Hydrology Update Autumn 2026

Report prepared by Charlotte Tomlinson, 15th June 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

Autumn 2026 was slightly wetter and less windy than usual. Marlborough experienced a mixture of weather systems, with some easterly rain events, including minor impacts from ex-tropical cyclone Vaianu in mid-April, along with two larger northerly rain events in May.

Autumn rainfall in Blenheim was slightly above average at 173 mm. March and May were both dry months, with just over 50% of average rainfall, while rainfall in April was over twice the monthly average. Blenheim has recorded 601 mm of rainfall from the start of July 2025 to the end of May, which is slightly above the average for this time of year.

Autumn was slightly wetter than usual along the south-east coast of Marlborough, due to a series of easterly rain events throughout April. Rainfall was also higher than average in northern areas due to two large northerly storms in May.

Baseflow in the Awatere River has remained elevated since January, with no restrictions on water users in Autumn 2026. The lowest flow in the Wairau River at SH1 occurred in late March, when flow declined to approximately 11 m^3/s. There were no days where Class A restrictions for the Wairau River were met over the irrigation season 2025/26. The rainfall event in the first week of May led to a flood flow of approximately 2,000 m^3/s in the Wairau River, slightly less than the mean annual flood. Flows in the Rai and Pelorus Rivers from the same event were 460 and 1,500 m^3/s, both exceeding their mean annual flood flows.

Soil moisture in Blenheim was low throughout March, before rainfall from early April onwards raised soil moisture to above 30% for the majority of April and May.

Groundwater level in the Wairau Aquifer declined throughout March, before rising in response to increased river flows throughout April and May. Groundwater level at the end of May was in the lower quartile at the Conders site, and slightly below the long-term average at Wratts Road. The LIDAR survey of the river was flown in late May, with post-processing due to occur in the coming months.

There is a very high probability that El Niño conditions will develop between now and August, with peak El Niño conditions likely during summer 2026/27. El Niño typically brings reduced rainfall to the east of both islands, including Marlborough. Winter rainfall is likely to be average or below average in Marlborough.

Climate

- It was a cool start to autumn, with March temperatures cooler than average. April and May were slightly warmer than average. The average autumn temperature in Blenheim was 13.9°C (0.2°C above average).
- There were ground frosts in early May in Blenheim, which were the only autumn frosts this year. There has been a strong decrease in the number of autumn frosts in Blenheim since data collection began in the 1930's.
- Autumn is generally less windy than other times of year, and autumn 2026 was slightly calmer than average. March was particularly calm, with 84% of the average daily windrun recorded.

Rainfall

Autumn rainfall in Blenheim was 173 mm, which is greater than the long-term average of 150 mm. March and May were both fairly dry, with 58% and 51% of average rainfall respectively. However, rainfall in April was over twice the monthly average, bringing the seasonal total to above average.

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

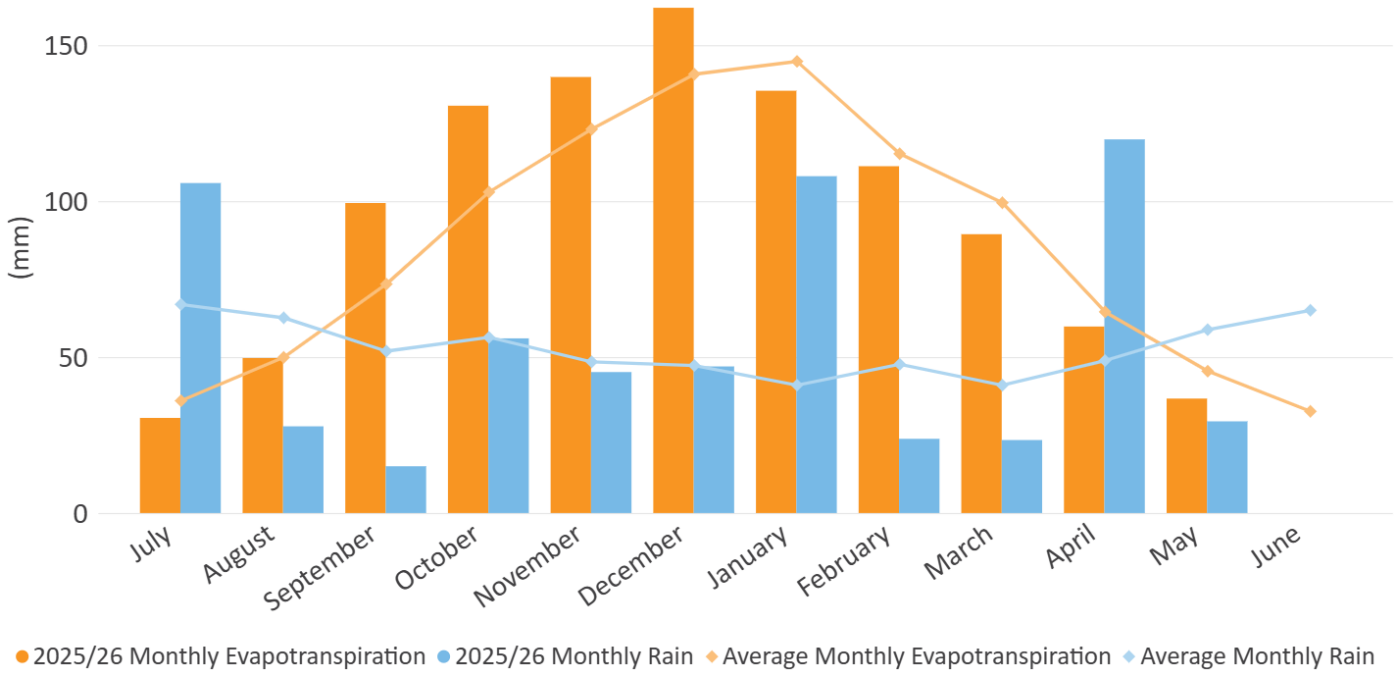

Figure 1. Monthly rainfall and evapotranspiration in Blenheim (Marlborough Research Centre) for the 2025-26 hydrological year, compared to average monthly totals.

Blenheim at the Marlborough Research Centre has recorded 601 mm of rain in the hydrological year to date (1 July to 31 May). This is 106% of the long-term average rainfall accumulation (see Figure 2 below).

