

DUNBLANE WEATHER REPORT 2012

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The weather station is my suburban back garden in Ochiltree, Dunblane. This is situated 50 m to the east of the Dunblane Hydro ridge, 100 m a.s.l., in a shallow, sheltered valley. (GR NN 78990143).

I have been recording the weather since 1995 and all averages etc. refer to the last 18 years. (Note: because there is much variation from year to year in Britain in the parameters used to define climate, climatological averages are usually taken over periods of 30 years for temperature and 35 years for rainfall. Therefore, all averages in this report should be viewed with some caution). I am indebted to Dr. John P. Holland for providing Met. Office and additional weather records from Kirkton Farm, Strathfillan (NN 359283; 170 m a.s.l.) and Killin. Weather recording began in 1991 at Kirkton Farm and means etc. for this site date from that year. Killin means date from 2000. The data from Kirkton allows for some interesting meteorological comparisons between the far north-west and central areas of our region.

Daily rainfall (> 0.2 mm), maximum and minimum temperatures, barometric pressure, cloud cover, wind direction and speed (Beaufort scale) are recorded. All except the maximum daily temperature are recorded at 09.00 hours. A brief description of the day's weather is also noted along with exceptional and unusual weather phenomena across the UK. Unless indicated otherwise, daily (24 hour) rainfall amounts are measured from 09.00 hours on the date mentioned until 09.00 hours the following morning.

2012 was **cooler** and **wetter** than normal. The mean temperature of 7.94°C was 0.52°C below the norm. The maximum temperature was 28.2°C (24th May) and the minimum temperature was -8.0°C (11th Dec.). There were 81 air frosts (mean 71) and snow lay on the ground at 09.00 on 14 occasions. Precipitation of 1262.5 mm was 12 % above the norm with measurable amounts on 214 days (mean 208). Turning to the seasons: Winter (December-February) was warmer and slightly wetter than normal while spring (March-May) had temperature and precipitation values close to the means. The mean summer temperature (June-August) was close to normal but rainfall was 60 % above average. The mean temperature in autumn (September-November) was 1.45°C below the mean while the rainfall amount was normal. Across the UK the mean temperature was 8.8°C, 0.1°C below the 1981-2010 average. Mean rainfall of 1331.0 mm was 15 % above the average.

January was a little warmer and drier than usual. The mean temperature of 2.35°C was 0.09°C above the average. There were 17 air frosts and snow lay on the ground at 09.00 hours on three occasions. Precipitation of 111.7 mm was

93 % of the average with measurable amounts occurring on 21 days, the average for the month. The average pressure was 1013 mb with a high of 1031 mb (29th) and a low of 958 mb (3rd). Over Scotland as a whole temperatures were 0.8°C above the 1971-2000 average and while the north of the country received around 150 % of normal precipitation, Fife and the eastern Borders had only half the norm. It was the second sunniest January (in a series dating back to 1929) for eastern Scotland.

Wet snow during the night of the 1st/2nd produced a light covering. A deep depression (958 mb at Strathallan airfield, Perthshire at 09.00 hours) moved across northern Scotland from east to west during the morning of the third. The winds were at their strongest across the Central Belt from 07.00 hours to 11.00 hours with gusts of 102 mph and 91 mph recorded in Edinburgh (Blackford Hill) and Glasgow respectively. These were the result of a 'sting jet' which formed round the rear of the depression. The Forth, Tay, Erskine and Kingston bridges were closed to all traffic. Several high-sided vehicles as well as trees were blown over and there was structural damage. Ferry and train services were also disrupted. Up to 160,000 homes were without electricity at any one time and the Isle of Bute had their supplies cut for 3 days. Tyndrum recorded 52.6 mm of precipitation. The 4th was a day of continuous raw rain (23.9 mm, 48.0 mm Tyndrum). Another deep low (985 mb) crossing Scotland during the night of the 4th/5th produced more gales (82 mph on Islay). The 5th was a rare cloudless day as the northwesterly winds slowly eased. As high pressure built over Scotland from the 8th the weather became more settled with the occasional day of unbroken sunshine (12th & 13th). There were night frosts from the 13th to the 17th with the -7.3°C recorded at 09.00 hours on the 16th being the lowest of the winter to date (-10.5°C, Aboyne). As the high pressure system decayed from the 18th Atlantic weather systems again became the norm. Strong westerly winds on the 21st (gusting up to 60 mph through the Central belt) were accompanied by heavy showers, these being prolonged and of snow in the western hills. A spell of quieter weather with night frosts then followed with high-pressure (1031 mb, 29th) building over Scandinavia from the 28th.

