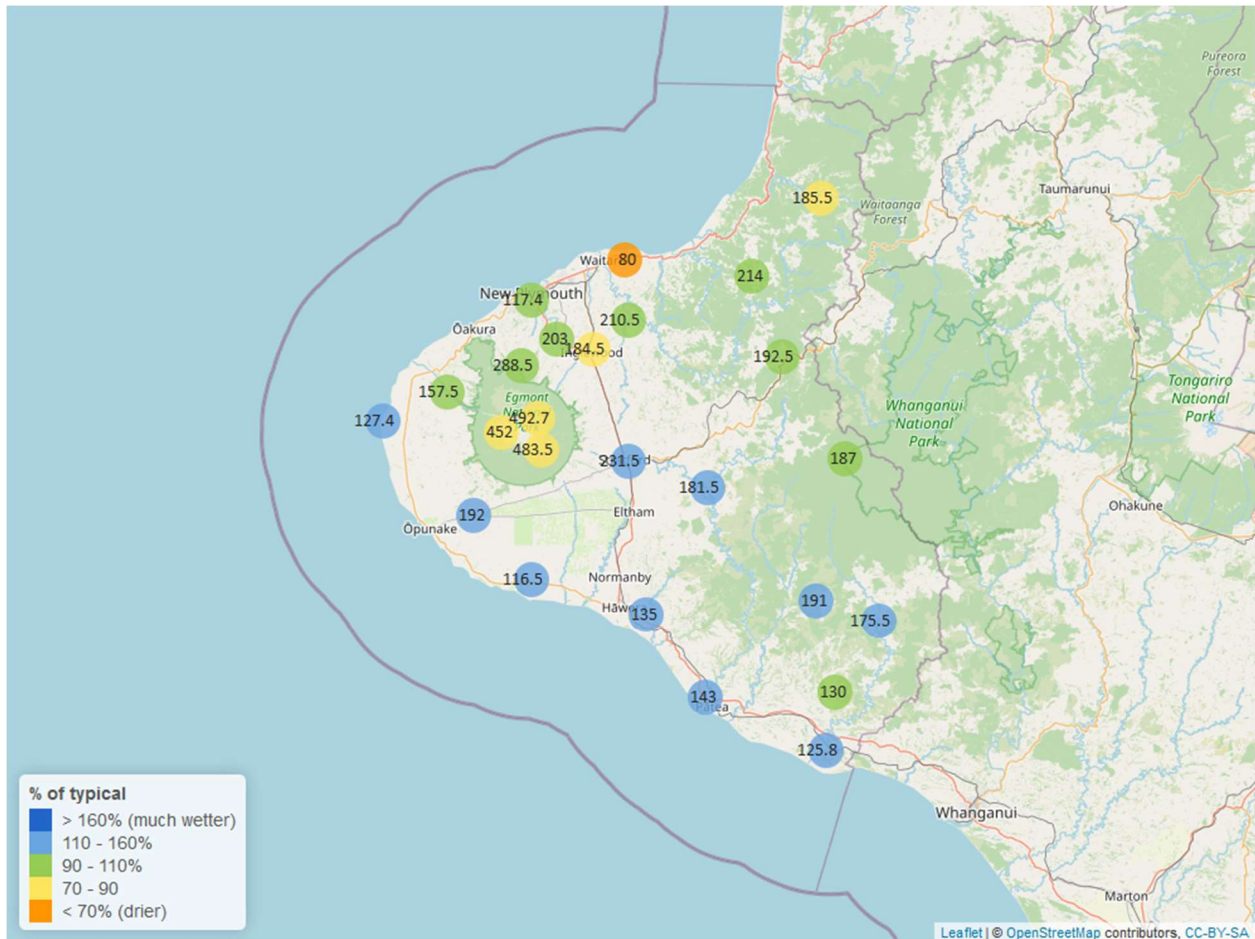


Taranaki Regional Council Monthly Rainfall and Environmental Data Report for September 2024

Note: The data presented here are provisional data only and may change as a result of quality control at a later date.

1. Rainfall

Map 1: September total rainfall (mm) and percentage of long-term mean (colour key).



Map 1a. Total rainfall 1 January to end September (mm) and percentage of long-term mean (colour key).

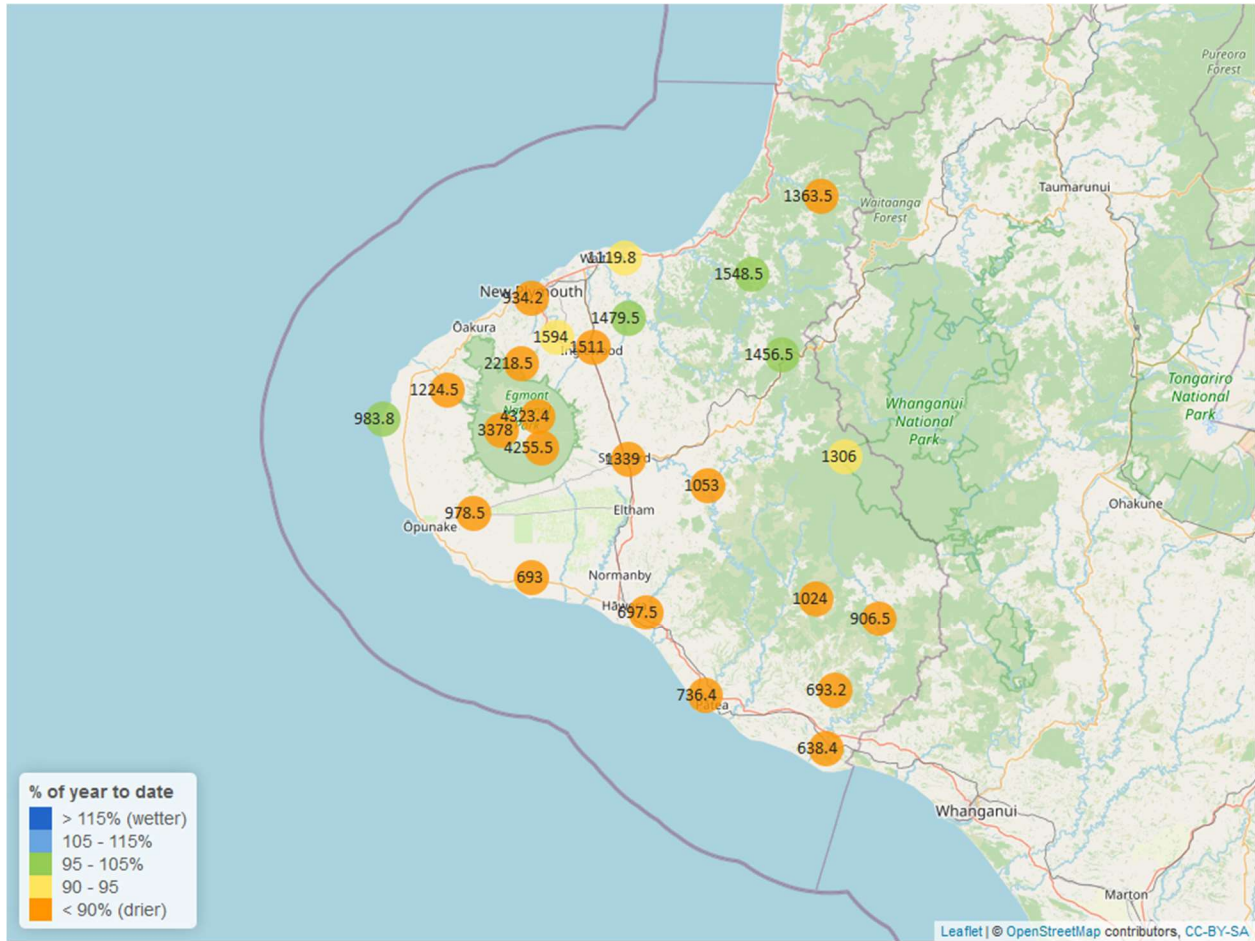


Table 1: Rainfall September and year-to-date totals for rain gauge sites in Taranaki.

Rain gauge	September			Year to Date			Records Began
	# days with rain	Total rain (mm)	% of typical month	Total to date (mm)	% of typical year to date	% of typical full year	
North Egmont at Visitors Centre	23	492.7	73.5	4323.4	84.6	62.5	1995
Dawson Falls	24	483.5	76.1	4255.5	86.7	66.5	1999
Kapoaiaia at Kahui Hut	25	452.0	89.8	3378.0	85.2	64.2	2006
Mangorei Upper at Forest Hill	20	288.5	105.2	2218.5	80.8	59.2	2018
Waiwhakaiho at Hillsborough	14	133.0	87.0	1126.5	80.1	61.6	2013
Brooklands Zoo at New Plymouth	15	117.4	92.2	934.2	74.3	57.9	2012
Motunui M39 at Weston W3	11	80.0	58.6	1119.8	94.1	71.0	1999
Waiwhakaiho at Egmont Village	17	203.0	95.4	1594.0	90.2	65.7	1995
Manganui at Everett Park	16	210.5	108.3	1479.5	96.5	70.4	1995
Inglewood at Oxidation Ponds	15	184.5	83.0	1511.0	87.5	64.2	2000
Stony at Mangatete Bridge	14	157.5	93.5	1224.5	81.8	61.1	2004
Kapoaiaia at Lighthouse	12	127.4	111.6	983.8	96.8	73.4	1999
Taungatara at Eltham Rd	19	192.0	131.9	978.5	82.6	61.9	2005
Kaupokonui at Glenn Rd	14	116.5	112.0	693.0	79.3	59.3	1998
Patea at Stratford	16	231.5	123.9	1339.0	88.1	67.3	1999
Mangaehu at Bridge	14	181.5	124.9	1053.0	88.2	66.1	1999
Kotare at OSullivans	16	185.5	87.0	1363.5	88.1	63.2	1998
Uruti at Kaka Rd	15	214.0	101.3	1548.5	98.0	69.6	1995
Pohokura Saddle	17	192.5	98.6	1456.5	101.0	73.1	1995
Omaru at Charlies	21	187.0	108.0	1306.0	94.6	71.4	2006
Omahine at Moana Trig	19	191.0	116.2	1024.0	80.4	60.6	2007

Rain gauge	September			Year to Date			Records Began
	# days with rain	Total rain (mm)	% of typical month	Total to date (mm)	% of typical year to date	% of typical full year	
Waitotara at Rimunui Station	17	175.5	138.3	906.5	89.5	65.9	1995
Waitotara at Ngutuwera	13	130.0	108.5	693.2	73.3	53.8	1999
Tawhiti at Duffys	14	135.0	146.4	697.5	86.0	63.0	1995
Patea at Bore 3	13	143.0	145.6	736.4	83.6	62.3	2006
Waitotara at Hawken Rd	15	125.8	119.4	638.4	70.0	53.9	2016

Notes: Low and high values in tables refer to the upper and lower 5th percentiles of the historic record for each site (except for wind gust and soil moisture which are the upper and lower 1st percentiles). Percentile values give a better indication of the general upper and lower range of the historic data against which to compare the current month. Start year (records began) shows the length of data used to compute historic highs, lows, and "typical values". Sites with a longer data record will generally provide a more reliable comparison to values in the current year.

1.2 Long-term data patterns

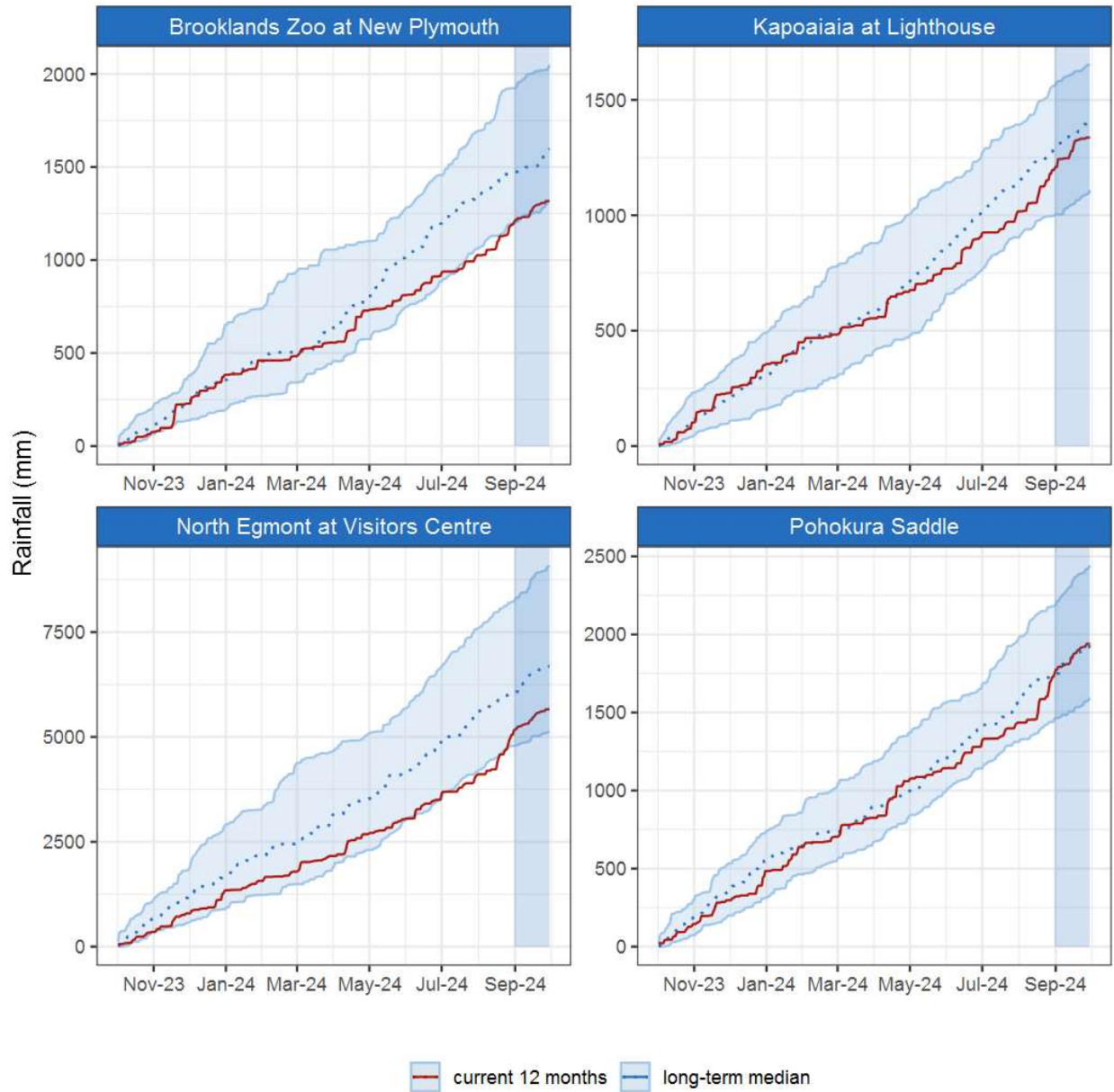


Figure 1.1: This year's and last year's data set in context of historic record at selected rain gauge sites in Taranaki.

