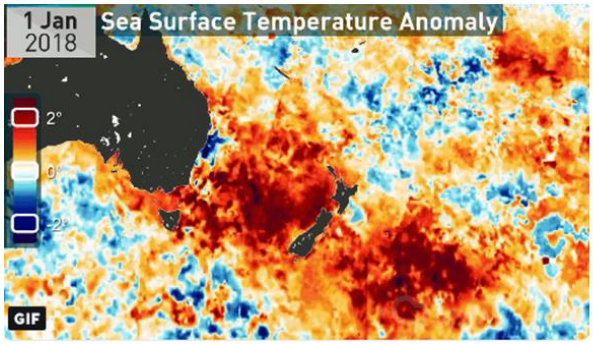
greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

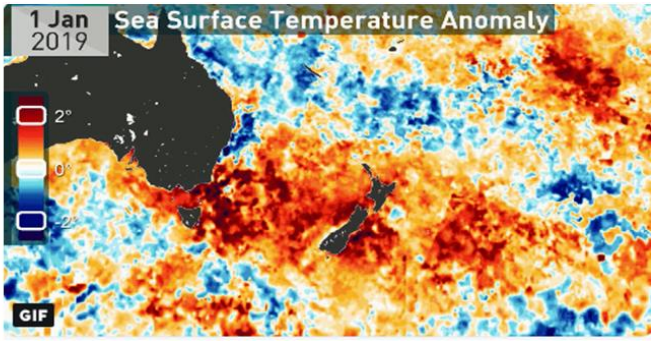
Climate and Water Resources Summary for the Wellington Region

Warm Season (November to April) 2018-2019

Release date: 16 May 2019

Contents





Sea Surface temperature anomalies showing above normal water temperatures in red, and below normal water temperatures in blue. A marine heatwave is shown by the large red areas in the Tasman Sea, and around New Zealand. We can see the conditions on the 1st Jan 2018 when New Zealand had the hottest summer on record (left), in comparison to the same day this year (right). As the comparison shows, a similar marine heatwave prevailed for the second consecutive year. Marine heatwaves have a direct impact on the weather patterns affecting our region, providing warmer temperatures and additional energy for storms and floods (refer to global climate drivers discussion chapter in this report). Source: NIWA.

In this report you will find:

More information

For more information on monitoring sites and up-to-date data please visit http://www.gw.govt.nz/environmental-science/. Several climate sites are operated by NIWA and/or MetService, and GWRC is grateful for permission to present the data in this report.

Disclaimer

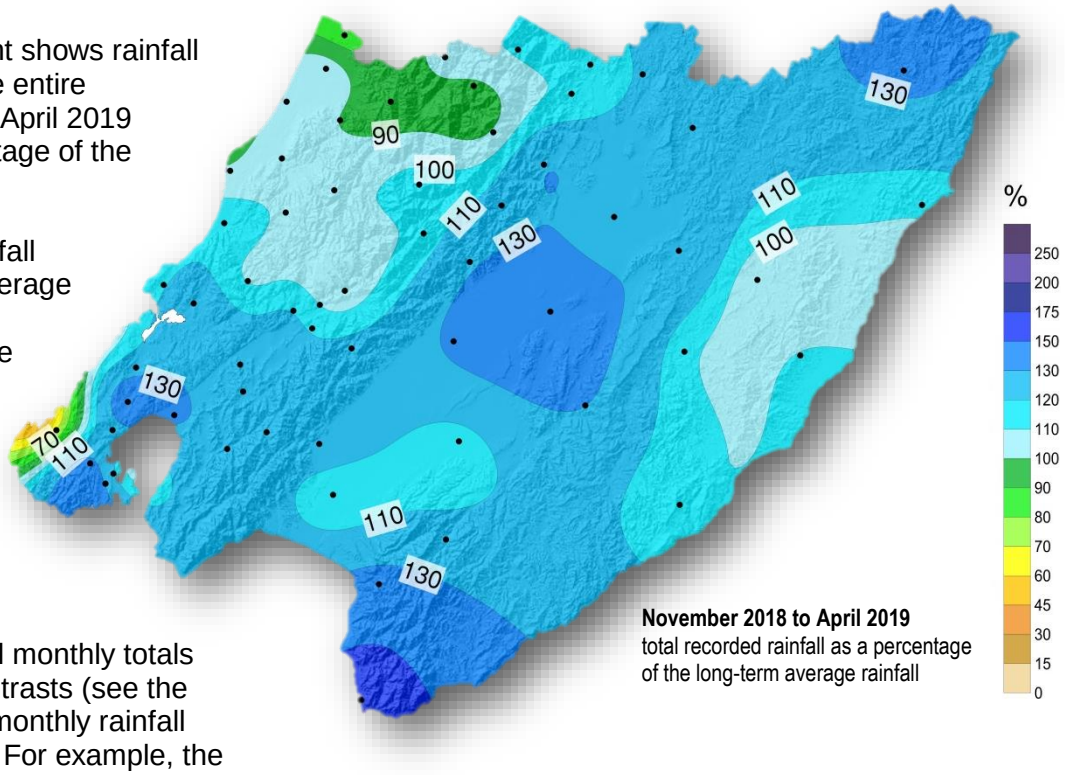
Report release date: Nov 2018

Total rainfall over the warm season from November 2018 to April 2019 was higher than normal in most places. However, a closer look into the rainfall patterns (see next page) shows that the rainfall anomaly varied widely from month to month.

Rainfall (November to April)

The map to the right shows rainfall recorded during the entire November 2018 to April 2019 period as a percentage of the long term average.

Total seasonal rainfall was higher than average across most of the region, including the Wairarapa, Hutt Valley and Wellington area. The Tararua Range and Kapiti Coast were around normal.



However, individual monthly totals show some big contrasts (see the following page for monthly rainfall percentage maps). For example, the Wairarapa was exceedingly wet in November and December and then exceptionally dry in January and March.

Analysis of the number of days that it rained is interesting. If more than 1mm of rain is recorded in a day this is called a 'Rain Day' and if there is more than 25mm this is termed a 'Heavy Rain Day'.

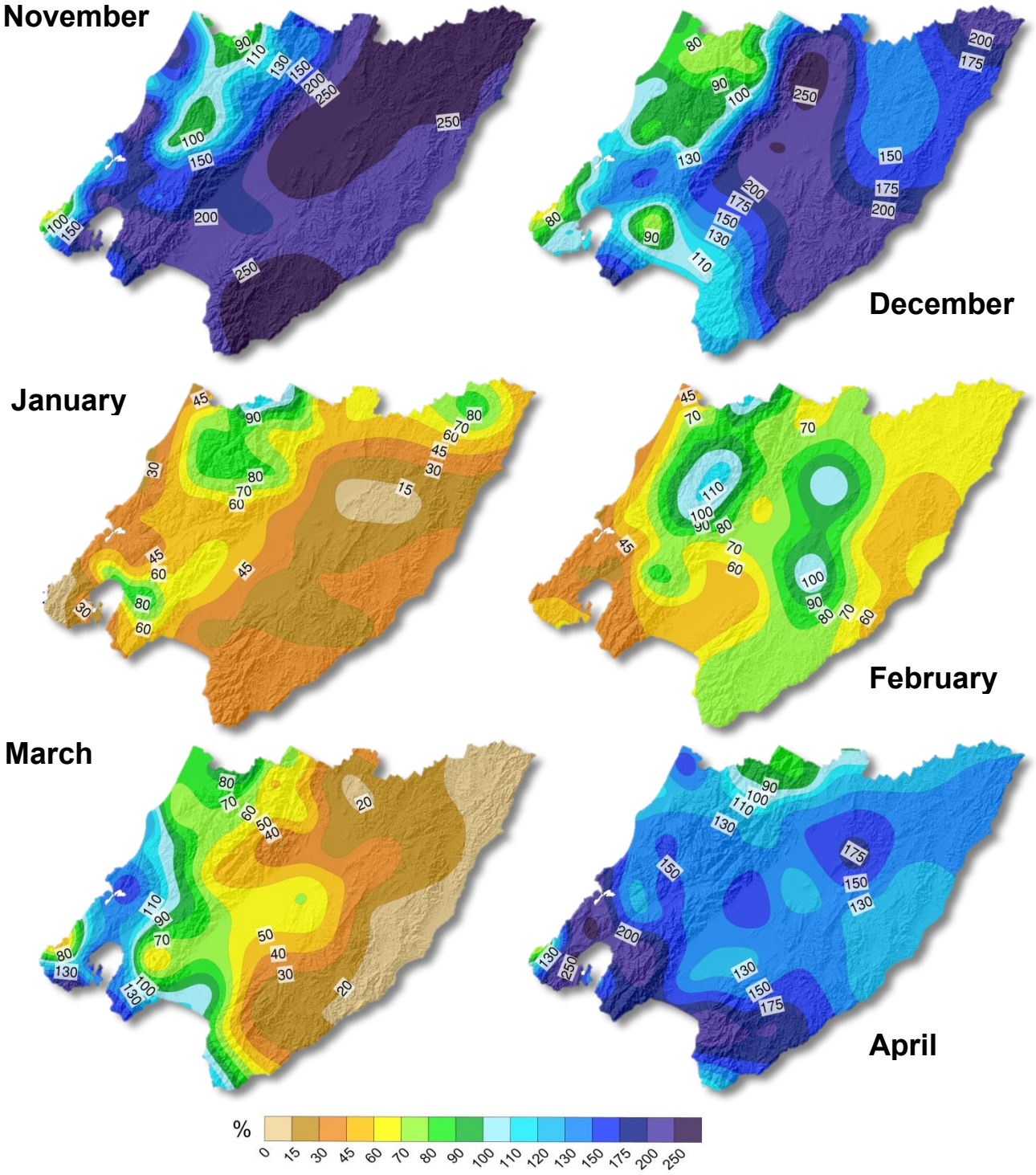
The table below shows that the number of Rain Days was lower than normal everywhere. However, the number of Heavy Rain Days in lowland areas was higher than normal everywhere except the Kapiti Coast (and is probably the main driver of the overall pattern of seasonal rainfall totals).

