Hydrology Update Summer 2025-26

Report prepared by Charlotte Tomlinson and Peter Davidson, 15th March 2026.

Data from the Marlborough District Council's Environmental Monitoring network was primarily used in preparing this report and supplemented with data from the Marlborough Research Centre, MetService, NIWA, and FENZ.

Executive Summary

Summer 2025-26 can be described as wetter and less sunny than usual. In Blenheim, summer sunshine totalled 716 hours, compared to an average of 745 hours.

Summer rainfall in Blenheim was 179 mm, 133% of the long-term average. December rainfall was average, followed by more than twice the average January rainfall, and then a dry February with just 50% of average rainfall. Summer evapotranspiration was 408 mm (average). Blenheim has recorded 429 mm of rain from the start of July 2025 to the end of February, which is very close to the average for this time of year.

In the eastern coastal areas of Marlborough, summer was much wetter than usual, receiving between 125% to over 200% of average summer rainfall. Rainfall was closer to average in the inland areas such as Wairau Valley. North Marlborough was drier than usual this summer, with rainfall between 60-90% of average in the Kaituna and Te Hoiere/Pelorus catchments.

River flows in December and early January were lower than usual, however they received a top-up from the high rainfall in January. As a consequence, there have been few restrictions on water abstraction this season. With low rainfall in February, the Rai River flow declined below 1.5 m^3/s in the last week of February, meaning Class B consent holders were restricted.

Soil moisture in Blenheim was extremely low (below wilting point) for much of December and early January. January rainfall then raised soil moisture to a new record high for the time of year, 34%. Soil moisture remained above average for the remainder of January and into February.

Groundwater level in the recharge reach of the Wairau Aquifer has declined by almost 4 metres since the flood-induced high levels observed in July 2025. Groundwater level was in the lower quartile during early summer, with a top-up to aquifer levels provided by the increased river flows in January. Levels rapidly dropped again in February to reach a new record low level. The record low levels at the Conders well are not universally translated across other wells further downstream in the recharge reach, indicating there are likely to be some differences in the recharge processes in different sections of the river. Council are looking into several aspects of the river-groundwater processes, including commissioning an updated LIDAR survey to determine what changes to river elevation have occurred as a result of the June/July 2025 floods, and how this could be affecting recharge processes.

La Niña conditions have ended, and we are now back in a neutral ENSO position, although there is likely to be an easterly wind anomaly over the next few months. There is still a normal to elevated risk for ex-tropical cyclones in New Zealand, with activity increased compared to earlier in the season.

Climate

- Summer this year was wetter and had fewer sunshine hours than an average year.
- The average summer temperature was 18.1°C, which is 0.4°C above the long-term average.
- 716 hours of sunshine were recorded over the summer months, compared to an average of 745 hours. January was noticeably gloomy, with 53 fewer sunshine hours than average.
- Summer 2025-26 was less windy than average. January was particularly calm, with just 87% of the average wind-run recorded.

Rainfall

Summer was wetter than average with 179 mm of rainfall in Blenheim, 133% of the long-term average. This is the 10th wettest summer in the period 1986 to 2026. December rainfall was near average, followed by very high rainfall in January of 108 mm (compared to an average of 40.5 mm). February was dry, with just 51% of average rainfall.

Evapotranspiration was slightly higher than average in December, when it was warmer and sunnier, and slightly below average in January and February. The total 3-month evapotranspiration was 408 mm, which is 102% of the average summer evapotranspiration.

Monthly rainfall totals along with monthly evapotranspiration from July 2025 onwards can be seen in Figure 1 below.

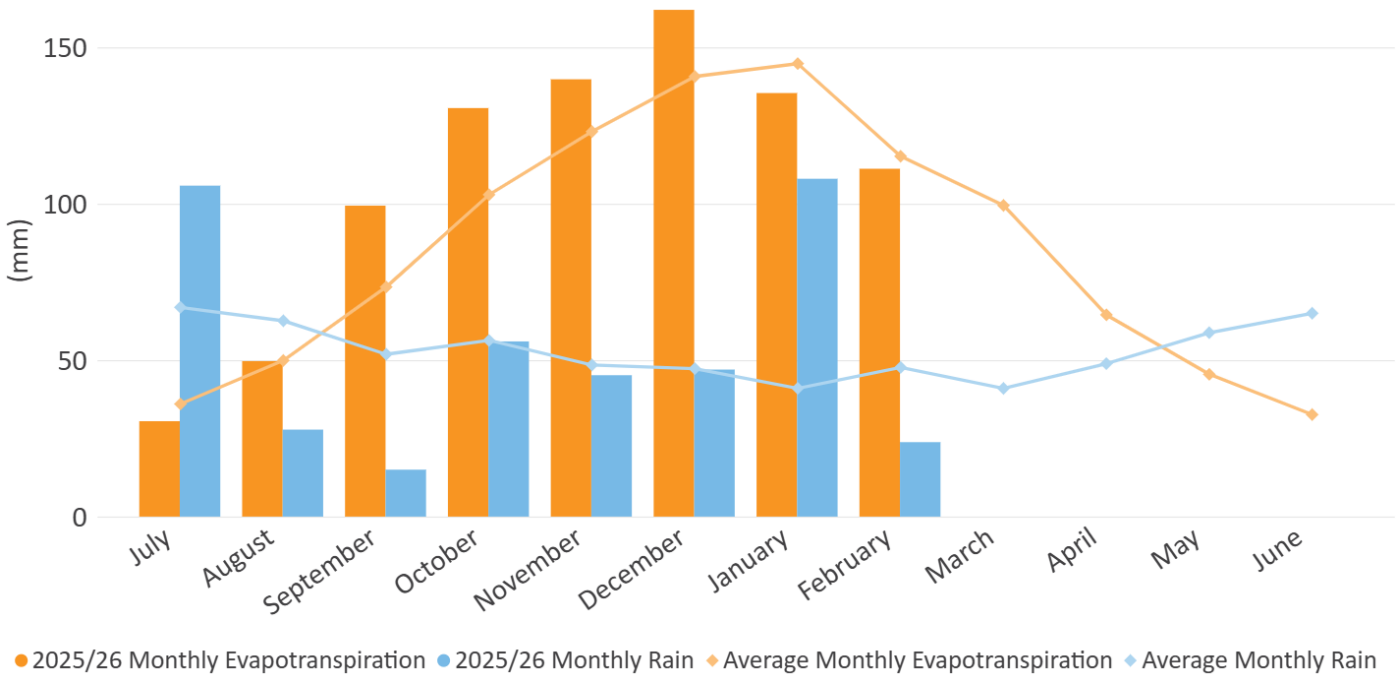

Figure 1. Monthly rainfall and evapotranspiration in Blenheim (Marlborough Research Centre) for the 2025-26 hydrological year, compared to average monthly totals.

