northern and eastern parts are wetter than normal. During a La Niña summer, anticyclones are more frequent, bringing dry weather. Outbreaks of warm northeast winds bring rain to areas in the north and east of the North Island, especially Gisborne, Coromandel and Northland.

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.

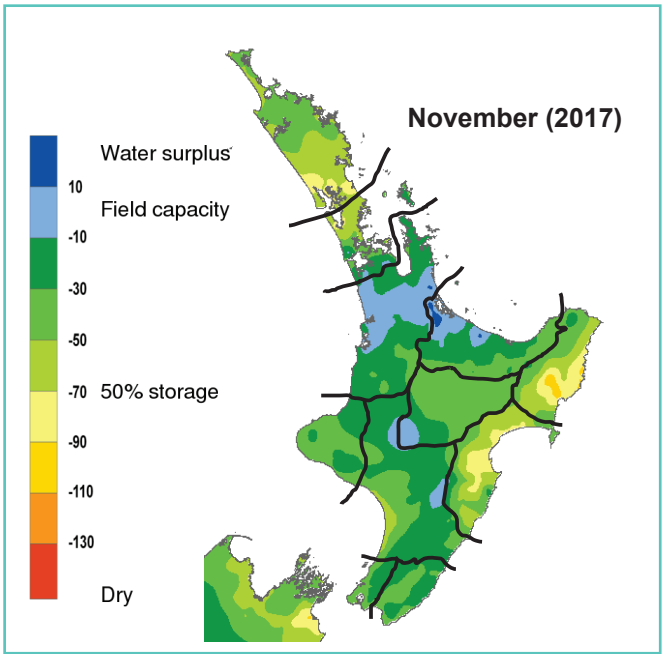

Figure 3. Soil moisture deficits as of 01/11/2017.
Source: NIWA.

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.

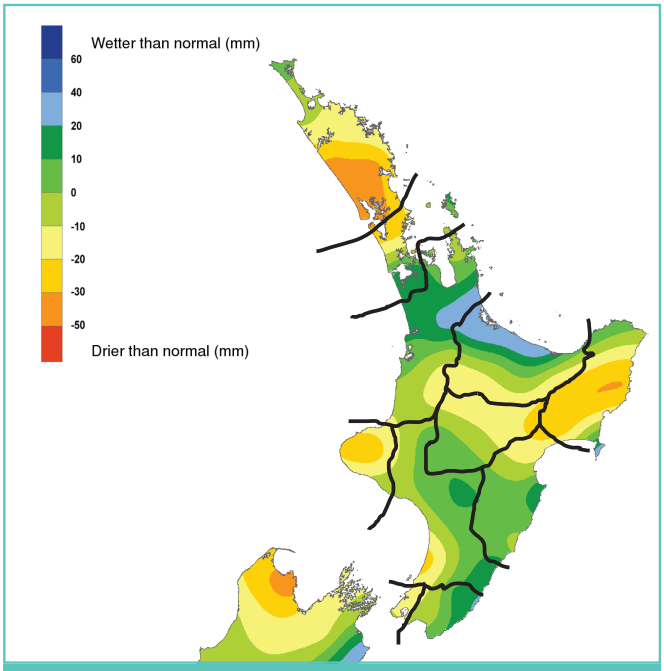

Figure 4. Soil moisture anomaly as of 01/11/2017.
Source: NIWA.

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=ftr

Front Cover Image:
2013 Selwyn Road fire, Christchurch. (Veronica Clifford, Scion).

