



March – May 2020

Issued: 27 February 2020

Hold mouse over links and press **ctrl + left click** to jump to the information you require:

[Outlook Summary](#)

Regional predictions for the next three months

[Northland, Auckland, Waikato, Bay of Plenty](#)

[Central North Island, Taranaki, Whanganui, Manawatu, Wellington](#)

[Gisborne, Hawke's Bay, Wairarapa](#)

[Tasman, Nelson, Marlborough, Buller](#)

[West Coast, Alps and foothills, inland Otago and Southland](#)

[Coastal Canterbury, east Otago](#)

[Background](#)

[Contacts](#)

[Notes to reporters and editors](#)

NIWA Outlook: March – May 2020

Outlook Summary

- ENSO-neutral conditions continued during February 2020. The Southern Oscillation Index (SOI) was within the neutral range (-0.2) while sea surface temperatures (SSTs) in the central Pacific were also in the neutral range.
- Oceanic ENSO-neutral conditions will most likely persist (70% chance) over the next three months.
- Warmer than average ocean waters in the Coral Sea and west-central Pacific Ocean are expected to have an influence on New Zealand's climate during March-May.
- When the climate drivers described above are active, northerly quarter air flows could bring an increase in humidity, moisture, and rainfall to New Zealand; one such period could occur during March.
- New Zealand's air temperatures are expected to be pushed in a warmer direction by above average sea surface temperatures near the North Island and in the Tasman Sea over the upcoming three months.
- March – May 2020 air pressure is forecast to be lower than normal to the northwest of New Zealand and at times near the South Island. This is expected to be associated with mixed westerly and northeasterly quarter air flow anomalies.
- Temperatures are mostly likely to be above average in the North Island and about equally likely to be above average or near average in the South Island.

- Rainfall is expected to be near normal in all regions of New Zealand except for the north and west of the South Island where normal or above normal rainfall is about equally likely.
- The tropical Southwest Pacific will be intermittently active during March and April. Four tropical cyclones (Uesi, Vicky, Wasi, Esther) occurred during February and Uesi passed near New Zealand. Significant rainfall, damaging winds, and coastal damage can occur if an ex-tropical cyclone passes near the country.

March – May 2020 temperatures are most likely to be above average (50-55% chance) in the North Island and about equally likely to be near average (40-45% chance) or above average (40-45%) in the South Island. Early autumn is expected to have periods of summer-like warmth and humidity, especially in the North Island.

March – May 2020 rainfall is most likely to be near normal (45% chance) in all regions of New Zealand except for the north and west of the South Island where near normal (40% chance) or above normal (35% chance) rainfall is about equally likely. During periodic northeasterly quarter air flow patterns, the country will be exposed to moist and humid conditions from the sub-tropics. This may be associated with heavy rainfall events.

March – May 2020 soil moisture and river flows are most likely to be below normal in the north of the North Island (50% chance) and east of the South Island (45% chance). Soil moisture and river flows are about equally likely to be near normal or below normal in the west and east of the North Island (35-40% chance). Soil moisture levels are about equally likely to be near normal or below normal in the north of the South Island (35-40% chance) with near normal river flows most likely (40% chance). In the west of the South Island, above normal soil moisture and river flows are most likely (45% chance).

Regional predictions for March – May 2020

Northland, Auckland, Waikato, Bay of Plenty

The table below shows the probabilities (or percent chances) for each of three categories: above average, near average, and below average. In the absence of any forecast guidance there would be an equal likelihood (33% chance) of the outcome being in any one of the three categories. Forecast information from local and global guidance models is used to indicate the deviation from equal chance expected for the coming three-month period, with the following outcomes the most likely (but not certain) for this region:

- Temperatures are most likely to be above average (55% chance).
- Rainfall totals are most likely to be near normal (45% chance).
- Soil moisture levels and river flows are most likely to be below normal (50% chance).

The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	River flows
Above average	55	25	20	20
Near average	35	45	30	30
Below average	15	30	50	50

Central North Island, Taranaki, Whanganui, Manawatu, Wellington

Probabilities are assigned in three categories: above average, near average, and below average.

- Temperatures are most likely to be above average (50% chance).
- Rainfall totals are most likely to be near normal (45% chance).
- Soil moisture levels and river flows are about equally likely to be near normal (40% chance) or below normal (35% chance).

The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	River flows
Above average	50	35	25	25
Near average	35	45	40	40
Below average	15	20	35	35

Gisborne, Hawke's Bay, Wairarapa

Probabilities are assigned in three categories: above average, near average, and below average.

- Temperatures are most likely to be above average (50% chance).
- Rainfall totals are most likely to be near normal (45% chance).
- Soil moisture levels and river flows are about equally likely to be near normal (40% chance) or below normal (35% chance).

The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	River flows
Above average	50	30	25	25
Near average	35	45	40	40
Below average	15	25	35	35

Tasman, Nelson, Marlborough, Buller

Probabilities are assigned in three categories: above average, near average, and below average.

