

Cumbria Eden 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 Eden catchment which are vulnerable to flooding are Appleby and Carlisle. Papers which cover part of Cumbria 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

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

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 Carlisle Journal of 30 January 1903 gives a list of comparative levels at Eden Bridge Carlisle from a register kept at the City Surveyor's office:

1852	Dec 13	21 feet 11 inches
1856	Dec 8	23 feet 0 inches (Highest since 1822 when water was 1 foot higher than 1771)
1868	Jan 31	21 feet 2 inches
1891	Dec 10	20 feet 7 inches
1892	Sep 2	20 feet 4 ½ inches
1898	Nov 3	20 feet 0 inches
1899	Jan 19	20 feet 5 inches
1903	Jan 27	20 feet 10 inches

The Journal 24 August 1928 lists further high floods on the Eden at Eden Bridge.

1903	Jan 27	21 feet 3 inches
1903	Feb 25	18 feet 3 inches
1903	Feb 27	20 feet 10 inches
1903	Oct 6	18 feet 8 inches
1908	Mar 9	19 feet 0 inches
1909	Jan 18	19 feet 0 inches
1910	Feb 1910 (3 times)	18 feet 3 inches
1914	Nov 14	18 feet 3 inches
1914	Nov 30	18 feet 6 inches
1924	Dec 27	21 feet 3 inches
1925	Jan 2	22 feet 10 inches
1926	Sept 22	19 feet 3 inches
1927	Sept 22	19 feet 6 inches

And the following in subsequent papers:

1934	Dec 18	18 feet 10 inches
1947	Apr 22	19 feet 5 inches (said to be the highest of the winter)
1954	Oct 29	No level given (journal notes - Highest at Carlisle since 1945; probably 1941 (snowmelt) was higher. But a note indicates that the bed of the river at Eden bridge has been lowered by 4 feet (no date given).

Formal gauging on the Eden commenced at Warwick Bridge in 1959 and at Sheepmount (Carlisle) in 1967. It would of course be useful to tie the historical levels to the gauged records.

HIFLOWS UK has been accessed to identify summer events which have appeared in the annual maximum series of each gauging station. Thus events are designated for example AMS1 AM25 which means that the event was the Rank 1 annual maximum (peak) discharge for the summer months April to September but only the Rank 25 annual maximum for winter and summer events combined. Only events of AMS Rank 1 to Rank 3 are identified. This analysis shows that summer

events only rarely provide the annual maximum, and these events tend to be well down the annual maximum rank list. In fact for some stations out of 40 years of record there may only 3 or fewer events which occurred during the summer. The HIFLOWS information is shown in pink colour.

Date and sources	Rainfall	Description
? 1571		A major flood was reported on the River Eden when the river created two channels around the north of Carlisle. (In the early 19 th century the old river course was filled in and the new channel known locally as Priest's Beck or Prestwick Beck assumed the role of the main river)
Tobin (1979) ? 1689 Crisp, D.T., Rawes, M, Welch, D. (1964)	Thunderstorm	Stainmore
22 Aug 1749 West's Guide to the Lakes (1812)	Intense convectional storm	Derwent catchment (also affecting upper Kent at Longsleddale). Details and quotations provided in separate chronologies.
Carling P A. 1997 CBHE 2 Jan 1752	Frontal plus snowmelt	Affecting upper Eden at Mallerstang
Watkins & Whyte (2007) Sedgwick (1868) 21 Nov 1761	No information	
Bradbury 1995 from West Cumberland Times 15 Jul 1770		We learn from Brampton that at the head of the Irthing there was much rain which brought down the Irthing so

Newcastle
courant 21 Jul

rapidly that in an instant some were surrounded by the water. Two boys in search of bird's nests at Newby Holme were so much surrounded that no help could be given them. They stood in the water knee deep for 10 to 12 hours holding bushes [Were they on an island?]. A young girl was got out at the foot of Cambeck with difficulty. A great deal of fine wood was carried off from the new bridge being built over the Irthing and it is feared the work is damaged.

17 Nov 1771 The great flood on the
Garret (1818) Tyne Wear and Tees

Appleby: On Saturday about 3 pm the Eden began to rise and swelled higher than was ever known so that foot passengers could not get along the road. The rain began the preceding day and continued that night, next day and till a little after eleven at night. The flood levelled about 20 yards of the park wall belonging to the Earl of Thanet. The water ran with a strong current along Bridge Street and on the high side of the low cross. It also came down the churchyard and ran out at the church gate. The arches of the church were cracked. Bolton Mill 3 miles downstream was carried away. The miller and his family with difficulty saved themselves. (This was the second time that the mill had been carried away by the water. Carlisle On Sunday was the greatest flood ever known. It was so high in Rickergate as to drown a horse in a stable. One house was demolished in Caldergate. The mill at Botcherby was swept away. The eruption of the Solway Moss took place. It contains about 1300 acres of deep and tender moss, impassable to foot passage. The surface of the flow is about 50 to 80 feet higher than the fertile plain between it and the River Esk. Its bursting surprised the inhabitants of 12 towns in their beds. Nobody was lost but many saved their lives with difficulty. Next morning 35 families were dispossessed with the loss of most of their corn and cattle. Some houses were completely covered, others up to the thatch. It continued to flow with further rains till it reached the Esk- no salmon have since entered. It covered areas to a depth of 15 feet. We hear from Carlisle, that many thousand stooks of corn came down the river Eden on Tuesday se'ennight [probably 27 August, not 4 Sep]; several boat loads were taken up at Crosby, Linstock, and Rickerby, and a great quantity hooked off from Priest beck bridge. It is said that one farmer upon the banks of the river Irthing has lost upwards of 200£ worth of grain by the late flood."

27 Aug 1781
CBHE
Cumberland
Pacquet,
11 Sep 1781
21 Aug 1783
CBHE
Cumberland
Pacquet
19/26 Aug

CP 19th Weather is colder than usual and we have had several showers prejudicial to the hay harvest. However earlier in the month the temperature in London reached 90 degrees in the shade.
CP 26th "We hear from Brough in Westmorland, that on Thursday last, about two o'clock in the afternoon, the river Swindale (which runs through Market Brough) was suddenly swoln to an unusual height, and in a few minutes increased to such a flood as had never been seen there, in the memory of the oldest person living. This uncommon rise (which was an absolute phenomenon) was supposed to have been occasioned by a heavy shower of rain, and hail-stones of a prodigious large size, which fell amongst the mountains about a mile above Brough, and which, soon collecting, forced a passage, through some mosses, into the river.- On receiving this

inundation, the river became quite black, had a most nauseous and offensive smell, and rolling down a vast body of water, with great rapidity, in its course tore up by the roots vast numbers of large trees. All the battlements and troughs which conveyed water to two corn-mills, were entirely destroyed, and the mills rendered useless. All the stone walls and fences adjoining the river were carried away by the torrent, and great apprehensions were formed for the safety of the houses which stood near it. The road leading to Church Brough is greatly injured, and other considerable damage done.- Our correspondent informs us that there were several gentlemen (strangers) in the town, who declared it was the most tremendous scene they had ever beheld."

Appleby: the flood overflowed the bridge rendering it difficult to cross over on horseback.

2x Dec 1790
Hampshire
Chron 3
Jan1791

A very heavy snow was
succeeded by thunder
and lightning

16 Jul 1792
Cumberland
Paquet 17 Jul

A little after 6 o'clock yesterday an unusual darkness came on, increasing for 15 minutes, then we had the most violent thunderstorm, known for many years. The rains rolled through the streets like a tide. Several cellars were overflowed [probably Whitehaven]. Besides the dreadful storm on 16th, general throughout the region, a great deal of rain fell on Carlisle on 17 and 18th. The hay harvest is much affected. Sudden heavy rain carried away 2 arches of a bridge on the turnpike road from Hexham to Carlisle [Doesn't say where].

Letter in
Kendal Library

Severe thunder and hail storm that caused great damage in North Westmoreland area including Ravenstonedale (SW of Kirkby Stephen). **To be checked.**

25 Aug 1792
Cumberland
Pacquet 4 Sep

Rain fell was generally
from midday to 7 on
Sunday evening and in
some parts there was
another fall on Monday
morning with tempest
accompanied with
thunder and lightning.

On Saturday 25th it rained for the greater part of the day at Carlisle and the next night also a very heavy rain fell and by four o'clock on Monday morning the River Eden had overflowed all the adjacent low grounds. The road between the two bridges was covered to a depth of 3 feet upon the causeway; the lower part of Rickergate was also overflowed, and several houses there were endangered by the flood. The inhabitants in them were brought out in carts to the upper part of the street. Happily no lives were lost. Boats, carts etc were used for several hours on conveying people and cattle from Stanwix to the city where the fair was held. The river continued to rise till noon and towards the evening it abated a little. The flood has done much damage in the low grounds; the river was almost red and its waters expanded beyond what any person can remember, covered several fine fields of corn just ready for the sickle.

The bridge at Appleby has received some damage and a number of horses, cattle and sheep have been lost. At Brough under Stainmore the front of a house was washed down and great loss has been sustained in that neighbourhood. A bridge at Bolton in Westmoreland is washed down. A number of sheep cattle and horses were carried off the lowlands by the rapidity of the flood. The front of a house at Brough has been washed

<p>13 Aug 1795 Cumberland Pacquet 18 Aug ? 1806</p>	<p>down and otherwise greatly injured. [Severe storms reported at Bootle in Lancashire] Thunderstorms were reported at Whitehaven and Workington. The storm lasted two hours at Carlisle; it started two hours later at Appleby and lasted about the same time.</p>
<p>CBHE 6 Sep 1807 Lancaster gaz. 12 Sep 1 Feb 1809</p>	<p>In the vicinity of Carlisle the Rivers Eden Caldew and Petteril were considerably swollen, overflowing the banks and deluging the low ground. It formed a magnificent expanse of water beautifully dotted with small islands!</p> <p>Refers back to a flood in 1809 when the Caldew was highest and washed down Hawksdale bridge. Another reference in 1918 to this date noting that ‘embankments, waterwheels were washed away. Caldew bay was demolished and water was 6 feet deep in some houses.</p>
<p>Carlisle Patriot Feb 5 1831 22 Aug 1809 Cumberland Pacquet</p>	<p>CP 15th Aug In the course of the past week we have had frequent showers of heavy rain with thunder and lightning. On Thursday morning we had an awful thunderstorm with stock killed. CP 22nd Aug The weather is uncommonly severe. On Wednesday last very heavy rain continued without intermission till late the following day. The Eden, Caldew and Petteril were considerably swelled. [Reference to heavy rain in the Newcastle area]</p>
<p>15? Sep 1809 Kentish Gaz 3 Oct</p>	<p>Persistent rain</p> <p>Carlisle: The Rivers Eden Caldew and Peterril overflowed their banks . The largest proportion of the damage was effected by the Caldew where the flood descending in its fury resembled a mighty tide. In Shaldongate, Caldewgate and by the Damside houses were flooded to three four and even six feet. Furniture was carried away and a house was washed down only a minute or so after they had made their retreat. Immense quantities of grain were driven down by the current. Timber trees and hedges were carried away and stone walls levelled. At Sebergham a field of potatoes was swept away not only the roots but every particle of soil leaving a bed of gravel. A nearby woollen mill was destroyed as was Sebergham bridge. The bridges of Hawkesdale, Whelpa, Heskett and over the River Ellen near Maryport were carried away. At the River Ellen a boy was drowned crossing the bridge on horseback when it gave way. A woman was drowned in her house from the River Waver. The Rivers Tyne and Esk were also much swollen.</p>
<p>12-14 May</p>	<p>Carlisle: Thunderstorms occurred at 5 pm on three successive days. They were accompanied by hail. The streets</p>

1811
Caledonian
Mercury 20
May

were deluged and in some places impassable. The Rivers Eden and Caldew overflowed their banks and many houses were flooded in Caldewgate. A boy was drowned in the Eden at Warwick Bridge. A three year old boy was drowned in his house at Cumrew SE of Carlisle. The rain that fell on the neighbouring mountains came down with such impetuosity to bear everything before it and the water rushed in the back door, burst open the front door and carried furniture out into the yard. Another boy who was in bed managed to escape. Two cows were killed by lightning at Cumwhitton. The storm of hail and rain was extraordinary at Armathwaite and formed a torrent that carried everything away until it reached the Eden where the rock and gravel have completely destroyed the mill race and choked the channel of the river. At Humphrey close it nearly swept the bridge away. Buildings were damaged by lightning at Dalston and Cummersdale. Owing to the late thaw the water flooded the Sandgate area of Penrith with water 2 feet deep in some houses.

5? Feb 1814
Lancaster Gaz.

19 Feb

31 May 1815
Carlisle

journal 3 Jun

13 Nov 1815
Carlisle

journal 26
Oct 1849

30 Dec 1815
Carlisle Jour

26 Oct 1849

30 Jul 1816

Royal

Cornwall Gaz

3 Aug

Exeter Flying

Post 8 Aug

22 Aug 1816

Stamford

Mercury 30

Aug

5 Jan 1817

Thunderstorm lasting an
hour and a half

Wigton was visited by a storm resembling a waterspout , the greatest ever remembered accompanied by thunder, lightning and hail. The streets were absolutely inundated. Furniture was floating in cellars.

One of the abutments of the arched Causeway Bridge next Rickergate was undermined and caused great scour at the base.

(As above this information related to repairs to the Causeway Bridge and historical causes of problems.)

The water rose in Rickergate 2 feet higher than was ever known before, a circumstance accounted for by the broad and flat buttresses of the bridge next Rickergate. Severe further damage was caused to the bridge.

