

## **Cumbria Derwent flood history 2013**

### **Sources**

Descriptive information is contained in newspaper reports, diaries and, further back in time, from Quarter Sessions bridge accounts and ecclesiastical records. The main source for this study has been from newspaper accounts.

### ***Newspaper Sources***

Newspaper descriptions include much that is of human interest but only limited information which can be used to define the magnitude of the flood. It is only the latter information which has been extracted for the most part, indicating levels or depths on roads and buildings which may still be identifiable. Such details provide a means of assessing the comparative magnitude of floods.

The two principal urban areas within the Derwent catchment which are vulnerable to flooding are Keswick and Cockermouth. Keswick has had its own broadsheet the Keswick Reminder published since 1840 and available on microfilm since 1915. However it is mainly an advertising paper and contains virtually no flood information. Other papers purport to cover that part of Cumbria but have been and are based outside it. These include

Cumberland Packet (Whitehaven) 1774 to 1915,  
Carlisle Journal, 1801 to 1960s,  
Carlisle Patriot (later Cumberland News) 1815 to present  
Penrith Observer, 1860 onward  
West Cumberland Times(Workington) 1874 onward  
Westmoreland Gazette (Kendal) 1818 onward

Further information with respect to Cockermouth is contained in books and pamphlets produced by local historian J. Bernard Bradbury including a series on 'Cockermouth in Pictures', and two books Bradbury's History of Cockermouth and Cockermouth and District in Old Photographs. Flood photographs from this source have been copied to illustrate this report.

Descriptions are generally imprecise and without details of levels reached or the extent of the area flooded. It is therefore difficult to make judgements as to the comparative severity of the events.

### ***Associated meteorological information***

The publication British **Rainfall** 1863 – 1968 (Symons British Rainfall from 1863 to 1900) was inspected to identify potential flood dates and to ascertain the meteorological conditions associated with flooding – thaw, thaw with rain, frontal rainfall, convectional storms etc.

Information contained in the **Chronology of British Climatological Events** is mainly drawn from British Rainfall and refers only to daily rainfall totals and not to extremes in less than one day.

The online British Newspaper Archive has a limited number of newspapers and years of record available for Cumbria. The following were available in May 2015.

Cumberland and Westmorland Advertiser, and Penrith Literary Chronicle – 1855 – 1871

Cumberland Pacquet, and Ware's Whitehaven Advertiser – 1777– 1808, 1812 – 1871

Westmorland Gazette 1818- 1867, 1871

Kendal Mercury 1835 - 1870

Carlisle Journal 1801-1805, 1810-1811, 1814-1815, 1818-1820, 1833 - 1867

Carlisle Patriot 1816-1871

Note for later papers

Lancaster gazette 1870-1893

Lancashire Evening Post (based in Preston) 1886 – 1909, 1917 – 1921, 1924, 1929, 1930 - 1947

**Date and sources**

22 Aug 1749

West's Guide to  
the Lakes (1812)

**Rainfall**

Intense convectional storm

**Description**

Accounts (West' Guide and Gilpin) of a summer convectional storm over the Vale of St John which caused much havoc are included in full.

'On the evening of 22 August, the day having been much hotter than was ever known in these parts, a strange and frightful noise was heard in the air which continued for some time to the great surprise of the inhabitants, rumbling over them like a strong wind. This was succeeded by the most terrible claps of thunder and incessant flashes of lightning flashing over their heads. At the same time the clouds poured down whole torrents of water on the mountains to the east which in a very little time swelled the channels of the rivulets and the brooks so as to overflow every bank and overwhelm almost every obstacle in their way. In a moment they deluged the whole valley below and covered with stones earth and sand, many acres of fine cultivated land.

Several thousands of huge fragments of rock were driven by the impetuosity of the waters on to the fields and some were more than 10 horses could move and one was fairly measured as 19 yards in circumference. A corn mill, dwelling house and stable, all under one roof, lay in the track of one of these currents and the mill from the one end and the stable from the other were both swept away leaving the little habitation in the middle rent open at both ends, with the miller who was old and infirm in bed who was ignorant of the matter till he rose the next morning and beheld nothing but ruin and desolation. All was covered with large stones and rubbish four yards deep

Something similar to this happened to other places in the neighbourhood along Legberthwaite and Fornside but no lives were lost'.

There are no reports of effects of any sort further down the valley.

The Vale of St John was some years ago the scene of one of those terrible inundations which wasted lately the vale of Brackenthwait. I shall relate the circumstances of it as they were given to us on the spot; but as we had them not perhaps on the best authority they may in some particularly be overcharged.

It was on 22 August 1749 that the disaster happened. The day which had been preceded by weather uncommonly close and sultry set in with a gloom aspect. The blackness gathered more and more from

Gilpin

every quarter. In the meantime the inhabitants of the valley heard a strange noise in various parts around them, but whether it was in the air or arose from the mountains they could not ascertain. It was like the hollow murmur of a rising wind. This noise continued without intermission for about two hours when a tempest of wind and rain and thunder and lightning succeeded; which was violent beyond anything remembered in former times and lasted without a pause near three hours.

During this storm the cataract fell upon the mountain on the north of the vale. The side of that mountain is a continued precipice through the space of a mile. This whole tract we were told was covered in an instant with one continuous cascade of roaring torrent sweeping all before it from the top of the mountain to the bottom. There like that other inundation [Grassmoor] it followed the channel of the brooks it met with and shewed similar effects of its fury.

One of these effects was astonishing. The fragments of rock and deluges of stone and sand which were swept from the mountain by the torrent choked one of the streams which received it at the bottom. The water thus pent up and receiving continually vast accretion of strength after rolling suddenly about that part of the vale in frightful whirlpools at length forced a new channel through a solid rock which we were informed it disjointed in some fractured crevice, and made a chasm at least 10 feet wide. Many of the fragments were carried a great distance and some of them were so large that a dozen horses could not move them.

Gentlemen's  
Magazine

The Gentlemen's Magazine notes in a report from Cockermouth that repeats some of the above information that the Derwent was much discoloured right down to the Irish Sea. However, it also notes that on the same date there were extreme rainfalls in various parts of the country. At Wolverhampton the rain fell for 3 hours and inundated the lower town 'the like never known before', but reports storms also in Worcestershire, Oxfordshire Shrewsbury, Bridgenorth and the Manchester Oldham areas.

Cumberland  
Pacquet 16 Jun  
1807

CP has a description of this and the flood of 1795 with further notes on the geology (trying to explain without knowledge of glaciation, the occurrence of stones far from their point of origin). Four waterspouts fell on the sides of mountains in the SE quarter between 4 and 5 miles from Keswick. It was the hottest day of that year. About 9 pm thunder, very large hailstones and heavy rain followed. An old man had his mill swept away which adjoined one end of his house and a hog sty at the other end; his house was left standing like a rock in the sea. A large millstone was carried away and never

CBHE

found. A new gill was formed next to the miller's house. A neighbouring house called 'The Green' was broken into by the flood; the family retreated to the upper storey and feared for its destruction. This is 4 ½ miles from Keswick at the north end of Great How. Turn your back to the white house and you can see the old miller's house and Hawthorn Gill, made in 1749, a little beyond the houses. The Vale of Legburthwaite suffered most. A few furlongs to the south another waterspout fell which took the ground high upon the mountainside and left stones piled three feet high in the fields below. A yeoman had his house broken into with the water 9 feet deep. A third fell two miles to the northeast of Green Crag carrying a vast quantity of stones and earth, from 15 tons downward. The author had not heard of any life being lost, either man or beast.

Carling 1997

Carling refers to further information from various sources (Locke 1749, Smith 1754, Hutchinson 1776, 1794, Clarke, 1789, Housman 1802, Carling and Bevan 1989). This mainly refers to the adjacent valley of Mosedale to St John's beck. Rain began to fall at 0100 on the 23<sup>rd</sup> over an area less than 8 miles in diameter centred over the Legburt fells to the southeast of Mosedale. Three kilometres to the east of Wallthwaite at Mell Fell there was no precipitation. Exceptional floods occurred in several streams and gullies particularly Mill Gill (formerly Catcheety Gill) draining the west side of Matterdale Common and Mosedale beck draining to the north. In Mosedale houses were flooded at Wallthwaite and at Lobbs some boulder lobes were recorded some 10 m (?) in height with individual boulders weighing up to 20 tonnes (equivalent to spherical boulders 2.4 m in diameter). Carling describes the geomorphological features of the area assumed to have been formed in this 1749 flood.

3 Oct 1754  
Gentleman's  
Mag.

Keswick Literary and Scientific Society excursion to Thirlmere and Castle Rock .... At Castle Rock Mr Crosthwaite..... told of the Legburthwaite floods of 1749, 1806 and 1846  
Description of a 'dreadful storm in Cumberland' which appears to describe the same or a very similar storm as that which was described in 1749. The torrent lasted 8 hours with fences overturned, fields covered with the ruins of the mountains, cottages were crushed and people climbed trees to escape. The article also includes a sketch of the hillside (St John's Vale?) showing the gulleys and deltaic spreads below.

1? Aug 1758  
Oxford Journal 12  
Aug

Wigton: there was such a fall of rain that it swelled the rivulets of the town to such a degree that five bridges within two miles of the town were swept away. It has done considerable damage to hay and corn by overflowing all the adjacent grounds. Several houses were damaged and many trees torn up by the roots by the rapidity of the current. In several houses in the town the water was six feet deep on the day after the flood.

7/9 Sep 1760  
Watkins&Whyte

Thunderstorm

Gilpin describes the site: 'Three little streams take their origin of which the Lissa [Presumably now named Liza Beck] is the least considerable. The course of the stream down the mountain is very steep and about a mile in length. Its bed and the sides of the mountain are profusely scattered with loose stones and gravel. On leaving the mountain the Liffa divides the vale and after a course of 4 or 5 miles falls into the Cocker'.

Gilpin (1792)

'On 9 September 1760 about midnight a waterspout fell upon Grasmer [Grassmoor] where the three little streams issue from the fountains. At first it swept the whole side of the mountain and charging itself with all the rubbish it found there, made its way into the vale, following chiefly the direction of the Lissa. T the foot of the mountains it was received by a piece of Arable ground on which its violence first broke. Here it tore away trees soil and gravel and laid all bare many feet in depth to the naked rock. Over the next ten acres it seems to have made an immense roll; covering them with so vast a bed of stones that no human art can ever again restore the soil.

When we saw the place though twelve years after the event many marks remained still flagrant of this scene of ruin. We saw the natural bed of the Lissa a mere contracted rivulet an on its banks the vestiges of a stony channel spreading far and wide almost enough to contain the waters of the Rhine or the Danube. It was computed from the flood marks that in many places the stream must have been five or six yards deep and nearly one hundred broad and if its great velocity can be added to the weight of water its force will be found equal to almost any effect [whatever this means].

On the banks of the stony channel we saw a few scattered houses, a part of the village of Brackenthwait which had a wonderful escape. They stood at the bottom of Grassmoor rather on rising ground. In passing further down the vale we saw other marks of the fury of this inundation, bridges were thrown down, houses carried off and woods rooted up. But its effects on a stone causeway were thought the most surprising. This fabric was of great thickness and supported on each side by an enormous bank of earth. The deluge not only carried it off but as if it turned it into sport made its very foundations the channel of its own stream.

Having done all this mischief, the Lissa threw its waters into the Cocker where an end was put to its devastation.

21 Nov 1761

No information

There was 'a prodigious flood at Cockermouth which carried away several houses, mills etc.'

Bradbury 1995

from West  
Cumberland  
Times  
28 Aug 1781  
Cumberland  
Pacquet 4 Sep

On Tuesday last (28<sup>th</sup>) it was the heaviest rain for many years; it is feared considerable damage has been done to the country. The fields are overflowed from Keswick to Cockermouth. Rivulets rose to a prodigious height. A small river in the neighbourhood of this town [Whitehaven] is said to have risen 4 feet perpendicular in less than 10 minutes. On Thursday night and early Friday there was a terrible storm of thunder and lightning.

3 Aug 1783  
Gentlemans Mag.

A storm of thunder lightning wind and rain was reported at Whitehaven.

3 Sep 1783  
Cumberland  
Paquet 9 Sep

A most violent storm of wind and rain accompanied by lightning worst that has been known for many years occurred at Whitehaven. Mainly crop damage was reported. High winds caused shipping damage and loss. Houses were unroofed and trees torn down.

12 sep 1785  
Gentleman's  
mag.

At Whitehaven a storm of thunder lightning hail and ice caused the inundation of the lower part of the town. In Lowswater (sic) large flakes of ice fell.

13 Aug 1795  
Cumberland  
Pacquet 18 Aug

A very violent thunderstorm occurred in Whitehaven, the worst for many years past. It followed a period of exceptionally warm weather. Heavy rainfall lasted an hour and a half. The Market Place and adjoining streets were completely flooded and cellars in many parts of the town were filled. The water poured down the streets with such velocity that all were cleared a few minutes after the storm ceased. The storm was felt at Workington, Cockermouth and Hesketh to a similar degree (also in Carlisle and Appleby).

Cumberland  
Pacquet 13 Jun  
1807

Reference back to Aug 1795. Five large waterspouts fell within a few miles of Keswick, all of them on the sides of mountains, 2 in Borrowdale, 1 in Newlands and 2 on Skiddaw which seemed to be the largest of the five. It took the ground on the SW side of Skiddaw where it has made a scar on the side of the hill which 'a thousand years will not efface'. In less than ten minutes it made a scar 60 yards long, 20 broad and 5 feet deep, whilst this mighty torrent was also ploughing up a furrow below in its steep descent of 400 yards to Millbeck Gill and forced its way 27 yards up the opposite shore or side of the Gill, a steep brow which rises with an angle of 26 degrees where gravity turned this mighty stream into the said gill at 7 furlongs above the village of Millbeck.

This great convulsion happened between 9 and 10 o'clock at night and carried off not less than 100,000 cart loads off the side of the mountain and it appears this waterspout flood was more than

		<p>400 times the average flow in the gill. When this torrent mixed with thousands of large stones approached the village it made such a dreadful noise which drowned out the sound of loud thunder. A wall of considerable length was swept away and where it passed through the village it was 12 yards wide and 6 feet deep. In less than 15 minutes it was filled with stones to the brim. It damaged roads and fields.</p>
<p>8 Sep 1795 Gentleman's Mag.</p>		<p>At Whitehaven it was uncommon warm then very heavy rain for 20 minutes caused the streets of the town to be completely filled, rolling down some of them like a river and bore everything with it – but it was short lived. 'No thunder was heard'.</p>
<p>20 Jul 1803 Cumberland Pacquet 26 Jul</p>		<p>A dreadful storm of thunder lightning rain and hail occurred at Whitehaven., continuing without intermission for about 2 hours. Considerable damage was done by hail breaking windows and destroying plants. Some hailstones measured 6 inches in circumference. The mountain tops were covered for many hours. The weather had been excessively hot for many days before. The storm was felt as far as Ulverston in the south but did not extend beyond Maryport in the north.</p>
<p>1/4 Aug 1805 Cumberland Pacquet 6 Aug</p>		<p>At Whitehaven a violent gale was accompanied by heavy rain which continued for the whole of the night.</p>
<p>? 1806  CBHE</p>		<p>On 1<sup>st</sup> August very heavy rain fell within a circle of two miles at Threlkeld. Torrents of water poured down from the hills and the Glenderamakin which is normally a small stream suddenly overflowed. Furniture from some houses near the bridge was washed out. There was no rain in Keswick and inhabitants were puzzled by the sudden rise in the Greta. In the space of ten minutes it rose upwards of three feet. The rain did not continue longer than half an hour.</p>
<p>31 May 1815 Carlisle Journal 3 Jun</p>		<p>Keswick Literary and Scientific Society excursion to Thirlmere and Castle Rock .... At Castle Rock Mr Crosthwaite..... told of the Legburthwaite floods of 1749, 1806 and 1846" [Not added to EXCEL file]</p>
<p>18/19 Jul 1819 Westmorland Gazette 31 Jul</p>	<p>The rain continued without intermission for nearly 60 hours</p>	<p>Wigton: A storm with thunder lightning and rain. In a very short time the streets were inundated; several cellars were so much flooded that furniture was floating about.</p>
<p>Lancaster gaz 31 Jul</p>		<p>The heavy and continuous rain which fell on 18<sup>th</sup> and 19<sup>th</sup> caused flooding in the Derwent, Cocker, Ehen, Keekle, Calder, Irt and Mite. Sheep and pigs were washed away and much hay was washed out. A weir at Wath Mill near Cleator was washed away.</p> <p>Whitehaven: Incessant rain for not less than 60 hours causing an inundation in this part of the country not known for 50 years. There was much damage to crops and hedges and bridges over brooks and rivulets have been washed down. Similar accounts of the effects have been reported from Egremont, Calder bridge, and on all the roads to Bootle, Whitbeck and Whicham. Similar reports from</p>



Cockermouth, Keswick, Braithwaite, Bassenthwaite.

Carlisle Patriot 31  
Jul

The heavy rains caused considerable damage in the western part of the county; the streams rose to a considerable height and swept away a great deal of hay and many animals.

Cumberland  
Pacquet  
27 Jul 3 Aug

This was the greatest flood ever known in this part of the country. At Braystones near Egremont, a house on the bank of the Ehen was flooded for a day and two nights to a depth of 2 1/2 feet and a nearby bridge was rendered impassable. A small house was demolished when a gable wall gave way. Hay was swept away on the banks of the Marron, notably at Branthwaite hall and Calva Hall. Effects were widespread with great loss of crops. Calder Bridge and the road to Bootle, Whitbeck, Withcam were affected. Also mentioned were low grounds at Cockermouth, Keswick, Bassenthwaite, Braithwaite and Bridgefoot.