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

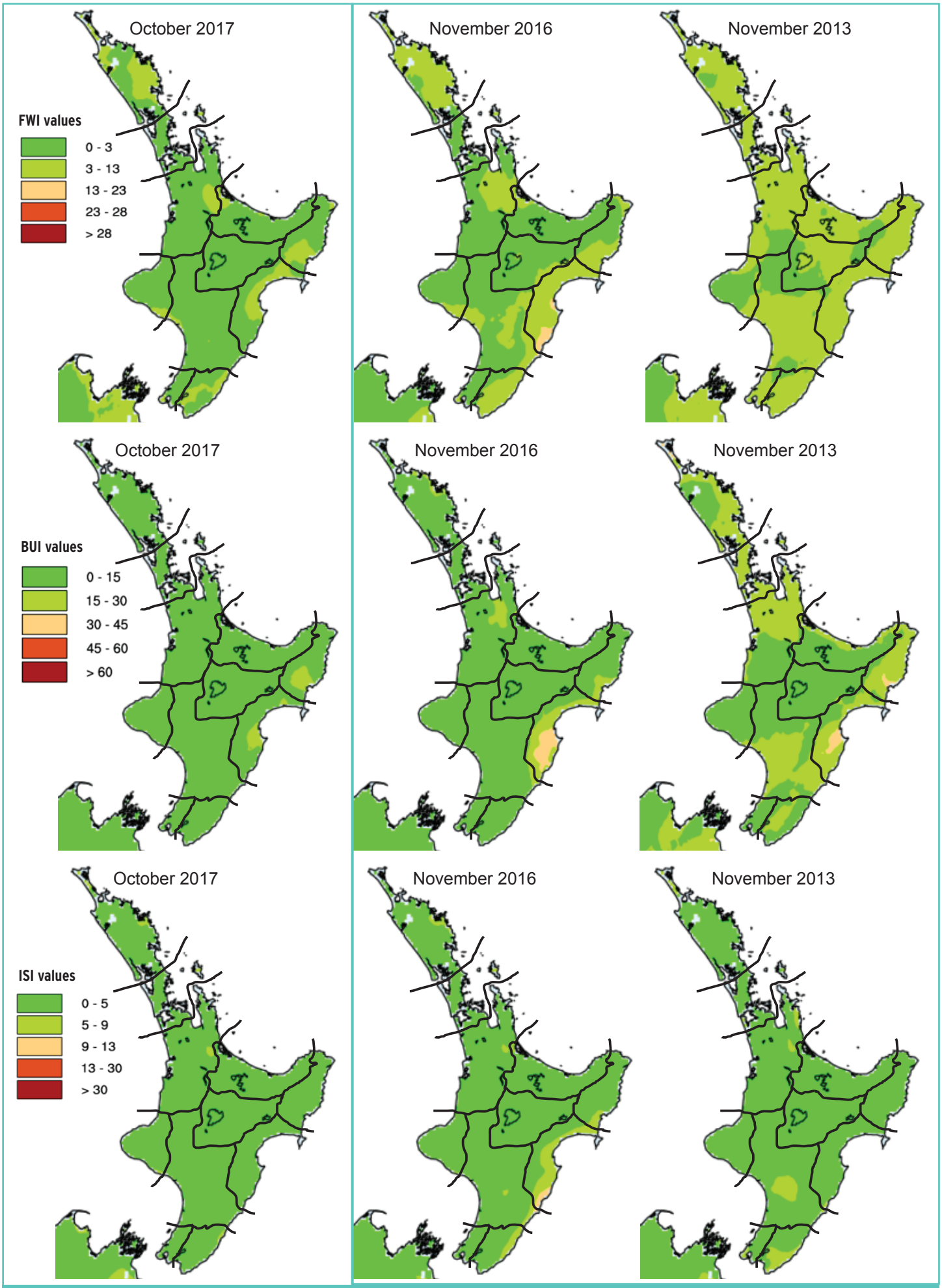

Figure 5. Current Monthly Average for the: Fire Weather Index (top), Buildup Index (middle) and Initial Spread Index (below).

