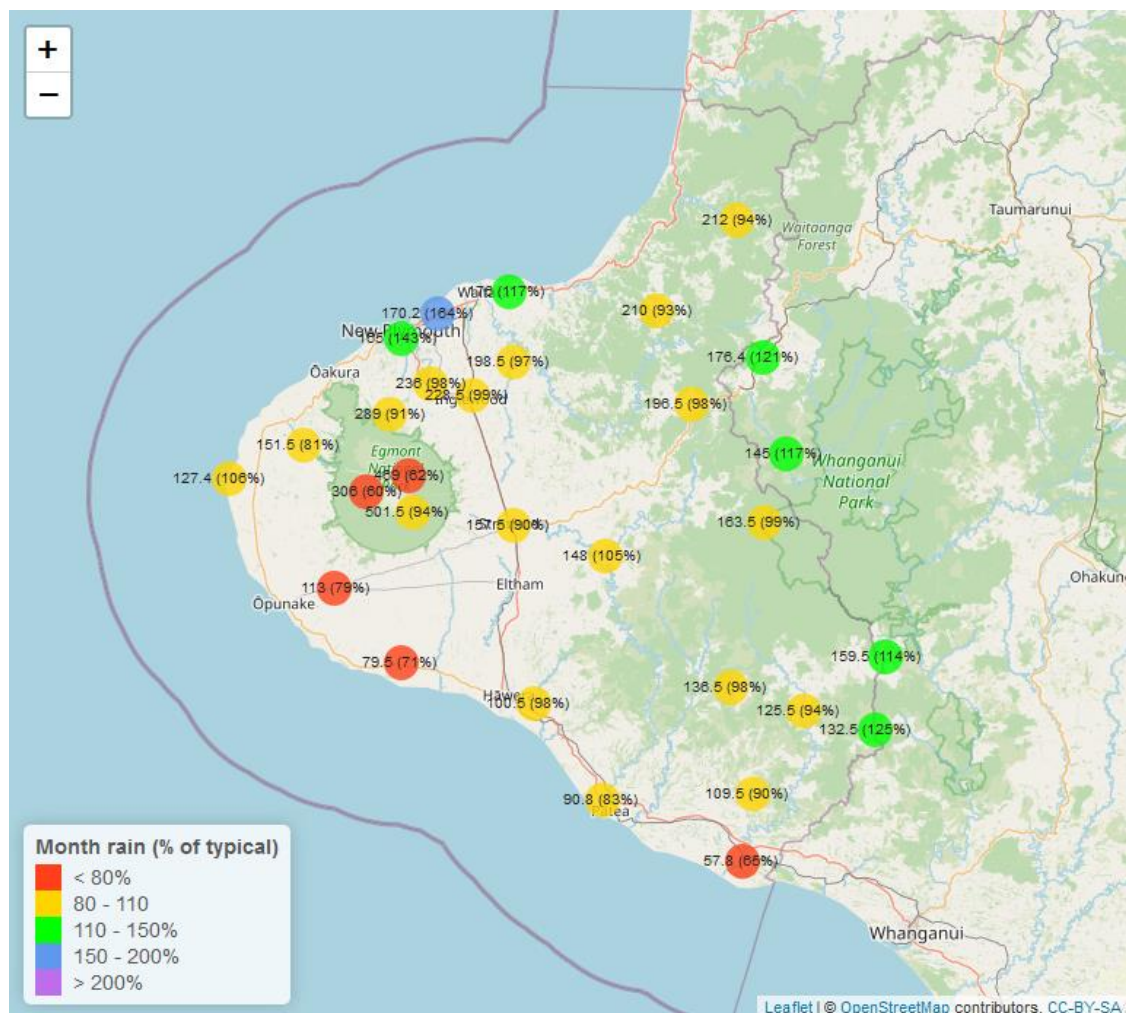


Taranaki Regional Council Monthly Environmental Data Report for October 2022

Note: Provisional Data Only.

1. Rain gauge values at 28 sites in Taranaki

Taranaki Regional Council co-owns rain-gauges with Horizons, so we can assess rainfalls right over the Eastern Hill Country (these are included in our reporting since August 2022).



