



Cumbria Weather Report – The Year 2023

Very Warm and at some sites, the warmest year recorded

Wetter than average, but with an uneven distribution throughout the year – wettest since 2020.

Whilst 2022 was the warmest year on record across the whole of Cumbria, 2023 has managed to be even warmer at a few sites; although the general pattern for 2023 was slightly less warm than that of 2022. The warmest year on record went to sites such as Shap and Maulds Meaburn, in the central eastern portion of the county, where it finished 0.1°C warmer than last year.

However, with a mean temperature of 11.16°C, Walney also recorded its highest ever annual mean temperature, surpassing that of 2022 by just 0.04°C.

Just as importantly though, that mean temperature of 11.16°C is provisionally the warmest ever recorded in Cumbria.

Walney followed the UK trend for the greatest positive anomalies of temperature being found in the far west.

At Shap the three months to finish colder than average only did so by small margins, but of the nine to finish warmer than average two did so by at least 2.0°C, four by 1.5°C.

2023 was generally in the region of 0.8°C warmer than average, but with a wide variation from the 0.29°C above average at Ambleside to the 1.11°C at Walney.

Unlike the record breaking heat-wave of July 2022, the summer of 2023 was generally quite poor – even though it had got off to great start in June.

This year the warmest temperatures were to be found in June and September!

June saw the river Derwent in the Borrowdale valley run dry and the warmth and dryness of the month, especially in the first half, was more than notable.

A temperature of 31.1°C was recorded at Seaton (near Workington) and which would be the year's highest.

And then September! Whilst only Warcop 6th-8th, Keswick 4th-9th and Levens 4th-8th achieved 'heat-wave' status, many stations were warm if not very warm, but failed to get three consecutive days above 25°C – however, with some very large daily rainfall totals the month would also finish very wet and included a notable thunderstorm on the 10th that caused some flooding.

It was as much the consistency of warmth that stood out in 2023 and in some ways best illustrated by Walney recording a mean temperature over 16°C in the four consecutive months of June to September.

This year the lowest temperature would not be recorded at Shap, but at Grisedale on the 17th January; its -10.6°C only just lower than the -10.5°C recorded at Shap on the 8th March.

2023 was the wettest year since 2020 with rainfall totals broadly finishing in the range of 110-120% of the LTA.

Generally, when expressed as a percentage of the LTA, it was driest in the north-western coastal areas of the county and wettest in the far south of the county.