1.3 Monthly Bar Charts

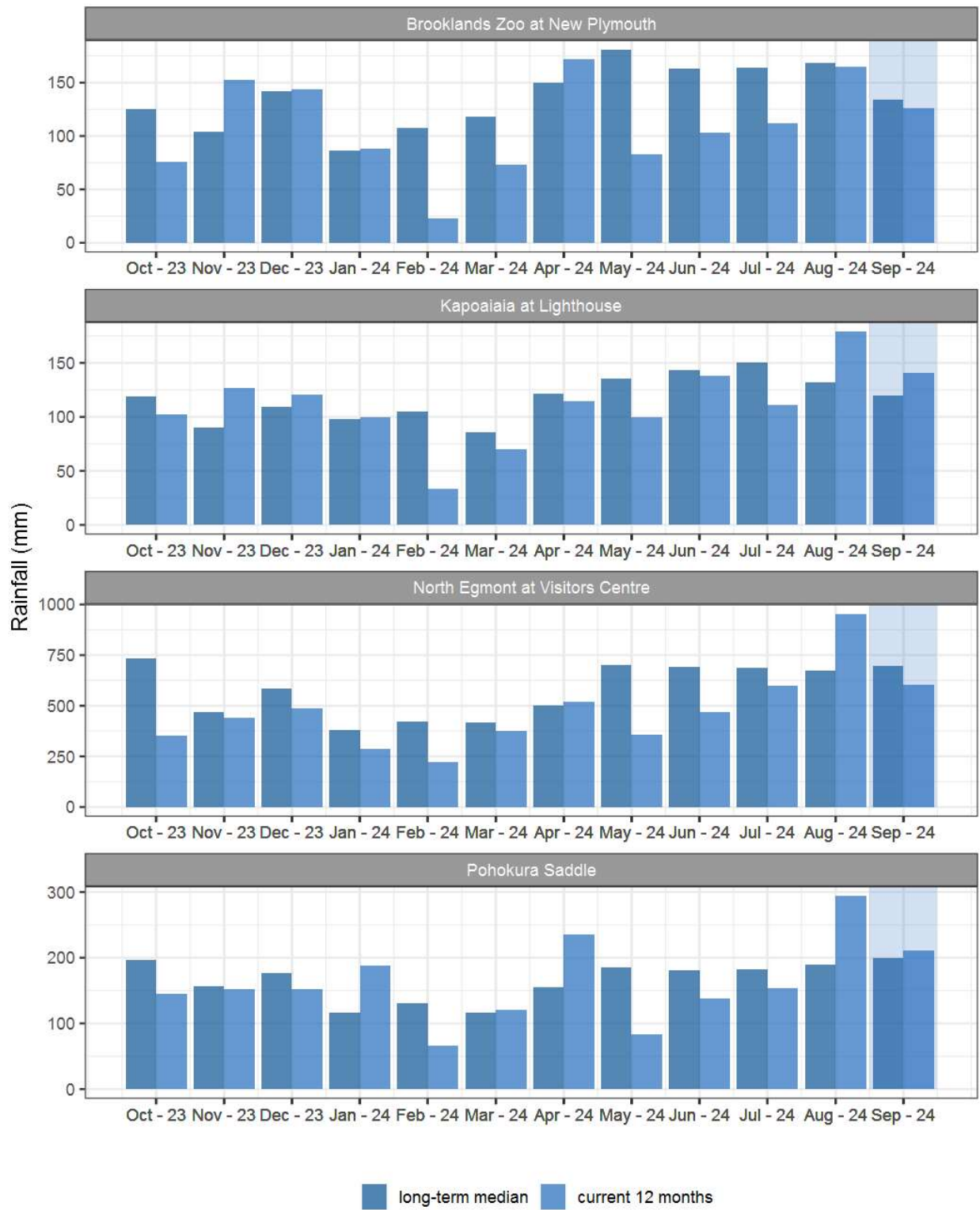


Figure 1.2: Monthly rainfall totals for this month and the mean of all previously recorded months.

2. River Flow

Map 2: September mean river flows (m3/sec), with difference as percentage of long-term mean.

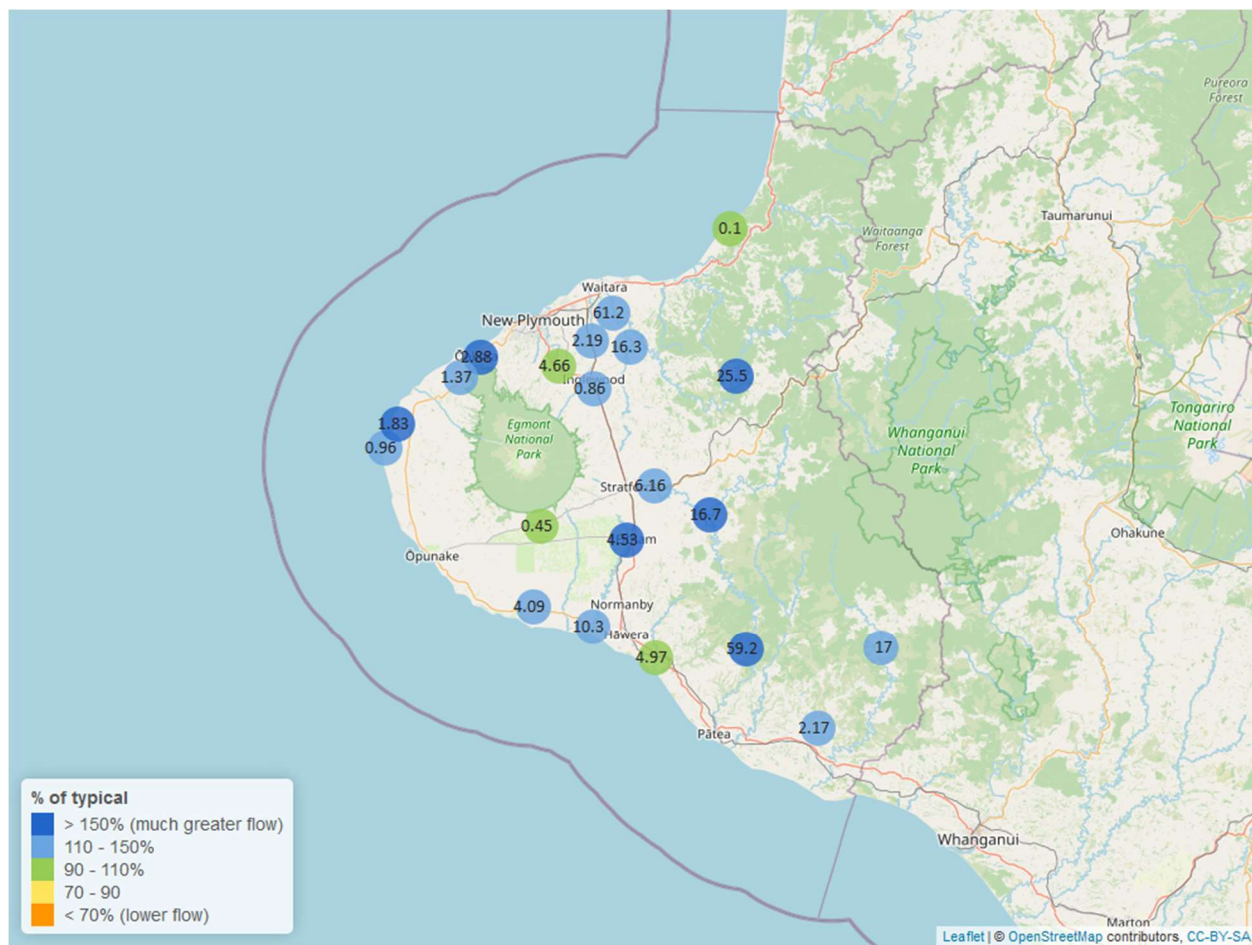


Table 2: Summary of high, low and mean flow for September and for September in all preceding years of record.

September 2024 - Recorded flows (m3/sec)								
River and Site	Highs		Lows		Mean		September maximum	Data years
	current month	historic	current month	historic	current month	historic		
Kapoaiaia at Lighthouse	3.02	3.59	0.69	0.45	0.96	0.85	11.08	38
Kaupokonui at Glenn Rd	9.53	9.81	2.93	1.60	4.09	2.99	118.64	45
Mangaehu at Bridge	61.30	47.05	6.87	4.23	16.70	10.08	118.95	45
Manganui at Everett Park	72.31	67.12	9.18	5.36	16.30	11.14	675.72	33
Mangawheroiti Above Intake W.W	1.42	1.26	0.32	0.25	0.45	0.44	9.10	11
Moumahaki at Johnston Rd	9.63	8.12	0.89	0.96	2.17	1.86	31.60	6
Ngatoro at SH3	3.48	4.00	0.61	0.40	0.86	0.73	41.87	36
Oakura at Victoria Rd	10.27	8.72	1.61	1.06	2.88	1.88	50.76	5
Patea at McColls Bridge	102.87	73.45	7.40	3.31	59.20	30.31	370.31	35
Patea at Skinner Rd	17.73	15.32	3.81	1.85	6.16	4.20	51.06	46
Tangahoe below Railway Bridge	22.35	12.95	2.69	2.63	4.97	5.09	53.63	6
Timaru at Tataraimaka	4.44	5.21	0.84	0.50	1.37	1.14	24.48	11
Waikaramarama at Bridge	0.75	0.53	0.05	0.03	0.10	0.10	4.55	7
Waingongoro at Eltham Rd	9.93	8.38	2.77	1.15	4.53	2.58	110.78	49
Waingongoro at SH45	23.20	19.97	6.80	4.12	10.30	8.11	118.08	43
Waiongana at SH3a	8.25	8.39	1.41	0.74	2.19	1.84	94.01	43
Waitara at Bertrand Rd	225.17	218.76	35.10	14.40	61.20	41.72	837.40	44
Waitara at Purangi Bridge	109.19	110.37	10.42	1.86	25.50	11.81	192.20	25
Waitotara at Rimunui Station	63.96	55.95	8.43	5.65	17.00	12.14	137.85	19
Waiwhakaiho at Egmont Village	18.01	25.73	3.32	2.62	4.66	4.80	167.14	44
Warea at Coast	5.38	3.65	1.14	0.60	1.83	1.18	17.19	7

2.2 Long-term data patterns

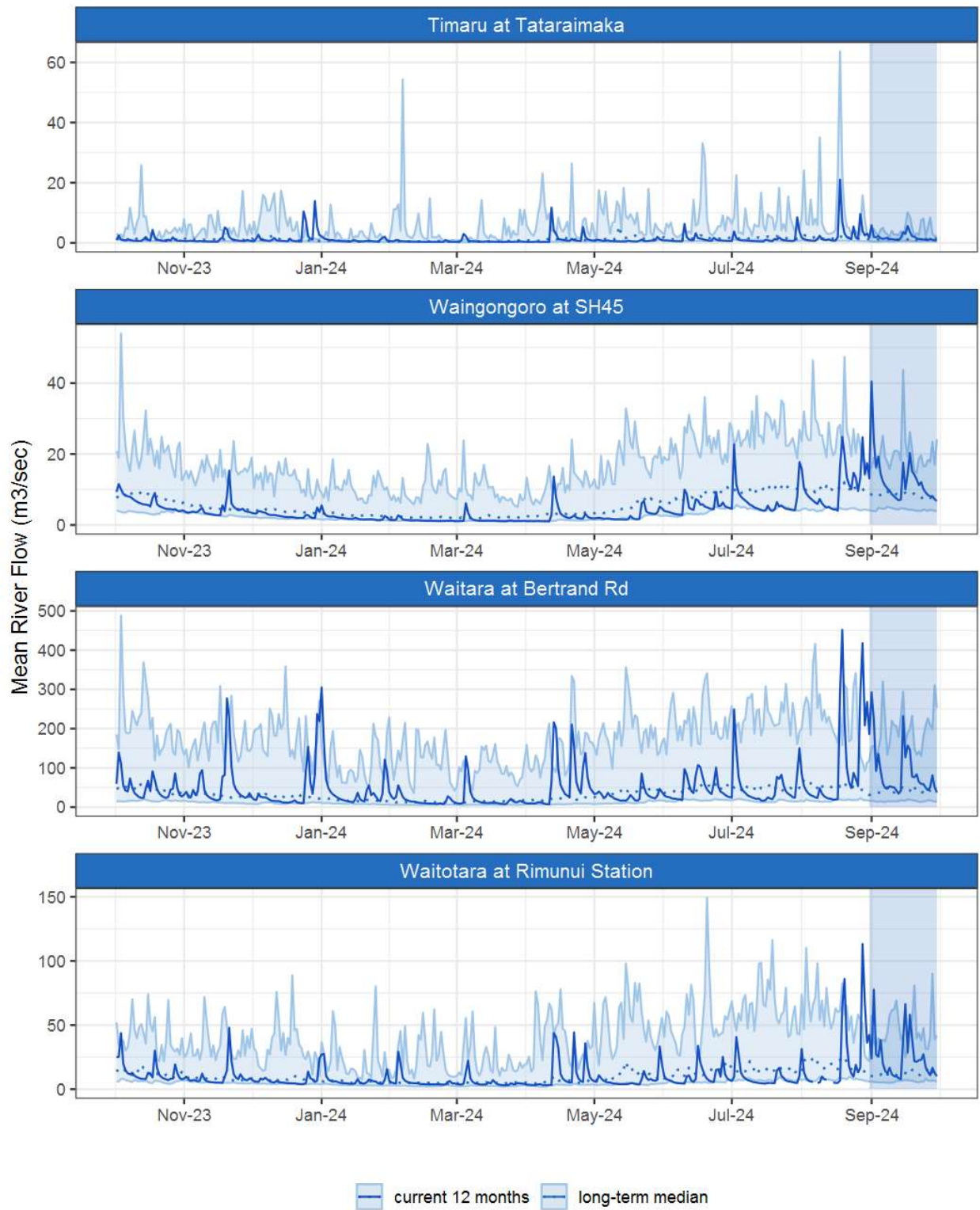


Figure 2.1: Running average river flows for selected sites, set in context of the historic record.

