

## December 2013

The averaging period used for the following assessment was 1981-2010.

### UK overview

The first few days were mostly fine over England and Wales, but rather less so for Scotland and Northern Ireland. A major winter storm on 5th brought strong winds to Scotland with a storm-surge mainly affecting the east coast. Quieter weather resumed until mid-month, with some notably high temperatures recorded in Scotland, after which high pressure gave way and the weather became increasingly unsettled and stormy. A succession of deep Atlantic low pressure systems brought heavy rain and very strong winds for most areas, with frequent gusts of 60 to 70 mph. This was the windiest December in records from 1969 and one of the windiest calendar months since January 1993. On Christmas Eve a mean-sea-level pressure of 936 hPa was recorded at Stornoway (Western Isles), the lowest such value at a UK land station for many years.

The UK mean temperature was 5.7 °C, which is 1.8 °C above the 1981-2010 average, the warmest December since 1988. The UK overall received 156% of average rainfall. Two broad areas, one over southern and south-east England and the other extending from the Lake District to Highland Scotland, were much wetter than average with many places receiving twice the normal rainfall for the month; for Scotland this was both the wettest December and wettest *any* calendar month in a series from 1910. However, some parts of eastern England were drier than average. There was 103% of the long-term average hours of bright sunshine, with western areas rather dull but central and eastern England sunnier than average.

A maximum temperature of 16.6 °C was recorded at Cassley (Sutherland) on the 10th. A minimum temperature of -6.1 °C was recorded at Dalwhinnie (Highland) on the 7th. In the 24 hours ending at 0900 GMT on the 24th, 106.9 mm of rain fell at Widecombe-in-the-Moor, Devon. A wind gust of 109 mph was recorded at Aberdaron (Gwynedd) late on the 26th. A snow-depth of 15 cm was measured at Kindrogan (Perthshire) at 0900 GMT on the 24th.

### Weather impacts

Most weather impacts during the month were related to strong winds, heavy rain and associated flooding. However, in more settled interludes, saturated ground allowed fog to form, with an increased risk of icy conditions. Frontal systems following such colder spells also brought significant snowfalls to Scotland's mountains and transient snow to lower levels.

The first major storm of the month was associated with a low pressure centre that crossed northern Scotland on the 5th. This brought strong winds and heavy rain to much of the UK. There was flooding and widespread transport disruption with Scotland's rail network shut down, two fatalities and many thousands of homes without power. Coastal flooding damaged properties and led to evacuations in north Wales, while high tides coincided with the strong winds to create a highly damaging storm surge for North Sea coasts. Thousands of homes were evacuated and several cliff-top properties collapsed into the sea due to coastal erosion.

Severe gales and heavy rain affected Scotland again on 14th and 15th, causing further flooding and power cuts, and a major storm on 18th to 19th again caused disruption to Scotland and Northern Ireland with strong winds and flooding. A cold icy start to the 20th produced difficult travel conditions across Wales, exacerbated by some snowfall as a frontal system arrived from the Atlantic.

Another deep Atlantic low pressure system brought strong winds and heavy rain to much of the UK from 23rd to 24th December, bringing 60 to 70 mm of rain to the high ground of southern England. Flooding affected parts of Dorset and Surrey, with power cuts for over 10,000 homes continuing through the Christmas period.

There was further stormy weather with heavy rain and strong winds on 26th to 27th and again on 29th to 30th. Transport disruption continued with flooded railways and fallen trees blocking roads in Wales, while Dumfries and Galloway experienced severe flooding as the River Nith burst its banks. Continuing stormy weather and concerns for further flooding extended into the New Year period.

## England diary of highlights

The month was largely unsettled, with a series of deep low pressure systems from the Atlantic bringing increasingly stormy weather. The high pressure and cold, settled weather that characterised most of November continued for the first few days of December, and there was another brief settled spell around 10th. However, otherwise there was frequent heavy rain and strong winds. The mainly Atlantic airstream resulted in notably mild conditions and an absence of frosts.

Temperatures for the month overall were above normal, with the mean temperature 1.6 °C above the 1981-2010 average. The number of air frosts was the lowest for any December since 1988. The south and south-east, and also the far north, were much wetter than average with over twice the average rainfall in some places; for the region of England SE and Central S, this was the wettest December since 1959. In contrast, a rather drier band stretched from Merseyside to Humberside, and the overall rainfall figure for England was 135% of average. Sunshine totals were well above average over central and eastern England, with 116% of average overall.