23 Jul The eastern part of the County of Carlisle was visited by a tremendous thunderstorm. It was accompanied by hailstones of large diameter. A cow was killed at Longrig. A house was badly damaged at Bewcastle. Hail and ice caused much agricultural damage at Whaldub and Parkbroom and broke windows in villages of Longtown, Netherby, Scaleby and Kirklington, Crosby and Castle Shields.

30 Jul In Appleby there was a sudden shower of hailstones and ice some of which measured 1 ½ inches in circumference.

The storm raised a flood that carried away houses and fences and left hail 3 inches deep. Three bridges were broken down between Cannonobie and Langholm. A waterspout burst on Irvin Hill. The road for several miles is entirely carried away and at one point where a bridge was carried away, the water has left a chasm 40 to 59 feet deep. Upwards of a thousand trees have been torn up by the roots.

The Eden has never risen to so great height as in the last flood since the overflowing of Solway Moss in 1771. A

Lancaster Gaz.
18 Jan

22 Jun 1817
Carlisle
Patriot 28 Jun

12 May 1818
Carlisle
Patriot 16
May

11 Jul 1818
Lancaster Gaz
19 Jul
R Cornwall
Gaz 25 Jul

26 Jul 1818 Thunderstorm
Durham
Advertiser
18/19 Jul
1819
Lancaster gaz.
31 Jul

25 July 1819
Cumberland
Pacquet 3 Aug
9 Aug 1820
Public Ledger
29 Aug

1 Nov 1821
Cumberland
Pacquet
3.12.1821

man from Kirkoswald was found drowned in the Eden near Nunnery.

Some of the most violent rain ever remembered fell on Carlisle and many house were inundated in the lower part of the town. The Caldew rose to a great height almost instantaneously and much damage was sustained along its banks. A waterspout fell on Tindal Fell carrying away timber, trees, sheep. Kirk house and houses nearby were all inundated and damage was done to the waggonway of the Earl of Carlisle's collieries. Severe thunderstorms reported widely over Cumbria but particularly severe in the Brampton area. At Crookdake between Wigton and Maryport, a man was killed by lightning.

Thunderstorm extended over the northern and eastern part of the county and was particularly violent on Alston Moor where a man was killed along with several of his animals. Animals were also killed in the vicinity of Carlisle.

Following four days of continuous rainfall thunderstorms were reported in some areas but floods were widespread in northern England. The low grounds around Carlisle were overflowed by the Eden. Such a heavy and continuous fall from Saturday to Monday has never been known at this season.

Carlisle: At Drawdykes two miles for Carlisle hailstones brought down fruit and branches and corn a potato crops were levelled. The storm covered a large part of the north of England and the south of Scotland. A pig was killed by lightning.

The Eden overflowed all the low land in its vicinity and swept away considerable quantities of hay, and damaged corn and potatoes etc. The newly formed bank from the Bridge to the Castle Walk was put to the test and the result is most satisfactory.

Widespread rain occurred near the coast.

During the thunderstorm a cow was killed by lightning at Allonby.

The new bridge being built over the Esk on the Carlisle to Glasgow road was destroyed. Much standing corn was destroyed and 20 sheep were drowned.

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

22 Dec 1824 Carlisle Journal 17 Sep 1918 Westmorland Gaz. 25 Dec 1824 11 Jul 1829 Carlisle Patriot 18 Jul 24 Aug 1829 Carlisle Patriot 1 Aug		CJ refers back to occasions of Caldew floods and notes a flood on this date with no other details.
		The Rivers Eamont and Lowther were exceedingly swollen; no details of flooded property given. The entrance to the town of Penrith was flooded partly caused by the backing up of an old bridge. WG also refers to the making of a new cut in the town which saved the town from worse flooding. A thunderstorm lasting over an hour struck Carlisle. Several houses were struck by lightning and damaged and several people were struck and injured by lightning.
		Thunderstorm for several hours. The temperature fell during the night from 72F to 55F and a strong wind blew up from the northwest. Damage was done to hay crops along the Eden Petteril, Wampool, Esk etc. The Eden was never known to rise with such rapidity. A cow was killed by lightning at Curthwaite and several houses were flooded at Croglin from water coming off the neighbouring hills. The water stood more than two feet deep in streets in Penrith. Roads were ploughed even in solid rock especially in the area of Melmerby and Lazonby with water pouring off Cross fell. Five or six small bridges were carried away – some of them county bridges. Several bridges between Alston and Brampton shared a similar fate. At one place near Nunwick Hall, Great Salkeld, large stretches of wall were carried away into the Eden and ploughed the road to a depth of ten feet. Paper refers back to occasions of Caldew floods and notes 3 floods during 1829 - with no other details. Watkins and Whyte list this as a frontal storm affecting upper Eden and Longsleddale
14 Oct 1829 Carlisle Journal 17 Sep 1918 Westmorland Gaz. 17 Oct 1829 21 Sep 1830 Westmorland Gaz.	Frontal rain	The rainfall on 14 th was heavy throughout Westmorland. The Eden at Appleby was tremendously swollen equalling the height of the flood of February 1822 which committed such ravages on the county. On Stainmore in Brough and neighbourhood great damage has been done.
8 Feb 1831	Snowmelt plus rainfall	Thunderstorm at Langholm and over the Esk catchment was reported. the Esk rose higher than it has done for many years past. The tributaries Ewes and Wauchope (sp?) were also much swollen and caused much damage to crops. At Carlisle the thaw was accompanied by rain over two days. The Eden overflowed and was 6 to 7 feet on the meadows next the banks. Caldew and Petteril were equally swollen. Houses were flooded and evacuated at Caldewgate. The New bay at Dalston and the bay at Holme Head was washed down.
Cumberland Pacquet 15 Feb 1831	Snow depth around Keswick said to be greater than in the last	The Eden was within a few inches of the level in 1822. The Caldew was at its highest since 1809 when it washed down the Hawksdale (?) Bridge.

60 years

Carlisle
Patriot Feb 12
14 Jul 1831
Westmorland
Gaz 23 Jul
17 Aug 1831
Westmorland
Gaz. 27 Aug

11 Jun 1833
Carlisle
journal 15 Jun

At Penrith it was one of the greatest floods remembered. In several streets the water was 3 feet deep. Lowther bridge was so greatly injured as to be impassable.

A thunderstorm seems to have been general throughout Cumberland. Five cows were killed by lightning at Crofts near Carlisle. At Carlisle the storm continued almost without intermission for 4 hours. Buildings were damaged by lightning (cotton mill) and some people injured but recovered. Severe thunderstorm with heavy rain reported at Penrith with damage from lightning – but no flooding reported. [Very severe flood damage from a thunderstorm flood in Liverpool where the water rose with such rapidity that people barely escaped with their lives. Also in London where Westminster Abbey was struck and a pinnacle was struck and fell down] A thunderstorm with rain hail and large pieces of ice occurred in the morning and then with a break later in the day. All the streets were flooded [Carlisle] and in some places one had to wade to a considerable depth. Channels swept along the streets with great rapidity. The Caldew and Petteril rose rapidly and swept away every loose thing that lay in their courses. All the low ground was flooded. The Eden rose late at night with 'a rapidity never before exceeded and to a height rarely surpassed'. The most serious damage was at Warwick Bridge where a new bridge was being built. A cofferdam and formwork were washed away. Severe losses were sustained by farmers in the Barrock Fell area where the water tore up channels in the surrounding fields. The flood covered the road at Low Hesketh and at each end of Botcherby bridge.

Carlisle
Patriot 15 Jun

At Carlisle, just before noon rain came down in torrents for a hour and the flow of water on the ground became so excessive as to produce an inundation which blocked every outlet in streets, lanes, courts and entries. In several lower parts of town notably Rickergate cellars were nearly filled with water whilst the water flowed through many houses with a rapid current. In the country the rain beat down the hay and grass and carried off large portions of soil, knocking off young fruit. The field below Castle Bank, ready for the scythe was greatly injured. Penrith also suffered from a thunderstorm and inundated several lower parts of the town.

5 Jul 1836
Carlisle
Journal 9/16
Jul

Destructive thunderstorm: Rain combined with hail and large pieces of ice occurred for several hours in Carlisle. Damage was most serious in Brampton where hail as large as pigeons eggs fell with a southwest wind causing serious damage to windows facing in that direction. Scarcely a house facing in that direction escaped without loss; some houses had 60 panes broken. Howards Arms Inn had 110 panes broken. Fruit was knocked off trees or badly damaged. A woman was killed by lightning at Natrass Alston. At Brampton large hail fell with a circumference of 3 inches; thousands of panes of glass have been broken. The storm also occurred at Wigton and Penrith but there were no reports of damage. No reports of flooding were found for the Eden or Cumbria but serious damage was done in South Scotland Dumfries area with bridges washed away and several deaths by

11/13 Jul 1838 Westmorland Gazette 14 Jul ? 1840 Workington Star and Harrington Guardian of 28 May 1915 (Notes of the Week). 13 Jun 1842 Westmorland Gazette 18 Jun	lightning. Thunderstorms occurred at Dalton on 11 th and 13 th . The hailstones were of immense size and the oldest inhabitants of Dalton never knew the streets to have been so flooded. A few houses were flooded. [Dalton is near Kendal, Dalston is near Carlisle – not sure which this refers to DA] Nothing in Carlisle Journal for 1840. Nothing in Westmorland Gazette 1840
5 Jul 1843 Carlisle Journal 8/15 Jul Newcastle courant 14 Jul 15 Nov 1844 Carlisle Patriot 22 Nov	There was a most tremendous thunderstorm and torrent of rain at Sleddale, Swindale Shap Rosgill and Bampton. The rain had fallen in waterspouts for most suddenly the becks from the mountain had swollen the River Lowther to a most unusual size. The rush was so sudden that several lambs and a calf were seen floating down the river at Bampton. In the evening the Rivers Eden and Eamont were also greatly swollen . Great quantities of soil have been washed away. Description of a severe thunderstorm with lightning mainly at Longtown, Wigton, Cockermouth and Keswick but no reports of flooding. [Flooding was also reported in Scotland including Glasgow and Edinburgh and in Yorkshire and Lancashire with damage mainly from Lightning but flooding occurred at Milnrow near Rochdale where several bridges were washed away and houses were flooded]. In Carlisle streets were flooded 2 feet deep. At Longtown many house roofs were damaged [but it appears this was the result of accompanying wind]. The River Irthing was flooded to a greater extent than for many years. Although the day was wet and rainy in Brampton, there must have been heavier rainfall further east 'on account of such a rapid and extraordinary influx of waters. On the northern side of the bridge leading to Longtown the road was impassable throughout the day. It made a rapid expansion over neighbouring fields the surface covered with huge branches and hedges Thunderstorms were widespread but flooding was limited. No flooding was reported in Carlisle.
5 Jul 1846 Carlisle Journal 11 Jul	Penrith: The storm surpasses the one which occurred on 27 Jun. Hail accompanying the rain broke many skylight windows. The water came down Castlegate like a mountain torrent. The ground apartments of the Royal Oak Hotel were flooded and nearby shops. A field of turnips was completely washed away. Greystoke: A storm of extreme violence occurred and 9.53 inches of rain fell in an hour and a half [Do I believe

29 Jul 1846
Carlisle
journal 1 Aug
CBHE

Newcastle
courant 7 aug.

Carlisle
Patriot 7 Aug

this??]

[thunderstorms were also reported in Lancashire and London]

Carlisle and its neighbourhood have been visited by the most terrible thunderstorm resulting in extensive damage to property but no loss of life. On 27 to 29th the weather was oppressively hot and close. The storm commenced at 7 pm and continued until 4 the following morning. By midnight the Caldew Petteril and Eden began to roll from bank to brae. The Caldew rose most rapidly. Between one and two o'clock the watchman at Shaddongate heard a sudden roar and saw an immense stream of water along the road by the Shaddongate riverside which 'in an incredibly short time' was covered by it. John Street and Lonsdales Lane were soon covered. It caused havoc to mills and houses and damaged a partially completed bridge. A body of water forced its way for about 50 yards from the Damside up the Dalston Road. The water was deepest at the Sun Inn. Residents in Queen Street and Willow Holme have also suffered. On the eastern side of the Caldew there has not been serious loss. Water street was flooded but none of the houses suffered inconvenience. The wooden bridge at Cummersdale was washed away. The centres of the bridge at Southwaite just finished have been carried down by the current. So disastrous a flood has not occurred since 1821 (sic presumably 1822) At Dalston the flood level was far beyond anything for the last 20 years. The long footbridge was carried away. Brampton and surrounding area were seriously affected. Brampton beck overflowed its bounds and flooded a number of houses. Cambeck bridge was demolished.

All along the Irthing the effects of the flood were evident and many sheep were washed away. The Esk Liddel and Lyne in the vicinity of Longtown overflowed and caused much damage to crops and loss of stock especially sheep. A sawmill was undermined. At Lairdstown on the Lyne a family were removed by boat. As far as Canobie there are rumours of lives lost. In the Langholm area several small bridges were washed away. On the Liddle above Netherby, a farmer had 51 sheep washed away and his crop is entirely covered. Considerable damage is reported at Longtown where a farmer lost a dozen sheep and a sawmill was carried away.

Penrith – some houses in low parts of the town were flooded.

Appleby: The thunderstorms have not been as serious here as elsewhere.

'So disastrous a flood has not occurred since 1821'.

At Kingwater the bridge at King Bridge ford was swept away and great damage to crops is reported from Clocky Mill to Kilewood. The wooden bridges at Bewcastle also suffered greatly.

Damage along the Caldew was severe; large crops of hay were covered with sand.

60 sheep perished at Harker.