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

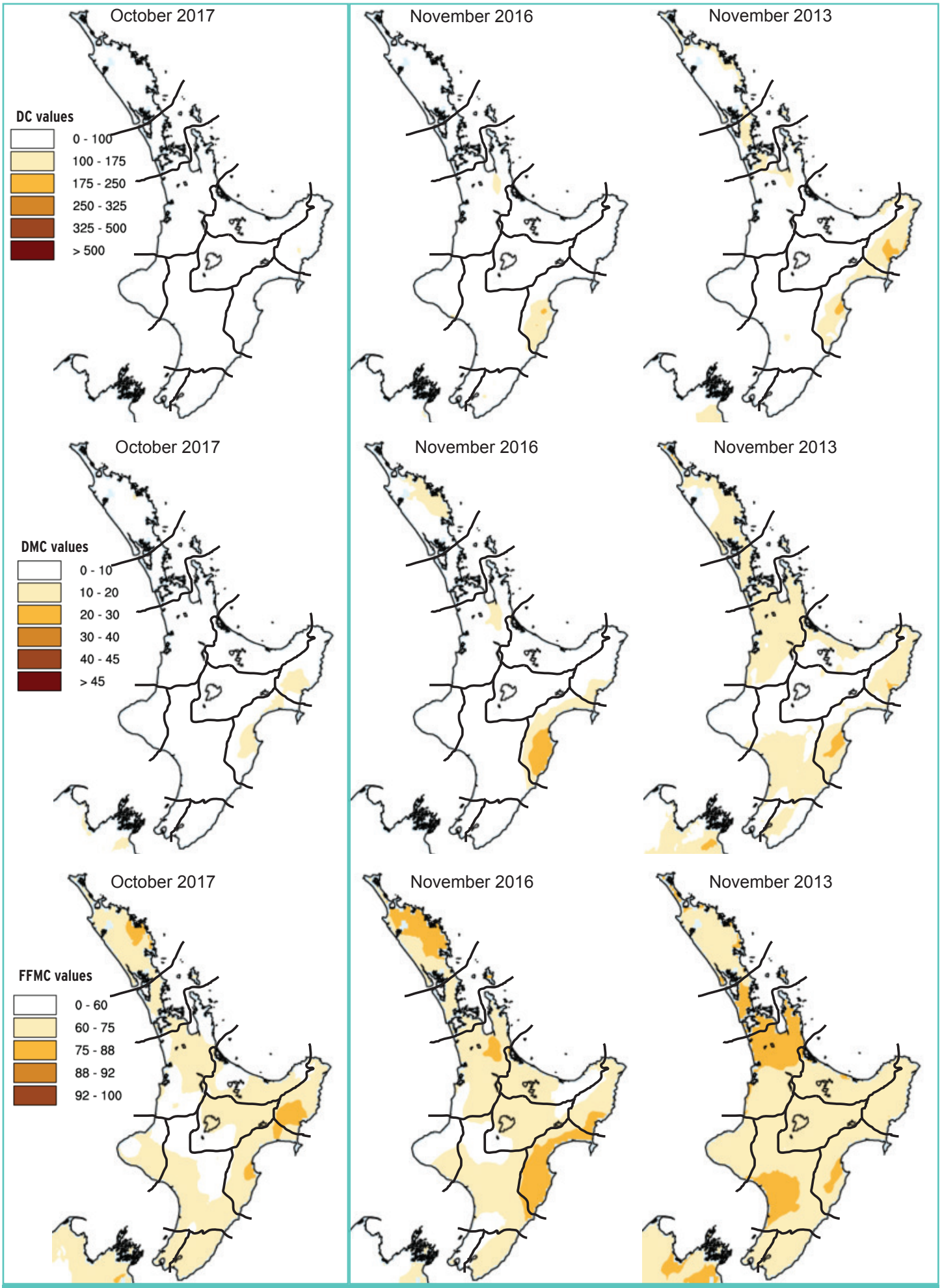

Figure 7. Current monthly average for the: Drought Code (top), Duff Moisture Code (middle) and the Fine Fuel Moisture Code (below). Average monthly values of: Drought Code (top), Duff Moisture Code (middle) and Fine Fuel Moisture Code (below); for the previous year and during the 2011/12 weak La Niña year.

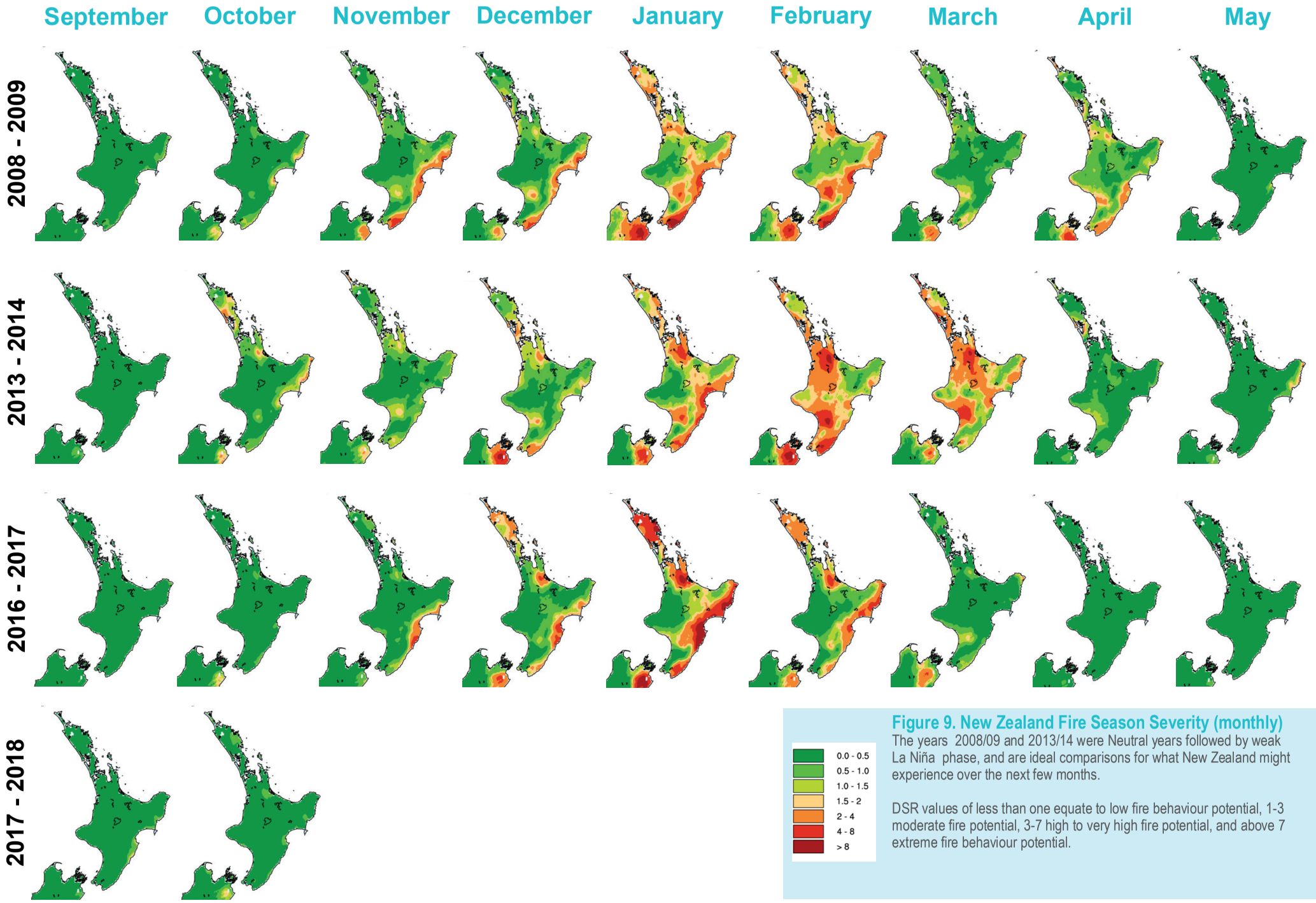

Figure 9. New Zealand Fire Season Severity (monthly)