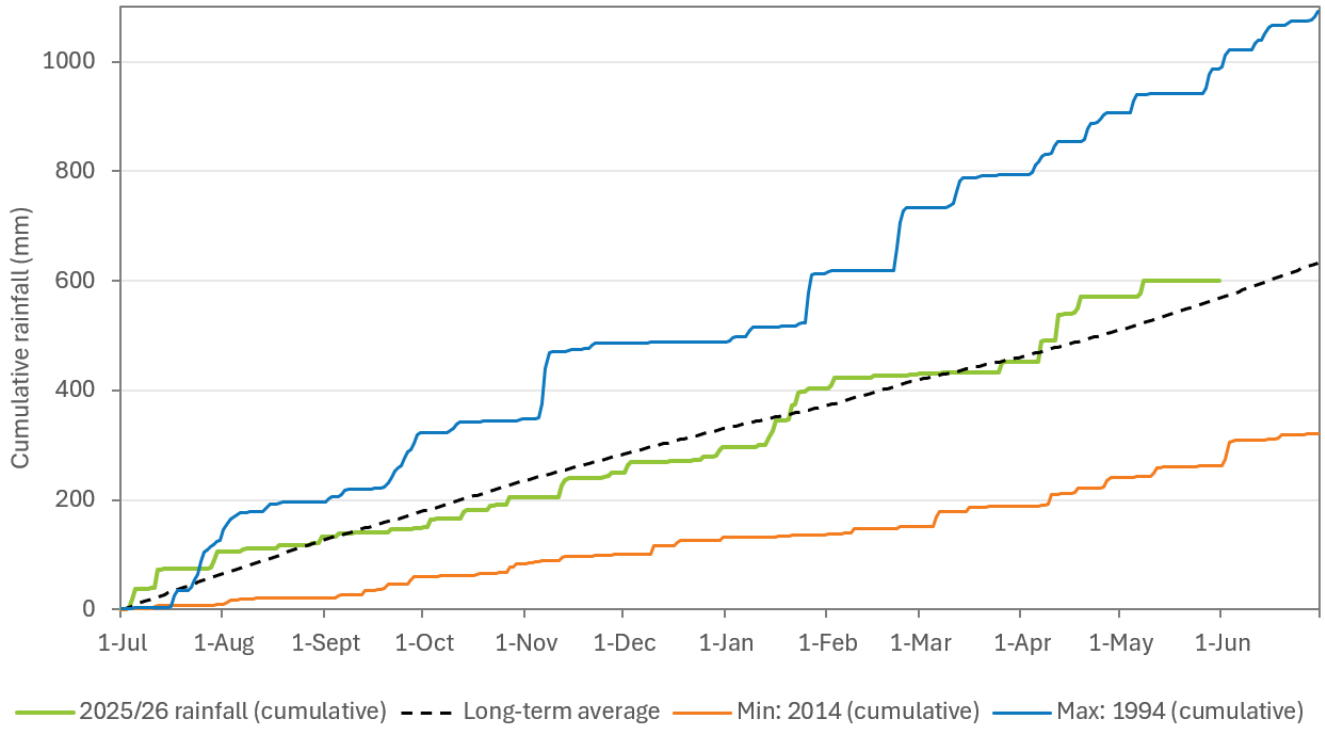

Figure 2. Cumulative rainfall (mm) for the 2025/26 hydrological year in Blenheim (Marlborough Research Centre), compared to the long-term average rainfall accumulation. Also shown are the minimum and maximum rainfall years.

Autumn rainfall across the region has been average or slightly above average at most gauged locations. Several easterly rain events throughout April delivered rainfall to areas along the south-east coast. There was therefore slightly higher than average autumn rainfall in coastal areas, particularly around the Flaxbourne/Ward catchments. Two big northerly storms in May brought excess rainfall to catchments in Northern Marlborough, and seasonal rainfall was therefore higher than average at sites in the Rai and Pelorus catchments, along with sites in the Richmond Ranges/on the northbank of the Wairau Catchment.

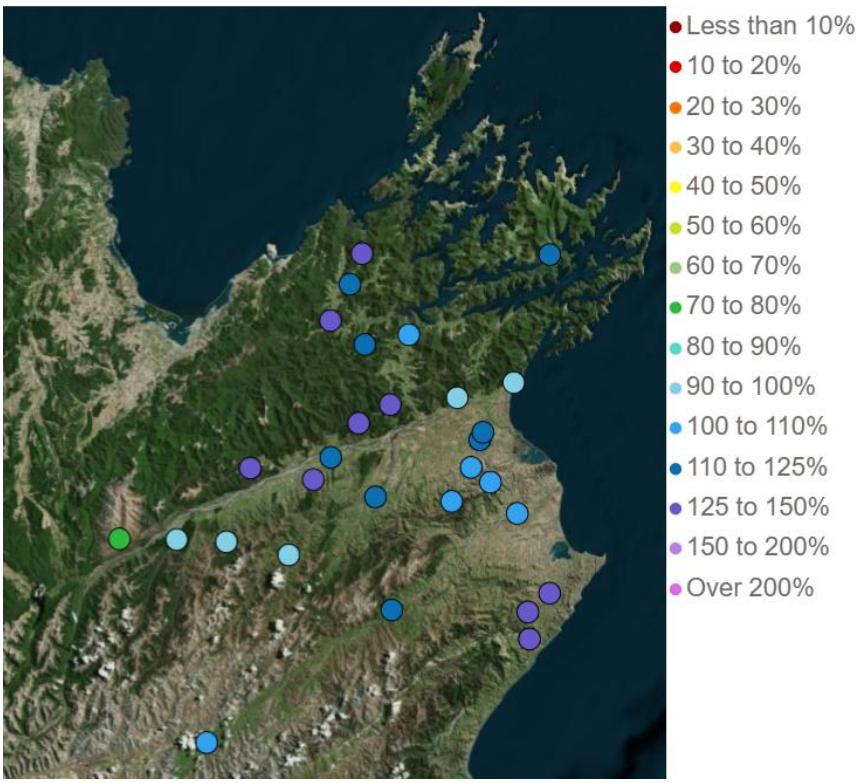

Figure 3. Autumn 2026 rainfall at MDC monitoring sites, as a percentage of average autumn rainfall.

Figure 4 shows the monthly rainfall for sites in South Marlborough compared to average. Monthly rainfall was near average in inland areas, such as at the Branch and Awapiri, while there was greater monthly variability in coastal areas such as Blenheim and the Flaxbourne. There was higher than average rainfall in April for the coastal areas due to a number of smaller easterly rainfall events. For example, ex-Tropical Cyclone Vaianu brought moderate rainfall to eastern coastal areas of Marlborough on the 12th of April. Rainfall at the MDC Office was 119 mm in April, exceeding 90% of historical monthly totals at the site. May was dry along the coast, with less than 50% of the normal rainfall in Blenheim and the Flaxbourne.

