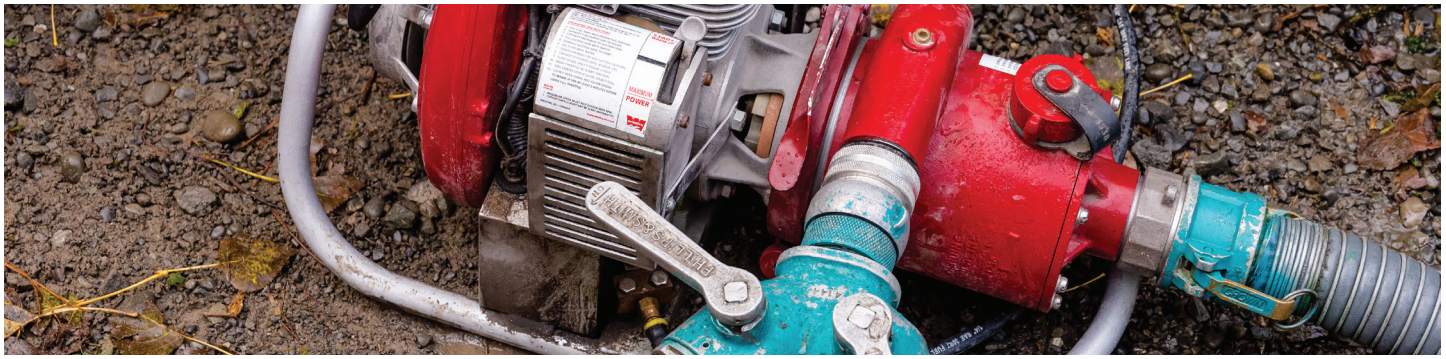

New Zealand Seasonal Fire Danger Outlook 2018/19

ISSUE: North Island, October 2018

SCION
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Current fire danger situation & outlook:

Welcome to the first fire danger outlook for the 2018/19 fire season. The purpose of these monthly outlooks is to provide a heads up on the progression of fire danger as we transition from spring to summer and, later, into autumn. It aims to forewarn fire agencies of current and potential fire danger conditions, that can be used as a prompt for local and regional discussions on 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 climate and fire weather). Now is the chance to start your pre-planning (if you haven't done so already), by discussing where conditions are at, where they are heading, and how this can drive awareness about what this might mean in your patch and for your neighbours.

Conditions across the North Island are currently low. Winter resulted in New Zealand being mostly wet. Low fire climate severities and fire danger currently exist in most areas of the North Island (Figures 1 & 5). The wet winter is reflected in the current FWI System codes and indices, which indicate that fuel moistures are high, and noticeably damper than at the same time last year (Figures 5-6 & 7-8).

Soil moisture levels are currently at, or close to, capacity for this time of the year (Figure 3). However, soil moisture is currently slightly below normal for Wakaito, Central North Island, Bay of Plenty, parts of Hawkes Bay, Wairarapa and coastal Wanganui-Manawatu (Figure 4). Mild winter conditions for some localities have also resulted in abundant grass growth.

One of the major climate drivers for New Zealand is the El Niño–Southern Oscillation (ENSO). The ENSO Outlook currently remains at El Niño WATCH. International models suggest that we are still in a Neutral phase, with the possibility of transitioning towards a weak El Niño over the next three-month period (68% chance over October – December 2018). This is unlikely to be a normal text book El Niño, as we will likely experience variance from south westerly air flow patterns typically experienced during traditional El Niño events.

The climate outlook for October – December 2018 is for higher pressure than normal to the west and south west of New Zealand and anticyclonic conditions extending over the country, interspersed by southerly and south-westerly winds. Cool nights and mornings are expected for October, with late season frosts and fog. This spring, temperatures are forecast to be average for all regions. Rainfall is predicted to be below normal to near normal for all regions. Soil moistures and river flows are forecast to be below or near normal.

Fire dangers and severity for October are expected to be low for most of the North Island. There are no specific areas to currently watch out for very high to extreme fire potential. The fire season years of 2004/05 and 2006/07 are possibly good indicators for what to expect during a weak El Niño this coming fire season (Figure 9). As we transition from spring to summer, expect to see fire dangers increase, especially for east coast locations (Gisborne, Wairoa, Hastings, Central Hawkes Bay, Palmerston North & Wairarapa). We may also be in for a similar season to last year, with rainfall keeping the fire dangers and severity low until the Christmas/New Year's holiday period, after which many parts of the North Island experienced High to Extreme fire dangers.

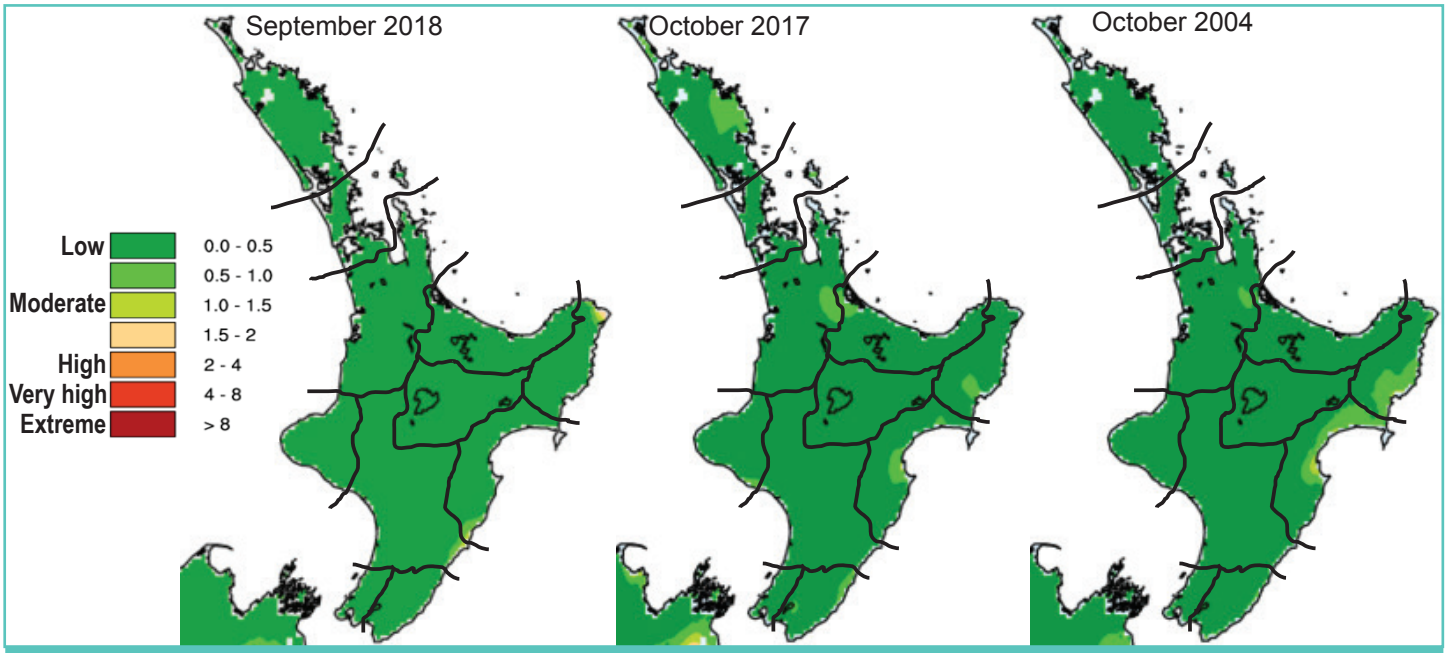

Figure 1. Monthly average Severity Rating for: current (left), last year (middle), & 2004/05 Neutral year followed by a weak El Niño (right).

