NIWA Climate Briefing to National Adverse Events Committee

Ben Noll – NIWA National Climate Centre

1 September 2021

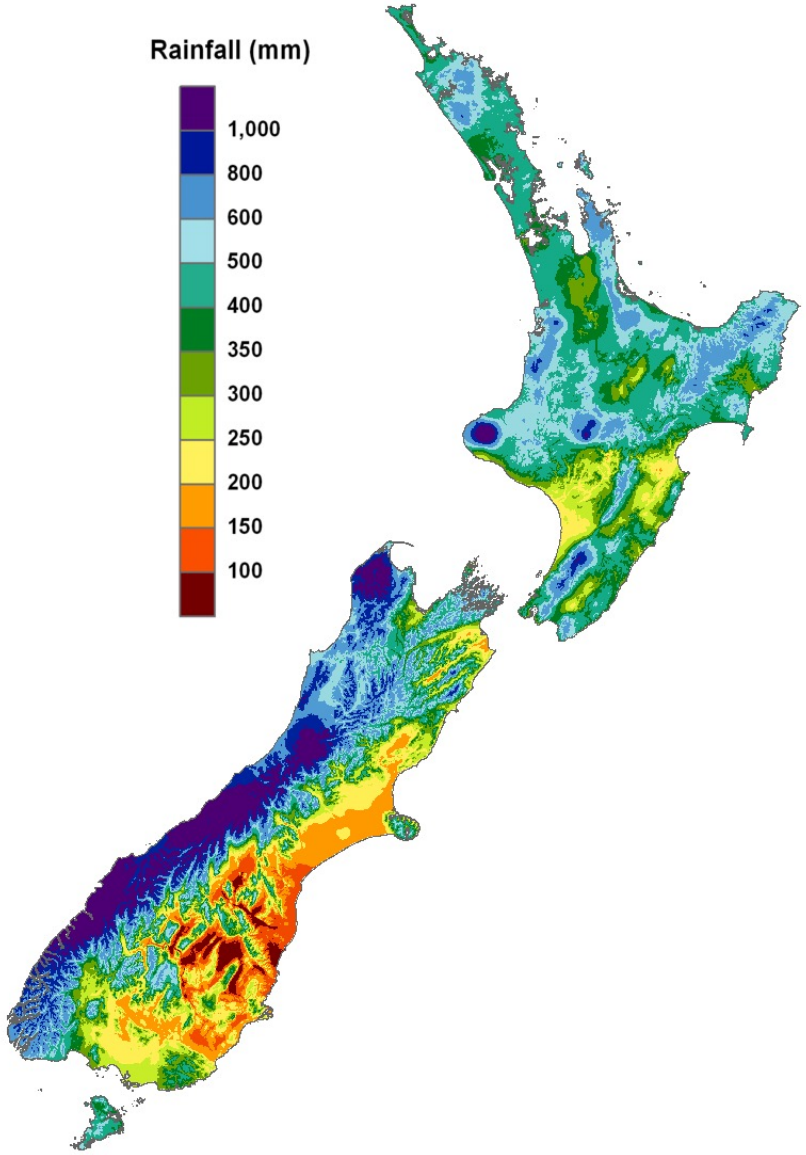
Climate, Freshwater & Ocean Science

NIWA
Taihoro Nukurangi

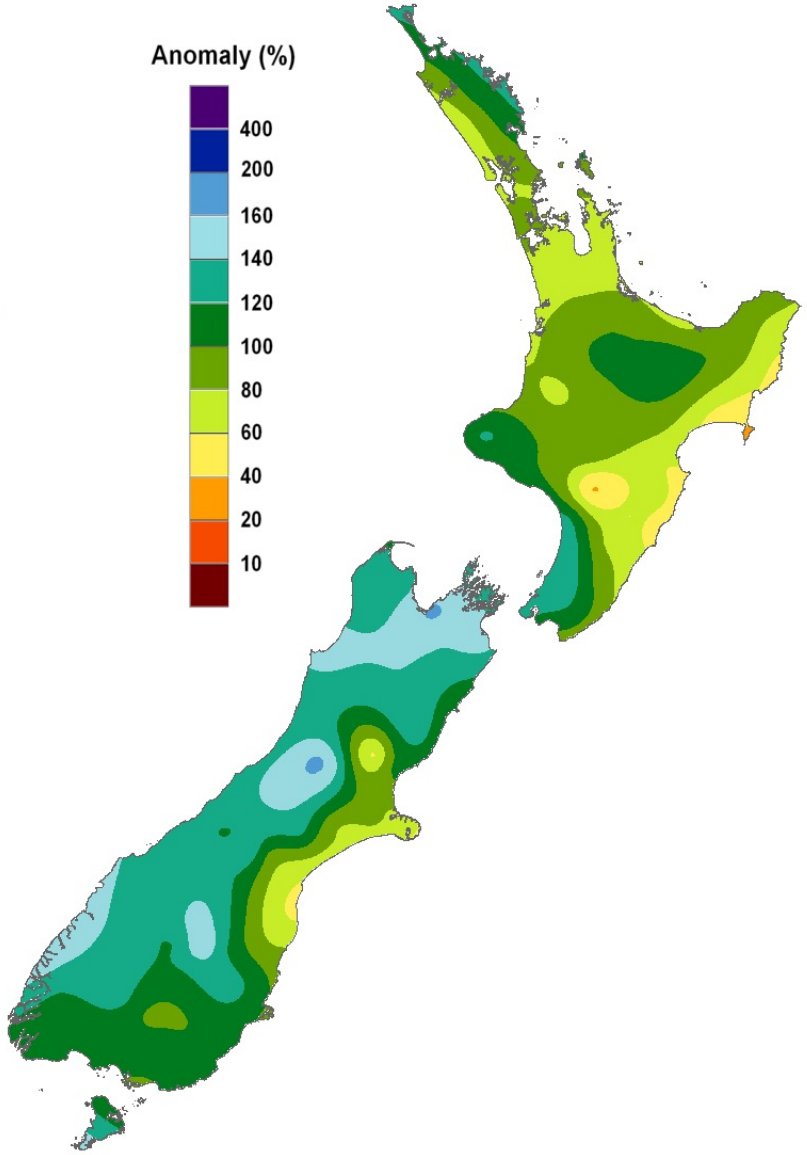
Key messages

- **Recent rainfall** - slide 3: winter rainfall was below normal in Auckland, northern Waikato, Gisborne, Hawke's Bay, and Mid/South Canterbury.
- **Soil moisture** - slide 4: soil moisture levels were, for the most part, recharged over winter, although Hawke's Bay is an exception.
- **Soil moisture deficit** – slide 5: compared to this time last year, soil moisture levels are higher in the eastern South Island (irrigation may not need to start as early) but a little lower in Hawke's Bay.
- **River flows** - slide 6: river flows are below in parts of the eastern and northern North Island following only modest winter rainfall. The South Island has above normal flows for the most part.
- **Seasonal rainfall Sep-Nov** - slide 7: the chance for a drier than normal spring season is elevated for many regions of the country, especially the east of the North Island. Lengthy dry spells, atypical for the season, will be possible. The west of the South Island looks like an exception with near normal rainfall most likely.