Map1. Month total rain (mm) and percentage of long-term mean



Map1a. YTD total rain (mm) and percentage of long-term mean

Table 1: October 2022 - Rainfall totals at 27 rain gauge sites in Taranaki

Hydro_Sites	# days with rain	Total rain (mm)	% of typical month	Total to date (mm)	% of typical year to date	% of typical full year	Records Began
N Egmont VC	21	469.0	62	6997.0	120	101	1991
Dawson Falls	19	501.5	94	7332.0	145	124	1933
Kahui Hut	21	306.0	60	5265.0	121	101	2006
Forest Hill	16	289.0	91	3798.5	128	106	2017
Brooklands Zoo	16	165.0	143	1622.6	119	102	2012
Bell Block	16	170.2	164	1651.2	130	110	2013
Motunui	15	176.0	117	1664.0	125	105	1998
Egmont Vill	15	236.0	98	2722.0	137	113	1991
Everett Pk	17	198.5	97	2090.0	122	101	1987
Inglewood	17	228.5	99	2361.0	122	101	2000
Stony R	16	151.5	81	2088.0	126	105	2004
Cape Egmont	15	127.4	106	1921.8	163	139	1930
Taungatara	16	113.0	79	1752.5	135	112	2005
Kaupokonui	15	79.5	71	1224.0	126	105	1998
Stratford	15	157.5	90	2095.5	129	111	1999
Mangaehu	18	148.0	105	1749.0	133	112	1999
Kotare OSullivans	18	212.0	94	1945.5	110	91	1998
Uruti Kaka Rd	19	210.0	93	2189.5	121	99	1991
Pohokura Saddle	16	196.5	98	1959.5	120	99	1991
Omaru Charlies	16	163.5	99	1843.0	122	103	2006
Omahine Moana Trg	19	136.5	98	1574.0	128	111	2007
Rimunui Station	17	125.5	94	1344.5	119	98	1994
Ngutuwera	16	109.5	90	1251.5	119	98	1999
Hawera Tawhiti	15	100.5	98	1193.0	133	110	1993
Patea Bore3	15	90.8	83	1237.0	128	106	2006
Hawken Rd	12	57.8	65	1134.8	116	97	2016
Te Tuhi Jn	17	132.5	125	1445.5	135	108	2018
Mataimona Trig	20	159.5	114	1694.5	129	101	2018

Table 1: October 2022 - Rainfall totals at 27 rain gauge sites in Taranaki							
Hydro_Sites	# days with rain	Total rain (mm)	% of typical month	Total to date (mm)	% of typical year to date	% of typical full year	Records Began
Marco Road	19	176.4	121	1883.7	124	100	2018
Br to Somewhere	17	145.0	117	1646.5	124	99	2018