25 July 1819  
Cumberland  
Pacquet 3 Aug

Early on 25<sup>th</sup> a violent thunderstorm occurred in the Loweswater area and became most severe at 1 o'clock. The water precipitated itself with incredible force into the vale below. Having washed down considerable quantities of wall it carried the stones and gravel to a house at Graythwaite where the water was four and a half feet deep. An outhouse was washed away. At Low Mosser in Brigham, several bridges were washed away. At Wood in Whinfell, some heifers were washed away. At Eaglesfield Cragg a house was unroofed and a bed set alight by lightning. Heavy rain occurred at Mockerkin but none at all at Lamplugh.

9 Aug 1820  
Cumberland  
Pacquet 21 Aug  
Public Ledger 29  
Aug

Great heats have been followed by much wet with thunderstorms as in other parts of the kingdom. Corn is much laid and banks of the rivers have had violent inundations. A new bridge over the Blea Beck at Ullock near its junction with the River Marron was washed down. A house at Branthwaite was inundated. A wooden bridge over the River Marron was washed away. Crosdale Beck in Ennerdale overflowed its banks and caused considerable damage in adjacent fields. The bridge at Wigton was destroyed and also the new bridge over the Esk on the Carlisle to Glasgow road was destroyed

1 Nov 1821  
Cumberland  
Pacquet  
3.12.1821

Frontal storm affecting River Greta notably at Threlkeld  
[Not added to EXCEL file]

2 Feb 1822

The winter was remarkable both for its 'hurricanes' and storms of rain as for its

'The oldest person living never saw anything equal to this flood in this part of the country. The Rivers Greta and Derwent, particularly the latter were never known to be so high and the consequent damage is very great'. A wash house of Forge on the Penrith Road (Greta) was completely carried

Carlisle Patriot

mildness. The area experienced destructive wind and rain on 1 Dec 1821, whilst only the highest summits had seen a sprinkling of snow through the whole winter. The February floods were accompanied by a southwesterly gale which was also responsible for widespread damage.

18 Aug 1823  
Carlisle Patriot 23  
Aug

Some thunder was noted but there is no description of thunder and lightning

away with all its contents - 80 stone of oatmeal, a fat pig, a washing of clothes and brewing utensils. Dwelling houses nearby and a wool carding factory also suffered severely with the water 4 1/2 feet deep in the latter. The cottages were flooded to the ceiling, which was 'higher by two yards than ever remembered'. The roads leading to Borrowdale, Penrith and Bassenthwaite were totally impassable. Rev Brown of Bassenthwaite was washed off his horse and perished. On the Cockermouth road the water rooted up trees and levelled hedges in all directions

The arches of the new bridge (the two-arch stone Derwent bridge probably completed within the previous two years) at Cockermouth were not found large enough and the road in consequence was completely impassable.

On the neighbouring River Eden the level at Carlisle was higher than in the great flood of 1771. The season in west Cumberland has been extremely wet but flooding occurred during the previous week in Whitehaven and the road to Workington. Tangier Street was flooded to a depth of 3 feet and cellars were flooded. Ale barrels at Bransty were floating about. At Rottington flow from surrounding hills forced its way through farmyards and corn mills were damaged. At Woodend near Egremont houses were flooded to a depth of several feet. The River Ehen overflowed its banks damaged a tan yard, overturned a wall and flooded several houses in Egremont. General reports of flooding were noted at Gosforth, Harrington, Lamplugh and Ennerdale with loss of crops.

Cumberland  
Pacquet 18 Aug  
12 Jul 1828  
Lancaster Gaz 19  
Jul

Cumberland P has verbatim the same information as Carlisle Patriot Whitehaven; Thunderstorm with very heavy rain. We have also had very heavy and continuous rain for the last 4 days and rivers in Cumberland are swollen to a very great extent. The new bridge over the Cocker was completely swept away. That part of the town [presumably Cockermouth] which lies on the west side of the river was inundated to a depth of 2 or three feet owing to the damming of water by the stones and framework of the ruined bridge. Some houses were also in danger of being washed down

1 Aug 1828  
Liverpool  
Mercury 8 Aug  
11 Jul 1829  
Carlisle patriot 18  
Jul

A mine dam failed above Loweswater on the Crabtree Beck. The water rushed down with the noise of thunder tearing trees up by the roots and carrying stones weighing half a ton. From a farmhouse immediately downstream the farmer and a child tried to escape but were carried away and drowned. A severe thunderstorm was reported at Maryport. A house was damaged by lightning at Crosby and several stacks of hay were burnt down.

Cumberland  
Pacquet 4 Aug

24 Aug 1829  
Carlisle Patriot 1  
Aug

30 Jul 1830  
Cumberland  
Pacquet 3 Aug

19 Sep 1830  
Westmorland  
Gaz.

8 Feb 1831      Snowmelt plus rainfall  
Source uncertain

Thunderstorms appear to have been very general throughout the kingdom but most damage was done in northern counties. Loweswater was particularly affected; mountain torrents were greatly swollen by the deluge of rain. Two men at Rannerdale Knot were struck by lightning but recovered. Thunderstorm for several hours. The temperature fell during the night from 72F to 55F and a strong wind blew up from the northwest. All along the west coast the thunder was continuous; very large hailstones fell at Maryport. In the Gosforth area the River Bleng rose to a great height; the Mite was also very high carrying away large quantities of hay. In Netherwasdale, the Little Hole Gill, often quite dry, swelled to an enormous size, sweeping before it stones and gravel and discharging itself at Span Broad at the foot of Wastwater where the River Irt rises. Inhabitants of Austhwaite left their houses, anxious that they might be swept away. Much damage was done in Ennerdale and Eskdale

Following a period of oppressive heat, a thunderstorm struck Whitehaven. Rain in torrents caused flooding of streets in a few minutes rising to more than a foot in height and flowing like a river from wall to wall. The Market Place became a small river. All ground floor apartments and cellars were flooded with the inhabitants not having time to remove them to places of safety. King Queen Tangier, Lowther and roper Streets suffered worst with cellars filled nearly to their ceilings.

We have had a very wet season but this was the wettest of all. The wooden bridge below the famed waterfall at Lodore inn was washed away just after some gentlemen had crossed it. In Borrowdale the water rose to an unusual height, doing considerable damage to fields and fences. An occupation bridge at Rosthwaite was carried down. In the lower ground of Brithwaite, Thorthwaite and Unterskiddaw, much damage has been done to crops.

The quantity of snow which fell in Keswick and neighbourhood was greater than had occurred for 60 years (1767?) and Greta and Derwent were again in high flood. The thaw was accompanied by a fall of rain of two days continuance. Houses in the inappropriately-named village High Hills near (now a part of) Keswick were in danger of being swept away when the water swept over and destroyed an embankment along the Greta. Water was five feet deep in some houses and foundations were undermined. Inmates of the houses were conveyed on carts and horses into Keswick. Flood levels at that location were said to be diminished by the breaching of an embankment further upstream at Monk's Hall and the spreading of water over the flood plain. At Briery Hill further upstream mill weir and gates were carried away and the gates of the weir at The Forge were also damaged.

At the head of Bassenthwaite, a newly-erected wooden bridge over the Derwent was destroyed and another a mile upstream seriously damaged. The lakes of Derwentwater and Bassenthwaite were absolutely joined. The high road from Keswick to Cockermouth was rendered impassable and for

several days afterward the coaches were compelled to travel by Bassenthwaite on the ancient road past the vicarage near Keswick.

A stone bridge near Uzzicar over the Newlands/Braithwaite Beck was swept away. Gills rising on Skiddaw and other hills have spread out great quantities of sand and stones over neighbouring low-lying farmland

No information was found on Cockermouth.  
Ennerdale was visited by a severe thunderstorm of hail. One cow was killed by lightning.

3 Nov 1831  
Westmorland  
Gaz 12 Nov  
14 Jul 1831  
Cumberland  
Pacquet and  
Wares  
Whitehaven Adv  
19 Jul  
9 May 1833  
Cumberland  
Pacquet 14 May  
17 Jul 1834  
Cumberland  
Pacquet 22 Jul  
11 Aug 1837  
Cumberland  
Pacquet 15 Aug  
  
29 Jul 1839  
Carlisle journal  
10 Aug  
? 1840  
Workington Star  
and Harrington

Severe thunderstorm through much of Cumberland. Five cows were killed at Crofts near Whitehaven.

A thunderstorm occurred at six in the evening at Keswick. A number of houses were several inches deep in water and 'the town seemed inundated'.

A thunderstorm occurred over Keswick and surrounding district. The rivers which had previously been remarkably low were swollen to an amazing height. Some large trees were torn up by the roots at under Skiddaw.

Thunderstorm in the Keswick district. A farm at Armboth at the foot of the mountains suffered from a torrent of water rushing through the barn leaving gravel to a depth of 3 feet and through the kitchen of the farmhouse. Roads were rendered impassable and 5 sheep were found dead probably struck by lightning. A field in grass was torn up and furrowed.

During a thunderstorm Skiddaw was covered with snow (sic) to its very base and remained for several hours afterwards

It was reported that a nail had been driven into a wall adjacent to the Derwent Bridge between the Soapery and the Mill Field to mark the level that the water had reached. This nail was referred to in some subsequent floods (1852 and 1898) The Derwent overflowed its banks including the reach above

Guardian of 28  
May 1915 (Notes  
of the Week).

21 Jun 1842  
Westmorland  
gazette 25 Jun  
5 Jul 1843  
Carlisle journal  
8 Jul 1843  
Cumberland  
Pacquet 11 Jul

5 Jul 1846  
Carlisle journal  
11 Jul  
29 Jul 1846  
Carlisle Journal 1  
Aug

CBHE  
Westmorland  
Gazette 1 Aug

Whitehaven 2.245 inches  
The hottest day of the season  
with temperature 84 F  
Thunder and lightning  
continued with scarcely any  
intermission for 11 hours.

Rain at Wigton was 3.5 inches  
between the morning of 29<sup>th</sup>  
and 30<sup>th</sup>. This was not as great  
as last October when the total  
was 3.6 inches, but the rivers  
rose more during the present  
event. Low grounds along the  
Wampool and Waver were  
flooded to a depth of 2 to 3  
feet.

the Yearl weir, and the Mill Field was flooded, the water reaching to the boundary wall of the Park at the lower corner on entering the field. The paper provides the ancillary information that the adjacent Derwent Bridge had been built in that year and the identity of those who had driven the nail. The wall was reported to still exist until about 10 to 15 years ago (pers. comm. J. Thompson). i.e., until about 1985 but on inspection I was unable to find it.

Thunderstorm following an intensely hot day. The streets (Whitehaven?) were covered to a considerable depth.

Thunderstorm affected Keswick, Wigton and Cockermouth. No flooding reported at Keswick but at Cockermouth 'a portion of the town was completely flooded'. Lightning damaged the church steeple and a man and a boy injured.

The thunderstorm hit Whitehaven but no damage was reported. However at St Bess several people were hit by lightning but not seriously injured; a house was hit and damaged at Egremont. Houses were also damaged in Workington by lightning.

A severe thunderstorm with hail and rain was reported at Keswick (no flooding reported), Cockermouth where streets were flooded and rivers swelled to a great height in a very short space of time.

Keswick Literary and Scientific Society excursion to Thirlmere and Castle Rock .... At Castle Rock Mr Crosthwaite..... told of the Legburthwaite floods of 1749, 1806 and 1846"

CJ reports mainly on flooding in Carlisle but notes for Wythburn and Threlkeld: Mountain streams came down in torrents that have been never before known, carrying along rocks trees and soil and covering extensive fields of potatoes and turnips. Bridges and banks were swept away and roads broken up. Houses were swamped and people are gathering fish by the basketful in potato fields. Keswick: **The rise of the Greta was so singularly sudden that little time was given to remove articles out of harm's way.** At half past eleven the river was little flooded but by one o'clock many thousands of acres were under water. The damage is much greater than by any similar previous visitation. The weir belonging to the high corn mill has been washed down. The pencil manufactory was serious injured; the furnace room was completely washed down and considerable damage was done in the main building. Several houses at the low end of Keswick were flooded to a depth of at least 2 feet. The low ground between Keswick and Bassenthwaite Lake is flooded. The Greta was at its highest since 1822.

Daily rainfall at Keswick was  
2.58 inches

WG reports The river at Keswick has not been known to be so full for the last 16 years. The cause of the flood in the Greta is the bursting of a cloud or waterspout a little above Wallthwaite in the vale of Threlkeld. Part of a bridge near Threlkeld was also washed down.

The waters in Borrowdale did not come in so rapidly

Cockermouth: Three weirs belonging to the Aikmark corn mill have been washed away. The Cocker has not been so high for upwards of half a century (Cumb P.). It rose from little more than ordinary height to this unprecedented flood in less than one hour.

Maryport: A cargo of timber discharged from a ship was washed out to sea by the overflowing of the River Ellen.

Arlecdon and Lamplugh: the farm at Crofts was completely under water. A bridge across the road leading into Ennerdale was washed away.

Workington: the River Derwent rose to an unusual height and washed away large logs of timber.

Loweswater: Water rushed down hillsides in all directions

Gosforth: The small beck that runs through the village rose to an unprecedented height and in the house of Mr Singleton grocer to a height of 13 or 14 feet causing a wall to fall down. The flow joined the River Bleng which was never known to be so high.

Lorton: The Cocker has not been so high for upwards of half a century. It rose from its ordinary height to this unprecedented flood in not more than one hour. So general is the damage along the river that it would be pointless to enter into particulars.

Patterdale: Metal was washed away from the Greenside lead mine and other serious damage was done.

Wigton: Rainfall 3.50" in day Many fields adjoining the Wampool and Waver were flooded to a depth of 3 feet.

Aspatria: River Ellen was in flood; one hundred acres of prime grass has been sanded up or carried away between Brayton and Gilcrux.

Whitehaven: the thunderstorm was preceded by warm and sultry weather. However no damage was reported in the town except for the dislodgement of a few bricks on chimneys due to lightning.

Arlecdon and Lamplugh: Bridges and fences were washed away. At Crofts the farmstead was completely under water. The bridge across the road leading into Ennerdale was washed away. A horse

Cumberland  
Pacquet 4 Aug

8 Aug 1846 Carlisle journal 15 Aug	Seathwaite 6.62"	was killed by lightning. Gosforth: the small beck that runs through the village backed up at a point adjoining the grocer's to a depth of 13 to 14 feet so that the yard wall gave way, levelling walls and gardens. The River Bleng was never known so high and took a new course through a wheat field at Scot Hole and Bolton Hall. Keswick another thunderstorm: Thunder severe lightning and heavy rain occurred. The River Greta overflowed its banks in several places. The weir which had been damaged in the last flood and partly repaired in the meantime was washed away again. Much of the low ground near Threlkeld was completely under water. [Not added to EXCEL file]
CBHE 21 May 1850 Cumberland Pacquet 28 May		Keswick: Thunderstorms occurred over 3 days with heavy falls of rain. The new sewerage was inadequate and some houses were flooded.
2 Feb 1852 Westmoreland Gazette		The weather during the previous week at Keswick had been continuous rain and with the rivers in flood, the land between Derwentwater and Bassenthwaite was entirely under water. The mills on the Greta were at a complete standstill but fortunately little damage was sustained.
CBHE		Derwentwater flood: "... On the 14th June 1824 ... a permanent notch was cut in the rock of Friar's Crag, which I call zero.. ... the water ... in the night of 2nd February last it was eight feet two inches above" [Not added to EXCEL file]
6 Jul 1852 Westmorland gazette 10 Jul		Not since July 1849 [no info available] has there been such a thunderstorm as occurred over Wythburn and Thirlmere. There were no reports of loss of life or property.
17 Jul 1852 Carlisle Patriot 24 Jul		Whitehaven experienced a violent thunderstorm. Overnight heavy rain continued for two hours. Many properties were flooded in the lower parts of the town including the cellars of the Golden Lion Hotel, grocer and ironmonger among many others.
12 Dec 1852 From West Cumberland Times (1898)		At Cockermouth during a later event (in 1898) the flood of Dec 1852 was said to be the greatest of the floods of the second half of the century (exceeding the floods of 1856, 1868, 1874, 1891 and 1898. Extensive flooding of industrial premises was recorded including a tannery, a hat factory and a tweed mill. The Brewery and Herbert's foundry also suffered The Main Street and the Goat area were also flooded.