2.3 Monthly Bar Charts

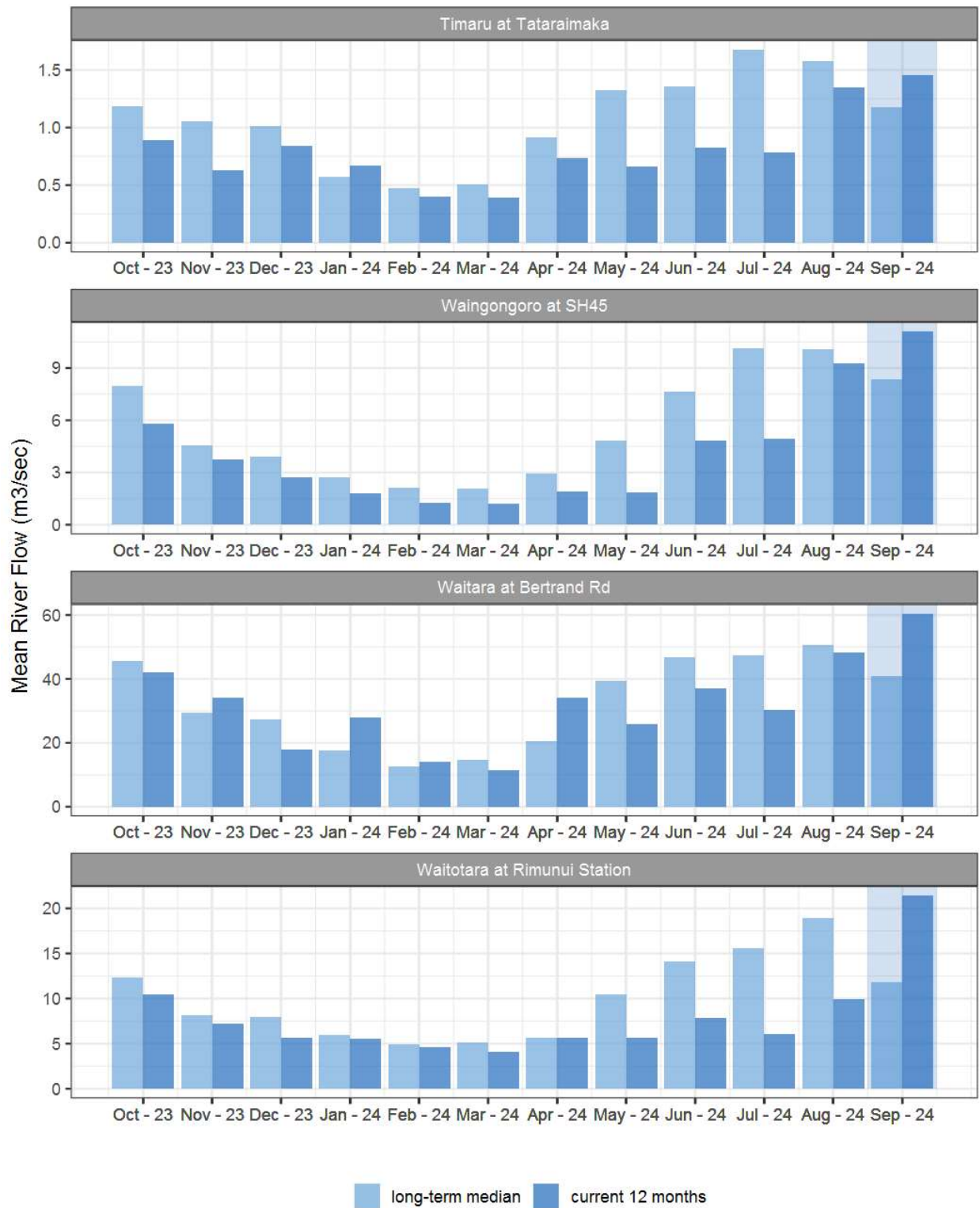


Figure 2.2: Monthly mean river flow for this month and the mean of all previously recorded months.

3. River Temperature

Map 3: September mean water temperature with difference to long-term mean (°C).

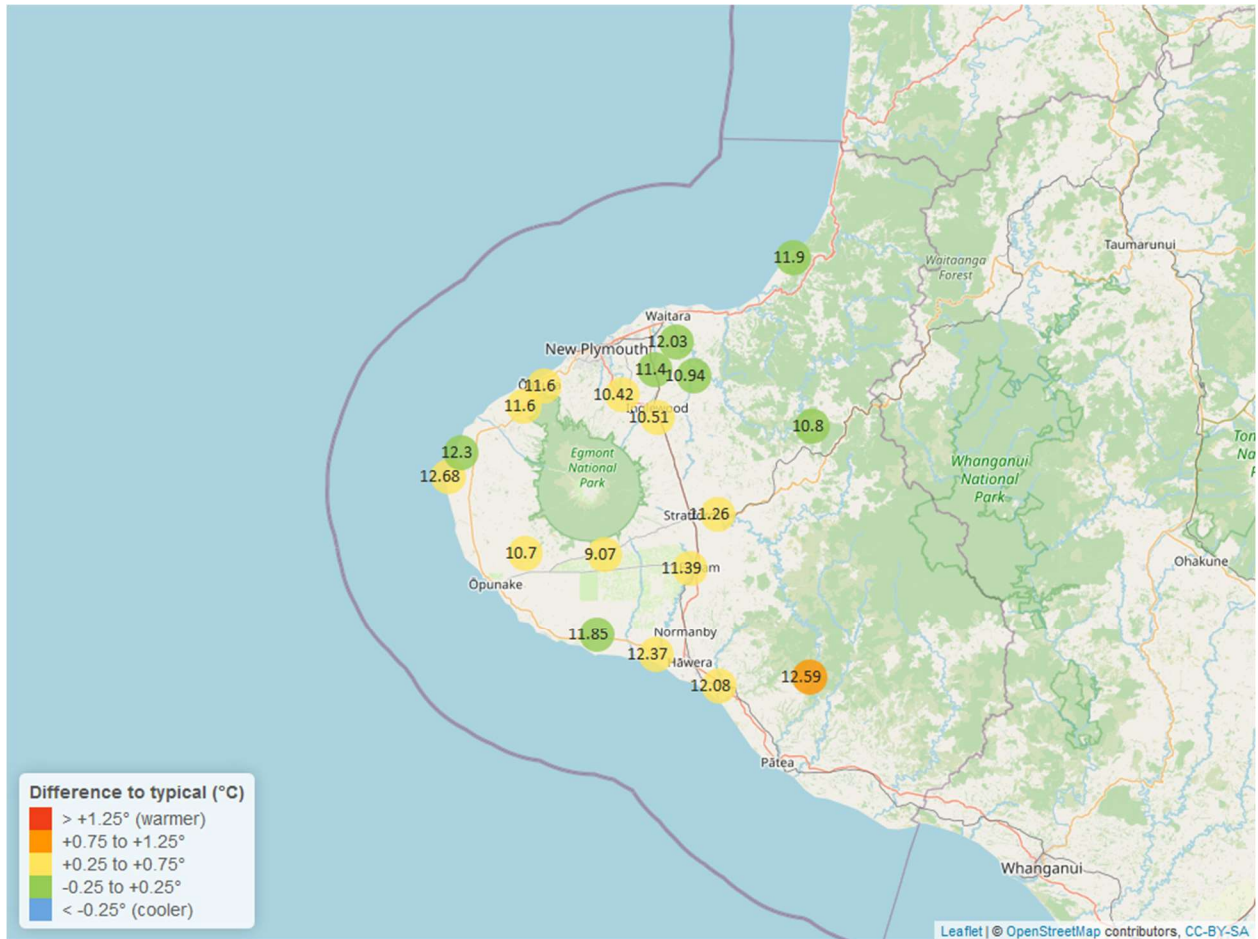


Table 3: Summary of high, low and mean river temperature for September and for September in all preceding years of record.

September 2024 - River Temperature (°C)								
River and Site	Highs		Lows		Mean		September maximum	Data years
	current month	historic	current month	historic	current month	historic		
Kapoaiaia at Lighthouse	14.45	15.11	10.10	9.46	12.68	12.34	16.07	26
Kaupokonui at Glenn Rd	13.96	14.69	9.24	8.99	11.85	11.63	16.25	33
Manganui at Everett Park	12.13	13.22	8.90	9.03	10.94	11.16	12.71	16
Mangawheroiti Above Intake W.W	10.39	10.45	7.81	7.02	9.07	8.72	11.04	11
Matau at Woolshed	12.50	12.97	8.93	8.42	10.80	10.78	13.36	7
Ngatoro at SH3	12.09	12.55	8.37	7.84	10.51	10.22	12.73	23
Oakura at Victoria Rd	12.93	13.54	9.66	9.27	11.60	11.19	13.90	5
Patea at McColls Bridge	13.41	13.33	11.59	10.31	12.59	11.76	14.00	10
Patea at Skinner Rd	12.62	13.09	8.19	8.60	11.26	10.73	13.65	20
Tangahoe below Railway Bridge	13.52	13.82	10.37	9.62	12.08	11.61	14.37	6
Timaru at Tataraimaka	12.85	13.38	9.82	8.94	11.60	11.31	13.67	10
Waiaua 2 at Barraclough Opuia	13.74	13.50	8.47	7.42	10.70	10.14	16.31	5
Waikaramarama at Bridge	13.06	13.41	10.00	9.59	11.90	11.66	13.66	7
Waingongoro at Eltham Rd	13.14	12.99	9.46	8.79	11.39	10.90	14.04	19
Waingongoro at SH45	13.52	14.30	10.46	9.95	12.37	12.00	14.01	19
Waiongana at SH3a	12.87	13.30	9.34	8.90	11.40	11.19	13.60	13
Waitara at Bertrand Rd	13.11	14.08	10.48	10.00	12.03	11.80	13.70	35
Waiwhakaiho at Egmont Village	12.10	12.40	8.29	7.62	10.42	10.00	13.00	35
Warea at Coast	14.21	15.32	9.92	9.57	12.30	12.39	15.90	5

3.2 Long-term data patterns

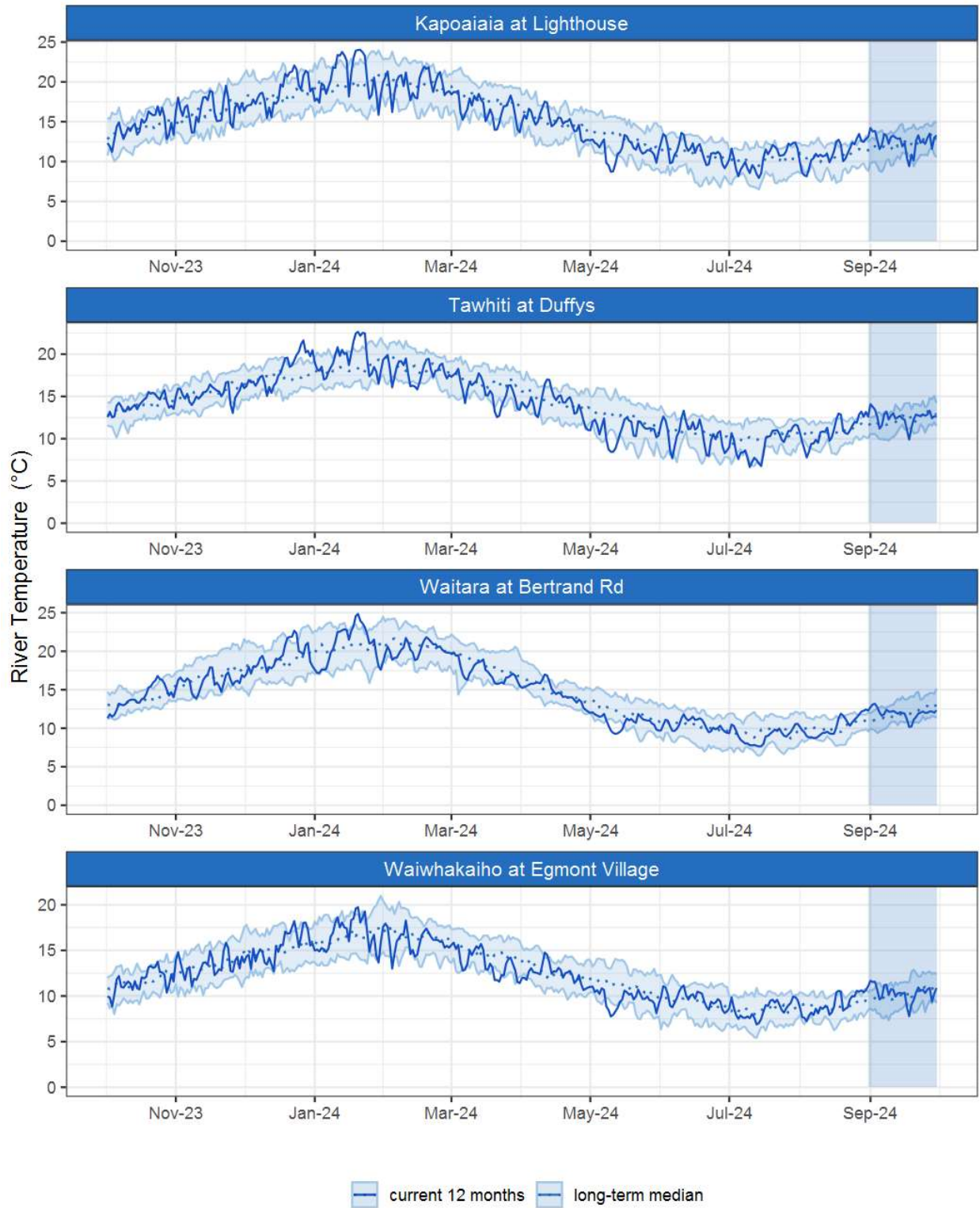


Figure 3.1: Running average river temperature for selected sites, set in context of the historic record.