2. River Flow at 32 sites in Taranaki

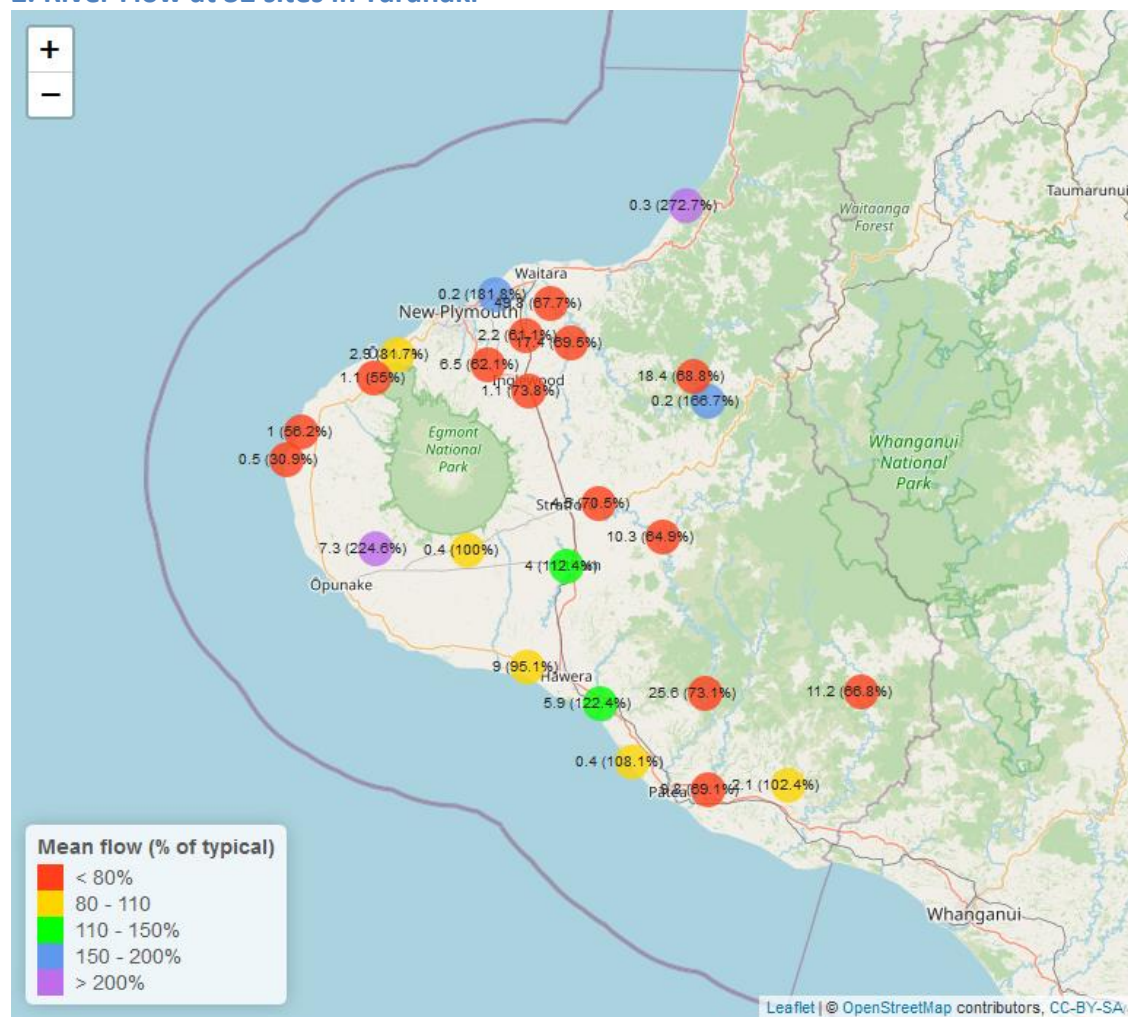


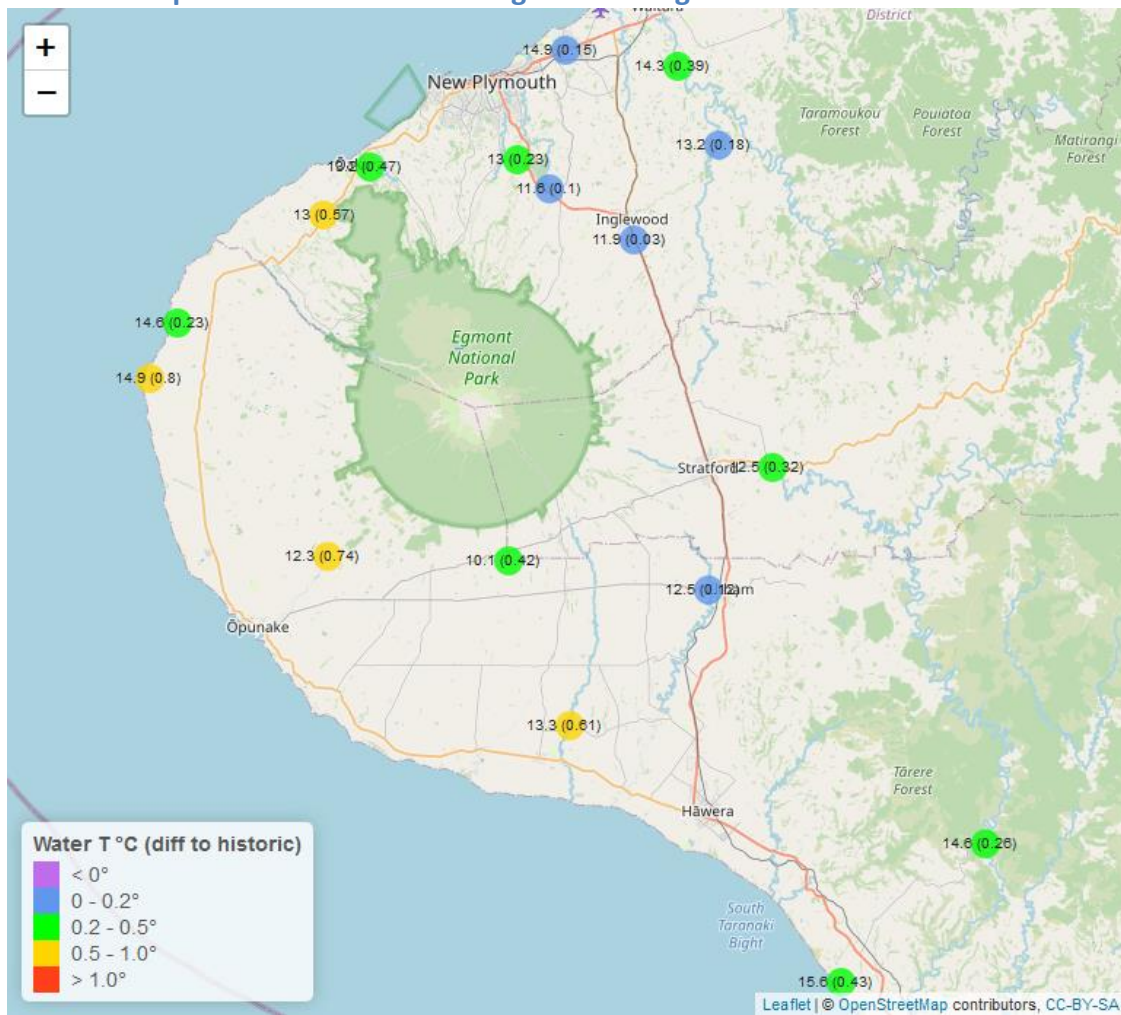
Table 2: October 2022 - Recorded flows (m3/sec) in 32 Taranaki Rivers