<p>Late Dec 1852 Carlisle Patriot 1 Jan 1853</p>		<p>It was reported that at Workington that the overflow had reached nearly to the 'water nail' placed in 1840. The Derwent did not reach the height it did three weeks before and the Cockermouth Railway has not sustained any further damage except the interruption of men working on the damaged bridge. Prolonged rainfall and high winds caused widespread damage [Not added to EXCEL file]</p>
<p>28 Oct 1855 Carlisle patriot 3 Nov 1855</p>		<p>The fields between Derwentwater and Bassenthwaite were generally submerged. The waters of the lake extended to Grange and overflowed the road in several places near Lodore. Note on levels of Derwentwater based on a low water mark at Friars Crag. Feb 9 1831 8 feet 4 inches Oct 12 1832 8 ft 9 inches Dec 20 1833 8 ft 1 inch Oct 10 1846 8 ft 4 inches End Dec 1852 8 ft 2 ½ inches 28 Oct 1855 7 ft 9 inches.</p>
<p>8 Aug 1856 Kendal Mercury 16 Aug Dec 7 1856</p>	<p>Snowmelt plus rain</p>	<p>Severe thunderstorms affected the west of Cumberland. Many cattle have fallen victims to lightning. A woman at Torpenhow was struck and severely injured.  The flood was caused by a sudden thaw accompanied by continuous rains and high winds. The Greta was 'at least three inches higher than ever known' The flat lands between Derwentwater and Bassenthwaite were under water and considerable damage was sustained.</p>
<p>Source ?</p>		
<p>23 Jul 1859 Carlisle Journal 22 Jul Westmorland</p>		<p>At Cockermouth the whole of The Goat between Derwent Bridge and the half mile stone was covered with water to a depth of 2 to 3 feet. Ferry carts plied for hire and the road past the Goat Mill had become a foaming torrent two feet deep. The flood rendered Cockermouth inaccessible for pedestrians from Papcastle and the Maryport road. It covered the fields between Harris' Mills and the town and The Goat toll bar but also extended nearly the entire length of the main thoroughfare. The Goat and Papcastle Mills suspended work and the Fitz Mill was surrounded A thunderstorm with heavy rain affected Pardshaw and Morkerkin in the Cockermouth area, washing soil from the fields and flooding several houses. The water was at least 2 feet deep on the road between the two villages. Cattle and a horse were reported killed by lightning. The thunderstorm with hail and heavy rain flooded King Street and the Market Place in Whitehaven. A</p>



Gazette 30 Jul		cow was killed by lightning at Lamplugh and a horse in its stable at Calderbridge. Hailstones were as large as marbles.															
26 Nov 1861	Heavy rain for nearly 24 hours	[Storms were also reported in Lancashire and Yorkshire, Bristol and the southeast] The Derwent rose to a great height at Cockermouth and Workington and the main street in Cockermouth was at one point impassable and "Dr Armstrong and Major Thompson had narrow escapes from being washed off horseback'. At Workington the continuous fall of rain had the effect of swelling the Derwent to a height 'which it had not reached since the memorable flood nine years ago'.															
Westmoreland Gazette		The rivers in the Keswick area rose to a height not known since 1831. Cottages in the lower part of town were nearly filled with water and they were obliged to leave. The lake of Thirlmere extended itself to the meadows below the Nag's Head, Wythburn. Two bridges across Thirlmere at Armboth were washed away and nearby houses were flooded.															
5 Dec 1864	Greatest daily rain at Seathwaite this year: 6.47 inches. "This was the last of three wet days; the fall on the 3rd 3.10 in., on the 4th 5.95 in., and on the 5th 6.47 in., making 15.52 in. in three days; 21.77 in. fell in 10 days"	<table border="1"> <thead> <tr> <th></th> <th>Dec 3-4</th> <th>Dec 4-5</th> </tr> </thead> <tbody> <tr> <td>Seathwaite</td> <td>5.95</td> <td>6.47</td> </tr> <tr> <td>Ambleside</td> <td>3.00</td> <td>?</td> </tr> <tr> <td>Cockermouth</td> <td>1.50</td> <td>1.41</td> </tr> <tr> <td>Tarnbank</td> <td>1.66</td> <td>1.56</td> </tr> </tbody> </table>		Dec 3-4	Dec 4-5	Seathwaite	5.95	6.47	Ambleside	3.00	?	Cockermouth	1.50	1.41	Tarnbank	1.66	1.56
	Dec 3-4	Dec 4-5															
Seathwaite	5.95	6.47															
Ambleside	3.00	?															
Cockermouth	1.50	1.41															
Tarnbank	1.66	1.56															
Nothing in Westmoreland Gaz		[Not added to EXCEL file]															
30 May 1865	Greatest daily rain at Seathwaite this year: 6.41 inches	[Not added to EXCEL file]															
BR/CBHE	. a very warm moist wind arose on the 9th, and a fall of 6 in. at Seathwaite, and 2 in. at Arncliffe took place.	[Not added to EXCEL file]															
9 Sep 1865																	
BR/CBHE																	
15-17 Nov 1866	15 Nov Seathwaite 6.38"	Very high rainfall but principally in S Yorks and Lincs															
British Rainfall	Kendal 2.20" High Close 2.79" Patterdale 2.62" Lesketh How 3.26"																

? 1868  
From  
West  
Cumberland  
Times (1898)  
30 Jan 1869  
Carlisle Patriot  
5 Feb

Rain on 30<sup>th</sup> was accompanied  
by thunder

A flood at Cockermouth in this year was mentioned during a subsequent event in 1898 but no documentary evidence was found.

[Not added to EXCEL file]

Persistent heavy rain and strong winds lasting several days accompanied high tides affecting West Cumberland. On 30<sup>th</sup> the tide rose 2 feet higher in Whitehaven than predicted and cellars in the Market Place and the Strand were flooded. The following day although the tide was lower the rainfall caused further flooding of the Market Place Roper Street and King Street. The level at the market place is 18 feet above high tide level and on Sunday (1 Feb) there was 2 feet of water there. Conjectured that there had not been such a high tide since 1842. Railway lines were also injured.

[Not added to EXCEL file]

13 Nov 1869  
  
BR/CBHE  
2 Oct 1872 BR

Greatest daily rain at  
Seathwaite this year: 6.70  
inches

<Whitehaven>: The total fall was 2.33" and nearly the whole fell between 2 a.m. and 5 a.m; much damage was done, great part of the town was laid under water, walls were washed down, and many roads rendered impassable.

Silloth: Severe thunderstorm but no effects noted. It was reported to be the hottest day for 20 years with 80F.

[Widespread thunderstorms in southern Lake District and elsewhere].

22 Jul 1873  
Westmorland  
Gazette 26 Jul  
7 Oct 1874

Preceding wet weather  
Storm rainfall lasting 30 hours.

Flooding of low-lying land occurred throughout Cumberland and Westmoreland. The Derwent from Keswick to Workington and 'more especially between the latter place and Cockermouth' was heavily flooded. The Derwent at Cockermouth was estimated to be seven feet above its ordinary level and 'some three feet below the great flood thirteen years ago' (1861). It did considerable damage to warehouses along its banks, whilst the River Cocker which was said to be at its highest ever level flooded a warehouse and many houses, from which tenants were obliged to quit. Many of the houses at the back of Main Street were flooded. In Main Street, the water covered the roadway to a depth of a foot or more. A salmon weighing 34 pounds was caught in mid street.

British Rainfall  
  
Meteorological  
Magazine, vol.  
ix., p. 162

6 October 1874	Inches		Inches
Dartmoor	3.00	Highgate	3.38
Highfield, Hawkshead	3.05	Underfell	3.52
Cartmel	3.05	Hawesmead	3.51
Coniston Parsonage	3.85	Stavely Hall.	3.80
Low Wray	3.17	Matson's Grounds	3.24
Seathwaite	5.14	Windermere, The Wood	3.52
Barrow House	3.30	Brathay Vicarage	3.82
Deer Close, Keswick	3.03	Little Langdale	4.34
Brow Top	3.10	Eltenwater	4.70
Shu le crow	3.28	Lesketh Howe	3.75
Waterend	3.05	High Close	3.30
Kendal, Kent Terrace	3.22		

Communication with The Goat on foot by the normal road was stopped, the river having spread over the fields to the mill race and swept over the road beyond Derwent Bridge. Water stood a yard deep in many houses at the Goat. A woman was drowned when she fell into the tributary Bitter Beck and was swept 300 yards into the Cocker. Herbert's iron foundry was damaged by the Cocker as was a



tanyard and butcher's.

16 Aug 1877  
Carlisle Patriot 24  
Aug  
Lancaster gaz. 25  
Aug

A severe thunderstorm occurred Friday 17<sup>th</sup> at 3 pm and after 2 hours the grain was beaten down. Thereafter rain continued almost without intermission until the following Wednesday afternoon. Floods occurred in west Cumberland. At Parton near Whitehaven streets and houses were flooded. Whitehaven Bransty Row was also flooded. Similar reports were received from Cockermouth, Workington, Dearham and Wigton. Houses were flooded at Whitehaven on Monday 20<sup>th</sup> Derwent rose rapidly and at Rosthwaite the roads were more flooded than ever remembered.

15 Sep 1878  
BR  
Keswick PO 2.52"  
Keswick Barrow Ho 3.23"  
Patterdale 3.27"

8 Jun 1879  
Westmorland  
Gazette 14 Jun

Thunderstorm

Silloth: Lowholme windmill was badly damage by lightning. Two sheep were killed at Holme Cultram. [Widespread thunderstorms elsewhere – see south Lakes].

27 Dec 1879  
BR

Keswick Shu le Crow 3.02"

[Not added to EXCEL file]

13 Nov 1881  
Westmorland  
Gazette 20 Nov  
30 Jun 1881  
CBHE

In Borrowdale although the rain lasted only a few hours, the floods have hardly been equalled.

Rainfall observer at Borrowdale (Castle Lodge) noted "Great flood"

24 May 1882  
BR

Seathwaite 4.51"  
Loweswater 2.50"  
Cockermouth 2.08 and 2.01"

No newspaper reports of flooding in Cumbria [Not added to EXCEL file]  
[Not added to EXCEL file]

29 Jan 1883

Snowmelt plus rain

A heavy fall of snow was followed within two days by rain and strong winds which caused a complete

Carlisle Journal	24 Jan Keswick Shu-le-Crow 2.91 Elterwater 3.91" Shap Copy Hill 3.16 Cockermouth 2.06 Keswick 1.33 on 28 <sup>th</sup>	thaw. Part of Keswick was under water owing to the floods and Derwentwater and Bassenthwaite became joined. In Keswick, the flood waters were 100 yards up the Main street and the Fitz Recreation Ground was partially submerged up to the walls of the farm of Monk's Hall. The road to Portinscale was many feet deep The Carlisle Journal suggested that it was the heaviest flood in the Lake District for 20 years but no reference was found to flooding in Cockermouth. In some parts of the Pennines (Bedale) the event produced the greatest flood since 1822.
11/12 Sep 1885	Seathwaite 4.27" in 7 hrs Elteterwater 2.62"	Seathwaite observer noted the rain caused a flood such has not been known for a generation
British Rainfall 5/6 sep 1886 Manchester Times 11 Sep	Thunderstorm	Wasdale and Scafell: At a point above the junction where two streams join to form Lingmell Gill at a height of 1100 feet, the steep bare hillside of Lingmell was seen to burst open and a mass of mountain begin to slide. <b>A rush of water issued from the hill and swept all before it with an appalling sound.</b> The ordinary route to the Inn was blocked by unfordable streams and a new route had to be found.
19 May 1888 Liverpool Mercury 21 May	Thunderstorm	Allonby: Three houses by the sea were struck by lightning and very seriously damaged. No flooding was reported.
27 Oct 1888	Bowness 2.45" Ambleside 4.08" heaviest in 20 years	Observer notes very high level in Derwentwater
British Rainfall	Patterdale 4.45" Keswick 4.00 highest since 1867	
7 May 1889 Carlisle patriot 10 May	Thunderstorm	Worst remembered storm at Silloth, Maryport and Bowness. Horses and cattle were killed. Wigton: the storm lasted 3 hours but there were no reports of damage or flooding. Aspatria: Several people were struck and injured by lightning. Buildings were damaged. Silloth: Houses were struck. Maryport: Streets were flooded which caused considerable [unspecified] damage. Cockermouth: Similar reports of lightning but no reports of flooding.
2 Jun 1889 Carlisle journal 4 Jun		Very severe thunderstorms were reported over the Eden valley. Similar storms morning and afternoon occurred in Keswick but towards Cockermouth and the coast the storm was less severe.

30 Sep 1890      Seathwaite 6.79"  
 Borrowdale Vic. 5.33"  
 British Rainfall      Keswick Bank 2.66"

Heavy rainfall North Lancashire and Lakes.  
 Flooding noted in Langdale, Duddon and Ribble also overflowed

6/7 Nov 1890      Ulpha 3.27 in 25hrs  
 British Rainfall      Keswick 3.67"  
 Borrowdale Vic. 5.10" in 3  
 days  
 Buttermere 5.62 in 3 days

25 Aug 1891      Prolonged summer rainfall  
 British Rainfall      Keswick Shu-le-Cro 4.69" 17.30  
 on 24<sup>th</sup> to 05.00 on 26<sup>th</sup>

The West Cumberland Times reported that this was the heaviest August floods known at Keswick and it caused much agricultural damage but no houses were flooded. It followed a period of 30 hours of heavy rain.

West  
 Cumberland  
 Times  
 Carlisle journal 4  
 Sep

AUGUST 25th.		
VIII. Hawkshead (Esthwaite Lodge) .....	2.71 in. or	3.7 per cent.
" Monk Coniston Park .....	3.25 "	3.8 "
" Skelwith Fold (Ambleside) .....	3.94 "	3.5 "
IX. Sedburgh (Brig Flatts) .....	3.11 "	6.1 "
" (Thorn Hall) .....	3.11 "	4.9 "
X. Duddon Valley (Ulpha Vic.) .....	2.88 "	3.3 "
" Seathwaite .....	6.14 "	4.2 "
" Wythburn Vicarage .....	5.28 "	4.3 "
" Borrowdale Vicarage .....	4.41 "	3.6 "
" Buttermere (Hassnes) .....	4.85 "	3.9 "
" Kendal (National Park) .....	3.81 "	6.4 "
" " (Hill Top) .....	3.45 "	6.3 "
" " (Kent Terrace) .....	2.87 "	5.3 "
" " (Haweshead) .....	2.70 "	5.2 "
" " (Pillergreen) .....	3.10 "	6.1 "
" Bowness (Fallbarrow) .....	2.55 "	3.8 "
" Longsiddale .....	3.11 "	4.9 "
" Dungeon Ghyll .....	4.25 "	3.4 "
" Grassmere (Pavement End) .....	3.33 "	3.5 "
AUGUST 26th.		
IX. Hawes Junction .....	3.89 in. or	5.3 per cent.
X. Keswick (Barrow House) .....	3.01 "	3.4 "
" Ambleside (Nook Cottage) .....	2.98 "	3.2 "
" " (Lesketh House) .....	2.78 "	3.1 "
" Grassmere (High Close) .....	3.40 "	3.6 "
" Patterdale Hall .....	4.15 "	3.9 "
XI. Treherbert .....	2.75 "	3.6 "
" Colburn (Penwyll) .....	2.64 "	2.8 "

At Cockermouth the water rushed on to the roadway at the Goat and also flooded the road leading from South Street to Rubby Banks. It caused damage to the Waterloo Bridge (the Barrel Bridge) connecting High Sand Lane to the Castle Brewery. (The bridge had been built in 1887).

At the village of Braithwaite, the Star Inn was reported flooded.

Seathwaite had more than 10 inches in 2 days

1 Sep 1892  
 British Rainfall  
 Carlisle Journal 6  
 Sep 1892

SEPTEMBER 1st.		
VIII. Hawkshead (Esthwaite Lodge) .....	3.70 in.	
" Monk Coniston Park .....	2.65 "	
" Skelwith Fold [Ambleside] .....	3.18 "	
X. Borrowdale Vic. (Grange) .....	4.06 "	
" " .....	3.85 "	
" Keswick (Barrow House) .....	2.54 "	
" Aspatria (Brayton Hall) .....	3.07 "	
" Brampton (Denton House) .....	2.80 "	
" Bowness (Fallbarrow) .....	2.88 "	
" Windermere (Woodland Ter.) .....	3.08 "	
" Longsiddale .....	3.40 "	
" Ambleside (Nook Cottage) .....	3.04 "	
" " (Lesketh House) .....	2.97 "	
" Elterwater (Birch Hill) .....	3.50 "	
" Grassmere (High Close) .....	3.30 "	
" " (Pavement End) .....	3.87 "	
" Patterdale Hall .....	2.70 "	

The flood was very heavy in Borrowdale and Derwentwater and Bassenthwaite were again united. The Derwent overflowed at Millbeck Hall and flooded 30 acres of meadow hay. A very severe gale was experienced off Maryport endangering vessels. St Bees vale had the appearance of a large lake, the floods at a level not experienced in the last 20 years. Much land lies under water in the Cockermouth area. Stockmoor Farm at Great Broughton had fields flooded for the second time in a week. Some houses at Sea View Broughton Moor were flooded. Pits were flooded at Arlecdon and Cleator Moor. The heaviest flood in the Maryport district for 50 years was experienced on Friday. Streets and low lying roads were flooded including Larson Street. The river Ellen overflowed its banks and flooded areas from the east side of Aspatria to the sea. At Netherhall, the water level was within a few yards of the hall and the gardener's house flooded to 3 feet. Nethererton and Grasslot villages were partly under water.