EXPECTED CLIMATE OUTLOOK:

The ENSO (El Niño – Southern Oscillation) currently remains neutral in the tropics. The ENSO Outlook currently remains at El Niño WATCH (which means there is a more than 50% chance of an El Niño developing in 2018). There is a good chance (but no guarantee) of an El Niño forming in the next 4 to 6 weeks.

International climate models indicate that the tropical Pacific will transition towards El Niño over the next three-month period (NIWA are predicting a 68% chance over October – December 2018). The probability of El Niño conditions establishing by Autumn 2019 (March – May) remains high at 71%. If El Niño conditions form before Christmas, it is likely to be a weak event, and the impacts on New Zealand's weather may not run true to a typical El Niño climate pattern. It is not expected to be of a similar intensity to what was experienced during 2015-16, 1997-98 or 1982-83, and therefore different impacts are expected. We will likely see deviations from the south westerly air flow patterns typically experienced during traditional El Nino events. But ENSO is just one of several climate drivers that can influence New Zealand's rainfall and temperature patterns.

It is forecasted that New Zealand will experience higher pressure than normal over the South Island and to the south and west of the country, and lower than normal pressure to the northeast of New Zealand. This will lead to uncharacteristic southeast to northeast air flows over New Zealand. This atmospheric pattern will likely bring about cold nights and mornings, as well as frost and fog for early spring. Warm seas may help lessen the effects of cold air masses.

This month: October 2018

The Southern Ocean will continue to affect our weather across the country. For the start of October, cooler south-westerlies are expected (8 to 14 October). However, in the second half of the month, drier than normal conditions across the southwest of both Islands are expected. In contrast, periodic rain events are likely to affect the north and east of the North Island.

Temperatures will be variable, from somewhat warmer in the first week of October, to well below average across the country in the second week. In the second half of the month, average to cooler temperatures will likely continue.

Further ahead: October - December 2018

Further ahead (November – December 2018), higher than normal pressure to the west and southwest of New Zealand is expected. Anticyclonic conditions extending over the country, interspersed by episodes of southerly and southwesterly winds, are also expected. New Zealand may also experience cold nights and mornings, as well as frost and fog for early spring.

For the next three months:

Warm seas may help lessen the effects of cold air masses. Temperatures are forecast to be average for all regions.

Rainfall totals are forecast to be below normal or near normal for all regions of New Zealand except the east of the North Island, where near normal rainfall is most likely. Soil moisture levels and river flows are forecast to be below normal or near normal for all regions of New Zealand.

Regional breakdown (Figure 2):

Temperatures are most likely to be:

- Near average (45% chance) for Northland, Auckland, Waikato, Bay of Plenty, Central North Island, Taranaki, Whanganui, Manawatu, Wellington, Gisborne, Hawke's Bay, and Wairarapa.

Rainfall is most likely to be:

- Near normal (40% chance) or below normal (35% chance) for Northland, Auckland, Waikato, Bay of Plenty, Central North Island, Taranaki, Whanganui, Manawatu, and Wellington;
- Near normal (45% chance) for Gisborne, Hawke's Bay, and the Wairarapa.

Soil moistures are most likely to be:

- Near normal (40% chance) or below normal (40% chance) for Northland, Auckland, Waikato, Bay of Plenty, Central North Island, Taranaki, Whanganui, Manawatu, Wellington, Gisborne, Hawke's Bay, and the Wairarapa.

Last month: September 2018

During September, south easterly winds intermittently affected the North Island, and it was a drier than usual for most regions. Tauranga saw 33mm (equating to its third driest September in 77 years), Hamilton recorded 57mm. In contrast, it was very wet for Gisborne, Hawkes Bay and parts of the Wairarapa, which were affected by heavy rain during the first week of the month. Napier Airport received 118mm of rain in just five days, and ended up recording its 8th wettest September.

Despite an extremely cold start to September, temperatures rebounded in the middle of the month, and monthly temperatures ended up close to the September average in most areas. The exceptions were along the

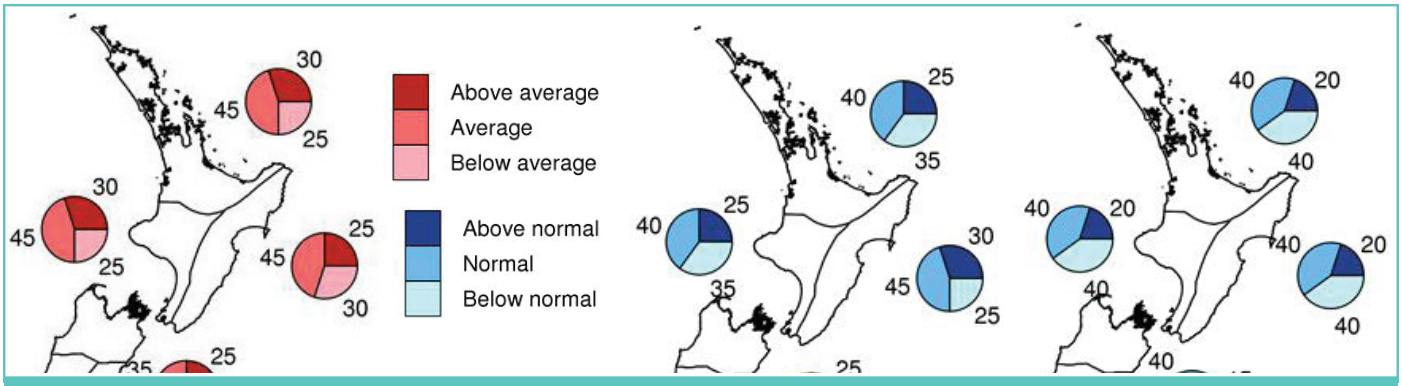

Figure 2. Outlook for Oct - Dec 2018: air temperature (left), rainfall (middle), available soil moisture (right). Source: NIWA.

east coast of both Islands, as well as for Northland and Wellington. The capital experienced its second longest southerly on record, during 3 to 12 September.

Over the past 6 months, the Southern Ocean has been the main driver for New Zealand's weather. The Southern Ocean was stuck in a positive phase (quiet mode), which enabled higher than normal pressure over the country. Compared to the previous five months before, there was regular switching between stormy and quiet modes (dry).

Sea surface temperatures (SSTs) around New Zealand's coastline varied considerably in September. The waters around the coast were cooled during the prolonged cold southerly at the start of September. Water temperatures rebounded in the middle of the month but then cooled again at the end. The sea is currently cooler than normal, except for the waters around the lower half of the South Island (warmer than usual).

What would El Niño mean for New Zealand?

New Zealand's climate is influenced by two key natural cycles: The El Niño-Southern Oscillation (ENSO) and the Interdecadal Pacific Oscillation (IPO). Both these operate over the Pacific Ocean and beyond, and cause 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, it accounts for less than 25% of the year to year variance in seasonal rainfall and temperature.

El Niño events are typically (but not always) associated with stronger and/or more frequent westerly winds over summer in New Zealand, following more south-westerlies in spring. Such a circulation pattern can lead to wetter than normal conditions to the west of the Southern Alps and drier conditions in northern and eastern regions of both Islands.

Note though that indications for the current El Niño event potentially developing suggest that it will not follow these typical climate patterns. If it develops, it is likely to only be a weak event and we will likely see deviations from the typical south westerly air flow patterns, and the Southern Ocean influences continuing to influence weather across the country.

Grass growth:

During spring, grasses are undergoing a period of growth, and much of the country side is looking green and lush. Typically, 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. The material is often hidden underneath lush green grass that appears to have low curing (30 - 50%). However, thatch can increase a fires ability to carry and sustain a fire. These fires will typically produce small flame heights and spread in a patchy manner.

Dead material can also come about from frost curing. As we transition from winter into spring, the potential for a fire to ignite and spread is increased as the curing process kicks off in these fuels (formation of seed heads and loss of seeds).

Wetter than normal soils, combined with mild winter conditions, have led to abundant grass growth in many areas. Once this dries out, these higher than normal fuel loads could contribute to increased fire intensities.

