

Butterflies



1 **Small Skipper** *Thymelicus sylvestris* Recorded from Highfolds, Tarn Fen and Thoragill in period 25th July to 27th August, no more than six at any time.

2 **Large Skipper** *Ochlodes venata* Recorded from same sites as last species from 26th June to 21st August, no more than five at any one time.

3 **Large White** *Pieris brassicae* Singles on 16th and 29th July, 6th, 21st and 27th August were the only records.

4 **Small White** *Pieris rapae* More records than usual, up to five in period 16th July to 12th September.

5 **Green-veined White** *Pieris napi* Recorded 10th May to 12th September, peak count was on 16th August when at least seventy on Tarn Fen.



6 **Orange-tip** *Anthocharis cardamines* Only two records, a male on the Fen 11th May and a female at Highfolds 23rd June.

7 **Green Hairstreak** *Callophrys rubi* Recorded 2nd May to 7th June, peak counts were ten at Darnbrook Ghyll on 11th May and twenty on Tarn Fen, 31st May.

8 **Small Copper** *Lycaena phlaeas* A single insect on the edge of Horseshoe Wood on 27th, 31st August and 12th September

9 **Northern Brown Argus** *Aricia artaxerxes* One Highfolds and two Tarn House meadow 26th June, and four Highfolds 24th July the only records.



- 10 **Common Blue** *Polyommatus icarus* Recorded from Highfolds, Fen, Tarn House meadow, Thoragill and the road side verges near Pot Hole Lane in the period 23rd June to 12th August, peak count ten on Highfolds 15th July.

- 11 **Red Admiral** *Vanessa atalanta* Recorded 23rd June to 5th October from Highfolds, Tarn Fen, Tarn House Meadow, Tarn Moss and Thoragill, peak was on 14th September when forty two on the Fen counted by Dave Hodgson.

- 12 **Painted Lady** *Vanessa cardui* A very poor showing, only two singles on 24th July and 31st August.

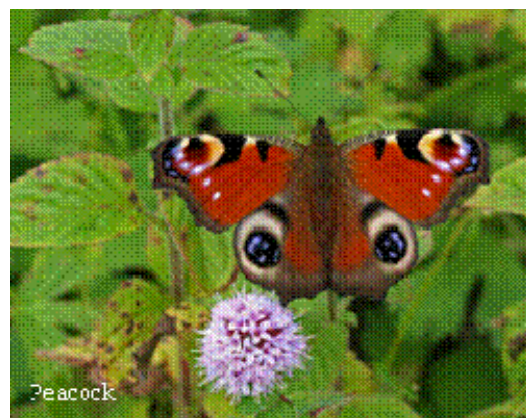
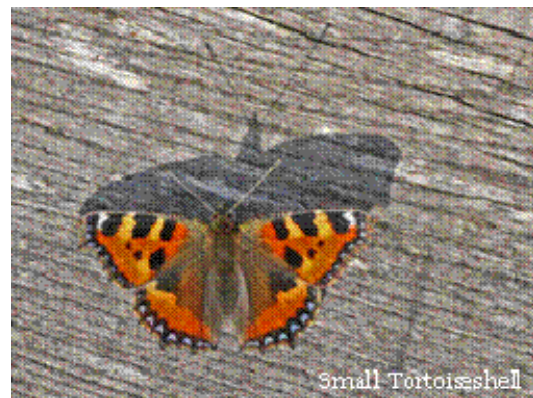
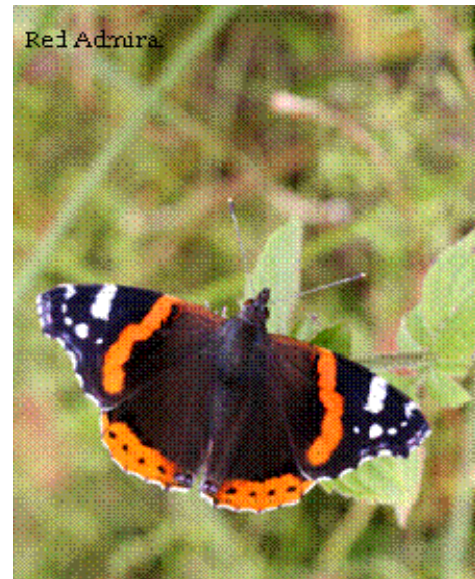
- 13 **Small Tortoiseshell** *Aglais urticae* Recorded 26th June to 2nd October, very low numbers, peak count only nine on 12th September.