Blenheim at the Marlborough Research Centre has recorded 429 mm of rainfall in the hydrological year to date (1 July to 28 February). This is 102% of the long-term average rainfall accumulation (see Figure 2 below).

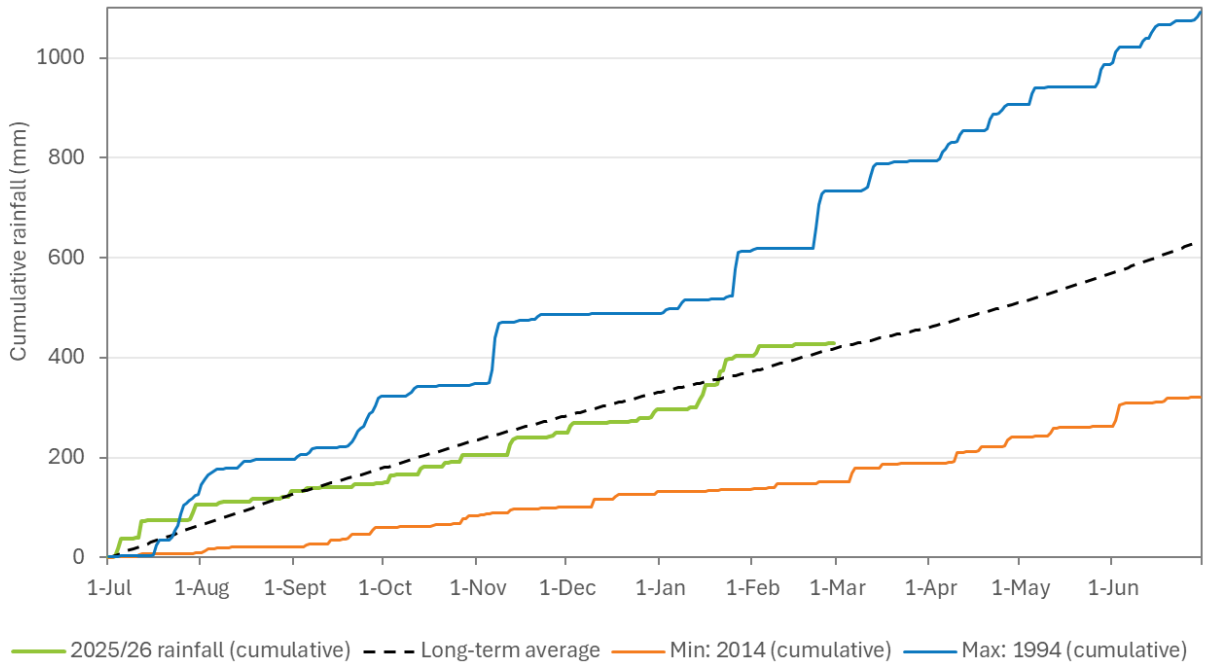

Figure 2. Cumulative rainfall (mm) for the 2025/26 hydrological year in Blenheim (Marlborough Research Centre), compared to the long-term average rainfall accumulation. Also shown are the minimum and maximum rainfall years.

Summer rainfall across the region has been variable (see Figure 3 below). The lowest rainfall when compared to average was in North Marlborough, where summer rainfall was between 60% to 90% of average in the Kaituna and Te Hoiere/Pelorus catchments. In contrast, rainfall along the east coast (including the Wairau Plains and lower Awatere) was well above average, with the highest rainfall seen along the south-east coast. Te Rapa rainfall site in the Waima River catchment received 289 mm of rainfall, or 211% of the summer average. It is interesting to note the contrast in rainfall between spring and summer this year, as spring was particularly dry along the east coast, with Te Rapa receiving less than 50% of average spring rainfall. Inland parts of the Wairau and Awatere catchments had near-average summer rainfall.

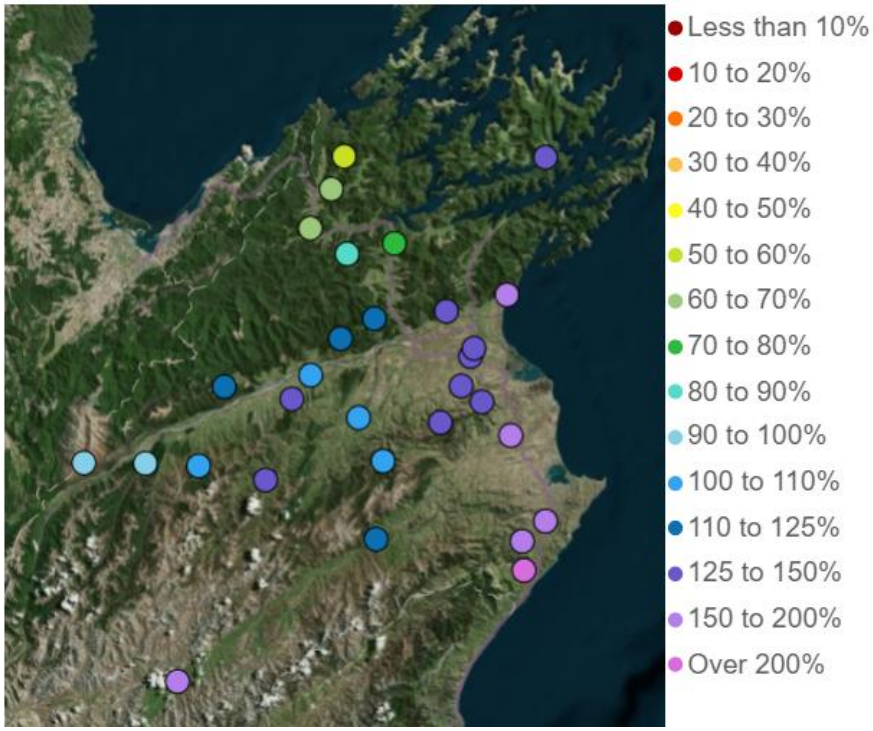

Figure 3. Summer 2025-26 rainfall at MDC monitoring sites, as a percentage of average summer rainfall.