The finer details:

Grassland curing will affect fire behaviour in several ways: it increases the amount of dead material present and affects fuel moisture content. The result is an increased chance of fire ignition, fire intensity and rates of spread.

The moisture content of fine grass fuels (as well as pine litter and other fine fuels) also dramatically affects the ignition potential and ability of a wildfire to spread. High amounts of moisture increase the heat and thermal conductivity of fuel, so that more heat is required for the fuel to reach its ignition temperature. As grasses cure, and become drier, less heat is required to ignite and sustain a fire.

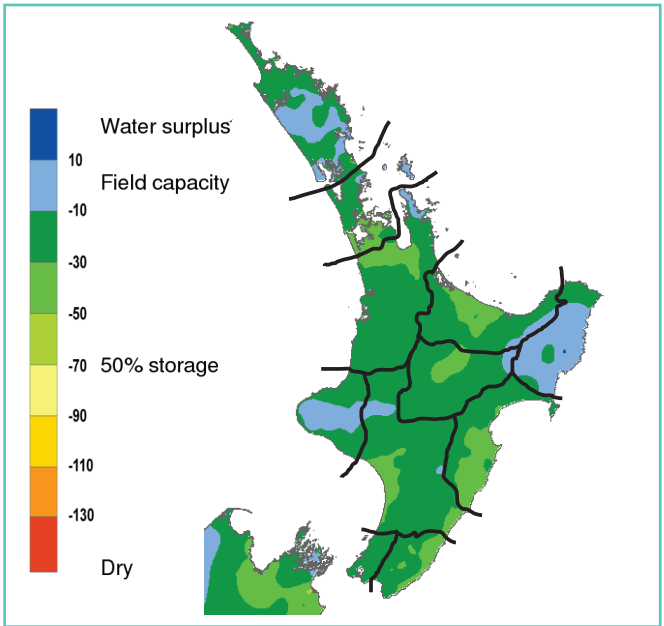

Figure 3. Soil moisture deficits as of 01/10/2018.
Source: NIWA.

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.

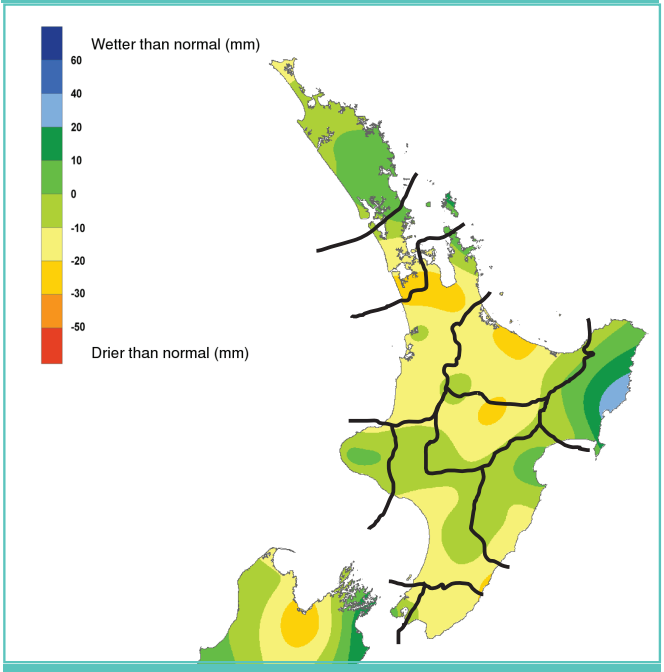

Figure 4. Soil moisture anomaly as of 01/10/2018.
Source: NIWA.

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 Fire and Emergency New Zealand's 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:
2017 Fire season familiarisation, pumps training (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

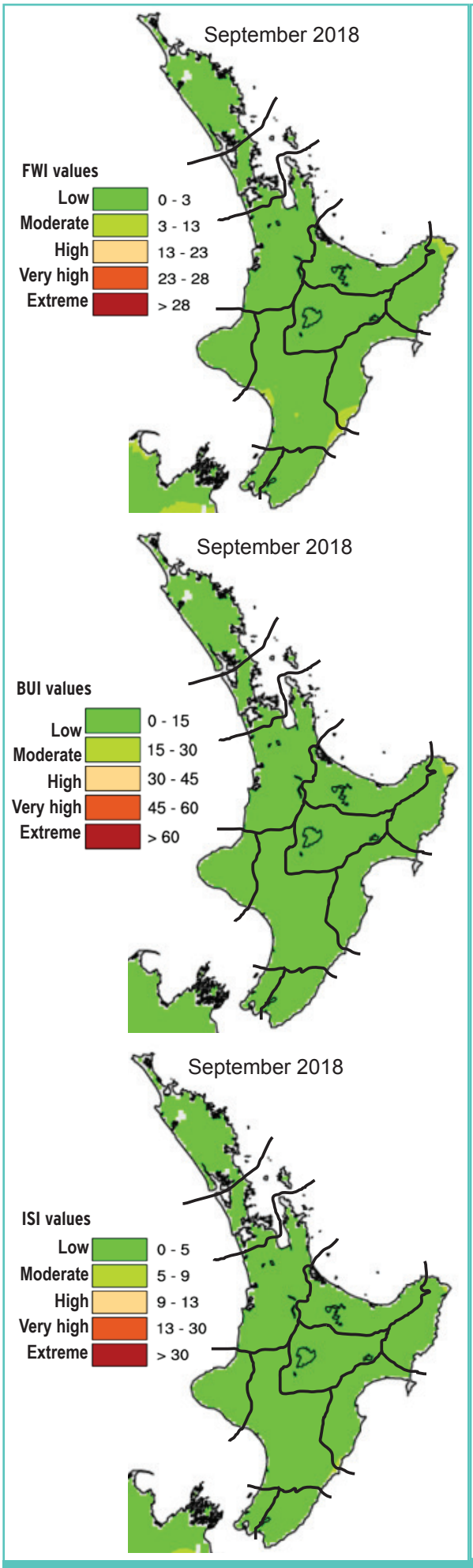

Figure 5. Current Monthly Average for the: Fire Weather Index (top), Buildup Index (middle) and Initial Spread Index (below).