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.

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 on 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 North Island:

Northland

Soil moisture:

- Soil moistures (Figure 3) across the region are not significantly dry, and are slightly wetter than this time last year.
- The soil moisture anomaly map (Figure 4) shows that Whangarei and Kaipara districts are drier than normal.

Fire weather codes and indices:

- Stations that are worthy of watching are: Kaikohe, Opouteke, Hokianga & Dargaville
- However, as with this time last year, any major rain events will provide some added relief.

- Current BUIs across the region range between 10 to 45, indicating that heavy and medium fuels are becoming available for combustion and the difficulty of control will generally be moderate to difficult.
- Maximum BUIs typically peak during February, and can range between 110 and 200.
- BUIs across the region are either above the average or on trend for this time of the year, and on trend with the levels recorded during the 2013/14 fire season.

- Current DC values are around the 100 mark, indicating that there is little sign of drought and low risk of extended mop up needs in heavy fuels.
- DCs are generally above the average for this time of the year, and on trend with levels recorded the 2013/14 season
- Maximum DC values typically peak during February or March.

- CDSR values across the region are tracking on trend with the average, and are normal for this time of the year.
- Current fire severity and danger for this region are, on average, low (Figure 1 & 5).
- Expect fire dangers and fire climate severity to start to increase over this region during January.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2011/12	**vs. average**	vs. 2011/12	**vs. average**	vs. 2011/12
Far North						
Aupouri Peninsula	slightly below	below	slightly below	below	slightly below	below
Waitangi Forest	slightly above	on trend	slightly above	on trend	slightly above	on trend
Kaikohe (Aws)	slightly above	slightly above	slightly above	slightly above	slightly above	slightly above
Kaikohe (Raws)	above	above	above	above	above	above
Hokianga	above	above	above	above	above	above
Whangarei / Kaipara						
Opouteke	above	above	above	above	above	above
Mangakahia	on trend	below	on trend	below	on trend	below
Whangarei Aero (raws)	slightly above	slightly below	slightly above	slightly below	slightly above	slightly below
Whangarei Aero (aws)	above	on trend	above	on trend	above	on trend
Dargaville	above	slightly below	above	slightly below	above	slightly below
Pouto	below	below	below	below	below	below

Auckland

Soil moisture:

- Soil moisture levels (Figure 3) across the region are not significantly dry, but are drier than this time last year.
- The soil moisture anomaly (Figure 4) highlights that the region is slightly wetter than normal for South Auckland and drier than normal for North Auckland (Rodney) districts.

Fire weather codes and indices:

- Stations that are worthy of watching are: Kaipara & Great Barrier
- However, as with this time last year, any major rain events will provide some added relief.

- Current BUIs across the region range from 5 to 25, indicating that heavy and medium fuels are not readily available for combustion and the difficulty of control will generally be easy.
- Maximum BUIs typically peak during February, and can range between 100 and 180.
- BUIs across the region are either on trend or below the average for this time of the year, and below the levels recorded during the 2013/4 fire season.

- Current DCs range between 20 - 100, indicating that there is little sign of drought and low risk of extended mop up needs in heavy fuels.
- DCs across the region are either above and below the average for this time of the year, and below levels observed during 2013/14.
- DC values typically peak around late February, where maximum values can be expected to range between 500 and 800.

- CDSR values across the region are low for this time of the year and either below or on trend with the average.
- Current fire severity and danger for this region are, on average, low (Figure 1 & 5).
- Expect fire dangers and fire climate severity start to increase over this region during December.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2011/12	**vs. average**	vs. 2011/12	**vs. average**	vs. 2011/12
Great Barrier Island						
Great Barrier Island	above	slightly below	above	slightly below	above	slightly below
Northern						
Mahurangi Forest	below	below	below	below	below	below
Kaipara	on trend	below	on trend	below	on trend	below
Woodhill	below	well below	below	well below	below	well below
Southern						
Clevedon Coast	slightly below	below	slightly below	below	slightly below	below
Cornwallis Depot	below	below	below	below	below	below
Patumahoe	slightly below	below	slightly below	below	slightly below	below
Waharau	below	well below	below	well below	below	well below

Waikato

Soil moisture:

- Soil moisture levels (Figure 3) are currently close to field capacity in the Waikato, and levels are similar to last year.
- The soil moisture anomaly map (Figure 4) shows mostly normal conditions over southern parts of the region, but wetter than normal soils in the north.