Number of Rain Days and Heavy Rain Days during November to May across the region (long-term average in brackets.)

	Kāpiti Coast		Porirua	Hutt Valley & Wellington		Ruamāhanga		Eastern Wairarapa
	Lowland	Hills	Lowland	Lowland	Hills	Lowland	Hills	
Rain Days (>1mm)	48 [70]	86 [104]	47 [66]	45 [69]	72 [96]	54 [66]	90 [115]	55 [69]
Heavy Rain Days(>25mm)	3 [3]	20 [24]	7 [5]	6 [5]	11 [13]	6 [3]	23 [34]	7 [5]

Rainfall by the month

The maps below show monthly rainfall as a percentage of average for each month of the warm season (November 2018 to April 2019). The contrast between the shoulder months of the season (Nov, Dec, Apr) and mid-summer months is clear to see. The pattern of extreme fluctuations from wet to dry in the Wairarapa, especially in the eastern hills, is one that has been highlighted in past seasonal reports.

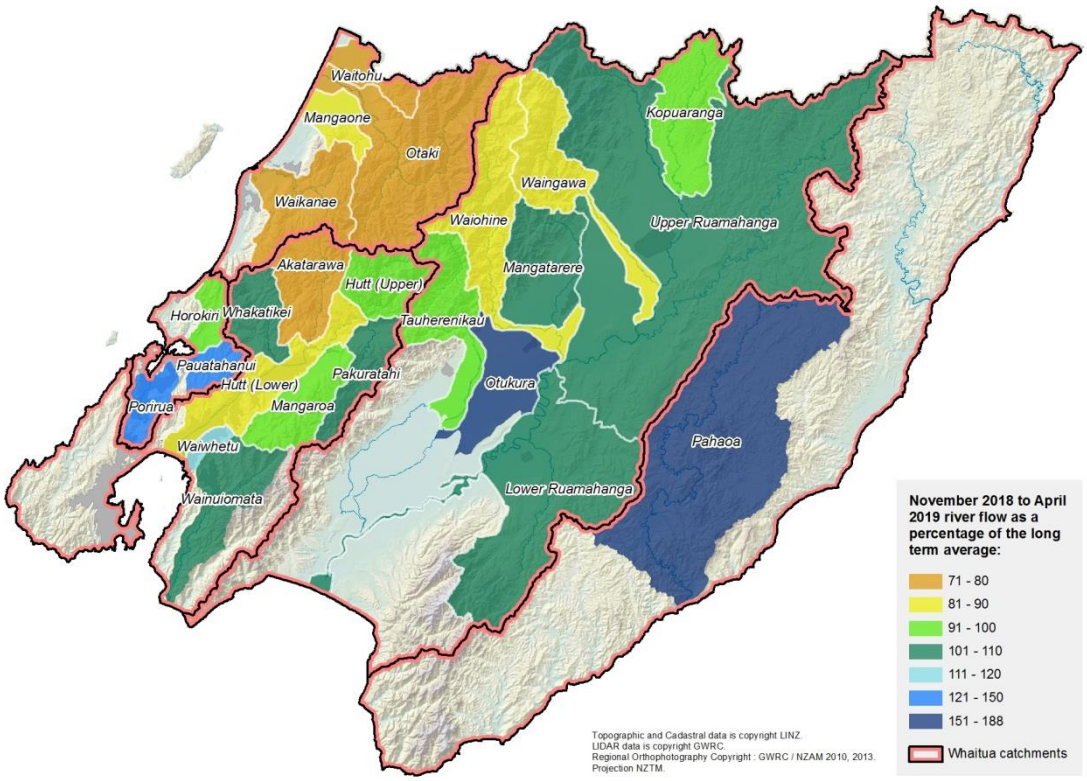


Monthly rainfall as a percentage of the long-term average

River flow

The map below shows the average river and stream flow conditions between November 2018 and April 2019, for various monitored catchments, as a percentage of the long-term average flow over this period.

The general pattern was one of lower than average flows in the west and in the larger catchments fed primarily by the Tararua Range, and near average to above average flows in the south and east and foothill or lowland catchments. The largest flow anomaly was for the Pahaoa River catchment in the eastern Wairarapa hill country where average flow was almost twice (188%) the long-run normal for the warm season. This statistic was driven by an exceptionally wet November and December in eastern Wairarapa; average flow in the Pahaoa River for these months was more than five and eight times the respective norms. Interestingly, January and February were exceptionally dry for this catchment with flow less than 15% of the normal.

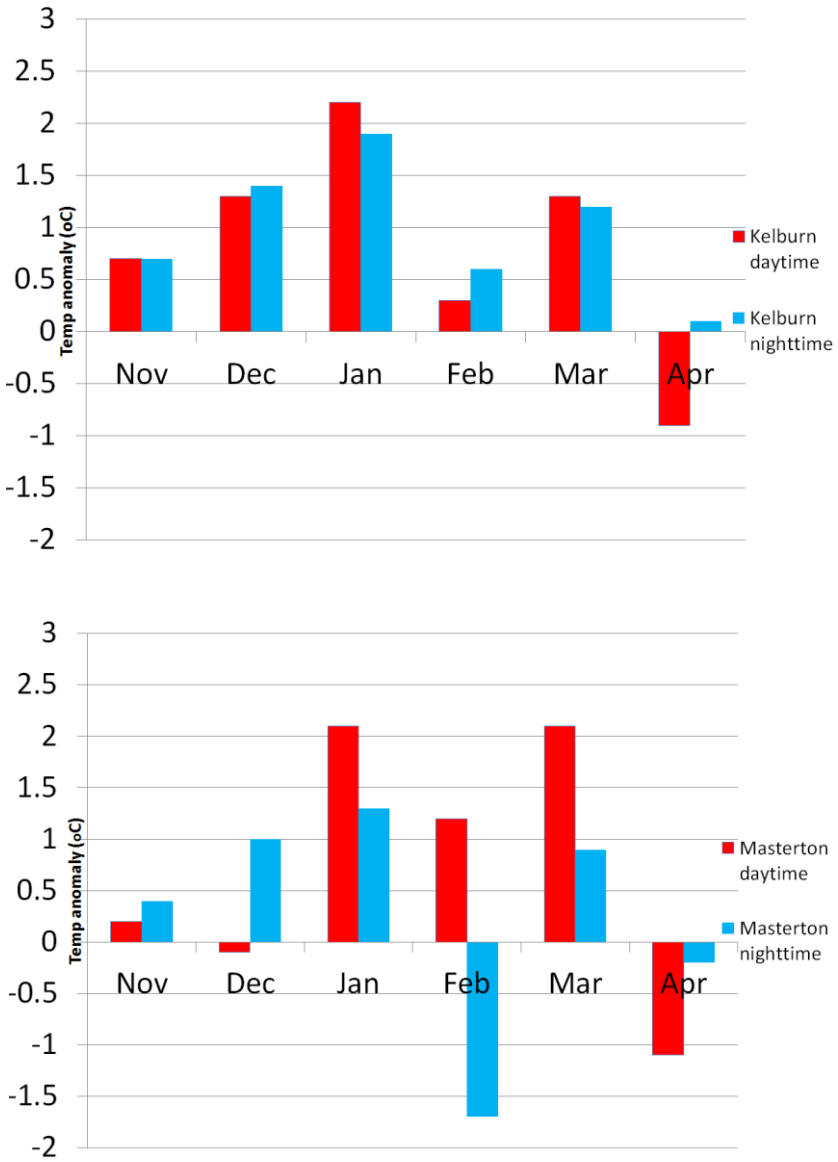


More detail on river flow statistics for each catchment can be found in the Appendix of this report on page 18.

Air temperatures

Air temperature is measured at a number of meteorological monitoring sites across the region. It is useful to look at the anomalies (i.e., departures from normal) in average temperatures month by month, in order to understand the climate anomalies.

The graphs below show the monthly average daytime maximum and average nighttime minimum temperature anomalies (i.e., based on every day of the month) for Kelburn (upper panel) and Masterton (lower panel). We can see that the warm season overall was much warmer than normal, except for April which had below average daytime temperatures. Masterton had cold nights in February likely as a result of dry conditions, as the soil moisture decreased after record low rainfall in January. On the 29th of January Kelburn had the hottest temperature ever measured on that site (for all months), with 30.3ºC (see global climate drivers and extreme weather events section below for further comments). In Kelburn, records started in 1927.



Average daytime and nighttime temperature anomalies for Kelburn (top) and Masterton (bottom) for the warm season period. Most of the period has been warmer than average, except April. In Masterton, there has been a predominance of cold nights in February, likely due to clear skies and dry conditions.

SOURCE: Data from MetService meteorological stations.