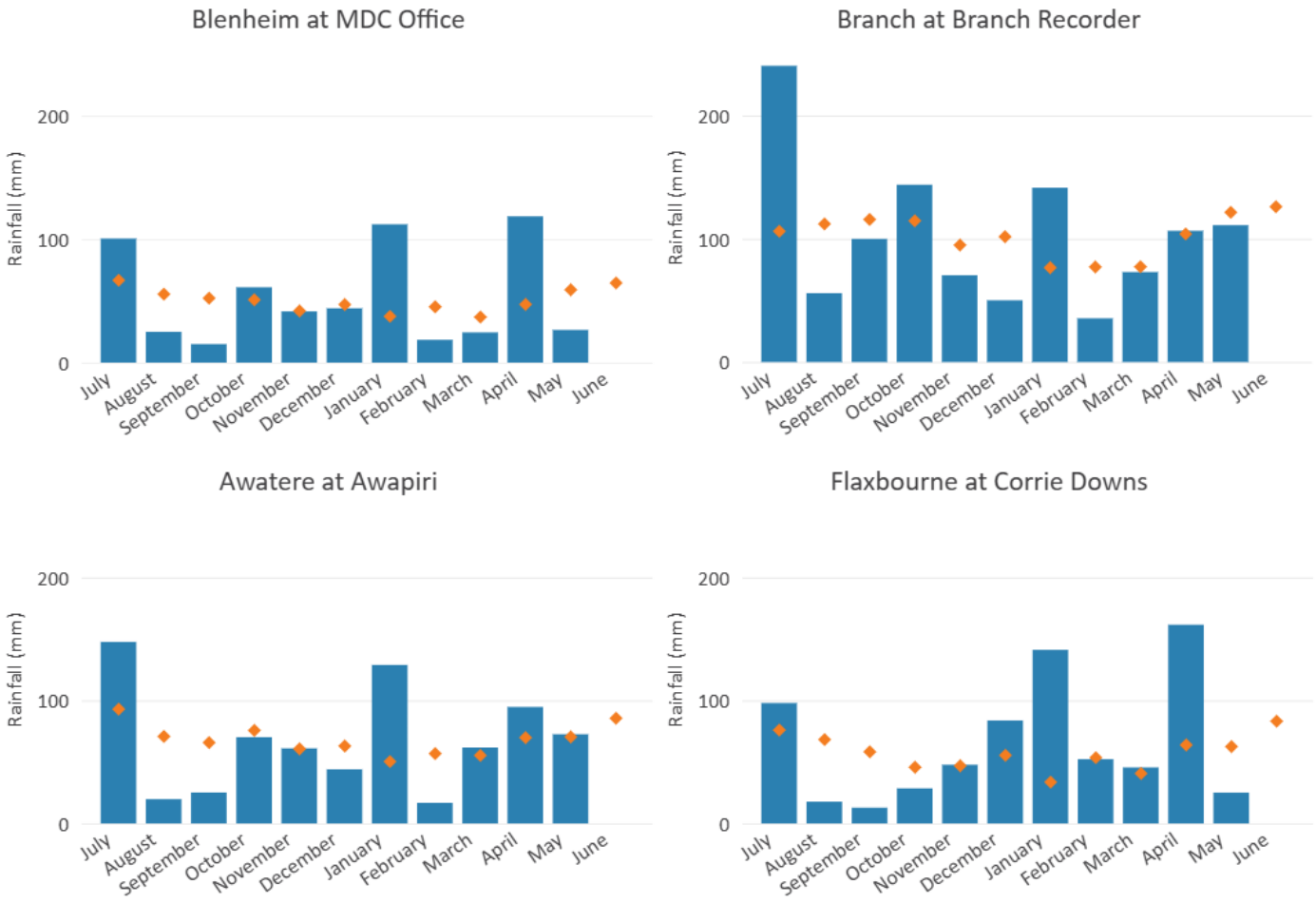

Figure 4. Monthly rainfall (mm) for the 2025/26 hydrological year at 4 sites in South Marlborough, compared to the average monthly rainfall.

Figure 5 shows the monthly rainfall for sites in North Marlborough compared to average. Tunakino and Top Valley both had higher than average rainfall in May due to the northerly rainfall events in the first week and the last day of the month. For both of these sites, the May rainfall totals exceeded 90% of the historical monthly totals at the site. In contrast, Picton and Kenepuru had higher than average rainfall totals in April, as these areas are more exposed to the easterly rainfall events that occurred throughout April, and are somewhat sheltered by the North Island from the northerly rain events occurring in May.