At Wigton the rivers Wem, Wampool and Waver rose very rapidly and flooded many 100 acres of land. The low-lying part of the town on the road to the railway station was flooded. Station road was

	Wigton 2.38" heaviest for 20 years	covered to a depth of 3 feet with water getting into many houses. Hartley's timber yard near the station was flooded along with Hill and Ray joinery works, Curries Machinery Works and Lemon and Pattinson's print works. Serious damage was caused at Wampool, Laythes, Powhill, etc. 'Old people say there has been no such flood here for 47 years'.
13 Feb 1893 BR	Seathwaite 4.96" Borrowdale Vic 3.77"	Rain centred further south but observer there suggested flooding was not severe as rain distributed over 24 hours.
22 Aug 1893 BR	Keswick (The Beeches) 0.77" in 18 mins	
24 Dec 1893 BR	Buttermere 4.37" Borrowdale Grange 2.75"	
6 Jul 1894 BR	Whitehaven 0.85" in 15 mins Nunwick Hall 1.15" in 2 hrs	Widespread thunderstorms
1 Nov 1894 BR	Borrowdale Vic 3.99 Borrowdale Grange 3.55 Keswick Barrow Ho 3.55	
1894 ? Tobin and Cumberland News		Tobin reports flooding - date unspecified. Flooding in December 1932 was accompanied by a statement in the Cumberland News that it was the biggest flood in Borrowdale for 36 years (1894). The absence of specific flood information suggests that the later reports were mistaken. References in 1932 probably refer to 1898 rather than to 1894. The only mention during the year was to 11 February when there was a severe gale with widespread damage throughout the country. There were accompanying coastal storm surges which affected the Cumbrian coast and flooding on the Derwent (as well as the Eden). No further details were located. But note August on Eden.
23 Mar 1895 BR	Seathwaite 4.46" Rosthwaite 3.62" Grange 2.95" Hassness 3.15"	
24 May 1895 BR	Cockermouth Whinfell Hall 1.24" in 1 hr	
26 Aug 1895 BR/CBHE	Cockermouth (Bradlinggill) 2.67" Uldale 2.66"	Rainfall observer at Cockermouth (Higham) noted: "Rain 2.47 in., being the heaviest fall since the record began in 1864"
9-16 Nov 1895		Rainfall observer at Keswick (Shu-le-Crow) noted : "... 6.07 in. of rain falling in this time [8 days], and 2.12 in. on the 10th. The River Greta rose to the highest flood for some years."

BR/CBHE

7/8 Feb 1896

Buttermere Hassness 5.05" in  
18 hr

Grange 3.58"

Keswick Barrow Ho 2.67"

7 Oct 1896

Keswick Eskin PI 2.50"

BR

Bassenthwaite Mirehouse

2.90"

29 Dec 1896

Seathwaite 4.59"

BR

Borrowdale Vicarage 2.91"

12 Nov 1897

BR Daily totals

Seathwaite 8.03"

British Rainfall  
CBHE

Borrowdale Vicarage 6.94 (8.8  
ins in 3 days)

Grange 5.93"

Keswick Barrow house 3.98 "

Keswick Deer Close 2,77"

Cockermouth (Higham) : "Rain  
2.45"; since 1865, exceeded  
only on Aug 26, 1895.

Cockermouth Broughton

Grange 2.53"

Ullock 4.44"

Brandlingill 4.12"

Hassness 4.68"

Maryport Netherhall 3.91"

31 Dec 1897

The flood in Borrowdale was the greatest known since September 1890 (date mistaken!). The storm had been preceded by some months of below average rainfall which limited its impact on the rivers. At Bowder End Borrowdale, hedges and fences were for some time out of sight.

Flooding was reported on the River Cocker at Lorton, where the water was up to the window sills of the Low Mill; a rustic bridge was washed away. No information was found on flooding in Cockermouth. The River Marron at Ullock was very high and some cattle were rescued with difficulty. The Star Inn at Branthwaite was flooded. Two young boys were drowned in the River Derwent at Workington.

Maryport observer reports 'Highest ever flood on the River Ellen'

Rainfall observer at Armathwaite (Hall), Bassenthwaite, noted: "the highest floods for some years."

BR/CBHE

5 Aug 1898

Carlisle Journal

Aug 9

2 Nov 1898

Borrowdale Vicarage

One of the heaviest rainfalls ever experienced occurred in Borrowdale on Friday. Three days previous (2<sup>nd</sup>) heavy rain caused a flood which carried away some hay but Friday's loss was serious. Roads were flooded and Derwentwater spread out over meadows at its lower end.

In common with most of the rivers of the Lake District, the Derwent suffered an exceptional flood.

	5.20/3.60
West Cumberland Times	Rosthwaite 5.12/3.51 Grange 4.65/4.45 Keswick barrow ho 3.50/3.25 Keswick Deer close 3.14
Carlisle Patriot	Keswick Derwent island 2.75 Keswick Eskin Place 2.82
Etc	Keswick Shu le Crow 2.51 Cockermouth Whinfell 2.95 Cockermouth Brandlingfell 2.73

The West Cumberland Times referred to this as the most serious flood in memory in Borrowdale with a total of 8.63 inches at Borrowdale Vicarage (duration unspecified). Bridges were destroyed at Thornythwaite, Mountain View, Longthwaite, Stonethwaite. It entered houses at Mountain View and at Rosthwaite the water was 4 1/2 feet in some houses. The Scawfell Hotel was seriously damaged. At Braithwaite houses were flooded to 3 feet and the bridge was destroyed.

At Keswick the daily rainfall was 3 inches. Thirlmere was full and overflowing. At Threlkeld the water flowed down the railway Derwentwater and Bassenthwaite became united as a single lake. Fitz Park was partially covered and many houses in Keswick on the banks of the Greta were flooded. The Carlisle Patriot suggested that 'it must be a dozen years since there was a similar flood in Keswick'. The Mid Cumberland and North Westmoreland Herald stated that 'the last similar flood occurred 14 years ago (1883?). Skiddaw Street, Wordsworth Street, Blencathra Street and Helvellyn Street were flooded. The lower part of Main Street had up to three feet depth of water. 'The overflow advanced beyond the Parish Room'. Derwentwater rose to a height of eight feet (another report of 7 feet) above its normal level. Lodore Hotel was damaged through overflow of the falls and the road to Borrowdale was impassable. A dam burst behind the pencil mill at Braithwaite and inundated a number of houses. Powe bridge between Keswick and Braithwaite was partially washed away. The water rose to within 3 feet of the railway line to Cockermouth whilst Bassenthwaite Lake Station was surrounded to a considerable depth.

Further downstream in the reach from Cockermouth to Workington, it was reported that 'a flood of such extent has not taken place for 45 years'. The River Cocker overflowed the roads and fields at Lorton. The River Cocker overflowed at the bridge and flooded the London and Midland Bank. It penetrated down South Street. Houses between South Street and Cocker Bridge were abandoned. Main Street was completely covered and the cellars in all the houses were flooded. At the Globe Hotel water filled the cellar and backed up to the ground floor. Houses adjoining the District Council Offices had water in them to several feet and the Mechanics Institute Yard was flooded. Water dashed over the Barrel Bridge which became impassable whilst houses in the adjacent High Sand Lane were



flooded.

Below the Derwent and Cocker confluence, there was a broad expanse of water and all the houses at The Goat were flooded to the lower window sills and the sidewall of one house fell down. The Sandair cricket ground was covered.

West Cumberland Times reported bystanders discussions of previous floods and that documentary evidence was produced of floods in 1852, 1856, 1868, 1874 and 1891 with the event of 1852 being said to be the highest on the Derwent below the confluence.

Between Cockermouth and Workington hundreds of acres were under water and in some places it washed over the railway line. The penny bridge near Broughton Cross was almost submerged and at Camerton the passenger's bridge was damaged when struck by a floating tree trunk. The lower rooms of Camerton Hall were flooded.

At Workington little damage was done though observers remarked that if the flood had been accompanied by a high tide the effect would have been far more serious. Water covered Hall Park and it was reported that a spike driven into a wall just entering Millfield, to show the height of a previous high flood (1840) was surpassed. The water flowed over the railway line near the Workington Bridge Station and washed sleepers off the line.

At Branthwaite the water was 7 to 8 inches over the first step of the Star Inn. Rainfall Observer at Hassness Buttermere notes that the gauge was flooded and that the lake and streams were higher than ever remembered.

Johnson and Warburton report flood deposits from Raise beck on the road at Dunmail Raise and North towards Wythburn.

Johnson and  
Warburton  
(2002)

18 Jan 1899  
BR

Seathwaite 4.78  
Hassness 3.84

	Grange 5.21 Keswick 3.45, 2.69, 3.23, 3.06 and 3.21	
15 Feb 1900 BR	Keswick 2.51, 2.55, 2.53 Grange 5.06 Cleator Moor WW 2.88	
12 Jun 1900 BR	Workington Winscales 0.80" in 20 mins	
14 Dec 1900	Seathwaite 5.32 Rosthwaite 4.35	
10 Aug 1901 Carlisle journal 13 Aug		Perhaps the most severe thunderstorm in the past 30 years occurred at Keswick lasting from early morning until the afternoon. The streets resembled rivers. 'Fortunately there was little damage done'. At Wigton the thunderstorm was of the longest duration ever remembered. Extremely heavy showers flooded the streets. Also there was a shower of lumps of ice. At Silloth the storm was also reported starting between 7 and 8.00. The whole recreation ground was almost covered. Was in high flood, the water being as black as ink. In the Caldbeck, Ireby and Torpelow districts farmers sustained heavy losses. West Cumberland was generally affected and the River Ellen. Lightning damage and loss was also reported from Eskdale and Liddesdale and near Lockerbie. [Flooding affected much of the north of England and southern Scotland including Edinburgh, as well as Hull, West Hartlepool, Doncaster and Southport and Conway in north Wales.]
23 Sep 1901 BR	Whitehaven Irish St 0.66" in 30 mins	See Met. Mag. 1901 p149 for more details
14 Dec 1902 BR	Seathwaite 3.29 Rosthwaite 4.00 Grange 3.52 Keswick 3.35, 3.59, 3.63, 3.57	Heavy rainfall also in South Lakes
24 Feb 1903 BR	Hassness 3.34 Keswick Eskin Place 2.58 Keswick Shu le Crow 2.54	
14 Jul 1903	Silloth 2.88"	Observer noted all the rain fell after 9 pm (ie < 12 hr duration).

BR	Eskdale 3.03" Cleator Moor WW 3.47	Rainfall in this even was greatest on the Cumberland coast
22 Nov 1905	Grange 3.00	
BR	Hassness 3.42	
28 Jan 1906	Hassness 3.72	
BR	Seathwaite 6.15	
16 Mar 1907	Seathwaite 4.25	
BR	Grange 3.46	
15/15 Jan 1908	Seathwaite 3.30 in 12 hours	Observer notes houses were flooded
BR		
13 Jun 1908	Seathwaite 4.55	
BR	Hassness 3.82	
25 Jul 1908	Wigton Brookfield 1.75" in 3 hours	
BR		
16 Sep 1908	Beckfoot (near Silloth) 2.40"	Observer notes 'highest flood in 47 years
BR		
12 Oct 1909	Egremonth 2.60	
BR		
19 Oct 1909	Egremont 2.75	Rainfall was heaviest in S Lake District
BR	Grange 3.30	
10 Jun 1910	Penton Warwicksland Sch 2.05"	<b>Solway Esk</b> Observer notes thunderstorm from 2.30 to 4.00
BR		
24 Jun 1911	Keswick (Deer Close) 2.91 (The Bank) 3.10 Cockermouth (Whinell Hall) 2.76 (Shatton Hall)..... 2.73 Threlkeld (Blencathra Sanatorium) 3.65 Bassenthwaite (Mirehouse)...3.50 (Higham)..... 3.30 Cockermouth (Broughton Grange) 2.72	'A typically cyclonic type of rain affecting the east and north of England and south of Scotland'
BR		
29 Oct 1911	Keswick Shu le Cro 3.43	Rainfall observer reports Greta in high flood on 30 <sup>th</sup>
BR	Keswick the Bank 3.10	

	Keswick Crosthwaite Sch 2.87	
	Seathwaite 7.00	
	Grange 5.06	
	Cockermouth Brandlingill 2.94	
11 Jun 1912 Cumberland news 15 Jun		Widespread thunderstorms.
13 Dec 1912 BR	Seathwaite 5.70 Grange 4.08 Borrowdale The Moraine 4.82	Note the occurrence of a great flood in the Conway valley on the same date with description and photo in BR p 25 (not copied)
3 Dec 1913 BR	Keswick Derwent Island 2.55 Keswick Shu le Crow 2.51	
8 Aug 1914 CBHE/BR		Rainfall observer at Grange, Borrowdale, noted Rain 4.72 in. Big flood. But rainfall was concentrated in the south of the Lake District. See also Met. Mag., September, 1914, p 146
19 Apr 1915 BR	Seathwaite 3.67 Rosthwaite 2.50 Dungeon Ghyll 3.05	RR notes 'rain of the winter type' – presumably persistent prolonged rain
30 Oct 1916 BR	Seathwaite 4.50	
15 Sep 1918 BR	Uldale Chapel Ho Resvr. 2.60 Mealsgte Quarry Hill 2.88 Wreay Vic. 2.67 Kesick Crosthwaite Sch 2.54 Cockermouth Derwent Lodge 2.54 Threlkeld 2.73 Bassenthwaite Higham 2.97 Whitehaven Scragill Res 3.37 Whitehaven irish St 3.23 Distington 2.85 Workington Winscales 2.55 Silecroft Old chapels 3.19	A near stationary low pressure system which became deeper during the day brought very widespread rainfall in the north of England N Ireland and the Snowdonia are of Wales, affecting the Lake District and Northeast England
3 Oct 1918	Cockermouth 3.10, 3.50 and	

BR	3.10	
16 Oct 1918	Swindale Mosedale Cott. 2.50. No rainfall information for 16 <sup>th</sup> in BR 1918 but the reference may be to the rainfall earlier in the month.	Brief reference was made to rain and floods with a total of 3.37 inches falling at Whitehaven between 14.00 on 15th and 0700 on 16th. It was said to be the worst flood in 40 years in the Broughton district and that most of the land between Ribton Bridge and Miser Bridge was submerged, but no reference was made to Keswick or Cockermouth. Bradbury (1994) however includes photographs of flooding of the Main Street of Cockermouth during the event.
BR/CBHE		
10 May 1919	Keswick (The Bank) 1.98" fell in 4 hours	Based on the comparative statements made in the description of the flood of 1938, and photographs in Bradbury (1995) of the Barrel Bridge being overtopped (Figures 1 and 2), it is believed that the flooding in Cockermouth arose largely from the River Cocker.
BR		Also on this day an exceptional storm occurred at Caton in N Lancs which is copied in general floods.
15 Mar 1921	Hassness 3.92	
BR	Keswick Derwent Island 2.56 Keswick Crosthwaite Sch 2.71 Patterdale Greenside 2.80	
26 Dec 1921	Hassness 3.62	
BR	Keswick The bank 2.90 Keswick Met Stn 2.63 Crosthwaite School 2.63 Threlkeld 2.59 Grasmere The Wray 2.58	
13 Dec 1922	Hassness 3.70	
BR		
2 Aug 1923	Watermillock 2.50	
BR	Hassness 3.85 Keswick Derwent island 3.31 Keswick The Bank 2.97 Threlkeld 3.00 Patterdale Greenside 2.77	
23 to 29 Dec	Dec 26	A series of storms over the period from before Christmas to New Year brought widespread flooding

1924	Keswick Derwent Island 3.65 Keswick The Bank 3.07	and damage from gale force winds and resulting tidal flooding.
BR	Keswick High Hill 3.50 Threlkeld 3.22 Hassness 6.05  29 Dec Hassness 4.30	<p data-bbox="826 272 2033 440">On 23 December there was heavy flooding of the Brigham district of Keswick. It is not clear if this was from the Greta or from small culverted watercourses. A culvert in Chestnut Hill burst and the water rushed through an adjoining house. At Brigham a lake was formed from the foot of the Brow to Brigham School and many houses were flooded. It was stated that it was about 14 years since such a flood took place (?).</p> <p data-bbox="826 488 2033 655">On 27 December after further rainfall the River Greta rose to a level which exceeded a mark on houses near the pencil mill showing the level of a flood 80 years ago, by 18 inches (1852? 1856?). The Penrith Road near the mill was under water and the flood reached into Greta Street and penetrated some houses. Keswick Park was flooded to 1 to 2 feet deep. Brigham was again flooded with 2 to 3 feet of water in houses.</p>
		<p data-bbox="826 703 2033 871">Villages in Borrowdale were affected with reports of serious flood losses in Stonethwaite, Rosthwaite, Seathwaite and Seatoller. From Embleton to Threlkeld, fields were flooded; the Braithwaite, Portinscale and Borrowdale roads were deep under water. Thirlmere reached an unprecedented height and there was a strong (but mistaken?) opinion amongst the residents of Keswick that the severity of the flood was due to the method of release of water from the reservoir.</p>
		<p data-bbox="826 919 2033 1158">Flooding of Cockermouth first occurred on 23 December but conditions became even worse on 29 December with flooding at The Goat. The lower part of Waterloo Street was also flooded, due to blockage of a culvert. At the Goat, the water was not high enough to pass through many doors. The field beside the Derwent between the high road and the Mill was under water. Sandair was flooded. The River Cocker was only a matter of inches below Brewery (Barrel) Bridge. Seaton Road from Brown's corner to Ivy Lodge was flooded to more than 1 foot. At Camerton. the Hall Park was like a lake.</p>
14 Apr 1926	Buttermere Hassness 3.85 Keswick Derwent Island 2.50 Portinscale High Moss 2.50	<p data-bbox="826 1174 1928 1238">Rainfall partly orographic in character. A broad current of air over the British Isles between a depression near Iceland and an anticyclone over Central Europe.</p>
BR		
21 Sep 1926 Cumberland	Heaviest rainfall at Wigton since 15 Sep 1918 (over 2 inches in 6 hours)	<p data-bbox="826 1308 2033 1370">Hundreds of acres alongside the Wampool, waver and Wiza were flooded. The Wampool flooded the roadway at Micklethwaite Bridge.</p>

News  
Carlisle journal  
21 Sep

At Wigton roads were flooded at Western bank, Burnfoot and Station Road, with houses flooded. The Carlisle Wigton road was flooded for half a mile at Nealhouse near Thursby. Near Crofton Station, railway metals were under water. At Curthwaite the Royal Oak and adjoining property was flooded. The Waver overflowed its banks at Parkgate bridge and the lower part of Waverbridge School was flooded. The main Cockermouth to Carlisle Road at Greenhill 2 miles from Wigton was blocked. At Cockermouth the thunderstorm was reported to have caused considerable damage to roofs and a horse was killed by lightning. A boy was drowned in the River Wiza at Wigton  
[Extensive flooding over north of England including Carlisle]

4 Nov 1926  
BR  
Buttermere Hassness 4.61  
Keswick Langholm 3.72  
Keswick Derwent Island 3.12  
Keswick The Bank 3.03  
Keswick High Hill 3.32  
Portinscale High Moss 3.17  
Threlkeld 2.60  
10 Jul 1927  
Keswick Langholm Gdns 1.65 in 45 mins

Rain was widespread in western Britain in the southern portion of a depression the centre of which skirted the NW coast of Scotland. Heaviest rain fell on high ground. Many rivers overflowed their banks and caused considerable damage by flooding, roads were made impassable and railway services were delayed.