- 14 **Peacock** *Inachis io* At least half the usual numbers, a very poor showing. Two singles in the early months on 22nd April and 31st May, present then from 16th August to 5th October. Twenty-two on Malham Tarn Estate 31st August, with twelve at Thoragill the same date and a further seventeen on 12th September.

- 15 **Comma** *Polyommata c-album* Just the one record, a single on the Fen 21st August.

- 16 **Dark Green Fritillary** *Argynnis aglaja* A good year, the best to date, recorded from the Fen, Highfolds, along the Pennine Way near Keepers Cottage in the period 15th July to a late 12th September, up to eight individuals at times.

- 17 **Speckled Wood** *Pararge aegeria* A probable single on Highfolds 5th August and a definite sighting of one on the Fen by Robin Sutton 20th September, this is the first record for the Malham Tarn Area and the 24th species in all. Hopefully colonisation will take place over the coming years. This species is established a few miles to the East and West of Malham Tarn at Ingleton and at Grassington.



- 18 **Meadow Brown** *Maniola jurtina* Not as many records as in the last few years, recorded from Highfolds, Fen, Tarn House meadow, Tarn Moss and Thoragill in period 15th July to 19th September, peak counts fourteen on 7th August and eighteen on 16th August.



- 19 **Ringlet** *Aphantopus hyperantus* One+ Highfolds 22nd July and Eight here 24th July.

- 20 **Small Heath** *Coenonympha pamphilus* Recorded 19th June to 29th July, peak count only twelve on 26th June.

Dragonflies & Damselflies

- 1 **Emerald Damselfly** *Lestes sponsa* No more than three of this rather elusive species in the period 7th August to 12th September, at the moment confined to the Paul Holmes pond on the Fen and the ponds near Horseshoe Wood.

- 2 **Large Red Damselfly** *Pyrrosoma nymphula* Emergence later than usual in a cool wet spring, first seen 31st May, last record 16th August, peak count thirty on the Fen 7th June.

- 3 **Azure Damselfly** *Coenagrion puella* No more than ten from 19th June to 16th August.

- 4 **Common Blue Damselfly** *Enallagma cyathigerum* A species thought to be long extinct in the area was rediscovered by Robin Sutton on the Fen below Sandhill Cottage in July where at least three were seen and photographed.



- 5 **Common Hawker** *Aeshna juncea* Recorded from 15th July to 12th September, maximum count ten on 16th August.

- 6 **Southern Hawker** *Aeshna cyanea* One on the Fen for the day only 9th August, second record for the area.

- 7 **Broad-bodied Chaser** *Libellula depressa* One on the Fen seen by Robin Sutton 12th July is a new species for the area and the eleventh in total.

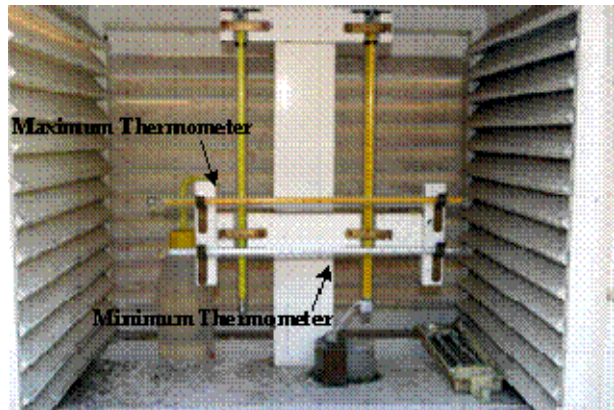
8 **Common Darter** *Sympetrum striolatum* Recorded from 7th August to 5th October, peak count eight on 27th August.

9 **Black Darter** *Sympetrum danae*
By far the commonest species, recorded 7th August to 16th October, count on the Fen board walk reached twenty five on 27th August and 12th September - probably only a fraction of those actually present.