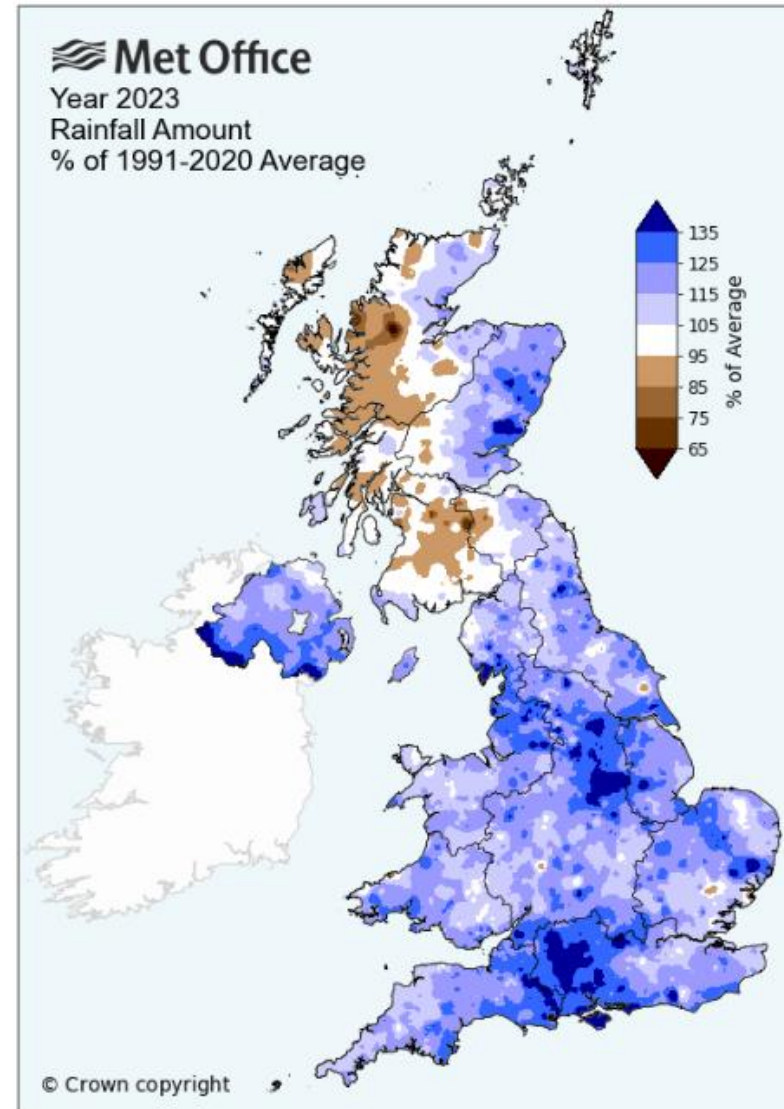
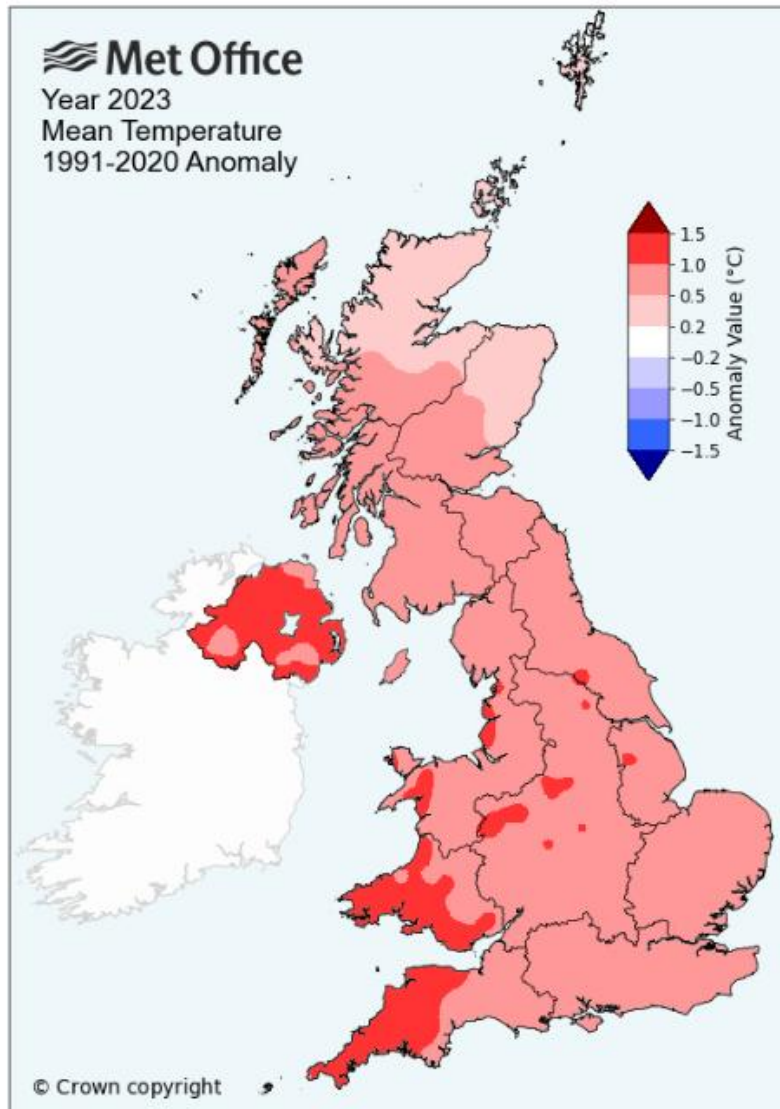
However, Aisgill in the south-east of the county finished with a total exactly on average whilst in those wetter locations totals of just over 120% were more wide-spread and attained 131.9% at Mickleden in the Langdale Valley (south Lakes).