February was milder and much drier than normal. The mean temperature of 3.95°C was 0.85°C above the norm while rainfall of 22.2 mm was only 23 % of the average making it the driest February at this station. There were 12 air-frosts while measurable precipitation was recorded on only 8 days (average = 17), equaling the previous low number in 2003. Average pressure was 1024 mb with a high of 1040 mb and a low of 997 mb. Across Scotland the mean temperature was 1.8°C above the 1971-2000 average making it the warmest February since 1998. The east of Scotland (from the Lothians to Aberdeenshire) received only a third of their normal February rainfall.

The high-pressure system over Scandinavia (1040 mb, 2nd) persisted until the 16th with nightly frosts (-7.0°C, 2nd, -11.8°C Cromdale, Highland, 3rd) and cold, calm, mostly sunny days. An Atlantic frontal system briefly breached the

fringes of this high, moving SE across the UK on the 4th/5th. Scotland only received a little rain and sleet at low levels with snow on the hills on a raw southerly force four wind but England, from a line south-east of Newcastle to Manchester, had moderate snowfall (16 cm in Yorkshire) throughout the day and night of the 4th/5th as the warmer occluded front came across the much colder static air mass. The 6th and 7th were days of virtually unbroken sunshine with night frosts (-7.2°C , 7th). A weak weather front pushed in from the Atlantic on the 8th, remaining stationary over Scotland until the 13th. This caused a marked split in the weather between England and Scotland and as the former continued to shiver under clear skies (-15.6°C , Holbeach (Lincs.), 11th; the lowest temperature in the UK since Boxing Day 2010) we endured several days of damp, murky and misty weather – just what the word ‘dreich’ was coined for. It was virtually calm throughout with a small temperature range of -0.6°C to 4.5°C . The murk started to lift on the 12th with the first glimpse of sun for 6 days. The weather remained ‘quiet’ up until the 17th with some sunshine and light winds. It was very mild for February with the 12.8°C and 12.9°C recorded at Strathallan on the 15th and 16th being the highest temperatures at a metrological station in the UK. A front crossing Scotland from the north-west during the afternoon and evening of the 17th not only produced the first notable amount of rainfall for the month (5.5 mm, (71.0 mm Achnagart, Highland)) but dragged down Arctic air in its wake which produced blizzard conditions on northern coasts and hills on the 18th. The Stirling area escaped with only occasional snow flurries on a bitterly cold wind. After a sharp frost (-5.6°C) the 19th was a rare sunny, calm day. However, broken cloud drifting in from the west during the late afternoon heralded yet another Atlantic front. The following 4 days were all overcast and damp with varying amounts of rain on fresh to strong south-westerly winds. The 24th was mostly sunny with a brisk west, drying wind before damp, overcast, and dreich weather returned the following day. This damp, dull weather persisted until the month end with only a brief spell of sunshine during the early afternoon of the 29th.

March 2012 was the warmest and driest at this station. The monthly mean temperature of 7.55°C was 2.52°C above the average while the maximum temperature of 18.6°C on the 28th set a new high here (after 17.5°C on 27.03.2003). There were only four air-frosts (mean = 10). Total precipitation of 35.7 mm (all rain) was only 47 % of the norm with measurable amounts on only 8 days – another new low at this station (average 16 days). Mean pressure was 1024.0 mb (average = 1010 mb) with a high of 1037 mb and a low of 1001 mb. Many other locations across Scotland recorded their highest ever March temperatures culminating in a new Scottish March high of 23.6°C at Aboyne, Aberdeenshire on the 27th. The previous Scottish high of 22.2°C was set in March 1957 at Gordon Castle, Moray, and equalled at Strachan, Kincardineshire in 1965. It was the third warmest March on record across the UK.