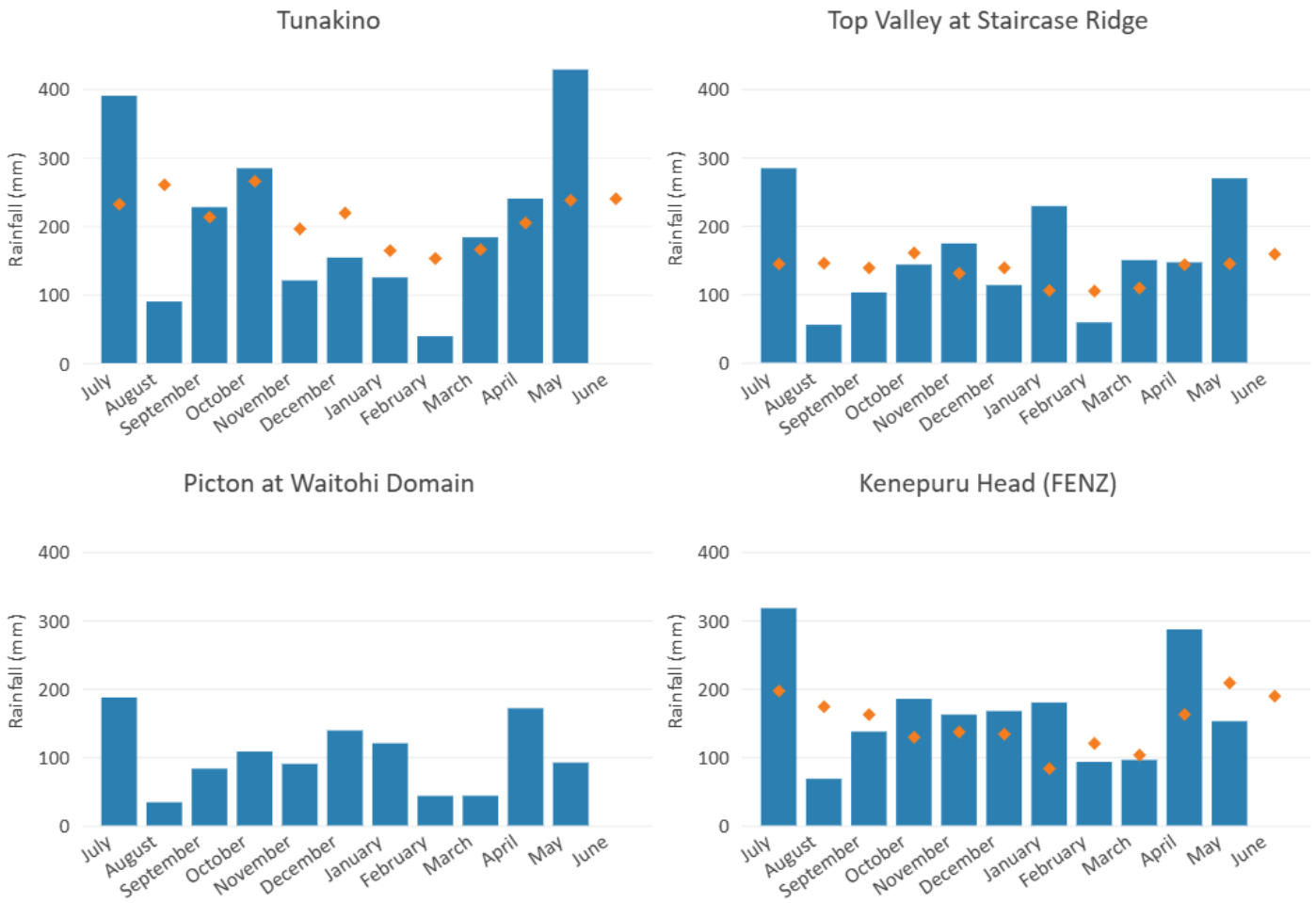

Figure 5. Monthly rainfall (mm) for the 2025/26 hydrological year at 4 sites in North Marlborough, compared to the average monthly rainfall.

River Flows

Baseflow in the Awatere River at Awapiri has remained in the upper quartile since late January. This is quite a contrast to earlier in the hydrological year, when baseflows were in the lower quartile consistently from September to early January. From late March to early May there were three moderate freshes in the river, with peak flows varying between 80-170 m^3/s. There were no restrictions required on Awatere water users during autumn 2026.

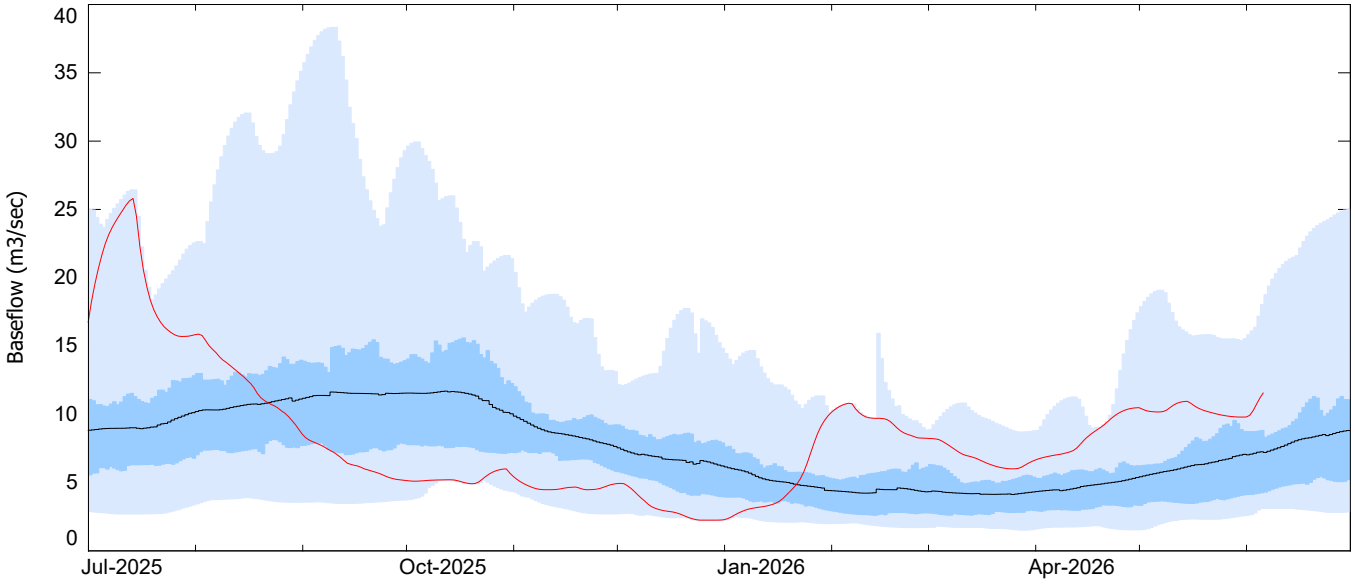

Figure 6. Awatere River at Awapiri baseflow, from 1 July 2025 to 30 June 2026. The black line is average baseflow and the red line is the 2025/26 baseflow. The dark blue shows the middle 50% of data and the light blue shows the upper and lower quartiles.

Baseflow in the Wairau River was slightly below average in early autumn, before increasing to above average following on from a series of rain events throughout April and May. The lowest flow in the river occurred in late March, when flow declined to just above 11 m^3/s at SH1. There were no periods of Class A restrictions in the Wairau River over the irrigation season 2025/26.