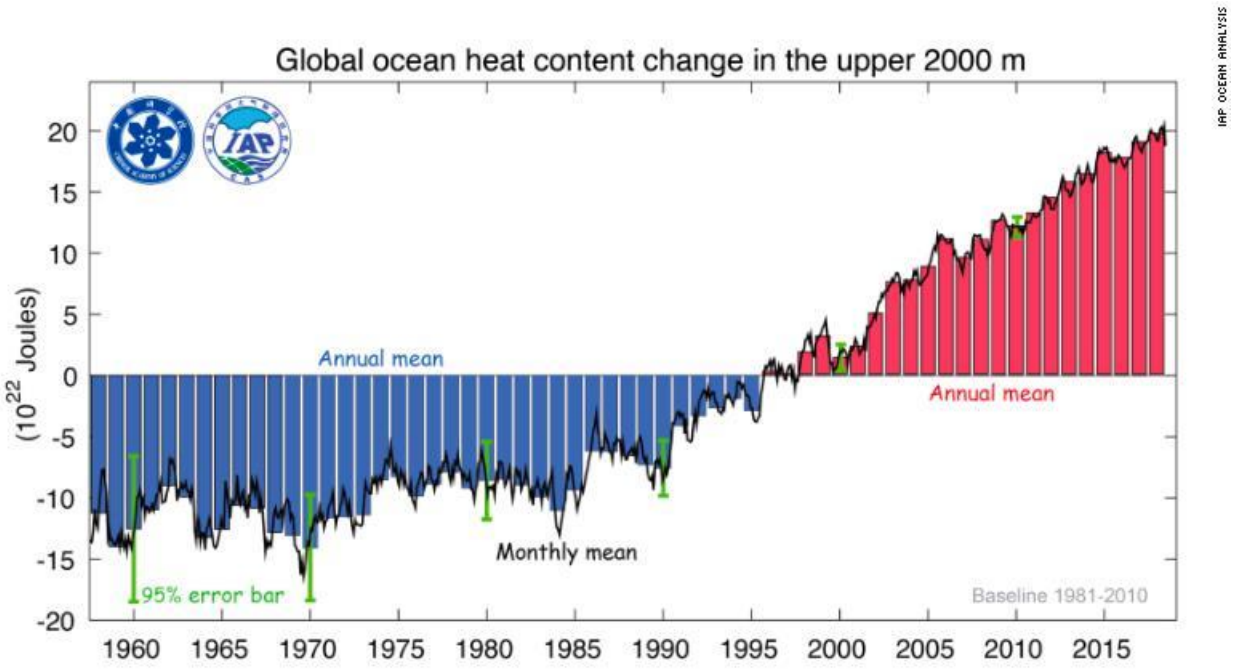
Global climate drivers

Climate variability and climate change

People often ask if the variable weather patterns in our region are a result of climate change. While natural climate variability has always been quite pronounced in our region, weather extremes are expected to get extremer as a result of human-induced climate change and "global warming" caused by greenhouse gas emissions (http://www.gw.govt.nz/climate-change/). This means that the imbalance in the atmosphere is growing (http://www.gw.govt.nz/assets/Climate-change-2/PresentationPezza27March2019.pdf.)

Some key observations about climate variability and change in our region during the period November 2018 to April 2019 are:

- The six-month period was warmer than normal, with large variability in month to month rainfall anomalies (e.g. three times the average rainfall in December, followed by record dry in January);
- The sea surface temperatures (following page) have gone once again from average to much warmer than average over summer, characterising the second consecutive warm season dominated by marine heatwave conditions;
- High pressure anomalies east of New Zealand, associated with the positive phase of the Southern Annular Mode, helped produce stronger onshore winds on the eastern coast. The synoptic patterns were very mixed, oscillating between westerlies and easterlies;
- Global climate data for 2018 reveals that the global oceans continue to warm in the upper 2000 m layer, with 2018 being the hottest year on record for this parameter. Deep layer measurements of oceanic heat content are one of the most reliable 'global warming' indicators available, due to the high stability of the oceanic system.

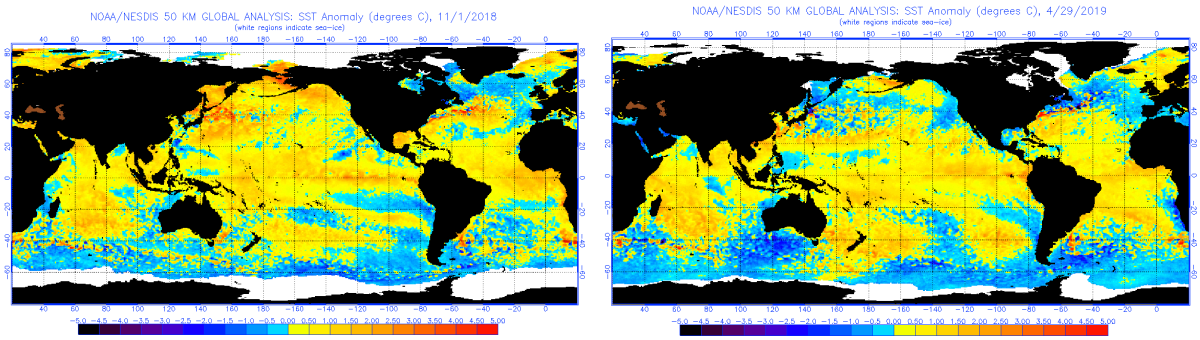


Change in 0-2000m Ocean Heat Content from 1958 to 2018. Each bar shows the annual mean relative to a 1981-2010 baseline (positive in red and negative in blue). Source: IAP ocean analysis, Cheng et al. 2019.

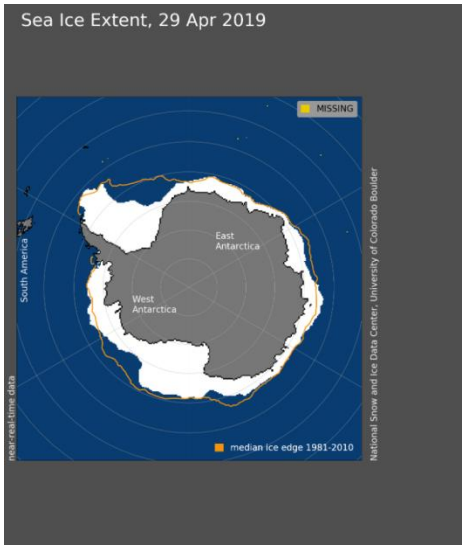
Global climate drivers and extreme weather events

Climate drivers are global mechanisms that can influence the weather in our region. The El Niño/Southern Oscillation[1] (ENSO) phenomenon is currently experiencing a weak El Niño phase (depending on which threshold is being used to define it). This is seen by the warm sea surface temperature anomalies in the Equatorial Pacific throughout the season. The sea ice extent (in white) has been well below average, and is currently at similar levels to what was observed last year (bottom panel). In the Northern Hemisphere, sea ice has been significantly declining and this has been shown to be connected to an imbalance leading to more extreme weather events. This includes, paradoxically, the recent severe cold waves on the eastern US coast (due to the weakening and meandering of the polar jet stream).

The marine heat wave around New Zealand is seen at the end of the season (as of 29 April) on the right panel. This warm water pattern provides more energy for severe weather events, and a sustained backdrop for unseasonably mild temperatures.



Sea surface temperature anomalies on 1st Nov 2018 (left), and 29th Apr 2019 (right). We can see that the equatorial Pacific remains warmer than average, in a weak El Niño state. The waters remain warmer than normal around and east of New Zealand, after a cooler pattern early in the season gave way to marine heatwave conditions (see contents page). Source: NOAA/USA.

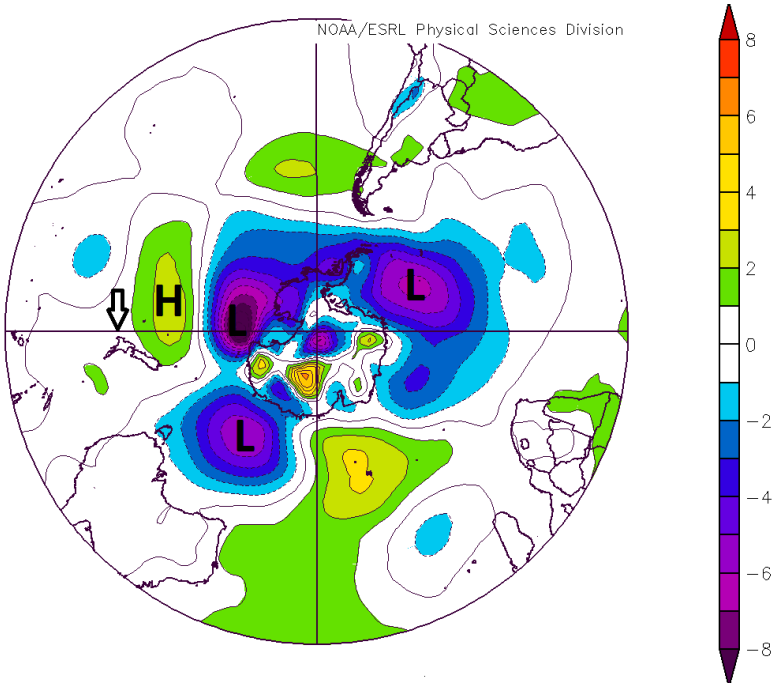


Sea ice extent anomalies for 29 April 2019. The actual extent of the sea ice is shown in white, compared to the 1981-2010 average marked by the orange line. While sea ice melting doesn't directly contribute to sea level rise, recent research shows that Antarctica will become severely vulnerable to climatic changes if the sea ice coverage that surrounds the continent starts to decline.

Source: NSIDC (USA).

[1] https://en.wikipedia.org/wiki/El_Ni%C3%B1o%E2%80%93Southern_Oscillation

The pressure anomalies over the six month period show a series of low pressure centres around Antarctica (marked as L), and a blocking high pressure east of New Zealand (marked as H). This condition was connected to the positive phase of the Southern Annular Mode (SAM), helping bring easterly winds on the eastern coast of the North Island. The wind regime was quite variable, which helps explain the rainfall variability from month to month. The blocking high wasn't strong enough to prevent the westerlies and fronts to come through from the Tasman Sea, and so the intra-seasonal regime has frequently oscillated between westerlies and easterlies, with an overall tendency for lower than average wind speeds (or wind run) due to the position of the blocking.



Mean sea level pressure anomaly for Nov to Apr 2018-2019.

We can see that conditions were dominated by low pressure around Antarctica and high pressure east of New Zealand, which is characteristic of the positive phase of the Southern Annular Mode. The blocking high east of NZ meant a tendency towards stronger onshore winds on the eastern coast.

Source: NOAA (USA).