3.3 Monthly Bar Charts

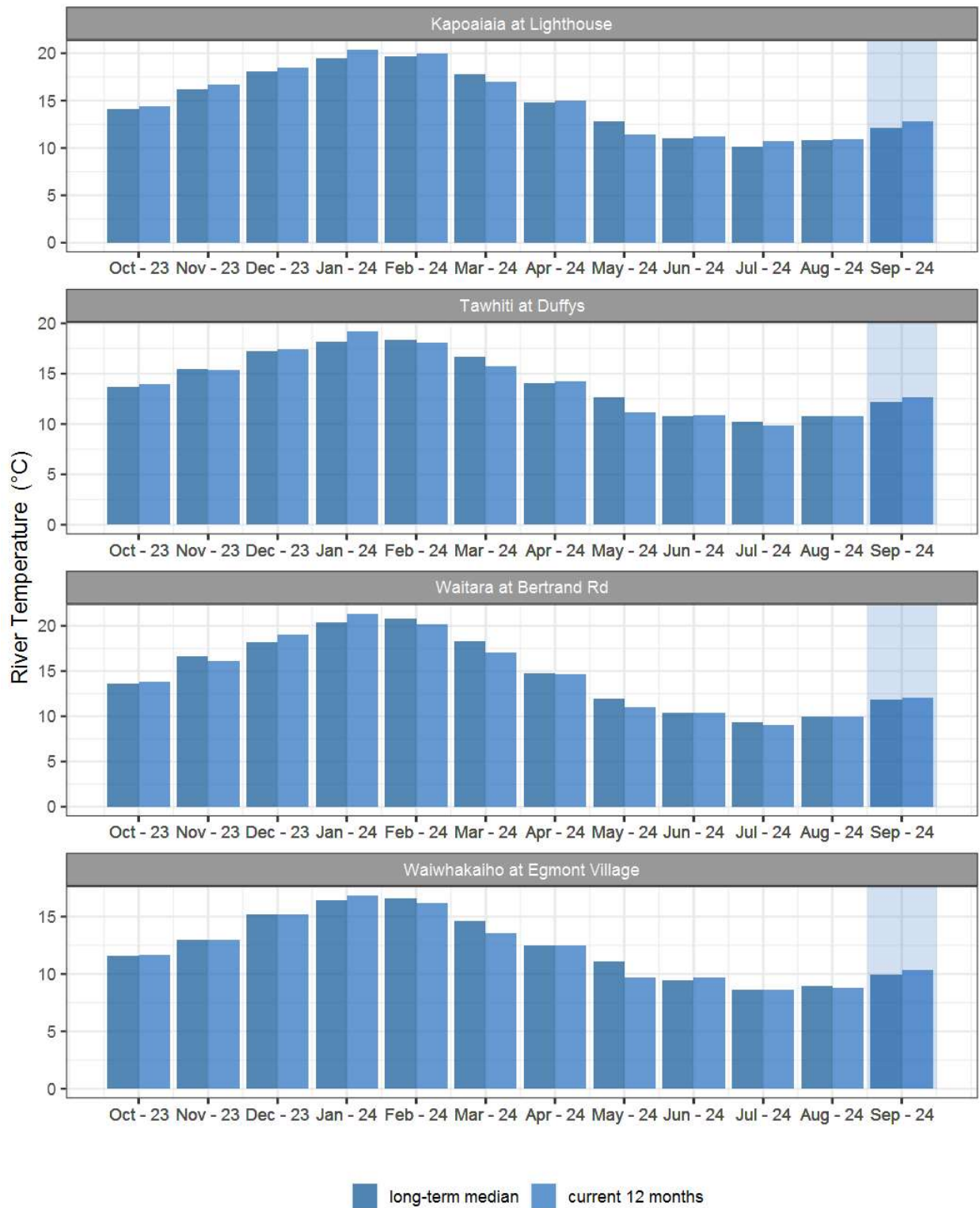


Figure 3.2: Monthly mean river temperature for this month and the mean of all previously recorded months.

4. Air Temperature

Map 4: September mean air temperature with difference to long-term mean (°C).

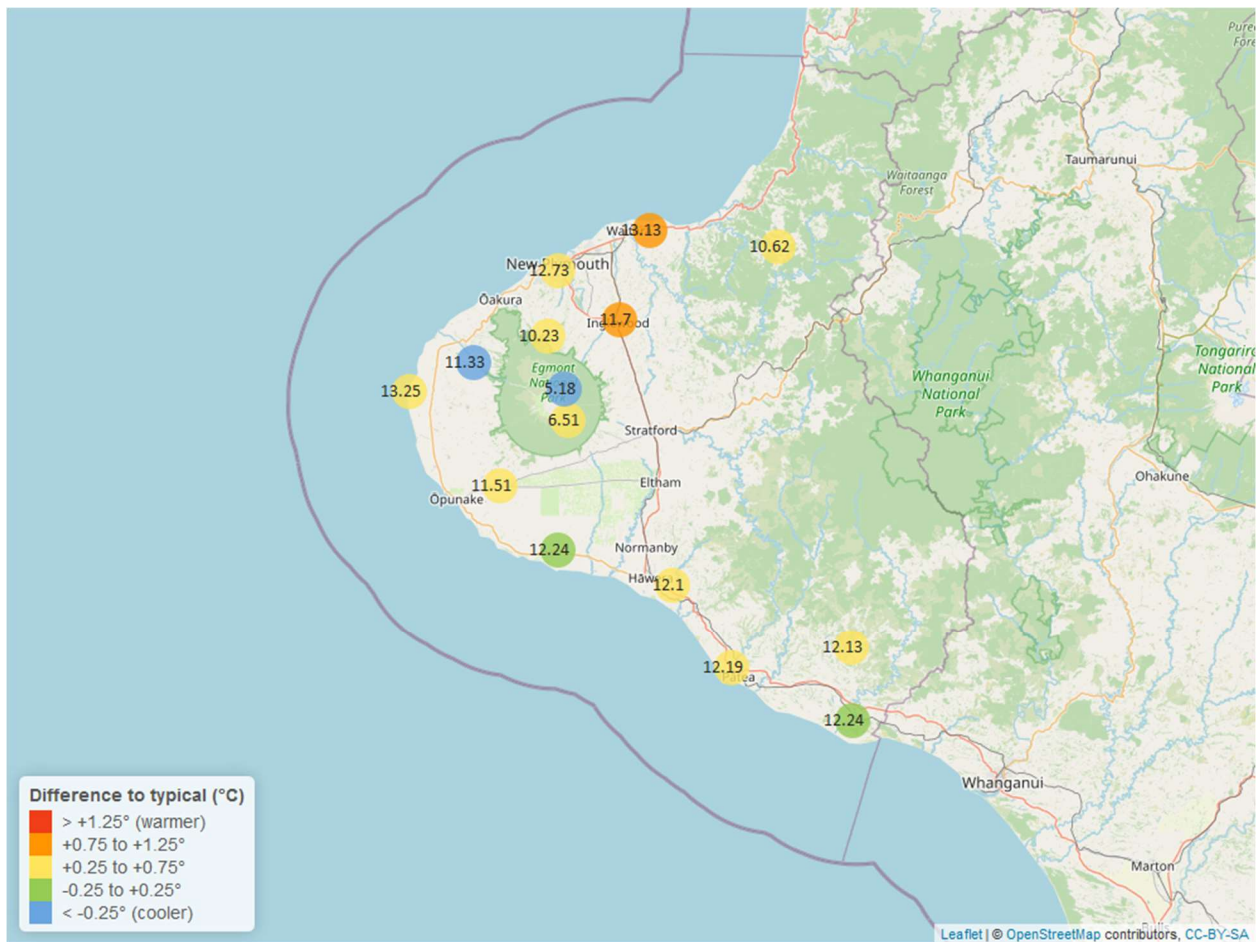


Table 4: Summary of high, low and mean air temperature for September and for September in all preceding years of record.

September 2024 - Air Temperature (°C)								
Site	Highs		Lows		Mean		September maximum	Data years
	current month	historic	current month	historic	current month	historic		
Brooklands Zoo at New Plymouth	17.19	17.29	7.50	6.66	12.73	12.48	18.55	12
Dawson Falls	11.73	11.28	2.59	1.62	6.51	6.19	15.33	9
Inglewood at Oxidation Ponds	16.02	15.51	5.23	4.38	11.70	10.76	19.17	13
Kapoaiaia at Lighthouse	15.44	15.52	8.85	7.68	13.25	12.86	16.34	12
Kaupokonui at Glenn Rd	15.89	16.30	7.76	6.70	12.24	12.01	19.56	9
Mangorei Upper at Forest Hill	13.02	13.29	5.81	5.30	10.23	9.67	14.88	7
Motunui M39 at Weston W3	15.67	15.63	7.14	6.23	13.13	12.20	16.26	8
North Egmont at Visitors Centre	9.01	10.41	0.98	1.43	5.18	6.08	12.56	9
Patea at Bore 3	15.58	15.81	8.37	6.53	12.19	11.84	18.93	12
Stony at Mangatete Bridge	14.18	15.21	7.95	6.68	11.33	11.64	16.57	8
Taungatara at Eltham Rd	14.65	15.00	7.00	6.25	11.51	11.08	17.25	9
Tawhiti at Duffys	16.11	16.21	6.71	3.60	12.10	11.78	19.65	11
Uruti at Kaka Rd	13.76	14.36	6.20	5.52	10.62	10.22	16.01	6
Waitotara at Hawken Rd	16.43	16.64	7.31	6.33	12.24	12.09	19.75	8
Weraweraonga at Mangawhio Rd	17.26	17.00	4.72	4.12	12.13	11.60	21.07	7

4.2 Long-term data patterns

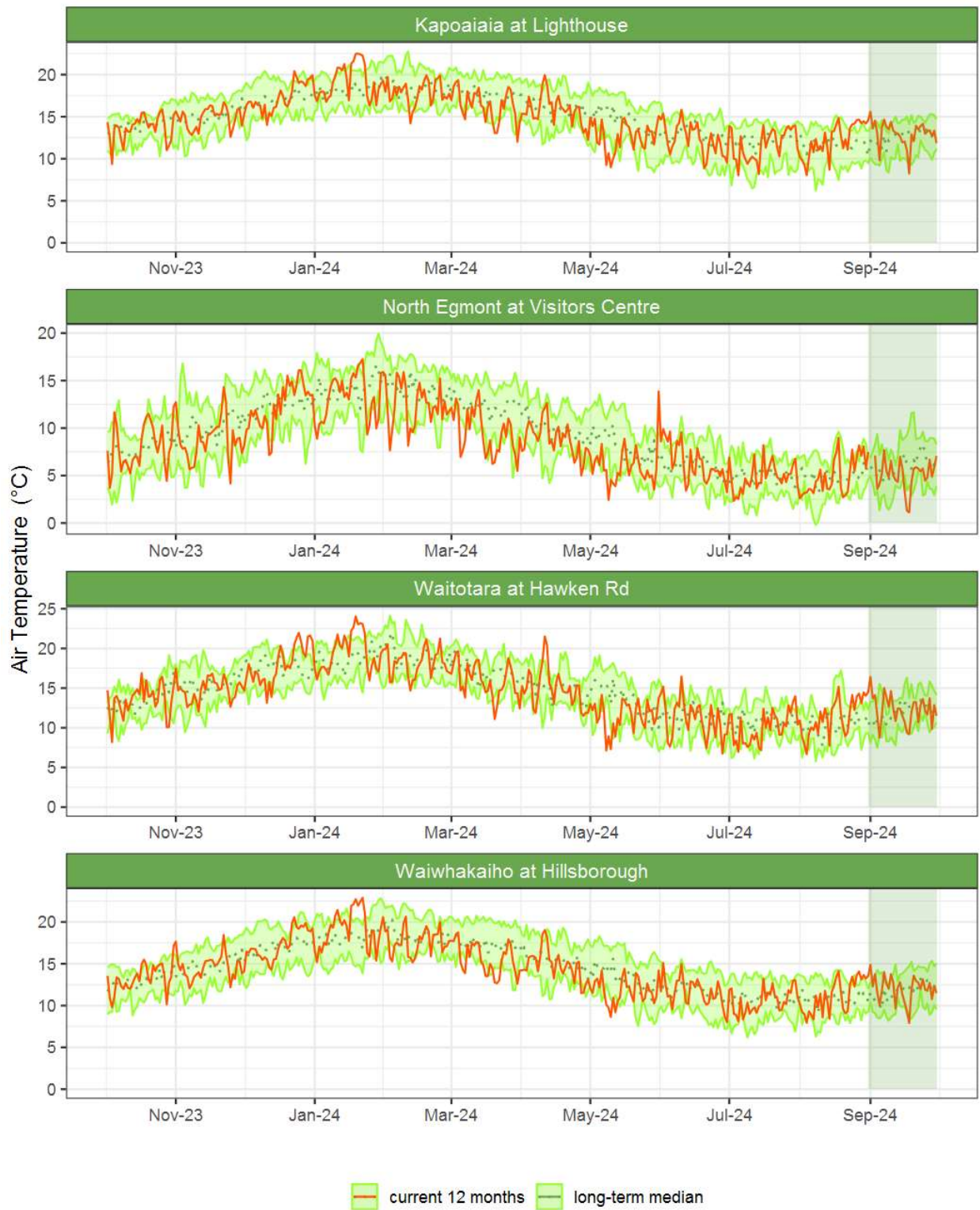


Figure 4.1: Running average air temperature for selected sites, set in context of the historic record.