- Temperatures are about equally likely to be near average (40% chance) or above average (45% chance).
- Rainfall totals are about equally likely to be near normal (40% chance) or above normal (35% chance).
- Soil moisture levels are about equally likely to be near normal (40% chance) or below normal (35%) while river flows are most likely to be near normal (40% chance).

The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	River flows
Above average	45	35	25	30
Near average	40	40	40	40
Below average	15	25	35	30

West Coast, Alps and foothills, inland Otago, Southland

Probabilities are assigned in three categories: above average, near average, and below average.

- Temperatures are about equally likely to be near average (40% chance) or above average (40% chance).
- Rainfall totals are about equally likely to be near normal (40% chance) or above normal (35% chance).
- Soil moisture levels and river flows are most likely to be above normal (45% chance).

The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	River flows
Above average	40	35	45	45
Near average	40	40	35	35
Below average	20	25	20	20

Coastal Canterbury, east Otago

Probabilities are assigned in three categories: above average, near average, and below average.

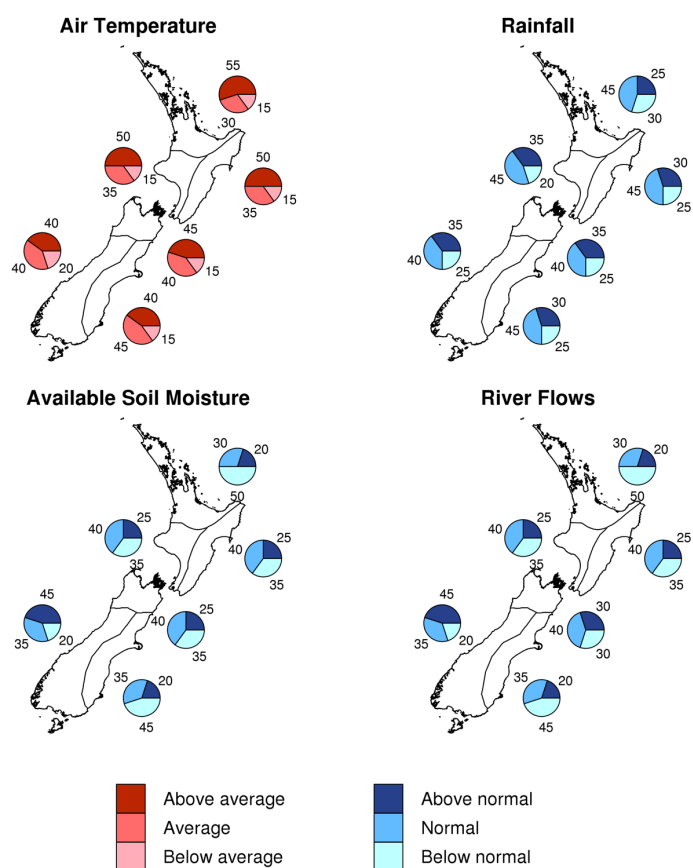
- Temperatures are about equally likely to be near average (45% chance) or above average (40% chance).
- Rainfall totals are most likely to be near normal (45% chance).
- Soil moisture levels and river flows are most likely to be below normal (45% chance).

The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	River flows
Above average	40	30	20	20
Near average	45	45	35	35
Below average	15	25	45	45

Graphical representation of the regional probabilities

Outlook for March - May 2020



Background

The NINO3.4 Index anomaly (in the central Pacific) for February 2020 (to the 23rd) was +0.30°C (in the neutral range). The warmest ocean waters with respect to average continued to be located in the west-central Pacific, with the NINO4 region recording a monthly value of +0.80°C (in the El Niño range).

During February 2020, upper-oceanic heat content remained above average near the International Date Line and increased slightly across the east-central Pacific. The warmest sea surface temperatures (SSTs) (30-32°C) worldwide were located near the International Date Line and thus anomalous high rainfall and convection is expected there during the upcoming three month period.

Trade winds were weaker than normal near and west of the International Date Line during February, allowing the west-central Pacific warm pool to persist. During March, weaker than normal trade winds are expected to persist in the west-central Pacific while enhanced trade winds are possible in the east-central part of the basin. This should lead to the persistence of the current SST pattern (warmer west, cooler east).

According to the consensus from international models, ENSO-neutral conditions are most likely (70% chance) for the March – May period. For the June – August period, the probability for ENSO-neutral conditions is 57%. ENSO-neutral (39% chance) and El Niño (37%) chance are then about equally likely during September – November.

During February, New Zealand’s coastal water temperatures were near or above average around the North Island and east of the South Island, and near or slightly below average in the north and west of the South Island. All regions experienced an increase compared to January. SSTs also increased across the Tasman and Coral Seas. Warm and humid northerly quarter air flows during March are expected to result in additional ocean warming around New Zealand.