### 1st to 4th:

High pressure dominated from 1st to 4th, resulting in patchy frost and fog each morning, especially in south-eastern areas. Cloud cover meant sunshine was scarce, particularly for the first three days.

### 5th to 8th:

A deep area of low pressure on 5th brought strong winds and rain for many parts, with High Bradfield and Emley Moor (both Yorkshire) recording gusts above 86 mph. A less windy day on 6th, with a bright start for many areas, but a band of patchy rain spread from the west during the day. The 7th was again mainly dry and bright apart from some showers in the south-west and north-west. Many areas were dry and bright again on 8th, though a band of heavy showers affected the north-west in the afternoon and evening.

### 9th to 13th:

High pressure gave a dry spell from 9th to 11th, although it was mainly cloudy in a mild southerly wind. Many southern areas remained dry on 12th, while patchy rain spread into northern areas during the day. The 13th was a wet day for many, with one band of rain affecting East Anglia and the south-east, and another crossing the country from the west. However, a few central areas remained largely dry.

### 14th to 22nd:

A deep low pressure system to the north of the UK on 14th brought strong winds and rain to many areas. The 15th was unsettled with rain for southern areas and a band of showers spreading from the west during the afternoon. Rain was generally restricted to the southern half of the country on 16th with the north seeing the best of any brightness. Apart from some patchy rain in the south-east, 17th was mainly dry and bright. There was patchy rain in the west during the day on 18th, but in the evening rain and strong winds spread from the west with a gust of 94 mph recorded at Needles (Isle of Wight). The 19th was bright and showery, the showers becoming heavier and more frequent during the afternoon with snow on high ground. After a dry but breezy

start on 20th, rain spread into the north-west towards dusk. The strong south-westerly winds continued on 21st with rain for southern areas and a band of heavy showers edging into the west during the afternoon. Winds eased slightly on 22nd with only well-scattered showers.

### **23rd to 31st:**

A stormy day on 23rd with strong winds and rain for much of the country. A number of sites in the Thames Valley area recorded more than 65 mm of rainfall, resulting in local flooding. There were gusts above 60 mph for much of central and southern England; Needles (Isle of Wight) recorded a gust of 92 mph. The rain moved away overnight but it remained windy on 24th with gusts again exceeding 55 mph for much of the country and Needles again recording a gust of 92 mph. Winds eased slightly on 25th, and any showers were confined to the south and south-west. It was quieter and brighter on 26th although another band of rain and strong winds spread into the west during the early evening, continuing to spread north overnight, followed by a breezy day with scattered showers on 27th. The strongest winds were in northern areas this time with St Bees Head (Cumbria) recording 85 mph. The winds eased on 28th and it was generally dry with only a few showers edging into southern coastal areas. A ridge of high pressure resulted in a bright and mainly dry day on 29th although the next area of wind and rain reached western areas during the evening. The rain continued into central areas during the early hours of 30th, with the heaviest rain in the north-west where Keswick (Cumbria) recorded 45 mm. Another band of rain spread from the west during 31st and cleared the country by dusk.

## **Wales diary of highlights**

**The first half of the month brought some unsettled conditions, with stormy weather on 5th. However, there were some quieter interludes too. The second half of the month saw frequent very strong winds and heavy rainfall brought by deep Atlantic depressions passing close to the UK. The month as a whole was mild.**

Temperatures for the month overall were above normal, with the mean temperature 1.8 °C above the 1981-2010 average. Some areas, particularly towards the south, were rather wetter than average, with 136% of average rainfall overall. Sunshine totals were below average towards the west, and the overall amount was 93% of average.

### **1st to 8th:**

The 1st and 2nd were dry but cloudy. The 3rd started dry and cloudy too, but light rain arrived in the north-west by evening. There was patchy light rain in the early morning of 4th, followed by dry weather and some sunshine. The 5th was windy with gale-force winds around late morning and early afternoon; the highest gust was 77 mph at Capel Curig (Gwynedd). A band of rain passed from north to south, followed by showers. The 6th and 7th were mainly cloudy with some patchy rain and showers. Showers continued into 8th but it became dry, with sunshine in the south and west.

### **9th to 11th:**

The 9th was dry and mild with variable cloud and some sunshine. It was dry, mild and mainly cloudy on 10th, and again on 11th, though with some fog at first in the south-east.