[Very severe thunderstorms were also reported in London accompanied by falls of ice breaking glass including in Buckingham Palace allowing water to flow down staircases etc , also the Houses of Parliament. There was

8 Aug 1846
Carlisle
journal 15
Aug
29 Jun 1848
Kendal
Mercury 1 Jul
27 Nov 1848

Seathwaite 6.62"

CBHE
13 Aug 1852
Westmorland
Gazette 21
Aug
2 Feb 1852
Westmoreland
d Gazette
Feb 7

CBHE
12 Dec 1852
From
West
Cumberland
Times (1898)

Carlisle
Patriot 1 Jan
1853

much flooding especially from the Fleet where some people were taken out of houses from upstairs.]
A heavy fall of rain occurred on the Carrick and Brackenthwaite Fells (near Castle Carrock, River Gelt catchment), flooding the farms in the low grounds and destroying an immense extent of crops. Carts were washed out of their yards, roads torn up and trees brought down by the force of the current.

Thunderstorm at Brough. Before any rain fell in the town the river which passes through came down in a flood from the hills 'about a foot high in abreast which might be heard some time before its arrival'. A cow was struck by lightning and killed.

Longtown: a man was killed by lightning and several others were injured.
[Thunderstorms were experienced in various parts of the country with deaths and injuries due to lightning but with little report of flooding]

In consequence of extremely heavy rain during the last few days the Eden, Eamont, Lowther, Caldew, Petteril and other streams were much swollen. Houses at Netherend, Penrith were flooded

Eamont 'All the way down by Dalemmain to Eamont Bridge the river overflowed low grounds. A horse was lost at Pooley. The village of Eamont Bridge was flooded on both sides of the bridge. The river was never known to be higher since the great Candelmas flood of 1822. The pumping station and the snuff mill downstream from the bridge were flooded. Low Mill was surrounded.' The Lowther also was high. Near Brougham Bridge on the Clifton road the road was impassable for horses.- also the road to Brougham Hall.

24 Dec Persistent rainfall for some weeks. Very strong winds not experienced since January 7 1839 occurred with much damage. The Rivers Petteril, Caldew and Eden rose to a great height. The road between Brampton and Carlisle at Petteril Bridge near Botcherby was submerged to several feet. Most of the description is of damage by wind. Penrith has again been flooded and was only 2 inches lower than in the flood of 12 Dec. Middlegate above the Ship Inn was flooded to a depth of about 3 feet. The cellars on the Long Front were all flooded. The Ship Inn was so surrounded that people gained access by windows. At Appleby the road leading to

Appleby Bridge was impassable for some time but flood damage to houses was limited.

9 Aug 1855
Carlisle
Journal 10 aug

At Burton near Appleby a thunderstorm was accompanied by a tremendous flood. The centre of the storm was on Roman Fell and Long Fell and continued for 3 hours without intermission. The flood swept down hedges, fences, gates, uprooting trees like bushes. Quarry Lane roared like thunder; large stones came rumbling down. Bell Nook Beck was greatly swollen. 'Such a flood has never taken place in the memory of the oldest inhabitant'. The Eden at Appleby reached an unusual size but no damage was reported. [See also Kent and South Lakes]

Kendal
Mercury 11
Aug

At Appleby the Eden rose to an unusual size; the thunderstorm lasted from 7 to 10 in the evening. The Fell Beck which runs through Warcop was higher than the oldest resident can recollect. Many houses were flooded for the first time, driving residents to their upper storey. At the Saw Mill the dam and logs were carried away. The bridge leading to the high road was completely swept away. Warcop Mill was much flooded and so rapid was the onset that bags of grain were carried away before they could be removed. Flitholme and High Green have had their meadows flooded. Nearer the village it came rolling down in a wave nine feet or more high entering into the mill and houses in its line.

25 Oct 1855
Carlisle
Patriot

Rains occurred without intermission through the day and the greatest part of the night. On the following, Friday, morning the Eden was swelled to a great height, the road on the other side of the bridge leading to Battlebarrow was flooded over. Many houses in Chapel Lane were two to three feet deep and the water took its course along the lane towards the Tabernacle. Broad Close was a complete sheet of water. 'It was the largest flood there has been for 5 years'.

7 Aug 1856
Carlisle
Journal 15
Aug

Dec 6/7 1856 Snowmelt plus rain

Widespread and severe flooding occurred from a combination of Eden, Caldew and Petteril. At Armathwaite, residents were awakened by a roar like thunder as the water entered their houses. Armathwaite Castle was surrounded on all sides, rising very rapidly at midnight, washing over the steps and filling the cellars and lower apartments to a depth of 6 to 7 feet (within 2 feet of the level in the great flood of 1822). At Warwick Bridge several houses were flooded with water to a depth of 5 feet 4 inches. Great damage was done in the neighbourhood of Crosby. 'At Rickerby the water has not been known to rise so high for fifty years past. **Carlisle** - At Carlisle the Warwick Road was covered to a depth of five or six feet. The Petteril swamped Hargrave's wool mill and Robinson's flour mill. At Eden Bridge the water rose 8-10 inches higher than ever known before. Water was prevented from entering large parts of the town adjacent to the Sands above the

Carlisle Rapid thaw on 4 and 5
Patriot Dec with occasional
Dec 13 1856 showers and W and SW
 wind but heavy rainfall
 on 7th

bridge by increasing the height of the embankment. Around the Castle bank the water stood some feet in depth. The Hyssop Holme island and baths and the Willow Holme stretching to Rockcliffe and on the other side to Grinsdale Beaumont were all flooded. In Caldewgate the water was nearly four feet deep in Bridge Street. The Damsides including the Dalston Road high up Shaddongate and Denton Holme were flooded by the Caldew. In Caldcoats the water actually reached 11 feet in places

‘The flood at Carlisle is the highest on record exceeding that of 1822’

At Armathwaite and Rickerby the river did not rise as high as in 1822.

Following this flood a fund for sufferers was set up and victims received between one shilling and sixpence and five shillings or alternatively blankets and coal.

Penrith – Eamont Ullswater was rarely known so high. From Pooley Bridge via Dailmain to Eamont Bridge the river overflowed low grounds. The village of Eamont bridge was flooded on both sides of the Bridge. Not so high since 1822. Low Mill was surrounded. The Eden was up as far as the Langwathby toll bar. (Nothing on Penrith itself)

Appleby – Flooding higher than at any time since 1822. It was a sheet of water surrounding the town. Owners in Bridge St, Chapel Lane and Wigh Wiend removed goods to higher ground and were indeed flooded to several feet. The church was flooded for the first time since 1822 (when the water reached half way up the pew doors. This time it was 1 ½ feet deep a few inches below the level in 1822. Both arches of the bridge were full. Chapel Lane had water 3 to 5 feet in depth. The dwelling part of the school house and neighbouring houses were flooded severely. The large holme on St Nicholas Farm has great quantities of gravel and sand and a weir has been destroyed. The dam and framework at Brough Mill was washed away; mills at Milburn and Hilton shared the same fate. At Colby the brook running through the village flooded Colby Hall to a height previously unknown. At Long Marton and old house was washed away. No reports of county bridges destroyed or seriously damaged.

11 Jun 1858
Carlisle
Journal 18 Jun

A violent thunderstorm occurred over Carlisle and other parts of the lake District. No flooding was reported at Carlisle. Further thunderstorms occurred on 14th and 15th. Although there was loss of stock by lightning no flooding was reported. One farmer lost 50 sheep in the same field. [Thunderstorms without serious flood reports also occurred in Lancashire and Yorkshire]

19 Jul 1859
Carlisle
Journal 22 Jul
1859
Westmorland
Gaz.
Storm followed a period of drought, the earth completely dissipated and vegetation burnt up and wells and watercourses dried up.

Carlisle: Thunderstorms occurred over the city on 22nd and more severely on 23rd. The water rushed with great force down Rickergate where most of the cellars were deeply flooded. A chemist and the Durham Ox Inn were particularly affected. A few houses in Tait Street and Damside were flooded. The storm was very localised for at Linstock and Botcherby very little rain fell whilst at Warwick Bridge there was a flood.

	Carlisle 0.90 inches in 1 hour.	
6 Jul 1861 Westmorland Gaz.		A violent thunderstorm passed southeast of Penrith. At Temple Sowerby the floods entered houses in streams. The road to Penrith was completely flooded. A waterspout was observed on the Beacon and discharged itself near the Round Hill Well on the Bowscar Estate. One also occurred at Calthwaite at the same time.
8 Sep 1861 Carlisle journal 13 Sep 1861	Rain fell from 10 pm to 2 am with unparalleled heaviness in a thunderstorm, with 2.12 inches in the centre of the city in 4 to 5 hours and 1.75 inches in 2 hours at Carlisle Cemetery.	The Caldew flooded and the Eden ran very full. Caldewgate was flooded with one sheet of water from the Royal Oak Inn, Church Street to Messrs Carrs biscuit mill and from Pattinson's tannery beside Infirmary Lodge to beyond Parham Beck. The Newton road was flooded by the Parham Beck to several feet deep Dow Beck was surcharged in Church Street. Queen Street was flooded half way up and another beck overflowed into Shaddongate. Carr's new bakery in Church Street was flooded to a foot or two. Plough Inn cellars were flooded as were many in the neighbourhood. Cellars in Rickergate were flooded. Hardy, the grocer, at the foot of Scotch street had his cellar similarly flooded. Cellars were also flooded in Tait Street. Slater's cotton mill in Water Street was prevented from flooding by the watchman barricading the doors. The Wrestler's Inn was flooded. The inhabitants of weaver's cottages at Parham beck have been the worst sufferers; between 30 and 40 cottages were flooded up to bedding level.
26 Nov 1861 Carlisle Patriot 30 Nov Penrith Observer Dec 3 Westmorland Gazette 30 Nov	'Continuous fall of rain' A thick covering of snow on the mountains was quickly dissolved	Flooding occurred at Brough on 7 th . It carried away the bay heading the dam for the Low Mill and also did great damage at the bay side which belongs to the town [whatever this means]; Main description given for the Derwent but 'the Lowther, Petteril, Eamont Eden and Esk also in flood'. A man was drowned at Lowther Bridge. Large floods at Orton and Tebay well nigh surrounded. Serious damage to roads below Kirkstone Pass was reported at Hartsop and Patterdale. The Dock Beck flowing through Penrith overtopped the arches of a bridge and flowed into Townend cellars
1 May 1862 Westmorland Gaz. 10 May 16 May 1864 Carlisle		Violent thunderstorm was reported at Penrith and at Edenhall, reported to be the worst for several years. Lightning killed several sheep. Heavy rain was reported but no flooding. Corby and Hayton were affected by a thunderstorm which had much more serious effects in the Tyne Valley [See northeast floods]. Hail broke window and lay 18 inches deep in places and stripped soil from fields.

Journal 20
May Carlisle
Patriot 21
May

5 Dec 1864 Greatest daily rain at
Seathwaite this year:
BR/CBHE 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"

22 May 1865
Westmorland
Gaz. 27 May

15 May 1865
Carlisle
Journal 23
May
Westmorland
Gazette 27
May

30 May 1865 Seathwaite 6.41"
K Stephen 1.25"
BR/CBHE Kendal 2.36"
Lesketh How 3.90"
Loughrigg 3.26"

Brampton: Thunderstorm with hail and ice upwards of 2 inches in diameter; windows were broken on the south side. The wind drove the hail and made holes in the window like bullet holes. This continued for more than half an hour. Fruit and vegetables were destroyed. So great was the accumulation that three days afterwards there were still heaps of ice in spite of the intense heat.

A severe thunderstorm occurred over Penrith and also Temple Sowerby and Langwathby. Following a period of close and oppressive heat, hail and rain fell accompanying persistent lightning. Hail was as big as marbles and some 2 inches in circumference. Some low-lying districts were instantly flooded and dwellings inundated before residents could take any remedial measures. Sky lights were broken by the hail.
Penrith: thunderstorm with hailstones as large as marbles lasting about an hour. [No mention of flooding there but a storm at Preston caused flooding of streets].

Penrith: Water overflowed the streets and rushed like a river; low lying districts ere instantly flooded before the occupants could take any measures to keep the water out. Many skylights in the town have been broken. Fruit trees have been damaged. The storm was also violent at Langwathby and Temple Sowerby. The railway station off Fishergate was completely flooded. The water rose to the height of the fireboxes of the engines.
Also heavy rainfall the previous day:
Ambleside 3.90"
Appleby 1.29"
Carlisle 1.52"
Cockermouth 1.59"
Wigton 1.76"

9 Sep 1865	. a very warm moist wind arose on the 9th, and a fall of 6 in. at Seathwaite, and 2 in. at Arncliffe took place.	
BR/CBHE		
13 Jul 1866		Carlisle: severe thunderstorm accompanied by large hailstones the size of marbles and pieces of ice one weighing nearly 2 ounces and measured 4 inches and 1/8 th . A man was struck and injured, and several animals including a horse were killed. A great number of panes of glass were broken in rooflights. 200 panes were destroyed at the Citadel Station. [The storm also occurred in Northeast England and S Scotland].
Carlisle		
Patriot 17 Jul		
15-17 Nov 1866	15 Nov Seathwaite 6.38" Kendal 2.20"	Very high rainfall but principally in S Yorks and Lancs
British Rainfall	High Close 2.79" Patterdale 2.62" Lesketh How 3.26"	
? 1868		
From		
West		
Cumberland		
Times (1898)		
13 Nov 1869	Greatest daily rain at Seathwaite this year: 6.70 inches	
BR/CBHE		
9 July 1870	Thunderstorm	Upper Dentdale
Watkins &	Kirby Stephen 1.50"	
Whyte	between 11.30 and	Kirkby Stephen: The river Eden rose 3 feet in 20 minutes, the stream running in some parts 18 inches deep in the streets, filled some low lying cottages to a depth of 2 to 3 feet. 24 hour rainfall was 1.80"
(2008)	13.00	
Kendal		
Mercury 16		
Jul		
Lancaster		
Guardian 16 &		
23 July		
BR		River Eden rose 3 feet in 20 minutes and subsided very rapidly, doing much damage.
Carlisle		Carlisle patriot and Cumberland packet give no information on rain or flooding in the Eden, but provide a

Patriot 15 Jul
Cumberland
Packet 12 Jul
4 Aug 1870
Carlisle
Patriot 5 Aug

12 Jul 1872
Westmorland
Gazette
4 Sep 1872
Westmorland
gazette
7 sep

7 Oct 1874

Preceding wet weather
Storm rainfall lasting 30 hours

Penrith
Observer
Oct 13

1.37 inches at Penrith
But more than 4 inches in
Kendal catchment
Shap 3.70" (6th) 1.05" (5th)

British Rainfall

description of the flood at Todmorden and Bacup Car. Pat. notes that ' with the exception of a few light showers at the beginning of the week the weather has been highly favourable for the hay harvest.