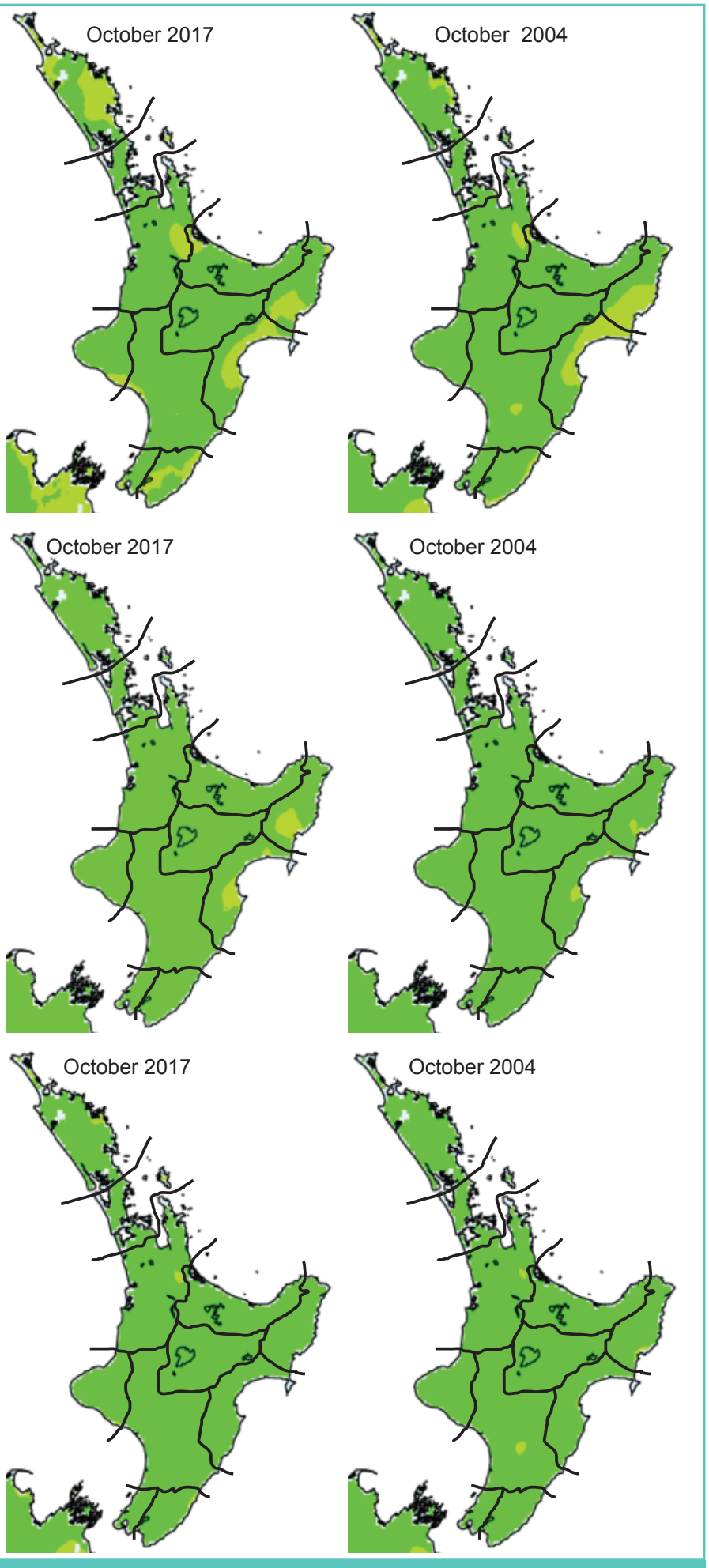

Figure 6. Average Monthly values of: Fire Weather Index (top), Buildup Index (middle) and Initial Spread Index (below); for the same time as last year (left) and during the 2004/05 Neutral year followed by a weak El Niño (right).

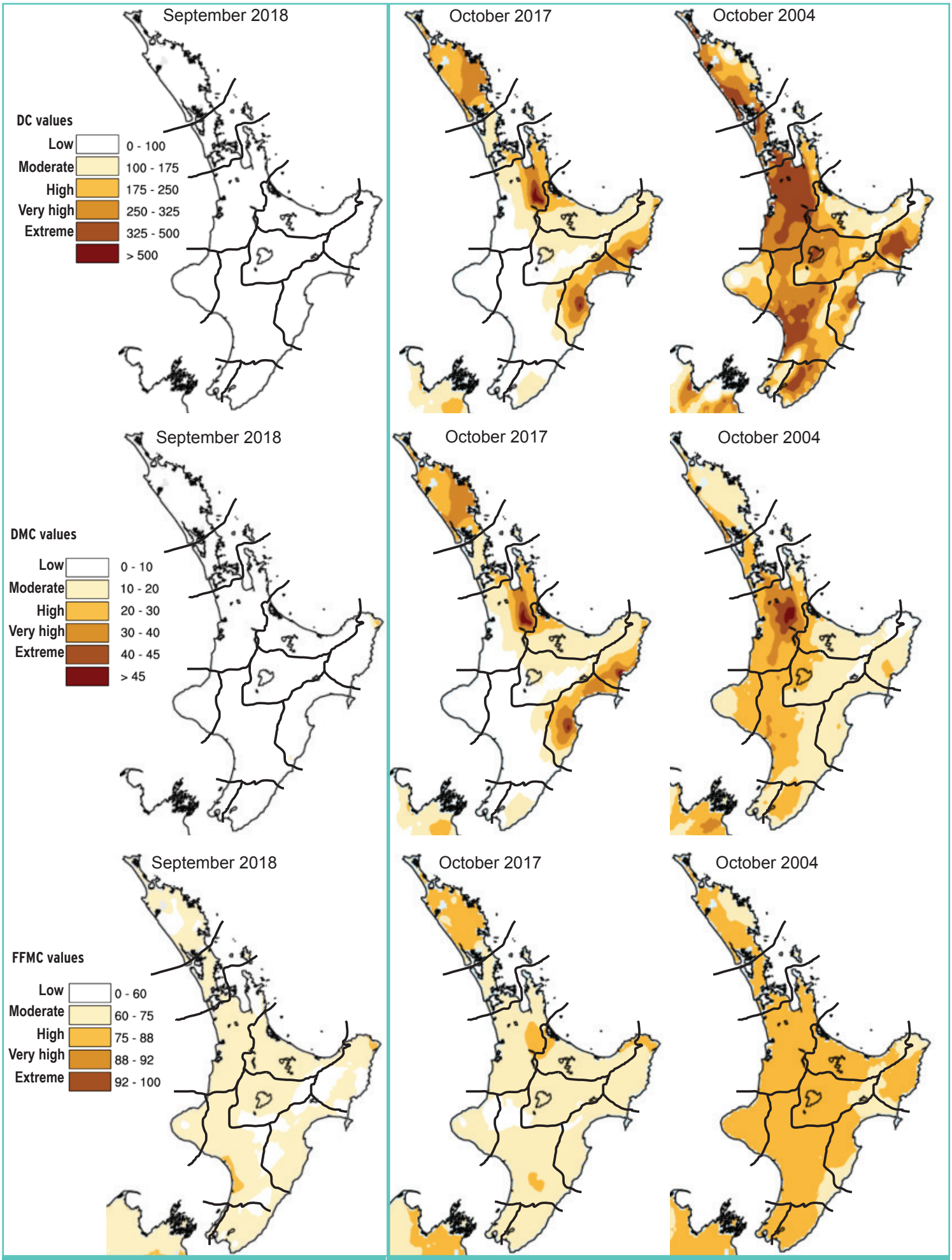

Figure 7. Current monthly average for the: Drought Code (top), Duff Moisture Code (middle) and the Fine Fuel Moisture Code (below).

Figure 8. Average monthly values of: Drought Code (top), Duff Moisture Code (middle) and Fine Fuel Moisture Code (below); for the same time as last year (left) and during the 2004/05 Neutral year followed by a weak El Niño (right).