- **Seasonal temperatures Sep-Nov** - slide 8: the trend of warmer than average temperatures is set to continue. Spring is known for its ups and downs; a warmer spring could come with earlier and more frequent 20-25 degree days. Brief but sharp cold snaps / frosts (e.g. 8-10 September) possible – early growth followed by any cold could be a concern.
- **Five-week rainfall** - slide 9: a dry start to September will be followed up with a more unsettled week 2. Week 3 favours a return to drier patterns.
- **Early look at Nov-Jan** – slide 10: this shows the analog years, or past years with climatic similarities to the present year, for November 2021-January 2022. The analogs favour a dry and warm end to spring and start to summer. Note that several of these years featured drought. 2020 is the strongest analog year at present.

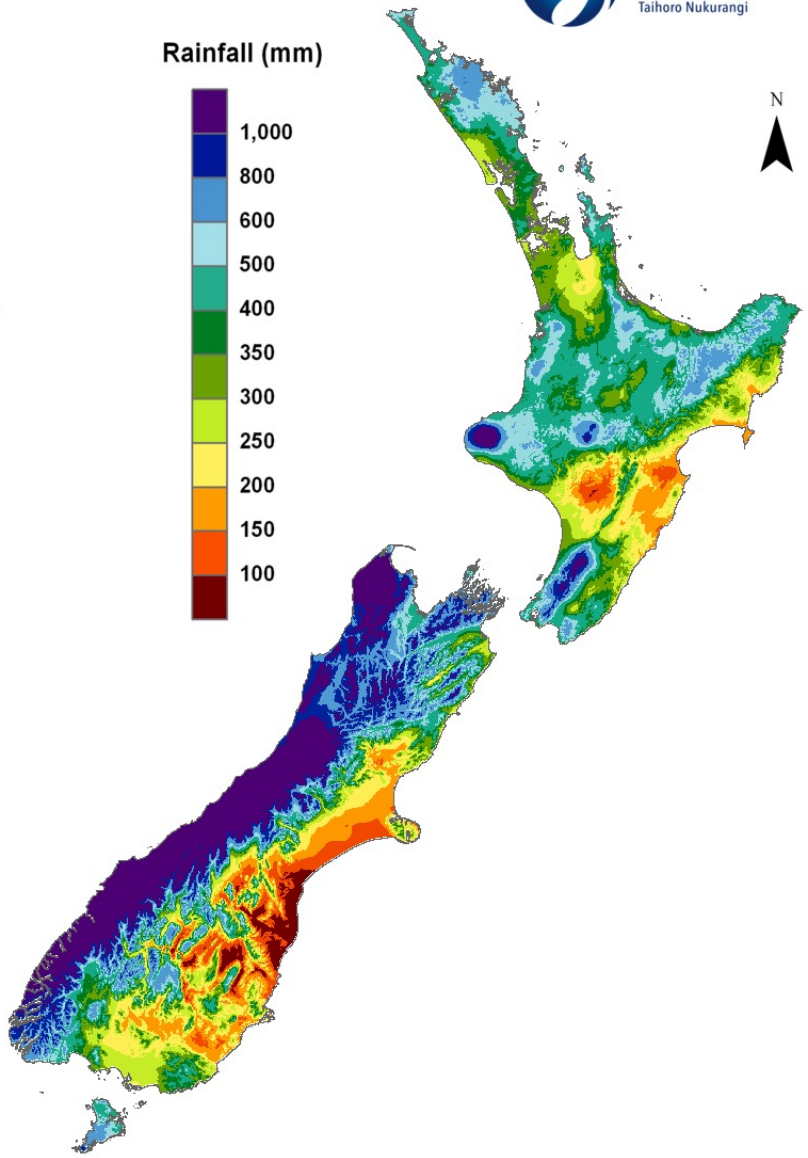
Winter 2021 rainfall



Average Rainfall,
9am 01/06 to 9am 31/08
(Based on a 30 year climatology: 1981-2010)