The weather continued dull and damp until the 4th. An overnight frost (-4.2°C) heralded a cloudless day on the 5th as a brief ridge of high pressure lay

over the UK. The clear skies lasted until the afternoon of the following day when an Atlantic front moved in from the west. This deposited 6.0 mm of rain during the night of the 6th/7th with further heavy showers the following day. Pressure built again from the 9th (1037 mb max.) and settled over the UK until the 15th. However, apart from the 11th and 12th which were mostly sunny, a layer of cloud was trapped beneath the high pressure system resulting in dull if calm days. Another Atlantic front produced 12.0 mm of rain during the morning of the 16th but this quickly cleared from the north and the 17th and 18th were days of unbroken sunshine and light winds. After an Atlantic weather front deposited 7.0 mm during the afternoon and night of the 19th/20th pressure began to build (1034 mb, 22nd). Apart from the 22nd, which was a day of unbroken sunshine and light airs, early mist lifted slowly to reveal cloud cover through which a hazy sun attempted to break through in the afternoons. The 26th to 31st were all either cloudless or virtually cloudless days with record high temperatures for March being set at this station with 18.6°C (28th) and successively for Scotland with 22.8°C at Fyvie, Aberdeenshire (25th); 22.9°C, at Fyvie and Aboyne, Aberdeenshire (26th – an all-time UK record high for this date) and 23.6°C at Aboyne, Aberdeenshire (27th). Most of Scotland enjoyed higher temperatures than southern Europe during this spell. There was no precipitation during the final 13 days of the month.

April was wetter and much colder than normal. The mean temperature of 5.98° C was 1.94° C below the average and the coldest April at this station (the previous was 6.32°C in 2000). It was also 1.57°C below the mean for the previous month. The maximum high was 14.8°C (1st) with a night low of -4.6°C (5th, -8.2°C Braemar). There were 10 air frosts (mean = 4.5). Precipitation of 95.0 mm was 51 % above the norm with measurable amounts on 20 days (average = 15) and snow lay on the ground at 09.00 hours on two occasions. Scotland-wide, the mean temperature was 0.8°C below the 1971-2000 average making it the coldest April since 1998. The eastern half of Scotland received over 250 % of the normal precipitation making it the wettest since 1934 with the number of days of recorded rain the highest in 50 years. Across the UK it was the coldest April since 1989 and the wettest on record with much of eastern and southern England recording up to three times the normal amount. Despite all this rain, much of eastern and southern England retained their official drought designations. Sunshine amounts were mostly close to or below normal apart from the west coast of Scotland, the Western Isles and the west of Northern Ireland.

After a calm, cloudless day on the first, a front moving down Scotland from the north deposited 7 cm of snow from the early hours of the 3rd. The driving snow continued on a bitter Arctic NE 3-4 until mid-am but did not lie in Bridge of Allan or Stirling. NE Scotland bore the brunt of this weather with 22 cm at Whitehillocks, Angus with several high level roads being closed. Ten thousand homes in NE England lost their electricity supply as iced lines were brought down by the strong winds. The 4th was mostly sunny on a cold NE 2 as the north-east of England was hit by the Arctic blast. The M62 and A66 roads were

closed all day and the heavy, wet snow on gale-force winds brought down many powerlines leaving c. 60,000 homes without electricity. It remained mostly overcast but dry until the 10th with light winds and some patchy rain on the 6th and 8th. Heavy rain in the early hours of the 10th died out by noon having deposited 13.0 mm (28.0 mm Tyndrum). After more rain in the early hours of the 12th a northeasterly airstream depressed temperatures with night frosts from the 13th-16th (-2.9°C, 15th). It was mostly sunny with very clear air and the occasional short shower, some of hail. The maximum temperature of 9.7°C (14th) was just below the seasonal norm. A north-easterly airstream continued to pre-dominate for the rest of the month, depressing temperatures. There was precipitation most days, often in the form of heavy showers but heavy rain/sleet during the night of the 16th/17th deposited 15.0 mm (37.6 mm Lochgilphead). Strong winds (gusts of up to 76 mph in Cumbria) and prolonged heavy rain across most of England from the 28th-30th caused much localised flooding while many trees were blown down which severely disrupted power supplies.