	Maximum		Minimum		Mean			
Hilltop	October 2022	October historic	October 2022	October historic	October 2022	October historic	Data years	Records began
Kaikura below 7346	0.34	1.60	0.08	0.05	0.2	0.27	7	2014
Kapoaiaia at Lighthouse	13.15	35.19	0.19	0.28	0.5	1.62	36	1986
Mangaehu at Bridge	42.05	315.60	3.97	2.70	10.3	15.87	43	1978
Manganui at Everett Park	146.73	977.55	5.89	3.80	17.4	25.02	31	1991
Mangaoraka at Corbett Rd	9.20	141.95	0.64	0.36	2.1	2.67	42	1975
Mangaroa at Manawapou Rd	0.83	0.86	0.06	0.03	0.4	0.37	3	2019
Mangati at SH3	2.06	4.60	0.09	0.01	0.2	0.11	10	2012
Mangawheroiti Above Intake W.W	3.42	4.10	0.21	0.18	0.4	0.40	10	2012
Mangorei at Pipebridge	113.90	248.52	0.90	0.47	3.1	2.66	13	2009
Matau at Woolshed	1.68	2.37	0.07	0.03	0.2	0.12	5	2017
Moumahaki at Johnston Rd	6.15	44.74	0.93	0.57	2.1	2.05	5	2017
Ngatoro at SH3	18.01	72.27	0.43	0.25	1.1	1.49	28	1981
Oakura at Victoria Rd	89.81	91.90	0.90	0.61	2.9	3.55	4	2018
Patea at McColls Bridge	69.95	663.43	2.16	0.92	25.6	35.01	33	1987
Patea at Skinner Rd	30.09	244.71	1.35	0.93	4.5	6.38	43	1978
Tangahoe below Railway Bridge	24.20	76.03	2.71	1.71	5.9	4.82	4	2018
Tawhiti at Duffys	3.02	18.32	1.04	0.21	1.6	1.08	37	1985
Tawhiti below Meat Plant	2.04	10.61	1.08	0.39	1.4	0.87	12	2010
Timaru at Tataraimaka	44.81	112.98	0.41	0.42	1.1	2.00	9	2013
Waiau 2 at Barraclough Opua	24.17	37.26	5.79	1.37	7.3	3.25	4	2018
Waikaramarama at Bridge	7.36	4.79	0.02	0.01	0.3	0.11	5	2017

Table 2: October 2022 - Recorded flows (m3/sec) in 32 Taranaki Rivers

	Maximum		Minimum		Mean			
Hilltop	October 2022	October historic	October 2022	October historic	October 2022	October historic	Data years	Records began
Waingongoro at Eltham Rd	18.47	140.37	2.13	0.70	4.0	3.56	41	1981
Waingongoro at SH45	27.22	182.31	4.60	2.43	9.0	9.46	40	1982
Waiongana at SH3a	18.04	131.98	0.76	0.54	2.2	3.60	41	1981
Waitara at Bertrand Rd	286.73	1541.59	12.97	7.14	49.8	73.60	39	1983
Waitara at Purangi Bridge	199.39	1338.89	2.05	0.18	18.4	26.74	23	1999
Waitotara at Rimunui Station	39.24	315.64	4.76	3.65	11.2	16.76	17	2005
Waiwhakaiho at Egmont Village	138.52	407.31	2.26	1.94	6.5	10.47	41	1981
Warea at Coast	7.94	27.48	0.57	0.20	1.0	1.78	5	2016
Weraweraonga at 749 Mangawhio Rd	11.88	36.54	0.45	0.30	1.6	1.38	5	2017
Whenuakura at Nicholson Rd	29.76	285.33	4.33	2.04	9.8	14.19	39	1983