BR

14 Jul 1927  
Keswick 1.10" in 80 mins

BR

28 Sep 1927  
Buttermere Hassness 4.14"  
Keswick Lingholm Gdns 2.65

2 Nov 1927  
Buttermere Hassness 3.46

More than 1 inch was recorded over most of Wales the English Lake district and SW Scotland. At many stations the duration exceeded 20 hours.

The effects of this storm on the Derwent were mainly described in terms of the effects of the wind damage rather than the ensuing flooding, as winds in the valley reached 60 mph whilst 1.8 inches of rainfall fell. The two lakes were almost joined together by the floods. Keswick School playing field was inundated. The Braithwaite Burn again broke through its banks and flooded agricultural land. There were also reports of land flooding in the vicinity of Threlkeld and loss of sheep.

No reports were found of flooding in Cockermouth but Camerton Hall Park and the field to the east of the Miser bridge were flooded and water was deep over Carr Meadow.

12 Jan 1928	Rosthwaite The Moraine 3.24
BR	Buttermere Hassness 2.61
28 Jun 1928	Rosthwaite The Moraine 4.34
BR	Buttermere Hassness 4.68
1 Jul 1928	Rosthwaite The Moraine 3.05
BR	Buttermere Hassness 2.59
26 Jul 1928	Rosthwaite The Moraine 2.50
BR	Buttermere Hassness 3.22
	Keswick Derwent Is 2.50
	Bassenthwaite Higham 2.63
11 Nov 1929	Rosthwaite the Moraine 4.89
BR	Buttermere Hassness 3.20
28 Dec 1929	Rosthwaite (Moraine) 3.3
BR	Buttermere (Hassness) 2.8
20/21 Aug 1930	20 <sup>th</sup>
BR	Rosthwaite (The Moraine) 2.97
	Eskdale Green (Gatehouse) 3.02
	Beckfoot (Eskdale Vicarage) 3.50
	21 <sup>st</sup>
	Rosthwaite The Moraine 3.37
	Buttermere Hassness 3.61
28 Dec 1930	Rosthwaite The Moraine 3.25
BR	Buttermere Hassness 3.02
14 Jun 1931	Keswick (High Hill) 2.52
BR	Keswick (Mirehouse) 2.52
	Eskdale Green (Gatehouse) 2.58
6 Jul 1931	Thunderstorm lasting 2 hours
Yorkshire Post 7	accompanied by large hail
Jul	
Westmoreland	
Gazette 11 Jul	

Note the occurrence of intense rainfall in south Lake District described by Hudleston and included in the Kent and South Lakes file

Heavy rain fell for over 2 hours and a cloudburst occurred at Stanah Ghyll and hundreds of tons of boulders and gravel were hurled down to the Manchester Aqueduct filling it and causing the water to flood Stanah Farm which was under water to a depth of 5 feet.

Some boulders were more than half a ton in weight. The occupant of Stanah Farm said that this was the seventh time that he had experienced floods but this was by far the worst. Stybeck fell Farm on the other side of the Ghyll was also damaged by the flood. Boulders and gravel were carried on Sty Beck to a depth of several feet. The beck runs into a tunnel under the road and empties into



Thirlmere. When this became choked the torrent burst through a wall and flooded the Keswick to Windermere road to 3 feet. The water also invaded Thirlmere School where the children had to be carried out.

3 Nov 1931  
BR  
Borrowdale (The Moraine) 5.24  
Keswick (Lingholm Gardens) 5.05  
Keswick (Derwent Island) old gauge 4.78  
Keswick (Derwent Island) new gauge 4.54  
Keswick (High Hill) 4.87  
Portinscale (High Moss) 4.64  
Threlkeld (Blencathra San.) 3.47  
Lowseswater 3.06

British Rainfall reported that Derwentwater and Bassenthwaite were joined in one great lake and that considerable erosion occurred as the heavy rain ran off steep slopes.

Cockermouth was flooded with water into Main Street, High Sand Lane, Waterloo Street and the Goat. No information was available elsewhere.

BR shows the synoptic chart for the day with an intense low off the NW coast of Scotland with trailing fronts and a strong southwesterly airstream.

9 Jan 1932  
BR  
Buttermere (Hassness) 3.4  
Watendlath Farm 3.18  
Borrowdale (The Moraine) 3.81  
Keswick (Lingholm Gardens) 2.9  
Keswick (Derwent Is.) old 2.66  
Patterdale Hall 3.72

Rainfall occurred generally over western mountains from Dartmoor to SW Scotland including the Lake District.

30 Jun 1932  
BR  
Watendlath Farm 2.75  
Borrowdale (The Moraine) 2.86  
Patterdale Hall 2.57

12 Jul 1932  
BR  
Keswick (Lingholm Gardens) 2.66  
Keswick (High Hill) 2.56  
Keswick (Derwent Is.) old 2.83  
Portinscale (High Moss) 2.7

16 Dec 1932  
BR  
A fall of 4 inches was reported in the Keswick area and more than double that in the Borrowdale valley. Nearly 3 inches fell in one day at Keswick and 6 inches in Borrowdale.

Weather observer at Borrowdale The Moraine noted 'continuous rain with very heavy squally downpours, roads and fields flooded. Derwentwater and Bassenthwaite were again said to be joined.

Cumberland  
News  
Carlisle Journal

5.2 inches (132 mm) recorded at the castle (Cockermouth) in six days.  
16th  
Buttermere (Hassness) 4.92

Flooding occurred after three days of almost continuous rain In Borrowdale it was said to be the highest flood for 36 years (Cumberland News) and more generally the Carlisle Journal reported that the floods were the most extensive experienced for over 40 years in the area between Keswick and the coast.

CBHE

Keswick (Lingholm Gardens)	3.62
Keswick (High Hill)	2.87
Keswick (Derwent Is.) old	3.13
Portinscale (High Moss)	3.09
Cockermouth (Loweswater)	3.72
Borrowdale (The Moraine)	5.18
Watendlath Farm	4.75
Caldbeck (Wellbank)	2.82
Patterdale Hall	3.65
Patterdale (Greenside Mine)	4.13
17 <sup>th</sup>	
Buttermere (Hassness)	2.68
Borrowdale (The Moraine)	4.05
Watendlath Farm	3.28
18 <sup>th</sup>	
Buttermere Hassness	2.65

Low-lying land between Thirlmere and Keswick was inundated as Thirlmere overflowed. The Greta at Keswick threatened to overflow but it fell short by a few inches and there was no serious flooding there.

With the highest rainfall over Borrowdale, Derwentwater and Bassenthwaite were said to be the biggest and highest ever known having become one lake. The water was up to the edge of the pathway down to Friar's Crag. Boat landings and sheds and their contents were washed into the lake. The boathouse on Derwent Island was almost submerged. Downstream, the River Derwent overflowed at Portinscale Bridge and at Braithwaite Bridge and in the main road in both places was 2 to 3 feet under water.

The main damage was done however downstream at Cockermouth from the sequential effects of the Derwent and Cocker. The Cocker rose rapidly on Friday 16th, then subsided but later rose again to a peak around 0400 on 17th, flowing over the Barrel Bridge and into the houses on High Sand Lane. During the 17th the Derwent started to rise and between 2300 on 17th and 0100 on 18th it overflowed and rushed down streets finishing up with 3 feet of water at the junction of Main Street and Sand Lane. The Main Street was inundated to a depth of 2 feet for 300 yards. It was in the Globe Hotel to a depth of 8 inches. In side streets and alleys over 100 houses were completely isolated, and in some 'it was barely a foot from the ceilings of the kitchens and parlours'. 'It went up Lindsey's yard and Irving's court like a torrent'. In the thoroughfare behind Main Street on the banks of the Derwent, water flowed like a millrace and inhabitants were confined to upper rooms. Houses in High Sand Lane and Waterloo Street were flooded to half way up their windows. Main Street was flooded from the Police Station to Wordsworth House and the water was over Barrel Bridge and halfway up the stairs of High Sand Lane houses.

Two hundred people in the area known as The Goat were marooned. Sandair cricket field was under water eight feet deep and the rugby field was little better. All roads into the town were impassable for more than an hour.

Four photographs which appeared in the Cumberland News are reproduced as Figure 3. Two photographs from Bradbury (1995) show the River Cocker again overtopping the Barrel bridge are reproduced as Figure 4 and 5. Figures 6, 7 and 8 (again from Bradbury, 1995) show Cockermouth Main Street looking towards the Mayo statue, a fisherman in the Main Street and the River Cocker taking a

short cut down South Street, looking towards Quaker Bridge.

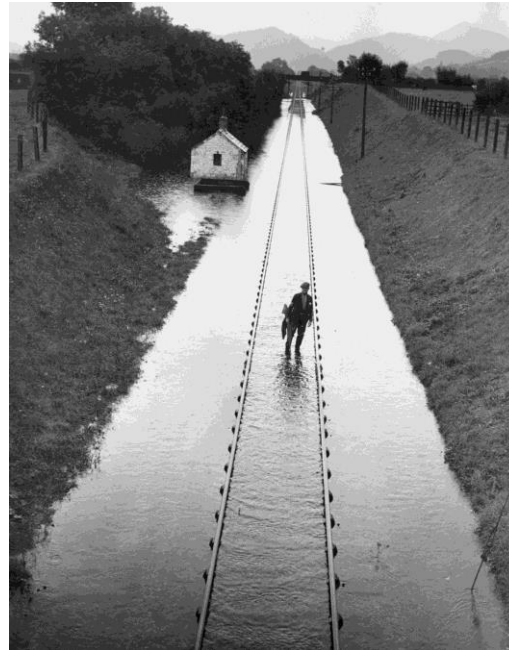
Although both Cocker and Derwent caused flooding it was the effects of the River Derwent which were more serious during this event.

The river Derwent caused damage to land and property in the Great Broughton district, inundating several hundred acres of land. A house at the Penny Bridge Great Broughton was surrounded and the road from Great Broughton to the main Cockermouth Workington road was impassable at Stoneybeck Lane. The roads from Great Broughton to Ribton and Camerton were also flooded several feet deep in places. At Carr Meadow the footpath to Camerton Parish Church had water spread over 100 yards. At Salmon Hall the water reached the top of the railway fencing. At Workington it inundated the Mill Field and flooded houses in Park View to a depth of one foot.

Flooding also occurred in Carlisle from the River Eden but more unusually also at the Maryport suburb of Grasslot from a small channel. Sixty houses and several shops were flooded and only two streets were unaffected. Floods were unknown there to 'all residents under 40 years of age'.

2 Jan 1933 BR	Watendlath Farm	3.05
	Buttermere (Hassness)	3.28
	Keswick (Lingholm Gardens)	3.29
	Keswick (Derwent Is.) old	3.07
	Portinscale (High Moss)	2.68
	Patterdale Hall	3.23
31 Jan 1933 BR	Patterdale (Greenside Mine)	2.8
	Ullswater Hallsteads	2.73
	Cadbeck (Wellbank)	3.05
	Watendlath Farm	5.5
	Buttermere (Hassness)	3.96
	Keswick (Lingholm Gardens)	3.58
6 Jan 1934 BR	Keswick (Derwent Is.)	2.9
	Borrowdale The Moraine	3.33
	Watendlath	2.75

4 Sep 1934  
<https://www.buzfeed.com/matthewtucker/extraordinary-vintage-photos-of-uk-flooding>



Man walking along flooded single railway track near Braithwaite

30 Sep 1934  
 BR

Borrowdale The Moraine 3.49  
 Watendlath Farm 3.50  
 Hassness 4.10

9 Jan 1936  
 BR

Watendlath Farm 3.2  
 Thirlmere (Dale Hd. Hall) 3.44  
 Hawes Water (Burn Banks) 2.81

24 Oct 1936  
 BR

Borrowdale (The Moraine) 4.57  
 Watendlath Farm 5.30  
 Thirlmere (Dale Head H.) 2.62

13 Dec 1936  
 BR

Borrowdale (The Moraine) 3.11  
 Watendlath Farm 3.27  
 Buttermere (Hassness) 2.96  
 Thirlmere (Dale Head H.) 3.00  
 Cockermouth (Loveswater) 2.67  
 Keswick (Lingholm Gardens) 3.32  
 Keswick (Derwent Island) 2.50  
 Portinscale (High Moss) 2.57

At Watendlath Farm the heavy rain commenced at 11.30 and ended at about 21.30. The streams rose in flood very rapidly and sheep were surrounded by water after only two hours of rain. Patterdale was affected and Ullswater filled quickly.

14 Jan 1938 BR	Lorton (The Bungalow)	2.59
	Thirlmere (Dale Hd. Hall)	2.5
	Watendlath Farm	3.08
	Grange-in-Borrowdale	3.2
	Borrowdale (The Moraine)	2.5
28 Jun 1938 BR	New Dungeon Ghyll Hotel	3.35
	Borrowdale (The Moraine)	3.1
	Buttermere (Hassness)	2.58
29 July 1938  BR	Thirlmere (Dale Hd. Hall)	2.69
	Threlkeld (Skiddaw Ho.)	2.8
	Kershope Ft. (Kershope Ho.)	4.46
	Borrowdale (The Moraine)	5.6
Carlisle Journal 2 Aug  Johnson & Warburton (2002)  Dodd (1996)	Watendlath Farm	5.95
	Buttermere (Hassness)	7.14
	Thirlmere (Dale Hd. Hall)	2.96
	Cockermouth (Loveswater)	4.06
	Keswick (Lingholm Gardens)	2.88
	Workington (Stainburn Res.)	2.8
Ulpha	3.93	

The rainfall occurred in a pronounced southwesterly current mostly in the warm sector close to a slow moving cold front which was so poorly defined that its position on the map can only be given approximately. No thunder was reported in BR.

Very heavy rainfall occurred in the upper part of the catchment with a daily total of 6 to 7 inches as Borrowdale, 4 to 5 inches at Newlands and Braithwaite. As a summer flood, the inundation of agricultural land had a much more damaging effect than the more common winter floods. Derwentwater and Bassenthwaite were joined together but Keswick itself was free of floods. Thirlmere was so low that it was capable of taking all the flood water and did not overflow. Footbridges at Scafell Hotel and at Styhead were washed away and at Mountain View the water almost reached the houses. Traffic to Cockermouth was diverted to the Castle Inn side of Bassenthwaite to avoid deep flooding at Braithwaite and Portinscale.

In Cockermouth on this occasion the River Cocker alone was responsible for the flooding of the Main Street, although the Derwent later overflowed into the lower part of the town. The Main Street was flooded to a depth of 3 feet and Carlisle Journal reported it to be the worst flood there since 1918. The Cocker rose very rapidly – 3 feet in 1 hour. When shops were first opened there was no sign of a flood but early customers had to leave by the back to avoid the rising water. The water rose over the Quaker Bridge connecting Lower South Street and Cocker Lane; it was pounded by tree trunks and it cracked in the centre and most of the steel railings and stone masonry were swept away. The Barrel Bridge collapsed at 1330. A large part of the town suffered losses and many houses and shops were damaged. Challoner Street was converted into a roaring torrent, three feet deep. On a lane off Market Street water was lapping the tops of ground floor doors. Horseman Street suffered from the backing up of drains. The proprietor of Huddart's shop on the Keswick side of the Cocker Bridge had to leave for safety; he said that in 1918 the flood did not reach the top stair of the cellar whilst on this occasion it was 2 feet over it. The shop was later demolished and the business moved next door and is still

there. A South Street resident of 50 years who had 4 feet of water in her living room said it was the highest experienced, the previous highest being in Oct 1918. A 15 lb pike was caught in the Main Street.

Observed from Derwent Mill Bridge the Cocker was riding 6 feet higher than the Derwent, pounding against the remains of Barrel Bridge. During the night the Derwent rose to flood properties, but in the meantime the Cocker had subsided. It was said that additional square arches added to the Goat Bridge kept most of the Goat free of floodwater and only houses at the lower end were affected.