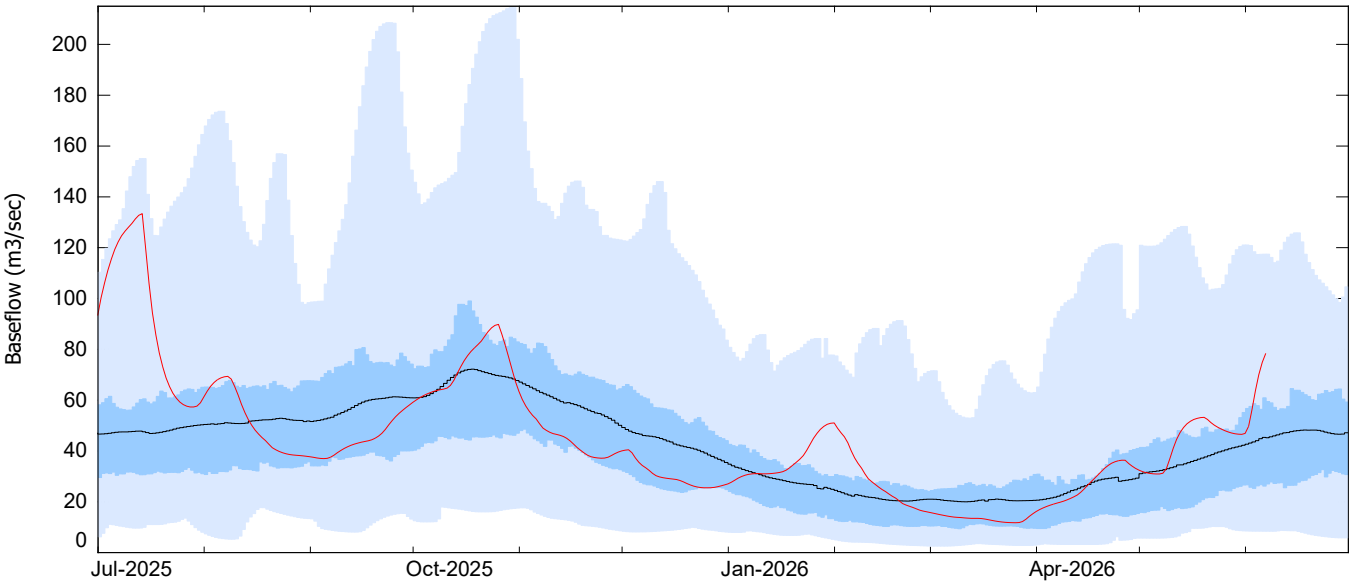

Figure 8. Wairau River at Tuamarina baseflow, from 1 July 2025 to 30 June 2026. The black line is average baseflow and the red line is the 2025/26 baseflow. The dark blue shows the middle 50% of data and the light blue shows the upper and lower quartiles.

The largest autumn flow in the Wairau River was on the 9th of May, with a peak flow of just under 2,000 m^3/sec, slightly smaller than the mean annual flood (see Figure 9 below). Rainfall beginning on the last day of May led to a peak flow of approximately 3,000 m^3/sec in early June (not shown in Figure 9 below).

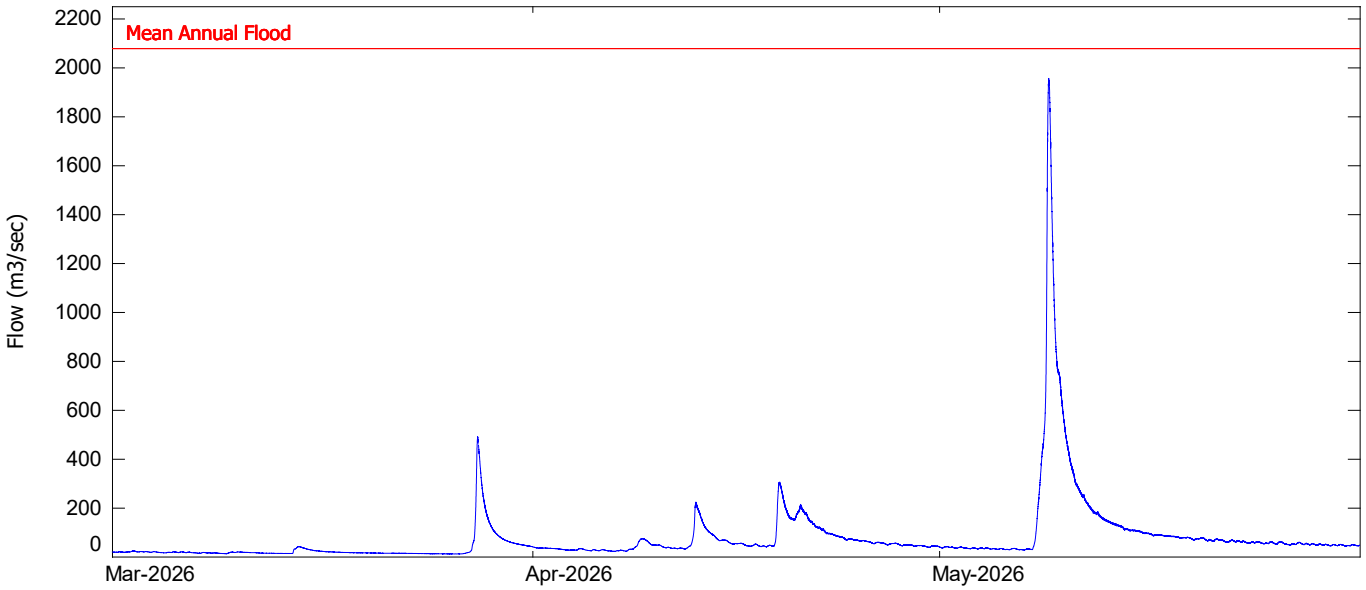

Figure 9. Wairau River at Tuamarina flow, from 1 March 2026 to 1 June 2026.

Baseflow in the Rai River was lower than average in March, before increasing to above average following on from a series of rain events from late March onwards. There were no Class A restrictions in the Rai River in the 2025/26 irrigation season, although Class B restrictions were in place from the last week of February until late March (when mean daily flow was below 1.5 m^3/s).