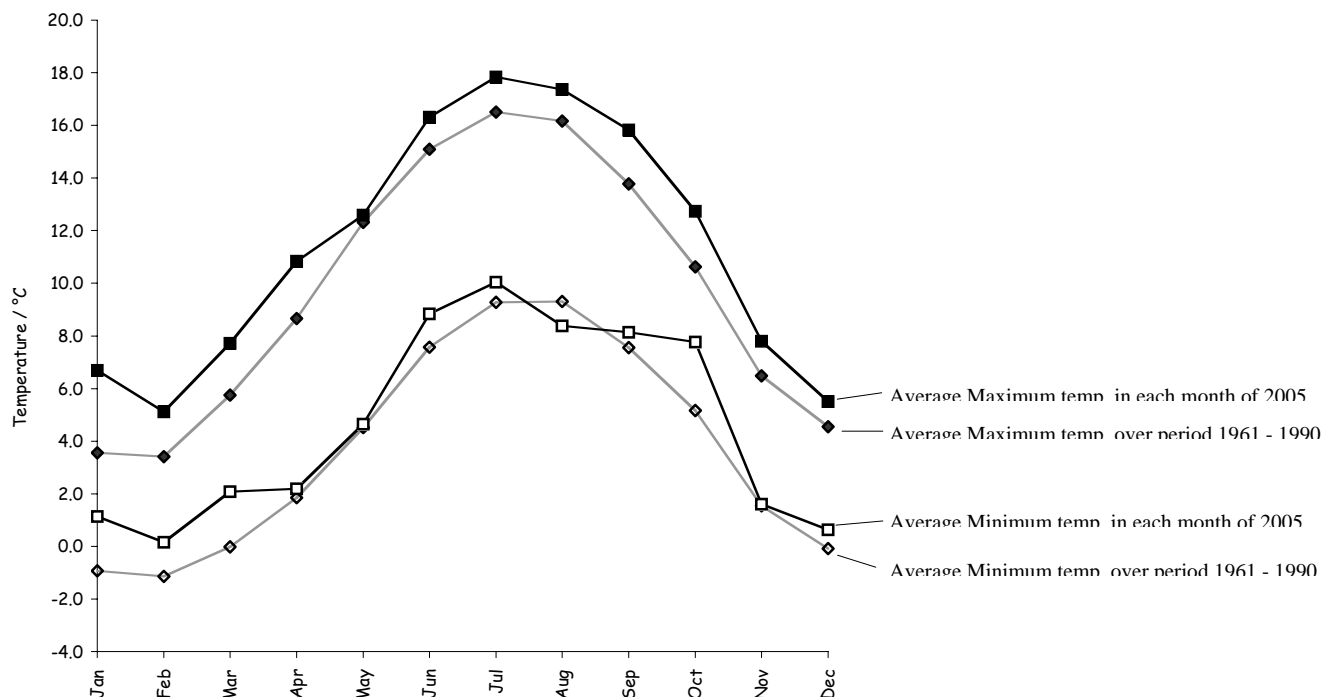


2005 Weather Report - Temperature

Every morning, including Christmas Day, a member of staff from Malham Tarn Field Centre takes a series of meteorological readings from a small met station near the edge of the Tarn. These readings include a number of temperature readings from thermometers housed in a white, slatted, wooden screen (a Stevenson Screen). The main readings are of the highest and lowest values recorded over the previous 24 hours.



The other thermometers in the screen measure wet and dry bulb temperatures - used to work out the humidity of the air.



The year started very mild with the average temperature recorded by the maximum thermometer three degrees warmer than the long term average for the period 1961-1990 (the standard baseline against which weather data are compared). Frost (an air temperature less than 0.0°C) was recorded on only 8 days and the Tarn failed to freeze over for the first time in many years. Warmer than average conditions persisted throughout most of the early part of the year - the maximums recorded being on average about 2°C warmer than the long-term norm. Air frosts were recorded on about half of the days of each of these months.