Fire weather codes and indices:

- Stations that are worthy of watching are: Waikawau Bay

- Currently BUIs across the region range from 5 to 20, indicating that heavy and medium fuels are not readily available for combustion and the difficulty of control will generally be easy.
- Maximum BUI values generally peak around late February, at around 100 – 160.
- BUIs are either on trend or below the average for this time of the year, and below the levels seen in the 2013/14 fire season.

- Current DCs range between 0 - 100, indicating that there is little sign of drought and low mop-up needs in heavy fuels.
- Maximum DC values typically peak during March, and can range between 450 – 800.
- DCs are below average levels for this time of the year, and below the trends shown in 2013/14.

- CDSR values across the region are low, and below the historical average and for the 2013/14 fire season.
- Current fire severity and danger for this region are, on average, low (Figure 1 & 5).
- Expect fire dangers and fire climate severity to start to increase over this region in January.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2011/12	**vs. average**	vs. 2011/12	**vs. average**	vs. 2011/12
Thames Valley						
Waikawau Bay	on trend	below	on trend	below	on trend	below
Whangamata	slightly below	below	slightly below	below	slightly below	below
Paeroa (raws)	slightly below	below	slightly below	below	slightly below	below
Paeroa (aws)	below	below	below	below	below	below
Waihi Gold (RAWS)	below	below	below	below	below	below
Waihi	below	below	below	below	below	below
Waikato / Waitomo						
Hamilton	below	well below	below	well below	below	well below
Taharoa (RAWS)	below	below	below	below	below	below
Port Taharoa	well below	well below	well below	well below	well below	well below
Athol	below	below	below	below	below	below
Waitomo	below	below	below	below	below	below
Bodley Road	discontinued					

Central & Eastern North Island:

Bay of Plenty

Soil moisture:

- Soil moistures (Figure 3) across the region are close to field capacity, and are similar to levels of last year.
- The soil moisture anomaly map (Figure 4) shows wetter than normal soils for coastal Bay of Plenty, and slightly drier soils for more inland areas of this region.

Fire weather codes and indices:

- Stations that are worthy of watching are: Opotiki

- Currently BUIs across the region range from 0 to 20. This indicates that heavy and medium fuels are not readily available for combustion and the difficulty of control will generally be easy.
- BUIs are below the average for this time of the year, and also below the levels recorded during the 2013/14 fire season.
- BUIs typically peak in late February, and maximum values can be expected to range between 120 and 160.

- Current DCs range between 20 - 100. These indicating that there is little sign of drought and little risk of extended mop-up needs in heavy fuels.
- Values typically peak during February or late March, and reach maximum values between 550 and 700.
- DCs are either below or on trend with the average for this time of the year, and also below the levels recorded during the 2013/14 fire season.

- CDSR values are generally on trend or below the historical average for this time of the year, and below levels observed during the 2013/14 fire season.
- Current fire severity and danger for this region are, on average, low (Figure 1 & 5).
- Expect fire dangers and fire climate severity to start to increase over this region in January.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2011/12	**vs. average**	vs. 2011/12	**vs. average**	vs. 2011/12
Coastal						
Waihi Beach	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Waihau Bay	below	below	below	below	below	below
Tauranga Aero	below	below	below	below	below	below
Tauranga Raws	below	below	below	below	below	below
Minden	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Te Puke	below	below	below	below	below	below
Whakatane (Raws)	below	below	below	below	below	below
Whatatane (Aws)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
TECT All Terrain Park	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rotoehu	well below	well below	well below	well below	well below	well below
Opotiki	above	slightly below	above	slightly below	above	slightly below
Rotorua / Kawerau / Whakatane						
Kawerau	below	well below	below	well below	below	well below
Rotorua (Raws)	below	below	below	below	below	below
Rotorua Aero (Aws)	well below	well below	well below	well below	well below	well below
Waimana	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Galatea	below	below	below	below	below	below

Central North Island

Soil moisture:

- Soil moisture levels (Figure 3) across the region are close to field capacity, and also similar to the same time last year.
- The soil moisture anomaly map (Figure 4) shows soils are drying in the north of this region and are at normal levels in the south.

Fire weather codes and indices:

- There are no stations exhibiting FWI System values considered exceptionally out of the ordinary currently.

- Currently BUIs across the region range from 0 to 20. This indicates that heavy and medium fuels are not readily available for combustion and the difficulty of control will generally be easy.
- BUIs are below the average for this time of the year, and also below the levels recorded during the 2013/14 fire season.
- BUIs typically peak in late February, when maximum values can reach between 120 and 150.

- Current DCs range between 20 - 100. These indicate that there is little sign of drought and little risk of extended mop-up needs in heavy fuels.
- Values typically peak during February or late March, with maximum DC values reaching between 450 and 650.
- DCs are either below or on trend with the average for this time of the year, and also below the levels recorded during the 2013/14 fire season.