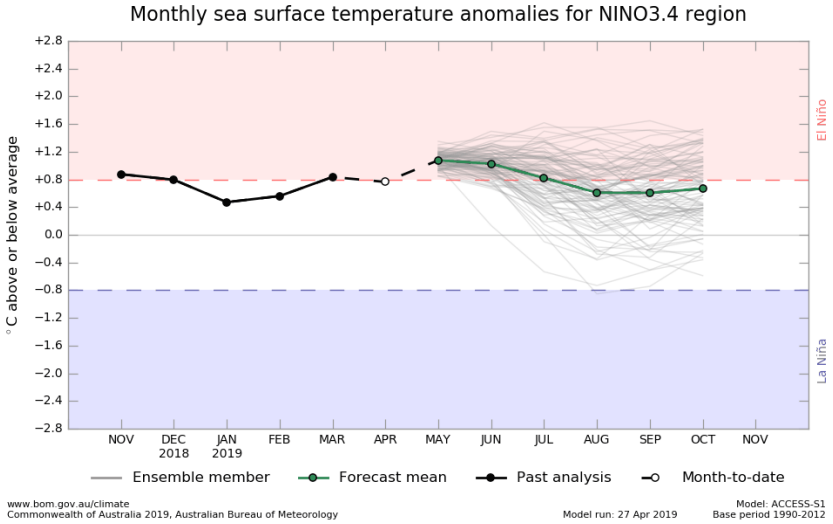
Depending on the position of the blocking high shown above, there was an alternation between conditions favourable for atmospheric heatwaves and periods of cooler weather. The strongest heat wave of the season formed later in January, with 30.3^{o}C on the 29th of January in Kelburn. This was the highest temperature ever measured on that site for all months (records started in 1927). What is more impressive about that record, is that the day started quite cool (overnight minimum of 16.6 degrees), taking a long time to warm up due to marine fog on coastal areas. If such a long-term record can be broken even when conditions were not necessarily ideal for maximum heating, we can be confident that even higher temperatures will be measured in future years, as climatic changes continue to worsen.

Seasonal climate outlook update

The variable rainfall over the last six months is a pattern that has been persisting around the Wellington Region for at least two years now. The warming of the oceanic temperatures around New Zealand is injecting more energy into the atmosphere, creating stronger swings in weather patterns. We have been consistently oscillating between very wet and very dry months, not infrequently with the resultant seasonal accumulation being near average. As the marine heatwave is still ongoing around New Zealand, this erratic pattern is expected to continue. At the same time, as the climate

imbalance associated with anthropogenic emissions continues to worsen, it is likely that this extreme behaviour, or swings in weather extremes, could become the new norm.

The ENSO phenomenon is expected to remain borderline between neutral and weak El Niño before returning to normal later in the year (see figure below). The sea surface temperature anomalies around New Zealand are predicted to remain above normal, although not as strongly as they have been during the warm season.



ENSO predictions as of 27 April 2019, showing that a currently weak El Niño (positive phase) is expected to return to neutral conditions over the winter months. Source: BOM (Australia)

The following points summarise the expected pattern over the remaining of autumn, and beginning of winter:

- ENSO likely remaining borderline between El Niño and neutral;
- Westerly regime likely becoming stronger;
- Warm Sea Surface Temperature continues around New Zealand;
- Normal to above average temperatures, large oscillations between extremes;
- Highly variable month to month rainfall;
- High chance of extreme rainfall events, with possible flooding, as the cold season advances

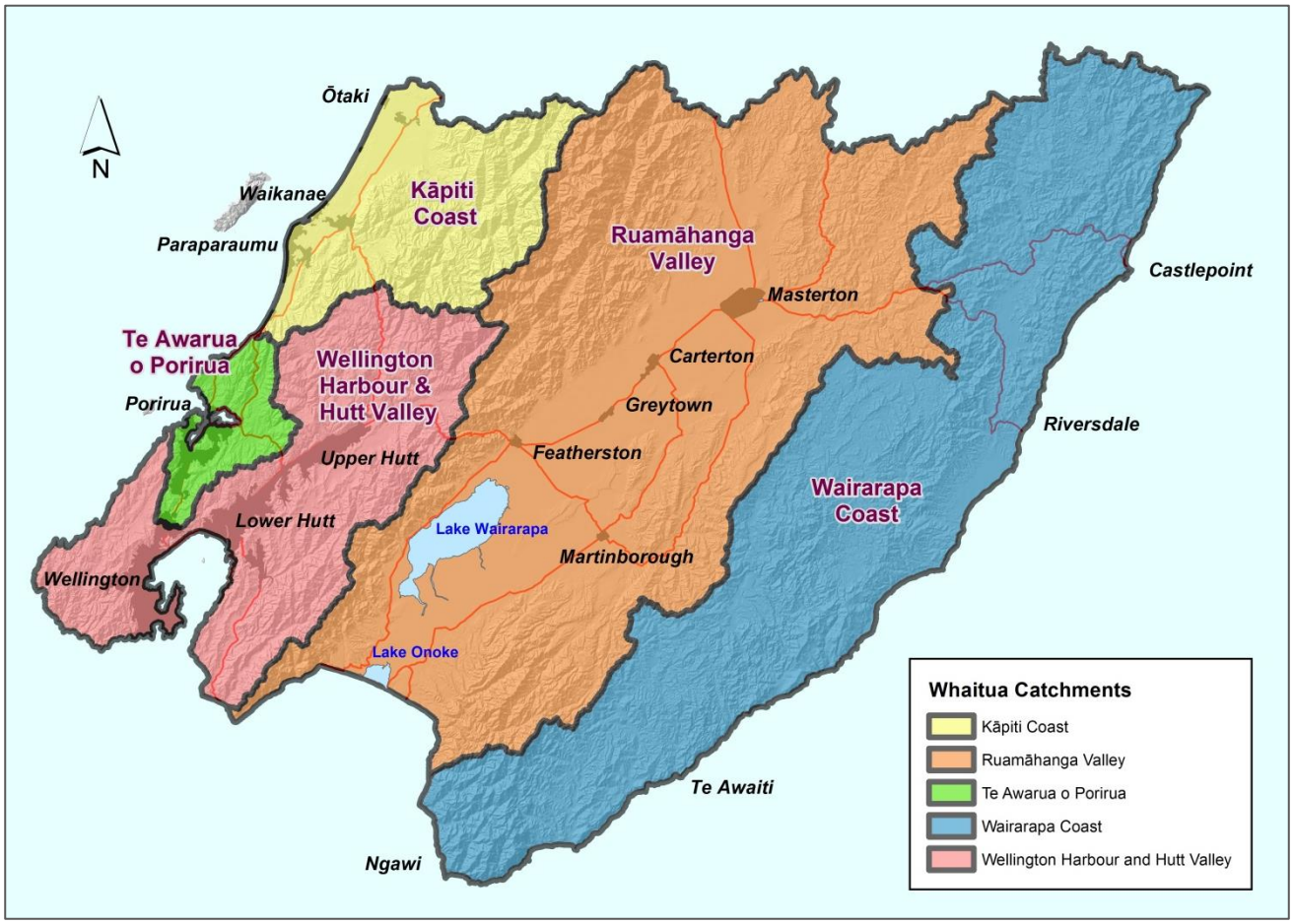
The full updated climate outlook for winter will be released with our regular seasonal briefing by mid-June.

What happened in each whaitua catchment?

Climate and water resource summaries are provided in the following sections for each of the five Wellington region whaitua catchment areas (as shown below). The whaitua catchments provide an important sub-regional basis for environmental management in the Wellington region[2], and roughly coincide with the different climate and water resource zones.

Click the following links for November 2018 to April 2019 summaries for:

- Wellington Harbour and Hutt Valley
- Te Awarua-o-Porirua
- Kāpiti Coast
- Ruamāhanga Valley
- Wairarapa Coast

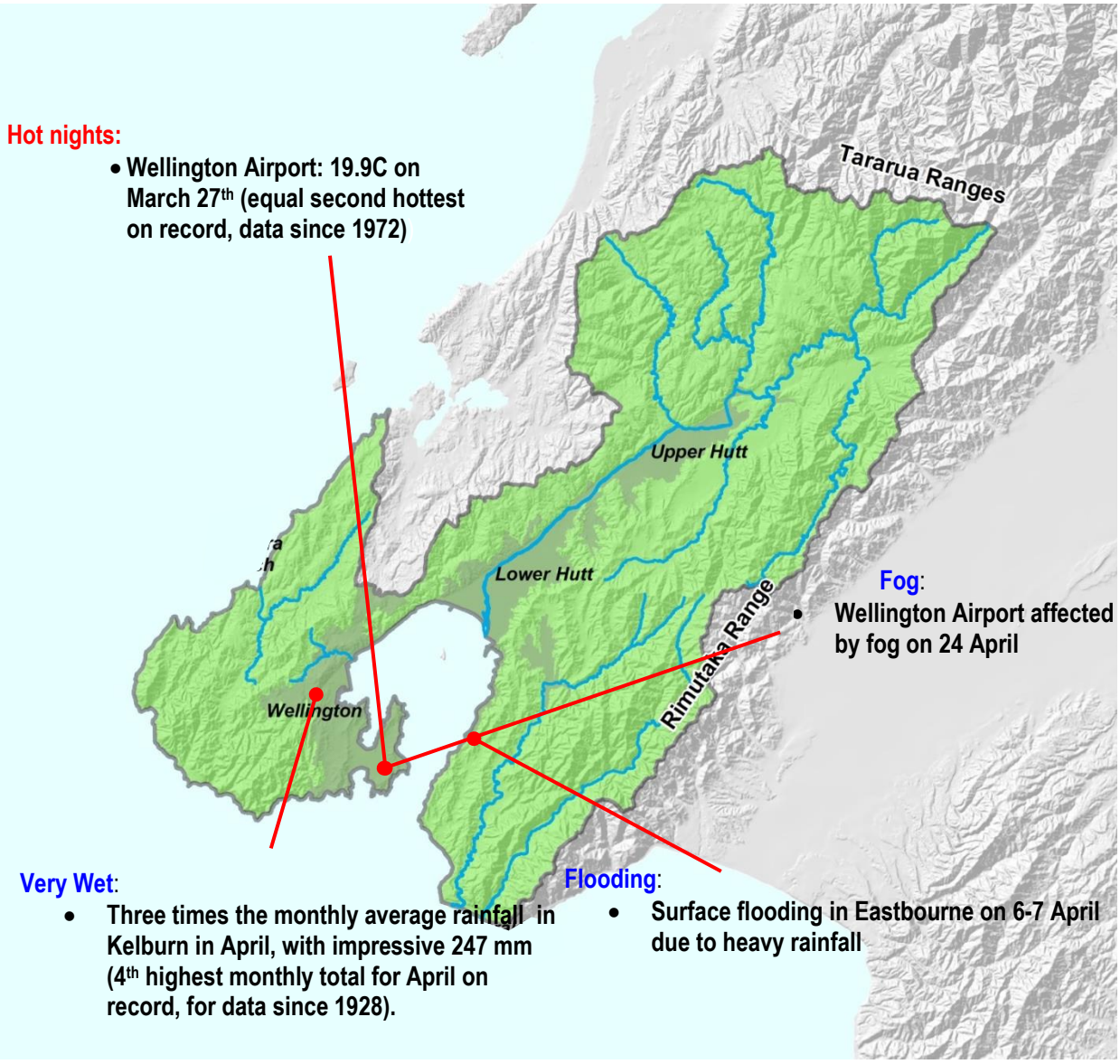


Map of the five whaitua catchment areas in the Wellington region. Each whaitua roughly coincides with a climatic zone, expressing the marked east-to-west contrast that we experience in our region.