4.3 Monthly Bar Charts

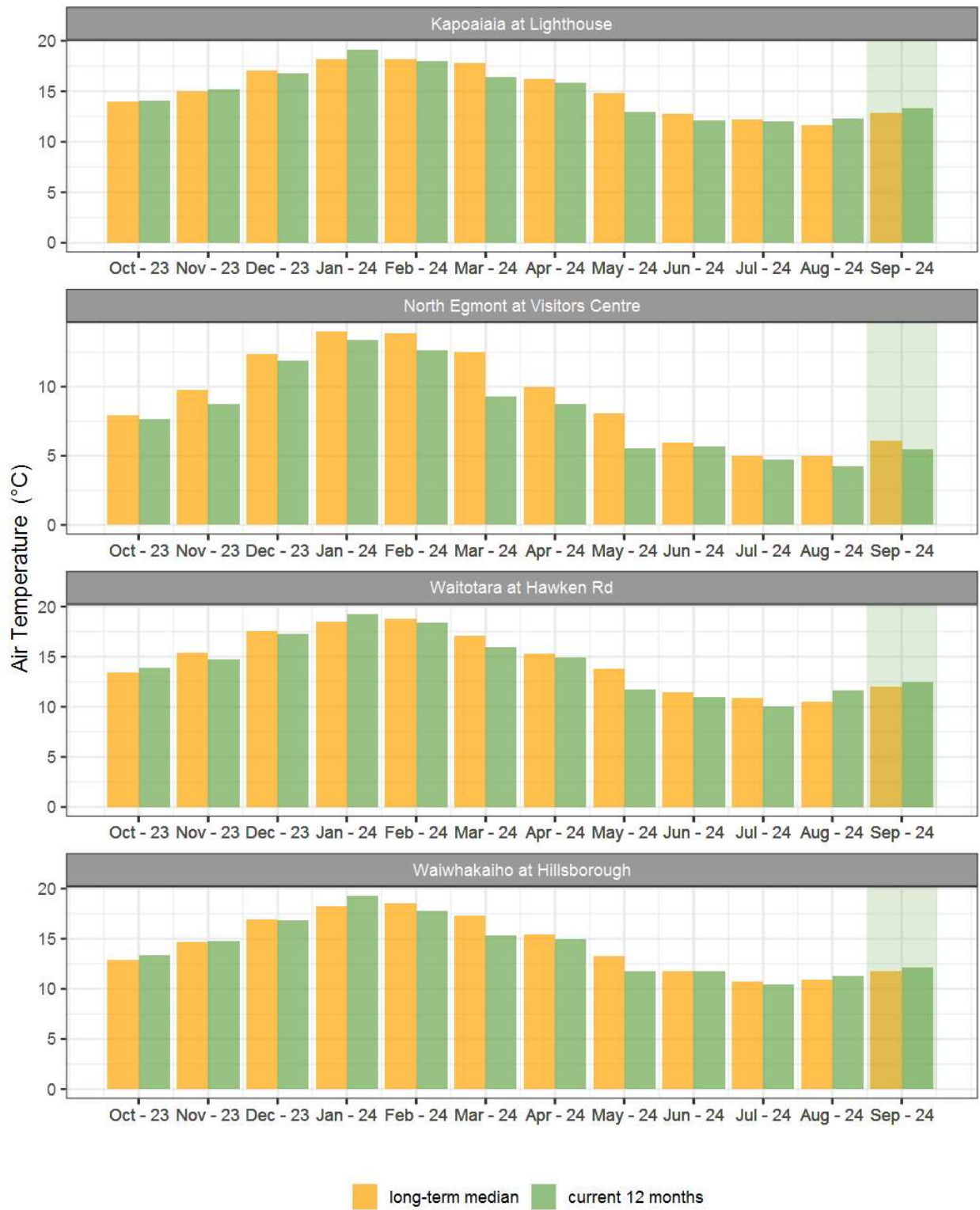


Figure 4.2: Monthly mean air temperature for September and the mean of all previously recorded months.

5. Soil Moisture

Map 5: September mean soil moisture content (%).

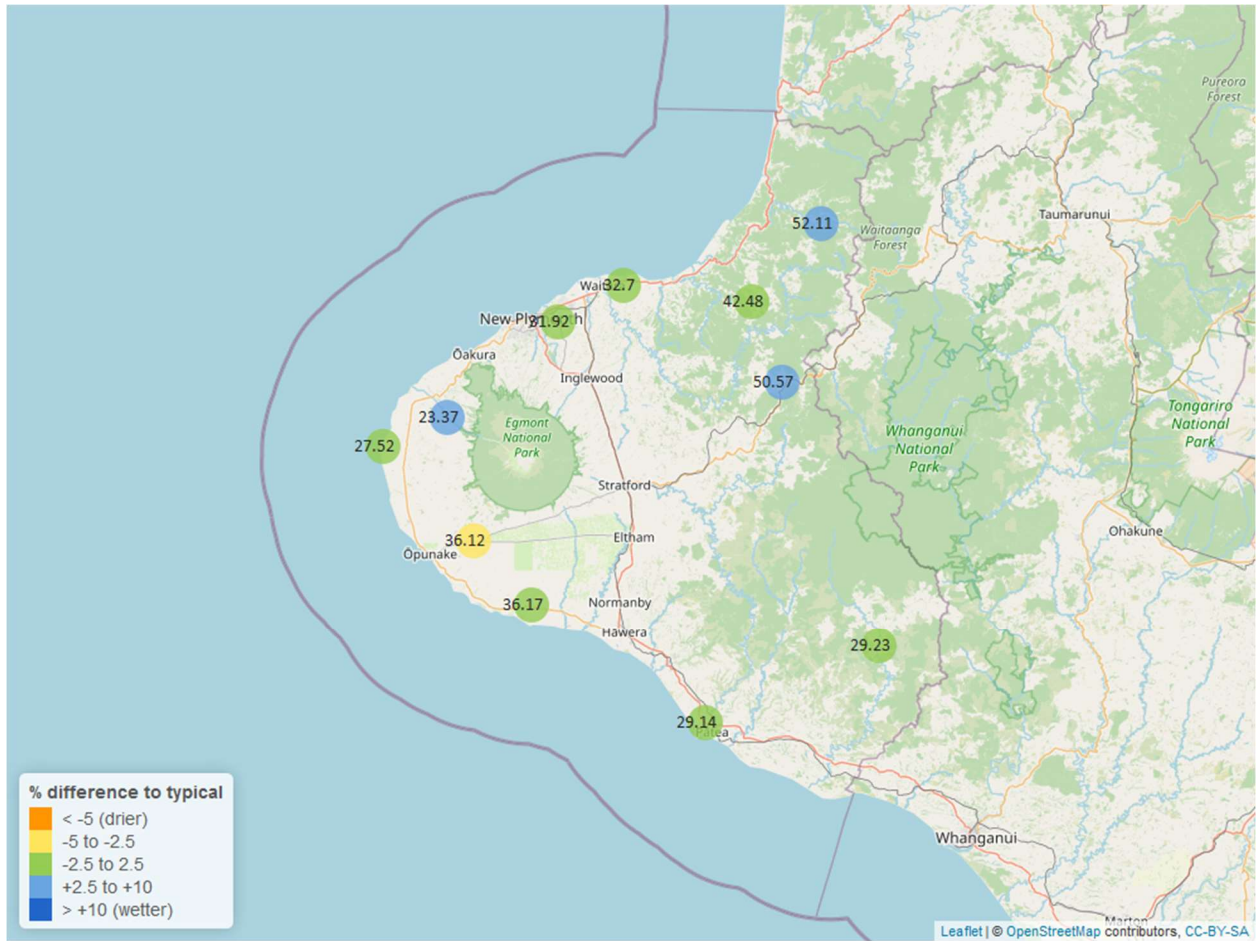


Table 5: Summary of high, low and mean soil moisture for September and for September in all preceding years of record.

September 2024 - Soil Moisture (%)								
Site	Highs		Lows		Mean		September maximum	Data years
	current month	historic	current month	historic	current month	historic		
Kapoaiaia at Lighthouse	28.83	35.05	26.64	22.82	27.52	27.62	29.38	16
Kaupokonui at Glenn Rd	38.97	43.25	34.34	32.19	36.17	35.60	41.17	13
Kotare at OSullivans	55.16	50.89	50.42	36.57	52.11	43.42	57.34	12
Motunui M39 at Weston W3	33.78	36.44	31.71	29.01	32.70	31.51	34.12	16
Patea at Bore 3	31.66	34.46	27.42	25.13	29.14	29.68	36.13	8
Pohokura Saddle	52.13	56.63	48.57	35.70	50.57	45.20	52.39	18
Stony at Mangatete Bridge	28.01	25.18	21.30	15.55	23.37	19.85	31.30	8
Taungatara at Eltham Rd	40.28	45.83	34.86	29.94	36.12	39.00	43.79	11
Uruti at Kaka Rd	43.05	46.92	41.65	38.67	42.48	42.65	43.27	13
Waitotara at Rimunui Station	31.51	30.73	27.64	26.35	29.23	27.96	32.83	7
Waiwhakaiho at Hillsborough	33.57	35.86	30.21	26.49	31.92	31.21	35.22	12

5.2 Long-term data patterns

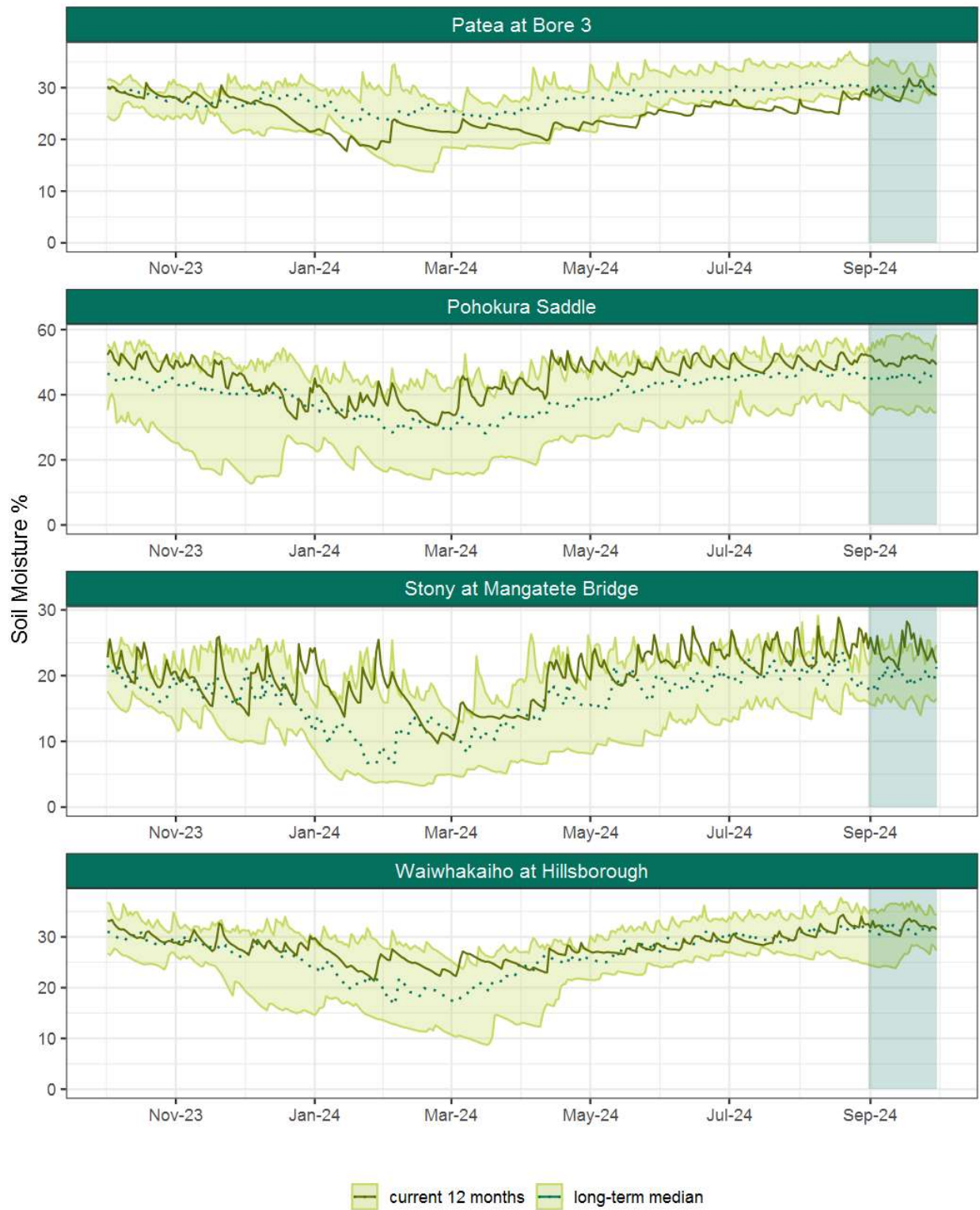


Figure 5.1: Running average soil moisture for selected sites, set in context of the historic record.