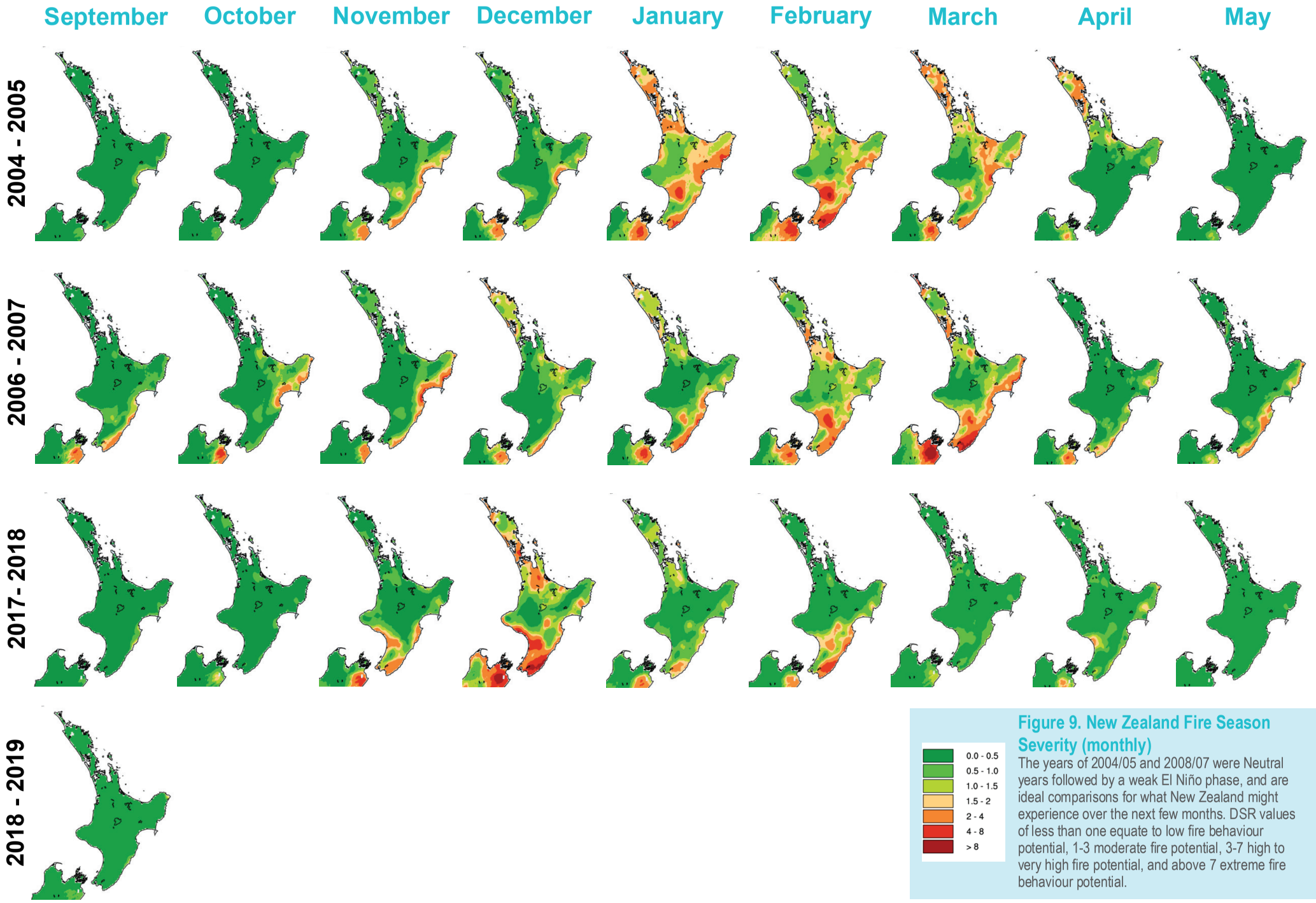

Figure 9. New Zealand Fire Season Severity (monthly)

The years of 2004/05 and 2008/07 were Neutral years followed by a weak El Niño 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 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 on the Scion website: https://www.scionresearch.com/rural-fire-research

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 contact Scion Rural Fire Research for the Excel sheets, and R scripts (to make the graphs in pdfs).

The more detailed regional graphs highlight where the 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 min values,
- We've also colour coded the 2004/05 & 2006/07 fire season years which were regarded as Neutral years transitioning to a weak El Niño season, similar to predictions for this coming season (yellow & blue lines).

Northern North Island:

Northland

Soil moisture:

- Soil moisture levels across the region are at storage capacity (wet) or nearing field capacity (in the Far North) (Fig 3).
- The soil moisture anomaly map shows a transition from slightly drier than normal soils for this time of the year in the Far North to about normal in the Kaipara & Whangarei districts (Figure 4).

Fire weather codes and indices:

- **Stations to watch are:** Currently, there are no stations that are reporting significant values.

- Current BUIs across the region range from 1 to 4, indicating that heavy and medium fuels are not readily available for combustion and the difficulty of control should be easy.
- BUIs across the region are below average for this time of the year, and values in the weak El Niño year of 2004/05.
- Maximum BUIs typically peak during February and can range between 110 and 200.

- Current DC values are generally ranging between 2 to 16. These values indicate little sign of drought, and a low risk of extended mop-up needs in deep soil organic layers and heavy fuels.
- DCs are generally below historical averages across the region, and the levels observed for the 2004/05 season.
- Maximum DC values typically peak during February or March.

- CDSR values across the region are below their historical averages, and those of the 2004/05 season.
- Current fire severity and danger for this region are, on average, Low (Figure 1 & 5).
- With forecasted below average temperatures, and normal to below normal rainfall, expect fire dangers and seasonal severity to begin to gradually rise over the month (in the absence of any major rain events).

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2004/05	**vs. average**	vs. 2004/05	**vs. average**	vs. 2004/05
Far North						
Aupouri Peninsula raws	below	below	below	below	well below	well below
Waitangi Forest raws	below	below	below	below	well below	well below
Kaikohe aws	below	below	below	well below	well below	well below
Kaikohe raws	below	below	below	below	well below	well below
Hokianga raws	below	on trend	below	on trend	below	slightly below
Whangarei / Kaipara						
Opouteke raws	below	on trend	well below	on trend	well below	on trend
Mangakahia raws	well below	well below	well below	well below	well below	well below
Whangarei raws	below	below	below	below	well below	well below
Whangarei Aero aws	well below	well below	well below	well below	well below	well below
Dargaville raws	below	on trend	below	on trend	below	slightly below
Pouto raws	below	NA	below	NA	well below	NA

Auckland

Soil moisture:

- Soil moistures across the region are near field capacity (wet) (Figure 3).
- The soil moisture anomaly map shows a transition from slightly drier than normal for this time of the year in southern locations to about normal in the north (Figure 4).

Fire weather codes and indices:

- **Stations to watch are:** Currently, there are no stations that are reporting significant values.

- BUIs across the region range from 1 to 8, indicating that the difficulty of control should be easy.
- BUIs across the region are either on trend or below the historical average and the 2004/05 weak El Niño fire season for this time of the year.
- Maximum BUIs typically peak during February and can range between 100 and 180.

- Current DCs range between 2 and 31. These values indicate little sign of drought, and a low risk of extended mop-up needs in soil organic layers and heavy fuels.
- DCs across the region are generally below the historical average for this time of the year, and on trend with the 2004/05 season.
- 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 below their historical averages and the 2004/05 weak El Niño fire season.
- Current fire severity and danger for this region are, on average, Low (Figure 1 & 5).
- With forecasted below average temperatures, and normal to below normal rainfall, expect fire dangers and seasonal severity to begin to gradually rise over the month (in the absence of any major rain events).

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2004/05	**vs. average**	vs. 2004/05	**vs. average**	vs. 2004/05
Great Barrier Island						
Great Barrier Island raws	below	below	below	below	below	well below
Northern						
Mahurangi Forest raws	below	NA	well below	NA	well below	NA
Kaipara raws	below	on trend	below	on trend	below	below
Woodhill raws	on trend	slightly above	above	above	below	on trend
Southern						
Clevedon Coast raws	on trend	on trend	slightly above	on trend	on trend	below
Cornwallis Depot raws	below	on trend	below	on trend	well below	below
Waharau raws	slightly below	on trend	on trend	slightly above	slightly below	below
Patumahoe raws	slightly above	slightly above	above	above	below	below

Waikato

Soil moisture:

- Soils across the region are near field capacity (wet) (Figure 3).
- The soil moisture anomaly map shows that soils are slightly drier for this time of the year across the region, more so in the Hauraki, and about normal in the Coromandel district (Figure 4).

Fire weather codes and indices:

- **Stations to watch are:** Currently, there are no stations that are reporting significant values.

- Currently BUIs across the region range from 1 to 22, indicating that heavy and medium fuels are not readily available for combustion and the difficulty of control should be relatively easy.
- In the Thames Valley localities, BUI values are generally below the historical average for this time of the year, and the levels observed during the the weak El Niño year of 2004/05. However, in the Waikato and Waitomo localities, the values are above the historical average and that observed during 2004/05.
- Maximum BUI values usually peak around late February, at around 100 to 160.