[2] http://www.gw.govt.nz/whaitua-committees/

Wellington Harbour and Hutt Valley climate summary

- **Wetter (high total rainfall accumulation, but swinging between extremes monthly).**
- **Warmer (well above average temperatures)**

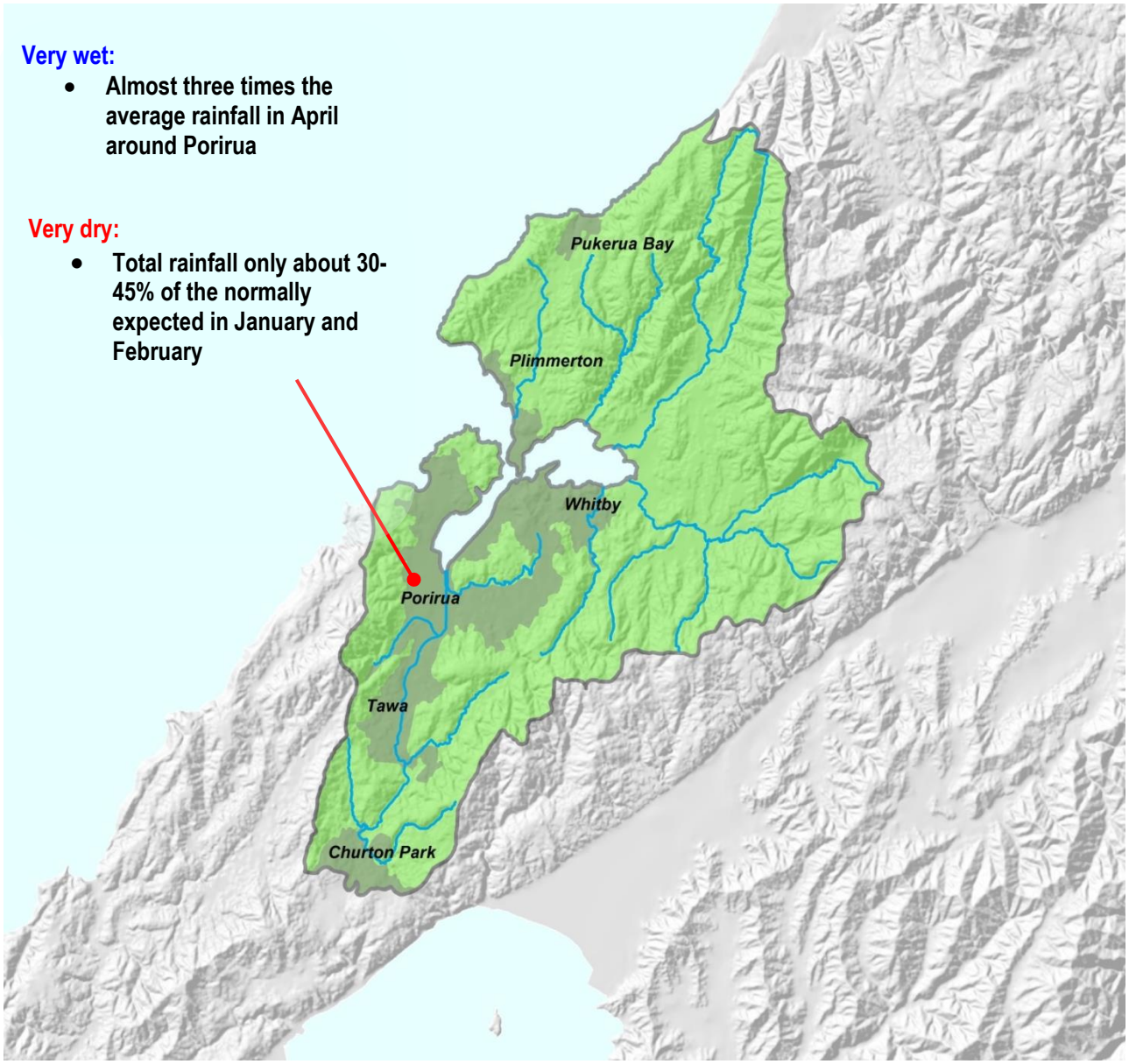


Want to look at the summary tables and graphs?

- Rainfall
- River flows

Te Awarua-o-Porirua climate summary

- **Wetter (high total accumulation, but swinging between extremes month to month).**
- **Warmer (well above average temperatures)**

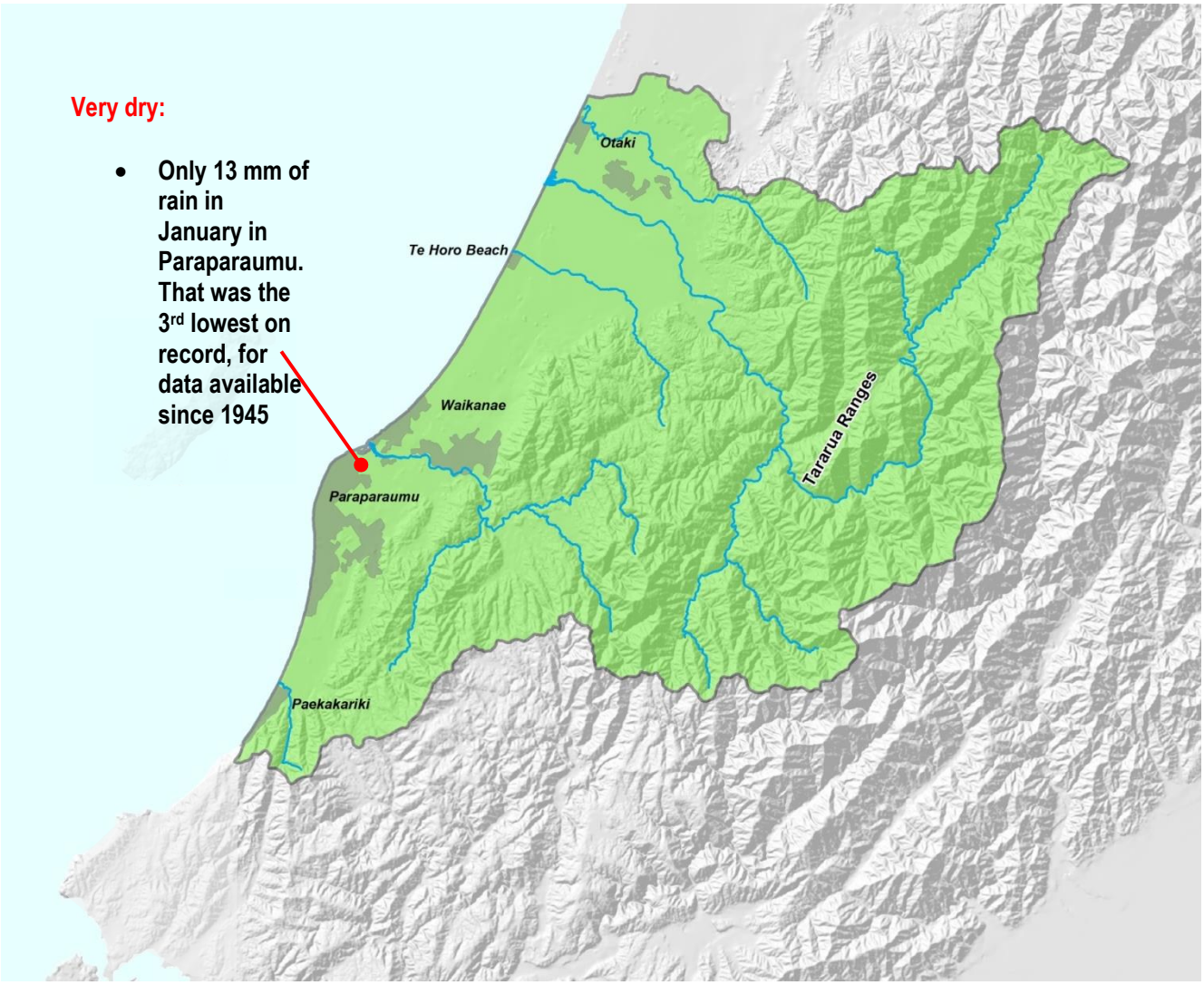


Want to look at the summary tables and graphs?