Figure 4 shows monthly rainfall for sites in South Marlborough compared to average. Of note is the high rainfall in January:

- In Blenheim (as recorded at the Marlborough Research centre) January rainfall was 112 mm, which is the 2nd highest January total since records began in 1930.
- The Awatere at Awapiri site also recorded the 2nd highest January total at the site, with 129 mm recorded (records began in 1995).
- At the Flaxbourne site, 141 mm of rain was recorded in January, which is the highest January total since the site was installed in 2007.

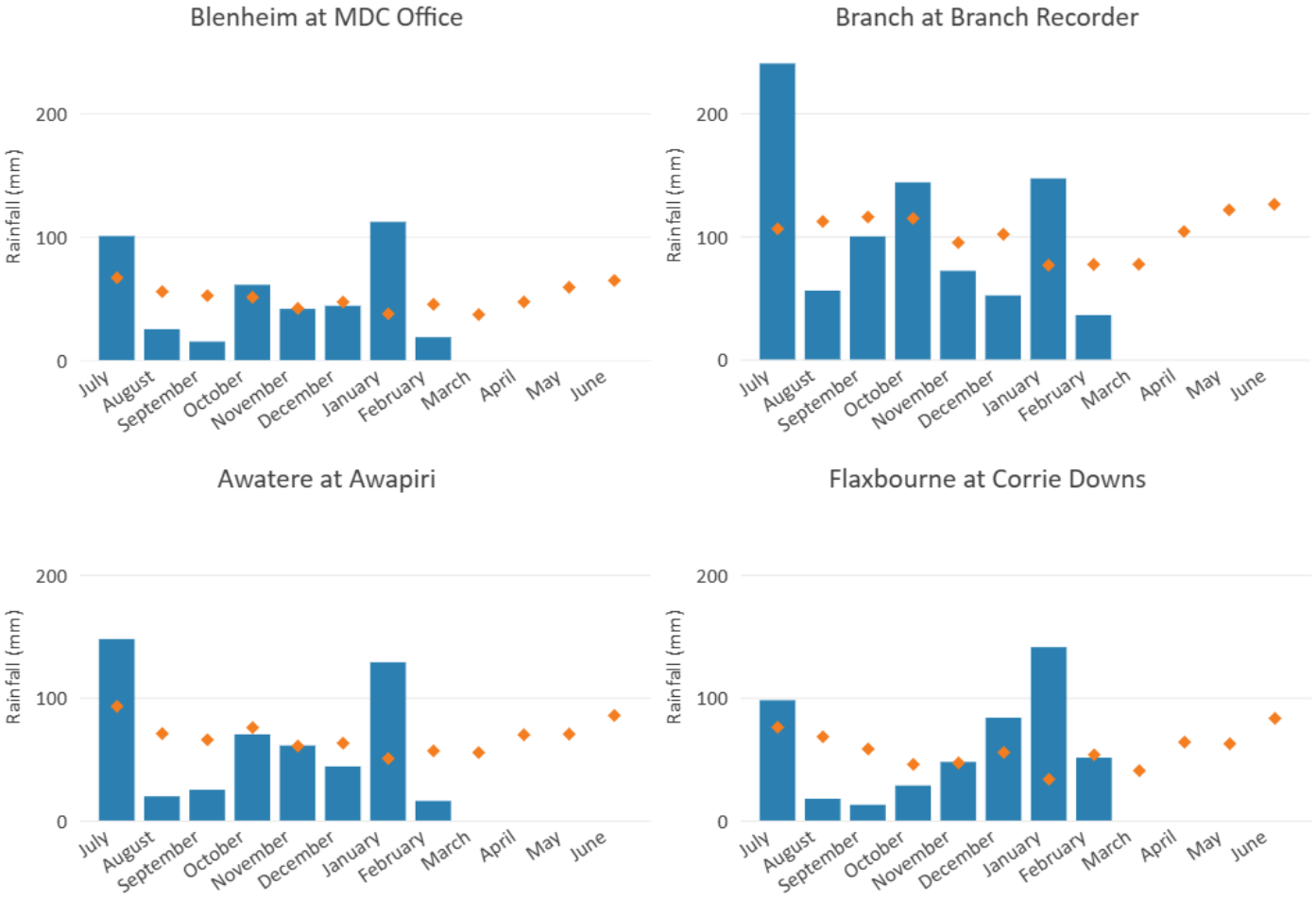

Figure 4. Monthly rainfall (mm) for the 2025/26 hydrological year at 4 sites in South Marlborough, compared to the average monthly rainfall.

Figure 5 shows monthly rainfall for sites in North Marlborough compared to average rainfall.

The Tunakino site in the Rai River catchment recorded below-average rainfall across all three summer months. Total summer rainfall at the site was 318 mm, which is the 5th driest summer over the last 35 years. February was especially dry with 39 mm of rainfall, making it the 4th driest February over the same time period.

Picton/Waitohi received 302 mm of rainfall over summer, mostly during December and January, making it the 3rd wettest summer since the site was installed in 2018.