The main cold spell was between the 19th February and 14th March, minimum air temperatures fell below zero for most of this period with the lowest of -4.9°C on 6th March. None of these really compare with the lowest ever temperatures for these months which have been as low as -13°C. A second spell of cold weather between 13th and 21st April had a low of -7.5 on 16th April and this is the lowest April temperature ever recorded. So after a promising start to the year Spring was late, badly affecting the onset of the breeding season. May was average in terms of temperature but the rest of the year was warm with temperatures being 1°C to 2°C warmer than usual. No frosts were recorded for any of the months between May and October.

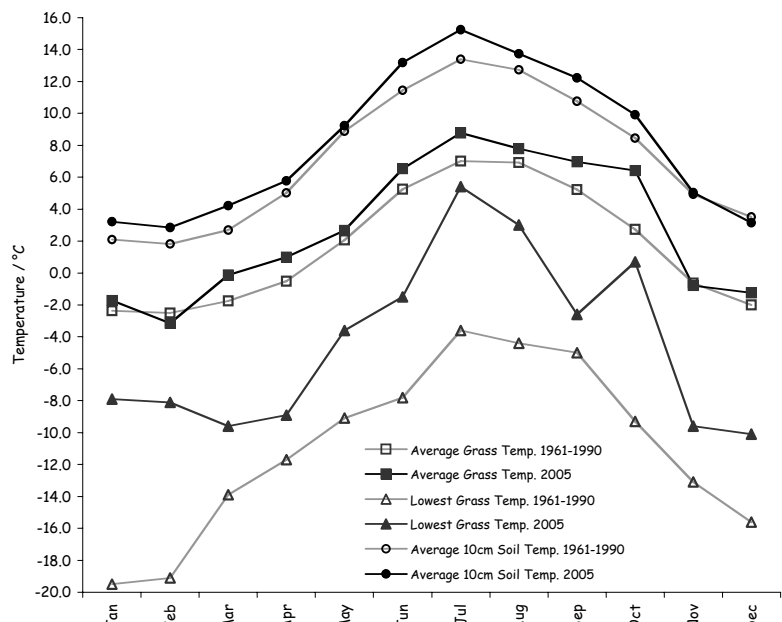
Temperature / °C	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Highest Ever	11.1	13.0	18.9	21.0	22.8	27.2	28.0	28.2	25.0	21.1	15.2	12.9
Highest 2005	10.6	10.6	14.4	15.4	16.9	24.5	27.3	21.4	21.5	17.6	14.1	8.9
Average Maximum in 2005	6.7	5.1	7.7	10.8	12.6	16.3	17.8	17.4	15.8	12.7	7.8	5.5
1961-1990 Average	3.6	3.4	5.7	8.7	12.3	15.1	16.5	16.2	13.8	10.6	6.5	4.5
Average Minimum in 2005	1.1	0.2	2.1	2.2	4.7	8.8	10.0	8.4	8.1	7.8	1.6	0.6
1961-1990 Average	-0.9	-1.1	0.0	1.9	4.5	7.6	9.3	9.3	7.6	5.2	1.5	-0.1
Lowest 2005	-3.2	-3.3	-4.9	-7.5	0.0	2.4	6.9	4.6	0.6	4.3	-5.1	-6.6
Lowest Ever	-11.5	-13.0	-13.5	-7.5	-4.2	-1.1	1.7	2.2	-1.0	-4.9	-9.2	-12.6

June and July were warm (for Malham Tarn) with temperatures above 19°C to 20°C for the last two weeks in June and first two weeks of July with the highest temperature of the year being recorded at 27.3°C on 11th July. The end of July and beginning of August were slightly cooler but warmer weather returned towards the end of August and persisted through into September, October and the first part of November. October was well above average with the minimum of 4.3°C being exceptionally high. Equally exceptional was a maximum of 14.1°C on 2nd November - very pleasant for the time of year.

The end of November turned much colder. Minimum temperatures below freezing were the norm from the 17th until the end of the month. The lowest temperature recorded was -5.1°C on the 17th of November. December was fairly mild until Christmas and then cold conditions moved in on Boxing Day with the temperatures barely rising above freezing until New Years Eve, the coldest day being the 29th with a low of -6.6°C. The Tarn froze over completely for a few days in late November and again at the end of December.