- CDSR values are generally on trend or below the historical average for this time of the year, and below levels observed during the 2013/14 fire season.
- Current fire severity and danger for this region, are on average, low (Figure 1 & 5).
- Expect fire dangers and fire climate severity to start to increase over this region in January.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2011/12	**vs. average**	vs. 2011/12	**vs. average**	vs. 2011/12
Taupo / Whakatane						
Goudies	well below	well below	well below	well below	well below	well below
Tahorakuri	below	below	below	below	below	below
Minginui	below	below	below	below	below	below
Taupo (Raws)	on trend	on trend	on trend	on trend	on trend	on trend
Taupo Aero	below	below	below	below	below	below
Matea	below	below	below	below	below	below

Gisborne

Soil moisture:

- The driest soils across the North Island compared to normal for this time of the year are found in the Gisborne region.
- Soil moistures (Figure 3) are showing signs of drying along the coast, with closer to normal values inland along the ranges.
- This is reflected in the soil moisture anomaly map (Figure 4), where soils are drier than normal across the region.

Fire weather codes and indices:

- Stations that are worthy of watching are: Gisborne (Raws & Aero)
- However, as with this time last year, any major rain events will provide some added relief.

- Currently BUIs across the region range from 0 to 50. This indicates that heavy and medium fuels are becoming available for combustion and the difficulty of control will generally be moderate to difficult.
- They typically peak during February, with maximum values reaching between 80 and 160.
- BUIs are either on trend or above the historical average for this time of the year.

- Currently DC values are ranging between 20 and 180, indicating easy to moderate mop-up requirements.
- DCs across the region are either above or below levels for this time of the year compared with the historical average and are generally on trend with the 2013/14 fire season.
- DC values typically peak in late March, where maximum values can and are expected to range between 400 and 800.

- CDSR values across the region are below both the average and 2013/14 fire season levels observed for this time of the year.
- Current fire severity and danger for this region are, on average, low to moderate (Figure 1 & 5).
- Expect fire dangers and fire climate severity to continue to increase over this region especially as conditions remain dry.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2011/12	**vs. average**	vs. 2011/12	**vs. average**	vs. 2011/12
Gisborne						
Hicks Bay	slightly below	below	slightly below	below	slightly below	below
Poroporo	slightly below	on trend	slightly below	on trend	slightly below	on trend
Raparapaririki Raws						
Wharekopae	well above	NA	well above	NA	well above	NA
Pouawa	on trend	on trend	on trend	on trend	on trend	on trend
Gisbourne (Raws)	above	above	above	above	above	above
Gisbourne Aero	slightly above	slightly above	slightly above	slightly above	slightly above	slightly above

Hawkes Bay

Soil moisture:

- Soil moisture levels (Figure 3) are showing signs of drying across the region.
- The exception being more normal soil moistures in Central Hawkes Bay.
- The soil moisture anomaly map (Figure 4), shows drier than normal soils in the north and about normal in the south.

Fire weather codes and indices:

- Stations that are worthy of watching are: Napier (Raws & Aero), Cricklewood, Te Pohue, Waihau, Te Apiti, Waipukurau, Te Haroto.
- However, as with this time last year, any major rain events will provide some added relief.

- Currently BUIs across the region range from 0 to 50, indicating that heavy and medium fuels are becoming available for combustion and the difficulty of control will generally be moderate to difficult
- They typically peak around February, where maximum BUI levels can range between 70 and 225.
- BUIs are either on trend or above the historical average for this time of the year, and generally above the levels seen in the 2013/14 fire season.

- DC values are currently ranging between 50 and 140, indicating easy to moderate mop-up requirements.
- DCs are either above or on trend with levels observed for this time of the year from the historical average, and are either on trend or below that seen in 2013/14.
- The DC is expected to peak around late February or March, when maximum values can be expected to reach between 350 and 850.

- CDSR values are generally below the average for this time of the year, and also below the levels seen in 2013/14.
- Current fire severity and danger for this region are, on average, low to moderate (Figure 1 & 5).
- Expect fire dangers and fire climate severity to start to increase over this region in November.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2011/12	**vs. average**	vs. 2011/12	**vs. average**	vs. 2011/12
Wairoa						
Tuai	above	slightly below	above	slightly below	above	slightly below
Wharerata	well above	well above	well above	well above	well above	well above
Cricklewood	above	above	above	above	above	above
Wairoa						
Mahia	below	below	below	below	below	below
Hastings						
Te Harto	above	on trend	above	on trend	above	on trend
Te Pohue	well above	well above	well above	well above	well above	well above
Kaiwaka	on trend	below	on trend	below	on trend	below
Waihau	above	slightly above	above	slightly above	above	slightly above
Napier Aero	above	above	above	above	above	above
Napier (Raws)	above	slightly above	above	slightly above	above	slightly above
Crownthorpe	on trend	slightly below	on trend	slightly below	on trend	slightly below
Bridge Pa	on trend	slightly below	on trend	slightly below	on trend	slightly below
Gwavas	on trend	on trend	on trend	on trend	on trend	on trend
Te Apiti Road	well above	NA	well above	NA	well above	NA
Waimarama						
Central Hawke's Bay						
Ongaonga	on trend	below	on trend	below	on trend	below
Waipukurau	slightly above	slightly above	slightly above	slightly above	slightly above	slightly above

Lower North Island:

Taranaki

Soil moisture:

- Soil moistures (Figure 3) across the region are leaning towards field capacity, but are below those observed last year.
- The soil moisture anomaly map (Figure 4) however, shows that the area is drier than normal across the region.