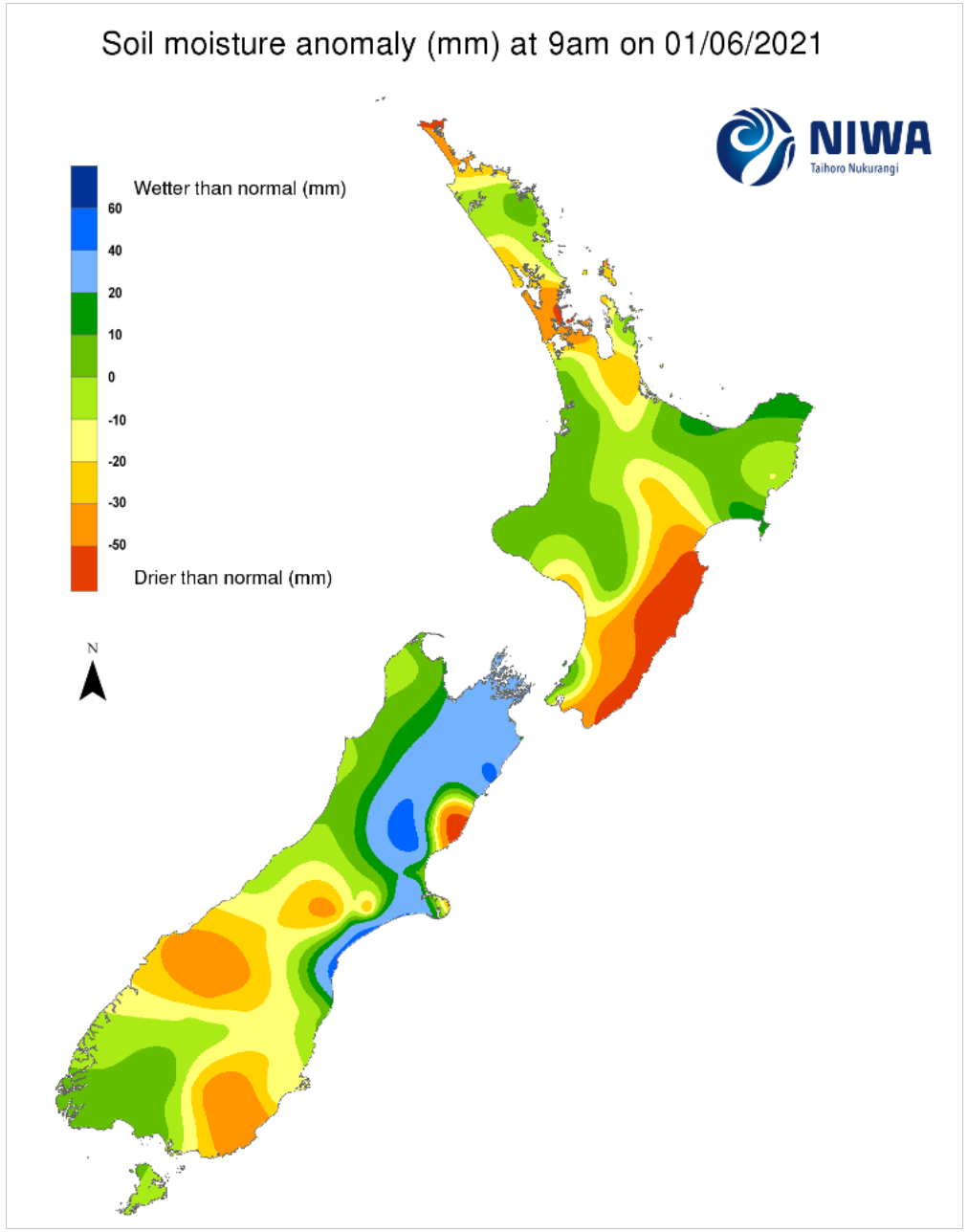


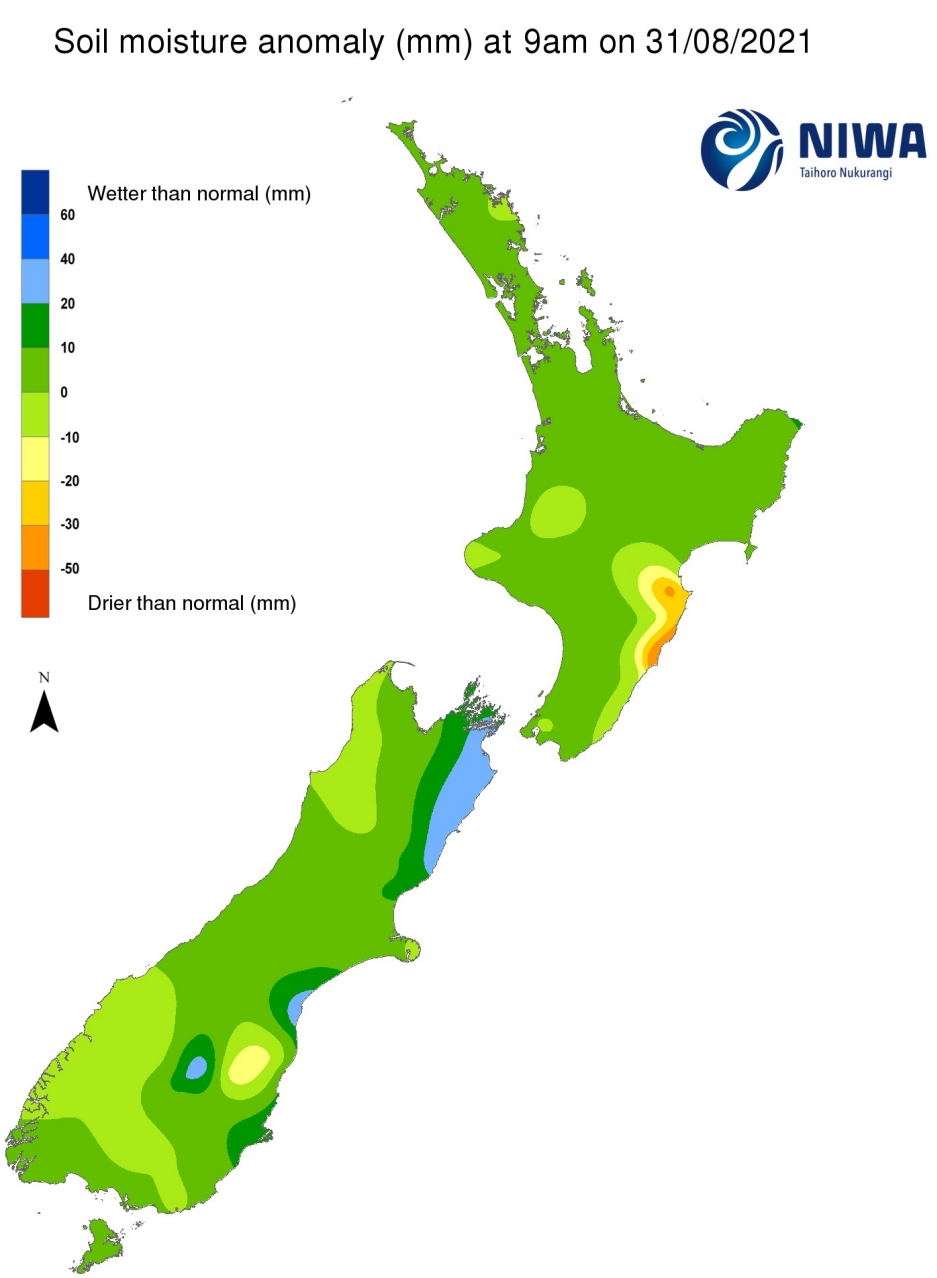
Rainfall Anomaly,