- Current DCs range between 1 and 56. These values indicate little sign of drought, and a low risk of extended mop-up needs in soil organic layers and heavy fuels.
- DCs are generally below average levels, and those of the 2004/05 fire season, for this time of the year in the Thames Valley localities, but above average and levels observed in 2004/05 for the Waikato and Waitomo localities.
- Maximum DC values typically peak during March and can range between 450 and 800.

- CDSR values across the region are generally below, or at, the historical averages and the levels observed during 2004/05.
- Current fire severity and danger for this region are, on average, Low (Figure 1 & 5).
- With forecasted below average temperatures, and normal to below normal rainfall, expect fire dangers and seasonal severity to begin to gradually rise over the month (in the absence of any major rain events).

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2004/05	**vs. average**	vs. 2004/05	**vs. average**	vs. 2004/05
Thames Valley						
Waikawau Bay raws	below	slightly below	below	below	well below	well below
Whangamata raws	below	on trend	below	on trend	below	slightly below
Paeroa raws *	slightly above	below	above	slightly below	below	below
Paeroa aws *	below	below	on trend	below	well below	well below
Waeranga raws	new station	new station	new station	new station	new station	new station
Waihi Gold raws #	NA	NA	NA	NA	NA	NA
Waihi raws #	below	on trend	well below	NA	on trend	on trend
Waikato / Waitomo						
Hamilton raws ^	slightly above	slightly above	slightly above	above	well below	well below
Hamilton Aero Aws ^	slightly above	slightly above	slightly above	above	below	below
Taharoa raws	on trend	on trend	slightly above	on trend	below	on trend
Port Taharoa aws	above	above	above	above	on trend	slightly above
Athol raws	slightly above	slightly above	above	slightly above	below	on trend
Waitomo raws	well above	well above	well above	well above	slightly above	above
Piopio raws	new station	new station	new station	new station	new station	new station

Central & Eastern North Island:

Bay of Plenty

Soil moisture:

- Soils across the region are leaning towards field capacity (wet) (Figure 3).
- The soil moisture anomaly map shows that soils are slightly drier for this time of the year across the region, more so around Tauranga (Figure 4).

Fire weather codes and indices:

- **Stations to watch are:** Currently, there are no stations that are reporting significant values.

- BUIs across the region generally range from 1 to 17, indicating that heavy and medium fuels are not readily available for combustion and the difficulty of control should be relatively easy.
- BUI values are either on trend or slightly above the historical average for this time of the year, and the levels recorded during the 2004/05 weak El Niño fire season.
- BUIs typically peak in late February, and maximum values can be expected to range between 120 and 160.

- Current DCs range between 1 and 50; the exceptions to this is Waihau Bay (77). These values indicate little sign of drought, and a low risk of extended mop-up needs in soil organic layers and heavy fuels.
- DCs are slightly above the historical averages for this time of the year, and on trend with the levels recorded during the 2004/05 fire season.
- Values typically peak during February or late March and can reach maximum values between 550 and 700.

- CDSR values are either on trend or below the historical average, and the levels seen in the 2004/05 fire season.
- Current fire severity and danger for this region are, on average, Low (Figure 1 & 5).
- With forecasted below average temperatures, and normal to below normal rainfall, expect fire dangers and seasonal severity to begin to gradually rise over the month (in the absence of any major rain events).

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2004/05	**vs. average**	vs. 2004/05	**vs. average**	vs. 2004/05
Coastal						
Waihi Beach raws	new station	new station	new station	new station	new station	new station
Waihau Bay raws	well above	well above	well above	well above	on trend	below
Tauranga Aero SYNOP *	slightly above	above	above	above	on trend	below
Tauranga raws *	slightly above	slightly above	above	above	below	below
Minden raws	new station	new station	new station	new station	new station	new station
Te Puke ews	above	above	well above	well above	above	slightly above
Whakatane raws #	on trend	slightly below	above	above	below	well below
Whakatane Aero aws #	above	above	well above	well above	below	below
TECT All Terrain Park raws	new station	new station	new station	new station	new station	new station
Rotoehu raws	on trend	slightly above	slightly above	above	above	above
Opotiki raws	on trend	NA	slightly above	NA	well below	NA
Rotorua / Kawerau / Whakatane						
Kawerau raws	on trend	on trend	above	above	well below	well below
Rotorua raws ^	above	above	above	above	on trend	below
Rotorua Aero aws ^	slightly above	above	above	above	well below	well below
Waimana raws	new station	new station	new station	new station	new station	new station
Galatea raws	above	slightly above	above	above	well below	on trend

Central North Island

Soil moisture:

- Soils across the region are near field capacity (wet) (Figure 3).
- The soil moisture anomaly map is showing that soils are slightly drier than normal for this time of the year (Figure 4).

Fire weather codes and indices:

- **Stations to watch are:** Ruatahuna (check rain gauge)

- BUIs across the region range from 1 to 14. This indicates that heavy and medium fuels are not readily available for combustion and the difficulty of control will generally be easy. The exception being Ruatahuna (at 39), which indicates heavy to medium fuels are becoming available and control of fires could be moderately difficult.
- BUI values are generally slightly above the historical averages for this time of the year, and the levels observed during the weak El Niño 2004/05 fire season.
- BUIs typically peak in late February, when maximum values can reach between 120 and 150.

- Current DCs generally range between 0 to 38, indicating the heavy and deep organic fuels are not readily available, and there is a little risk of extended mop-up needs The exception is Ruatahuna (154), which indicates heavy and deep organic fuels are drying out and there is some risk of difficult mop up requirements.
- DC values are generally slightly above the historical averages, and the 2004/05 season for this time of the year.
- Values typically peak during February or late March, with maximum DC values reaching between 450 and 650.

- CDSR values are generally below their historical averages, and the 2004/05 fire season.
- Current fire severity and danger for this region are, on average, Low (Figure 1 & 5).
- With forecasted below average temperatures, and normal to below normal rainfall, expect fire dangers and seasonal severity to begin to gradually rise over the month (in the absence of any major rain events).

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2004/05	**vs. average**	vs. 2004/05	**vs. average**	vs. 2004/05
Taupo / Whakatane						
Goudies raws	slightly below	on trend	on trend	slightly above	well below	well below
Tahorakuri raws	slightly above	slightly above	slightly above	slightly above	well below	on trend
Tihoi raws	new station	new station	new station	new station	new station	new station
Ruatahuna raws	new station	new station	new station	new station	new station	new station
Minginui raws	slightly above	above	above	above	below	below
Taupo raws *	above	above	well above	well above	on trend	on trend
Taupo Aero SYNOP *	above	above	well above	well above	below	below
Matea raws	above	above	above	above	on trend	slightly below
Rotoaira raws	new station	new station	new station	new station	new station	new station
Hautu raws	new station	new station	new station	new station	new station	new station

Gisborne

Soil moisture:

- Soils are at field capacity for the region (wet) (Figure 3).
- The soil moisture anomaly map shows that soils are transitioning from wetter than normal along the east coast to about normal inland (Figure 4).

Fire weather codes and indices:

- **Stations to watch are:** Poroporo (check rain gauge)

- Currently BUIs across the region range from 1 to 22. An exception is Poroporo (30). This indicates that heavy and medium fuels are not readily available for combustion and the difficulty of control should be relatively easy.
- BUI values are mixed across the region and are currently below, above, or on trend with, the historical averages for this time of the year.
- BUIs typically peak during February, with maximum values reaching between 80 and 160.

- Currently DC values are generally ranging between 1 and 60, except Poroporo (101), indicating the heavy and deep organic fuels are not readily available, and that there is a little risk of extended mop-up needs.
- DCs across the region are split below, at, or above their historical averages, and values seen in the 2004/05 weak El Niño fire season.
- DC values typically peak in late March, where maximum values can range between 400 and 800.

- CDSR values across the region are generally on trend or below both the historical average and 2004/05 fire season.
- Current fire severity and danger for this region are, on average, Low (Figure 1 & 5).
- With forecasted below average temperatures, and normal rainfall, expect fire dangers and seasonal severity to begin to gradually rise over the month (in the absence of any major rain events).