The highest annual rainfall total is only ever going to come from a handful of sites and this year of the four sites to top the 4000 mm mark (157.5 In) Honister with 4435.6 mm (174.6 In) was the wettest.

As for the driest location, the caveat is, without access to all records and some such as Kirkby Thore (the driest part of Cumbria) having incomplete data, we cannot be entirely certain.

However, provisionally it would appear that nowhere recorded less than 1000 mm (39.37 In). Both Brampton and Thursby just scraped over the mark and had it not been for missing data in December, Carlisle would potentially have been even closer to the 1000 mm mark.

This report should be used in conjunction with the monthly editions of the CWR.



Station Notes

Ambleside - Rainfall was 2626.9mm 3rd Wettest Year on record

Appleby in Westmoreland – 1090.8 mm is 121.7% of average for the period 1857-2020.
Wettest since 2020 -- 18th wettest in that time

Brampton – 3rd warmest on record and slightly wetter than normal.
Mean temperature of 10.00c (average is 9.40c)
There was 35 Air Frosts and 84 Grass Frosts
Total rainfall was 1017.3mm or 104.5%.
Wettest Day was 8th July with 29.4mm.
No days with Fog at 0900 !!
Total Sunshine was 1298.4hrs or 104.1%

Carlisle - Mean temperature +0.88c above normal.

Coniston - 3344.7mm 3rd wettest year on record.

Ennerdale Black Sail – 4373.8 mm is 111.2% of its average (2000-21)
Wettest since 2020 -- 18 have been drier and five wetter

Grasmere - Total rainfall = 3118.9mm

Maulds Meaburn - Mean temperature of 9.67°C is 0.82°C above the 14yr average for this site.
The warmest yet recorded – beats 2022 by 0.07°C
Rainfall of 1359.5 mm is 108.9% of average (2009-2022) -- Wettest since 2020
Eleven have been drier and four wetter.
No. of rain days (225) is 10.2 above average
49 air frosts is 9.2 below average -- 104 ground frosts (14.7 below average)
38 days attained 20°C+ (2.3 above average) and 10 days attain 25°C (4.6 above).
Seven days of lying snow is 3.8 below average.

Scotby - 2023 was a warmer than average year, very similar to 2022 and 2014.
The mean annual temperature for each year was 10.6C and the mean maximum was 14.8C.
During 2023 only July and November had average temperatures cooler than normal, whereas May and June were well above the normal.
The total rainfall for 2023 was 942.9mm (37.1 inches).
This was a wetter year than the previous two years but was almost exactly the same as the average for Scotby over the last 37 years.
July was much wetter than normal and May was much drier, with the other months not Deviating too far from the average.

Seathwaite Farm - 4233.6 mm is 125.6% of average for 1845-2020
Wettest since 2020 -- the 13th wettest year

Shap - Mean temp of 8.86°C is +0.85°C warmer than average and makes 2023 the warmest year yet in its Records – beating 2022 by 0.1c
Rainfall of 2044.2 mm is 111.1% of average
In a record from 1989 it is the wettest since 2020 -- 26 have been drier and eight wetter
61 air frosts is 10 below average.