After the flood hundreds of tons of gravel were found deposited near the junction of the Derwent and Cocker 100 yards below the wrecked Barrel Bridge. The Carlisle Journal published a page of flood photographs which are reproduced in a JBA report of historical flooding to the Environment Agency as follows:

- A view of the Main Street from the Globe Hotel
- Surcharged water upstream from Cocker Bridge emerging from beneath the Midland Bank
- Challoner Street transformed into a roaring torrent
- Policeman assisting stranded shoppers
- River Cocker overtopping the Barrel Bridge
- Main Street Cockermouth
- A view of the River Cocker from Cocker Bridge
- Pedestrians viewing the flood from the corner of Station Street and Main Street
- The broken Jubilee footbridge at the foot of Cocker Brow
- The extreme turbulence of the Cocker flowing into the Derwent below Barrel Bridge.

A further three photographs are reproduced from Bradbury (1995) as follows:

- South Street leading to Challoner Street
- Waterloo Street
- Surging and turbulent flow over the remains of Barrel Bridge.

Workington escaped with little damage, although at the Workington Bridge Station, trains had to

travel through water three feet deep which partly covered the platforms. The Grasslot area of Maryport was again flooded and even more seriously than in 1932 or in Dec 1933. A hundred houses, some shops and a church were affected. The River Ellen overflowed onto roads and into houses. The end of Collins Terrace near the Maryport Workington road was first to suffer and water was 4 feet deep at the entrance to the street eventually rushing over the higher part of the road opposite Roper Street. Lower Grasslot Street resembled a canal. All the houses in this part have steps down to them and the lower rooms had 3 to 4 feet of water in them. Garner Street and houses on the main road were also flooded. Many houses have storm boards issued by the Urban District council after the last flood but in most cases the flood rose above the top of the 3 feet boards. The main Road from the Station Hotel to Collins Terrace was under water for 600 yards. At Dearham a family were trapped in upper rooms; Sandhams provision Stores were surrounded. Craika Road was flood from the rear.

The Rotarians of Cockermouth opened a Flood Relief Fund and many houses were supplied with coal.

Whitehaven  
News 4 Aug 1938

Lorton Vale – the flood was nearly half a mile wide

Sothwart Mill farm was surrounded by 7 feet of water

Workington – little damage was done but at Workington bridge Station trains had to travel through 3 feet of water which partly covered the platform.

Grasslot – After 30 hours of rain about 100 houses and shops were flooded. Many people are still paying off their debts for refurnishing after the last flood 4 ½ years ago.

River Ehen rose so rapidly that people had little opportunity to get property to safety. The Black bridge was swept away and another bridge upstream.

Egremont – the main road over the bridge at the South entrance to Egremont was flooded to 3 feet and a wall at bridge End was swept away and several houses flooded. Egremont Rugby Club was flooded to several feet and the Bowling green was flooded.

At Low Mill south of Egremont one house was flooded to several feet and inhabitants made their escape by a latter through the bedroom window. From Low Mill to the Sea was one vast lake and Braystones was completely cut off and every house flooded.

At Wath the Ehen burst through a hedge, demolished a wall and cut off the road from Ennerdale to Cleator Moor.

Cleator – Mill Street and Hilden Street were marooned and invaded some houses. A small bridge at Cleator was broken in two.

Whitehaven escaped the worst damage and there have been more severe storms here. 2.33 inches

rain was reported in 24 hours – not as severe as in August 1931 (no record above). Some flooding occurred at the bottom of New Road.

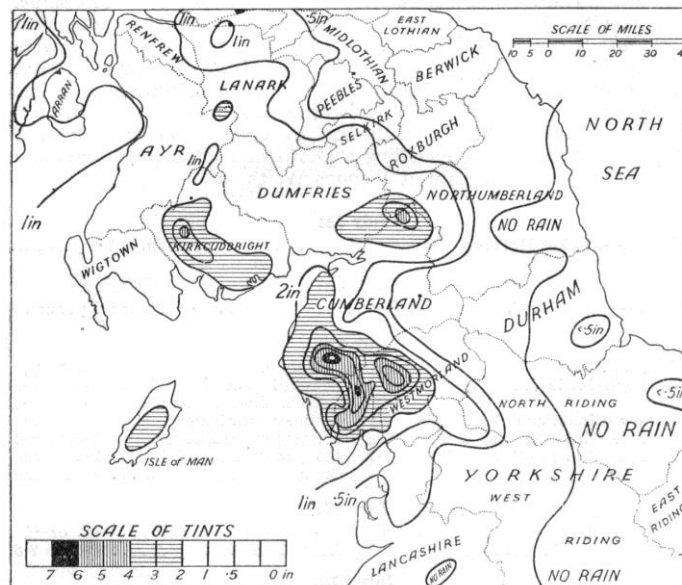
Distington – the becks were the highest on record. Beck Side Leads bridge was damaged. Beck Green tenants were driven upstairs. A child was saved after falling in.

Millom was practically isolated.

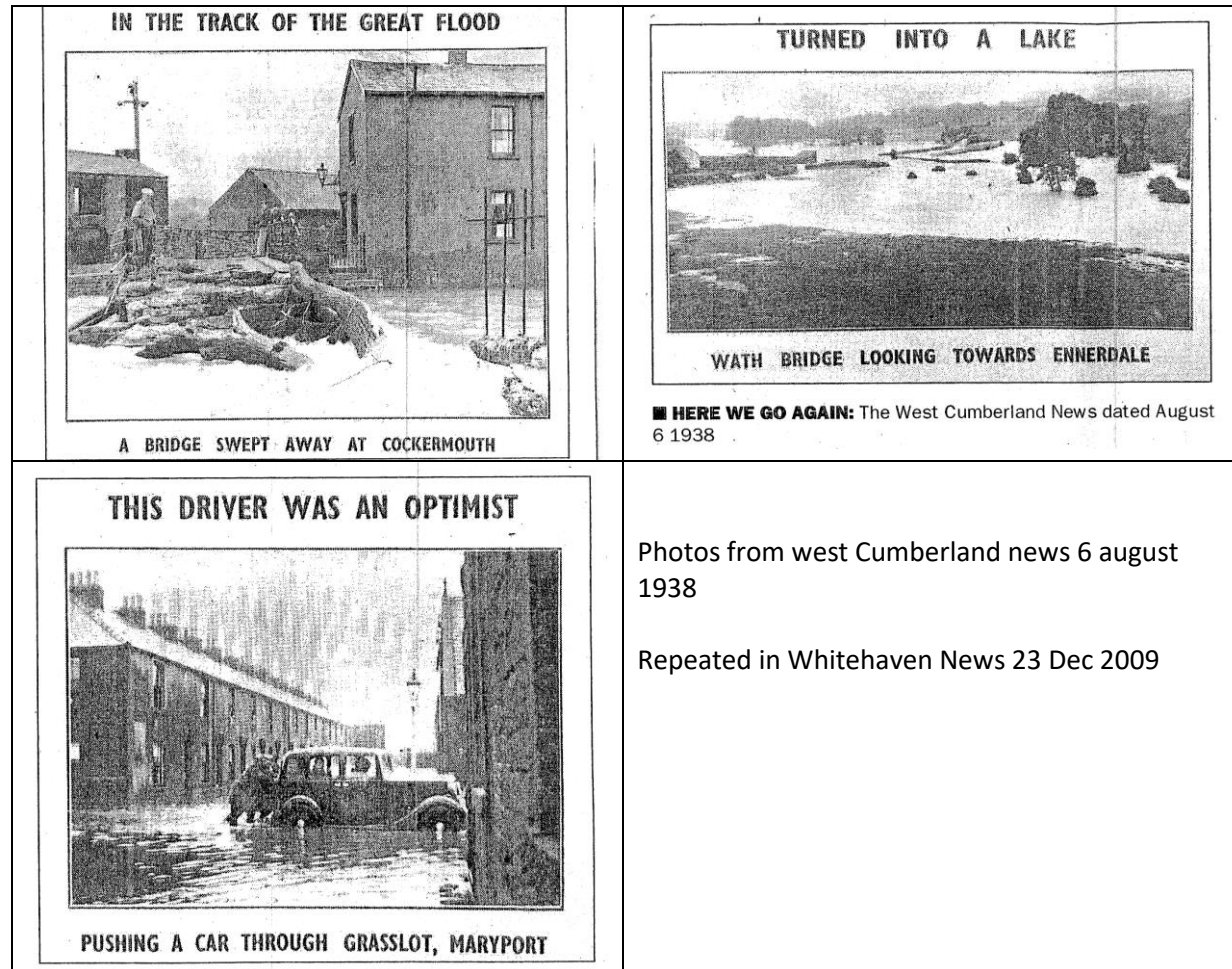
Broughton – 26 cows were swept downstream but only one was drowned.

River Irt reached its highest level in history. Cottages never flooded before were affected at Meadow View and also the Reading Room. East of the bridge the water on the road was 6 feet deep. A mark of a flood 60 years ago was exceeded by some inches. The footbridge on the path to Ireton Church was badly damaged.

River Calder rose to a record height exceeding the flood of 20 October 1909 by 1 inch. Records were taken by Mr Rymer of Calder Abley who made marks on a churchyard wall. There was 2 ½ feet of water in St Bridget's Church basement.







12 Aug 1938  
BR

Kendal Crosthwaite Low Fell 1.08 in  
55 mins

Dodd 1996

Dodd (1996) reports on a flood at Lingmell Fell in August 1938; mountain torrent on the west of Scafell. Boulders were deposited on an alluvial fan and the flood resulted in the loss of pasture land. There is only one reference to heavy rainfall in the Lake District in August although there were intense thunderstorms reported elsewhere from 3<sup>rd</sup> to 12<sup>th</sup> including SW Scotland. It is also possible that erosion was caused by the more prolonged flood on 29 July.

2-6 Oct 1938  
BR

<b>Daily totals 2<sup>nd</sup></b>	
Threlkeld (Skiddaw Ho.)	2.5
Borrowdale (The Moraine)	2.99
Watendlath Farm	2.75
Buttermere (Hassness)	2.8
Keswick (Lingholm Gardens)	2.98
Keswick (Derwent Island)	2.6
<b>Daily totals 3<sup>rd</sup></b>	
Matterdale Council School	3.76
Threlkeld (Skiddaw Ho.)	2.6
Borrowdale (The Moraine)	3.86
Watendlath Farm	4.63
Buttermere (Hassness)	3.98
Thirlmere (Dale Hd. Hall)	3.7
Keswick (Lingholm Gardens)	3.11
Keswick (Derwent Island)	2.7
Keswick (High Hill)	2.96
Portinscale (High Moss)	2.73
Threlkeld (Blencathra San.)	2.5
Ulpha	3.05
<b>Daily totals 6<sup>th</sup></b>	
Borrowdale (The Moraine)	3.49
Watendlath Farm	3.23
Buttermere (Hassness)	2.83
Thirlmere (Dale Hd. Hall)	2.53
Matterdale (Council School)	4.05
Threlkeld (Skiddaw Ho.)	4.1
Troutbeck (Wellbank)	3.54
Borrowdale (The Moraine)	3.5
Watendlath Farm	4.1
Buttermere (Hassness)	3.49
Thirlmere (Dale Hd. Hall)	3.85
Keswick (Lingholm Gardens)	3.62
Keswick (Derwent Island)	3.45
Portinscale (High Moss)	2.99
Keswick (Mirehouse)	2.7
Threlkeld (Blancathra San.)	3.16
Ulpha	2.8
7 <sup>th</sup>	
Borrowdale (The Moraine)	2.95
Watendlath Farm	2.76

Between 2 and 5 Oct depressions moved north-east over Scotland with very unsettled weather with severe gales on 4<sup>th</sup> and widespread thunderstorms on 5<sup>th</sup>.

12 Nov 1938  
BR

7/8 Jan 1939  
BR

Flooding in England in January was due to frequent and persistent rains rather than any daily falls of unusually large amounts

	8 <sup>th</sup>	
	Borrowdale (The Moraine)	2.5
	Watendlath Farm	2.81
	Grange (Bield)	2.69
8 Feb 1939	Borrowdale (The Moraine)	3.64
BR	Watendlath Farm	3.25
	Grange (Bield)	3.03
1 Mar 1939	Borrowdale (The Moraine)	2.95
BR	Grange (Bield)	2.61
	Ulpha	2.94
28 Jul 1939	Borrowdale (The Moraine)	3.24
BR	Watendlath Farm	2.77
	Grange (Bield)	3.17
	Ulpha	2.69
	Patterdale (Greenside Mine)	2.54
25 Nov 1939	Borrowdale (The Moraine)	3.01
BR	Watendlath Farm	2.76
	Grange (Bield)	2.63
16 Sep 1940	Borrowdale (The Moraine)	3.3
BR	Watendlath Farm	3.07
5 Oct 1940	Borrowdale (The Moraine)	2.55
BR	Watendlath Farm	2.75
	Grange-in-Borrowdale	3.16
23 May 1941	Grange-in-Borrowdale	2.57
BR	Keswick (Lingholm Gardens)	2.53
	Braithwaite (Spring Bank)	2.54
	Threlkeld (Blencathra)	3.1
9 Oct 1941	Keswick (Lingholm Gardens)	3.1
BR	Keswick (Derwent Island)	3.07
	Hallthwaites (Baystone Res.)	3.55
	Ulpha	3.41
4 Sep 1942	Keswick 2.86 in 13 hrs	
BR	Troutbeck (Wellbank)	2.57
	Borrowdale (The Moraine)	5.08
	Watendlath Farm	4.7
	Thirlmere (Dale Hd. Hall)	2.82
	Grange-in-Borrowdale	5.33
	Keswick (Lingholm Gardens)	3.12
	Keswick (High Hill)	2.86
	Braithwaite (Spring Bank)	3.64

No reference in BR to thunderstorms or intense rainfall

Mr T Wilson of Keswick reported that at Seathwaite the valley was full of water, Sour Milk Ghyll having poured stones into the river bed causing the water to overflow and that at Grange the river flowed over the bridge. This has not occurred since November 1898.

	Hawes Water (Burn Banks)	3.12
	Patterdale Hall	4.25
	Patterdale (Greenside Mine)	4.14
9 Oct 1942	Watendlath Farm	4.67
BR	Thirlmere (Dale Hd. Hall)	3.4
	Grange-in-Borrowdale	2.77
	Keswick (Lingholm Gardens)	2.8
	Keswick (Derwent Island)	2.52
28 Jan 1943	Borrowdale (The Moraine)	3.68
BR	Watendlath Farm	3.36
	Grange-in-Borrowdale	3.22
14 Sep 1943	No specific rainfall figures noted	
BR		
5 Oct 1943	Borrowdale (The Moraine)	3.21
BR	Watendlath Farm	3.34
	Thirlmere (Dale Head Hall)	3.28
	Grange-in-Borrowdale	4.44
	Keswick (Lingholm Gardens)	3.27
	Braithwaite (Spring Bank)	3.15
	Patterdale (Greenside Mine)	3.34
19 Apr 1944	Borrowdale (The Moraine)	3.33
BR	Watendlath Farm	2.6
	Thirlmere (Dale Head Hall)	2.5
	Grange-in-Borrowdale	3.08
27 Aug 1944	Borrowdale (The Moraine)	2.6
BR	Hallthwaite (Braystone Reservoir)	2.85
	Ulpha	3.15
19 Jul 1945		
BR		
24 Oct 1945	Borrowdale (The Moraine)	4.85
BR	Watendlath Farm	4.2
	Thirlmere (Dale Head Hall)	3.49
	Grange-in-Borrowdale	3.32
	Patterdale Hall	4.07
4 Jun 1946	Borrowdale (The Moraine)	3.42
BR	Watendlath Farm	3.26
	Grange-in-Borrowdale (Bield)	3.16

On 9<sup>th</sup> three fronts associated with a deep depression to the N of Scotland followed each other rapidly across the British Isles. There was widespread heavy rain and local thunder.

BR notes that rainfall of abnormal intensity was also reported from the Cockermouth district of Cumberland. Widespread severe thunderstorms were reported from many other parts of England 'Between Oct 2 and 6<sup>th</sup> Caldbeck north of Skiddaw received 10.2% (5.39 ins) of the year's total. The fall of 4.44 at Grange was the highest daily total in GB during 1943. Serious flooding was associated with these rains'

A trough of low pressure moved across the British Isles.

BR notes that two thunderstorms on that day yielded 1.68

On the 4<sup>th</sup> a depression to the north-west of Ireland moved eastwards, the fronts associated with it remaining quasi-stationary over northern England. Rain was general and was especially heavy in the Lake District and in North Wales.

22 Dec 1946 BR	Patterdale Hall	2.6
	Borrowdale (The Moraine)	2.8
	Watendlath Farm	2.6
	Grange-in-Borrowdale (Bield)	2.55
5 Apr 1947 BR	Borrowdale The Moraine	2.50
	Watendlath Fm	2.50
	Grange	2.98
	Keswick Lingholm Gdns	3.00
	Keswick High Hill	2.51
21 Apr 1947 BR	Borrowdale The Moraine	2.83
	Watendlath Fm	3.20
	Thirlmere Dale Head Hall	3.22
	Grange	4.10
	Keswick Lingholm Gdns	3.40
	Keswick high Hill	2.90
14 May 1947 Manchester Guardian	Braithwaite	3.00
11 Nov 1947 BR	Borrowdale (The Moraine)	3.6
	Watendlath Farm	3.03
21 Nov 1947 BR	Borrowdale (The Moraine)	4.5
	Watendlath Farm	2.61
31 Mar 1948 BR	Thirlmere (Dale Head Hall)	4.28
	Grange-in-Borrowdale (Bield)	4.33
	Braithwaite (Blackwood)	2.55
2 Jun 1948 BR	Borrowdale (The Moraine)	3
	Grange-in-Borrowdale (Bield)	2.93
	Braithwaite (Blackwood)	3.51
22 Feb 1949 BR	Borrowdale (The Moraine)	3.2
	Watendlath Farm	3.15
3 Apr 1949 BR	Watermillock (Lake View)	3.03
	Troutbeck (Wellbank)	2.85
	Watendlath Farm	4
	Borrowdale (The Moraine)	4.1
	Thirlmere (Dale Head Hall)	3.85

West Cumberland had one of the worst storms it has known with thunder and lightning from 2 am to noon accompanied by rain and hail. Flooding was reported in many parts of the area. Many houses were flooded at Workington and at Harrington water came in the back door of houses and out the front into the street. The main road from Cockermouth to Workington was flooded to over two feet and at Lorca large areas of tar macadam were forced from the road.