9am 01/06/2021 to 9am 31/08/2021



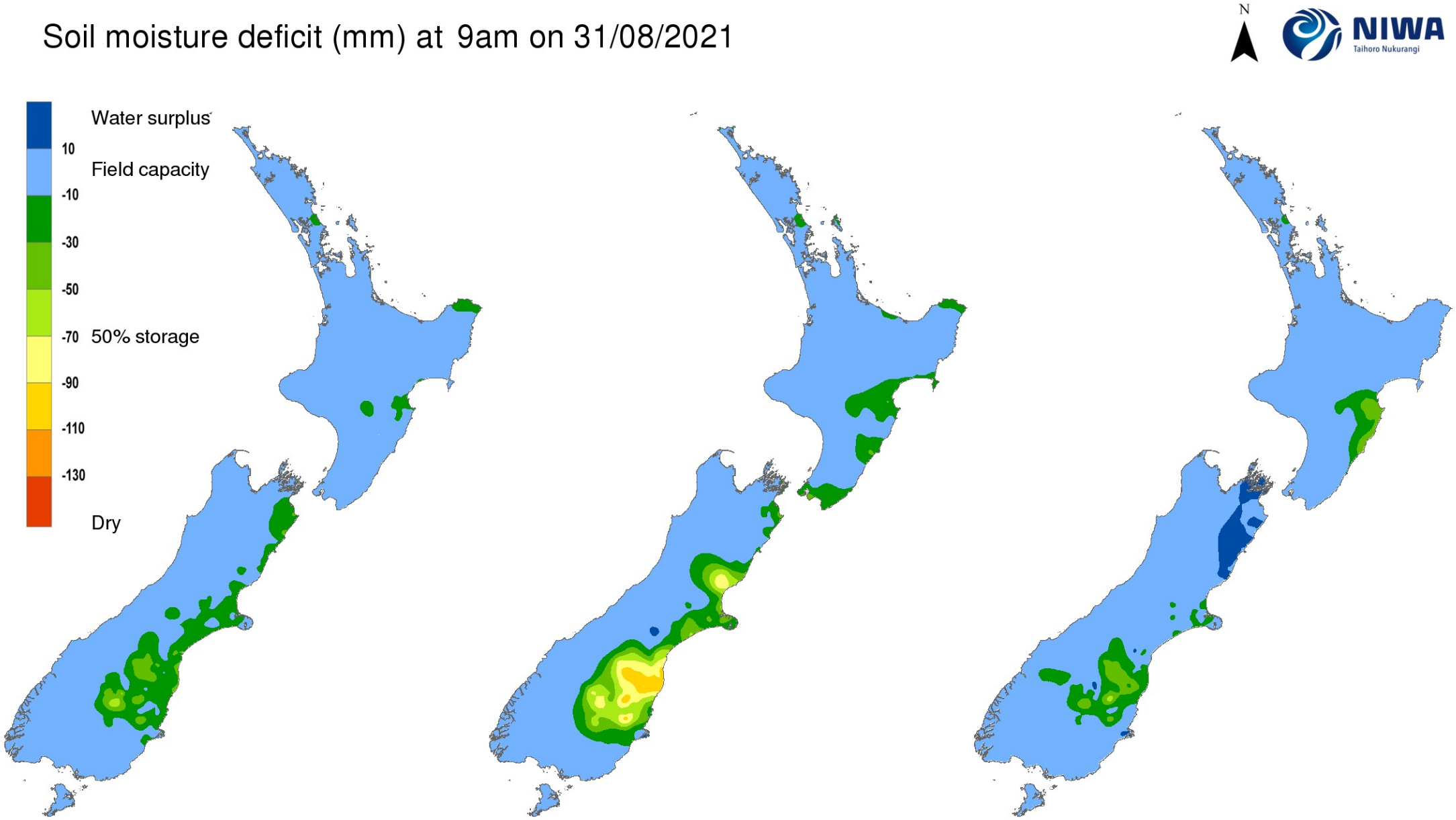
Observed Rainfall,
9am 01/06/2021 to 9am 31/08/2021