May was slightly cooler and drier than normal. The mean temperature of 10.63°C (0.33°C below the norm) masked some wide variations during the month with a maximum daily high of only 7.2°C (10th) contrasting with 28.2°C (24th), which was a record for May at this station (the previous being 26.0°C on 21 May 2010). There were two air frosts. Precipitation of 68.1 mm was 98 % of the norm with measurable amounts falling on only 12 days. Barometric pressure ranged from 1002 mb to 1031 mb. It was notably sunnier in the north of Scotland where it was the third sunniest in a series dating back to 1929.

The persisting north-easterly airstream continued to depress temperatures in the east of the country but as is often the case with this airflow, the north-west basked in virtually continuous sunshine with temperatures reaching 21.1°C at Kinlochewe (2nd). Closer to home, Tyndrum recorded 20.9°C on the 3rd when the maximum in Dunblane was only 15.7°C. A weak front crossing southwards over Scotland during the early hours of the 4th brought little rain but the Arctic airstream behind it depressed temperatures even further with a night frost of -3.1°C on the 5th nipping the early growth on tender plants (-6.2°C Saughall, E. Ayrshire). Despite clear skies, daytime temperatures struggled to only 12.2°C (5th). Fresh snow on the Trossach Hills on the morning of the 6th was another indicator of below seasonal temperatures. The weather continued changeable with a front crossing Scotland from south-west to north-east the following day being followed by 2 days with long sunny spells. However, another area of low pressure, with its associated front, moving up from the south on the 10th, deposited varying amounts of rain at lower levels across Scotland with enough snow on the hills for skiing to be resumed on Cairngorm. The raw north-easterly wind and maximum temperature of only 7.2°C was reminiscent of winter and caused the central heating to be turned up in this house and doubtless many others. The low-pressure system lingered over Eastern, Central and Southern Scotland throughout the following day before retreating in the face of an advancing high pressure in the Atlantic

(1035 mb, 12th). Rainfall amounts varied with Dunblane receiving only 0.2 mm while Stirling and Clackmannanshire were subject to several downpours from the leaden skies. After an overnight frost, the 12th was a sunny day with a fresh south-westerly drying wind. Rain returned on the 13th with a marked west to east gradient. While Dunblane had a 24 hour total of 7.5 mm, Tyndrum received 63.0 mm and Kinlochewe (Highland) experienced the wettest Scottish May day on record with 101.0 mm. It was also windy with a gust of 67 mph being recorded on Blackford Hill in Edinburgh. A couple of mostly sunny, if cool, days followed (a minimum of -2.5°C Tyndrum, 16th) before a slow moving front settled over Scotland from late on the 16th to the 18th. This time, the eastern half of Scotland fared worst with drenching rain on raw north-easterly winds more reminiscent of winter than May as temperatures struggled to a maximum of 7.8°C . Thereafter, daytime temperatures rose steadily to a May record high of 28.2°C (24th) with largely sunny and warm (or very warm) days until the 29th. The 29.3°C recorded at Achnagart (Highland) on the 25th was a new May record high for Scotland. There was no measurable precipitation from the 18th to the 29th. 'Normal service' resumed during the final 2 days of the month as an Atlantic weather system produced 25.7 mm of rain.

June was notably cooler and wetter than normal. The mean temperature of 12.51°C was 1.4°C below the norm with the maximum daily high of 21.8°C being the lowest ever for June at this station and the daily low of 9.8°C being the coldest since 9.1°C in 2000. Rainfall of 116.9 mm was 52 % above the norm making it the wettest June since 2002. Measurable rain fell on 22 days, seven more than the mean and the most for this month. A minimum temperature of -3.5°C was recorded at Loch Glascarnoch (5th). Across Scotland it was the coolest June since 1998 with southern and eastern areas recording their wettest June ever with 250 % to 300 % of normal rainfall. By marked contrast, it was drier and sunnier than average in north-west Scotland and the Western and Northern Isles. Across the UK it was the coolest June since 1991 with daily maximum temperatures well below normal. It was also the wettest June in England and Wales in a series dating back to 1766.