### **12th to 17th:**

The 12th continued mild, with patchy rain, becoming more persistent later; 28.8 mm was recorded at Capel Curig. The 13th was cloudy with rain late morning and early afternoon, particularly in the south-east. There was sunshine for many on 14th, accompanied by moderate to strong winds and followed by some rain in the afternoon. The 15th had sunshine to start, but rain from mid-afternoon. Rain during the morning of 16th cleared by the afternoon, and it was cooler. The 17th was generally dry with sunshine but a few isolated showers in the south-west.

### 18th to 31st:

Rain and strong winds affected all areas on 18th with severe gales by late afternoon, gusting to 82 mph at Pembrey Sands (Dyfed). The 19th had rain through the late morning and early afternoon with strong winds. The 20th started with sunshine and showers, then a heavy band of rain followed from the west by late afternoon; Capel Curig recorded 47.0 mm. The 21st had strong to gale-force winds and a band of rain in the afternoon. A gust of 81 mph was recorded at Aberdaron (Gwynedd). A day of sunshine and showers followed on 22nd. The 23rd was stormy with gale to severe gale-force winds and heavy rain for most of the day; 60.4 mm was recorded at Tredegar (Gwent) and a gust of 87 mph at Capel Curig. The gales decreased during 24th, which saw sunshine and showers. There were isolated showers on 25th, with some sunshine and light winds. The 26th started dry and fairly calm, but rain and storm-force winds moved in by evening, and a gust of 109 mph was recorded at Aberdaron just before midnight. The 27th continued with the storm-force winds through the morning (102 mph gust at Aberdaron) before the gales eased, with sunshine and showers. Showers died out on 28th, giving way to sunny spells and lighter winds. It was dry with some sunshine at first on 29th, before rain arrived. After a wet morning on 30th, it became dry with a little sunshine for the afternoon. On 31st, another band of rain cleared by midday, leaving drier conditions, though isolated showers developed later.

## Scotland diary of highlights

The month was mostly unsettled, very wet and windy. The settled weather of November held on at the start of the month, but was soon followed by a major winter storm on 5th. High pressure to the south then gave a few days of fine, dry and very mild weather, but after this the rest of the month was characterised by a succession of deep low pressure systems bringing further strong winds and heavy rain. Despite significant snowfalls at times across the mountains, the month overall was rather mild.

Temperatures were well above normal, with the mean temperature 2.2 °C above the 1981-2010 average, making it the fifth mildest December for Scotland in a series since 1910. The number of air frosts was the lowest for any December since 1988. Except in the extreme north-east, Scotland was much wetter than average, with more than twice the monthly average rainfall widely. Scotland overall recorded 184% of average making this the wettest December and wettest *any* calendar month in a series from 1910. It was a dull month in the west, with only 73% of average sunshine overall.

### 1st to 2nd:

These two days were dominated by high pressure for much of the country which resulted in patchy frost and fog in the mornings and dry but overcast days. The Northern and Western Isles had patchy rain at times.

### 3rd to 6th:

On 3rd a band of rain spread from the north to reach central areas by late afternoon. The 4th was showery in the west and far north, and a band of heavy rain moved into central and western areas in the evening. A deep area of low pressure crossed the country on 5th, with a gust of 93 mph recorded at Altnaharra (Sutherland), followed by scattered snow showers in many areas. The winds eased to allow a frosty start to 6th for many. There were snow showers in the north-east and a band of more organised rain, preceded by light snow, reached the west during the evening.

### 7th to 13th:

Another frosty start away from coasts on 7th, but it was a bright day with scattered showers near western coastal areas. The 8th was wet for many areas with pulses of rain driven on by a strong westerly wind. The rain was heaviest in the north-west, Cluanie Inn (Inverness-shire) recording 46 mm. Fine and dry on 9th as high pressure built. The 10th remained mainly dry apart from some rain in the far north-west. It was also warm, with 16.6 °C recorded at Cassley (Sutherland). Still mostly dry on 11th apart from some rain in the north and

west. Overnight rain cleared to the east on the morning of 12th, but more patchy rain spread from the west later. Rain again spread from the west on 13th but became patchier as it progressed.