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2004/05	**vs. average**	vs. 2004/05	**vs. average**	vs. 2004/05
Gisborne						
Hicks Bay SYNOP	slightly below	slightly below	on trend	slightly above	on trend	below
Poroporo raws	well above	NA	well above	NA	on trend	NA
Raparapaririki Raws	new station	new station	new station	new station	new station	new station
Wharekopae raws	on trend	NA	slightly above	NA	well above	NA
Pouawa raws	below	NA	below	NA	below	NA
Gisborne raws *	above	above	slightly above	above	on trend	below
Gisborne Aero SYNOP *	below	below	below	below	slightly above	below

Hawkes Bay

Soil moisture:

- Soils across the region are leaning towards field capacity (wet) (Figure 3).
- The soil moisture anomaly map shows that soils are slightly drier than normal for Central Hawkes Bay and about normal conditions for Hastings and Wairoa districts (Figure 4).

Fire weather codes and indices:

- **Stations to watch are:** Wairoa (check rain gauge).

- Currently BUIs across the region generally range from 1 to 17, indicating that heavy and medium fuels are not available for combustion, and the difficulty of control is relatively easy. The exception is Wairoa (238), where the value is indicating all fuels are readily available, and difficulty of control will be extremely difficult.
- BUI values north of Napier are below the historical trend, with the remaining stations either at, or above the historical averages for this time of the year.
- BUIs typically peak around February, where maximum levels can range between 70 and 225.

- DC values are currently generally between 5 and 45, indicating the heavy and deep organic fuels are not readily available, and that there is a little risk of extended mop-up needs. The exception is Wairoa, where the current extreme value (1230) appears improbable, and indicates extremely difficult and extensive mop-up if a fire were to occur.
- DCs for stations north of Napier are generally below the historical average for this time of the year. The remaining stations in the southern half are generally on trend or slightly above their historical averages.
- DC values typically peak around late February or March, when maximum values can reach between 350 and 850.

- CDSR values are generally below, or well below, the historical averages and values observed in the 2004/05 weak El Niño fire season.
- Current fire severity and danger for this region are, on average, Low (Figure 1 & 5).
- With forecasted below average temperatures, and normal rainfall, expect fire dangers and seasonal severity to begin to gradually rise over the month (in the absence of any major rain events).

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2004/05	**vs. average**	vs. 2004/05	**vs. average**	vs. 2004/05
Wairoa						
Kaitawa raws *	below	NA	slightly below	NA	slightly below	NA
Tuai raws *	NA	NA	NA	NA	NA	NA
Wharerata raws	on trend	NA	slightly below	NA	well below	NA
Cricklewood raws	slightly below	slightly below	slightly above	above	well below	well below
Wairoa raws	new station	new station	new station	new station	new station	new station
Mahia raws	below	below	below	on trend	well below	well below
Mahia aws	below	slightly below	below	on trend	below	below
Hastings						
Te Haroto raws	on trend	on trend	above	above	well below	well below
Te Pohue raws	slightly above	on trend	above	on trend	well below	below
Kaiwaka raws	above	slightly below	slightly above	on trend	below	well below
Waihau raws	slightly above	on trend	slightly above	on trend	below	below
Napier Aero SYNOP *	on trend	on trend	slightly below	on trend	below	below
Napier raws *	slightly below	slightly below	below	slightly below	below	below
Crownthorpe raws	on trend	below	on trend	below	below	below
Bridge Pa raws	below	below	below	below	well below	well below
Te Apiti Road raws	above	NA	on trend	NA	above	NA
Central Hawke's Bay						
Gwavas raws	on trend	below	slightly above	below	below	below
Ongaonga raws	on trend	slightly below	slightly below	below	below	below
Waipukurau raws	on trend	slightly below	below	below	below	below
Porangahau raws	new station	new station	new station	new station	new station	new station

Lower North Island:

Taranaki

Soil moisture:

- Soil moistures across the region are at field capacity or nearing capacity (wet) (Figure 3).
- The soil moisture anomaly map shows that soil conditions are about normal for this time of the year (Figure 4).

Fire weather codes and indices:

- **Stations to watch are:** Currently, there are no stations that are reporting significant values.

- BUIs now range between 1 and 5. This indicates that heavy and medium fuels are not available for combustion and the difficulty of control will be easy.
- BUI values are mixed, with stations below, at, or slightly above the historical averages for this time of the year, and levels recorded during the 2004/05 weak El Niño fire season.
- BUIs typically peak at values of around 70 to 120 in late February or early March.

- DCs across the region currently range between 1 and 20, indicating the heavy and deep organic fuels are not readily available, and that there is a little risk of extended mop-up needs.
- DC values are generally below their historical averages and the 2004/05 fire season for this time of the year.
- DC levels can increase to a peak of 350 to 700 in early March.

- CDSR values are generally below their historical averages and on trend with the 2004/05 season.
- Current fire severity and danger for this region are, on average, Low (Figure 1 & 5).
- With forecasted below average temperatures, and normal to below normal rainfall, expect fire dangers and seasonal severity to begin to gradually rise over the month (in the absence of any major rain events).

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2004/05	**vs. average**	vs. 2004/05	**vs. average**	vs. 2004/05
Taranaki						
New Plymouth SYNOP	on trend	on trend	slightly above	on trend	above	slightly above
Tikorangi raws	new station	new station	new station	new station	new station	new station
Marco raws	below	on trend	well below	slightly below	well below	on trend
Okato raws	on trend	slightly above	slightly below	on trend	below	on trend
Opunake raws	new station	new station	new station	new station	new station	new station
Eltham raws	below	slightly below	well below	below	below	on trend
Ngamatapouri raws	new station	new station	new station	new station	new station	new station
Whareroa raws *	above	above	well below	well below	slightly above	above
Hawera aws *	slightly above	slightly above	on trend	on trend	well below	NA
Waverly raws	on trend	on trend	slightly below	on trend	below	on trend

Manawatu-Wanganui

Soil moisture:

- Soils across the region are near storage capacity (wet) (Figure 3).
- The soil moisture anomaly map shows that soils are slightly drier than normal for southern coastal locations (Whanganui, Rangitikei Manawatu, Horowhenua & Palmerston North), and about normal for the Ruapehu district and inland locations (Figure 4).

Fire weather codes and indices:

- **Stations to watch are:** Kirikau, Ranana, Ngahere Park (check rain gauges)

- BUIs currently range between 0 and 17, indicating that heavy and medium fuels are not readily available for combustion and the difficulty of control should be relatively easy. The exceptions being Kirikau (35), Ranana (50) and Ngahere Park (33). These values indicate fuels are becoming readily available and any fires in these areas will be more difficult to control.
- BUIs for this time of the year are generally on trend with the historical average levels, and values observed during the 2004/05 weak El Niño fire season.
- BUIs typically peak in March, where maximum ranges can be between 80 and 170.

- DCs are generally ranging between 0 and 36. The exceptions being Kirikau (191), Ngamatea (106), Ranana (196) and Ngahere Park (148). These values indicate that there could be some potential for extended mop-up.
- DCs are generally on trend with the historical averages for this time of the year.
- 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.

- CDSR values are generally below the historical average for most stations, but some inland sites are sitting above average.
- Current fire severity and danger for this region are, on average, Low (Figure 1 & 5).
- With forecasted below average temperatures, and normal to below normal rainfall, expect fire dangers and seasonal severity to begin to gradually rise over the month (in the absence of any major rain events).