The first days of the month were largely sunny but a cool easterly airstream depressed temperatures which only reached 13.8°C on the 2nd. The weather remained changeable and cool although Scotland, especially the west, fared much better than England, which received regular drenchings as a conveyor belt of low pressure systems, caused by the Jet-stream being further south than usual, crossed that country from south-west to north-east. The Aberystwyth area of west Wales received double the normal June rainfall in 24 hours on the 8th (186.0 mm in 48 hours) causing the R. Lery to burst its banks flooding two villages and four caravan sites with 1,000 people having to be evacuated. The weather remained changeable and yet another low pressure system, entering the UK in the south-west on the 14th, made its way up into southern Scotland, where it remained for all of the 15th and 16th, depositing 18.0 mm of rain (52.6 mm, Threave, Dumfries and Galloway). The accompanying raw north-

east force 3-4 winds made it feel more like November as temperatures struggled to a maximum of only 9.8°C on the 15th. The 18th-20th were mostly sunny, warm days (21.0C, 20th) but these proved to be the lull before yet more storms. Twenty-four hours of non-stop rain beginning at 09.00 hours on the 21st produced 24.2 mm (54.3 mm, Durris (Aberdeenshire). The gusting north-easterly winds depressed temperatures such that the maximum value of 11.9°C on the 21st was only 2.0°C more than the previous night's low. Although the 22nd was largely dry, a further 10.0 mm of rain fell during the following night as a low pressure system and associated encircling fronts remained virtually stationary over Scotland. Most of Great Britain received large amounts of rain during this spell but the worst flooding was reported from the Lancashire/Yorkshire boundary around where a month's rain fell in just 24 hours flooding roads and swamping houses (93.8 mm at Blencathra, Cumbria). The west-coast main railway line was also cut at Carlisle as floods washed away part of the track. A ridge of high pressure (1019 mb) produced a largely sunny day on the 25th but this respite was all too brief as heavy rain fell again the following afternoon. It remained largely wet to the month end as yet another slow moving low pressure system settled over Scotland. 23.0 mm of rain fell from noon till midnight on Friday 29th ensuring that very little (if any) cricket was played in Scotland for the third weekend running. Despite this miserable weather, Central Scotland escaped relatively lightly as electrical storms on the 28th caused havoc in the midlands and north-east of England with the main line between Newcastle and Edinburgh being blocked by two landslips south of Berwick. Landslips also closed the Glasgow to Fort William line with Tyndrum receiving 34.0 mm on the 28th while only 2.4 mm was recorded in Dunblane.

July was cooler and wetter than normal with the mean temperature of 14.66°C being 1.11°C below the average. This was mostly due to the mean daily high temperature being 2.07°C below the norm. Rainfall of 142.7 mm was 66 % above average making it the 3rd wettest at this station (156.3 mm July 2002). Measurable rainfall fell on 20 days, four below the mean. The average pressure was 1011.0 mb which, considering the frequent low pressure systems during the month, had a narrow range of 1002 mb-1021 mb.

With the Jet-stream still over the south of England the very unsettled weather of June continued. It rained every day during the first 2 weeks of the month. Amounts at this station were never excessive (15.0 mm, 2nd) but the south-east of Scotland and several areas in England fared worse. Torrential rain during the night of the 6th/7th caused flooding in Edinburgh and Midlothian with the Edinburgh southern by-pass closed at one point. Maximum daytime temperatures fluctuated between 14.3°C (2nd) to 22.6°C (6th). From the 3rd to the 6th both the days and nights were quite humid with a minimum night temperature of 15.0°C on the 5th/6th. Another spell of prolonged rain during the 11th/12th added 21.9 mm to already waterlogged ground forcing the cancellation of local weekend cricket matches for the 5th successive weekend. The first dry day of the month occurred on the 16th but this respite was short

lived as yet another slow moving weather front produced 54.7 mm in 24 hours from 22.00 hours on the 17th. Falling on already saturated ground, several roads in central Scotland, Fife and Angus quickly became impassable due to flooding. The 19th to the 21st were largely dry with some good sunny periods. It rained all day again on the 23rd (10.6 mm) but this was followed by four rare dry and mostly sunny days. It became quite warm with temperatures peaking at 23.3°C (31.4°C London) on the 25th. The 28th/29th were classic 'sunshine and showers' days. The final 2 days of the month were sunny.

The weather in **August** was very similar to that of July. Although the mean temperature of 15.27°C was virtually identical to the average, the rainfall total of 147.4 mm was 62 % above the average with measurable amounts on 21 days – five more than the norm. The maximum temperature of 11.3°C (31st) was the coldest August day at this station (after 12.1°C on 06/08/2008). Again, despite several low pressure systems and associated fronts during the month, barometric pressure remained within a fairly narrow range of 1000 mb to 1028 mb.