New Zealand Coastal Sea Surface Temperatures during February 2020 (to the 25th):

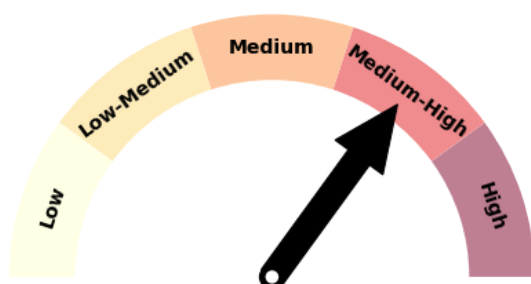
North NI	West NI	East NI	North SI	West SI	East SI
0.22°C	-0.07°C	+0.78°C	0.10°C	-0.10°C	+0.47°C

The Southern Annular Mode (SAM) was quite variable during February. The SAM could turn more negative during the second week of March as a trough of low pressure develops in the Tasman Sea which could be associated with an increase in the chance for rain across New Zealand.

The Madden Julian Oscillation (MJO) was active over the western Pacific Ocean and eastern Maritime Continent, or phases 4-6, during February in response to a warm pool of water there. This was associated with the formation of four tropical cyclones in the Southwest Pacific (Uesi, Vicky, Wasi, and Esther). During March, convection is forecast to reemerge over and west of the International Date Line as well as the Maritime Continent. Additional tropical or sub-tropical cyclones are possible in the Coral Sea and tropical Southwest Pacific, which could send moisture toward New Zealand.

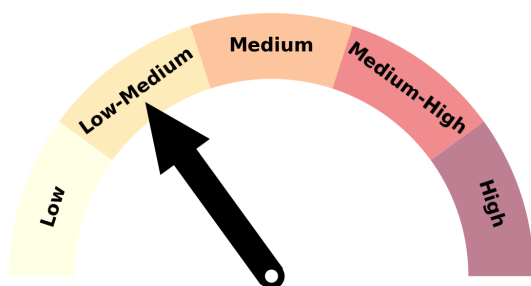
Forecast Confidence

Temperature



Forecast confidence for temperature is medium to high. A very warm and humid start to the autumn season is expected with frequent northerly quarter air flows. Thus, above average coastal sea surface temperatures are expected, which will influence air temperatures upward. A cooler than average autumn appears quite unlikely.

Rainfall



Forecast confidence for rainfall is low to medium. The lack of strong climate drivers (ENSO-neutral, variable SAM, unclear tropical influence) makes this a particularly challenging forecast. Many models lean in a wetter direction for autumn, but drier than normal conditions have now persisted for several months in the New Zealand region and there is a concern that this could continue for at least a part of the upcoming season.

For comment, please contact

Chris Brandolino, Principal Scientist – Forecasting and Media, NIWA National Climate Centre

Tel (09) 375 6335, Mobile (027) 886 0014

Ben Noll, Meteorologist/Forecaster, NIWA National Climate Centre

Tel (09) 375 6334, Mobile (027) 405 3052

Notes to reporters and editors

1. NIWA's outlooks indicate the likelihood of climate conditions being at, above, or below average for the season as a whole. They are not 'weather forecasts' as it is not possible to forecast precise weather conditions three months in advance.
2. The outlooks are the result of the expert judgment of NIWA's climate scientists. They take into account observations of atmospheric and ocean conditions and output from global and local climate models. The presence of El Niño or La Niña conditions and the sea surface temperatures around New Zealand can be a useful indicator of likely overall climate conditions for a season.
3. The outlooks state the probability for above average conditions, near average conditions, and below average conditions for rainfall, temperature, soil moisture, and river flows. When a particular probability reaches or exceeds 60%, we conclude it is "very likely".
4. This three-way probability means that a random choice would be correct only 33 per cent (or one-third) of the time. It would be like randomly throwing a dart at a board divided into three equal parts, or throwing a dice with three numbers on it.
5. Each month, NIWA publishes an analysis of how well its outlooks perform. This is available online. See www.niwa.co.nz/our-science/climate/publications/all/cu
6. All outlooks are for the three months as a whole. There will inevitably be wet and dry days, and hot and cold days, within a season. The exact range in temperature and rainfall within each of the three categories varies with location and season. However, as a guide, the "near average" or middle category for the temperature predictions includes deviations up to $\pm 0.5^{\circ}\text{C}$ for the long-term mean, whereas for rainfall the "near normal" category lies between approximately 80 per cent and 119 per cent of the long-term mean.
7. The seasonal climate outlooks are an output of a scientific research programme.

8. Where probabilities are within 5% of one another, the term “about equally” is used.
9. The forecast confidence meter for temperature and rainfall represents the expert judgement of NIWA’s climate scientists. It aims to synthesize various forecast elements, such as global and local climate drivers, in order to clearly communicate forecaster confidence.

Visit our media centre at: www.niwa.co.nz/news-publications/media-centre