5.3 Monthly Bar Charts

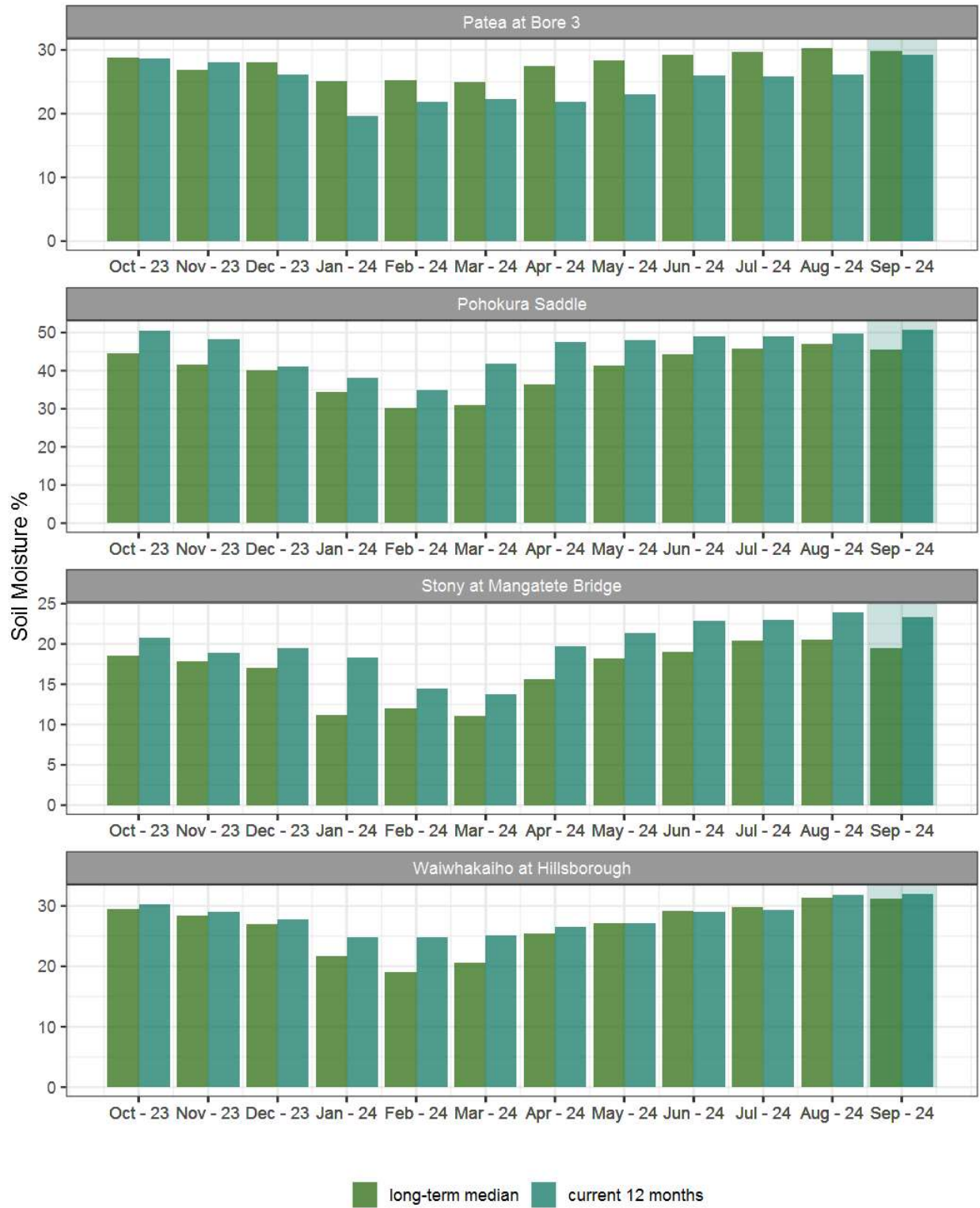


Figure 5.2: Monthly mean soil moisture for this month and the mean of all previously recorded months.

6. Soil Temperature

Map 6: September mean soil temperatures with difference to long-term mean (°C).

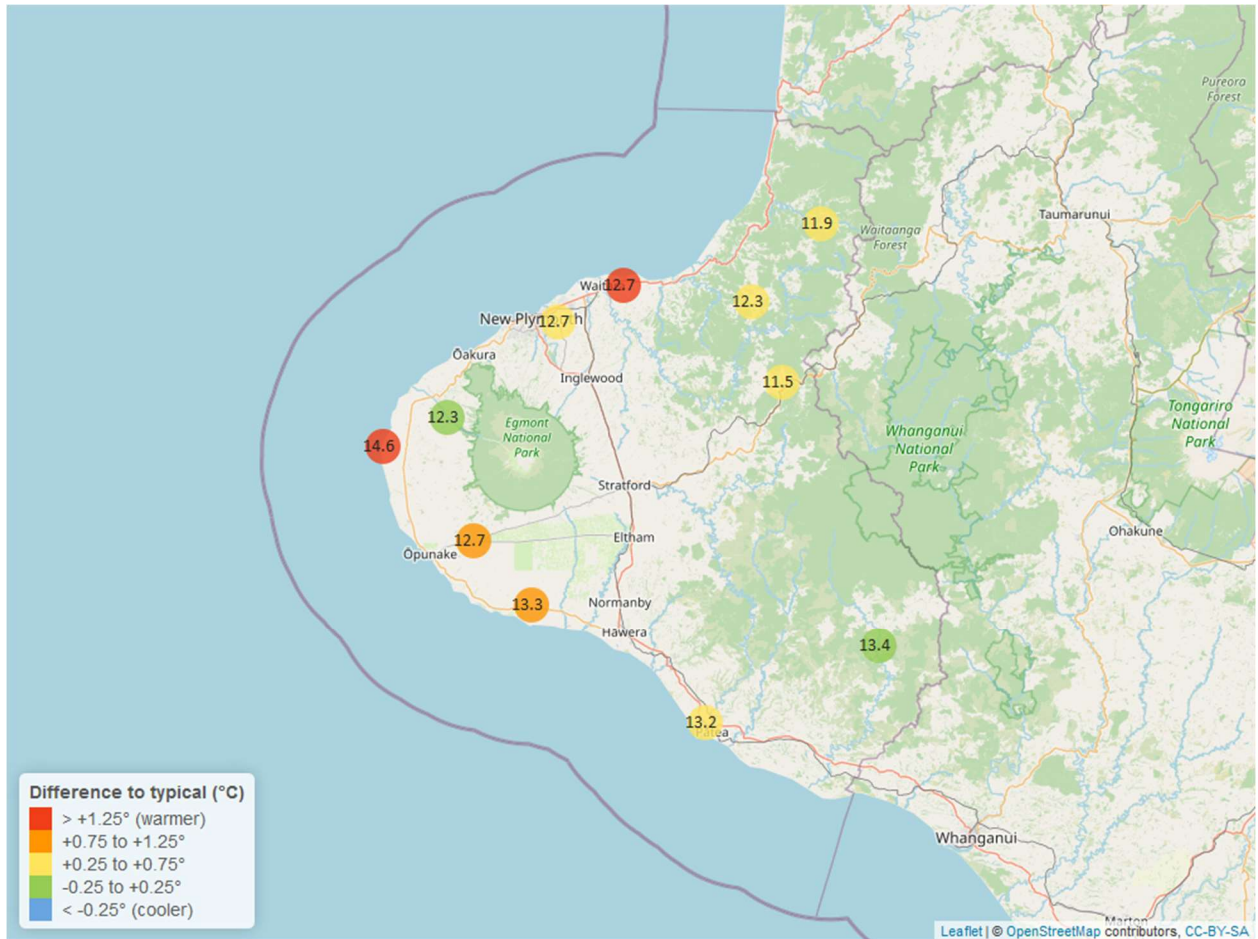


Table 6: Summary of high, low and mean soil temperature for September and for September in all preceding years of record.

September 2024 - Soil Temperatures (°C)								
Site	Highs		Lows		Mean		September maximum	Data years
	current month	historic	current month	historic	current month	historic		
Kapoaiaia at Lighthouse	18.82	15.21	11.34	10.74	14.6	12.90	22.32	18
Kaupokonui at Glenn Rd	14.11	14.60	11.70	10.47	13.3	12.34	14.90	13
Kotare at OSullivans	12.98	13.81	11.23	9.08	11.9	11.30	13.17	12
Motunui M39 at Weston W3	14.16	13.65	11.38	9.78	12.7	11.48	14.53	16
Patea at Bore 3	14.58	14.96	11.14	10.29	13.2	12.57	15.34	8
Pohokura Saddle	12.52	13.07	10.08	9.29	11.5	11.00	13.25	18
Stony at Mangatete Bridge	13.30	14.76	10.60	9.80	12.3	12.10	13.92	7
Taungatara at Eltham Rd	14.06	13.50	10.56	9.79	12.7	11.70	15.30	11
Uruti at Kaka Rd	12.97	13.62	11.53	9.81	12.3	11.68	13.24	13
Waitotara at Rimunui Station	14.99	15.99	11.85	11.08	13.4	13.57	16.83	7
Waiwhakaiho at Hillsborough	13.71	14.04	11.36	10.30	12.7	12.08	14.04	12

6.2 Long-term data patterns

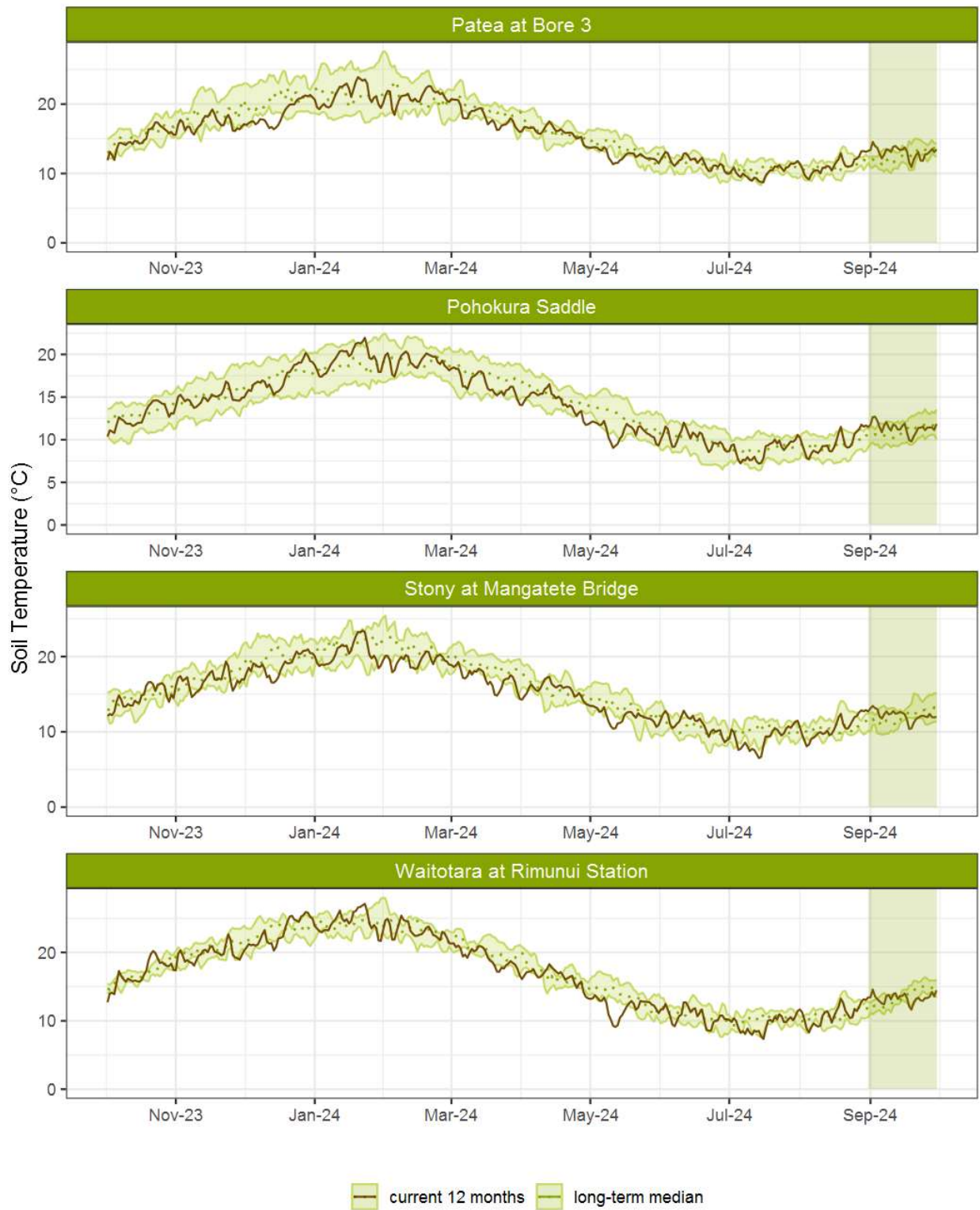


Figure 6.1: Running average soil temperature for selected sites, set in context of the historic record.