Sprinkling Tarn at the head of Borrowdale had 32 inches total rainfall in November, the highest monthly total in England for the year.

An intense depression off northwest Ireland brought widespread rain and gales to western districts from Devon to Perthshire. Heavy seas and high winds caused considerable damage in coastal areas.

	Keswick (Derwent Island)	3.1
	Keswick (High Hill)	2.9
	Braithwaite (Blackwood)	3.1
17 Oct 1949	Grange-in-Borrowdale (Bield)	3.38
BR	Keswick (Derwent Island)	2.53
	Keswick (High Hill)	2.74
	Braithwaite (Blackwood)	2.5
	Ulpha (Intake)	2.57
12 Nov 1949	Troutbeck (Wellbank)	3.44
BR	Borrowdale (The Moraine)	3.21
	Watendlath Farm	3.26
	Thirlmere (Dale Head Hall)	2.55
	Keswick (High Hill)	2.6
	Braithwaite (Blackwood)	2.5
25 Dec 1949	Borrowdale (The Moraine)	2.89
BR	Watendlath Farm	3.5
	Thirlmere (Dale Head Hall)	2.8
	Grange-in-Borrowdale (Bield)	2.85
6 Jan 1950	Watendlath Farm	4.00
BR	Thirlmere (Dale Head Hall)	3.63
6 Sep 1950	Watendlath Farm	3.45
BR	Thirlmere (Dale Head Hall)	3.72
24 Sep 1951	Watermillock (Lake View)	2.63
BR	Watendlath Farm	3.25
	Thirlmere (Dale Head Hall)	4.53
	Keswick (High Hall)	2.93
	Hawes Water (Burn Banks)	3.16
	Patterdale Hall	3.95
5 Nov 1951	Thirlmere (Dale Head Hall)	3.59
BR	Patterdale Hall	3.02

Thundery rain was common on 24<sup>th</sup> to 27<sup>th</sup> giving the heaviest daily fall of the year at Thirlmere.

Widespread southwesterly gales and heavy rain occurred on 4th and 5th and rivers began to rise rapidly. The basins of the Yorkshire Ouse and Severn were the most seriously affected the flood at York being the highest since 1931 with the exception of March 1947. A notable feature of these floods was that they occurred suddenly after a very dry period when most rivers were at a remarkably low level for the time of year. It might have been expected that the ground would have been able to absorb very considerable amounts of rain and delay the rising of the rivers but the falls were sufficient to saturate the surface layers and cause heavy runoff in a short time. Most of the Pennines, the Lake District had their heaviest falls on 4th whilst the Yorkshire Wolds and Cleveland Hills had theirs on 5th. For the two days more than 3 inches occurred over the North York Moors and in the Lake district

15/16 Nov 1951 BR	Ravenglass (The Grove) 3.35 Patterdale Hall 3.00 Thirlmere (Dale Head Hall) 2.54 Patterdale Hall 3.29
27 Jun 1953 Lancs Evg News 27 Jun	The day of the severe flood at Troutbeck (See S lakes)
21 Sep 1953 BR	Thirlmere (The Nook) 2.87 Watendlath Farm 2.9 Thirlmere (Dale Head Hall) 2.69 Ulpha 2.77 Martindale (Howtown) 2.66
30 Sep 1953 BR	Thirlmere (The Nook) 2.75 Thirlmere (Dale Head Hall) 2.51
26 Nov 1953 BR	Watermillock (Lake View) 2.57 Troutbeck (Wellbank) 2.56 Thirlmere (The Nook) 4.26 Watendlath Farm 3.5 Thirlmere (Dale Head Hall) 3.34 Hawes Water (Burn Banks) 3.17 Patterdale Hall 4.86 Martindale (Howtown) 2.95
15 Jun 1954 BR	Thirlmere (The Nook) 2.81 Borrowdale (The Moraine) 3.81 Watendlath Farm 2.95 Gosforth (Netherwasdale) 2.62
27 Jul 1954 BR	Borrowdale (The Moraine) 2.83 Watendlath Farm 2.85 Thirlmere (Dale Head Hall) 2.55 Patterdale Hall 2.85 Great Langdale (Long House) 2.81
9 Sep 1954 BR	Borrowdale (The Moraine) 2.61 Watendlath Farm 2.5
15-18 Oct 1954 BR	15 <sup>th</sup> Borrowdale (The Moraine) 3.28 Watendlath Farm 3.4 Thirlmere (Dale Head Hall) 2.5
Whitehaven News 21 Oct	17 <sup>th</sup> Borrowdale (The Moraine) 2.93

The period of very wet weather finally came to an end on 26<sup>th</sup> Nov and the Yorkshire Post noted that 'Windermere is almost half a mile longer at each end and many yards wider.

Aspatia: A thunderstorm caused a landslide which blocked the railway between Carlisle and Whitehaven.

A very deep depression affected western districts.

Intense rainfall was followed by persistent rain but heaviest in S Lakes.

Rainfall was caused by the passage of a depression.

A small active depression brought heavy rain to Snowdonia and the Lake District.

'July was another month in which depressions followed tracks far to the south of the route usually taken in the summer'

WN reports west Cumberland's worst flood for 25 years following 48 hours of incessant rainfall. At Maryport the River Ellen was reported as at the highest level ever – it flooded property in the highest part of Senhouse Street between the Town Hall and Crosby Street corner that had never

	Watendlath Farm 18 <sup>th</sup>	2.82	flooded before. The Ellen spread across Netherhall Park to the new secondary modern school, around ¼ mile wide and around one cottage it was 5 feet deep. The family were rescued with difficulty. The rainfall at Maryport was 3.6 inches in 72 hours. River Liza flooded some houses in Wigton, rising 6 feet above its normal height. It caused damage to a paper making factory and to the West Cumberland Farmers depot where the water was 1 foot deep.
	Thirlmere (The Nook)	2.68	
	Borrowdale (The Moraine)	2.78	
	Watendlath Farm	2.5	
29 Oct 1954 BR	Thirlmere (The Nook) Watendlath Farm	2.64 2.64	Cumberland News stated that the floods were the worst in 20 years. There was more than 8 inches of rain at Seathwaite over the weekend. Keswick Reminder reported that Derwentwater and Bassenthwaite were joined as one mighty sea. 'It has happened many times now; in fact it is almost tradition'. The burghers of High Hill boarded their gates and doors and the water flowed round the corner of Crosthwaite Road and into the street. It did not, however get into the houses. It overflowed and flooded the Howrahs between Keswick School of Industrial Arts and Portinscale Bridge.
Cumberland News			
			At Cockermouth it was said that flood prevention work particularly the increased bridge capacity, done just before World War II was believed to have prevented damage of the 1932 proportions above the Goat Bridge. Some houses in Waterloo Street were flooded and it overflowed the doorsteps of some 20 houses in the Goat. The Sandair cricket ground and adjoining fields were under water. Police houses in Castlegate were flooded to a depth of 6 inches.
27 Nov – 2 Dec 1954 BR	27 <sup>th</sup> Thirlmere (The Nook) Thirlmere (Dale Head Hall) 30 <sup>th</sup> Borrowdale (The Moraine) 1 Dec	2.65 3.25 2.55	This was the culmination of an exceptionally wet autumn; more than 2 inches of rain fell at Keswick. The Keswick Reminder stated that 'this was probably as big a flood as any known. The West Cumberland Times noted that Derwentwater was 7 feet above normal level and 1/4 inch higher than the record of 1861. Seatoller, Newlands and St John in the Vale were cut off by water 4 feet deep on the roads. The River Greta overflowed into Keswick Park and houses in Crosthwaite Road and High Hill were flooded to a depth of 2 to 3 feet. Keswick Pavilion was flooded. Children at Keswick School were sent home when the flood water entered the grounds and penetrated into the school. Portinscale Bridge was damaged by the flood (Figure 22).
	Thirlmere (The Nook) Borrowdale (The Moraine) Watendlath Farm	3.01 3.35 3.4	
	Thirlmere (Dale Head Hall)	2.65	
9 Jan 1955 BR	Thirlmere (The Nook) Borrowdale (The Moraine) Watendlath Farm	3.02 4.07 3.65	At Cockermouth The River Cocker was appreciably lower than in October but the Derwent was much higher and the Goat suffered more severely. It is noted that whereas the Derwent at Keswick reached a peak on the afternoon of Thursday, the peak in Cockermouth was at 0300 to 0400 on Friday.
2 Jul 1955 BR	Ravenglass (The Grove)	2.92	



27 Dec 1955 Borrowdale (The Moraine) 2.78  
BR Watendlath Farm 2.6

29 Jul 1956 Braithwaite Black wood 2.50  
BR

27 Aug 1956 Uldale (Chapel House Reservoir) 2.65  
BR Troutbeck (Wellbank) 2.84  
Thirlmere (The Nook) 2.55  
Keswick (High Hill) 2.92  
Keswick (Mire House) 2.5

<http://www.cumbria.gov.uk/eLibrary/Content/Internet/536/4042394623.pdf>

4 Jan 1957 Thirlmere (The Nook) 2.5  
BR Thirlmere (Dale Head Hall) 2.78

? ? 1958  
Whitehaven  
News 23 Sep  
1993

10 Aug 1958 Keswick High Hill 1.42 in 60 mins  
BR

12 Oct 1958 Borrowdale The Moraine 2.66  
BR

26 Oct 1959 Thirlmere (The Nook) 3.1  
BR Borrowdale (The Moraine) 3.57  
Thirlmere (Dale Head Hall) 3.19

21/22 Jan 1960 21<sup>st</sup>  
BR Thirlmere (The Nook) 2.5  
22<sup>nd</sup>  
Thirlmere (The Nook) 3.36  
Borrowdale (The Moraine) 3.42  
Thirlmere (Dale Head Hall) 2.86

30 Jan/ 2 Feb 1960 30 Jan  
BR Thirlmere (The Nook) 2.88  
Ulpha 3.31

Thunderstorms were widespread on 27<sup>th</sup> and 28<sup>th</sup> with high temperatures but none were reported on 29<sup>th</sup>.

A secondary depression moving north-eastwards over Wales and northeast England caused heavy falls in northern England and southern Scotland

WN has a photo of floods in the River Ehen in 1958 – but does not give a date.

After one of the hottest days of the year violent thunderstorms broke out in various parts of England. Severe and long lasting T/storms Scafell area. Rainfall estimated at 6" per hour. Changed the look of the scree for evermore. Large boulders ended up as far away as Eskdale

An intense depression which moved across northern Scotland was preceded by exceptionally large falls of pressure resulting in gale force winds and widespread heavy rain

	2 Feb		
	Thirlmere (The Nook)	3.02	
	Borrowdale (The Moraine)	2.62	
	Ulpha	3.05	
1/2 Nov 1960	1 <sup>st</sup>		
BR	Borrowdale (The Moraine)	2.89	
	2 <sup>nd</sup>		
	Borrowdale (The Moraine)	3.46	
25 Dec 1960	Thirlmere (The Nook)	2.7	
BR	Thirlmere (Dale Head Hall)	2.66	
15 Jan 1962	Derwent Island	2.5	Winds S to SW strong; frontal, orographic; warm and cold fronts moving east – vigorous depression in the Atlantic. High rainfall mainly in Lowther catchment.
BR	Braithwaite	3.52	
News & Star Nov 2000			A whirlwind was observed in the Egremont area.
2 Apr 1962	Borrowdale	5.1	Wind SW fresh to strong; frontal, orographic; warm front and cold front with wave moving east.
BR	Derwent Island	3	
	Braithwaite	3.15	
10 Aug 1962	Borrowdale	4.51	Winds SW fresh to strong; frontal, orographic; warm and cold fronts moving quickly east.
BR	Derwent Island	2.45	
Mar 1963			The Barrel Bridge, destroyed in the 1938 flood was not replaced until the beginning of 1963 (Bradbury, 1995). Work on the bridge was completed on a Friday but during the following weekend the Cocker rose and washed the supports away. The stonework was raised 18 inches and the bridge retrieved from the river and re-erected. Although the date of this occurrence was not noted, it may have been the snowmelt flood of 6 March which caused very high levels on other rivers in the north of England. Derwent at Camerton 1960-09 AMS Rank 3 AM 48
14 Jun 1963			
Hiflows UK			
12 Nov 1963	Braithwaite	2.79	
BR	Penriddock	2.54	
6 Oct 1964	Westwater Hotel	98.3	Frontal; occlusion moving east followed by cold front with wave.
BR	Borrowdale	117.1	
	Keswick, Braeside	97.3	
	Thirlmere, The Nook	102.9	
	Dale Head Hall	105.4	
	Braithwaite	75.9	
	Cockermouth Moor Res.	72.1	
	Great Broughton	57.1	
	Quarry Hill Filter Wks	51.8	

7-9 Dec 1964 BR	Hutton John	52.1
	Burn Banks	79.5
	7th	
	Keswick, Braeside	93.7
	Derwent Island	72.4
	Braithwaite	78.2
	Hutton John	57.1
	Burn Banks	86.4
	8 <sup>th</sup>	
	Keswick, Braeside	81.5
13 Aug 1966 BR Hiflows UK	Derwent Island	68.8
	Thirlmere, The Nook	107.9
	Dale Head Hall	95.5
	Patterdale Hall	104.1
	Burn Banks	89.4
	Summergrove	63.5
	St Bees Head	64.5
	Workington, Coke Ovens	57.4
	Braithwaite	74.7
	High Lorton	62.2
Newcastle Evening chronicle 15 Aug	Cockermouth Moor Res.	52.8
	Stainburn Res.	57.1
	Quarry Hill Filter Wks	53.6
	Bromfield	58.9
Cumberland News Aug 19	Brookfield	51.1

Frontal, orographic; warm front and cold front with wave moving east.

Depression, frontal orographic, thundery; wave depression off southwest England deepening and moving north-north-east. Also northeast England and much of Scotland.

Derwent at Camerton 1960-09 AMS Rank 1 AM 20

The Lake district was badly hit by the flooding. A four foot wall of water surged down Borrowdale valley sweeping away bridges, swamping grazing land and littering villages with tons of mud and debris. Honister pass was closed after a dam burst and the torrent tore a crater in the road.

Hotels and houses were flooded in Borrowdale in the biggest flood that most people in the valley can remember. At Seathwaite water gushed down the ghylls with such force that the river changed its course and rushed through Seathwaite farm. Long lengths of dry stone wall were breached and fences broken. At Seatoller the Hause Ghyll rushed down Honister Pass and carved out a new channel. It left a stone bridge standing high and dry and smashed through greenhouses and sheds in a row of gardens. A car fell into a gaping hole in the road at the foot of Honister. At Rosthwaite the flood was four feet high and carrying everything in its path. The footbridge of the Scafell hotel disappeared like straw. An observer stated 'It must have risen four feet in 10 minutes' and the hotel was flooded. Cars were picked up and washed down the main road. Two people were carried away by the flood but survived. Royal Oak was also flooded. At Grange it entered houses and swept completely over the top

Aug 1966	BR has no record of intense short period rainfall in the Lake District in August 1966	<p>of the two span bridge taking away the parapet walls. Flooding blocked the A596 Workington to Maryport road and the A 597 Workington to Cockermouth. Debris washed down the mountains blocked Scawghyll Brow, Whinlatter pass, Honister Pass and the Chapel Stile Dungeon Ghyll road.</p> <p>At Workington houses in Low Harrington near the harbour were flooded as were houses in Brayton Street.</p> <p>At 9 Kirkgate Cockermouth a house was filled to ceiling level. Cars were washed away. St Helens Street in Cockermouth was flooded with water up to the occupant's neck. Many people in Wigton, Silloth and Aspatria ahd up to a foot of water in their houses..... (See below)</p> <p>An intense summer thunderstorm centred to the east of Cockermouth resulted in flooding neither from the Cocker nor the Derwent but from the minor tributaries of the Cocker, the Tom Rudd Beck and Bitter Beck. A culvert at Butts Fold collapsed blocking the channel so that water poured downs St Helen's Street flooding about 50 houses and shops as far as Cocker Bridge. No 9 Kirkgate (now demolished) had water 4 to 5 inches in the house. The height of the water in the Market Place is shown on the door frame of Banks' ironmonger shop by a line 31 inches above pavement level. Tom Rudd Beck also overflowed and flooded the Skinner Street area.</p> <p>As a consequence the Bitter Beck Scheme was prepared which involved the reculverting of the beck. At the same time many old vulnerable buildings were demolished including the lower end of Kirkgate.</p> <p>Turner (1989) estimated that the Langdale and Borrowdale floods of 1966 cost an estimated £200,000 in loss of livestock destruction of bridges walls, roads and damage to houses.</p> <p>There was renewed devastation at Borrowdale. Homes were again invaded by floodwaters at Seathwaite and Seatoller. Grange was again affected; the Golf course was under water in many places and shops in the Main Street and Kent banks Road junction had their cellars flooded.</p> <p>Warburton estimated the stream competence of a flood in Redacre Gill Langdale (NY 285053). The flood washed out the Blea Tarn Road and flattened walls. Maximum discharge was estimated at 72.7 cumecs. (No major rainfall events affected the area in Jan and Feb 1967 according to BR)</p> <p>Cocker at Southwaite bridge 1967-09 AMS Rank 2 AM 20</p>
<p>3 Sep 1966 Westmoreland Gazette 9 Sep Jan/Feb 1967 Warburton (1983) 27 Jun 1967 Hiflows UK 26 Sep 1967 BR 1 Oct 1968</p>	<p>Quarry Hill Filter Wks 57.1</p> <p>Sellafield 50.3</p> <p>Lanthwaite 92.7</p>	<p>Frontal, thundery; cold front moving northeast over area.</p> <p>Frontal; cold front moving south over northern England followed by a warm front moving east over</p>

BR	Ennerdale	80.5
	Summergrove	55.9
	Seathwaite Farm	104.1
	Threlkeid	69.1
	Loweswater	80.8
	Cockermouth Moor Res.	54.6
	Dean	53.6
31 Oct 1968	Sellafield	56.1
BR	Summergrove	55.6
	St Bees Head	59.6
	Workington, Coke Ovens	60.5
	High Lorton	57.9
	Cockermouth Moor Res.	56.9
	Great Broughton	50.3
	Stainburn Res.	63.8
	Quarry Hill Filter Wks	51.6
	Oughterside	63.5
	Mealo House, Allonby	76.7

area.