3. River Temperature at 28 sites throughout the region

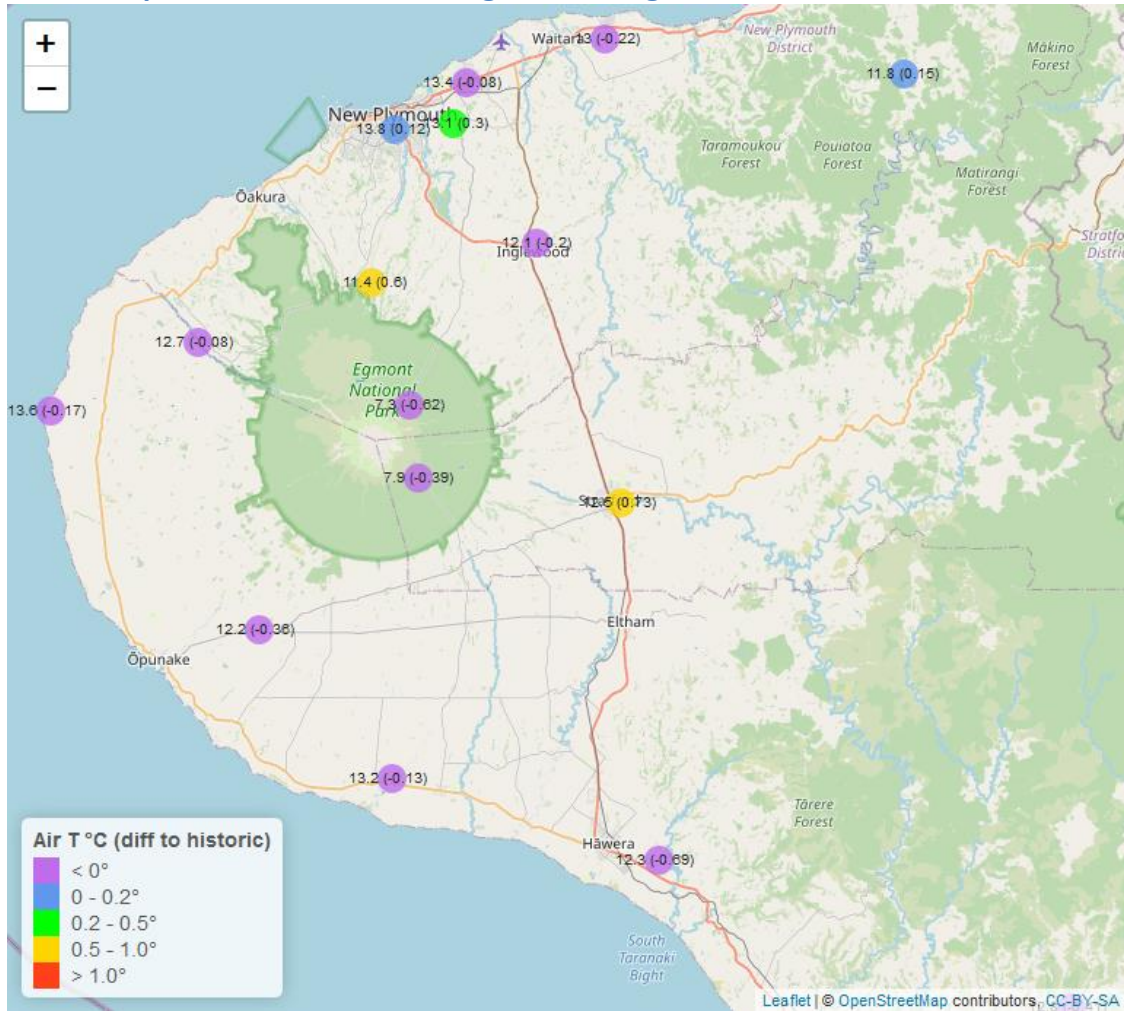


Map3: Month mean water temperature with difference to long-term mean (°C)

Table 3: October 2022 - River Temperatures (°C) in 28 Taranaki Rivers

	Maximum		Minimum		Mean			
Hilltop	October 2022	October historic	October 2022	October historic	October 2022	October historic	Data years	Records began
Kapoiaia at Lighthouse	21.65	21.83	8.94	6.40	14.9	14.10	24	1998
Kapuni at Normanby Rd	19.50	21.30	8.44	6.80	13.3	12.69	23	1999
Manganui at Everett Park	15.97	18.41	8.47	7.40	13.2	13.02	14	2008
Mangaroa at Manawapou Rd	19.36	20.11	12.49	11.31	15.6	15.17	3	2019
Mangati at Ponds	19.87	22.25	11.64	11.30	16.1	15.79	4	2018
Mangati at SH3	18.02	18.89	10.11	9.96	14.9	14.75	10	2012
Mangawheroiti Above Intake W.W	32.14	14.76	5.99	5.97	10.1	9.68	10	2012
Mangorei at Pipebridge	16.34	19.32	8.00	7.81	13.0	12.77	8	2014
Ngatoro at SH3	14.56	17.75	6.44	6.35	11.9	11.87	23	1980
Oakura at Victoria Rd	17.61	17.62	7.94	7.81	13.2	12.73	4	2018
Patea at McColls Bridge	17.81	19.02	12.38	10.94	14.6	14.34	8	2014
Patea at Skinner Rd	16.46	17.70	7.84	7.57	12.5	12.18	18	2004
Timaru at Tataraimaka	16.40	18.49	8.02	8.04	13.0	12.43	9	2013
Waiaua 2 at Barraclough Opua	19.59	19.17	5.73	5.87	12.3	11.56	4	2018
Waingongoro at Eltham Rd	16.67	18.25	9.03	7.20	12.5	12.38	18	2000
Waitaha 1 at SH3	18.84	17.06	0.00	5.94	14.6	14.40	4	2018
Waitara at Bertrand Rd	17.55	19.30	11.05	8.85	14.3	13.91	31	1983
Waiwhakaiho at Egmont Village	14.69	19.30	6.35	5.60	11.6	11.50	31	1991
Warea at Coast	20.79	20.19	8.66	8.06	14.6	14.37	4	2018