6.3 Monthly Bar Charts

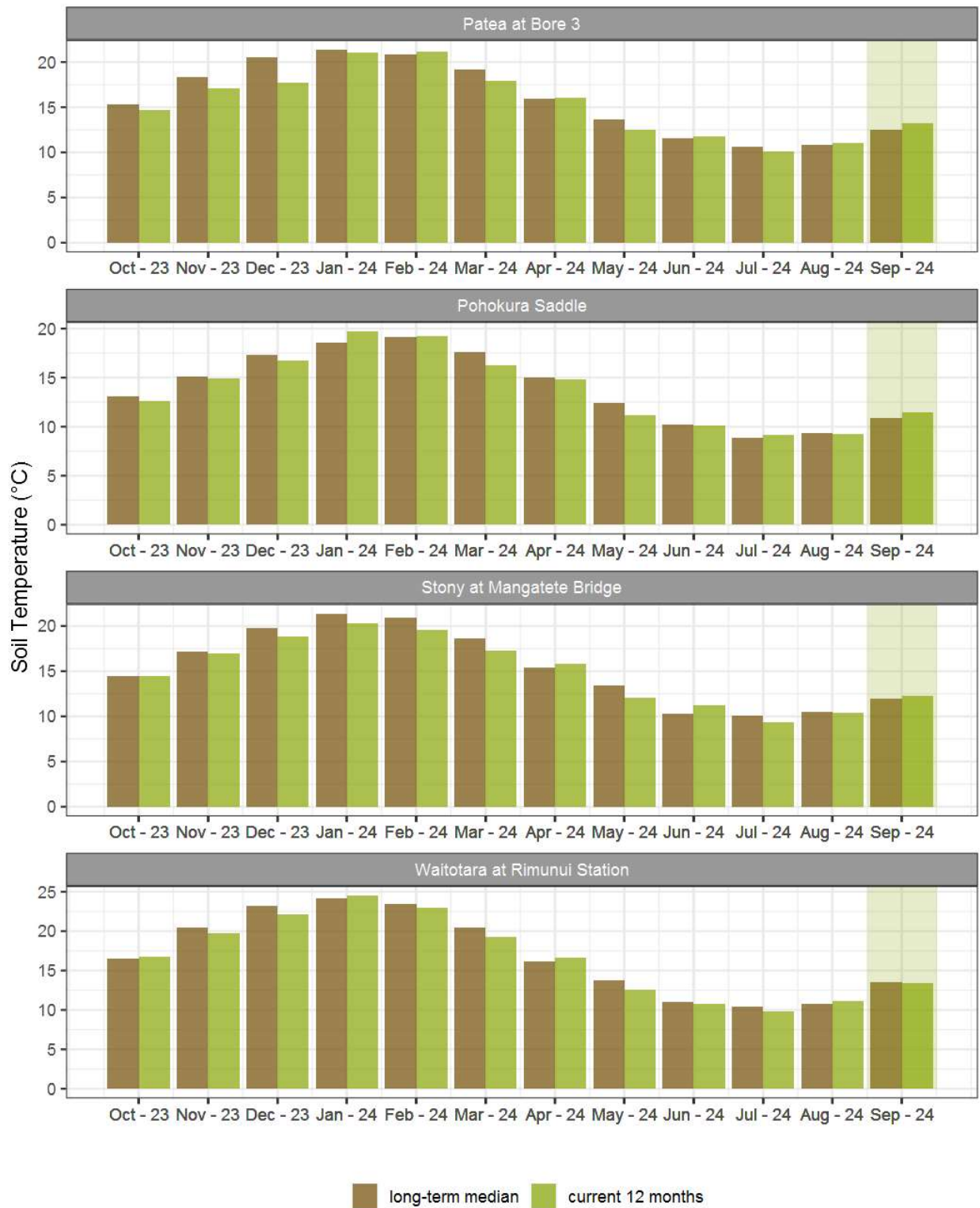


Figure 6.2: Monthly mean soil temperature for this month and the mean of all previously recorded months.

7. Wind Speed and Maximum Gusts

Map 7: September mean of wind speed with difference to long-term values (km/hr).

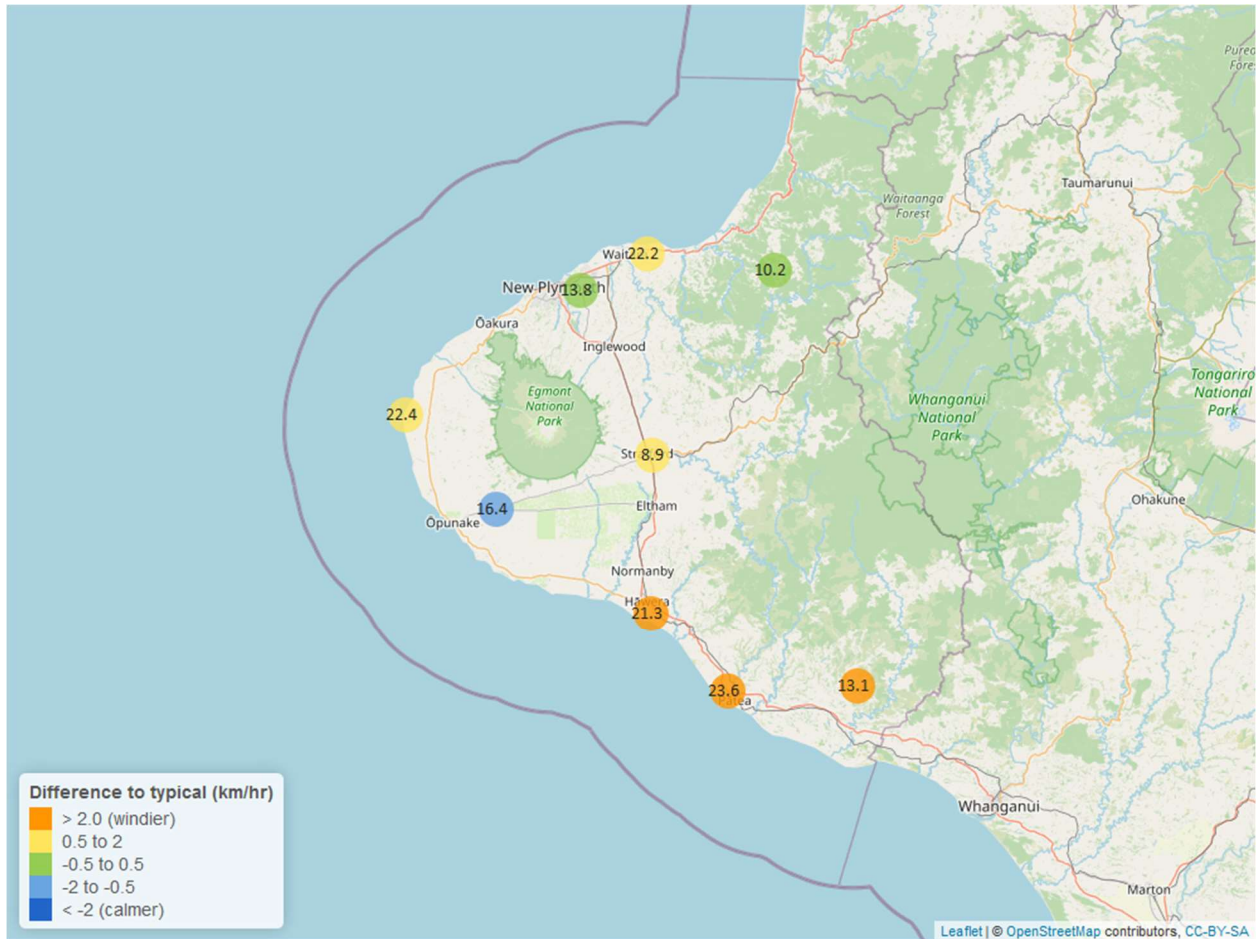


Table 7: Summary of high, low and mean wind speed for September and for September in all preceding years of record.

September 2024 - Wind Speed (average) - (km/hr)								
Site	Highs		Lows		Mean		September maximum	Data years
	current month	historic	current month	historic	current month	historic		
Hawera AWS	37.97	39.82	8.33	5.92	21.3	18.52	50.00	19
Kapoaiaia at Lighthouse	36.28	42.59	8.58	6.78	22.4	20.71	55.48	26
New Plymouth AWS	36.16	42.60	5.56	6.48	22.2	20.37	56.49	16
Patea at Bore 3	40.46	43.87	8.22	6.77	23.6	20.35	50.75	8
Patea at Stratford	17.92	20.41	3.04	2.49	8.9	8.04	29.72	18
Taungatara at Eltham Rd	33.51	34.99	7.57	6.95	16.4	17.79	49.67	9
Uruti at Kaka Rd	22.09	25.35	4.43	3.80	10.2	10.67	52.82	27
Waitotara at Ngutuwera	24.25	24.54	4.09	2.54	13.1	10.82	42.99	26
Waiwhakaiho at Hillsborough	29.46	33.24	3.84	4.25	13.8	14.03	43.38	7

Table 8: Summary of high, low and maximum wind gusts for September and for September in all preceding years of record.

September 2024 - Wind Gusts (Maximum) - (km/hr)								
Site	Highs		Lows		Mean		September maximum	Data years
	current month	historic	current month	historic	current month	historic		
Hawera AWS	79.64	77.78	31.48	23.53	51.9	48.15	92.60	19
Kapoaiaia at Lighthouse	65.88	85.90	30.24	24.10	45.4	48.50	65.88	25
New Plymouth AWS	75.93	85.19	35.19	24.08	53.7	48.15	83.34	16
Patea at Bore 3	74.80	83.14	26.30	24.60	56.2	50.20	90.50	8
Patea at Stratford	61.92	65.80	19.44	20.50	43.9	38.88	75.60	18
Taungatara at Eltham Rd	76.30	81.70	26.20	25.50	49.0	49.00	115.70	9
Uruti at Kaka Rd	78.48	76.30	29.16	21.70	51.8	40.90	104.40	25
Waitotara at Ngutuwera	80.28	78.12	30.24	20.40	60.5	42.48	83.52	26
Waiwhakaiho at Hillsborough	66.90	79.20	33.20	23.50	48.1	45.50	69.10	7

7.2 Long-term data patterns

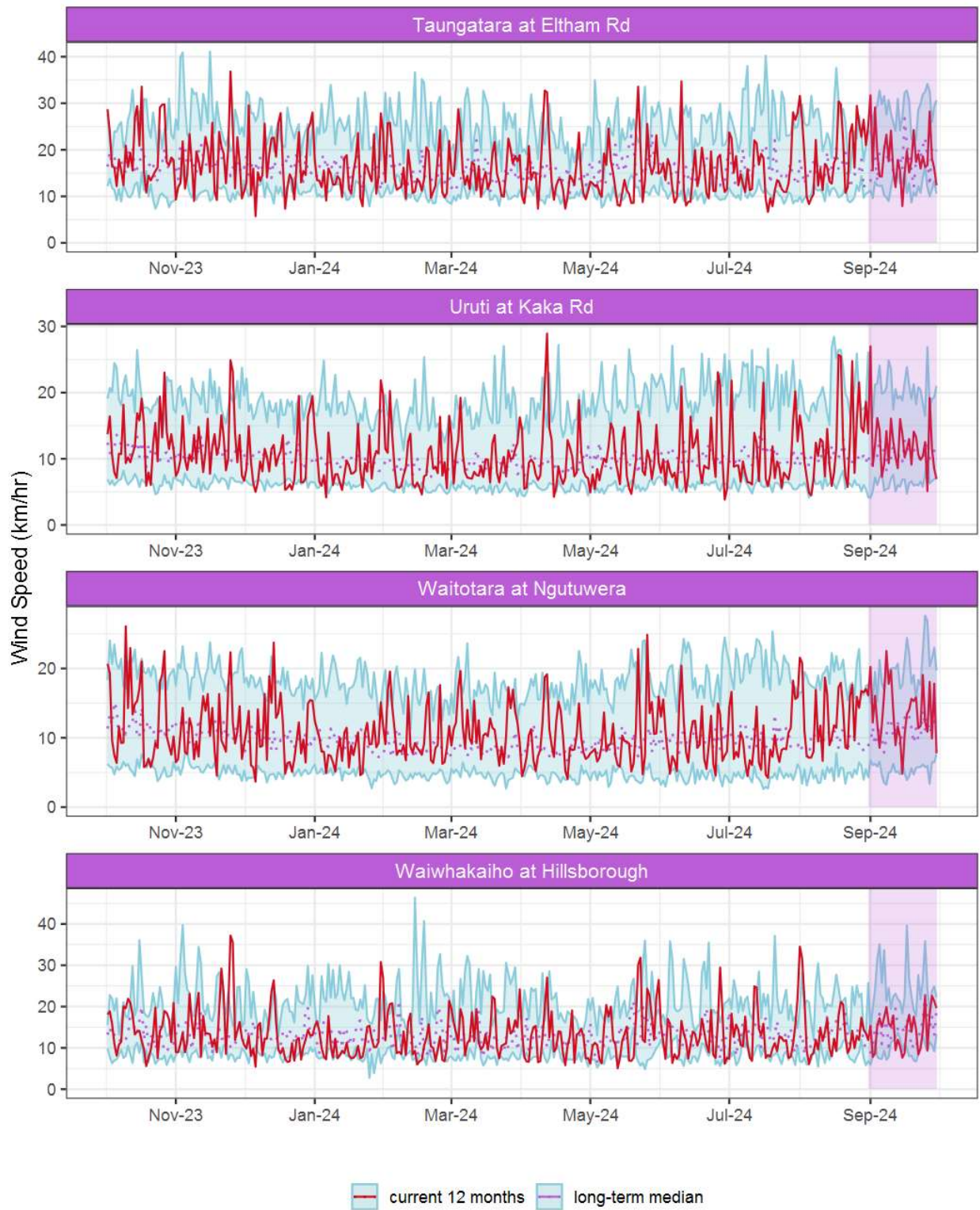


Figure 7.1: Running average wind speed (km/hr) for selected sites, set in context of the historic record.