Soil moisture anomaly – 1 Jun 2021 vs 31 Aug 2021

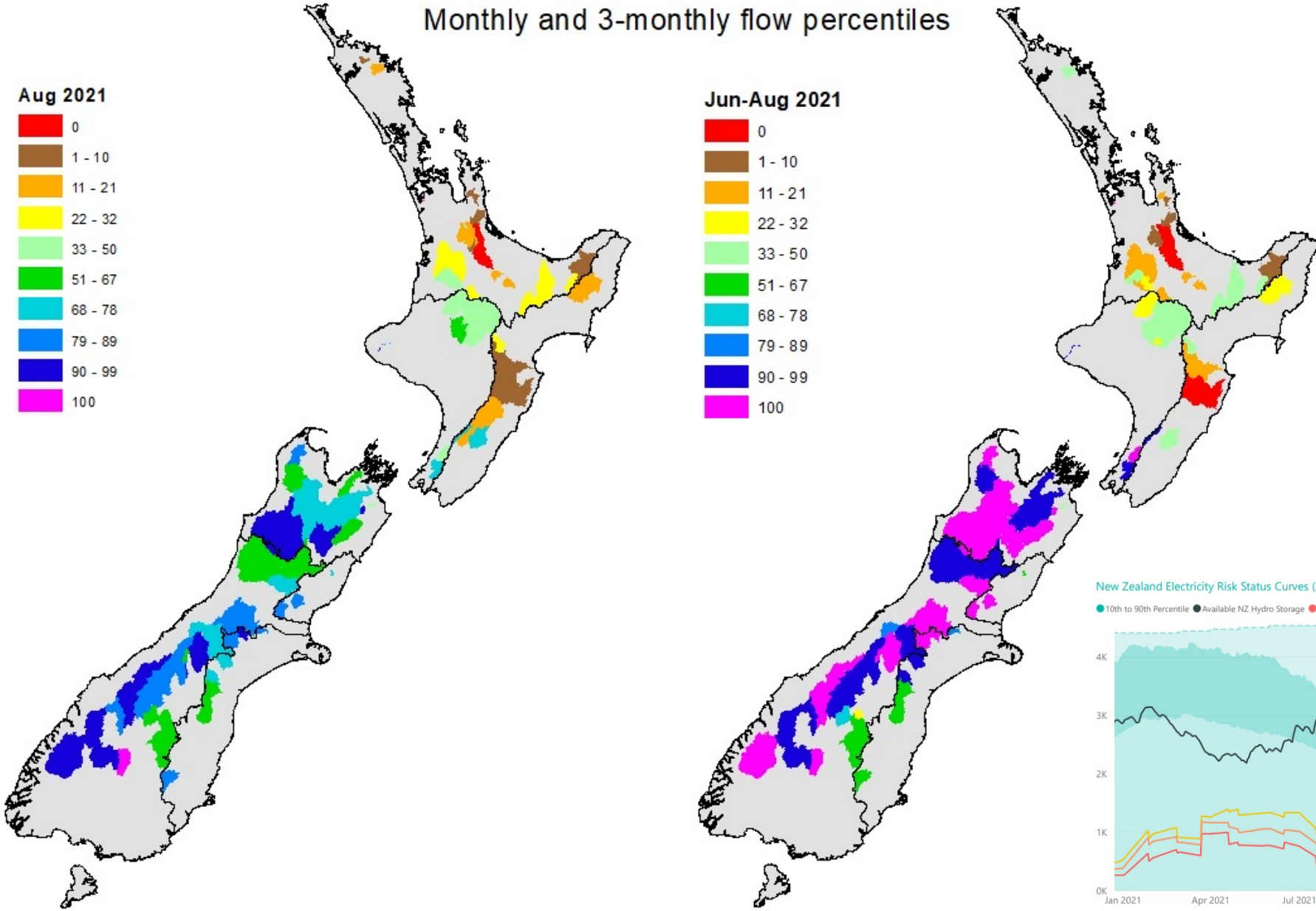


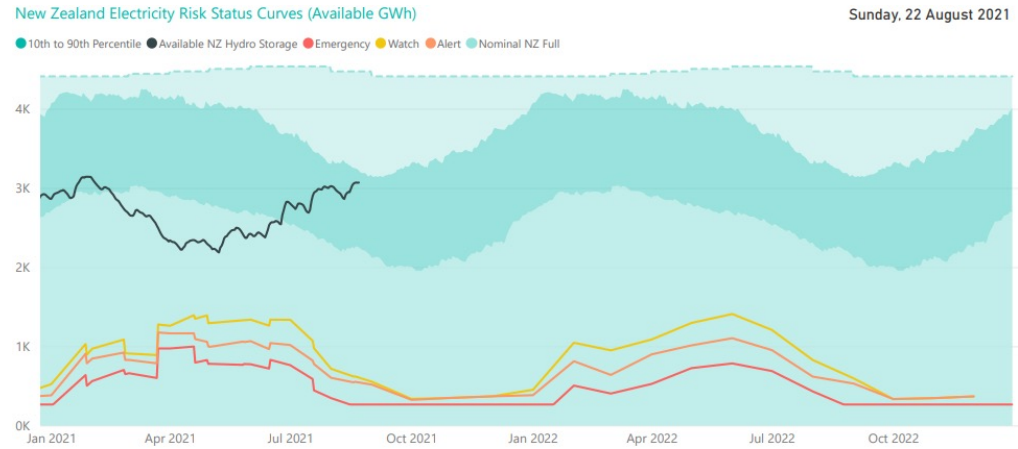


Soil moisture deficit – average vs last year vs this year



