

## TARANAKI REGIONAL COUNCIL MONTHLY RAINFALL AND RIVER REPORT FOR December 2021

*Provisional Data Only*

*Note: some sites record a number of parameters*

**Table 1: Rainfall at 27 sites throughout the region**

Station	Sub-region	Monthly				Year to Date		Records Began
		Number of rain days (>0.5mm)	Total Monthly Rainfall (mm)	% of Monthly Normal (%)	Maximum December RF (year occurred) (mm)	Total to date (mm)	% of Normal for year to date	
Nth Egmont	Ntnl Park (North)	18	1165.0	202	1308.5 (2001)	7324.5	104	Nov 1990
Dawson Falls	Ntnl Park (South)	19	1002.5	239	1195.5 (2011)	7403.5	125	Feb 1933
Kahui Hut	Ntnl Park (West)	22	<b>827.5</b>	228	657.5 (2011)	<b>5766.5</b>	110	Nov 2005
Mangorei Upper	Near bushline	18	678.0	-	-	4320.5	-	Feb 2017
Hillsborough		14	<b>318.0</b>	297	153.5 (2013)	1983.0	113	Feb 2012
Brooklands	New Plymouth	15	300.6	236	378.5 (2011)	1750.2	109	Jan 1872
Mangati	Bell Block	13	<b>269.0</b>	292	148.0 (2013)	1651.0	111	Oct 2012
Weston's Farm	Motunui	16	266.8	205	386.8 (2011)	1677.4	106	Feb 1998
Waiwhakaiho	Egmont Village	18	<b>487.0</b>	245	459.5 (2011)	2865.0	121	Aug 1990
Manganui	Everett Park	14	351.0	198	378.5 (2011)	2288.0	111	Jan 1987
Oxi' Ponds	Inglewood	15	<b>432.0</b>	213	407.0 (2011)	2467.5	106	May 1999
TRC	Stratford	14	334.0	221	339.5 (2011)	2289.0	117	Jul 1998
Mangaehu	Toko (Huinga)	13	<b>324.5</b>	267	217.5 (2011)	1756.0	113	Jul 1998
Kotare	Tongaporutu	15	223.0	114	412.0 (2003)	2024.0	94	Jan 1998
Kaka Rd	Okoki	17	334.5	162	504.0 (2003)	2224.5	101	Aug 1990
Pohokura Saddle	Pohokura	16	269.5	158	316.5 (2001)	2078.0	105	Aug 1990
Stony	Mangatete Rd	18	<b>391.5</b>	239	345.5 (2011)	<b>2348.5</b>	121	Dec 2003
Kapoaiaia	Cape Egmont	16	<b>299.6</b>	288	253.0 (2011)	1690.8	122	Jan 1930
Taungatara	Te Kiri	17	<b>288.5</b>	230	225.0 (2018)	<b>1771.5</b>	115	Dec 2004
Kaupokonui	Manaia	15	<b>258.5</b>	285	256.0 (2011)	1248.5	108	Sep 1997
Duffy's Farm	Whareroa	15	<b>251.0</b>	252	208.0 (2011)	1222.0	112	Feb 1993
Bore 3	Patea	16	<b>279.6</b>	272	211.8 (2005)	<b>1428.4</b>	125	Feb 1994
Omaru	Charlie's Clearing	18	<b>250.0</b>	195	238.0 (2011)	1881.0	108	Apr 2005
Omahine	Moana Trig	18	<b>269.0</b>	233	185.5 (2011)	1632.5	94	Mar 2006
Rimunui	Waitotara Valley	16	<b>257.0</b>	231	214.5 (2001)	1355.0	100	May 1993
Ngutuwera	Waitotara	16	<b>221.5</b>	197	218.4 (2011)	1279.0	99	Apr 1998
Waitotara	Coast	16	<b>181.6</b>	239	127.4 (2019)	1212.8	105	Sep 2015

**Table 2: River Flow at 9 sites throughout the region**

River and Site	Recorded Flows (m3/sec)						Records Began
	Maximum		Minimum		Mean		
	December 2021	December all previous years	December 2021	December all previous years	December 2021	December all previous years	
Waitara at Bertrand Rd	883.477	920.875	16.103	5.046	119.054	50.680	Feb 1980
Manganui at Everett Park	426.304	635.423	5.793	2.919	43.469	16.241	Jun 1991
Waiwhakaiho at SH3	255.858	305.342	2.176	1.661	17.543	7.748	Feb 1980
Waiongana at SH3a	76.740	99.482	0.828	0.306	6.434	2.463	Apr 1980
Kapoaiaia at Lighthouse	28.728	36.670	0.774	0.233	3.834	1.005	Feb 1986
Waiongongo at Eltham Rd	80.039	100.624	1.122	0.353	5.092	1.968	Dec 1974
Punehu at Pihama*	36.274	43.527	0.369	0.231	1.954	0.885	Jan 1970
Tawhiti at Duffy's Farm	6.544	10.718	0.602	0.150	1.247	0.615	May 1985
Whenuakura at Nicholson Rd	196.804	200.486	3.793	1.664	20.603	7.842	Mar 1983