- Rainfall
- River flows

Kāpiti Coast climate summary

- **About normal accumulated rainfall, but swinging between extremes month to month**
- **Warmer (much above average temperatures)**

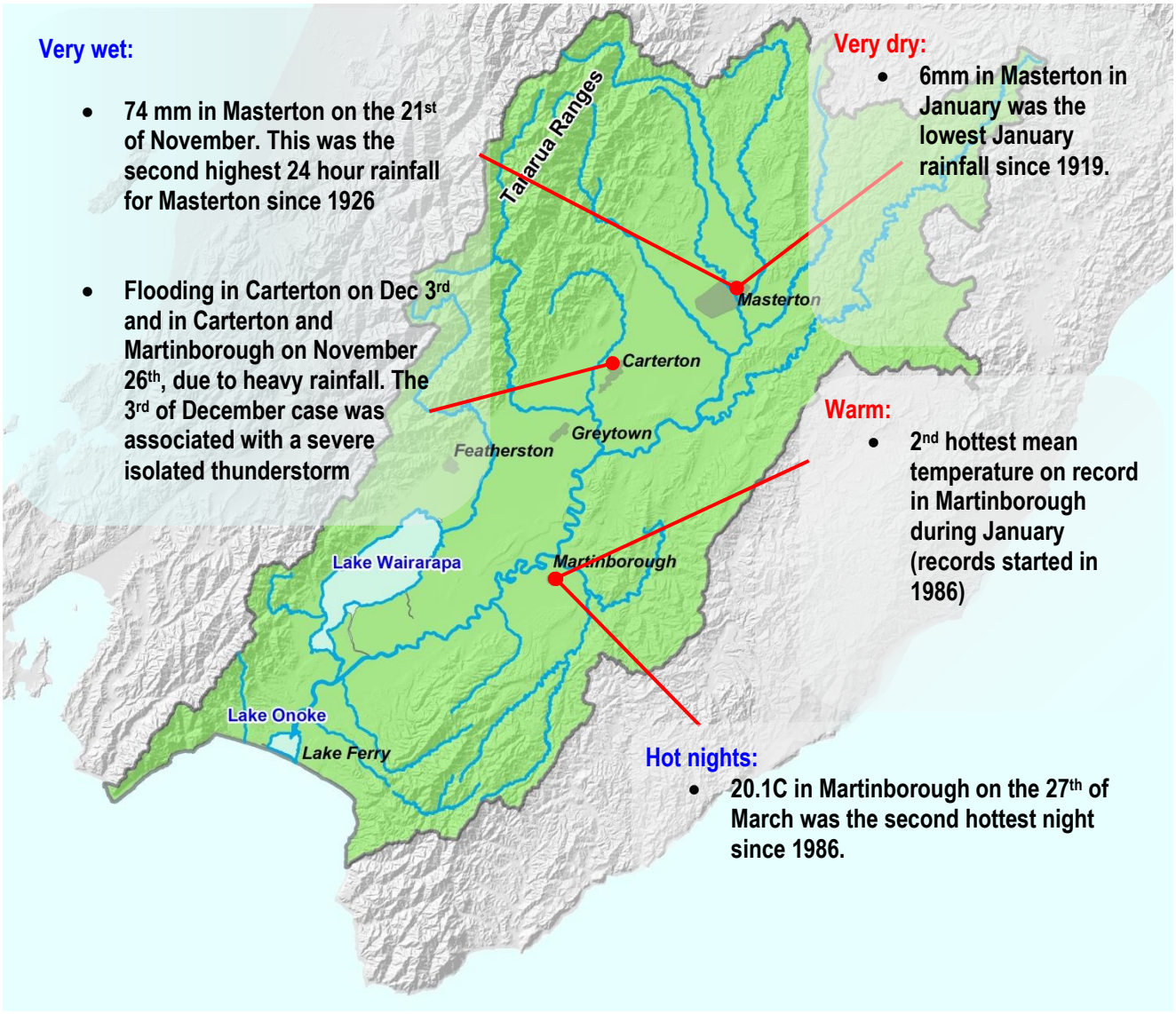


Want to look at the summary tables and graphs?

- Rainfall
- River flows

Ruamāhanga Valley climate summary

- **Wetter (high total accumulation, but swinging between extremes month to month).**
- **Warmer (much above average temperatures)**

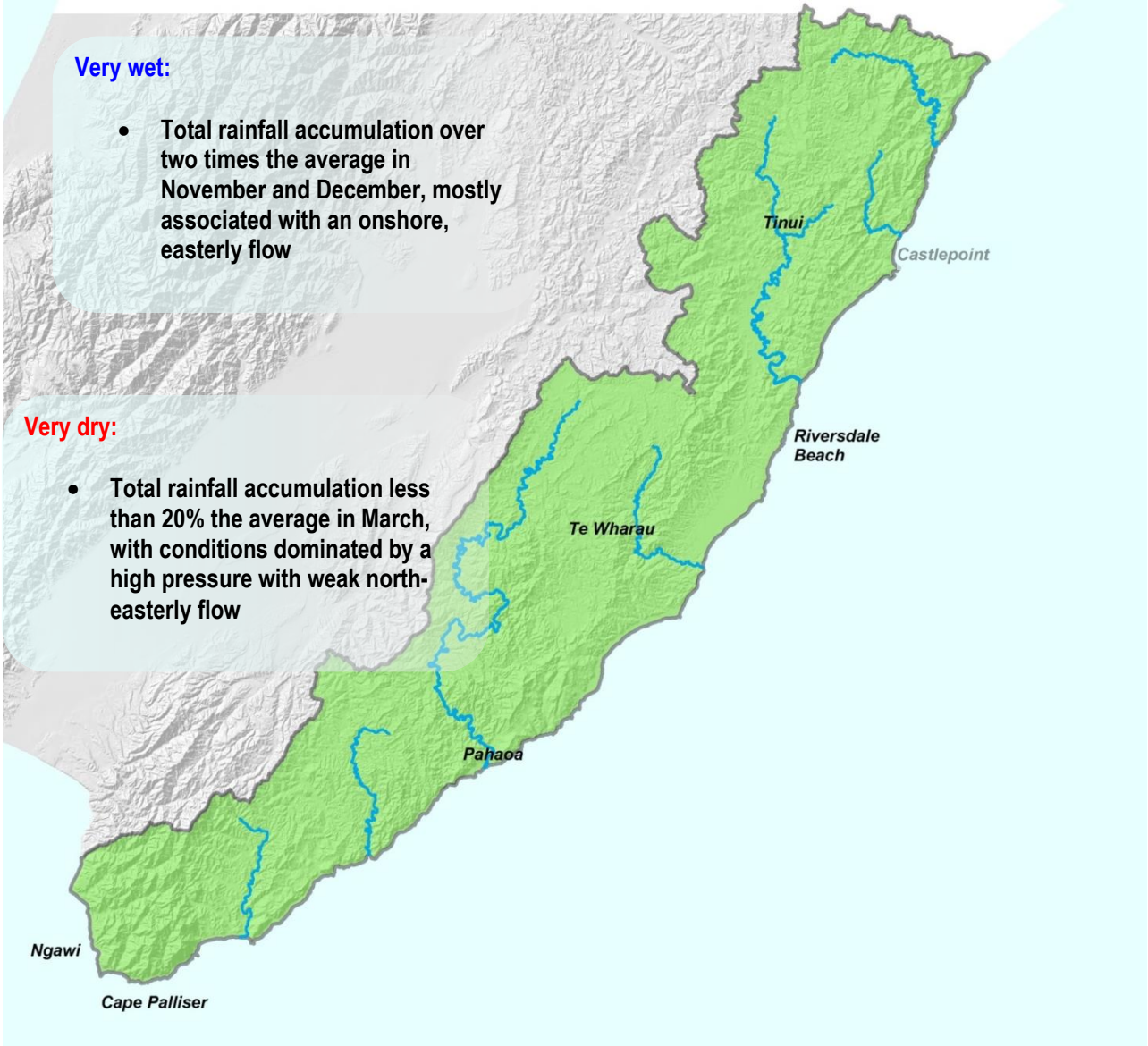


Want to look at the summary tables and graphs?

- Rainfall
- River flows

Wairarapa Coast climate summary

- **Wetter (high total accumulation, but swinging between extremes month to month).**
- **Warmer (much above average temperatures)**



Want to look at the summary tables and graphs?

- Rainfall
- Soil moisture

Rainfall statistics

Rainfall was variable over the individual six months in the Nov to Apr period, but ended up slightly less or near average in the west (Kapiti Coast) and high altitude Tararuas but above average elsewhere. Seasonal totals were especially high (relative to norms) in the south around the Wellington peninsula area and eastern hills of Wainuiomata.

Whaitua	Location	Nov %	Dec %	Jan %	Feb %	Mar %	Apr %	Nov-Dec (mm)	Nov-Dec %
Wellington Harbour & Hutt Valley Click to see cumulative rainfall plots	Kaitoke	117	100	47	102	58	137	924	95
	Lower Hutt	154	101	61	29	99	207	551	110
	Wainuiomata	235	91	86	48	54	217	938	127
	Karori	197	114	38	45	121	274	720	138
	Wellington	214	132	39	45	155	274	589	147
Te Awarua-o-Porirua Click to see cumulative rainfall plots	Battle Hill	202	119	45	60	165	152	665	124
	Whenua Tapu	148	115	35	31	146	199	500	111
	Tawa	174	106	51	38	132	253	560	125
Kāpiti Coast Click to see cumulative rainfall plots	Otaki	26	22	109	265	193	152	458	95
	Waikanae	26	30	78	239	136	152	518	89
	Paekakariki	184	93	23	51	107	135	507	98
	Tararua (Otaki headwaters)	131	101	84	110	58	133	2423	104
Ruamāhanga Click to see cumulative rainfall plots	Masterton	303	247	17	109	25	92	446	120
	Featherston	203	217	48	70	52	165	603	129
	Longbush	234	220	31	107	46	139	486	131
	Tararua (Waiohine headwaters)	114	97	84	86	53	89	1741	88
Wairarapa Coast Click to see cumulative rainfall plots	Tanawa Hut	367	203	85	69	12	131	697	136
	Ngaumu	226	126	12	52	26	127	397	94

Click the following links to return to climate summaries for:

- Wellington Harbour & Hutt Valley
- Te Awarua-o-Porirua
- Kāpiti Coast
- Ruamāhanga
- Wairarapa Coast

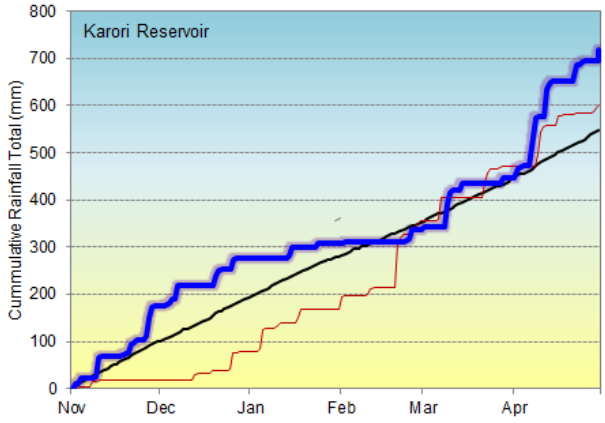
Cumulative rainfall plots

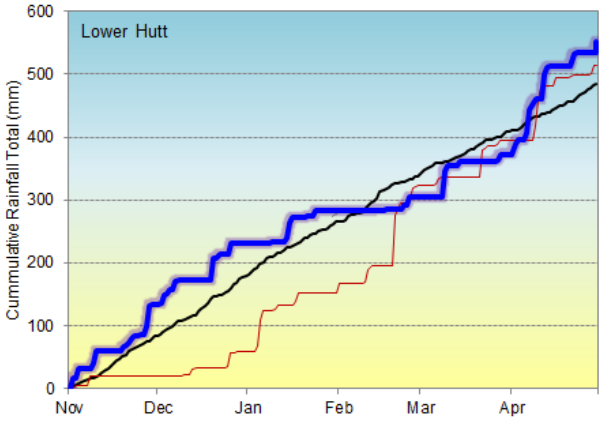
Cumulative rainfall totals for the November to April 2019 period are detailed for various rain gauges sites across the regional whaitua areas, as denoted by the blue trace on the following plots. November to April 2018 period is denoted by the red trace and the black trace represents the long-term average rainfall accumulation.