The month started with yet another front which produced 8.0 mm in the 24 hours starting at 22.00 hours on the 31st of July. Thundery downpours caused several flash floods across southern Scotland from the afternoon of the 4th until the 6th. Dunblane received 23.5 mm from noon on the 5th until midnight on the 6th. High pressure then built across the UK (1028 mb, 10th) giving six consecutive dry, mostly sunny, warm days (24.6°C, 10th; 25.9°C Eskdalemuir). The weather became unsettled from the 13th with rain every day, occasionally accompanied by claps of thunder until the 18th when the clouds cleared. It was often humid during this spell with a high of 22.4°C (13th) and a night low of 16.0°C (18th) – the highest of the year so far. The south-east of England experienced a mini-heatwave over the weekend of the 18th/19th with 32.4°C at Cavendish, Suffolk (18th). Unsettled weather returned on the 19th with rain every day until the 30th, often in the form of sharp downpours interspersing spells of sunshine. However, rain all day on the 27th produced 17.0 mm while isolated, torrential, thundery downpours on the 29th resulted in a further 34.5 mm. This station received c.20.0 mm between 16.00-17.30 with hail at times. The night of the 30th/31st was unusually cold (2.2°C; -2.5°C at Cromdale (Highland)).

September was cooler and wetter than normal with the mean temperature of 10.82°C being 1.34°C below the norm. Rainfall of 106.0 mm was 18 % above average with measurable amounts on 20 days. There was one air frost (-0.7°C, 22nd).

Sunny spells and showers typified the first two weeks of the month with winds mostly from a south-westerly direction. It was warm at times during the first week with a maximum temperature of 20.8°C (3rd). Heavy rain during most of the 16th/17th produced 30.3 mm while a further 13.0 mm fell on the 20th when a maximum temperature of only 8.6°C was reached. High pressure

(1021 mb) with a light northerly airstream and clear skies produced the first air-frost of the winter on the 22nd. A deep low pressure system (973 mb – the lowest in September for 30 years), deposited copious amounts of rainfall on strong NE 5-6 winds from the afternoon of the 24th continuing all of the following day. Dunblane received 25.0 mm but NE England fared the worst with virtually continuous rain from the 23rd-25th (124.0 mm) with the A1 road being impassable for three days both north and south of Newcastle from the 24th. In all, there were 92 flood warnings across the UK during this period. Spume, whipped-up by the gales, coated seaside buildings white in Aberdeen. The 26th/27th were the calm after the storms with much sunshine but unsettled weather returned on the 28th with heavy showers – some of hail. A further 11.7 mm of rain fell during the night of the 29th/30th.

October was much colder and a little drier than normal. The mean temperature of 6.3°C was 2.13°C below the mean making it the coldest yet at this station. There were 10 air-frosts (mean = 3.2) and two ground frosts. Total precipitation of 115.4 mm was 86 % of the norm with measurable amounts on 20 days. Barometric pressure ranged from 976 mb to 1029 mb. Across Scotland, the mean temperature of 6.1°C was 1.9°C below average making it the coldest October since 1993, and with regards to minimum temperatures, the coldest since 1981. A minimum temperature of -7.4°C was recorded at Braemar (17th) while 70.4 mm of rain fell at Crombie Country Park, Angus during the 24 hours ending at 09.00 on the 13th.

The south-westerly airstream continued for the first 3 days of the month producing 19.6 mm of rain. A high pressure system building from the 4th led to a succession of sunny, mostly calm days with ground and air frosts in the early mornings (-2.3°C, 10th) and several gloriously sunny, calm autumn days. Very heavy rain during the night of the 11th/12th (31.9 mm) heralded a change to more unsettled weather with rain every day until the 20th. A high pressure system then built over the country (1028 mb, 24th) which resulted in several sunny days, highlighting this year's spectacular autumn colours to maximum effect. Snow showers during the early evening of the 26th were a reminder that winter is almost upon us. Pressure fell rapidly on the 30th/31st with wind and rain on the final 2 days of the month.