Monthly and 3-monthly flow percentiles



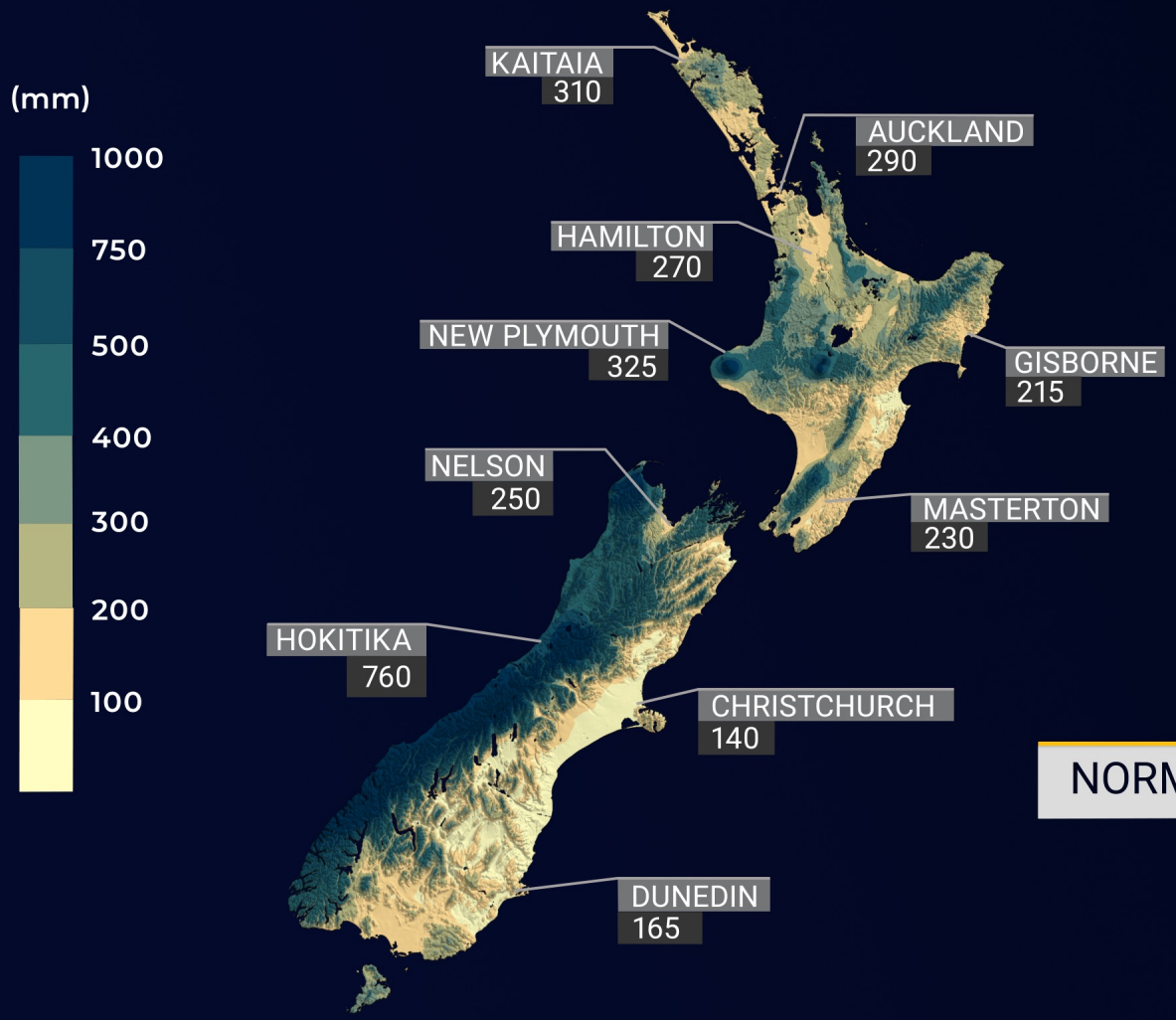


Flow data provided by NIWA and regional councils from archived and provisional real time sources.