Grass & Soil Temperature

As well as air temperatures from the Stevenson Screen a number of measurements are taken on the grass surface and 10cm deep in the soil. The grass temperatures record ground frosts. These have been recorded from every month of the year at some time between 1961 and 1990. In 2005 ground frosts were recorded in every



month apart from July, August and October. The lowest temperature (-10.1°C) for the whole year was recorded on 29th December on the grass surface. This sounds positively warm compared to the lowest grass temperatures recorded at Malham Tarn Field Centre which were -19.5°C on 12th January 1987 and -19.1°C on 11th February 1986. The average grass surface temperatures for each month (except February and November) were once again consistently higher than the 1961-1990 average; a difference of one to two °C higher for most months though October was much warmer in 2005. The 10cm soil temperature was again warmer month by month in 2005 than the long term averages.

Rainfall

2005 was a dry year. The total rainfall for the year was 1280mm (about 50in) compared to the average yearly rainfall for 1961-1990 of 1487mm (58in). Most months were drier in 2005 than is the norm. The only exception was April which had nearly 50% more rainfall than usual.

The period from June to December was particularly dry with only about 75% of the usual rainfall. In July only 50% of the usual rain fell and many of the springs on Fountains Fell, which supply the Centre with water, became dry.

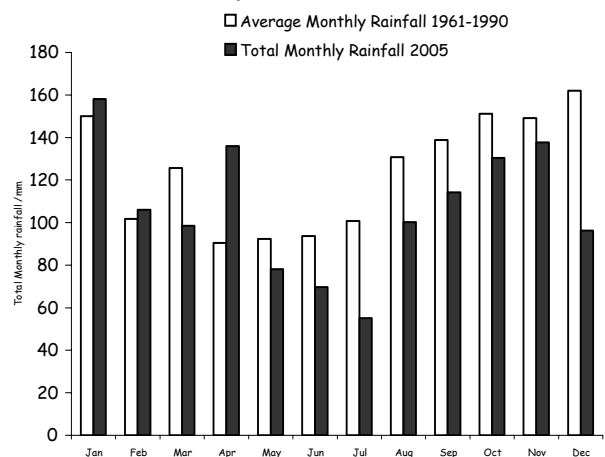
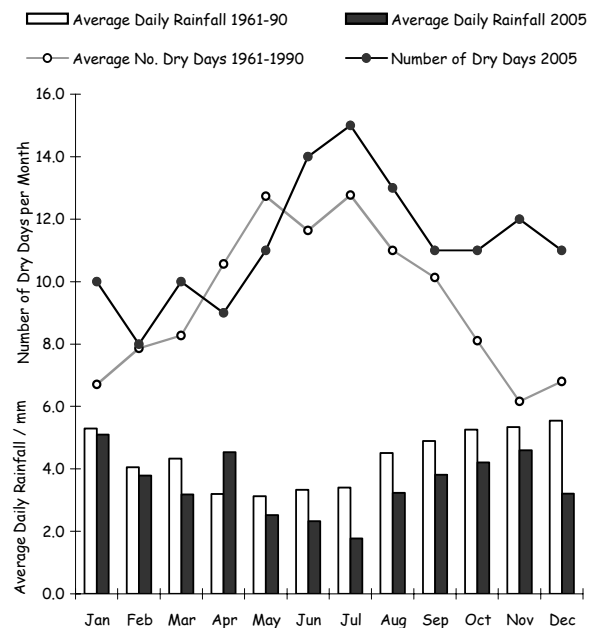
Most months had not just less rain per day but fewer wet days. The exceptions were February, April and May which all had either about the usual number of dry days or were less dry than usual. In contrast October, November and December all had many more dry days than we would expect.

Even though the year was drier than usual there were significant wet spells. In the first week of January we had 96.1mm (3.8in) of rain with 48.7mm (1.9in) falling on 7th January. This was the greatest amount of rain on one day for the whole year. This pales into insignificance when compared with the 31st January 2002 when a staggering 135.4mm (5.3in) fell on one day.