November was colder and a little drier than normal. The mean temperature of 3.83°C was 0.85°C below the norm. There were 12 air frosts with a low of -6.7°C (29th). Rainfall of 105.0 mm was 9 % below the average with measurable amounts recorded on 20 days. Monthly rainfall totals across Scotland varied from 130 % above normal in parts of the Borders to only 50 % of normal in the north-east. The north of Scotland was the sunniest area of the UK in November.

More heavy rain fell during the early hours and morning of the 1st (19.0 mm; 34.0 mm Tyndrum) but thereafter the days were mostly sunny. A southwesterly airstream dominated from the 6th-10th providing duller and

damp weather although rainfall amounts were low. The 13th was much milder than usual with a high of 11.8°C (16.3°C Kinloss, Moray). A ridge of high pressure (1022 mb) brought calm but damp and dreich days from the 14th-16th. Heavy rain during the night of the 18th/19th (27.0 mm) heralded the start of a spell of wet weather with rain every day until the 25th. The Water of Ruchill burst its banks in Comrie on the 19th causing widespread flooding with many houses inundated. In England, a swathe of the country from Devon to Tyneside endured the wettest seven day period (20th-26th) in 50 years. These downpours and storms caused widespread flooding and structural damage with over 1,000 homes swamped. Holne (Devon) received 88.4 mm in the 24 hour period up to 09.00 on the 25th. High pressure then brought more settled weather with night frosts (-6.7°C, 29th; -7.3°C Braemar) and sunny, calm days until the month end. The temperature remained below freezing all day on the 29th (-1.0°C max) and rain, followed by freezing temperatures during the evening of the 30th, produced lethal black ice.

December was a little colder and much wetter than normal. The mean temperature of 1.48°C was 0.24°C below the norm while precipitation of 196.4 mm was 87 % above average and the most at this station (193.8 mm, December 2006). There were 13 air frosts and snow lay on the ground at 09.00 on 9 occasions. Across the UK rainfall totals were 150 % of the long-term average making it the wettest December since 1999. Aberdeenshire recorded over twice the normal rainfall for this month and across Eastern Scotland it was the wettest December since 1929.

Five-and-a-half centimetres of snow fell during the night of the 2nd/3rd. and successive night frosts until the 9th (-7.3°C, -12.9°C Braemar, 6th) meant that it remained lying until that date. The temperature remained below freezing on both the 2nd and 5th. A front crossing Scotland from the northwest to the southeast on the 6th/7th deposited 6.4 mm of rain in Dunblane rather than the forecast snow although Fettercairn recorded a depth of 20 cm. A high pressure system built over the country from the 9th (1032 mb). This produced several sunny, calm days but also some severe frosts (-8.0°C, 11th) with daytime temperatures remaining below freezing on three consecutive days (11th-13th). A deep depression (975 mb, 15th) moving up from the southwest initially produced a dusting of snow on the 13th but turned to rain the following afternoon with 16.5 mm in 21 hours. The east coast of Scotland from Shetland down to Berwick-upon-Tweed was battered by severe south-easterly gales during the early hours of the 15th. These caused major structural damage at several harbours including Lossiemouth, Peterhead, Fraserburgh, Stonehaven, Eyemouth and Berwick. A weak ridge of high pressure (1017 mb, 19th) brought a brief spell of quieter weather before a very moist front moved up from SW England. This deposited 52.2 mm (101.2 mm Tyndrum) in the 40 hours from 17.00 on the 19th. Another pulse of rain approaching from the same area produced a further 35.3 mm in 35 hours from 09.00 on the 22nd. The whole of the UK suffered these deluges with over 500 flood alerts in place on the 23rd. Devon and Cornwall were worst affected with many properties

flooded and road and rail links severed. Locally, the Perth to Gleneagles line was cut by a landslide as was the A85 between St Fillans and Lochearnhead. Some residents in Stonehaven were moved to a community centre as their homes were flooded. The wet and occasionally stormy weather – a gust of 72 mph was recorded at Stornaway (28th) – continued until the month end. The dominant south-westerly airstream ensured that this period remained frost free and relatively mild.