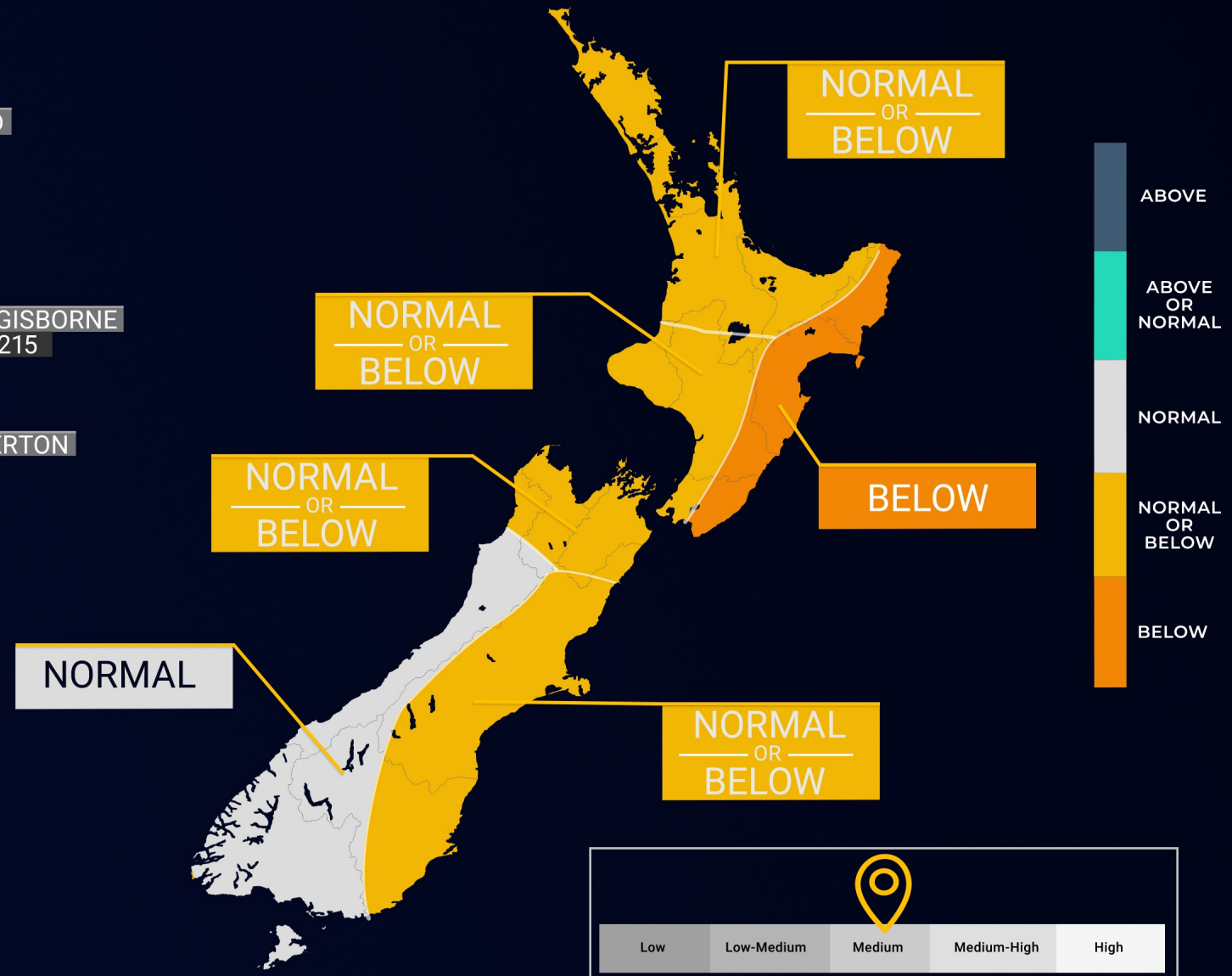
Map generated on 27 August 2021

LONG TERM NORMAL RAINFALL

(1981-2010)



FORECAST RAINFALL



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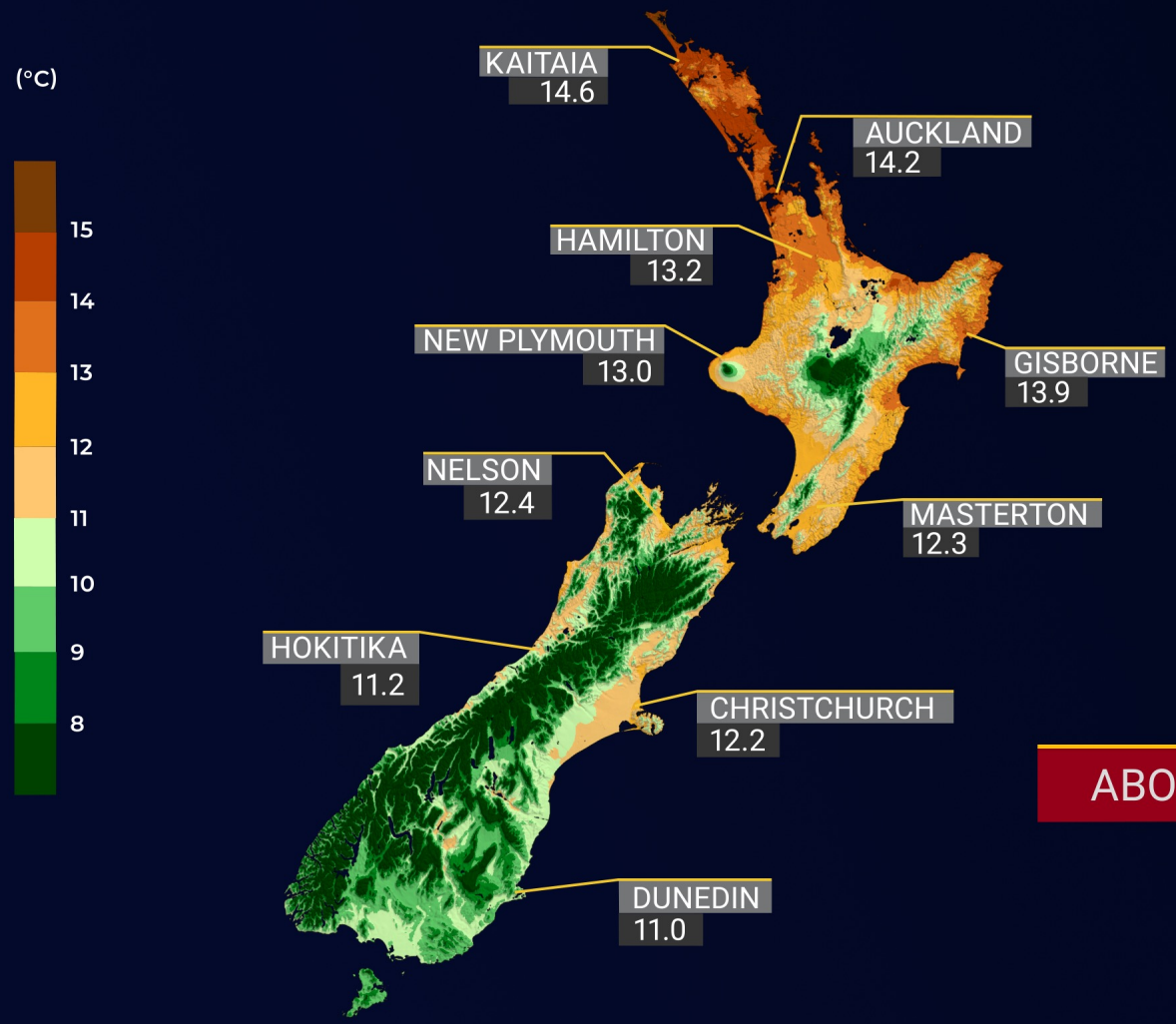
SEASONAL CLIMATE OUTLOOK