Dry sultry weather was followed by a thunderstorm and flood in Carlisle. The drains were incapable of carrying off the flood and many streets were flooded. Horses waded knee deep along the West Walls at the foot of Head's Lane. Houses of poor people living in Damside were inundated and also in several parts of Caldewgate. Penrith: The storm was localised in part of the town and the dry and dusty streets were soon flooded
Thunderstorm at Carlisle, Brampton and Warwick Bridge with water flowing along roads.

Penrith: thunderstorm with hail caused pools in the streets and cellars and kitchens were flooded. One house was damaged by lightning.

Flooding of low-lying land occurred throughout Cumberland and Westmoreland. In Carlisle farmers lost sheep at Willow Holme and Rickerby. Fields inundated had not been flooded since 1856. The rising flood carried cattle off at Aglionby. Water level reached 22 (probably 21 feet –correction from Peter Spencer) feet 11 inches at Eden bridge (18 inches lower than the great flood of 1856 and 2 inches higher than the flood of 1868. As in 1868, the flood invaded the Filter Beds. Overflow from the Petteril made the Warwick Road impassable for 200 yards and the residents of Botcherby had to reach the city by means of Harraby. Houses in Brunton Place were flooded. The Caldew ran over the highway in Shaddonga and flooded houses in the lower part of Caldewgate.

Penrith Obs notes that the Penrith District had one of the heaviest floods for the last 30 to 40 years on the Eden, Eamont and Lowther.



2 Jul 1875 Westmorland Gazette 10 Jul		Stainmore and Brough: A 'waterspout' on Stainmore near Tran house caused the river which runs through Brough to rise suddenly to six feet higher than its usual level. It carried all before it; stone walls were washed down and the road leading to the Wesleyan Chapel was washed away altogether along with some outhouses. Sheep and cattle were carried away and drowned. The water was 3 feet high in cottages adjacent to the river. Fish were caught in rooms. On the hill the storm washed away a cow shed and ploughed up the earth to a tremendous extent.
1877 Bennett and Doyle (1998)		'A catastrophic flow down Swart Beck after heavy rain one night in 1877 is attributed to the failure of Top Dam. The flood destroyed a silver refining house' The dam location is approximately 3 km from Glenridding.
16 Aug 1877 BR Carlisle Patriot 17/24 Aug	Penrith The Ludham 0.82" in 1 hr	Rainfall very localised (described as a waterspout). Rain began at 3 pm on Friday 17 th with a thunderstorm and within 2 hours grain was beaten down. But rain continued with little intermission until the following Wednesday afternoon. [Flooding occurred in west Cumberland – Whitehaven, Cockermouth, Workington, Dearham and Wigton].
27 Jun 1878 BR	Penrith Ludham 0.51" in 12 mins Total storm duration 20 mins.	
30 Aug 1878 Westmorland Gazette 7 Sep		A whirling waterspout was observed south of Naworth (S of Lanercost). It lasted about 3 minutes and travelled from NW to SE although the wind below was easterly. Rain fell in torrents.
15 Sep 1878 BR	Shap 2.34" Keswick PO 2.52"	
27 Dec 1878	Patterdale 3.27"	
8 Jun 1879 Westmorland Gazette 14 Jun	Thunderstorm	Carlisle: Tweed mill at Raven Nook was struck by lightning and badly damaged.
30 Jun 1881 CBHE/BR Westmorland gazette 9 Jul	Patterdale hall 2.93"	Rainfall observer at Shap (Copy Hill) noted "Strong gale and heavy rain, 2.06 in., causing considerable floods on the following day." [R. Lowther/Eden] Brough: The Swindale was so much swollen that it carried everything before it causing considerable damage to pasture land. It completely washed away the road at High Mill and Brewery and come within a foot of the

		dwelling house, at one point washing out the earth more than 2 yards deep. The 'Eden certainly never rose quicker'. Large tracts of meadow land were submerged and crops and garden produce have suffered great damage
5 Jul 1881 Northern Echo 7 Jul		A thunderstorm passed over Kirkby Stephen. A waterspout burst on Hartley Fell tearing up the ground in every direction. The Eden and its tributaries are greatly swollen. Large trees and gates are being dragged out of the river.
13 Oct 1881	Carlisle Cem 1.02"	Rainfall observer at Shap (Copy Hill) noted "On 9th, 10th and 12th strong N.W. gales occurred, with rain and hail, the highest mountains being covered with snow on the 13th, on which day 1.48 in. of rain fell, causing a great flood..." [Lowther/Eden]
CBHE/BR 12/13 Feb 1882	Shap 2.67 (2 days)	Observer reported – 'storm of wind and rain and great floods'.
BR 25 Feb 1882	Shap 2.19"	Fall exceeded 2" at 9 stations in the Lake District
BR 6 Jul 1882	Patterdale hall 3.27"	
BR Carlisle Patriot 7 Jul	Carlisle 0.40" in 20 minutes	Event reported to be very localised. Reference is made in 'Weather and Crops' to 'hot weather last week but on Wed 5 th and Thursday 6 th there were heavy downpours'. [Reference is made to heavy thunderstorms on Yorkshire and Durham and to a waterspout in Allendale which destroyed a railway bridge and embankment]
29 Jan 1883	Snowmelt after snow on 24 th plus rain with strong winds on 28th	In some parts of the Pennines (Bedale) the event produced the greatest flood since 1822. Limited reference to flooding on the Eden.
Carlisle Journal	24 Jan Shap Copy Hill	A storm of rain and wind raged in Westmoreland. Walls have been washed away, houses blown down and a quantity of stock along the Eden have been destroyed. A farmer near Appleby has lost 200 sheep, washed away in the flood and another farmer in the same district lost about a score.
Newcastle Journal	3.16"	(Flooding reported on Swale Ure and at Todmorden and thunderstorms in Wales)
25 Jun 1883	Kirkby Stephen 3.54"	Rainfall widespread in Cambridge Derby and West Yorkshire.
	Appleby 2.20"	Shap had 0.40" in 18 minutes
British Rainfall	Gilgarron Hall 2.50"	Shap - A waterspout burst on Hardendale Fell and the Force Beck was full in a very short time. Thunderstorms at 16.25 and hail fell for 3 minutes.
	Carlisle Cem 1.18"	
Carlisle Patriot 29 Jun		A somewhat severe thunderstorm occurred on 25 th but was welcomed by farmers since crops badly needed moisture. The train from Kirby Stephen to Penrith was slowed by water on the line from adjoining flooded fields

Carlisle Journal 26 Jun		which left sand and soil on the line. At Kirby Stephen there was almost total darkness between 5 and 6 pm. An exceptionally violent storm broke over Appleby after 5 pm lasting for more than 1 hour. Much damage was done to sloping macadamised street but no casualties of a more serious nature were reported. Noted that the long looked-for rain has come at last after a long drought in which rivers were lowered far below their normal levels.
8 Jul 1884		Tropical heat was experienced for several weeks; then thunderstorms occurred for several days culminating on 8 th .
Westmorland Gazette 12 Jul		Appleby: For a time the main street had the appearance of a rapidly flowing river – water forced its way through houses. Many animals were killed in the neighbourhood. Brampton (6 Jul): The rain was the heaviest experienced for a number of years. Many houses in the vicinity of the beck were flooded to 3 to 4 feet. One woman was drowned. Carlisle: Several buildings were struck by lightning Matterdale: 5 cattle were killed at one place and several other animals elsewhere [Very high temperatures and thunderstorms were reported in various parts of England]
13 Jul 1884 Westmorland Gazette 19 Jul		Another thunderstorm. The only flooding reported was at Kirkby Stephen where the streets were flooded and one cow killed by lightning.
23 Jul 1886 Carlisle Patriot 23 Jul		Widespread thunderstorms occurred in northern England. In the Eden Valley the rain flooded many villages [doesn't say where] and laid hundreds of acres of meadow land under water.
Yorkshire Gaz 24 Jul		Heavy rain fell at Kirkby Stephen which was flooded. A little boy was swept away by the flood and drowned at KS.
17 Aug 1887 Carlisle patriot 19 Aug	Thunderstorm after a prolonged drought	Carlisle: flooding was caused in some places and the rivers came down turbid. Buildings were struck by lightning and damaged. Cattle were killed at Warwick Bridge. At Pedder Hill there was a great fall of hail which accumulated in some places to 13 inches depth.
24 July 1888 Watkins & Whyte (2008)	Thunderstorm	R. Raven and Kirkoswald See Chronology for Swaledale.
Penrith	BR shows no heavy rain in this area but totals up to 3 inches in N Yorks	A waterspout burst and completely carried away the surface of 3 acres of land, leaving nothing but bare rock, together with sheep and bridges, the Raven being 2 feet higher than ever known at Raven Bridge Mill. Pastures

Observer 31 Jul and Westmorland Gazette 28 Jul	and Durham on 25 th . Shap had 0.65" in 23 minutes	were covered with mud and in some places a new course was taken. All the way to Kirkoswald, it carried away all the footbridges and water rails. At Howscales a flock of sheep were surrounded by flood water and 10 were carried away into an adjoining field. At Kirkoswald Mill a piece of rock weighing many tons was broken and boulders beaten upon it.
British Rainfall		
Carlisle Patriot 3 Aug		July was one of the most inclement months on record. Last week fellsiders had the experience of waterspouts in 2 or 3 places. At the source of the Raven beck above Kirkoswald several acres of land were stripped of soil, flocks of sheep carried away and stones and rocks were hurled down. [Noted also a storm at Gildersdale near Alston]. A peculiar feature of the rains was their local character. Even the heavy downpour of Sunday afternoon was unfelt in some districts 5 miles south and east of Carlisle. The carcasses of many sheep were washed up. [CJ notes destructive floods near Langholm in Eskdale which caused Rennald Burn to come down in a great flood. A bridge on the Langholm to Eskdalmuir road was carried away and Eskdalmuir PO was flooded to 18 inches and a number of sheep were drowned.]
Carlisle journal 27 Jul		
Westmorland Gazette 4 Aug 27 Oct 1888	Bowness 2.45" Ambleside 4.08" heaviest in 20 years Patterdale 4.45" Keswick 4.00 highest since 1867 No thunder reported	Observer notes very high level in Derwentwater Patterdale: Rainfall lasted 80 hours. Water broke out of its course and made the highway its channel with much damage to roads and walls. At Dalemmain Mill the stables were invaded whilst at Eamont Bridge some houses were flooded. At Kirkbythore a bridge was washed away. 'Never within living memory was Ullswater so low and so high within three days. Appleby: The Eden rose to a great height. The new bridge suffered damage; the centre of the western arch and the stonework on it collapsed and a large part of the middle pillar. The thunderstorm lasted for upwards of an hour at Carlisle but the storm was felt with its full severity on the shores of the Solway. There was no loss of human life but lightning killed horses and bullocks. Lower parts of Penrith were flooded.
British Rainfall Westmorland Gazette 3 Nov		
6 May 1889 Carlisle Patriot 10 May		
2 Jun 1889	Melmerby 1.43" with hail	CP gives an extended description of a severe thunderstorm. On Sunday last Carlisle and surrounding district in common with a wide extent of country in the north of England and Scotland was visited by a thunderstorm of almost tropical intensity. It commenced shortly after 9 am with a lull at 11 but then a more severe burst after 4 pm, a brief lull after 5 pm then the sky became very dark after 5.30 with further thunder and rain. Damage to
British Rainfall	Shap 2.10" Thunderstorms	