4. Air Temperature at 19 sites throughout the region

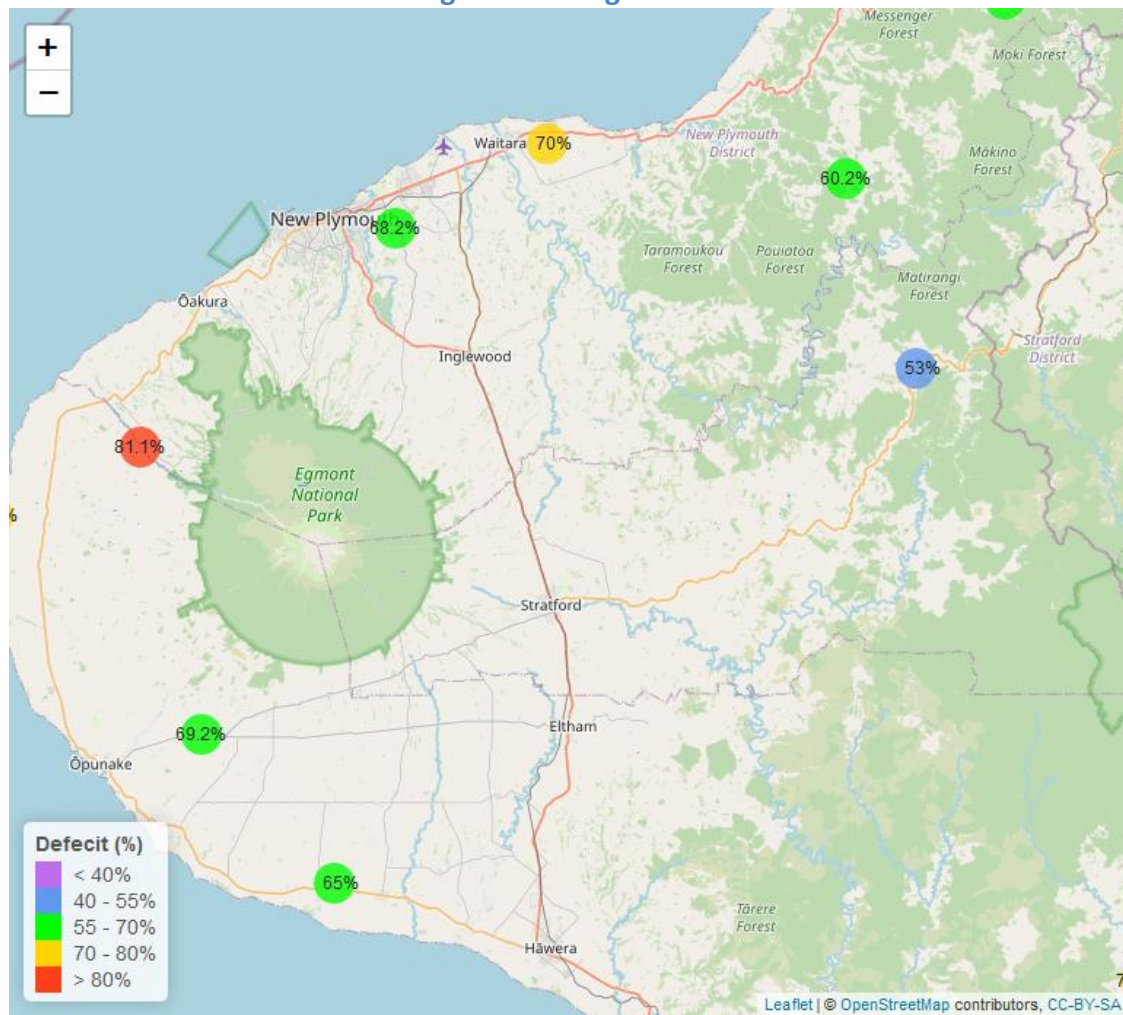


Map4: Month mean air temperature with difference to long-term mean (°C)