Fire weather codes and indices:

- Stations that are worthy of watching are: Waverly.

- BUIs across the region range between 5 - 20. These indicate that heavy and medium fuels are not readily available for combustion and the difficulty of control will generally be easy.
- BUIs typically peak around 70 – 120 in late February or early March.
- BUIs are generally on trend with the average for this time of the year, and above the levels recorded during 2013/14 fire season.

- DC values across the region range between 0 and 100, indicating easy mop-up requirements.
- DC levels can increase to a peak of 350 – 700 in early March.
- DCs are generally above the historical average and the 2014/14 fire season for this time of the year.

- CDSR values are currently about normal for this time of the year and on trend with the 2013/14 season.
- Current fire severity and danger for this region are, on average, low (Figure 1 & 5).
- Expect fire dangers and fire climate severities across the region to be elevated during February.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2011/12	**vs. average**	vs. 2011/12	**vs. average**	vs. 2011/12
Taranaki						
New Plymouth	slightly below	slightly below	slightly below	slightly below	slightly below	slightly below
Marco	below	below	below	below	below	below
Okato	below	on trend	below	on trend	below	on trend
Eltham	on trend	slightly above	on trend	slightly above	on trend	slightly above
Hawera	slightly below	on trend	slightly below	on trend	slightly below	on trend
Waverly	above	above	above	above	above	above

Manawatu-Wanganui

Soil moisture:

- Soil moisture levels (Figure 3) are leaning towards field capacity for many parts of this region, and about normal for the southern coastal locations, and slightly drier than this time last year.
- The soil moisture anomaly map (Figure 4) shows soils along the west coast are drier than normal, and the rest of the region is about normal

Fire weather codes and indices:

- Stations that are worthy of watching are: Spriggens Park, Whanganui (Raws & Aero), Waitarere Forest, Levin, Alfredton, Matarawa, & Desert Road.
- However, as with this time last year, any major rain events will provide some added relief.

- BUIs across the region range between 0 to 30, indicating that heavy and medium fuels are not readily available for combustion and the difficulty of control will generally not be difficult.
- BUIs typically peak in March, where max ranges can be between 80 and 170.
- BUIs are generally at above average levels for this time of the year.

- DCs are ranging between 0 and 100 across the region.
- DC values typically peak between 300 and 700 in late February or early March. For some stations, they can remain high (400+) until early May.
- DCs are generally at above average levels for this time of the year.

- CDSR values are about or below normal for this time of the year.
- Current fire severity and danger for this region are, on average, low (Figure 1 & 5).
- Expect fire danger and fire climate severity levels to start to increase over the next few months.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2011/12	**vs. average**	vs. 2011/12	**vs. average**	vs. 2011/12
Ruapehu / Rangitikei						
Kirikau Raws	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
National Park	well below	well below	well below	well below	well below	well below
Paradise Valley Raws;	slightly below	on trend	slightly below	on trend	slightly below	on trend
Desert Road Summit	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Three Kings	on trend	slightly above	on trend	slightly above	on trend	slightly above
Waimarino Forest	on trend	on trend	on trend	on trend	on trend	on trend
Waiouru Airstrip	below	below	below	below	below	below
Ngamatea	well above	NA	well above	NA	well above	NA
Westlawn	slightly above	slightly above	slightly above	slightly above	slightly above	slightly above
Tarn Track Raws	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Whangaehu	below	slightly below	below	slightly below	below	slightly below
Whangaehu						
Wanganui Springgens Park	above	above	above	above	above	above
Matarawa	well above	NA	well above	NA	well above	NA
Wanganui (Aws)	well above	well above	well above	well above	well above	well above
Wanganui (Raws)	above	above	above	above	above	above
Tapuae	below	below	below	below	below	below
Raumai	well above	well above	well above	well above	well above	well above
Palmerston North City / Horowhenua						
Palmerston North	above	above	above	above	above	above
Ngahere Park	on trend	on trend	on trend	on trend	on trend	on trend
Waitarere Forest	above	above	above	above	above	above
Levin	above	above	above	above	above	above
Tararua						
Dannevirke	slightly below	below	slightly below	below	slightly below	below
Waione	below	below	below	below	below	below
Pahiatua	on trend	on trend	on trend	on trend	on trend	on trend
Akitio	on trend	below	on trend	below	on trend	below
Alfredton	above	above	above	above	above	above

Wellington

Soil moisture:

- Soil moistures (Figure 3) are trending to field capacity, but are slightly drier than for the same time last year.
- The soil moisture anomaly map (Figure 4) shows soils are drier than normal for the region

Fire weather codes and indices:

- Stations that are worthy of watching are: Paraparaumu, Rimutaka Forest
- However, as with this time last year, any major rain events will provide some added relief.

