Hydrology information for the situation report – 30 April 2020

Current situation summary

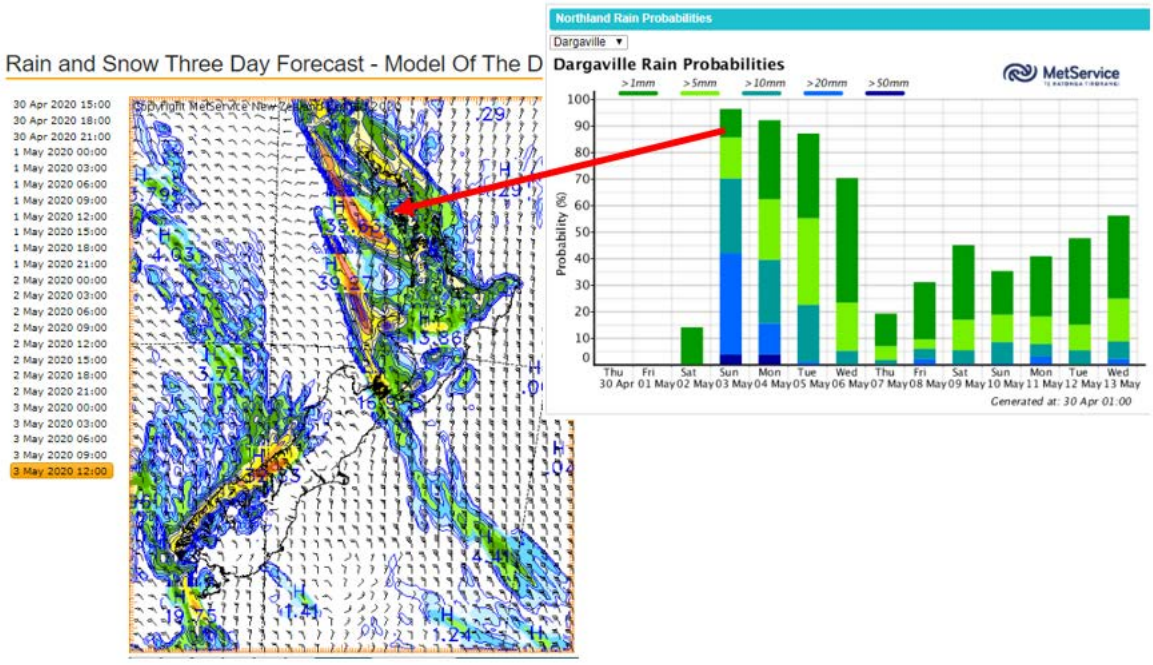
It was a good week for rainfall in the Whakapara catchment with a total of 81.5mm, which was well received as it has been one of the driest catchments through this drought. The Aupouri, Waitangi, Kerikeri catchments also got some decent rain with totals of 30-40mm for the week.

In contrast the western catchments from Lake Kaiiwi down to Pouto Peninsular and across to the Paparoas and Managwhai catchments had only 5-10mm of rainfall for the week and will be 30-40% below the normal April rainfall by the end of this month.