#### **14th to 31st:**

Gale-force winds and heavy rain spread across the country on 14th, with 47.6 mm recorded at Cluanie Inn, and a gust of 70 mph measured at South Uist (Outer Hebrides). Winds reached gale-force again on 15th, with rain spreading across the country. The 16th was cold and windy with heavy blustery showers in the north and west. It was windy on 17th, but mostly dry until rain spread into the west during the evening. The 18th was another day of strong winds with showers or longer spells of rain, mainly in the south. Overnight rain cleared by morning on 19th but more rain as well as snow spread in later, particularly affecting the north. Scattered showers, some wintry, at first on 20th, then rain spread in from the west later with strong winds again. Blustery showers or longer spells of rain on 21st, some turning to sleet or snow, with gale-force winds. There was heavy rain accompanied by strong to gale-force winds for most areas on 22nd, again more wintry in the north. Rain, turning to snow on higher ground, spread in from the south-west on 23rd, and it was windy with strong to gale-force winds for all areas. More heavy rain fell on 24th, and winds reached severe gale force at times; a gust of 82 mph was recorded at Peterhead (Aberdeenshire). There were heavy showers and strong to gale-force winds again on 25th, but it was drier in the south. The 26th was a quieter day with lighter winds, and some showers in the west which slowly eased through the day. More heavy showers and gale-force winds spread across the country on 27th, with a gust of 81 mph at Inverbervie (Angus). The 28th continued unsettled and windy with blustery showers for most areas. There were showers in the west at first on 29th, followed by mostly dry weather for a time before more wind and rain spread in to the south-west in the evening. Heavy rain on 30th slowly cleared to the east, though some areas in the north remained mostly dry. More rain pushed in from the west on 31st but again the north remained mainly dry.

## **Northern Ireland diary of highlights**

**A winter storm brought strong winds on 5th, but the first part of the month was otherwise mainly settled and mild. However, from 12th onwards it became much more unsettled, though staying mild for most of the time. Later in the month a succession of storms brought rain, strong winds, and some snow on high ground.**

Temperatures for the month overall were above normal, with the mean temperature 1.4 °C above the 1981-2010 average. The number of air frosts was the lowest for any December since 1988. Some areas were rather wetter than average, with 126% of average rainfall overall. Sunshine totals were mostly close to average, and Northern Ireland overall recorded a total of 101% of average.

#### **1st to 11th:**

Some light rain early in places on 1st, then continuing rather cloudy and mild but mainly dry before rain spread from the north on the afternoon of 3rd. After a touch of frost in places overnight, it was dry and sunny on 4th. Winds strengthened from the west early on 5th, reaching gale force and bringing rain to all areas; the rain cleared around midday to leave behind a cold north-westerly flow. A wind gust of 84 mph was reported at Orlock Head (County Down). There were some wintry showers on 6th and further rain cleared to bring a return to milder, cloudy conditions. The 7th and 8th were generally overcast with showers in places, then 9th was drier and brighter. The 10th and 11th continued dry and bright and it was unseasonably mild, particularly overnight.

#### **12th to 19th:**

There were periods of rain on 12th with fresh south-westerly winds. Further bands of rain followed through on 13th and 14th. A dry start on 15th but rain arrived later. Mainly dry on 16th away from northern coastal areas, and winds became lighter. A touch of frost early on 17th, but south-westerly winds increased and brought bands of rain to most areas during the evening and overnight. The 18th started dry away from the north, but

winds increased to gale force later, with further heavy rain. Winds continued strong to gale force on 19th with rain, and snow on high ground at times, especially in the north.

### **20th to 31st:**

A dry start on 20th but outbreaks of rain spread from the west later in the morning, clearing the east by late evening. The 21st and 22nd were days of sunshine and scattered showers with a fresh westerly wind. A stormy day on 23rd with rain and strong winds for all areas as a deep area of low pressure tracked north, and a gust of 62 mph was recorded at Killowen (County Down). The winds eased slightly on 24th but there were frequent showers for many areas. The 25th was generally dry and bright. It remained fine on 26th, although the next area of stormy weather reached western areas by the end of the day, with a gust of 77 mph recorded at Orlock Head. The rain cleared north overnight, and 27th was a day of strong winds and frequent, heavy showers; a gust of 73 mph was recorded at Killowen. The showers continued on 28th, albeit lighter and more scattered. The 29th started dry but by midday another area of rain and strong winds reached western areas. The rain cleared eastern areas by daybreak on 30th to leave a mainly dry day. The 31st began with rain in many areas, which cleared to leave scattered showers in the afternoon.

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