Notable events in 2023:

- 12th February – rainfall of 118.6 mm at Honister
- Drought from mid May to Mid June that saw some rivers run dry
- Thunderstorm of 10th September which caused some flooding and included 24.2 mm of rain being recorded in a 15 minute period at Dubbs Reservoir
- 19th September – rainfall of 117.0 mm at Honister
- 5th October – the greatest 24Hr rainfall total of the year, 132.0 mm, recorded at Ennerdale Black Sail
- 13th November – rainfall of 124.2 mm at Honister
- 2nd December – snowfall event in south Cumbria that saw some locations with snow laying to a depth in excess of 30 cms (1Ft)
- 17th December – rainfall of 110.4 mm at Ennerdale Black Sail

Away from the LDNP the greatest 24Hr rainfall total was recorded at Appleby In Westmorland on 10th September, 63.6 mm

A selection of mean temperatures for 2023 from various official sites

2023	Ambleside		Anon	Brampton		Anon	Carlisle		Anon	Walney		Anon	Keswick		Anon	Maulds Meaburn		Anon	Shap		Anon
Jan	1.9	6.8	+0.45	2.5	6.9	+0.65	2.6	7.8	+0.65	3.8	7.9	+0.75	2.70	8.30	+0.80	1.55	7.00	+0.99	1.10	6.70	+0.90
Feb	3.4	8.6	+1.30	3.9	8.7	+1.95	4.2	9.5	+2.00	4.7	9.1	+1.75	4.10	9.60	+2.05	3.03	8.59	+1.96	2.40	7.90	+2.00
Mar	2.6	8.7	-0.35	2.8	8.8	-0.10	3.5	9.9	+0.35	4.1	9.4	+0.15	3.10	9.40	+0.30	2.12	8.55	-0.18	1.10	7.70	-0.25
Apr	3.4	12.6	-0.65	3.9	12.0	-0.15	4.5	13.0	+0.15	5.7	12.6	+0.20	4.10	12.80	+0.05	3.20	12.05	-0.09	2.10	11.10	-0.15
May	7.6	17.8	+1.30	7.6	16.6	+1.10	8.4	17.7	+1.70	8.9	15.9	+0.70	7.30	17.90	+1.30	6.23	17.40	+1.48	5.00	16.50	+1.35
June	11.0	22.6	+2.60	10.9	20.9	+2.15	11.4	21.8	+2.55	13.0	21.2	+3.40	11.00	22.60	+2.85	9.68	21.33	+2.13	7.70	20.40	+1.90
July	11.4	18.2	-1.20	11.8	17.8	-0.80	12.3	18.9	-0.25	13.7	18.6	+0.15	12.20	18.60	0.00	11.19	18.15	-0.51	10.70	17.50	+0.05
Aug	11.4	18.7	-0.80	12.1	18.6	+0.25	12.7	19.4	+0.5	13.8	18.9	+0.35	12.30	19.00		11.33	18.37	+0.31	10.60	17.80	+0.50
Sept	11.1	18.8	+1.60	11.3	18.5	+1.75	11.5	19.2	+2.15	13.1	19.3	+2.20	11.10	19.40	+2.35	10.75	18.73	+2.22	9.90	17.90	+2.35
Oct	7.8	13.5	+0.60	7.7	13.1	+0.35	7.7	13.9	+0.50	9.7	14.1	+0.65	7.50	14.00	+0.60	6.71	13.25	+0.35	5.90	12.60	+0.65
Nov	3.2	8.2	-1.15	3.7	8.6	-0.60	3.7	9.3	-0.50	5.7	10.4	-0.05	3.50	9.60	-0.55	2.96	8.79	-0.24	1.80	8.50	-0.30
Dec	3.0	7.4	+0.55	3.4	8.1	+1.4	3.6	8.7	+1.55	5.2	9.0	+1.40	3.80	9.10	+1.6	2.74	8.01	+1.48	2.10	7.60	+1.65
YEAR	6.48	13.49		6.80	13.22		7.18	14.09		8.45	13.87		6.89	14.19		5.97	13.37		5.03	12.68	
MEAN	9.99		+0.29	10.01		+0.71	10.63		+0.88	11.16		+1.11	10.54		+0.94	9.67		+0.82	8.86		+0.85
Mean 1991-2020	9.7			9.3			9.75			10.05			9.6			8.85			8.01		