Other wet spells in the early part of 2005 were:

- 11th February (41.2mm)
- 11th - 17th April - (62.8mm)
- 18th - 24th May (47.2mm)

These wet spells meant that even though the number of wet days was lower in 2005 than usual the total rainfall for the months of January, February and April were all actually higher than we normally get. January was the wettest month of



the year with 158.1mm (6.2in) this is less than half the maximum amount of rain ever recorded in a month, February 2002 was the wettest month ever recorded at Malham Tarn with 364mm or 14.3in falling.

Into the autumn of 2005 and we had a lot of dry weather but the last week in September was wet (63.1mm) as was the period 19th – 26th October (95.3mm). Probably the most consistently wet period though was the 1st – 11th November when we had 127.0mm of rain. The rest of the year was mostly dry but we ended with an inch or so of rain (25.8mm) on 30th December.



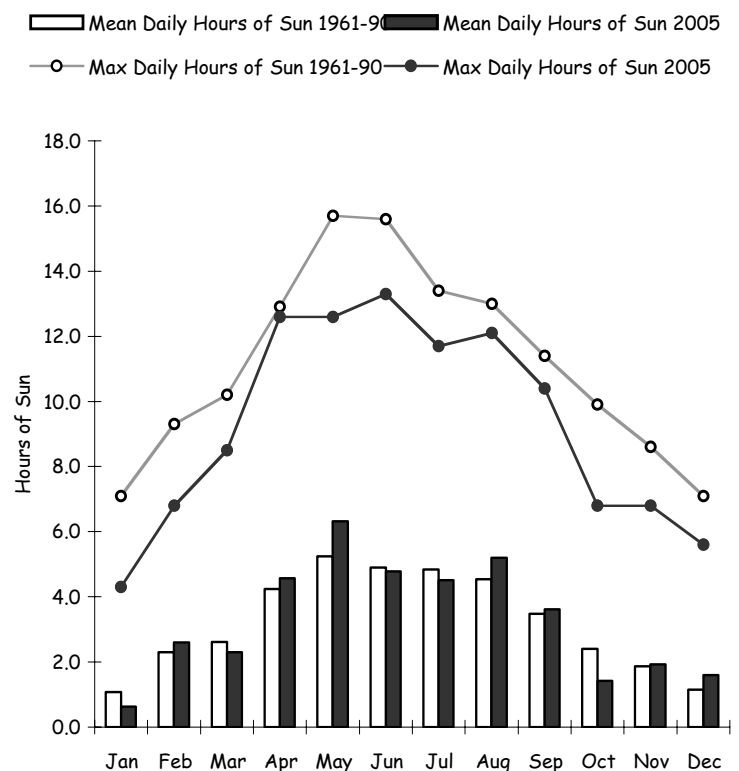
Sunshine

The average number of hours of bright sunshine is recorded using an instrument looking very much like a crystal ball. The Campbell Stokes recorder is a large glass ball that acts like a huge magnifying glass focusing the sun onto a dark card. The sun then burns a line through the card and the length of the line indicates how many hours of bright sunshine we've had.



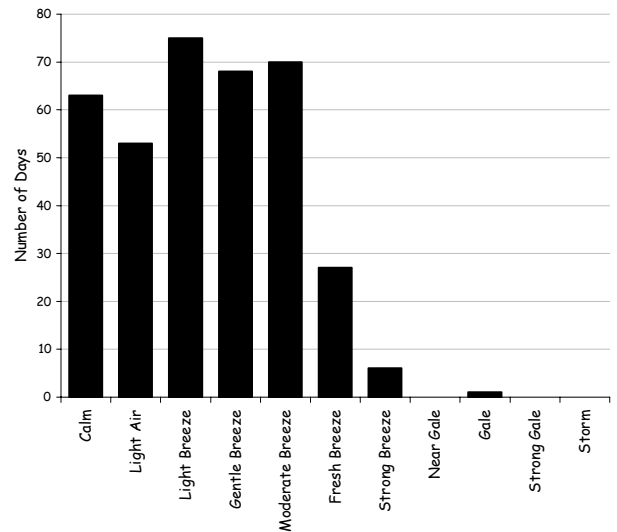
2005 was a fairly average year. There was slightly more sun per day than average in some months, notably May, August

and December. The 2005 average was lower than normal in January, March and October and the other months were about the same as the long term 1961-90 average.