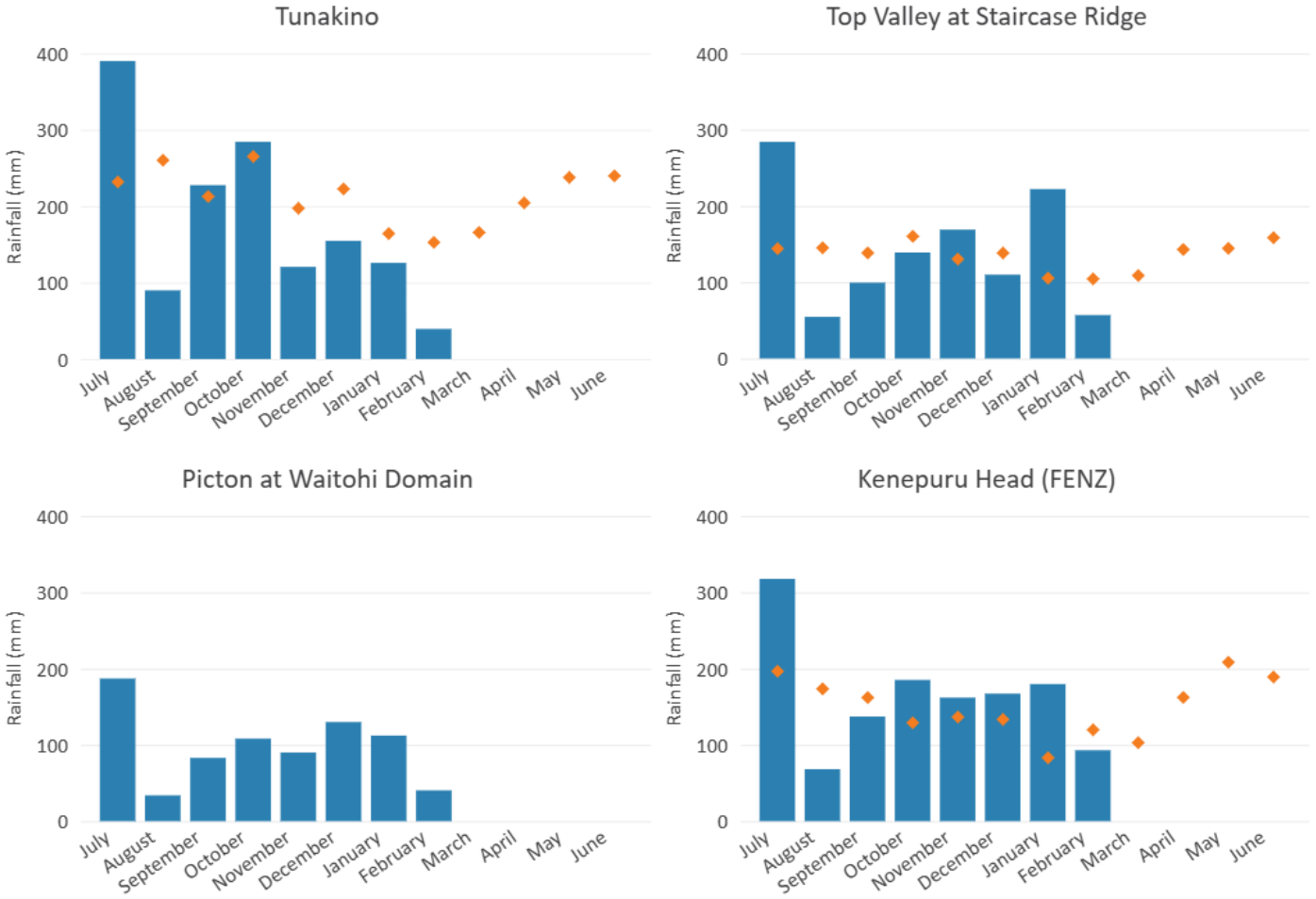

Figure 5. Monthly rainfall (mm) for the 2025/26 hydrological year at 4 sites in North Marlborough, compared to the average monthly rainfall.

A full list of monthly rainfall totals for the 2025/26 hydrological year at all rainfall monitoring sites can be found in the appendix, Table 1.

River Flows

The Awatere River had lower than average flows throughout spring, and this trend continued into December. December mean flow was 5.4 m^3/s, which is just 41% of average. Class C water permit holders faced 19 days of restrictions in December. In contrast, January had plentiful rainfall, and at Awapiri three freshes of over 80 m^3/s were recorded in the second half of the month. Baseflow rose to reach a new seasonal high by the end of January (see Figure 6 below) and stayed high throughout February.

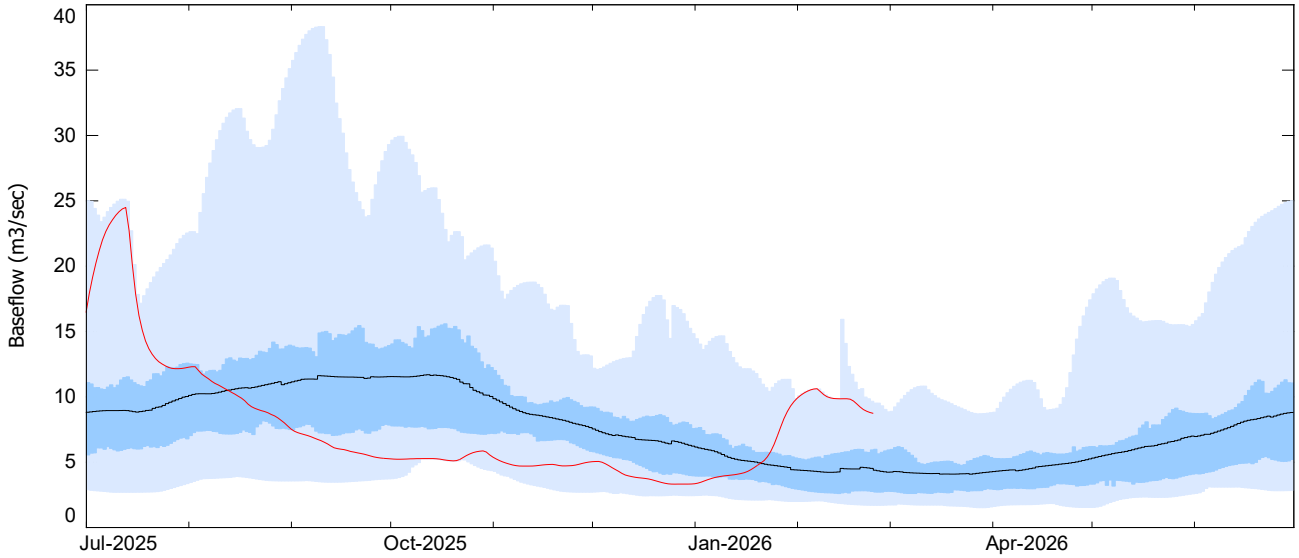

Figure 6. Awatere River at Awapiri baseflow, from 1 July 2025 to 30 June 2026. The black line is average baseflow and the red line is the 2025/26 baseflow. The dark blue shows the middle 50% of data and the light blue shows the upper and lower quartiles.

Waihopai at Craiglochart baseflow was slightly below average from mid-August to early January, before rising into the upper quartile in response to the January rainfall. Mean flow in December was 4.28 m^3/s, or just 36% of average flow, but in contrast January mean flow was 16.5 m^3/s, or 180% of the average flow.