A selection of rainfall totals for 2023 from assorted sites

2023	Maulds Meaburn +	Ambleside	Castle Scar	Honister +	Shap +	Appleby *	Thursby*	Brampton+	Mickleden Langdales *	Aisgill Moor *	Haresceugh Castle *	Brothers Water *	Seathwaite Farm *	Coniston	St. Bees +	Walney +
Jan	154.1	386.3	223.5	545.8	308.8	93.4	97.6	99.1	580.6	263.1	86.53	439.85	585.4	472.7	126.6	121.0
Feb	11.3	103.9	15.9	198.2	30.0	6.8	26.0	29.1	223.0	68.8	26.62	115.38	219.8	146.9	42.2	27.2
Mar	150.3	317.8	207.2	572.6	264.2	106.1	68.0	104.4	410.4	197.7	91.11	399.70	545.0	415.6	127.8	135.4
Apr	71.7	108.5	98.3	138.6	91.8	57.4	53.2	38.5	169.8	67.7	81.57	109.82	156.2	141.5	74.6	49.0
May	14.7	34.5	16.5	60.0	18.2	24.3	41.4	45.6	54.0	37.7	44.17	32.30	50.6	37.6	44.6	20.2
June	54.4	68.6	60.0	137.6	52.8	71.5	62.0	63.0	119.4	64.7	91.35	92.35	138.6	104.8	66.8	50.4
July	155.9	273.8	203.3	436.6	183.8	128.8	168.9	172.9	419.4	171.1	172.12	314.56	426.4	325.6	126.4	142.8
Aug	142.7	174.7	160.2	228.2	154.2	100.7	76.7	82.4	234.6	156.1	133.71	251.15	231.8	173.6	70.2	87.4
Sept	213.4	308.1	281.5	495.6	298.6	172.5	117.1	100.2	406.0	198.8	124.45	424.01	450.2	352.6	170.6	143.2
Oct	75.4	184.9	94.7	347.4	129.2	53.4	100.5	87.6	391.2	178.2	79.60	242.72	326.8	233.9	89.8	115.0
Nov	130.6	240.8	171.7	554.8	195.6	122.0	104.7	88.9	441.8	198.3	136.90	332.90	436.6	363.9	98.6	151.2
Dec	185.0	424.9	243.3	720.2	317.0	153.9	120.4	105.6	722.2	297.6	139.57	580.66	666.2	576.0	151.8	223.6
YEAR	1359.5	2626.8	1776.1	4435.6	2044.2	1090.8	1036.5	1017.3	4172.4	1899.8	1207.7	3335.4	4233.6	3344.7	1190.0	1266.4
%	108.9	124.9		118.1	111.1	121.7	122.8	104.5	131.9	100.0	117.9	120.3	125.6	124.1	107.3	123.3
* = Environment Agency gauge + = Met' Office site										Relatively new records with not enough years data						
Castlehowe Scar is between Shap and Crosby Ravensworth										Estimate made by Mr. D. Rogers						
Long Term										est' made by the Met' Office						
Averages	1252.7	2102.9		1575.2	1862.9	896.0	844.1	973.2	797.3	1899.2	1024.6	2772.0	3370.1	2695.9	1109.4	1027.0

Thursby has been used instead of Carlisle which unfortunately had incomplete data in December and hence it wasn't possible to provide an annual total. At the end of November Carlisle had had 902.2 mm compared to Thursby's 916.1 mm

Some other stations that had incomplete records for the year and which I would have used for this report were Keswick and Barras