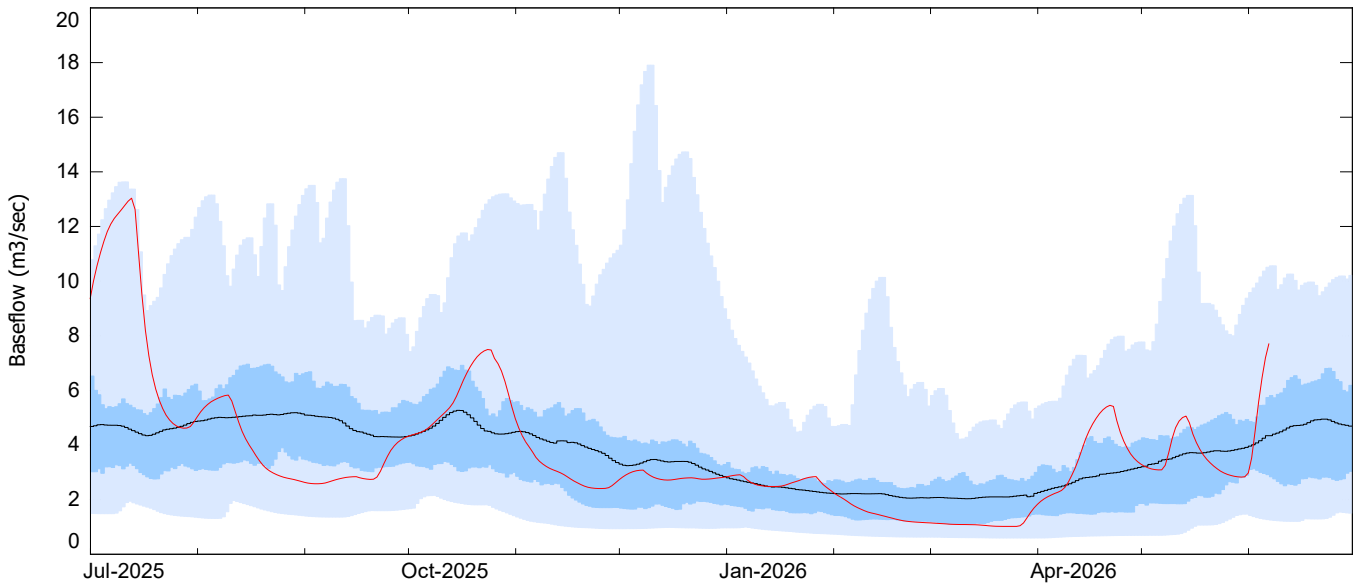

Figure 7. Rai River at Rai Falls baseflow, from 1 July 2025 to 30 June 2026. The black line is average baseflow and the red line is the 2025/26 baseflow. The dark blue shows the middle 50% of data and the light blue shows the upper and lower quartiles.

The northerly storm event in early May led to flooding in the Pelorus and Rai catchments. Peak flows at the Rai and Pelorus flow sites were approximately 460 and 1,500 m^3/sec, larger than an annual flood in both locations.

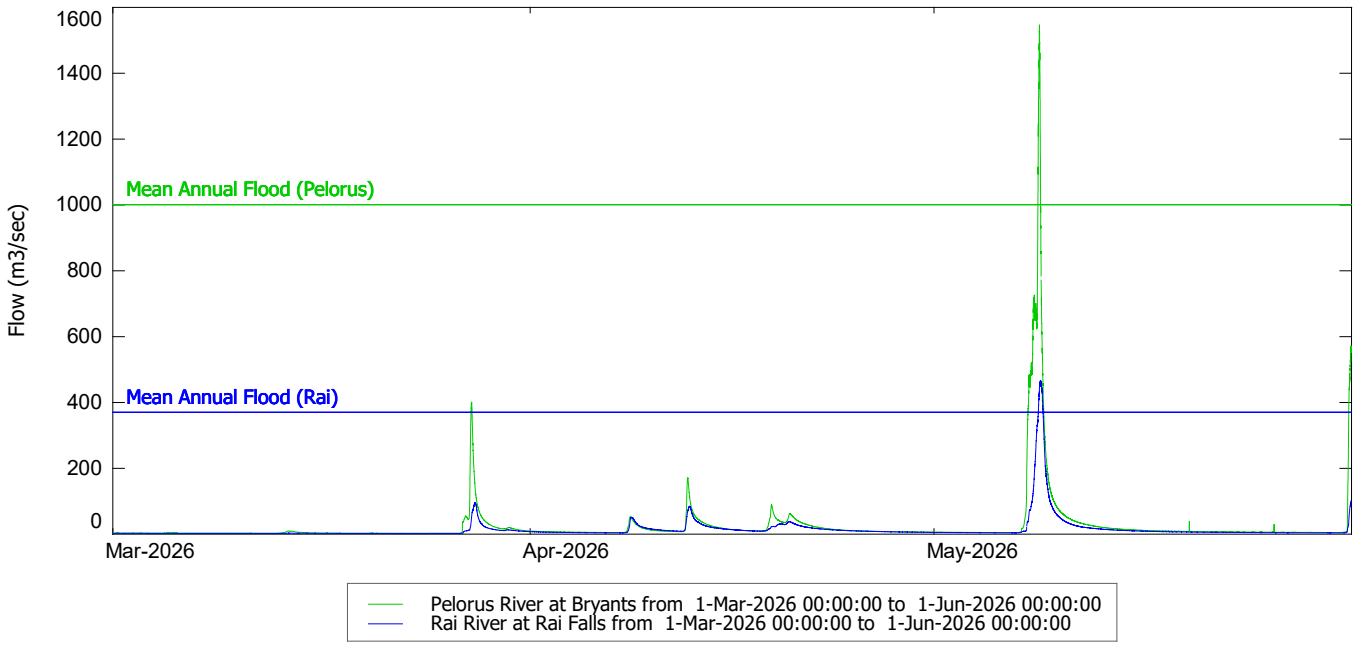

Figure 11. Pelorus River at Bryants and Rai River at Rai Falls flow, from 1 March 2026 to 1 June 2026.

Soil Moisture

Soil moisture in Blenheim was lower than average throughout March and into early April, with soil moisture below wilting point briefly in the last week of March. Rainfall from the first week of April onwards raised soil moisture to above 35%, and soil moisture remained above average through to mid-May. Rainfall in May was low (51% of average rainfall) so soil moisture declined somewhat. However, lower windrun and therefore lower evapotranspiration helped the soil to retain moisture.