Depression, frontal, thundery; complex depression extending from southwest Ireland to North Sea with front moving slowly south over Northern Ireland and Northern England.

23 Apr 1970  
Hiflows UK  
29 Apr 1970  
Hiflows UK  
14 Aug 1971  
Hiflows UK  
1972 No date  
News & Star 25  
Aug 2004  
3 Apr 1972  
Hiflows UK  
11 Nov 1972  
Newcastle  
Journal 11 Nov  
21 Apr 1975  
Hiflows UK  
2 Aug 1982  
Westmoreland

Cocker at Southwaite Bridge 1967-09 AMS Rank 3 AM 33

Irt at Galesyke 1967-09 AMS Rank 3 AM 19

Derwent at Ouse Bridge 1968-09 AMS Rank 1 AM 37

Greta at Low Briery 1971-09 AMS Rank 2 AM 39 (no more summer AM floods)

Shows photographs of devastation at Seathwaite said to be in 1972 but with no date. The photos show trees in leaf so not a winter flood. Could they be mistaken and this was actually the 1966 flood referred to above.

Derwent at Ouse Bridge 1968-09 AMS Rank 2 AM42 (no other summer AM floods)

'Torrential rain ends drought'. The villages of Rosthwaite and Seatoller had 5 feet floods outside but no water in the taps.

Irt at Galesyke 1967-09 AMS Rank 1 AM 8

A landslide blocked the A591 at Thirlmere after torrential rain. The road was reopened in 2 days.

Gazette 6 Aug 17 Jul 1983 Eden (2008)			Torrential downpour brought 112mm at Honister Pass.
15 Aug 1985 Hiflows UK			Ehen at Bleach Green Weir 1973-09 AMS Rank 3 AM 23
24 Aug 1985 Hiflows UK			Esk at Cropple How 1974-09 AMS rank 3 AM10
18 Sep 1985 COL HiflowsUK	Workington St Bees	64.8 30.0	19 Sep Ehen at Braystones 1973-09 AMS Rank 2 AM 14 21 Sep St John's Beck at Thirlmere u/s 1976-09 AMS Rank 1 AM 27 (no other summer AM in record) Ellen at Bullgill 1975-09 AMS Rank 1 AM 10 (no more summer AM in record)
10 Jul 1987 COL	Workington	60.0	Frontal rainfall
3 Aug 1988 Hiflows UK			Derwent at Camerton 1960-09 AMS rank 2 AM 46
9 Mar 1989 MO Rainfall	Keswick Stable Hills	100.8	Frontal systems associated with a complex low over the Atlantic crossed the British Isles. Rainfall was heavy and persistent.
13 Aug 1989 Hiflows UK			Esk at Cropple How 1974-09 AMS Rank 2 AM 8
30 Aug 1989 Hiflows UK			Ehen at Braystones 1973-09 AMS rank 3 AM 16 Calder at Calder Hall 1973-09 AMS Rank 2 AM 3
5 Jul 1990 Hiflows UK			Calder at Calder Hall 1973-09 AMS Rank 3 AM 5
2 Oct 1990 COL	Thirlmere	76.8	
1 Apr 1991 COL	Thirlmere	65.7	
7 Oct 1991	Thirlmere The Nook	61.0	Pressure was high over the Baltic and low over mid Atlantic with a cold front aligned north south over Britain.
30 Oct 1991 COL	Thirlmere the Nook Thirlmere Dalehead Hall	54.5 76.0	Active fronts crossed most regions during the last day of the month.
8 Jun 1992	Thirlmere The Nook	47.5	On 8 <sup>th</sup> thunderstorms developed over NW England SW Scotland and the Midlands.

COL			
13 May 1993	Thirlmere The Nook	95.0	Sleet and snow fell on high ground.
COL	Thirlmere Dalehead	85.0	
	Keswick	76.5	
16 May 1993	Thirlmere the Nook	64.5	Glenderamakin at Threlkeld 1969-09 AMS Rank 2 AM 37 (No more summer AM floods)
COL	Thirlmere Dalehead	64.0	
Hiflows UK			
17 Sep 1993			Irt at Galesyke 1967-09 AMS Rank 2 AM 10
Hiflows UK			
14 Apr 1994			Flooding occurred at Mirehouse with water up to 1 foot deep in houses at Wasdale Close, Mirehouse road, Borrowdale Road and Skiddaw Road. The problem appears to have been a culvert blocked by rubbish.
Whitehaven news 14 Apr			
3 Aug 1994	Thirlmere The Nook	48.8	
COL			
31 Jan 1995	30 <sup>th</sup>		Raise Beck, a small mountain torrent (1.27 km <sup>2</sup> ) is described in the ESPL paper. 164 mm rainfall occurred in the 24 hours preceding the flood. The peak discharge using palaeohydrological methods gave 27-74 cumecs and rainfall runoff methods 4 to 6 cumecs. The flood transported boulders with b-axes up to 1400 mm. Two major historical events are identified in mid nineteenth century
Johnson and Warburton (2002)	Thirlmere The Nook	102.0	
	30/31 <sup>st</sup>		
	Thirlmere the Nook	167.0	
	Haweswater Burnbanks	96.4	
2 Oct 1995	Thirlmere the Nook	62.7	
COL	Keswick	70.2	
28 Sep 1996	Keswick	55.5	Warm/cold fronts swept across Ireland and Scotland during the night of 28 <sup>th</sup> /29 <sup>th</sup> . The cold front moved more slowly across England and minor waves formed along it.
COL			
Westmorland Gazette 4 Oct	There were no reports of thunder		The A 591 was flooded to a depth of 2 feet near Thirlmere.
17 Sep 1997			Cocker at Southwaite Bridge 1967-09 AMS Rank 1 AM 11
Hiflows UK			Ehen at Bleach Green Weir 1973-09 AMS Rank 1 AM 4
3 Aug 1998			Ehan at Bleach Green Weir 1973-09 AMS Rank 2 AM 11
Hiflows UK			Ehen at Braystones 1973-09 AMS Rank 1 AM 10
			Calder at Calder Hall 1973-09 AMS Rank 1 AM 1
			Esk at Croppe How 1974-09 AMS Rank 1 AM 3
? Jul 1999			A 30 minute downpour caused thousands of pounds of flood damage to houses and businesses [Whitehaven?]
News & Star Nov 2000			
?Nov 1999			Whitehaven was hit by a rainstorm with 15 mm in 15 minutes.

News & Star Nov  
2000

9 Aug 2001 ?

News & Star 9  
Aug

20 Aug 2004

Hiflows UK

3 Oct 2004

Keswick

49.3

COL

23 Aug 2005

Keswick

44.2

COL

11 Oct 2005

Keswick

91.0

COL

Seaton

81.5

News & star 12-  
13 Oct

13 Jun 2007

News & Star 13  
Jun

Met Office said weather was bad across Cumbria but severe conditions were confined to small areas including Whitehaven. The weather station at St Bees did not report significant rain.

18 Jun 2008

Seaton

46.9

COL

Lorton

37.4

Cleator Moor – Photo in the N&S shows houses flooded at Coniston Park. The flood also affected Whitehaven Road, Bowthorn Road, The Crescent and Mill Hill. Water spilled out of drains into the street [Not sure when the flooding occurred]

Glenderamackin at Threlkeld 1969-09 AMS Rank 1 AM 3

Greta at Low Briery 1971-09 AMS rank 1 AM 15

A deep depression of NW Scotland caused gales and widespread strong winds on the 24th, while associated fronts spread rain across the entire British Isles during the day. The rain was relatively slow to clear S England, and gave some heavy falls in places here, with heavy rain also across some upland areas further N.

No thunder reported

Seaton: The 11th produced a heavy sustained rainfall, with torrential rain falling during the evening.

Widespread local flooding. Total of 81.5mm on the 11th made this the wettest day on record here since (1995) but probably wettest day for many a decade. Actual rainfall on the calendar date 11th nearer to 98mm as 16.8mm was recorded on the 10th, but most of this fell in the early hours of the 11th. Only low river flows before this event prevented more widespread and serious flooding in West Cumbria.

The problem started off in Whitehaven and Egremont around 6 pm, then up to parts of Workington, Flimby and Maryport, then quickly spread to Keswick and Carlisle.

Schools were closes in west Cumbria at Eaglesfield Paddle, St Brigit's in Brigham, Mayfield in Whitehaven, Bridekirk, Dovenby, Frizlington, and Bassenthwaite. Residents in Church street Workington were seeking payouts after their homes were flooded with sewage.

Whitehaven School was closed and children sent home as rain caused pools of water up to 3 feet deep in classrooms. In the town centre police cordoned off market Place after flood water lifted paving slabs. Scores of businesses including Boots, Woolworths and Haigs had to shut when water ran into their stores. Residents blamed the towns lock gates which were closed to allow tall ships to dock for the maritime festival – so that excess water had nowhere to go and overflowed into the town.

Low pressure remained close to NW Britain throughout the 18th, resulting in a generally unsettled and breezy day across the British Isles. An area of persistent rain affected much of Wales and Cent and W



23 Oct 2008 COL	Lorton	56.6	England in the morning and this pushed N to S Scotland in the afternoon. A wave developed on the front in the evening (995mb over Cumbria by 2400GMT) and this then drove frontal rain SE to SE England by midnight. No thunder reported
25 Oct 2008 COL	Lorton	53.8	Skies soon clouded over from the W as the fronts over (and to the W) of Ireland moved quickly E and only the SE corner of England saw much sunshine during the day. By midday there was a large pressure gradient across the British Isles, with readings of 977.3mb at North Rona and 1030.8mb at Jersey Airport. As a result it was a stormy day over N and W parts of the British Isles; according to the Met Office Lerwick recorded a wind gust of 93mph and North Rona a gust of 111mph. During the day there were some very heavy falls of rain over Ireland, Wales, Scotland and NW England; places in Cumbria and W Scotland reported local flooding during the day. By sunset hundreds of people taking part in a run in the Original Mountain Marathon near Keswick were stranded by flooding and torrential rain. About 12 people were taken to hospital with hypothermia and minor injuries, Northwest Ambulance Service said. Shap Fell recorded 73.8mm of rain from around lunchtime to the early hours of Sunday, according to the Met Office. As vast amounts of rain flowed over the saturated ground, rivers across the Lake District rose to dangerous levels - notably the River Cocker, which burst its banks overnight into Sunday.
28 Jul 2009 COL	Keswick	42.6	Frontal cloud early on the 28th spread rain to Ireland, SW Scotland, Wales and other parts of W Britain by dawn. E Britain remained mainly dry overnight before precipitation became widespread N of a line Exeter to Hull. Across Wales and N parts of England there were some heavy falls during the day. No thunder was reported E parts of Ireland, Wales, W England and much of mainland Scotland was wet overnight into the 29th. Two campsites in the Keswick and Bassenthwaite areas were evacuated early in the day amid fears of rising river levels.
5 Aug 2013 COL			<Cleator Moor>: A woman and her young son were rescued from a car that became stuck in floodwater as heavy rain hit Cumbria; fire crews said the vehicle had drifted in waist-high water and become lodged at the ford at Mill Hill in Cleator Moor
24 Dec 2013 Whitehaven News			In Whitehaven Wetherspoon's (Bransty Arch) and the Shipwrights Pub were floods and Tangier Street closed to traffic. Duke Street and Coach Road were affected as drains could not cope. A thunderstorm was reported on Broughton Moor and a house was struck by lightning.
22 Aug 2015 COL			The storms were particularly severe over northern England, with torrential rain, hail, and frequent thunder and lightning. Lightning set fire to houses at Oswaldtwistle, near Accrington, and Calderbridge

(west Cumbria), and a restaurant at South Shields, and flooding affected various districts.

## Flood Seasonality

The floods listed in the above descriptions (but excluding the very localised events of 1749 and 1966) may be considered in terms of their seasonality of occurrence.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	3	0	0	0	0	1	1	0	3	6	5

By far the predominant flood period is in the last three months of the year when 14 (70%) of the listed floods occurred, with 3 in October, 6 in November and 5 in December. Only two floods (in February 1831 and December 1856) are described as having a major snowmelt component. Summer floods are notably lacking with the exception of the lower magnitude 1891 flood and the exceptional event of July 1938.

## Notes

The flood chronology contains events derived from long duration rainfall, from snowmelt, from a combination of the two and only a limited number are the result of intense short period rainfall. In Upper Borrowdale, the wettest place in England, rainfalls of 6 inches in the day are not uncommon although such a rainfall elsewhere would be quite exceptional. However, if the rainfall occurred steadily through 24 hours, the average hourly rainfall is only 6 mm or 1.5 mm in 15 minutes. This compares with figures of more than 25 mm in 15 minutes observed during intense convective storms. Hence, if the Seathwaite rainfall was steady, it would not constitute a subject for study by this project. However, in some cases more intense rainfall might be embedded in prolonged rainfall and give rise to flash flood conditions. It has been necessary therefore to provide a full chronology as a basis for selection of suitable events and elimination of others.

The Derwent and other Lake District rivers are not ideal subjects for study of flash floods. Flow on most larger rivers is attenuated by lakes or reservoirs and this is particularly the case with short intense storms. Towns and villages are mainly located downstream from lakes, for example Keswick and Cockermouth and these are more vulnerable to prolonged rainfall or snowmelt. Rivers upstream from lakes have few settlements or properties that are vulnerable to flooding and hence the occurrence of a flash flood on such a river is unlikely to be reported in the press.

The potential for flooding on the River Greta through Keswick has been reduced by the construction of Thirlmere at the end of the nineteenth century. Water resources operating policy results in the reservoir being drawn down for long periods especially in summer, thus providing flood storage. However there is no active reserve flood storage policy and there is still the potential for heavy storm inflows to coincide with a full reservoir, especially in winter months. On these occasions the outflow from the Thirlmere catchment is reduced by reservoir attenuation but, examination of flood frequency curves for the Greta catchment suggests that at high return periods the flood discharge will be little different from the natural catchment.

The continued flood potential of the River Greta to cause flooding was illustrated by the very serious flooding which occurred in 1985 when 70 properties were flooded. Subsequent flood alleviation works in 1987 and 1988 are designed to protect against the recurrence of such an event.

Derwentwater and Bassenthwaite are essentially uncontrolled lakes and exercise a very strong natural attenuating effect on inflows to these lakes. Attenuation is enhanced by the spreading of waters over the intervening lowland between the lakes. Descriptions suggest that the joining of the lakes is a feature of all the larger historical events described in the chronicle and probably much more frequently.

The Buttermere and Crummock Water Lakes also have a natural attenuating effect but because of their smaller size, the attenuation is less than on the River Derwent. In addition the channel to the confluence at Cockermouth is shorter and steeper than the Derwent. Crummock Water also has an outlet control and the lake is used as a source of water supply for Cockermouth and the coast. However the operating rules permit the level only to be drawn down to the base of the sluice when it is still effectively a full reservoir. There is therefore no additional flood reduction due to storage.

Flood attenuation on the Derwent both from the lakes and from flood plain storage along its course, results in long lag times. As a consequence, flood peaks on the Rivers Cocker and Derwent at Cockermouth tend not to coincide. Historical accounts suggest that the peak on the Derwent is typically 12 hours or more after the Cocker. A very unusual spatial and temporal distribution of rainfall would be necessary to create such coincidence and must be considered very rare.

Cockermouth has, in the past been flooded by both the River Cocker and by the River Derwent, which can cause flooding independently of the condition of the other. Historical descriptions do not always distinguish the source. However the River Cocker was primarily responsible for flooding in 1938 and probably in 1918 and the River Derwent in 1932. The same property may be flooded from either river. Property may be flooded sequentially by the two rivers in a single event (e.g. 1932) but with an intervening lull whilst the Cocker falls and the Derwent is rising. The effects of a given discharge in one river may depend on the tailwater level in the other and a combined hydraulic modelling will be required which incorporates typical hydrograph lags and durations from the two rivers. This should be established by a more detailed examination of recorded data from extreme gauged events.

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