The following is a breakdown of the weather in 2023 at ... Shap

Shap 2023	Min	Max	High	Date	Low	Date	AF's	Rain	Wet Days		Wet Day	Date	Notes	Average	
														Temperature	Rain
Jan	1.1	6.7	11.0	3rd	-9.0	17th	9	308.8	17		48.6	10th		+ 0.90	132.2%
Feb	2.4	7.9	12.4	20th	-4.2	5th	7	30.0	6		10.4	17th	1 + 2	+ 2.00	15.8%
Mar	1.1	7.7	12.3	17+18th	-10.5	8th	14	264.2	18		53.2	12th		- 0.25	187.1%
Apr	2.1	11.1	14.2	17+29th	-5.1	25th	10	91.8	14		23.0	11th		- 0.15	91.8%
May	5.0	16.5	20.4	26th	1.3	29th	0	18.2	3		4.2	11th		+ 1.35	18.5%
June	7.7	20.4	27.6	12th	0.4	3rd	0	52.8	9		18.2	18th		+ 1.90	52.6%
July	10.7	17.5	24.1	7th	6.5	20th	0	183.8	19		36.0	15th		+ 0.05	172.3%
Aug	10.6	17.8	24.6	10th	4.6	31st	0	154.2	19		35.8	14th		+ 0.50	115.5%
Sept	9.9	17.9	26.6	8th	0.3	13th	0	298.6	16		76.4	19th	3	+ 2.35	227.8%
Oct	5.9	12.6	18.9	9th	-4.0	15th	5	129.2	14		30.4	5th		+ 0.65	69.9%
Nov	1.8	8.5	13.1	22+23rd	-7.7	25th	9	195.6	17		48.4	13th	4	-0.30	95.4%
Dec	2.1	7.6	12.3	24th	-9.4	1st	7	317.0	24		56.8	27th		+1.65	129.3%
Year	5.03	12.68	27.6		-10.5		61	2044.2	176		76.4			+0.85	111.1%
		8.86		Notes:-	1	second warmest February to that of 1998									
					2	third driest February									
		+0.86	+0.84		3	wettest September in record									
					4	4 days with laying snow									
														Warmest year yet recorded - beats 2022 by 0.1°C	
														Wettest year since 2020 - 26 have been drier and 8 wetter	

Data specific to Maulds Meaburn

- A Mean Minimum of 5.97°C - Mean Maximum of 13.37°C
- During 2023 snow lay on the ground* on 7 days (3.8 below average) and was seen to fall on 9 (inc' sleet)(16.2 below average) with hail falling on 3 days.
- Fog* was recorded on 2 days with thunder heard on 7 days (2.7 above average).
- Mean cloud* cover was 81% with 149 days having a 100% cover* and 11 days being totally clear.
- Mean air pressure* was 1012.2 Mb
Lowest pressure was 966.4 Mb (2nd November) and the highest was 1047.2 Mb (5th February).
- Mean wind speed* was 5.38 Mph - the highest gust = 58 Mph (11th April)
the windiest day with a mean speed of 24.1 Mph was the 17th December.
- Gales (a 10 min' mean wind speed of 39 Mph) - none were recorded.
- We had 49 air frosts (9.2 below average) - 104 ground frosts (14.7 below average)
38 days attained 20°C+ (2.3 above average) of which 10 went on to attain 25°C (4.6 above average).
- There was one 'Ice Day' (1st December) when the temperature remained below freezing all day.
- The 30 cm soil temperature had a mean of 11.0°C
with a low of 2.1°C (22nd and 23rd Jan') and a high of 18.4°C (13th June).
- The 100 cm soil temperature had a mean of 10.9°C
with a low of 5.5°C (25th Jan') and a high of 15.8°C (12th Sept').

* Refers to 0900 GMT – the hour of observations.