Table 4: October 2022 - Air Temperature (°C) at 19 Taranaki weather stations

	Maximum		Minimum		Mean			
Hilltop	October 2022	October historic	October 2022	October historic	October 2022	October historic	Data years	Records Began
Kapoaiaia at Lighthouse	19.05	19.82	4.31	3.67	13.6	13.77	10	2012
Brooklands Zoo at New Plymouth	22.87	24.61	1.08	3.09	13.8	13.68	10	2012
Mangati at SH3	19.25	21.95	0.33	1.70	13.4	13.48	10	2012
Kaupokonui at Glenn Rd	23.47	22.02	1.98	0.81	13.2	13.33	8	2014
Waitotara at Hawken Rd	23.40	23.17	1.93	2.61	13.3	13.33	7	2015
Motunui M39 at Weston W3	18.75	21.00	0.64	1.74	13.0	13.22	6	2016
Weraweraonga at 749 Mangawhio Rd	23.34	25.12	-0.32	0.97	12.8	13.21	5	2017
Patea at Bore 3	22.15	21.75	1.71	3.03	12.7	13.12	11	2011
Tawhiti at Duffys	21.15	21.97	-0.51	-0.65	12.3	12.99	9	2013
Waiwhakaiho at Hillsborough	20.69	21.85	0.81	2.63	13.1	12.80	10	2012
Stony at Mangatete Bridge	19.38	21.92	3.44	3.04	12.7	12.78	6	2016
Waitotara at Ngutuwera	21.52	22.54	0.39	2.99	12.2	12.73	4	2018
Taungatara at Eltham Rd	20.37	20.42	1.45	2.79	12.2	12.56	7	2015
Inglewood at Oxidation Ponds	20.80	23.72	-1.82	-0.52	12.1	12.30	11	2011
Patea at Stratford	23.40	23.54	1.76	1.76	12.5	11.77	11	2011
Uruti at Kaka Rd	19.46	20.35	0.11	1.91	11.8	11.65	4	2018
Mangorei Upper at Forest Hill	16.97	18.72	2.11	1.21	11.4	10.80	5	2017
Dawson Falls	18.05	21.21	-1.54	-0.57	7.9	8.29	7	2015
North Egmont at Visitors Centre	15.07	19.85	-2.91	-1.14	7.3	7.92	8	2014

5. Soil Moisture at 11 sites throughout the region

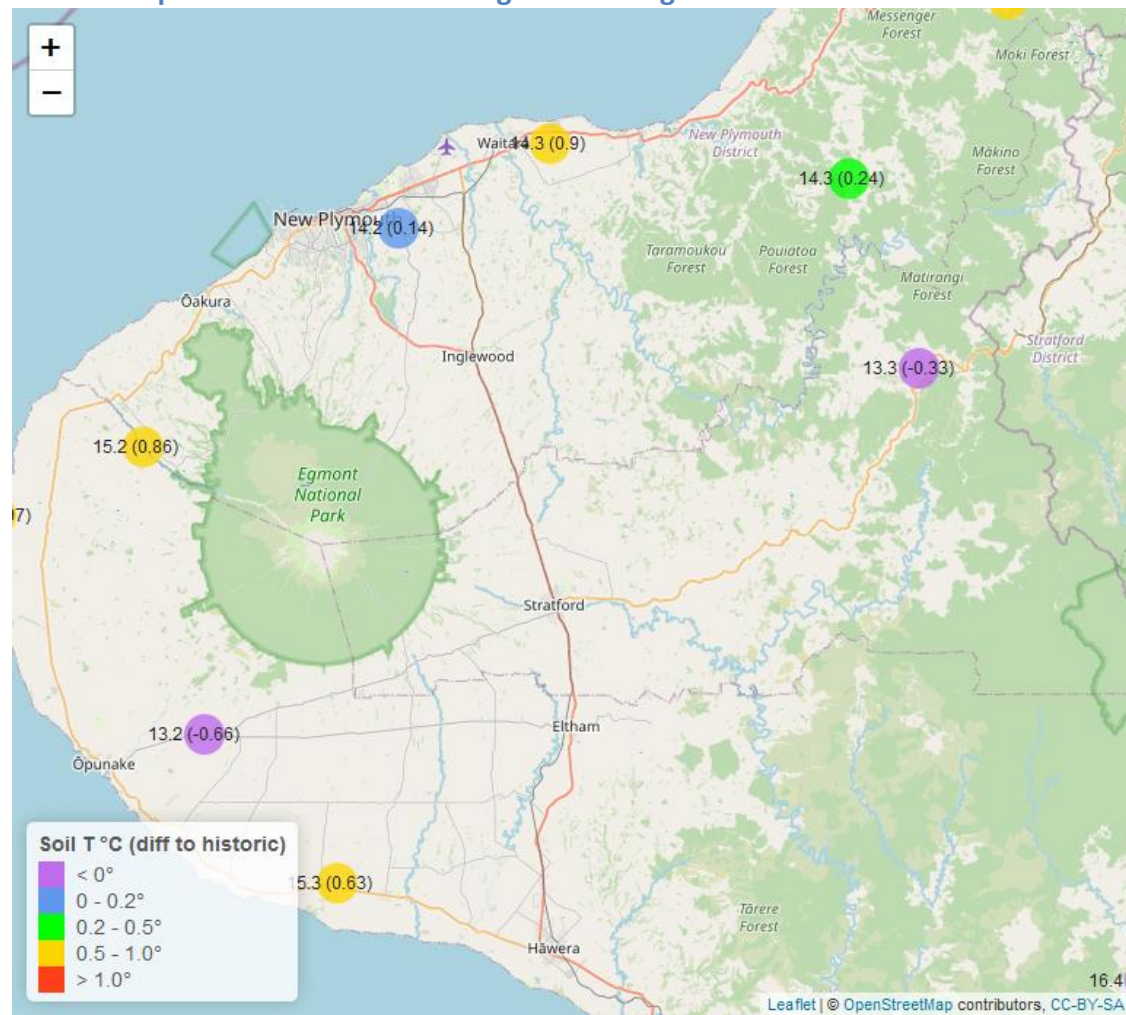


Map5: Month mean soil moisture deficit (100 - soil moisture, %)