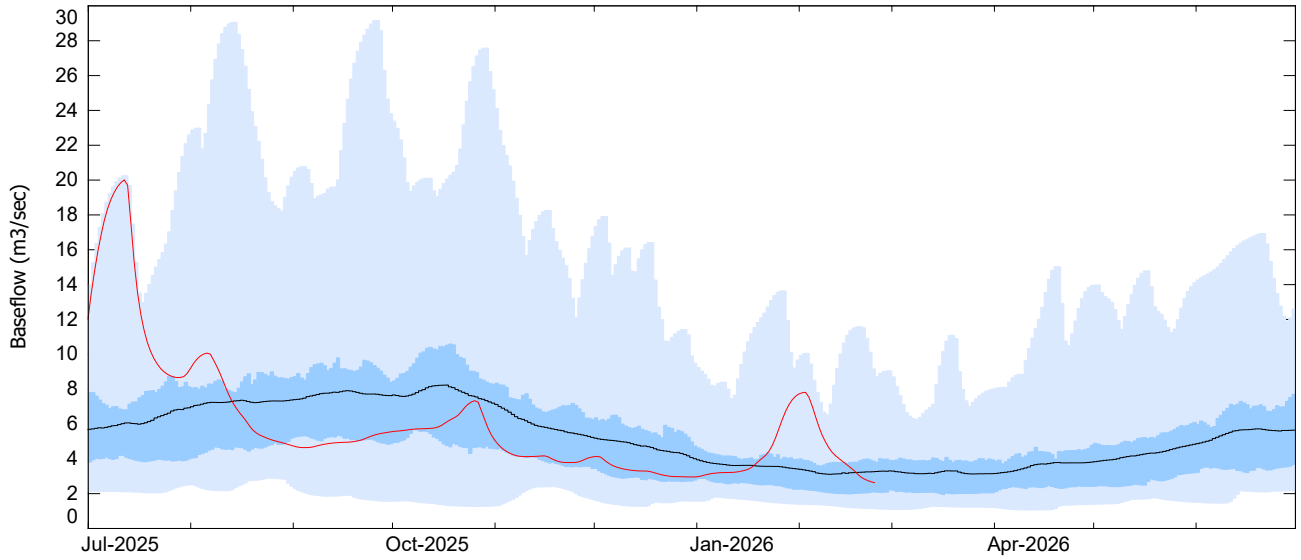

Figure 7. Waihopai River at Craiglochart baseflow, from 1 July 2025 to 30 June 2026. The black line is average baseflow and the red line is the 2025/26 baseflow. The dark blue shows the middle 50% of data and the light blue shows the upper and lower quartiles.

Mean flow in the Wairau River at Tuamarina for December was 44 m^3/s, about half of the long-term average. Flows increased in January, with baseflow rising into the upper quartile by late January. Towards the end of February baseflow was near average. There have been very few restrictions on water abstraction from the Wairau River this year, with Class C permit holders the only group to experience some short periods of shut off.

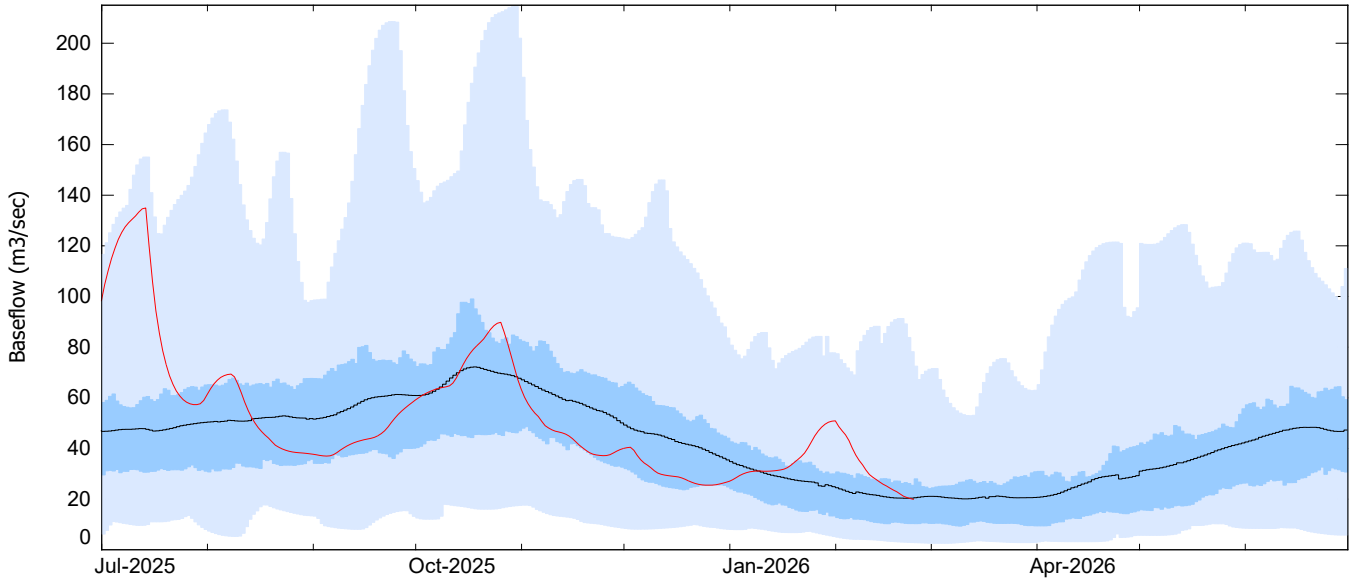

Figure 8. Wairau River at Tuamarina baseflow, from 1 July 2025 to 30 June 2026. The black line is average baseflow and the red line is the 2025/26 baseflow. The dark blue shows the middle 50% of data and the light blue shows the upper and lower quartiles.

Baseflow has been near average in the Rai River over summer. With low rainfall in February, flow is nearing the lower quartile heading into March. The mean flow for February was 1.97 m^3/s, which is just 28% of the long-term average, and reflects the low summer rainfall in this area. Class B restrictions were in place for the last week in February as flow dropped below 1.5 m^3/s.