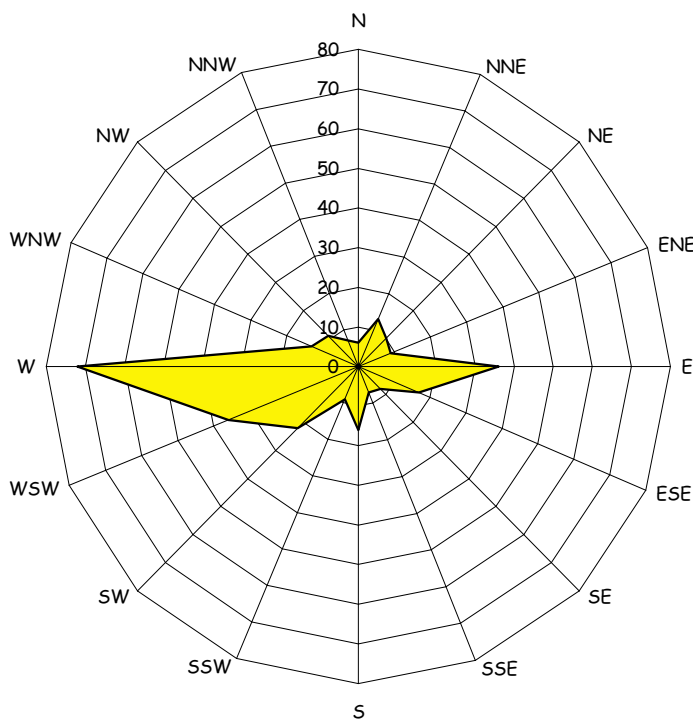


Wind

The wind speed is estimated using a modified Beaufort Scale. Signs such as the presence of white crests on the wave on the Tarn or whether or not the twigs on the branches are moving are used to indicate speed. 2005 was a relatively calm year with a gale being recorded on just one day of the year - 8th January.



The prevailing winds at Malham Tarn are from the West to South-West sector. Winds are from this direction on 36% of days. The next most common sector is East to South-East (17% of days). Very few days are recorded as having winds from the North (1.6%) or South (4.4%). No wind at all was recorded on 20% of days.



Direction	No. of Days
N	6
NNE	13
NE	10
ENE	9
E	36
ESE	17
SE	8
SSE	7
S	16
SSW	9
SW	22
WSW	36
W	72
WNW	13
NW	11
NNW	7
No Wind	73
Total	365

Records

	2005		Ever (1959 - 2005)		Notes
	Date	Amount	Date	Amount	
Temperature					
Warmest Day	11th July	27.3 °C	3rd Aug. 1990	28.2 °C	Highest air temperature recorded
Coldest Day	29th December	-6.6 °C	5th Mar. 2001	-13.5 °C	Lowest air temperature recorded
Warmest Month	July	17.9 °C	Aug. 1995	20.6 °C	Highest Average of all Maximum Thermometer readings
Coldest Month	February	0.16 °C	Feb, 1986	- 5.6 °C	Lowest Average of all Minimum Thermometer readings
Lowest Grass Temperature	29th December	-10.1 °C	5th Mar. 2001	-20.1 °C	
Lowest 10cm Temperature	23rd January	0.9 °C	14th Dec. 1999	-7.1 °C	
Lowest 30cm Temperature	2nd March	1.7 °C	28th Feb.1994	0.6 °C	
Rainfall					
Wettest Day	7th January	48.7 mm (1.9 in)	31st Jan. 2002	135.4 mm (5.3 in)	
Wettest Month	January	158.1 mm (6.2 in)	Feb. 2002	364.1 mm (14.3 in)	
Driest Month	July	55.1 mm (2.2 in)	Jan/Feb 1979	No Rain	
Highest Total Rainfall for Year	2005	1280.2 mm (50.4 in)	2000	2097.9 mm (82.6 in)	
Sunshine					
Sunniest Day	27th June	13.3 hours	7th May 1985	15.7 hours	
Sunniest Month	May	195.0 hours	Aug. 1995	246.2 hours	
Least Sunny Month	January	19.3 hours	Jan. 1997	No Sun	