Carlisle Patriot 7 Jun	Carlisle cemetery 1.14"	houses and death of animals was reported. At Burgh many roads were flooded. Lightning damage was also reported in Brampton. In the Penrith area heavy rain was accompanied by hailstones up to an inch in length. Windows were smashed in many houses.
Westmorland Gazette 8 Jun		In Penrith many houses were flooded; at the junction of Albert Street and Sandgate water collected. Houses were flooded in Wordsworth Street and Lowther Street and the water collecting at the foot of both ran down Hunter Lane like a river. Several houses in Great Strickland and Hackthorpe and Morland were flooded. Queen Street was flooded knee deep. A number of animals were killed by lightning.
Carlisle journal 4 Jun		At Kirkby Stephen immense hailstones fell and during the storm a large ball of fire was observed to fall on Hartley Fell. At Whinfell a crop of turnips was swept from the top to the bottom of the field.
8 Aug 1889 Watkins & Whyte (2008)	Thunderstorm Hawes Jct 4.16" (4" in 3 hrs)	At Ravenstonedale there were also morning and afternoon storms and the stream running through Coldbeck soon swelled out into a good sized river and damage has been done to weirs. CJ reports flooding in Carlisle in the Parham Beck area in Wood Street and Duke Street. Hailstones up to 1 inches also occurred at Dalston. In Penrith Queen Street was flooded to knee deep. Many houses were flooded at Temple Sowerby owing to the stoppage of drains. [Thunderstorms with hail and lightning damage were also reported through Lancashire, Cheshire, Shropshire and Staffs and North Wales.]
CRO (K) WPR 60/1/6.		Garsdale On Wed 7 th distant thunder was heard in Carlisle with 0.64" rain.
Carlisle Jour 8 Aug Carlisle Patriot 9 Aug 30 Sep 1890 British Rainfall Carlisle Patriot 3/10 Oct 25/31 Aug		We have had a great deal of stormy weather this week and occasional heavy rains have beaten down cereal crops. The spate on the Eden on Wed 7 th was very welcome owing to the preceding prolonged dry weather.
		Heavy rainfall North Lancashire and Lakes.
		Rainfall observer at Penrith Fir Bank noted daily rainfall 1.54" heaviest in 25 years; Newton Reigny 1.61"
		Flooding noted in Langdale, Duddon and Ribble also overflowed
		CP has no rain or flood information.
	Prolonged summer	Eden level reached 19 feet 9 inches [presumably this was 25 th)

1891	rainfall	
West Cumberland Times Carlisle Patriot 4 Sep 1891 Westmorland Gazette 29 Aug 5 Sep	There was no reference to thunder except at Aspatria.	<p>A southwesterly gale commenced on Monday 31st and lasted until Tuesday night and did much damage. The Eden was again very high and the Swifts and Sorceries (Sp?) were again partly flooded. There was however no loss by the floods such as occurred the previous week. Many low lying stations are again under water with meadows covered.</p> <p>A thunderstorm with lightning damage was reported in the Aspatria district on 29th.</p> <p>Kirkby Stephen: Eden overflowed and low-lying lands were flooded. Sheep and other stock were seen floating down. Some houses by the riverside were flooded to a depth of 3 to 4 feet. Nearly all the wooden bridges between KS and Mallerstang have been swept away. The main road between Warcop and KS was impassable. A farmer at Galsgill had 6 cows washed down the river. The High Bay weir at KS was seriously damaged.</p> <p>Shap: the mountain becks and the Lowther are very full.</p> <p>Ravenstonedale: the River Scandle was swollen to many times its usual size. Six cattle were washed away but were recovered alive.</p>
2 Sep 1892 Newcastle Journal Carlisle Journal 6 Sep	‘Heavy rains for the past 24 hours’ Gauge at the Waterworks 3.10” between 8 am on Thurs and 4 am on Friday.	<p>At Kirby Stephen the River Eden is rising to an alarming height flooding houses and compelling the inmates to escape to higher storeys. Rowlandson and sons Brewery is flooded and in the Eden valley a large quantity of corn and meadow are under water.</p> <p>The heavy and continuous rainfall on Thursday caused a great flood on Friday in the Eden. Carlisle level 20 feet 4 ½ inches (compared with 10 Dec 1891 when level was 20 feet 7 inches – highest on record was 1856 23 feet 8 inches). Rickerby Holmes, the Stoney Holme and the Swifts resembled a large lake and Cricket field, The Bitts, parts of the Saucerries and the Sheep Mount from the left bank of the Caldew to the railway bridge were submerged. Estimated that 550 acres were flooded in the Carlisle basin bounded by Rosehill and the North British bridge on the east and west and Rickerby and Botcherby on the north and south. CJ has further details of streets flooded. Flooding was greater this year than in Dec 1891 because of the prolonged flood with sewers fully charged. A boy was drowned in the Petteril which was in high flood.</p> <p>At Kirkby Stephen houses were flooded and in Appleby the main thoroughfare to the railway station was impassable for many hours being 3 feet deep. A large number of houses were flooded to 2 feet. The Sands were covered to a depth of three feet. The boat house and two boats were carried away from Castle Bank. The flood was the heaviest there for the past 10 years.</p> <p>At KS the rain and hail fell in such enormous quantities as to flood the entire district in a few minutes. In KS a large number of windows were broken by the hail [as at Richmond]. Some houses were flooded to 4 feet high</p>
13 Feb 1893 BR	Patterdale Hall 3.07”	Rain centred further south where observer noted that flooding was not great due to rain distributed over 24 hours.

8 Jul 1893 Lancaster Gaz. 15 Jul		Thunderstorms in various parts of the northwest including north Westmorland with hail and rain. A large number of windows in Kirkby Stephen were broken by the hail. In some low-lying districts houses were flooded to 4 feet.
Webb (1993) J Meteorol		On this day very severe hailstorms occurred at Richmond and Harrogate. The storms also affected the area from Kirkby Stephen to Penrith where windows were forced bodily out of frames and much damage was done to glasshouses.
Westmorland Gazette 15 Jul		Ravenstonedale: Thunderstorm for an hour with strong winds followed by hailstones of extraordinary dimensions breaking a large number of windows. Shap: Hailstones the size of plums which with the strong wind did much damage. One house had 60 panes broken and 30 acres of corn was completely destroyed. Kirkby Stephen: Hailstones as large as marbles broke scores of window panes. Streets were rapidly immersed especially in the neighbourhood of the Wesleyan Chapel where water rushed into cottages. The Wesleyan Sunday School was flooded. Lowther and Melkinthorpe: Two horses and several cattle killed by lightning Appleby: Streets were flooded (no reference to house flooding)
11 Feb 1894 Tobin and Cumberland News	Remarkable mildness of winter until early Jan then cold. Snowmelt?	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. The Eden rose to 19 feet at Eden Bridge.
6 Jul 1894 Westmorland Gazette 14 Jul	Thunderstorms	Shap: Storm lasted 1 ½ hours but no damage from flood or lightning was reported. Kirkby Stephen: A woman was seriously injured by lightning within her house.
2 Aug 1894 Carlisle Patriot Aug 3/10 Carlisle Journal 3 Aug	Carlisle 2.14" - highest in record 1862-1894	Carlisle patriot of 3 Aug refers to 'yesterday's heavy rain. Elsewhere Croglin notes that the Storm exceeded anything of the kind on the Fellside for some years. Carlisle Journal for 3 Aug reported that rain fell in torrents in the Appleby district yesterday
BR 9 Aug 1894	Carlisle Cemetery 2.58"	The British Rainfall report (scanned as a separate file) relates the thunderstorm, rapidity of rise, destruction of

BR

bridges, stranding of trout in fields, and movement of sediment and debris as follows:

River Gelt AUGUST 9th 1894

A tremendous fall of rain about 10 miles east of Carlisle near Castlecarrock; the Gelt rose so rapidly that it took the wooden bridge at Gelt mill, carried it over the parapet of the bridge at Middle Gelt and deposited it in a field at Ryeclose, about 7 miles distant. It also carried away the stone bridge in Gelt woods at Helbeck, and so damaged a bridge on the Newcastle & Carlisle line that only one pair of rails could be used. The river rose so high that trout were left stranded in the fields, some of them 500 yards from the bed of the river. Just before reaching the Irthing the Gelt took a new course, and from 20 to 30 acres of meadow land were left covered with between 2 and 3 feet of sand. Eighty trees (large and small) were stranded in one field. Without pursuing the list of damage, which must include quite a dozen bridges (large and small), we may say that it resulted from excessive rains on the ridge separating Northumberland from Cumberland, especially the portion about 7 miles long reaching N.N.W. from Gilderdale Forest (3 miles W. of Alston) to Cold Fell (2,039 ft.). It was very local, for in many surrounding villages hay making went on all day. The event seems to have closely resembled that on Bloody Bush Edge, on July 2nd, 1893, which was fully described and illustrated in British Rainfall, 1893. The two localities are scarcely 40 miles apart. An observer in the neighbourhood says that he observed clouds coming from the direction of the Solway, and one after another they settled on the top of the Fells, until they accumulated like long drifts of snow. Soon after this he heard a great roaring noise, and floods of water came down every hollow; the little river Gelt rose, not by inches, but all at once, to a raging torrent, and swept trees and bridges before it.

Carlisle
Patriot
10 Aug

CP refers to one of the most tremendous rainstorms within living memory lasting nearly one hour with slight intermissions and drainage was overwhelmed. Most serious was the blocking of the rail line out of Carlisle at Fenton Battery where the track was undermined by damage to a bridge and the rails sagged by 1 foot. The line to Newcastle was closed for some time. Also in Carlisle Carr's biscuit factory,, Ferguson's Mill, Becks Mill were flooded. Beneath Crown Street bridge the water was 2 to 3 feet deep. Warwick Road was converted to a stream. Four tenements on Back Duke Street were flooded to a great height. In Gloucester Road on the south side of the railway the water was about 2 feet deep. Through the choking of drains at Rickerby House the drive in front of the house was flooded knee deep.

A bridge near Hole Eden between Warwick Bridge and Little Corby was washed away. The road between Warwick Bridge and Heads Nook was knee deep for about a mile. At the Cairn Bridge a small portion of the parapet wall on the Cumwhitton side gave way. A number of houses in Scotby were flooded. The rainfall though phenomenally heavy seems almost to have been confined to Carlisle and the immediate district. At Whitehaven there was no rain whatever; at Silloth only a few drops in the afternoon; at Curthwaite, 7 miles

west of Carlisle, there were only one or two slight showers.

Carlisle
Journal
10 Aug

CJ gives further details of flooding in Carlisle principally at Caldewgate. Surface water came gushing out of manholes. The greatest overflow was near the junction of Hawick Street and York Street stated to be connected to the sewer through which the once open Dow Beck runs to the Caldew. From this flowed a great stream which flooded to a depth of 2 feet half a dozen houses at the low e with a sheet of water nearly a foot in depth.nd of Back Duke Street and ran like a river down Hawick Street, past Trinity church and down Church Street into Rigg Street, Queen Street and Broadguards, flooding all the shops and houses in its course. On the other side of Church Street from Caldcotes to Willow Holme was a similar sheet of water with shops and houses flooded. The greatest depth was in Carr's Works where the water came up from behind as well as in front. In Bread Street it entered every house an attained a depth of 3 feet. Through a butcher's shop opposite Trinity Church the water ran and deluged the stables behind.

In Shaddongate the flood was not so extensive as in Church Street but this was perhaps owing to the water rushing past the end of Rigg Street being able to run into the Caldew near the new brewery Company. Out of a manhole close to the millrace the water gushed making the roadway impassable.

In Newton road the water ran out of a manhole opposite Bright Street flooding most of the houses in the rear between the street and Port Road. At all the points in Caldewgate where sewer overflow occurred, heaps of soil were swept up .

In the lower part of Crown Street where the water generally accumulates in times of heavy flood the street was completely flooded to a depth of four feet, the water extending from Collier Lane underneath the railway bridge to Robert Street. At Millholme Terrace the water rushed into many of the houses. At Scotch Gate and Rickergate cellars were flooded. At Holme Head Works the flood caused work to stop. The Caledonian Goods Yard was a vast lake.

The storm extended beyond Brampton and the rail line was flooded in many places between Brampton and Wetheral above the height of the rails. At Corby part of the village was flooded. At Broadwath the Cairn came down very rapidly and Platts Mill was flooded to a depth of several feet. In the neighbourhood of Heads nook the water flowed down the road like a river to knee-depth. Daily max temperature in Carlisle 66.8; min 54.2; Pressure 29.56 at 9 am.

25 Jul 1895
BR
Carlisle
Journal 26/30
Jul
Carlisle Cem 1.75"
Edenhall 1.70"
Kirkby Stephen
2.93"
Sedbergh 2.60"

Rain which fell heavily on Thursday continued on Friday and Saturday morning almost without intermission. Eden and tributaries are in heavy flood. Swifts and adjacent holmes are partly under water. Great damage has been done to crops on flooded fields. On Friday afternoon there was a brief but violent thunderstorm. We have had the only thoroughly wet days since March thus welcomed by farmers because of the drought. A boy was drowned in Dufton.