Note: \* = NIWA station

**Table 3: River Temperature at 10 sites throughout the region**

River	Monthly Temperatures (°C)						Records Began
	Maximum		Minimum		Mean		
	December 2021	December all previous years	December 2021	December all previous years	December 2021	December all previous years	
Patea (Skinner Rd)	19.11	22.88	13.28	10.52	16.38	16.11	Dec 2003
Waiongongo (Eltham)	19.92	23.30	13.25	10.36	16.10	16.27	Jan 2000
Kapuni	22.00	27.30	12.88	9.50	16.91	16.85	Apr 1999
Kaupokonui (Manaia)	24.53	26.90	14.33	10.00	18.48	18.08	Sep 1978
Kapoaiaia	23.19	27.39	15.16	10.54	18.60	18.19	Jun 1998
Timaru	20.36	23.55	13.71	10.40	15.93	16.01	Mar 2013
Waitara	22.97	25.51	16.73	12.90	18.77	18.61	May 1981
Mangaoraka	20.63	25.00	15.12	11.50	17.67	17.28	Dec 2003
Waiwhakaiho	20.68	21.59	12.67	8.60	15.90	14.99	Jul 1980
Waiongongo (Ohawe)	22.01	24.80	15.56	11.88	18.24	17.94	Dec 2003

**Table 4: Air Temperature at 17 sites throughout the region**

Site	Monthly Air Temperatures (°C)						Records Began
	Maximum		Minimum		Mean		
	December 2021	December all previous years	December 2021	December all previous years	December 2021	December all previous years	
North Egmont	22.02	23.70	5.91	2.30	13.57	12.11	Jul 2011
Dawson Falls	22.07	23.67	5.48	2.95	14.03	11.96	May 2015
Mangorei (Bushline)	24.23	25.34	8.72	6.46	16.49	15.20	Feb 2017
Brooklands (NP)	27.85	31.10	12.25	5.25	19.20	17.46	Jan 2012
Motunui	25.66	25.77	9.83	6.60	18.51	16.68	Aug 2016
Mangati (Bell Block)	27.16	29.88	10.84	4.13	18.84	17.01	Oct 2012
Hillsborough	26.05	27.92	11.53	5.39	18.53	16.61	Feb 2012
Inglewood	30.57	29.85	7.57	3.71	17.77	16.20	Jul 2011
Stratford	29.10	28.37	9.38	4.06	18.04	15.45	Sep 2011
Mangatete Rd (Okato)	24.66	27.49	11.63	7.21	17.68	16.29	Dec 2015
Cape Egmont	23.56	27.18	12.43	6.55	18.82	16.87	Feb 2012
Te Kiri	24.30	25.13	11.42	5.04	17.58	15.83	Mar 2015
Kaupokonui (Manaia)	26.46	25.93	11.71	4.29	18.38	16.23	Oct 2014
Patea	25.56	27.10	12.81	4.77	18.12	16.62	Sep 2011
Whareroa	25.05	25.86	10.05	2.68	18.18	16.17	Mar 2013
Ngutuwera	25.54	26.70	11.83	4.48	17.91	16.14	Dec 2017
Waitotara (Coast)	27.43	28.15	12.01	4.92	18.77	17.20	Sep 2015

**Table 5: Soil Moisture at 11 sites throughout the region**

Site	Soil Moisture Extremes (%)						Records Began
	Maximum		Minimum		Mean		
	December 2021	December all previous years	December 2021	December all previous years	December 2021	December all previous years	
Kotare (Tongaporutu)	53.49	59.87	34.40	20.81	40.37	36.86	Jan 2012
Kaka Rd (Okoki)	45.87	58.30	36.22	13.80	40.73	37.97	Dec 2003
Motunui	33.75	41.43	26.05	12.46	29.05	26.26	May 2008
Hillsborough	35.60	35.45	26.27	13.98	29.42	25.10	Mar 2012
Pohokura Saddle	53.62	57.26	38.23	11.80	45.63	36.37	Oct 2005
Kapoaiaia (Cape Egmont)	33.08	45.60	21.52	8.40	26.49	21.21	Oct 2004
Mangatete Rd (Okato)	31.57	31.68	13.35	8.74	20.26	14.83	Dec 2015
Te Kiri	42.37	58.70	26.48	11.90	31.20	30.55	Nov 2007
Kaupokonui (Manaia)	36.13	45.60	27.96	7.97	31.59	23.39	Oct 2004
Patea	38.36	42.60	25.96	8.37	28.35	24.30	Apr 2006
Rimunui (Waitotara Valley)	31.80	55.99	22.85	12.11	26.32	26.81	Nov 2005