Wellington and Hutt Valley

The plots highlight that the rainfall accumulation during the November to April 2019 period was a little above average in the Hutt Valley and more significantly so in Wellington.

Periods of highest rainfall accumulation are evident on both shoulders of the season and the contrast with the previous year for the Nov-Dec period is particularly notable.

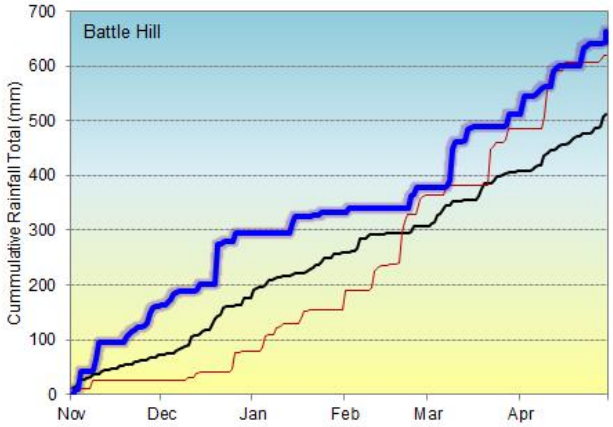


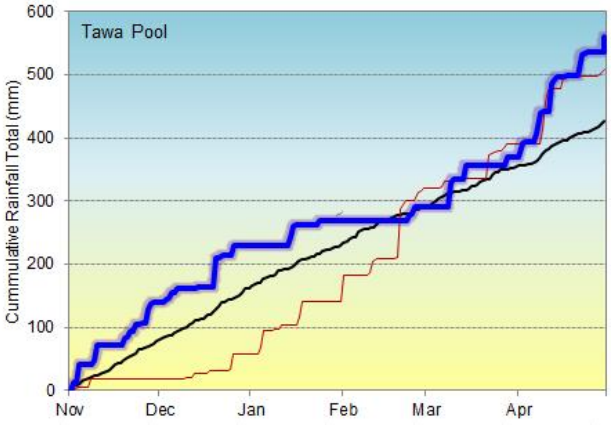


Porirua Harbour

The plots show that the pattern of rainfall accumulation over the November to April 2019 period at the two sites within the Te Awarua-o-Porirua whaitua area were quite similar, with notably higher than average rainfall occurring throughout the season. Again, the beginning of the season (Nov-Dec) contrasts starkly with the previous year.

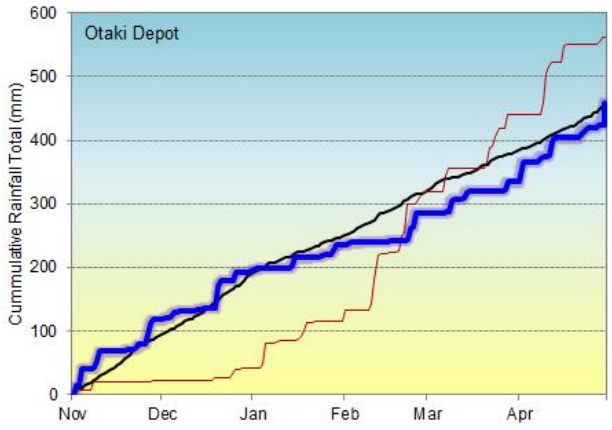
Rainfall for the period was around 25% greater than average.

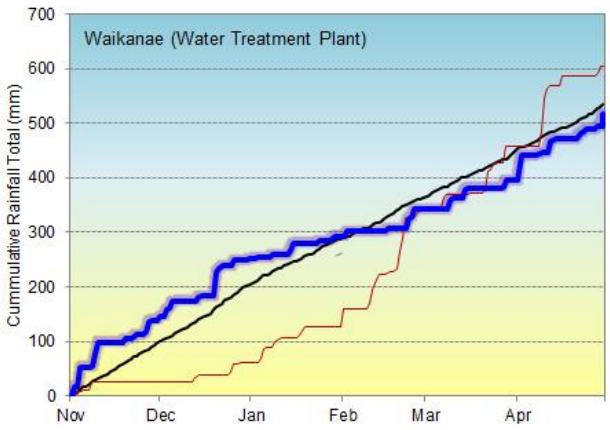




Kāpiti Coast

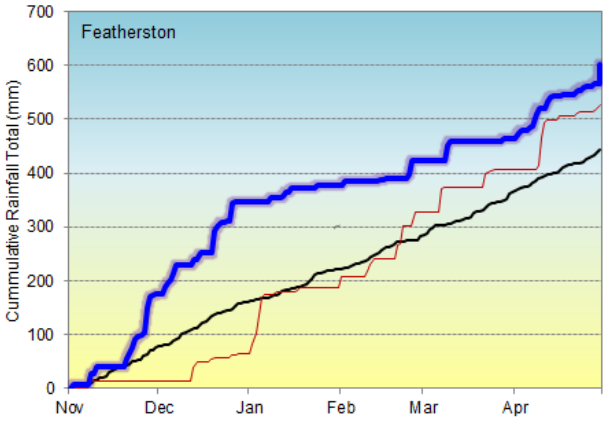
Rainfall accumulations on the Kapiti Coast were very close to normal in terms of both the pattern of accumulation (steady and consistent) and the eventual seasonal totals.

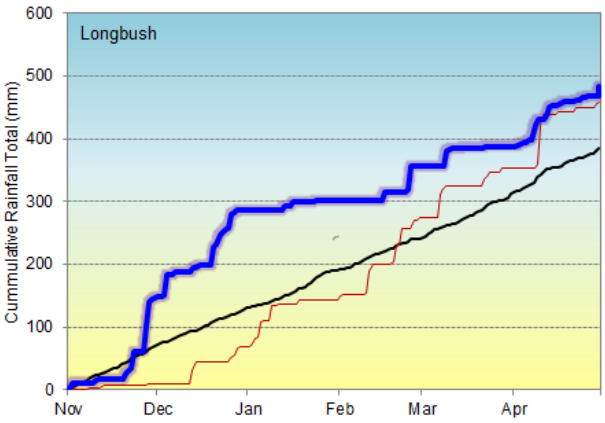




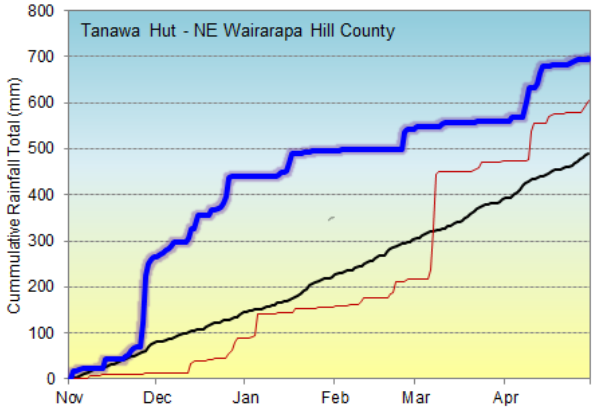
Ruamāhanga

Rainfall accumulations in the Ruamahanga Valley were quite notable. Accumulations were very high in Nov and Dec (opposite to the previous year) and then steadied to a more normal pattern with seasonal totals well above (100-200mm) normal.





Wairarapa Coast



The Tanawa Hut rain gauge in the eastern Wairarapa hills showed quite an exceptional pattern of rainfall. Accumulations were so high in Nov and Dec that the average seasonal total had been more or less reached by the new year. While Jan and Feb were relatively dry the seasonal total wound up being about 30% higher than usual.

River flows - averages

The average river flows over the November to April period were within 20-30% of normal at most sites. Kapiti Coast stood out as having lower than normal seasonal flows and the eastern Wairarapa coast for having much higher seasonal flows than normal. Individual months were very variable with a general pattern of higher than normal flows early in the season (November especially) and lower than normal later in the season (February especially).

		Flow as a percentage of average						
Whaitua	**River**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**Nov-Apr**
Wellington Harbour & Hutt Valley	Hutt River - Kaitoke	127	87	59	67	52	121	90
	Hutt River - Taita Gorge	124	87	50	48	50	103	83
	Akatarawa River	98	66	48	51	60	103	74
	Mangaroa River	148	128	64	41	52	91	98
	Waiwhetu Stream	132	143	95	54	80	167	116
	Wainuiomata River	176	99	65	46	50	172	110
Te Awarua-o-Porirua	Porirua	154	131	98	60	116	225	137
	Pauatahanui	153	231	97	53	91	127	136
	Horokiri	150	104	50	24	103	138	98
Kāpiti Coast	Waitohu	95	53	67	65	84	106	76
	Otaki	106	50	56	66	59	83	71
	Mangaone	83	57	73	80	118	110	82
	Waikanae	122	71	49	41	46	77	73
Ruamāhanga	Kopuaranga	152	194	65	30	31	35	91
	Waingawa	114	139	72	52	38	65	85
	Waiohine	114	99	67	69	47	81	84
	Mangatarere	160	256	63	35	19	62	108
	Tauherenikau	118	141	65	63	45	113	96
	Otukura	181	333	151	85	86	80	165
	Ruamāhanga	143	181	82	51	36	57	100
Wairarapa Coast	Pahaoa	520	888	90	14	6	47	188

Click the following links to return to climate summaries for:

- Wellington Harbour & Hutt Valley
- Te Awarua-o-Porirua
- Kāpiti Coast
- Ruamāhanga
- Wairarapa Coast

River flows – lowest

Minimum river and stream flows recorded during the Nov to Apr 2019 period. Flows did not get particularly low this season and no significant or record events occurred.