Table 6: October 2022 - Soil Moisture (%) at 11 Taranaki monitoring sites

	Maximum		Minimum		Mean			
Hilltop	October 2022	October historic	October 2022	October historic	October 2022	October historic	Data years	Records began
Kapoaiaia at Lighthouse	30.63	45.28	26.40	16.85	28.29	25.18	11	2011
Kaupokonui at Glenn Rd	38.35	46.90	32.19	24.00	35.04	33.80	11	2011
Kotare at OSullivans	50.67	59.26	35.58	33.40	38.82	42.32	10	2012
Motunui M39 at Weston W3	33.69	37.38	26.60	22.28	29.96	30.36	9	2013
Patea at Bore 3	36.58	42.62	25.72	22.62	28.17	28.51	6	2016
Pohokura Saddle	54.76	59.15	41.94	36.69	47.05	43.97	8	2014
Stony at Mangatete Bridge	27.36	33.02	14.60	12.02	18.92	18.70	6	2016
Taungatara at Eltham Rd	36.64	56.40	13.60	27.42	30.80	37.39	9	2013
Uruti at Kaka Rd	43.79	49.37	36.65	34.70	39.75	42.32	11	2011
Waitotara at Rimunui Station	32.01	32.01	25.10	24.14	27.31	26.97	5	2017
Waiwhakaiho at Hillsborough	38.30	37.78	27.75	22.95	31.75	29.62	10	2012

6: Soil Temperature at 11 sites throughout the region



Map3: Month mean soil temperatures with difference to long-term mean (°C)

Table 6: October 2022 - Soil Temperatures (°C) at 11 Taranaki monitoring sites								
	Maximum		Minimum		Mean			
Hilltop	October 2022	October historic	October 2022	October historic	October 2022	October historic	Data years	Records Began
Kapoaiaia at Lighthouse	22.59	20.20	9.61	10.82	16.1	15.13	11	2011
Kaupokonui at Glenn Rd	19.30	19.50	12.30	10.96	15.3	14.67	11	2011
Kotare at OSullivans	16.65	19.16	11.76	8.12	14.1	13.28	10	2012
Motunui M39 at Weston W3	17.84	17.75	10.60	10.01	14.3	13.40	9	2013
Patea at Bore 3	19.30	20.99	10.52	10.84	14.9	15.49	6	2016
Pohokura Saddle	16.27	16.51	9.62	9.61	13.3	13.63	8	2014
Stony at Mangatete Bridge	26.32	18.20	10.30	9.40	15.2	14.34	5	2016
Taungatara at Eltham Rd	17.10	19.60	9.90	9.40	13.2	13.86	9	2013
Uruti at Kaka Rd	15.88	18.30	12.86	8.98	14.3	14.06	11	2011
Waitotara at Rimunui Station	20.94	21.68	12.04	13.06	16.4	17.01	5	2017
Waiwhakaiho at Hillsborough	17.34	17.36	10.73	10.61	14.2	14.06	10	2012

Summary of months conditions

Rainfall

Rainfall for October was on average 101.1% of the long-term average, and ranged from 65% at Waitotara at Hawken Rd to 164% at Mangati at SH3. Rainfall was close to typical monthly values, across most of the region, with exceptions on the Maunga where rainfall was only around 60% at North Egmont and Kahui Hut.

Year to date rainfall is sitting between 110% (Kotare at OSullivans) and 163% (Kapoaiaia at Lighthouse) with an average of 126.8% of normal. Compared to typical full year totals, on average sites have already received 105.3% of a typical years rainfall, with the highest value 139% at Kapoaiaia at Lighthouse, whereas Kotare at OSullivans sits at 91% of the typical years total.

River Flow

Mean river flows for October were generally below typical October averages at around 74.5%. The minimum flows were all well above typical October lows (at 185.4%). Maximum flows were well below (on average 19% of) historic October values.

River Water Temperature

Mean river water temperatures were 13.7°C, an average of 0.3°C above long-term October values. Nighttime-low water temperatures were on average 0.4°C above historic lows. Peak temperatures were on average -0.4°C below historic highs.

Air Temperature

The average air temperature for the region (excluding Te Maunga sites) was 12.8°C, which is -0.1°C higher than the long term October average. Minimum air temperatures for October were on average -0.8°C below previously recorded lows, reflecting the cold snap which affected the whole country.

Soil Moisture

Mean soil moistures for October were close to typical values. On average, minimum soil moistures were -0.3% above previous lows, and the maxima well below previous highs. The average soil moisture was 32.4%.

Soil Temperature

Like September, October soil temperatures were generally 0.2°C above the long-term average. Nighttime minimum soil temperatures were on average 0.8°C below recorded minima, and maximum October soil temperatures were on average 0°C the same as long-term maximum October values.