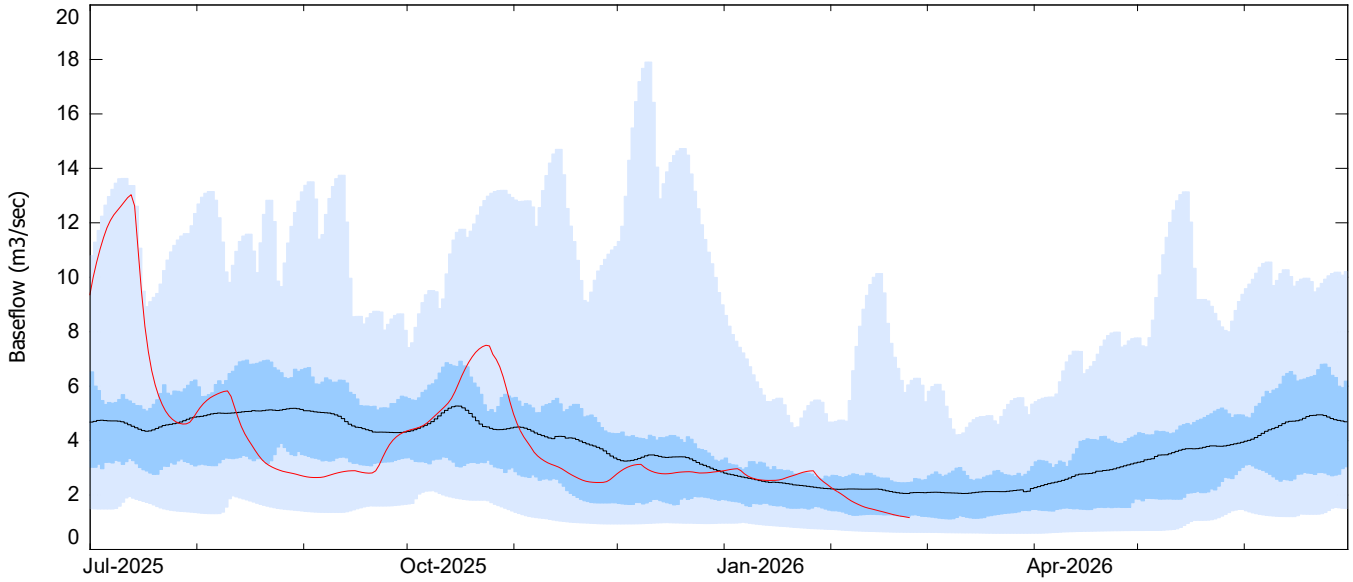

Figure 9. Rai River at Rai Falls baseflow, from 1 July 2025 to 30 June 2026. The black line is average baseflow and the red line is the 2025/26 baseflow. The dark blue shows the middle 50% of data and the light blue shows the upper and lower quartiles.

Soil Moisture

Soil moisture in Blenheim was in the lower 10th percentile through most of July/August and throughout spring. Soil was extremely dry (below wilting point) for much of December and early January, with an average soil moisture of 13.6% in December. Rainfall in mid-January then raised soil moisture to 34%, a new record high for the time of year. Soil moisture remained above average for the rest of January and February. With little rainfall in February soil moisture declined throughout the month to reach 18% by February 28th – about average for this time of year.

Figure 10 below shows soil moisture for Blenheim over the 2025/26 hydrological year.

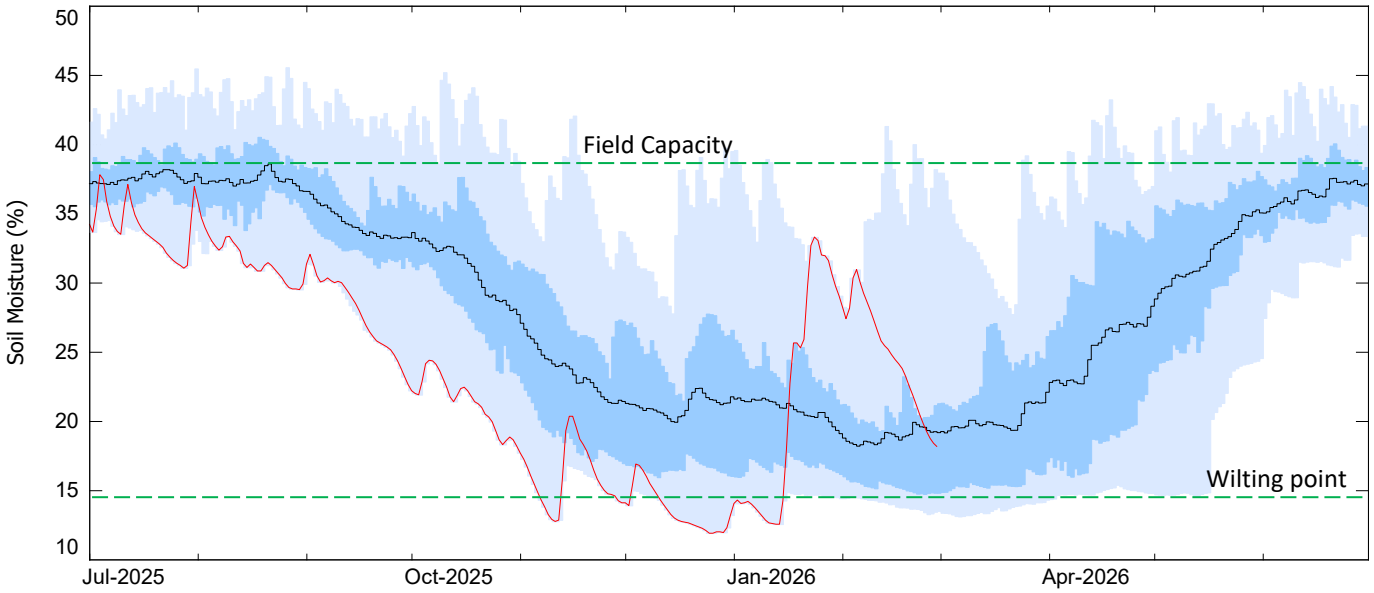

Figure 10. Shallow soil moisture at the Marlborough Research Centre (Blenheim) from the 1st of July 2025 to the 30th of June 2026. The red line shows this year's soil moisture, while the black line shows average soil moisture based on 20 years of data. The light blue shows the upper and lower 10% of the data and the dark blue shows the middle 80% of data.

Groundwater

Since July 2025, groundwater level in the Wairau Aquifer at Conders has dropped by almost 4 metres, from the high levels seen following the June/July 2025 flood events through to the low levels seen this summer. Groundwater level was in the lower quartile from late August through to late January, when a period of rain and higher river flows provided a top-up to the aquifer.

Groundwater levels rapidly dropped again throughout February, to reach a new record low level in early March. Interestingly, the record low level observed in the Conders well does not translate to a record-low level at Wratts Road, indicating that there are some differences in recharge processes to the aquifer between different sections of the river. The water levels in the Conders and Wratts Road wells can be seen in Figures 11 & 12 below.