SEPTEMBER - NOVEMBER 2021

LONG TERM AVERAGE TEMPERATURE

(1981-2010)



FORECAST TEMPERATURE

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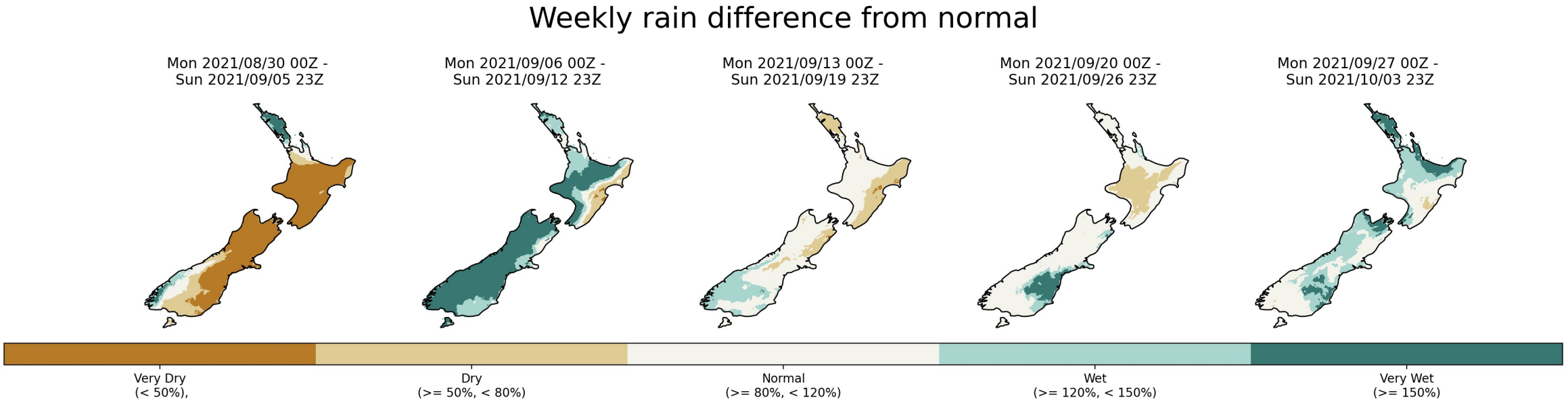
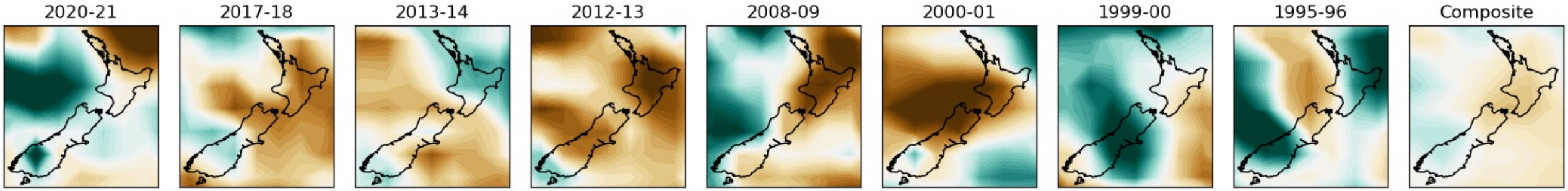
SEASONAL CLIMATE OUTLOOK

SEPTEMBER - NOVEMBER 2021

Rainfall as a difference from normal – next 5 weeks

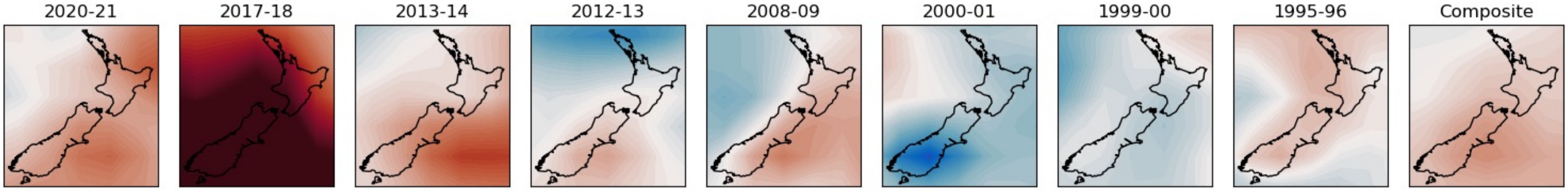


Early look: November-January rainfall and temperature, based on analogs



Green = above normal rain
Brown = below normal rain

Analog average



Red = above average temps
Blue = below average temps