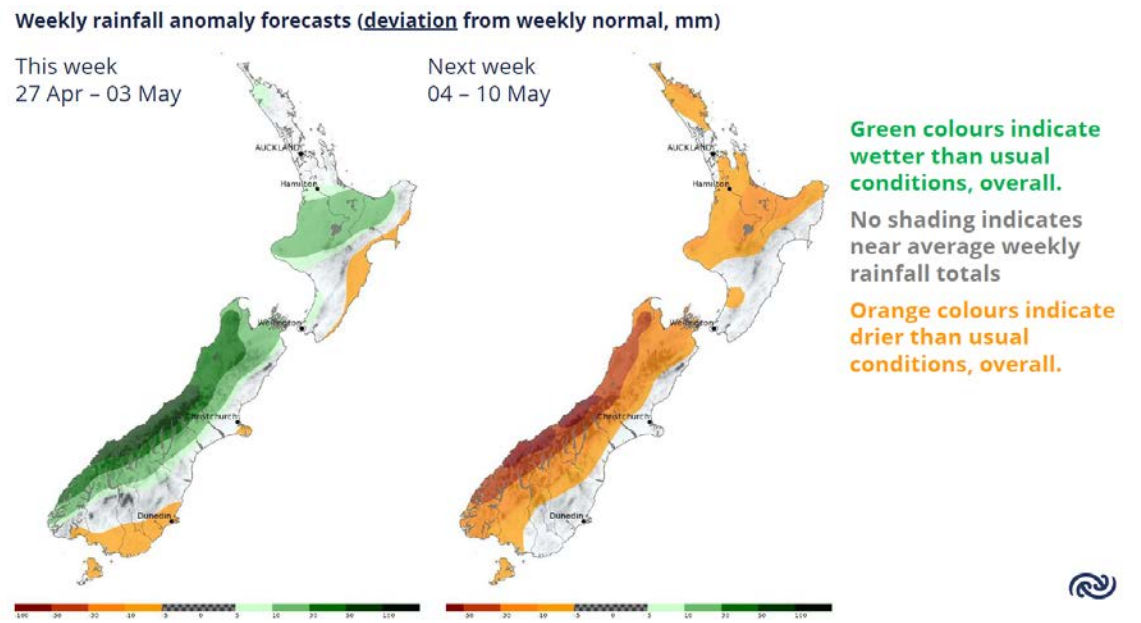
MetService Outlook

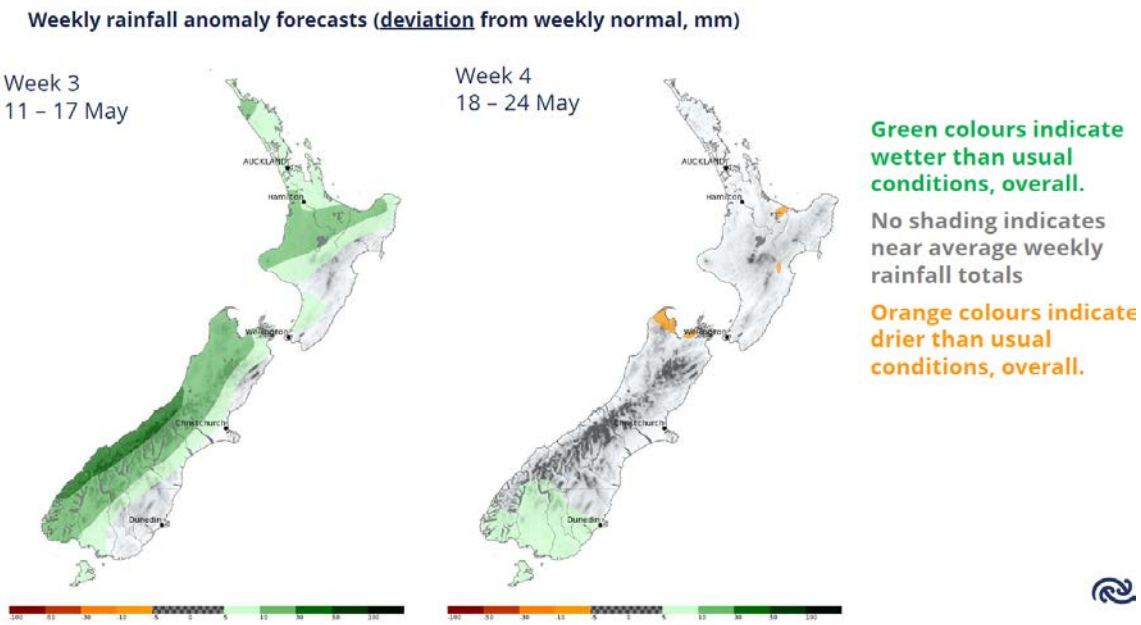
Short term: 3-5 days:

The MetService weather models are showing a front moving slowly east over the weekend, with north flowing humid air expected to generate some thunder cells across the Northland additional to potentially 8-12 hours of rain starting late Sunday.



Long range:



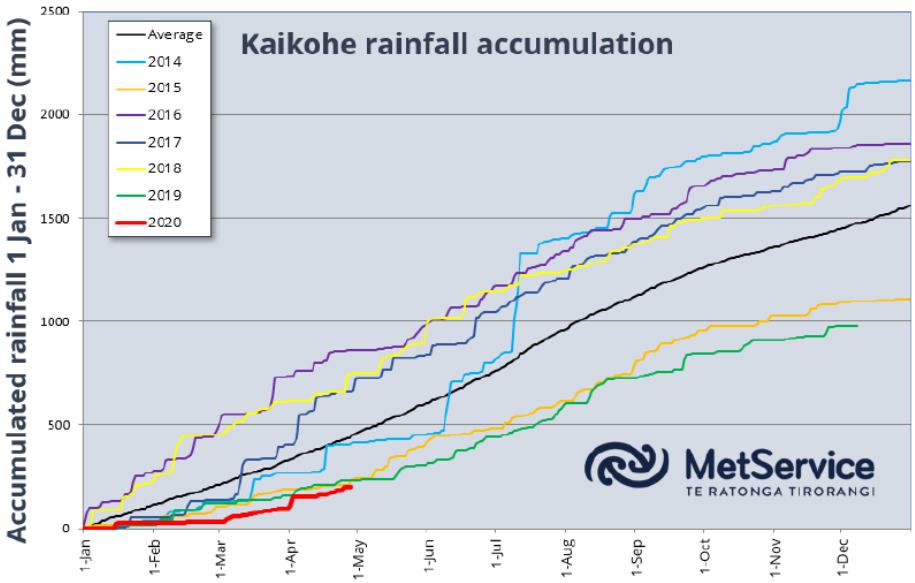


- Week two is expected to run rather dry, under cold southerlies.
- Week three remains highly uncertain*, with models showing a U-turn on previous “drier” predictions. The latest models show low pressures over the South Island, with a wetter than normal signal for Northland.
- There is very little confidence in week four predictions at the present time*.

Rainfall

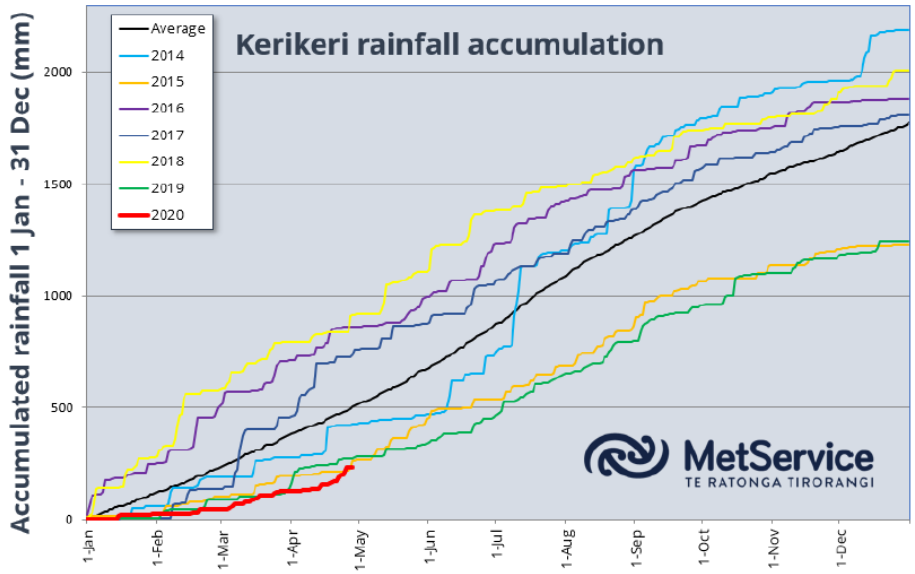
Rainfall for this year is currently tracking 40-47 % below normal levels, across all the main centres. Generally, Whangarei would have approximately 365 mm of rainfall in the bank by May each year. However, the total to date is well below; at only 140 mm.

Rainfall events this winter will determine how the regions rivers, aquifers and lakes cope with the following summer. By October 2020, rainfall totals for this year will need to be least 750 mm along the west coast and approximately 900-1000 mm along the east coast and in the Far North. A dry winter in 2018 preceded by a dry year in 2019 was the perfect setup conditions that tipped the region into one of the most severe droughts on record. Multiple storm events exceeding 100mm of rainfall are critical for the region this coming winter to claw back the enormous deficit the region is currently carrying