Hartlepool Mail 30 Jul 30 Apr 1897 Carlisle Patriot 30 Apr 5 Aug 1897 BR Carlisle Patriot Aug 6 Carlisle Journal Aug 6		A weir at Brough was carried away. A large quantity of hay as well as sheep and other livestock have been observed floating down. Valuable meadow land has been damaged by the deposit of sand. A severe thunderstorm was reported covering much of the north of England and in Carlisle at 9 pm. Lightning damage to several houses was reported and death of 11 sheep at Kirklington.
11 Aug 1897 Carlisle Patriot Aug 13	Penrith Greystoke 1.16" in 1 h 20 m Carlisle Cemy 0.84"	The intense heat has changed the appearance of the grass crop. The heavy rain which accompanied yesterday's thunderstorm has freshened the pastures but laid the grain crop in some places.
12 Nov 1897	BR Daily totals	After a few days of excessive heat a severe thunderstorm occurred on 5 th and continued upwards of an hour. As generally happens in heavy rain, Crown Street in the vicinity of the railway bridge was flooded to a depth of 3 feet. The storm was unusually violent in the vicinity of Wreay and also at Wigton where the streets were flooded for some time. Damage was mainly caused by lightning. [Reference also to thunderstorms in the midlands, Lancs and Scotland]. There has been no diminution of the heat since the storm on 5 th . Another severe thunderstorm: On 11 th some parts of Cumberland Dumfries and Ayr had another thunderstorm. Between 4 and 5 in the morning a severe storm passed over Silloth; most of the streets and green were completely covered and gullies unable to cope with the large amount of water. Carlisle Patriot flood reports cover mainly west Cumbria and include the death by drowning of two boys. There is no reference to flooding in the Eden.
British Rainfall CBHE Carlisle Patriot 26 Dec 1897 Westmorland Gaz. 1 Jan 1898 2 Aug 1898 Et seq BR	Patterdale Hall 4.55" Shap Hillfield 2.66" (6.81 in 26 hr) Orton Vicarage 2.98" Brampton Denton Ho 1.64"	Bampton (Cawdale Beck/River Lowther) was flooded – the lower part of the village was described as 'like a sea'. In the Shap area 'a great many lowlying areas were under water'. Heavy rain starting on 26 th . At Shap from Sunday to Wednesday 5.35 inches fell with 1.13 in 9 hours on Wednesday 29 th . Several houses in Shap were flooded and shops were only approachable by wading. The main Street known as the Straits was flooded and also the Crosby Ravensworth road, caused by the Crook Syke overflowing Observer noted 'caused floods which damaged footbridges and carried away haycocks'. Reports of heavy rain on Monday 1 st) and Wednesday (3 rd). The rains of the last 8 to 10 days have dashed the corn somewhat but revived the pastures. The northern part of Cumberland on 8 th was visited by a severe

Carlisle
Patriot 5/12
Aug

thunderstorm. The streams were for a time raging torrents and several bridges were swept away. Lightning at Bewcastle hit (but did not kill) seven people. (CJ refers to intense rainfall on Christenbury Crag). The Raven and Croglin on Friday night (5th) were higher than at any time during the last 8 or 9 years. The Raven has made several new courses on the Fog Close Farm. At Raven Foot where the beck enters the Eden, much damage has been done to the weiring. At Kirkoswald bridge a hundred cartloads of rubbish were washed away. At Walmersyke the wooden bridge over the Croglin was lifted from its foundations and the meadows have been covered by sand and mud. In the Nunnery Walks all the old wreckage left by previous floods has been washed away. A farmer near Appleby had a 30 acre field of corn laid flat. Many fields at Kirkbythore were flooded. At Kirkby Stephen several houses were flooded and there was about 6 feet of water in a portion of Rowlandson's brewery. At Mallerstang the river carried away a large slice of the main road. All through the dales the roads have suffered.

Carlisle
Journal Aug 9

Eden and tributaries were in heavy flood yesterday with Swifts and holmes under water. [Very heavy rainfall in Borrowdale and Derwent water spread over meadows at its lower end].

Westmorland
Gaz 13 Aug
1898

The Eden rose at Appleby, coming out on to the Sands but not completely covering the road. All though the dales the roads have suffered badly. Between Kirkby Stephen and Hawes Junction a landslip occurred on the Midland Railway

2 Nov 1898
West
Cumberland
Times

Gale accompanied by heavy rain, starting evening of 1st and all day 2nd.
Carlisle 0.50" on 1st,
0.84" on 2nd

The Eden rose during the night to 20 feet 0 inches at Eden bridge, and was the heaviest flood since 2 Sept 1892 when the level at Eden Bridge reached 20 feet 4 ½ inches. The flood in the Caldew was very big. Swifts and Rickerby Holme was one sheet of water, the water in the paddock and on the 'straight' being about 4 feet deep. The cricket field was flooded.

Carlisle
Patriot

Patterdale 4.07/2.47
Greenside 4.85/2.60
Ullswater 2.80/

Severe flooding occurred on the Esk where it was said the water had not been so high at Longtown for over half a century (since 27 July 1846).

Carlisle
Journal
Etc

The main flooding was in the south of the lakes with the River Kent and Kendal the worst affected. However, there were severe effects on the boundaries of the Eden catchment that could be considered flash floods. Westmoreland Gazette reports 'The ruin of Patterdale Road' The church bridge at Troutbeck was partially destroyed. On the Patterdale side of Kirkistone Pass there is serious damage to the main road. Grisedale Bridge at the foot of the pass is entirely washed away Rain commenced at 18.00 on Tuesday and 24 hours later 5.73

Westmoreland
Gazette

		inches rain had fallen at Patterdale hall Gardens. Glenridding Beck carried away about 50 yards of wall. Rose Cottage and the cellars of the Temperance Hotel were flooded.
18 Jan 1899 BR	Orton 3.57 Patterdale 2.95	
29 Jun 1899 BR	Melmerby Baldersby 0.90" in 30 mins	Violent thunderstorms were reported in west Cumberland, mainly with descriptions of effects of lightning. 'Carlisle has escaped the violent thunderstorm which swept over the north' Fisheries report notes that the Eden and Esk are still low.
Carlisle Journal 30 Jun		
12 Jul 1899 BR	Brampton Denton Ho 1.84" in 4.5 hr	Destructive storm: A severe thunderstorm with heavy rain passed over the north of England and Scotland on 12 th . Damage was done to crops and several persons were killed by lightning.
Carlisle Patriot 14 Jul		Great damage at Brampton; houses flooded: Storm occurred just after midday and continued for about two hours. It flooded low-lying houses in the space of a few minutes to a depth of 2 to 3 feet, the streets being quite unpassable. Damage was done to stock of Milburn's Tweed Mill. Water rushed down Lovers Lane in a torrent. That portion of the Sands opposite the cottages at Lovers lane had the appearance of a lake, flooding all the cottages up to Sand House Inn. Great damage was done in Lovers lane which was recently repaired by the parish council. At the Sands entrance immense holes have been made in the roadway, the paving stones being washed out and carried a considerable distance. The water poured through the doorway of Mill House where it stood a foot deep. The damage to Lovers Lane near the Craw Hall entrance is even more serious, the entire roadway except a small portion in the centre is washed away. At the corner of the road a little above Hamblesgate a portion of the fence was carried bodily into the reservoir. The two lower kitchens of the White Lion were flooded to a depth of several inches. In Low Cross Street houses were similarly affected whilst at the bottom end of the town below the police station water stood fully three feet deep.
Carlisle journal 14 Jul		Gelt was in flood and sheep and lambs were seen floating down amongst the debris. The present is the most severe storm that has occurred for many years. Westmoreland: In Kirkby Stephen cellars and low-lying dwellings were flooded. Railway traffic was dislocated due to undermining of the line at Bleathgill. On Stainmore, at Black Horse the water rushed down a riving and the culvert was unable to take it, the water rose until it reached the level of the rails – about 14 feet – sweeping away the loose ballast and leaving the rails 4 feet clear. On the fells the storm appears to have been more disastrous. A waterspout was observed along Hartby Fell just below Nine Standards. On the clouds clearing away a huge rent was observed in the earth presumably where the waterspout had burst.

Westmorland
Gazette 15 Jul

[Thunderstorms also on Swale, Ure, South Tyne, Borders and Leeds].

Kirkby Stephen: Water rushed down the main streets and a few low lying houses were flooded especially near the Wesleyan Church and also at the extreme north end of the town where the water rose to a considerable height and swept down the Beck Lane into the Eden. The railway east of KS was badly affected with ballast swept away to a depth of 4 to 5 feet. Water was up to the axles of carriage wheels. Signals were also thrown out of order by lightning.

14 Jun 1900 Carlisle Cem 2.70"
BR
Carlisle
Patriot 15 Jun

One of the most severe storms in recent years in the north of England occurred on Monday (11th) In Cumberland between 3 and 5 pm and in Lancs and Yorks some time later. Kirkby Stephen church tower was struck and partly demolished. At Harrogate camp a Colonel was killed by lightning. The storm was renewed on Tuesday Wednesday and Thursday.

Heavy thunderstorms have prevailed in Carlisle and district every day since Monday. The heat has been oppressive. In Caldewgate Carlisle hail the size of hazelnuts commenced 1.30 and continued until 2.15; **it stopped up the gulley openings and streets in the west end were soon in flood.** The water backed up into houses which lie off Church Street especially in Duke Street, Queen Street, Rigg Street and adjoining streets. A flood of water ran down from Port Road and Caldcoates from Wigton road and out of adjacent streets. Many houses were flooded and in one house in Duke Street the water was only a few inches from the bedding. Along Kendal Street, the water came like a sea and at Caldewgate Schools children were sent home; the infant's department was flooded. Hailstones 15 inches deep lay in front of the Pheasant Inn, the bar of which was flooded to 6 inches. At Murell Hill a nursery garden was destroyed. At Carr's Bread and Flour company in church Street, water came in front and back and entered a patent oven causing an explosion. The storm extended over Stanwix and water poured down the bank and on to the Bridges. The bowling green at Edenside was covered by ice and water. In Devonshire Walk, hail lay to a depth of over a foot.

Carlisle
Journal 15 Jun

Damage by lightning was reported at Little Salkeld and Appleby, though no flooding was reported.

A wave of almost tropical heat has been passing over the country with a remarkable succession of thunderstorms. A feature of the storm was the restricted area covered. Caldewgate suffered most but elsewhere as in Denton Holme and Devonshire Walk behind the castle and in the Castle itself there were heaps of hail a foot deep while a few yards away there was no trace of any fall at all. From some houses the drift was carried away in bucketfuls while neighbours a few doors away were left untouched. **Hailstones were sometimes as big as pigeon's eggs.** Further west Newton Road in front of the infirmary was flooded from side to side. In

22 Aug 1900 BR Carlisle Patriot 24 Aug Carlisle Jour. 22 Aug Newcastle Jour 24 Aug	Brampton Denton Ho 0.97" in 1 hr 25 mins	Junction Street the water was ankle deep and at the junction of Nelson Street and Blencowe Street the road was covered to a considerable depth. Corporation Road also experienced the severity of the storm with water rushing down Stanwix Bank and flooding Eden Bridge. It is difficult to recall when so much thunder and lightning have occurred within the space of four days. Streets were also reported flooded at Longtown with lightning damage at the Post Office, at Brampton, Haltwhistle with lightning but no flood damage reported. Also in Kendal district and south of Scotland. The rivers are down in flood, the land is sodden; the corn is laid and twisted. Nothing else was reported! Thunderstorms marked the weather on 21 st and 22 nd . On 23 rd the storm in Caldbeck district was very heavy. [Note a thunderstorm at Settle had hail 1 ½ inches in circumference.].
2 Apr 1901 BR	Patterdale Hall 2.70" Greenside 2.68"	Border districts of Eskdale and Liddesdale were affected by thunderstorms and a haystack was set alight at Cononbie. Cold stormy weather. The rains have brought down much of the snow which fell last weekend. Nothing more reported!
10 Aug 1901 BR Carlisle Journal 13 Aug Carlisle Patriot 16 Aug	Brampton Denton 1.31 in 1.5 hr Patterdale Greenside 1.45 in 2 hr Carlisle Cem 1.52"	Violent thunderstorm: The district was visited by a violent thunderstorm on Saturday morning from shortly before 8 and lasting for several hours with slight intermissions. Especially severe after 10.30. and again around 1 pm. Some streets around Carlisle were temporarily flooded. The cotton mill at Dalston was set alight in the third period causing its complete ruin. Further details were given of houses struck by lightning. At Brampton a young man was killed by lightning.
Westmorland Gazette 17 Aug	Thunder in Carlisle lasted on and off for 6 hours with a downpour of rain hail and frozen sleet.	At Brampton torrents rushed down streets flooding low-lying houses. At the White Lion Hotel, the lower kitchens were under water and in houses in Lower Cross street and in Humble's Yard the water stood several inches deep. In the Kirkhouse district the storm was very severe and this is where the man was killed. Farm stock were also killed around Penrith and Plumpton. Some parts of Kirkbride village were flooded.
11/12 Nov	Amounts for 11 th and 12 th	Thunderstorms were reported at temple Sowerby, Lowther, Kirkby Stephen, Stainton and Morland. No flooding was reported but animals were killed and houses struck by lightning. Widespread heavy rainfall from a deep depression moving across Ireland and northern England extending over 2 days. Rainfall on 11 th exceeded 1 inch over the whole of Ireland except the extreme NW and SW, and parts of

1901 BR	Kirkby Stephen 0.94 2.40 Appleby 0.63 2.50	Lancs and W Riding of Yorkshire. On 12 th the heavy rain continued in NW England and extended to Northumberland as well as southern Scotland and south to Derbyshire. (Complete BR rainfall list scanned)
14 Dec 1902 BR 27 Jan 1903 BR Carlisle Journal 30 Jan	Shap Vic. 2.63 Patterdale Hall 3.94 Patterdale Hall 3.21	BR notes that serious floods occurred in the Eden and Petteril rivers Heavy flooding was reported on the Eden and water level at Eden bridge was 20 feet 10 inches, the highest since 1874 (See initial notes on comparative levels). The flood on the Caldew was one of the highest in recent years and rose above the retaining wall of Milbourne Street railway siding, It was however far short of the level in 1856.
9/10 Jun 1907 Westmorland Gazette Jun 15	Thunderstorms following oppressively hot weather Reported daily rainfalls were less than 1.5"	Thunderstorms were reported at Kirkby Stephen, and Appleby with accompanying hail but no reports of flooding.
23 Feb and 1 Mar 1910 BR	Patterdale Greenside 3.75"	This daily amount occurred on two separate occasions.
13 May 1911 Cumberland News 25 Aug 1928 Westmorland Gazette 20 May 1911 29 Oct 1911 BR	Reference to previous high rainfall at Penrith (Laurel Bank) 2.77 Edenhall 1.80" Thunderstorm with some hail Patterdale 3.50 Bowness Lindeth Howe 2.98 Bowness Fall-barrow 3.30	To be checked Extensive flooding reported in Lancashire notably Burnley, but nothing found on the Eden. WG reports an Ullswater storm for 3 hours. The becks were overflowing and never known to rise in so short a time No reference to flooding found
11 Dec 1911 Evening		Owing to long continued rain, the rivers Eden Caldew and Petteril overflowed their banks and thousands of acres of land were submerged. The flood was especially severe in the Botcherby area where an inn was