Whaitua	River	Minimum Flow		
		Flow (m^3/s)	Date	Comment
Wellington Harbour & Hutt Valley	Hutt (Kaitoke)	1.167	15-February	
	Hutt (Taita Gorge)	3.312	15-February	
	Akatarawa	1.27	8-February	
	Mangaroa	0.345	15-February	
	Wainuiomata	0.179	1-March	
Te Awarua-o-Porirua	Porirua	0.191	28-February	
	Pauatahanui	0.138	15-February	
	Horokiri	0.089	28-February	
Kāpiti Coast	Waitohu	0.109	19-February	
	Otaki	5.487	8-February	
	Mangaone	0.193	8-February	
	Waikanae	0.987	20-March	
Ruamāhanga	Kopuaranga	0.332	17-February	
	Waingawa	1.154	15-February	
	Waiohine	3.38	15-February	
	Mangatarere	0.123	20-March	
	Tauherenikau	1.184	8-February	
	Otukura	0.123	26-March	
	Ruamāhanga (Upper)	2.067	14-February	
	Ruamāhanga (Lower)	7.679	15-February	
Wairarapa Coast	Pahaoa	0.144	26-March	

** Analyses have been completed on provisional data which may be subject to change once it is processed and archived.*

Click the following links to return to climate summaries for:

- Wellington Harbour & Hutt Valley
- Te Awarua-o-Porirua
- Kāpiti Coast
- Ruamāhanga
- Wairarapa Coast

River flows – highest

Maximum river and stream flows recorded during the Nov to April 2019 period. The estimated return period is given for each event. Most peak flows were well under those expected to occur on average at least once a year. The only exception was a relatively significant event in the Pahaoa catchment on 27 November 2018 when a peak flow with an return period of about five years occurred.

Whaitua	River	Maximum Flow		
		Flow (m^3/s)	Date	Return Period (years)
Wellington Harbour & Hutt Valley	Hutt (Kaitoke)	104	9 November	<1
	Hutt(Taita Gorge)	345	9 November	<1
	Akatarawa	98	9 November	<1
	Mangaroa	36	19 December	<1
	Waiwhetu	8	11 April	<1
	Wainuiomata	14	27 November	<1
Te Awarua-o-Porirua	Porirua	32	11 April	1
	Pauatahanui	29	2 December	<1
	Horokiri	9	8 March	<1
Kāpiti Coast	Otaki	437	9 November	<1
	Mangaone	3	9 November	<1
	Waikanae	82	9 November	<1
Ruamāhanga	Kopuaranga	42	27 November	<1
	Waingawa	153	26 November	<1
	Waiohine	308	26 November	<1
	Mangatarere	44	26 November	<1
	Tauherenikau	161	26 November	<1
	Otukura	6	27 November	<1
	Ruamāhanga (Upper)	268	26 November	<1
	Ruamāhanga (Lower)	849	27 November	<1
Wairarapa Coast	Pahaoa	611	27 November	5

** Analyses have been completed on provisional data which may be subject to change once it is processed and archived.*

Click the following links to return to climate summaries for:

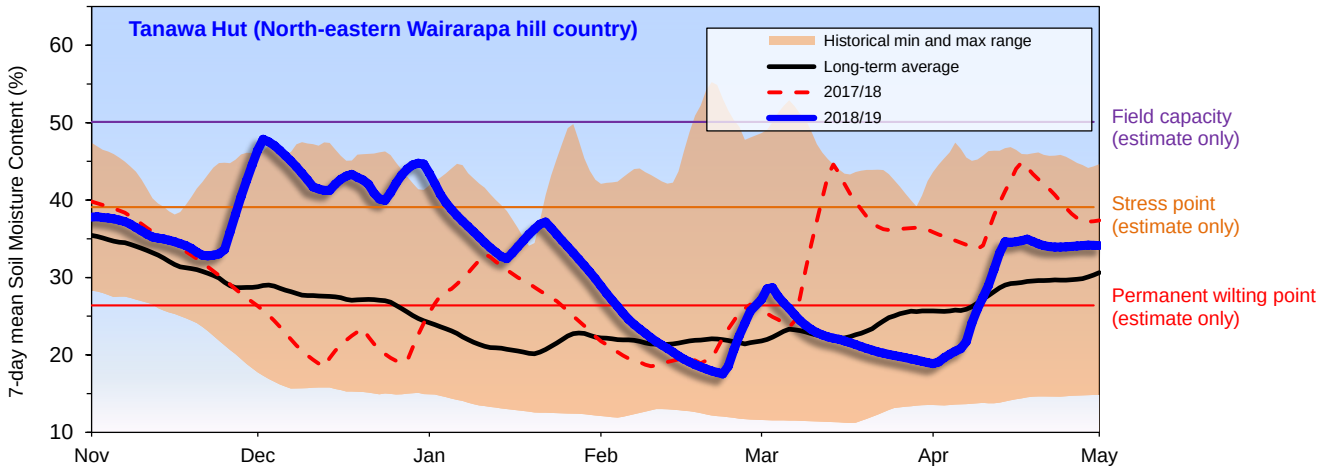
- Wellington Harbour & Hutt Valley
- Te Awarua-o-Porirua
- Kāpiti Coast
- Ruamāhanga
- Wairarapa Coast

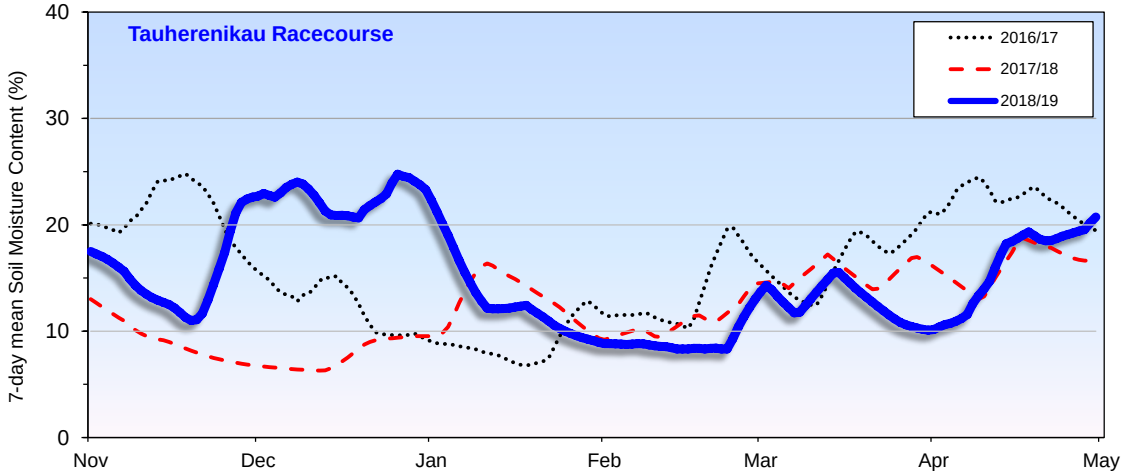
Soil moisture content

Wairarapa Coast

November to April 2019 soil moisture content at monitoring sites at Tanawa Hut in north-east Wairarapa (Wairarapa Coast whaitua) and Tauherenikau racecourse (Ruamāhanga whaitua) are plotted below.

Soil moisture was well above normal at both sites late in 2018, especially so at Tanawa Hutt where moisture levels were at historical highs during December. As conditions dried out in the new year moisture levels reduced to those more typically seen in summer months but remained well above historical lows.





Drought monitoring

GWRC maintains a drought check webpage with regional anomaly maps and links to live data across the region:

http://www.gwrc.govt.nz/drought-check/

Climate Briefings

Additionally to the extended water resources reports, the Environmental Science department, GWRC, also produces seasonal updates specifically targeting the farming community. Those can be accessed from the main Climate and Water Resource webpage:

http://www.gw.govt.nz/seasonal-climate-and-water-resource-summaries-2/

Environmental data

GWRC maintains a comprehensive online environmental data server feeding real time, live data across the region for several climatic and hydrological variables

http://graphs.gw.govt.nz

Interactive Climate Change Mapping

The Environmental Science department at GWRC has produced one of the first comprehensive climate change mapping tools publicly available in New Zealand. The online mapping tool is fully interactive and easy to understand, allowing users to plot over twenty different variables, projected over every available IPCC scenario for both mid and late century

https://mapping1.gw.govt.nz/gw/ClimateChange/

Sea level Rise Mapper (New)

The Environmental Science department at GWRC is also making available a comprehensive sea level rise (SLR) mapper for the whole region. The tool allows users to have a view of sea level rise impacts, for values between zero and 5m SLR, including the effects of storm surge for selected heights. We encourage community and stakeholders to use this tool as a first screening of likely impacts that the region will be dealing with, as sea levels continue to rise.

https://mapping1.gw.govt.nz/GW/SLR/

The Greater Wellington Regional Council's purpose is to enrich life in the Wellington Region by building resilient, connected and prosperous communities, protecting and enhancing our natural assets, and inspiring pride in what makes us unique

For more information contact the Greater Wellington Regional Council:

Wellington office
PO Box 11646
Manners Street
Wellington 6142

04 384 5708

Upper Hutt office
PO Box 40847
Upper Hutt 5018

04 526 4133

Masterton office
PO Box 41
Masterton 5840

06 378 2484

Follow the Wellington Regional Council

info@gw.govt.nz
www.gw.govt.nz