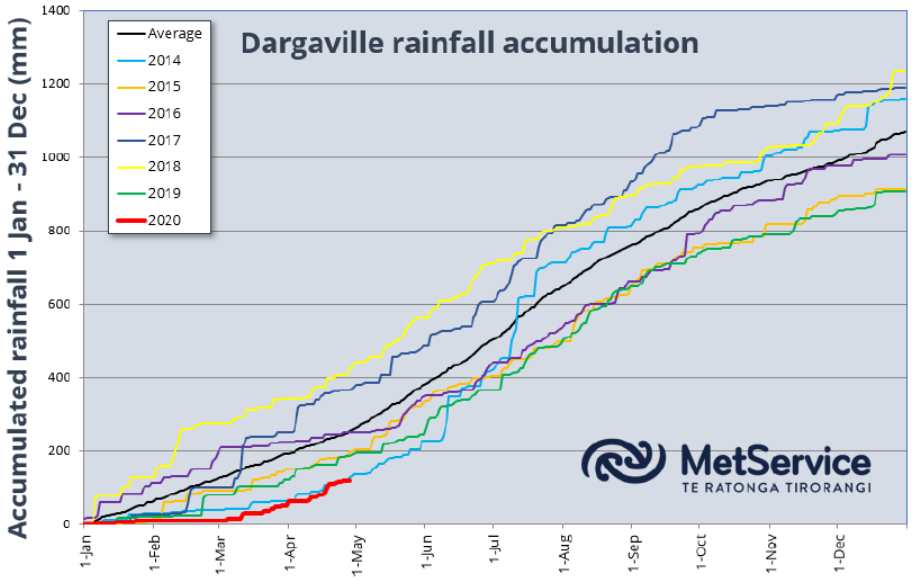
After some "decent" rain in Northland in the last 2 weeks, Kaikohe is sitting at **45% of year-to-date average rainfall**, as at 28 April.

Kaikohe has recorded 94mm of rain so far in April.



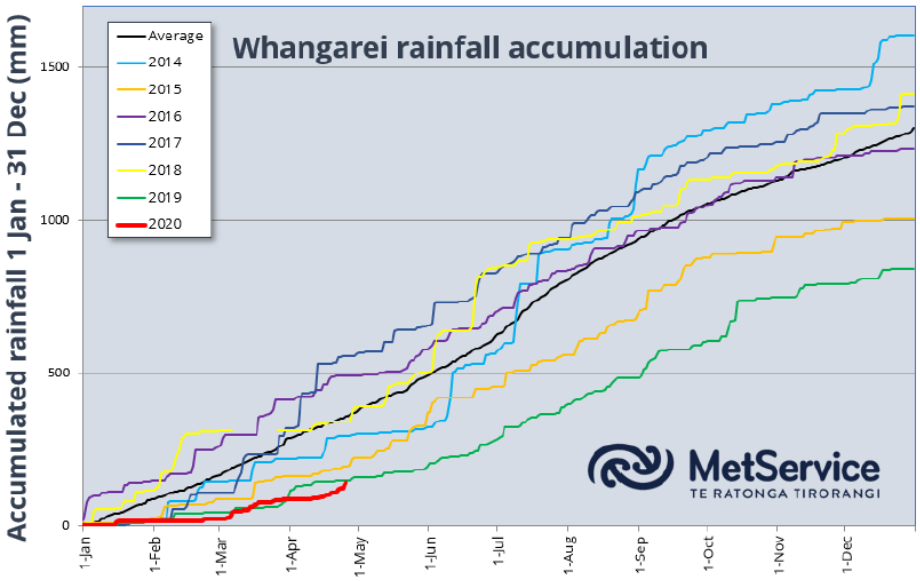
Kerikeri is sitting at **46% of year-to-date average rainfall,** as at 28 April.

Kerikeri has recorded 106mm of rain so far in April.



Dargaville is sitting at **47% of year-to-date average rainfall,** as at 28 April.

Dargaville has recorded 56mm of rain so far this month.



Whangarei is sitting at **40% of year-to-date average rainfall,** as at 28 April.

Whangarei Airport has recorded 56mm of rain so far this month.