Telegraph 11 Dec		surrounded and covered the whole of the road.
11 Jun 1912 Newcastle Evening Chronicle 12 Jun Carlisle journal 11 Jun Cumberland News 11 Jun	Thunderstorms Wigton 0.75" in 45 minutes	Streets were flooded in Appleby to 6 to 9 inches. Heavy thunderstorms were reported At Appleby where the Brampton Horse Fair was in progress many streets were flooded to a depth of 6 to 9 inches. Residents were imprisoned in their homes. Campers at Fair hill were flooded out. Hailstones fell as large as large marbles. In the neighbourhood of Brackenber Hill (Nr Settle?) where a large number of military are encamped, a gunner was killed by lightning. At Wigton after rain and hail, parts of Wigton streets were flooded and the Church of England Day School. A cow was killed by lightning at Nealhouse. Hailstones were of unusual size. A heavy thunderstorm occurred at Greystoke near Penrith.
18 Jun 1914 Newcastle Evg Chronicle		No further flood information found
16 Jul 1914 Cumberland News 25 Aug 1928 Westmorland Gazette 25 Jul 8 Aug 1914 CBHE Carlisle Journal 8 Aug Cumberland News 1/8/15 Aug	Reference back to previous high rainfall Penrith Laurel bank 2.15 Penrith Lowther St 2.14	The reference in 1928 is confused whether the date was for 1913 or 1914 – to be checked. (NOT 1913) Thunderstorms occurred in south Westmorland (Kendal area) on 21 Jul but WG has no reference to flooding further north Rainfall observer at Grange, Borrowdale, noted Rain 4.72 in. Big flood. See also Met. Mag., September, 1914, p 146"
12 Aug 1915 BR 31 Dec 1915 BR	Carlisle Scaleby Hall 2.75" in 1 hr 30 min Patterdale Hall 2.90 Patterdale Greenside	No reference to rain or flooding in either CJ or CN. Scaleby is NE of Carlisle, halfway between Brampton and Longtown (between the Irthing and Esk catchments). Rainfall accompanied by severe gales.

30 Oct 1916 BR Yorkshire Post 4 Nov	2.85 Patterdale Greenside 4.25	A very heavy month's rain in the Lake district in October. Crossthwaite had over 12 inches. There has not been so much flood water in the rivers for 17 years.
15 Sep 1918 BR	Orton 2.55 Penrith Laurel Bank 2.15	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
16 Oct 1918 BR/CBHE	1918 October 3: Daily rain at 3 Cockermouth raingauges equalled or exceeded 3.10 inches, with 3.50 in. recorded at the wettest of those sites.	
12 Sep 1919 Westmoreland Gazette 20 Sep		Thunderstorm with 17 sheep killed by lightning at Wharton near Kirkby Stephen
3 Feb 1920 BR Westmorland Gazette 7 Feb	Sedbergh 2.78 Patterdale Greenside 2.53	WG has no reference to rainfall or flooding
23 to 29 Dec 1924	Watermillock 2.80 Ullswater Hallsteads 2.91 Patterdale Greenside 5.00	A series of storms over the period from before Christmas to New Year brought widespread flooding and damage from gale force winds and resulting tidal flooding. See below – the same event.
Jan 1925		Note from event in July 1927 with reference to Penrith 'many dwellings were flooded inches deep, reminding of the costly flood of New Years Day 2 years ago' Carlisle Journal has extensive descriptions and a supplement of photographs

Tobin (1979)

Carlisle
Journal
6 Jan

Eamont - Eden tributaries were in flood including Caldew, Petteril, Eamont and Lowther. Pooley Bridge, Eamont Bridge, Carleton and Brougham were flooded. Ullswater equalled its highest level of 1857 (sic) (presumably 1856)

Eden – The river inundated many rivers along its course from Kirkby Stephen to Warcop, Langwathby, Lazonby and Kirkandrews. In Carlisle Caldewgate was inundated to a great depth due to combined river levels in the Eden and Caldew. Water level reached 22 feet 10 inches at Eden bridge. At Carlisle Sewage Works the water level was 18 inches higher than in 1856.

Tributaries – Tributaries in flood included the Caldew, Petteril, Eamont and Lowther, which together flooded Lanercost Priory, Kirkoswald, Hesketh-New-Market Millhouse, Carleton, Penrith, Plumpton, Brougham, Eamont Bridge, Pooley Bridge and Thrimby Grange.

Ullswater equalled its highest level of 1857

(Rivers to the northwest were also in full spate and many small villages such as Wigton, Gamelsby, Kirkbride, and Lessonhall were inundated.)

21 Sep 1926
Cumberland
News 26 Sep

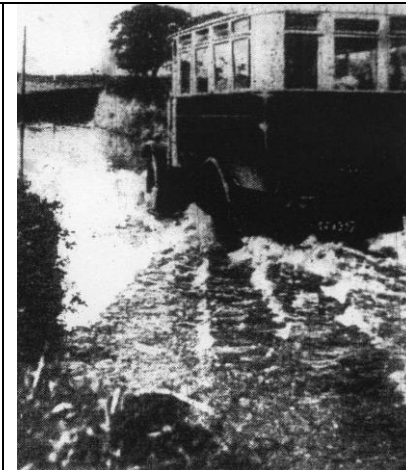
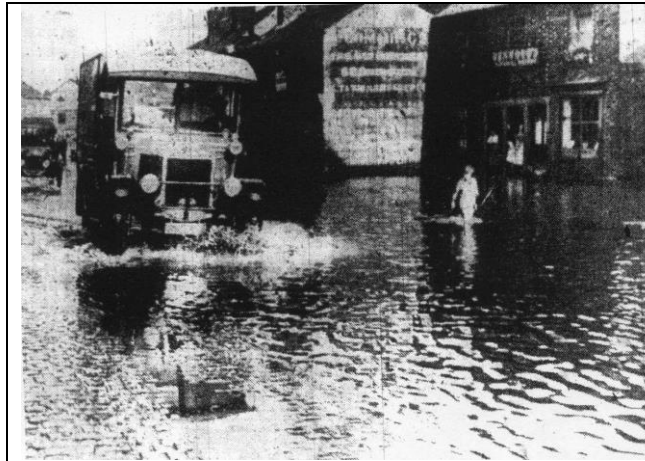
Carlisle
Journal 21/24
Sep

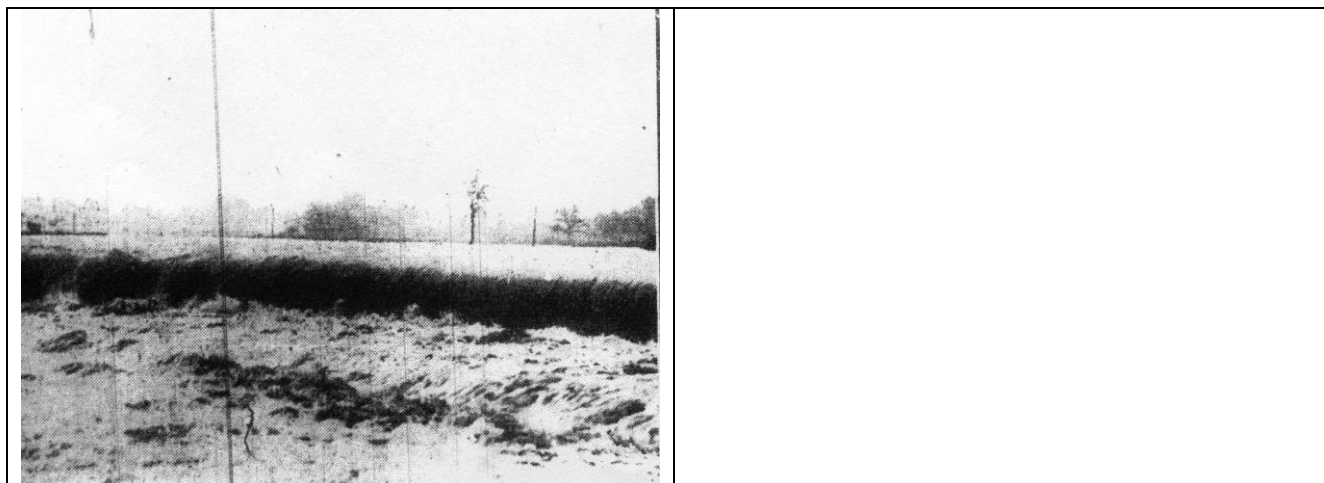
Lanercost 2.75 in 8 hrs
(highest in record)
Carlisle Cemy 2.25
between 4 am and
11.30 (Thunderstorm
lasted 3 hours)
Wigton 2.00 in 6 hours
Thunderstorms

Sudden storm sweeps the north: Fire and flood follow terrifying night: The storm broke at 3.30 am after fine oppressive (heat wave) days. Preceding temperature was 77 F at Carlisle and 88 F in London. At Carlisle the deluge lasted 2 hours. The storm affected 6 counties of Northern England and North Wales. **The Caldew and Petteril underwent an astonishing change in a few hours** and overflowed their banks in places; the Eden was more steady in its rise. Rickerby Park was inundated, the cricket field and bowling green at Edenside was covered as was the lower part of the Swifts and high up the Weaver's Bank in Victoria Park.

In Carlisle Caldewgate and Sheddongate districts were the main victims of the flood. As compared with the floods of 2 years ago there was an extension of the affected area in Caldewgate. Roads were flooded from the corner of Ashley Street to Wood Street near Cumberland Infirmary. The overflowing of the Dow beck was the main problem. Some houses on Port road were flooded. At Caldewgate water was more than knee deep on both sides of the street; shops and houses were flooded. Parts of Carr's Works were affected. Water ran through Hawick Street and into Caldewgate like a river. Also affected were houses in Broadguards, Queen Street, Rigg Street and Burn Street. Church Street water flooded the sidewalks, the crown of the road being clear save for a stretch of 20 yards at the west end. The Dow beck rose rapidly; its course from Morton leads through Bedford Road, Silloth St, Hawick St and then through Caldewgate. It is thought to have burst from underground in Hawick Street and Duke Street and flowed down into Church Street. Other parts affected were Crown Street under the railway bridge, the tennis court and putting green at Ferguson Park, Denton Holme the far end of Richardson Street and half way across Norfolk street and Dalston Road near Longsowerby. By 13.00 the Petteril at the foot of Warwick Road had overflowed. Parts of the Tilbury road Botcherby was flooded and the roadway near the City Golf course. The Caldew burst its banks near the Stampery. Although

Newton is in the higher part of the city some houses on Newton Road were invaded to a depth of 1 foot, due to the overflowing of the Parham Beck which goes underground just behind Peel Street. There was a flooded area in Cobden Street between Port Road and Newton Road.





A Caldewgate looking west, B. Water on the Houghton Road near Tarraby, C. Caldewgate, the Pheasant Inn, D. Warwick Road near the laundry and E **Is this a 'wall of water'?**

Rail traffic was held up between Barnard Castle and Kirkby Stephen where rain washed out ballast from the line near the summit.

Cattle and sheep were drowned or killed by lightning at Wetheral and elsewhere; houses were damaged by lightning. A boy was drowned at Wigton playing near a flooded river. At Lanercost an elderly resident said it was the biggest flood in the Irthing for 40 years.

River Lyne burst its banks and caused diversion to motor traffic. The River Esk overflowed flood banks erected to protect the auction market. Longtown to Carlisle Road was flooded knee deep in several places.

An intense convectional storm on Gale Scarth Pass, caused intense erosion and moved huge boulders in Longsleddale valley.

Heavy rainfall was also reported at Shap, Swindale, Rosgill, and Bampton flooding the Swindale and Wet Sleddale Becks. Craggs Mill bridge across the Lowther was damaged. Part of Rosgill Bridge was swept away and the Parish Crag bridge between Rayside and Rosgill was also damaged.