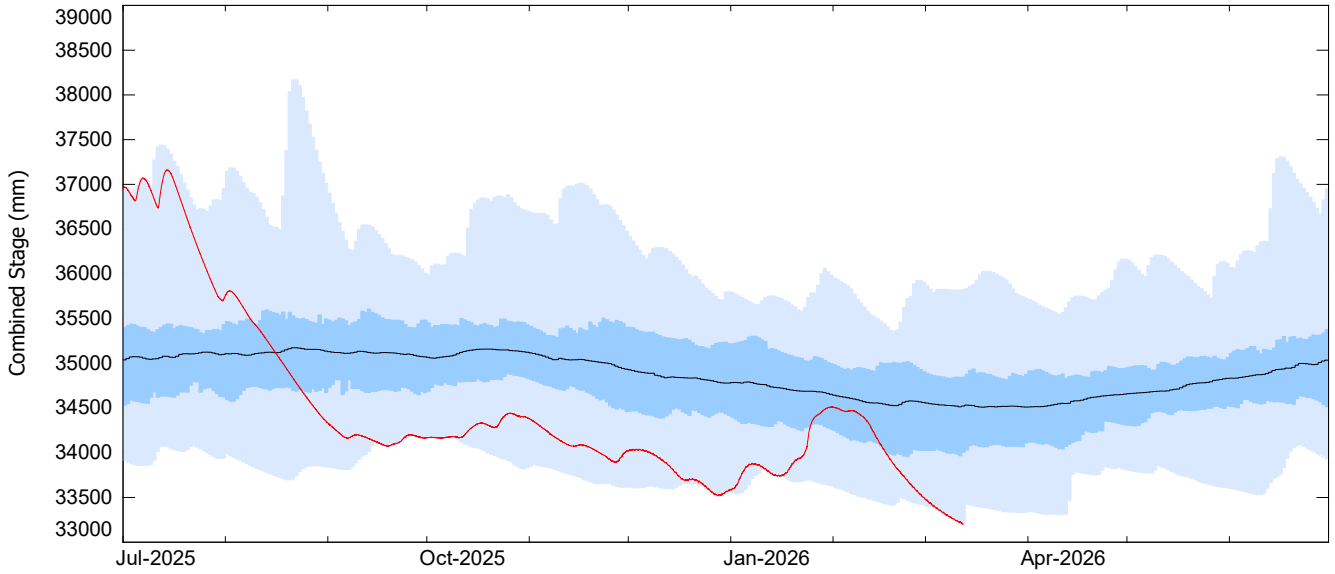

Figure 11. Wairau Aquifer at Conders well water level, from 1 July 2025 to 30 June 2026. The black line is the long-term average groundwater level, and the red line is the 2025/26 groundwater level. The dark blue shows the middle 50% of data and the light blue shows the upper and lower quartiles.

Recent and upcoming council investigations into the Wairau River-groundwater interaction include:

- A recent longitudinal gauging survey in the Wairau River from the Narrows to State Highway One, showing the same net loss of water from the river to groundwater as in previous surveys (around 7 cubic metres per second).

- Recent sonic bore drilling has enabled the ‘peanut butter gravels’ (a clay-rich and therefore less permeable gravel layer in the riverbed) to be mapped along the recharge reach.

- An updated LIDAR survey is due to be flown to quantify the changes in river elevation as a result of the June/July 2025 floods. Previous LIDAR was flown in 2021 and 2023. The update will provide insights into changes in the river’s elevation in comparison to the most permeable river gravels, and how this may be affecting recharge processes.

- Groundwater levels at Conders have been compared to pumping records from the relocated Renwick municipal supply well field, with no correlation between pumping and reduced groundwater levels observed.

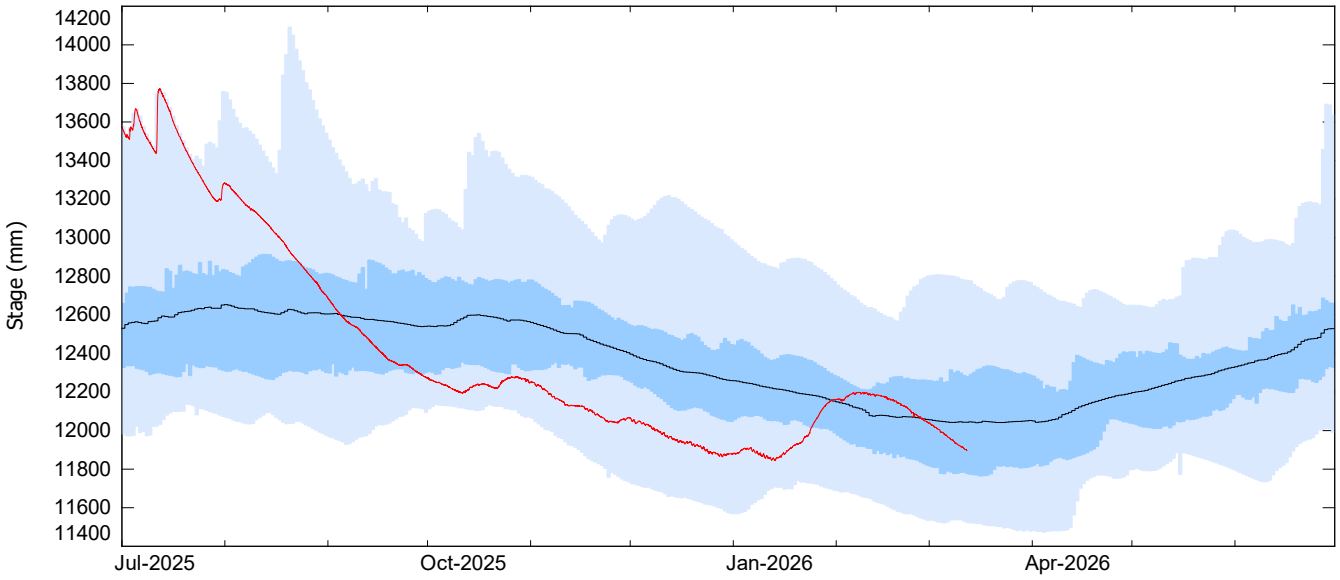

Figure 12. Wairau Aquifer at Wratts Road well water level, from 1 July 2025 to 30 June 2026. The black line is the long-term average groundwater level, and the red line is the 2025/26 groundwater level. The dark blue shows the middle 50% of data and the light blue shows the upper and lower quartiles.

The Riverlands Aquifer showed a pumping-induced decline in water level from November onwards. Abundant rainfall in January led to a sharp decline in pumping demand, leading to the aquifer level rising into the upper quartile for much of January and February, as seen in Figure 13 below.