Top three rainfall totals for each district from 23 April 2020 – 29 April 2020

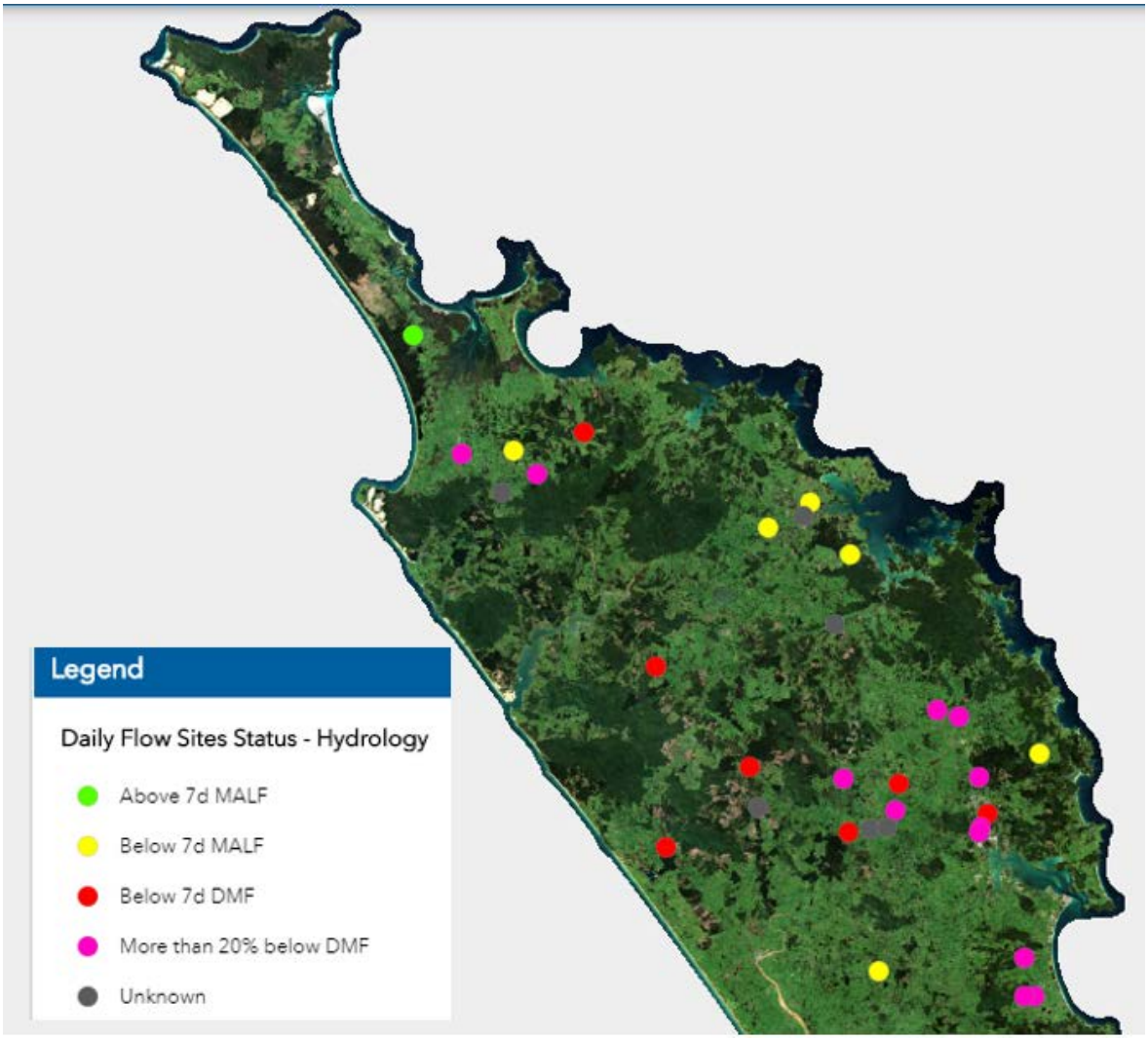
FNDC		WDC		KDC	
Kerikeri	43.5mm	Whakapara	81.5mm	Tutumoe Ranges	12.5mm
Ngataki	32.5mm	Hatea	25.5mm	Paparoa	11.0mm
Waitangi	29.0mm	Whangarei	18.2mm	Kaiiwi Lakes	7.0mm
CENTRES					
Kaitāia	1.3mm	Whangārei	20.0mm	Dargaville	2.2mm
Kaikohe	14.2mm				
Kerikeri	43.5				

River flows

The river flows were up for a few days from the rain over the week but have receded back down below drought flows. The east coast fractured greywacke systems are retaining the rain and holding the rivers up above the drought flows, highlighted with the yellow dots in the drought flow map below, but the remainder of the regions rivers are still running very low.

Public water supply river flows (litres per second: l/s) as of 12pm 29 April 2020					
FNDC		WDC		KDC	
Awanui	343	Hatea	77	Kaihu	584
Wairoro	6	Ruakaka	13		
Waitangi	686	Ahuroa	77		
Puketotara	144				
Petaka	3.2				

Drought flow map:



Groundwater levels

The Russell and Ruawai groundwater systems have begun to recover, water levels across the small east coast aquifers are a mixed bag with some recovering and others still decreasing. The Mangawhai, Poriiti and Manu aquifers are still declining.

The NRC Poriti groundwater station recorded the lowest water level for March since records began in 1981, the data indicates April is likely to be a record low month.

Soil moisture deficits

NA