7.3 Monthly Bar Charts

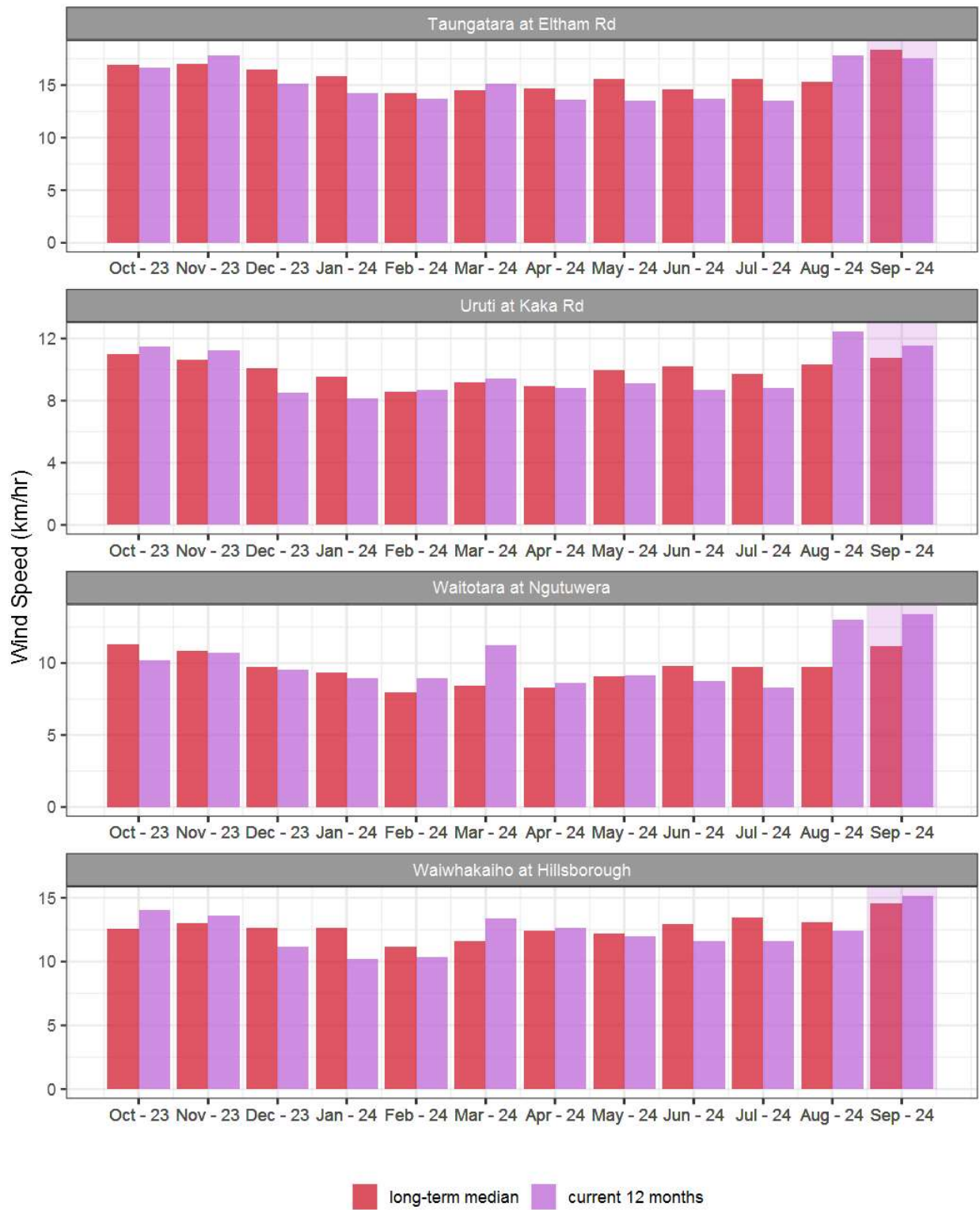


Figure 7.2: Monthly mean wind speed (km/hr) for selected sites, relative to the mean of all previously recorded months.

7.4 Wind roses for September 2024

Average windspeed

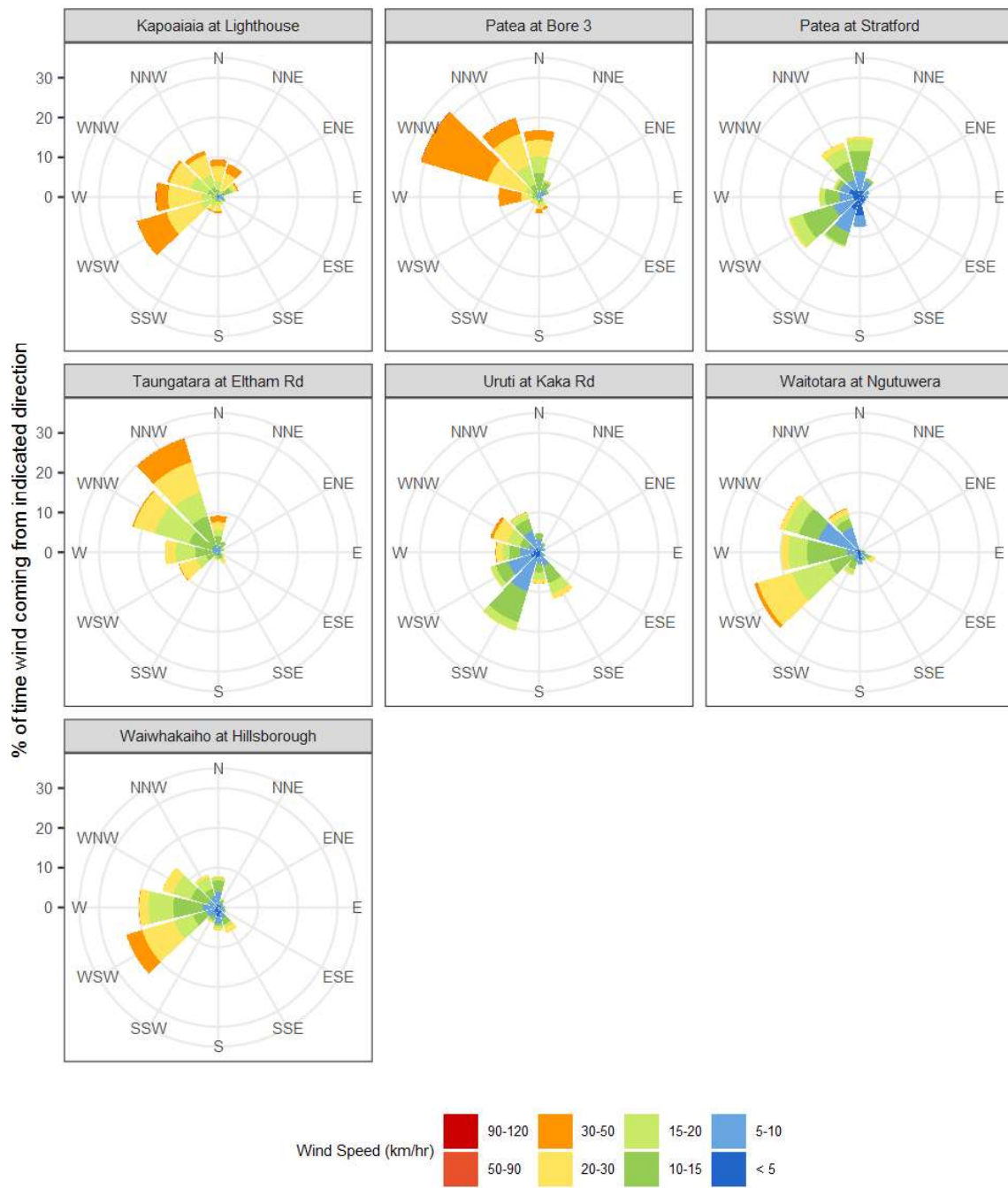


Figure 7.3: Wind roses for September for average wind speed (km/hr).

Maximum gust strength

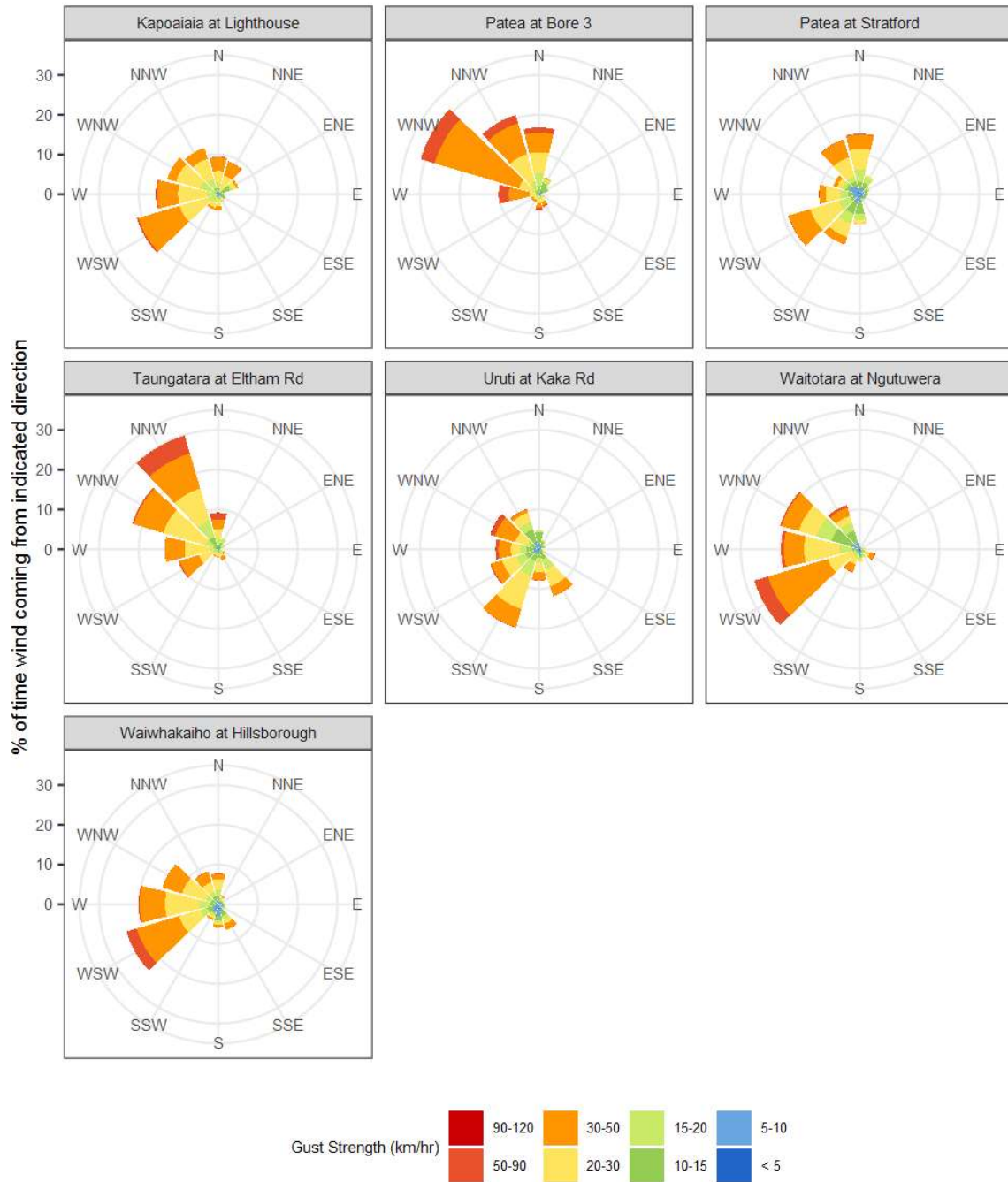


Figure 7.4: Wind roses for September for maximum wind gust (km/hr).

Summary of month's conditions

Rainfall

On average September rainfall was 169.7mm, 9% more than usual, ranging from 41% less rain at Motunui M39 at Weston W3, and 46% more than at Tawhiti at Duffys.

Year-to-date rainfall is lowest at Waitotara at Hawken Rd with 30% less rainfall than normal, Pohokura Saddle has had the highest year-to-date rainfall with 1% more than normal, on average there has been 14% less than normal across all rain gauges. Compared to typical full year totals, on average sites have already received 64% of a typical year's rainfall, with the highest value at Kapoiaia at Lighthouse, 73% of normal, whereas Waitotara at Ngutuwera sits at 54% of the typical year's total.

River Flow

Mean river flows for September were 29.6% greater than typical values, low flows were 77.9% greater, and high flows 8.6% greater than typical values. The maximum river flow recorded in September was 837.4 m³/sec at Waitara at Bertrand Rd, on 1 September.

River Water Temperature

Mean river (non-mountain) water temperatures were 11.6°C, an average of 0.3°C warmer than long-term September values. Nighttime-low water temperatures were on average 0.5°C warmer than historic lows, and day-time high temperatures were on average 0.5°C cooler than historic highs. The maximum river water temperature recorded in September was 16.3°C at Waiaua 2 at Barraclough Opuā, on 30 September.

Air Temperature

The average air temperature for the region (excluding Te Maunga sites) was 11.2°C, which is 0.3°C warmer than long-term September averages. Low air temperatures for September were on average 1°C warmer than the September average for previous years. Day-time high temperatures were on average 0.2°C cooler than historic highs. The maximum air temperature recorded in September was 21.1°C at Weraweraonga at 749 Mangawhio Rd, on 2 September.

Soil Moisture

The average soil moisture for September across sites in Taranaki region was 35.6%. Soil moistures were on average 1.6% wetter than typical September values. On average, low soil moistures were 5.1% wetter than previous lows, and the highs were on average 2.2% drier than previous values for September.

Soil Temperature

September soil temperatures were generally 0.7°C warmer than long-term averages. Average nighttime low soil temperatures were 1.1°C warmer than recorded lows, and upper day-time soil temperatures were on average 0.1°C cooler than long-term September

highs. The maximum soil temperature recorded in September was 22.32°C at Kapoiaia at Lighthouse, on 30 September.

Wind Speed (average and 10 minute gust)

September average wind speeds were 16.9km/hr, with average gust strength of 51.2km/hr, these were 1.2km/hr stronger, and 5.4km/hr gustier than the long-term average. Average calm weather wind speeds were 0.9km/hr stronger than recorded lows, and windy conditions were on average 3.3km/hr lighter than long-term September highs. The maximum wind gust recorded in September was 115.7km/hr at Taungatara at Eltham Rd, on 1 September.

Notes: Maximum values mentioned in the summary of month's conditions (Section 8) are the actual recorded minimum or maximums. In the tables, low and high values represent the lower and upper 5th percentiles of the historical record for each site, except for wind gust and soil moisture, which use the lower and upper 1st percentiles. Percentile values in the tables provide a clearer indication of the general upper and lower range of the historical data for comparison with the current month. The start year (when records began) for each site and variable, listed in the respective tables, indicates the length of data used to compute historical highs, lows and "typical values." Sites with a longer data record generally offer a more reliable comparison to current year values.

Report date: 7 October, 2024.

Supply of environmental data - General terms and conditions

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