Records for this site during 2023 are:

- The highest Barometric Pressure – 1047.2 hpa on 5th February
- Most consecutive days with no rain -- 23 days of 19th May to 10th June
- Driest wettest day of any month – 3.4 mm of 17th February

Below is the rainfall card from Maulds Meaburn for 2023

REGISTER OF RAINFALL IN 2023

At Maulds Meaburn, Westmorland

Time of Observation, 0900 GMT

Latitude 54° 32' 18 N

Height of Receiver} above ground..... 1ft

Longitude .. 2° 34' 55 W

of rain gauge } above sea level 600 ft

Date	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1	1.1	0.8	0.6	-	Tr	-	0.1	8.9	Tr	0.3	5.7	Tr ^
2	6.4	0.2	0.1	-	-	-	0.9	10.5	-	2.0	9.9	7.9*
3	18.2	-	-	-	-	-	Tr	13.4	-	1.1	Tr !	0.3
4	2.1	0.7	-	3.5	Tr	-	Tr	1.7	-	1.6	-	6.2
5	11.1	0.1 ^	0.9	8.6	-	-	0.8	5.2	-	5.7	1.4	-
6	6.8	0.1 ^	0.5	Tr	2.4	-	-	1.1	-	2.2	1.4	3.7
7	13.5	0.1	-	-	0.1	-	-	Tr	-	Tr	6.1	34.2
8	14.5	0.2	0.2 ^	-	7.3	-	27.1	-	-	Tr	18.6	11.2
9	5.7	-	2.3 *	3.4	0.1	-	4.6	-	-	-	8.5	8.9
10	21.9	-	-	5.8	Tr	-	2.5	0.5	51.5	2.0	0.2^#	12.9
11	18.4	-	2.1	12.2	4.2	3.2	1.0	7.3	2.3	Tr ^	-	2.5
12	12.8	-	27.7	3.7	-	-	0.1	6.0	0.1	1.8	15.7	1.7
13	14.6	-	3.6	1.0	-	-	0.2	4.2	2.9	0.1 !	26.1	0.4
14	2.8	Tr	3.8*	7.6	0.1	-	17.4	42.1	18.8	0.4	5.7	0.1
15	1.6*	1.2	7.9	-	-	-	21.1	3.0	2.7	-	5.2	0.1
16	-	1.1	12.8	0.1	Tr	-	5.4	-	0.1	-	2.5	0.3
17	0.3*	3.4	3.4	0.1	-	0.2	2.1	-	18.9	-	3.9	3.0
18	-	0.3	0.4	-	0.5	27.3	7.4	19.5	13.7	9.5	11.9	0.4
19	-	0.6	0.6	-	-	1.4	0.5	1.3	43.4	10.0	0.4	0.4
20	-	-	7.1	-	-	3.1	0.3	1.8	7.8	0.4	1.4	0.8
21	0.1 ^	0.1	15.6	14.9	-	-	8.0	5.3	1.0	0.2	0.5	2.1
22	0.1 #	1.8	29.8	2.9	-	Tr	15.5	0.2	1.6	-	-	1.1
23	-	0.3	9.0	1.4	-	5.8	18.5	0.7	4.0	0.9	Tr	0.6
24	-	-	4.0	-	-	-	-	0.1	12.7	0.2	-	1.7
25	0.2	0.2	3.9	-	-	7.4	0.7	0.7	0.5	2.8	-	1.6
26	-	-	0.2	-	-	1.1	11.7	7.3	9.1	3.8	5.0	12.8
27	-	0.1	0.9	1.3	-	1.1	0.8	0.4	12.8	0.7	0.3	34.1
28	0.2	-	5.2	0.1	-	1.2	0.5	-	1.9	11.0	-	11.4
29	0.7		5.8	3.8	-	0.4	3.4	0.4	0.3	0.5	0.2 *	3.5
30	0.4		0.4	1.3	-	2.2	3.0	-	7.3	0.2	-	14.4
31	0.6		1.5		-		2.3	1.1		18.0		6.7
Totals	154.1	11.3	150.3	71.7	14.7	54.4	155.9	142.7	213.4	75.4	130.6	185.0
From 1st Jan	154.1	165.4	315.7	387.4	402.1	456.5	612.4	755.1	968.5	1043.9	1174.5	1359.5

Rain Days	21	12	26	14	4	12	24	23	19	22	21	27
Wet Days	15	4	17	14	3	10	16	17	17	13	16	20

^ = Frost !Dew + = Mist # = Fog * = Snow * = Hail