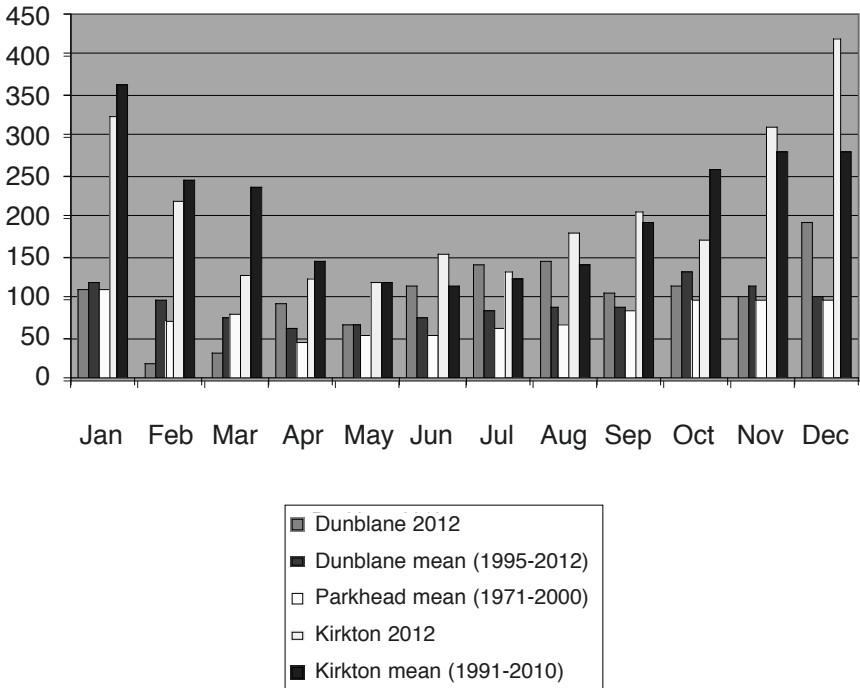


Figure 1. Rainfall 2012

Table 1. Temperature and precipitation 2012. Climatological Station Dunblane.

	Temp Mean maxima	Temp Mean minima	Number of air frosts	Total precipitation (mm)	Greatest 24 hour total (mm)	Number of days of measurable precipitation
January	4.8 (4.5)	-0.1 (0.0)	17/11 (15)	111.7/325.5 (120/364)	23.9 (35.0)	21/26 (20)
February	6.9 (5.9)	1.0 (0.3)	12/13 (13)	22.2/220.6 (97/248)	5.5 (38.0)	8/21 (17)
March	11.7 (8.7)	3.4 (1.4)	4/6 (11)	35.7/127.2 (76/240)	9.5 (30.5)	8/17 (16)
April	10.3 (12.4)	1.7 (3.5)	10/9 (5)	95.0/123.7 (63/149)	15.0 (27.8)	20/23 (15)
May	15.7 (16.1)	5.6 (5.8)	2/5 (2)	68.1/119.7 (70/120)	16.9 (27.1)	12/20 (17)
June	16.7 (19.0)	8.3 (8.9)	0/3 (0)	116.9/153.5 (77/118)	24.2 (39.8)	22/21 (15)
July	18.8 (20.9)	10.5 (10.7)	0/0 (0)	142.7/135.6 (86/124.1)	28.0 (33.5)	20/23 (16)
August	19.6 (20.0)	10.9 (10.5)	0/1 (0)	147.4/183.6 (91/143)	34.5 (40.0)	21/24 (16)
September	13.7 (15.9)	8.0 (8.4)	1/2 (<1)	106.0/208.5 (89/196)	15.3 (36.5)	20/27 (16)
October	9.9 (11.7)	2.7 (5.2)	10/11 (3)	115.4/175.0 (134/262)	31.9 (41.9)	20/25 (22)
November	6.7 (7.3)	1.0 (2.0)	12/9 (8)	105.0/313.0 (116/282)	22.0 (39.0)	20/28 (20)
December	3.7 (3.9)	-0.7 (-0.4)	13/16 (16)	196.4/420.7 (105/282)	35.0 (35.0)	22/23 (19)
Year	11.5 (12.2)	4.4 (4.8)	81/86 (71)	1263/2507 (1124/2528)	35.0 (41.9)	214/279 (208)

The climatological means for Dunblane are shown in (. Where either two 2012 values or climatological means are given, the first relates to Dunblane and the second to Kirkton. Figure in parenthesis in the 'Greatest 24 hour total (mm)' table refer to the highest ever 24 hour value for that month (09.00 hours to 09.00 hours). Temperatures are given in degrees Celsius.