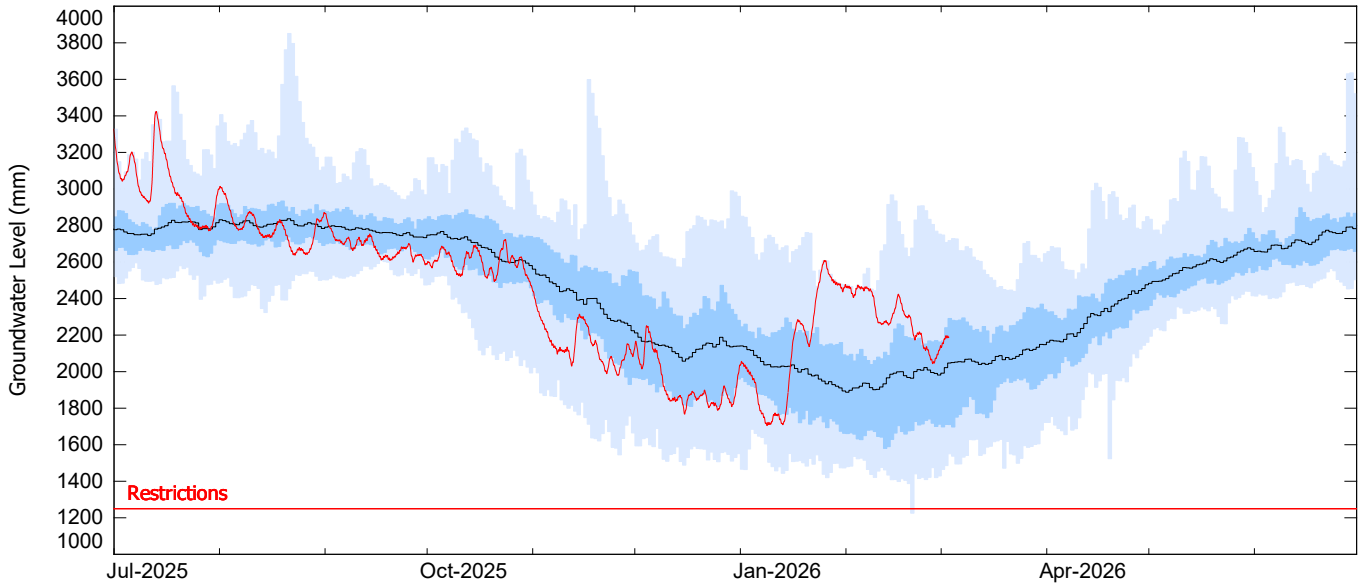

Figure 13. Lagoon Well (10346) water level, from 1 July 2025 to 30 June 2026. The black line is the long-term average groundwater level, and the red line is the 2025/26 groundwater level. The dark blue shows the middle 50% of data and the light blue shows the upper and lower quartiles.

Climate Outlook March to May:

- The El Niño Southern Oscillation (ENSO) transitioned from La Niña to neutral conditions during February.
- For the period from March to May there is likely to be higher pressure to the south of New Zealand and lower pressure to the north, leading to an easterly wind anomaly overall.
- The most likely source of significant weather is from the north, with weather systems from the Southern Ocean less likely than normal to impact New Zealand.
- The Tropical Cyclone Outlook shows a normal or elevated risk for ex-tropical cyclones over New Zealand. There are indications that tropical cyclone activity is increased over the next month compared with earlier in the season.

The predictions for Marlborough/Tasman from March to May are:

Temperature:	Near average
Rainfall:	Near normal
Soil Moisture:	Near or below normal
River Flows:	Near or below normal

Appendix

Table 1. Monthly rainfall totals (mm) for the 2025-26 hydrological year at monitoring sites in Marlborough. Note, rainfall totals for the most recent 3-month period are preliminary only and may change slightly when validated on-site.

Site	July	August	September	October	November	December	January	February	YTD Total
Awatere at Awapiri	148	20	25	70	61	44	129	16	**512**
Awatere Glenbrae NRFA	79	19	16	52	45	54	138	32	**435**
Beneagle at Farm Stream	108	18	21	56	32	58	115	24	**430**
Blenheim at MDC Office	101	25	15	61	42	44	112	19	**418**
Branch at Branch Recorder	240	56	100	144	70	50	141	36	**838**
Branch at Mt Morris	243	43	170	313	112	103	191	56	**1229**
Flaxbourne at Corrie Downs	98	18	13	29	48	84	141	51	**481**
Kaituna Rainfall at Higgins Bridge	208	52	108	113	111	74	106	25	**795**
Kenepuru Head NRFA	318	68	137	185	162	167	180	93	**1310**
Koromiko NRFA	203	45	93	113	116	146	186	54	**955**
Lake Elterwater Climate	92	24	10	28	43	78	144	51	**468**
Lansdowne NRFA	165	18	33	70	76	72	136	37	**607**
Malings	93	56	313	522	154	193	179	65	**1574**
Mid Awatere Valley NRFA	118	13	21	79	39	25	103	20	**417**
Molesworth NRFA	93	25	46	79	64	51	164	50	**572**
Omaka at Ramshead Saddle	154	20	24	80	60	39	114	18	**508**
Onamalutu at Bartletts Creek Saddle	289	48	99	136	172	102	239	38	**1123**
Onamalutu at Hilltop Road NRFA	247	59	148	173	175	132	228	39	**1202**
Picton Climate at Waitohi Domain	187	34	83	108	90	139	120	43	**804**
Pudding Hill NRFA	70	21	68	129	52	53	160	58	**609**
Rai at Rai Falls	348	89	192	230	183	136	147	30	**1355**

Table 1. (continued).

Site	July	August	September	October	November	December	January	February	YTD Total
Rai Valley NRFA	269	79	163	194	115	104	125	32	**1083**
Rarangi at Driving Range	155	34	33	68	96	78	150	105	**719**
Red Hills	271	45	153	135	83	101	176	59	**1021**
St Arnaud NRFA	140	61	224	283	94	85	127	23	**1036**
Taylor at Taylor Pass Landfill	109	20	23	56	36	47	100	18	**409**
Taylor at Tinpot	169	43	30	76	68	75	151	36	**646**
Te Rapa	112	25	8	27	63	83	206	42	**565**
Top Valley at Staircase Ridge	284	55	100	139	169	110	222	57	**1135**
Tunakino	390	90	228	284	121	154	125	39	**1431**
Upper Clarence NRFA	56	31	11	49	32	43	156	86	**463**
Waihopai at Craiglochart	138	26	17	51	60	35	105	22	**454**
Waihopai at Spray Confluence	175	22	55	115	60	48	171	25	**669**
Waikakaho	171	54	39	99	84	77	175	37	**736**
Waikawa at Boons Valley	213	53	69	103	87	201	149	82	**956**
Wairau Valley at Southwold	222	23	29	62	73	65	147	30	**650**
Wakamarina at Twin Falls	258	84	154	239	146	142	191	33	**1246**
Ward NRFA	105	23	9	33	45	82	166	43	**506**
Wye at Charlies Rest	162	30	62	113	64	58	149	27	**665**