**Table 6: Soil Temperature at 11 sites throughout the region**

Site	Soil Temperature Extremes (%)						Records Began
	Maximum		Minimum		Mean		
	December 2021	December all previous years	December 2021	December all previous years	December 2021	December all previous years	
Kotare (Tongaporutu)	23.02	27.08	18.75	11.50	20.58	17.86	Jan 2012
Kaka Rd (Okoki)	22.17	23.90	19.37	12.40	20.32	18.10	Dec 2003
Motunui	22.10	21.88	18.12	13.40	20.01	17.75	May 2008
Hillsborough	22.23	24.45	18.70	13.68	20.06	18.60	Mar 2012
Pohokura Saddle	21.85	21.40	16.89	11.60	18.77	17.24	Oct 2005
Kapoaiaia (Cape Egmont)	22.98	26.09	18.78	13.30	20.72	19.19	Oct 2004
Mangatete Rd (Okato)	22.40	25.40	18.60	15.10	20.39	19.77	Dec 2015
Te Kiri	24.10	22.60	16.90	12.10	19.54	17.52	Nov 2007
Kaupokonui (Manaia)	22.70	25.20	19.80	13.60	21.16	18.44	Oct 2004
Patea	27.43	28.40	17.98	12.00	21.76	19.61	Apr 2006
Rimunui (Waitotara Valley)	27.55	28.62	21.62	14.30	23.80	22.14	Nov 2005

**General Comments:**

December rainfall was well above normal with totals ranging between 114% and 297% of normal, with an average of 228%. The first 16 days of the month saw rainfall occur on most days, with only 1 or 2 days of rainfall for the remainder of the month. Hillsborough recorded 318.0 mm for the month, which was 297% of its normal December rainfall. Seventeen of the 27 sites that are monitored recorded new maximum December rainfall totals. These sites were: Kahui Hut, Hillsborough, Bell Block, Egmont Village, Inglewood, Toko (Huinga), Okato (Mangatete Rd), Cape Egmont, Te Kiri, Manaia, Whareroa, Patea, Omaru at Charlies Clearing, Omahine at Moana Trig, Waitotara Valley, Ngutuweru (Inland Waitotara) and Waitotara Coast.

Rainfall for the year ranged between 94% and 125%, with an average of 110%. Only three sites recorded below normal for the year and these were: Tongaporutu (94%), Moana Trig (94%) and Ngutuweru (99%). Dawson Falls recorded 125% of normal for the year with 7403.5mm. Four sites recorded new maximum annual rainfall totals since records began, these sites were Kahui Hut (5766.5 mm), Okato (2348.5 mm), Te Kiri (1771.5 mm) and Patea (1428.4 mm).

Due to the high rainfall for December, river flows were all above normal for the month by between 203% and 381% of mean December flows. The Kapoiaia Stream at Cape Egmont, had a mean December flow of 3,834 L/s, which was 381% of its normal December mean flow of 1,005 L/s.

Water temperatures were above normal for all sites by between 0.16°C and 0.91°C, except the Waingongoro River in Eltham and the Timaru Stream (near Oakura). These sites recorded below normal by 0.17°C and 0.08°C respectively.

The maximum air temperature for the region for the month was 30.57°C and occurred in Inglewood on the 23<sup>rd</sup> December. This is a new maximum for Inglewood as well, the previous maximum was 29.85°C. Stratford and Manaia also recorded new maximum December air temperatures for the month with 29.10°C and 26.46°C respectively. The average air temperature for the month, excluding Te Maunga, was 18.19°C, which was 1.79°C warmer than the long term December average of 16.4°C.

Soil moisture was above normal for the month for all sites by between 0.65% and 9.26%, except Waitotara Valley which had a mean soil moisture 0.49% lower than the long term average. Hillsborough recorded a new maximum soil moisture for December with 35.60%, which was 0.15% higher than the previous average. Soil temperatures were above normal for the month by between 0.62°C and 2.72°C for all sites. Three sites recorded new maximum soil temperatures for the month and these were, Motunui (22.10°C), Pohokura Saddle (21.85°C) and Te Kiri (24.10°C).