- BUIs across the region range between 10 to 35. This indicates that heavy and medium fuels are becoming available for combustion but the difficulty of control will generally be easy to moderate.
- BUIs typically peak up to 100 around late February.
- BUIs are generally above average for this time of the year, and levels seen during the 2013/14 fire season.

- DCs values are currently ranging between 0 - 100.
- However, they typically peak in late February and remain high until late April (600 -700).
- DCs are about average levels for this time of the year, and that observed during 2013/14.

- CDSR values across the region are currently below the average, but on trend with the 2013/14 fire season.
- Current fire severity and danger for this region, is on average, low (Figure 1 & 5).
- Expect fire dangers and fire climate severities start to increase over the next few months.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2011/12	**vs. average**	vs. 2011/12	**vs. average**	vs. 2011/12
Kapiti Coast						
Te Horo	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Paraparaumu Aero	above	above	above	above	above	above
Porirua, Elsdon Park	slightly above	above	slightly above	above	slightly above	above
City						
Titahi Bay	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Long Gully Raws	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Belmont	on trend	on trend	on trend	on trend	on trend	on trend
Wellington Aero	above	well above	above	well above	above	well above
Rimutaka Forest Park	well above	well above	well above	well above	well above	well above

Wairarapa

Soil moisture:

- Soil moisture levels (Figure 3) are close to field capacity across the region, as it was for the same time last year.
- This is further reinforced by the soil moisture anomaly (Figure 4), which shows soil dryness levels are about normal inland, and currently much wetter than normal on the coast.

Fire weather codes and indices:

- Stations that are worthy of watching are: Palliser, Ngawi, Stoney Creek, Haurangi, Featherston, Ngaumu, Holdsworth.
- However, as with this time last year, any major rain events will provide some added relief.

- BUI values are currently ranging between 10 - 35. These indicate that heavy and medium fuels are starting to become available for combustion, but the difficulty of control will generally not be difficult.
- BUI values typically peak at most stations in the region in late January to mid-February (100 – 180).
- BUIs are either on trend or above the historical average for this time of the year, and against the values seen during the 2013/14 fire season.

- Currently, values are ranging between 50 - 100 across the region, indicating very little mop-up requirements.
- DCs are typically on trend or slightly above levels for this time of the year, and are similar to levels in seen in 2013/14.
- DC values usually peak in late February, reaching between 500 and 800, and can remain high at some stations until early May.

- CDSR values are about normal or below levels for this time of the year, and with the 2013/14 fire season.
- Current fire severity and fire danger levels for the region (Figure 1 & 5) are currently low, on average.
- Expect fire dangers and fire climate severity in this region to increase over the next few months.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2011/12	**vs. average**	vs. 2011/12	**vs. average**	vs. 2011/12
Masterton / Carterton						
Castlepoint*	on trend	on trend	on trend	on trend	on trend	on trend
Crofoot*	on trend	on trend	on trend	on trend	on trend	on trend
Holdsworth Station	above	above	above	above	above	above
Masterton Aero#	above	above	above	above	above	above
Homebush#	below	on trend	below	on trend	below	on trend
Ngaumu Forest	above	above	above	above	above	above
Featherston Raws	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
South Wairarapa						
Haurangi	above	above	above	above	above	above
Stony Creek	above	well above	above	well above	above	well above
Ngawi^	above	above	above	above	above	above
Palliser^	above	above	above	above	above	above

Pacific Islands:

Chatham Island

- 12 noon monthly average temperatures experienced over November were above average (based on a three year historical average from the Chatham Island Aero station).
- Total rainfall for the month of November is below normal (only 0.4ml in total recorded, suspect there is an issue with the rain gauge).

Fire weather codes and indices:

- Stations that are worthy of watching are: Kaiwhata

- Current BUIs are ranging between 15 to 35.These indicate that heavy and medium fuels are becoming available for combustion, but the difficulty of control will generally not be difficult.
- Historically the values tend to peak from early February until March (up to 80).
- BUI values are currently trending above average for this time of the year.

- DCs are ranging between 100 to 150, indicating easy to moderate mop-up requirements.
- Maximum DCs typically peak (around 300 – 600) during February.
- The drought indices are generally trending with the historical average for this time of the year.

- The cumulative Fire Severity Rating is trending below average for this time of the year.

- Currently, the Chathams are experiencing low fire severity and danger.
- Expect fire danger to increase over the next few months.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 11/12	vs. average	vs. 11/12	vs. average	vs. 11/12
Chathams						
Kaiwhata	well above	NA	well above	NA	well above	NA
Chatham Islands Aero	above	above	above	above	above	above
Waitangi	well above	NA	well above	NA	well above	NA