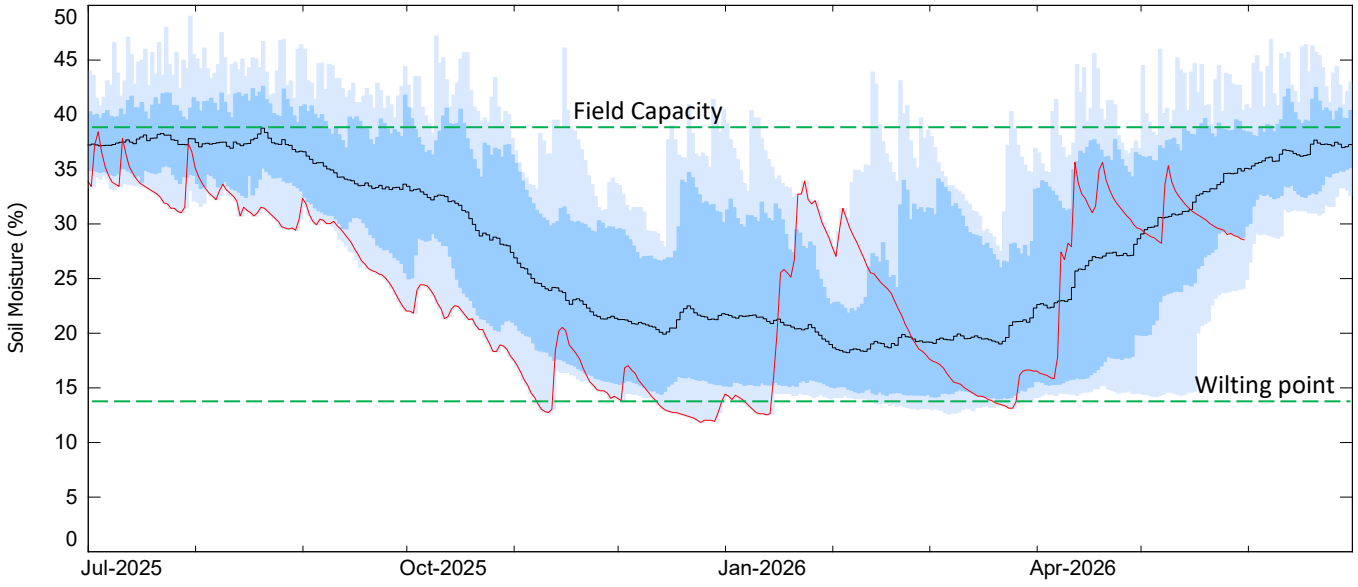

Figure 12. Shallow soil moisture at the Marlborough Research Centre (Blenheim) from the 1st of July 2025 to the 30th of June 2026. The red line shows this year's soil moisture, while the black line shows average soil moisture based on 20 years of data. The light blue shows the upper and lower 10% of the data and the dark blue shows the middle 80% of data.

Groundwater

Groundwater level in the Wairau Aquifer declined throughout March, reaching its lowest level of just above 33 mm elevation at the Conders well in late March, mimicking the timing of the lowest river flows. Groundwater levels then rose by over a metre in response to increased river flow throughout April and May. Groundwater level at the end of May was in the lower quartile at the Conders site, and slightly below the long-term average at Wratts Road. The LIDAR survey of the Wairau River was flown in late May, with post-processing due to occur in the coming months.

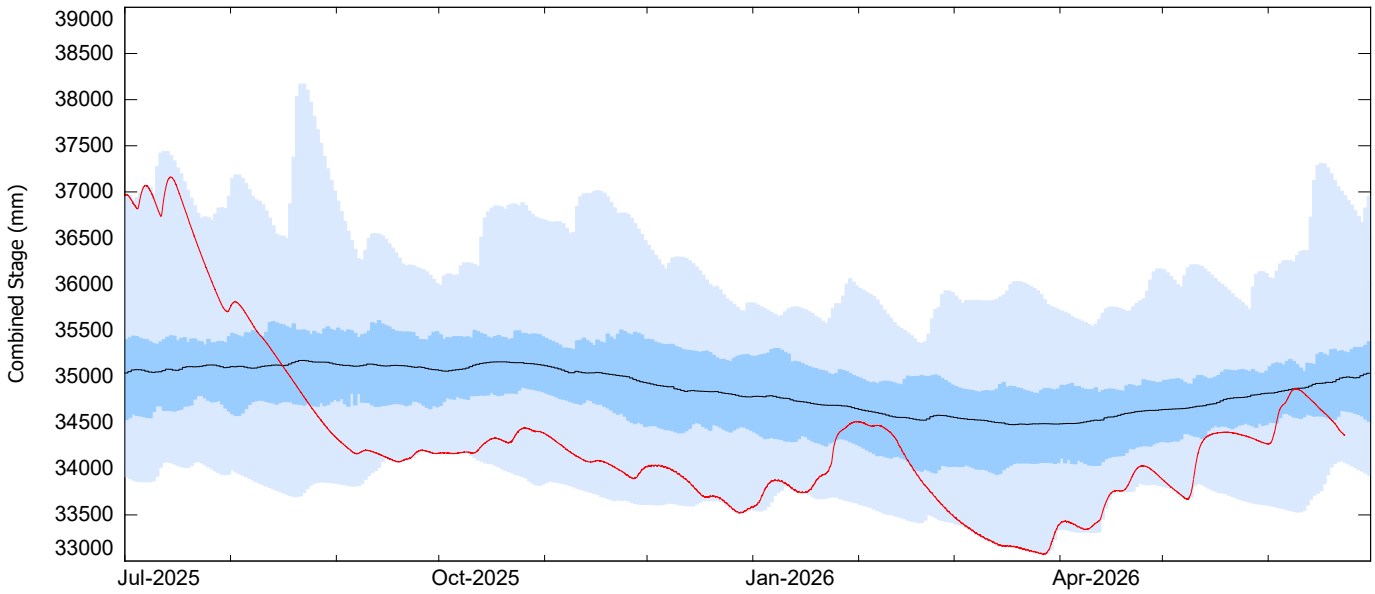

Figure 13. Wairau Aquifer at Conders well water level, from 1 July 2025 to 30 June 2026. The black line is the long-term average groundwater level, and the red line is the 2025/26 groundwater level. The dark blue shows the middle 50% of data and the light blue shows the upper and lower quartiles.