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2004/05	**vs. average**	vs. 2004/05	**vs. average**	vs. 2004/05
Ruapehu						
Kirikau Raws	new station	new station	new station	new station	new station	new station
National Park raws	well below	below	well below	below	well below	on trend
Paradise Valley raws	on trend	NA	on trend	NA	well below	NA
Desert Road Summit raws	slightly above	NA	on trend	NA	above	NA
Three Kings raws	on trend	NA	slightly below	NA	above	NA
Waimarino Forest raws	on trend	on trend	slightly above	slightly above	well below	well below
Waiouru Airstrip aws	well above	NA	well above	NA	below	NA
Westlawn raws	on trend	NA	on trend	NA	above	NA
Tarn Track Raws	new station	new station	new station	new station	new station	new station
Rangitikei						
Ngamatea raws	above	above	well above	well above	well above	well above
Whangaehu raws	slightly below	NA	on trend	NA	on trend	NA
Raumai raws	below	below	well below	well below	below	below
Whangaehu						
Ranana raws	new station	new station	new station	new station	new station	new station
Wanganui Spri. Park ews	on trend	on trend	on trend	on trend	below	on trend
Matarawa raws	well above	NA	above	NA	well above	NA
Wanganui aws *	on trend	slightly below	slightly below	slightly below	slightly below	below
Whanganui raws *	on trend	below	on trend	slightly below	below	below
Manawatu						
Tapuae raws	below	on trend	below	below	below	on trend
Feilding raws	new station	new station	new station	new station	new station	new station

Manawatu-Wanganui continues

Station Name	BUI trends		DC trends		CDSR trends	
Palmerston North City						
Palmerston North SYNOP	on trend	on trend	slightly below	on trend	slightly below	on trend
Ngahere Park raws	well above	NA	well above	NA	well above	NA
Horowhenua						
Waitarere Forest raws	slightly below	on trend	below	on trend	well below	below
Levin aws	on trend	on trend	on trend	on trend	well below	well below
Tararua						
Dannevirke ews	slightly above	NA	on trend	NA	slightly below	NA
Waione East raws	on trend	on trend	on trend	on trend	on trend	on trend
Pahiatua ews	above	NA	above	NA	well below	NA
Akitio ews	well above	NA	well above	NA	on trend	NA
Alfredton South raws	on trend	NA	on trend	NA	well below	NA

Wairarapa

Soil moisture:

- Soils across the region are leaning towards capacity (wet) (Figure 3).
- The soil moisture anomaly map shows soils are slightly drier than normal for this time of the year (Figure 4).

Fire weather codes and indices:

- **Stations to watch are:** Currently, there are no stations that are reporting significant values.

- BUIs are currently ranging between 1 and 13. This indicates that heavy and medium fuels are not readily available for combustion and the difficulty of control should be relatively easy.
- BUIs are generally below historical averages values for this time of the year and the levels observed during the weak 2004/05 El Niño fire season. The exceptions being Masterton Aero and Castlepoint, which are above.
- BUI values typically peak at most stations in the region in late January to mid-February (100 – 180).

- DCs across the region are ranging between 1 to 40, indicating the heavy and deep organic fuels are not readily available, and that there is a little risk of extended mop-up needsFor the same time of the year, DCs are generally below average historical levels, and those seen in the 2004/05 fire season.
- 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 generally below the historical averages and that observed during 2004/05.
- Current fire severity and danger for this region are, on average, Low (Figure 1 & 5).
- With forecasted below average temperatures, and normal rainfall, expect fire dangers and seasonal severity to begin to gradually rise over the month (in the absence of any major rain events).

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2004/05	**vs. average**	vs. 2004/05	**vs. average**	vs. 2004/05
Masterton / Carterton						
Castlepoint SYNOP #	slightly above	slightly above	slightly below	on trend	on trend	slightly above
Crofoot raws #	below	below	well below	well below	below	below
Holdsworth Station raws	on trend	slightly above	on trend	slightly above	well below	well below
Masterton Aero aws *	slightly above	NA	above	NA	well below	NA
Homebush raws *	well above	NA	well above	NA	below	NA
Ngaumu Forest raws	on trend	on trend	on trend	on trend	below	on trend
South Wairarapa						
Featherston Raws	new station	new station	new station	new station	new station	new station
Haurangi raws	below	on trend	slightly below	on trend	well below	on trend
Stony Creek raws	below	below	well below	well below	well below	well below
Ngawi aws ^	below	below	below	below	below	below
Palliser raws ^	below	below	below	below	below	below

Wellington

Soil moisture:

- Soils are near field capacity (wet) across the region (Figure 3).
- The soil moisture anomaly map shows soils are about normal for this time of the year across the region, and slightly drier in the Upper Hutt area (Figure 4).

Fire weather codes and indices:

- **Stations to watch are:** Currently, there are no stations that are reporting significant values.

- BUIs are currently between 1 and 9, indicating that heavy and medium fuels are not readily available for combustion and the difficulty of control should be easy.
- BUI values are either below or on trend with the historical averages for this time of the year and the levels observed during the weak 2004/05 El Niño fire season.
- BUIs typically peak at values up to 100 around late February.

- DC values are currently ranging between 3 and 30, indicating the heavy and deep organic fuels are not readily available, and that there is a little risk of extended mop-up needs.
- DCs are generally on trend or below averages for this time of the year, and levels seen during the 2004/05 fire season.
- DCs typically peak in late February (600 -700) and remain high until late April.

- CDSR values across the region are generally below both the historical averages and levels seen during the 2004/05 weak El Niño fire season.
- Current fire severity and danger for this region are, on average, Low (Figure 1 & 5).
- With forecasted below average temperatures, and normal to below normal rainfall, expect fire dangers and seasonal severity to begin to gradually rise over the month (in the absence of any major rain events).

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2004/05	**vs. average**	vs. 2004/05	**vs. average**	vs. 2004/05
Kapiti Coast						
Te Horo Raws	new station	new station	new station	new station	new station	new station
Paraparaumu Aero	on trend	slightly above	on trend	on trend	below	below
Titahi Bay Raws	NA	NA	NA	NA	NA	NA
Porirua Elsdon Park aws	below	below	below	slightly below	well below	well below
City						
Belmont raws	below	below	below	below	well below	well below
Long Gully Raws	new station	new station	new station	new station	new station	new station
Wellington Aero SYNOP	below	below	below	slightly below	well below	well below
Rimutaka Forest raws	slightly below	on trend	on trend	on trend	below	slightly below

Chatham Islands:

Weather:

- 12 noon monthly average temperatures experienced over Jul - Sep were above average (about 1°C).
- Total monthly rainfall for Jul – Sep was generally above the long term average, with approximately 60-100mm per month. In Sep, the total rainfall was approximately 80mm.

- Note: The historical averages are based on a 18-year average from stations at the Chatham Island Aero (Chatham Island Aero SYNOP and Chatham Island EWS stations) and a 20-year average from stations at Waitangi (Waitangi Raws and Chatham Islands Aws (Waitangi) stations).

Fire weather codes and indices:

- **Stations to watch are:** Currently, there are no stations that are reporting significant values.

- BUI values range from 1 to 3. This indicates that heavy and medium fuels are not readily available for combustion and the difficulty of control should be easy.
- BUI values are currently trending below historical average levels for this time of the year.
- Historically the values tend to peak from early February until March (up to 80).

- DCs are ranging between 1 and 11, indicating the heavy and deep organic fuels are not readily available, and that there is a little risk of extended mop-up needs.
- Drought indices are trending below the historical averages for this time of the year.
- Maximum DCs typically peak (around 300 – 600) during February.

- The CDSR is split either slightly above or below the historical averages for this time of the year.
- Currently, the Chatham's are experiencing Low fire severity and Low fire danger.
- Fire severity and danger levels are expected to remain Low throughout the first half of October.

Station Name	BUI trends		DC trends		CDSR trends	
	vs. average	vs. 2004/05	vs. average	vs. 2004/05	vs. average	vs. 2004/05
Chathams						
Kaiwhata raws	well below	NA	well below	NA	slightly above	NA
Chatham Islands Aero	below	NA	slightly below	NA	below	NA
Waitangi raws	new station	new station	new station	new station	new station	new station