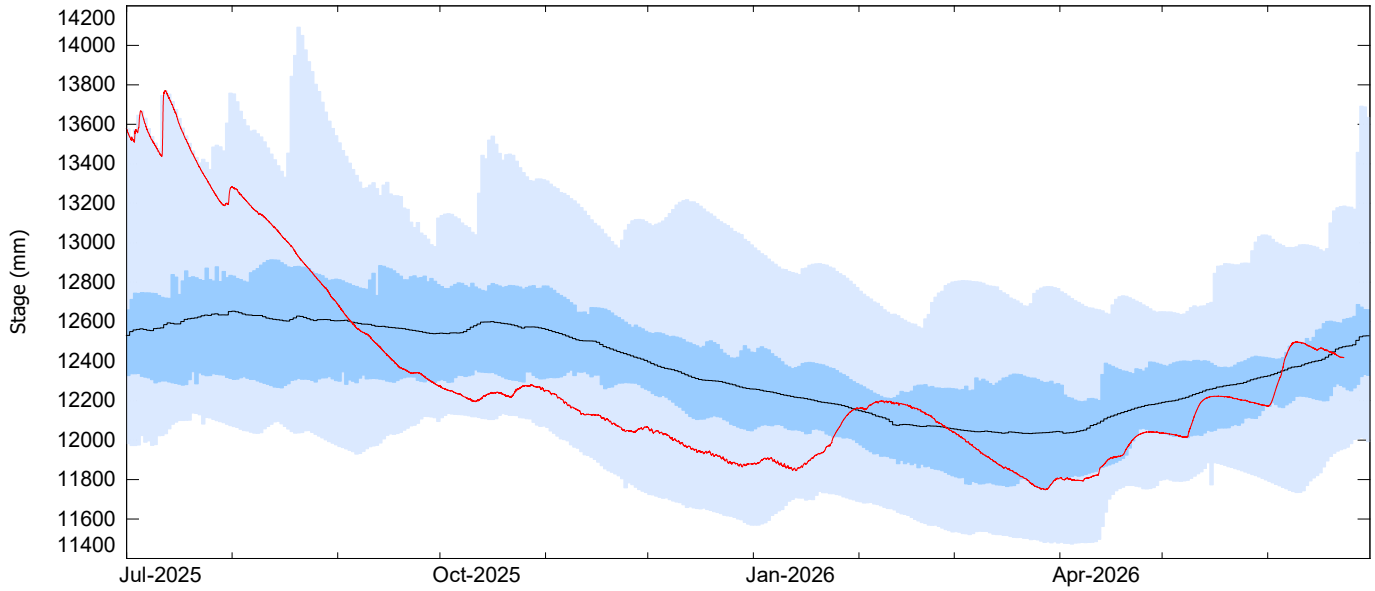

Figure 14. Wairau Aquifer at Wratts Road well water level, from 1 July 2025 to 30 June 2026. The black line is the long-term average groundwater level, and the red line is the 2025/26 groundwater level. The dark blue shows the middle 50% of data and the light blue shows the upper and lower quartiles.

Climate Outlook June to August:

It is likely that winter rainfall will be normal or below average in Marlborough. We are currently in a neutral ENSO period, however warming of the subsurface ocean in the tropical Pacific continues to expand, indicating a rapid shift towards El Niño conditions. There is a very high probability that El Niño conditions will develop between now and August. Peak El Niño is expected during summer 2026/27, and there is potential for this event to have significant impacts. El Niño typically brings reduced rainfall to the east of both islands, including Marlborough.

The predictions for Marlborough/Tasman from June to August are:

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

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	March	April	May	YTD Total
Awatere at Awapiri	148	20	25	70	61	44	129	17	62	95	73	**742**
Awatere Glenbrae NRFA	79	19	16	52	45	54	138	32	26	103	22	**586**
Beneagle at Farm Stream	108	18	21	56	32	58	115	24	25	112	28	**595**
Blenheim at MDC Office	101	25	15	61	42	44	112	19	25	119	27	**587**
Branch at Branch Recorder	240	56	100	144	70	50	141	36	73	107	111	**1128**
Branch at Mt Morris	243	25	0	0	69	113	210	61	102	126	137	**1084**
Flaxbourne at Corrie Downs	98	18	13	29	48	84	141	52	46	162	25	**714**
Kaituna Rainfall at Higgins Bridge	208	52	108	113	111	74	106	25	61	136	170	**1162**
Kenepuru Head NRFA	318	68	137	185	162	167	180	93	96	287	152	**1845**
Koromiko NRFA	203	45	93	113	116	146	186	54	47	171	121	**1294**
Lake Elterwater Climate	92	24	10	28	66	78	144	51	46	185	20	**741**
Lansdowne NRFA	165	18	33	70	76	72	136	37	60	136	102	**906**
Malings	93	56	313	522	154	193	179	65	77	184	275	**2109**
Mid Awatere Valley NRFA	118	13	21	79	39	25	103	20	50	76	36	**579**
Molesworth NRFA	93	25	46	79	64	51	164	50	46	68	43	**729**
Omaka at Ramshead Saddle	154	20	24	80	60	39	114	18	71			**)**
Onamalutu at Bartletts Creek Saddle	289	48	99	136	172	102	239	38	126	146	265	**1660**
Onamalutu at Hilltop Road NRFA	247	59	148	173	175	132	228	39	99	157	287	**1744**
Picton Climate at Waitohi Domain	187	34	83	108	90	139	120	43	43	171	92	**1111**
Pudding Hill NRFA	70	21	68	129	52	53	160	58	29	65	30	**734**
Rai at Rai Falls	348	89	192	230	183	136	147	30	166	181	410	**2112**
Rai Valley NRFA	269	79	163	194	115	104	125	32	134	180	259	**1655**
Rarangi at Driving Range	155	34	33	68	96	78	157	110	40	154	49	**972**

Table 1. (continued).

Site	July	August	September	October	November	December	January	February	March	April	May	YTD Total
Red Hills	271	45	153	394	113	101	176	59	124	113	84	**1630**
St Arnaud NRFA	140	61	224	283	94	85	127	23	52	103	83	**1274**
Taylor at Taylor Pass Landfill	109	20	23	56	36	47	100	18	22	104	26	**561**
Taylor at Tinpot	169	43	30	76	68	75	151	36	73	109	49	**877**
Te Rapa	112	25	8	27	63	83	216	55	73	172	43	**875**
Top Valley at Staircase Ridge	284	55	103	143	174	113	229	59	150	147	269	**1726**
Tunakino	390	90	228	284	121	154	125	39	184	240	428	**2283**
Upper Clarence NRFA	56	31	11	49	32	43	156	86	17	123	8	**611**
Waihopai at Craiglochart	138	26	17	51	60	35	114	24	45	102	48	**660**
Waihopai at Spray Confluence	175	22	55	115	60	48	171	25	47	94	51	**861**
Waikakaho	171	54	39	99	84	77	185	40	48	144	69	**1008**
Waikawa at Boons Valley	213	53	69	103	87	201	149	82	77	170	68	**1269**
Wairau Valley at Southwold	222	23	29	62	73	65	147	30	71	118	90	**929**
Wakamarina at Twin Falls	258	84	154	239	146	142	191	33	109	221	242	**1818**
Ward NRFA	105	23	9	33	45	82	166	43	47	136	31	**719**
Wye at Charlies Rest	162	30	62	113	65	59	153	28	54	103	73	**901**