6 Oct 1926
Watkins &
Whyte (2007)
Westmoreland Gazette 16
Oct

4 Nov 1926
Patterdale Greenside

Rainfall was widespread over the Lake District but greater to the west and south

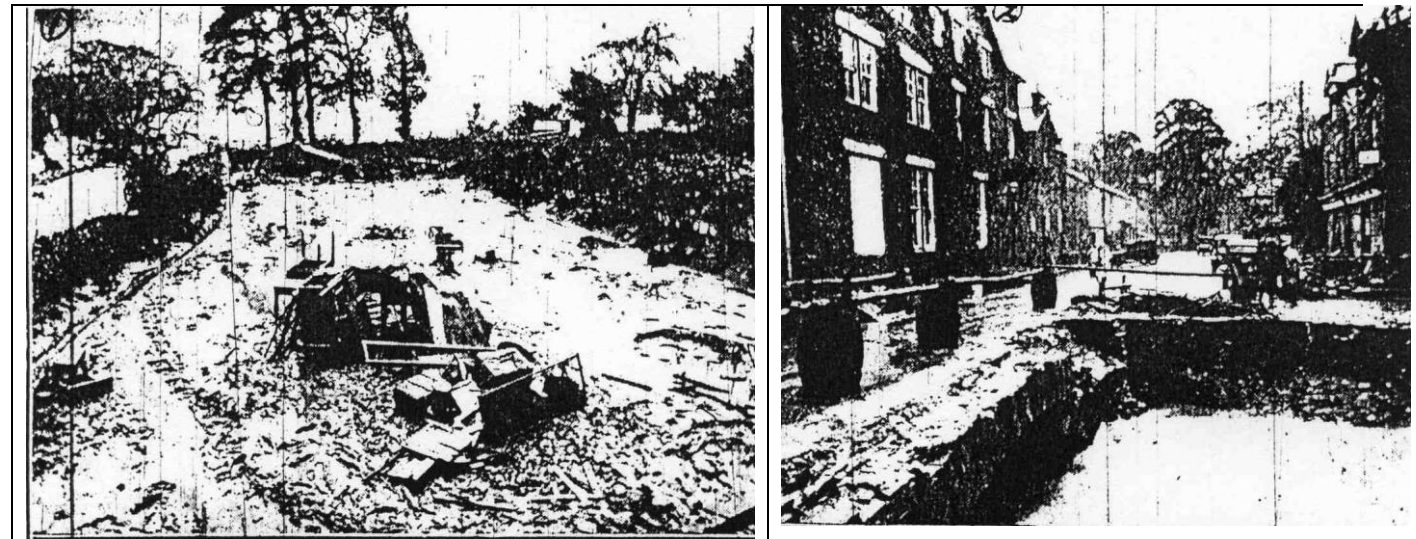
BR	3.98	
28 Jul 1927	Penrith Lowther Cas	
BR	0.88 in 20 mins	A great amount of damage was done by a thunderstorm in mid-Cumberland which started about 3:00 and was intense for about an hour but continued at a normal rate into the night. Rain was accompanied by hail as big as marbles. At Penrith spouts on houses and businesses overflowed into the street and in the more confined thoroughfares the water flowed inches deep over the full width of the road. In Friar Street – subject of flooding in extreme floods – the underground beck burst at several places and many dwellings were flooded inches deep, reminding of the costly flood of New Years Day 2 years ago.
Carlisle journal 28 Jul		Acres of corn have been beaten flat by rain and hail. The fell becks were in full spate and the lowland rivers soon became full and in places overflowed.
Cumberland news 30 Jul		At Penrith a storm of rain and hail occurred for about one hour in the afternoon. Water was on the roads several inches deep. Friar Street the underground beck burst from its confining arch. Many houses were flooded to a depth of several inches. Surface water drains were surcharged. Fell becks were in full spate and lowland rivers became full.
		Cloudburst on the Borders: Between Kershopefoot and Newcastleton a cloudburst washed away ballast on the Waverley route affecting railway traffic.
28 Sep 1927		A 6 year old boy was drowned at Kirkby Thore on the Troutbeck a tributary of the River Eden
Westmorland Gazette 1 Oct		
2 Nov 1927	Gale winds throughout the day and assumed a cloudburst occurred over Helvellyn	Reports of a dam failure at Glenridding. The dam provided power to the Greenside lead mines . A landslide occurred at Shap.
Carlisle Journal 4 Nov		At Carlisle the water level reached 18 feet 3 inches. The River Irthing overflowed at Brampton
Westmorland Gazette 5 Nov 1927		More details in Westmoreland Gazette 'In the early hours of Saturday morning disaster descended upon the little village of Glenridding and in half an hour created indescribable havoc and damage running into thousands of pounds. It was just about 12 months ago that the inhabitants of Longsleddale Valley suffered from the furious destruction of a cloudburst at Gate Scarth Pass but the torrent which swept down from the hills on that occasion and ravined the path for half a mile tossing about like so much rubble, boulders of huge girth and weight, paled into insignificance in the face of the weekend catastrophe in Glenridding Valley.
Carling & Glaister (1987)		High up on the slopes of Helvellyn there used to be a tarn covering an area of 6 acres and the waters of which

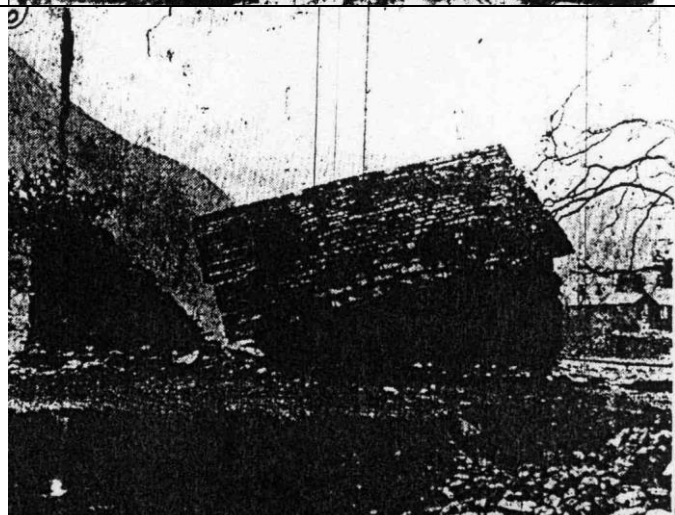
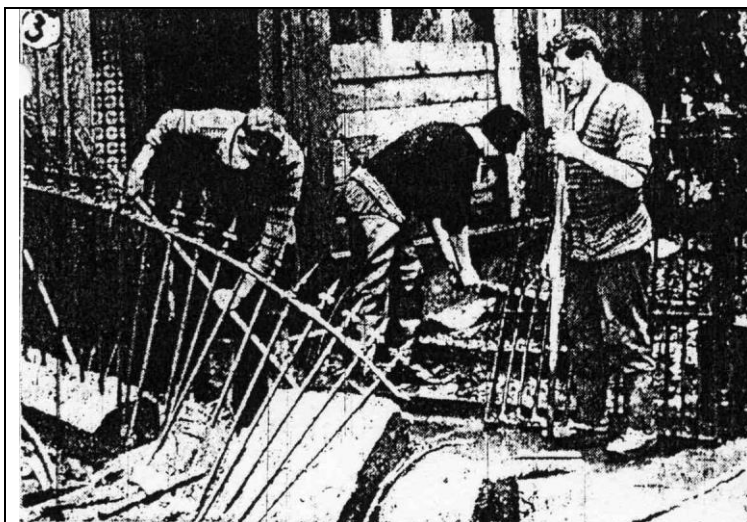
were impounded by a dam, forty feet high and 100 feet thick at the base and 80 feet thick at the top. From this Tarn, Kepple Cove, were released thousands of tons of water which swept in a huge wall down the hillside, smashing down centuries old trees and whisking them away like matchwood, transforming the face of the fell and washing it smooth of deep-rooted rocks; sweeping in a mighty devastating wave over the roadway; in at the front and out of the backs of houses and finally emptying into Lake Ullswater, leaving behind it chaos and a feeling of awe.'

There follows a description of personal losses. Rattlebeck Cottage which stands at the Edge of Glenridding beck was severely damaged and the stone bridge opposite was washed away entirely, not a stone remaining. The cottage according to Mr Parker, the resident, had been flooded once or twice a year ever since he entered it. The tarn dam was found to have a gap 30 feet wide and 40 feet deep. It is about 1800 feet above sea level and 2 ½ miles from Glenridding.

(some additional material not copied)

Could this be considered a GLOF (Glacial Lake Outburst Flood)?!







Westmoreland Gazette Nov 5 1927 1. Lawn of Milcrest's Hotel, 2. Glenridding Bridge 3. Rose Cottage 4. Rear of Post Office 5. Debris left by the flood 6. Hay barn lifted 20 feet by the flood 7. Street front on the following day 8. The breached Keppel Cove Dam seen in 2010.

20 Aug 1928
BR
Newcastle
Evening
chronicle 21
Aug

Carlisle
Journal
24 Aug

Cumberland
News Aug 25

Kirkby Stephen (Redman Ho.)
4.35
Stainmore (Rampson) 3.18
Kirkby Stephen 110 mm
Appleby (Castle Bank) 2.87
Carlisle 1.94
Geltsdale 2.15
Penrith (Laurel bank) 2.04
(only 3 times exceeded
13 May 1911 2.77
July 16 1914 2.15
Sept 15th 1918 2.15)
Penrith (Lowther St) 2.16
record from 1866; previous
>2.0 16 Jul 1914 2.14
29 Oct 1903 2.19
Lanercost 2.50
Thunderstorms and rain was
accompanied by strong

Chronicle reported a big flood on the River Eden and tributaries with thousands of acres submerged. The main road from Carlisle to Newcastle was flooded near Carlisle Golf course.

The heavy downpour of rain lasted 24 hours brought down the Eden and other rivers in heavy flood on 21th. A large tract near the city was inundated. In several parts of the north there were heavy thunderstorms on Monday 20th but the Carlisle district escaped. The level at Eden bridge was 20 feet 8 inches and the worst experienced since January 1925 when the rainfall was accompanied by a southwesterly gale when the level was 22 feet 10 inches. The Journal lists previous high floods on the Eden at Eden Bridge.

Dec 27 1924	21 feet 3 inches
Jan 2 1925	22 feet 10 inches
Sept 22 1926	19 feet 3 inches
Sept 22 1927	19 feet 6 inches
Also	
Jan 27 1903	21 feet 3 inches
Feb 25 1903	18 feet 3 inches
Feb 27 th 1903	20 feet 10 inches

winds.

Oct 6 1903	18 feet 8 inches
Mar 9 1908	19 feet 0 inches
Jan 18 1909	19 feet 0 inches
Feb 1910 (3 times)	18 feet 3 inches
Nov 14 1914	18 feet 3 inches
Nov 30 1914	18 feet 6 inches

This week's rainfall has been common over the whole Eden catchment. Eden and Petteril both overflowed their banks and adjacent Holmes were several feet under water. Rickerby Park, Stoney Holme the lower part of the Swifts the cricket pitch at Edenside, rugby and football grounds and roads near Petteril Bridge and Botcherby were under water. The cenotaph at Rickerby Park was completely surrounded and the low-lying portion of Victoria Park was submerged.. The Caldew was in flood on Tuesday morning and Holme Head Bay was a foaming cataract. Cummersdale Holmes were not flooded to any great extent. The main road between Newby and Crosby was impassable.

At Appleby the Eden rose 6 inches above the flood on New Year's Day 1925. Houses and shops on the Sands and Bridge Street were flooded. A torrent flowed down Chapel Street. The bowling green and tennis courts also suffered. Opposite the bowling green Atkinson's garage was invaded, the walls crashed and the big doors burst under the strain and oil drums were washed away. At Eden (Temple Sowerby) Bridge on the main road from Appleby to Penrith the depth of water was the highest for 40 years.

Villages adjacent to the Pennines were inundated. The road at Melmerby was flooded for 150 yards, the highest known for 30 years. At Briggie the road was covered to a good depth. A house was flooded to over 1 foot at Broadmeadows and also Stag Inn and Gullom Holme where the water reached the window sill. Inhabitants at Melmerby indicated the bulk of the water came with a rush. Stank Bridge one mile west of Melmerby was washed away and the road closed. Little Salkeld Mill was greatly damaged; the dam was completely washed away and the house flooded. The river at Eden bridge Langwathby overflowed to a great extent for 100 yards on the road to a depth of 2 feet. At Lazonby Townfoot the water came down in a great volume and buses were unable to cross from Lazonby to Kirkoswald.

Roads from Kirkby Stephen to Appleby were impassable. A new footbridge giving access to a glen at KS was washed away. Water swept down the main street from the south and many houses were flooded. Hartley Mill House was surrounded by deep water. The Podgill Lunehead Creamery abutting the Eden was demolished and milk cans were washed down the Eden.

Lyne and Esk kept within bounds but Brisco Hill Burn, a trickling stream flooded the roadway to a considerable depth, trapping motorists.

11 Nov 1929

Westmorland
Gazette 16
Nov

18 June 1930
Watkins &
Whyte (2008)
British Rainfall
1930
Carlisle
Journal 20/24
Jun

Thunderstorm
Carlisle Cemy 1.58
Daily Max temp 77 F.

[Rainfall was also reported at Manchester and in Dumfries where houses and shops were flooded]

Heavy rainfall occurred over most of the Lake District for several days starting with a thunderstorm on 9th and then persistent rainfall on 10th and 11th. In Patterdale District houses and roads were flooded and trees uprooted in the accompanying gale. By the end of the period Ullswater and Brotherswater were joined. The Glenridding Grisedale Becks were raging torrents and carried huge boulders. The basements of Glenridding Hotel were flooded to 18 inches. A landslide occurred up the valley.

Storm affecting Stainmore, Knipe Moor

A cloudburst occurred on high land on Stainmore in the Augill Beck and Swindale Beck catchments (tribs of Eden) and at a point of the river at Musgrave. On these becks and on the Eden down to Appleby thousands of trout grayling etc were suffocated by peat and clay. Some jumped out of the river. Anglers captured numbers at Appleby to restock. At the top of Augill Moor, the ground covering an area of 3 or 4 acres had been scooped out to a depth of 10 or 15 feet of peat with a subsoil of blue clay. The land was broken up onto lumps weighing 3 to 5 tons and hurled half a mile down the hillside. On Augill Beck the banks were broken in some places baring the rocks to a depth of 20 feet. Bridges and stone walls were damaged. The land adjoining the beck was covered with a thick layer of peat soil and lumps of earth weighing a ton were hurled on to the land. The cloudburst occurred many miles from houses but **the people in Musgrave (where the Swindale Beck enters the Eden) could hear the noise of the havoc.**

The great Storm: Carlisle Streets Flooded: House fired by lightning: water enters Newton dwellings:

A thunderstorm occurred over Carlisle on Wednesday afternoon (18th). It followed a period of dry weather then sultry atmosphere in the morning. Rain began shortly before 4 pm and was severe for about an hour but continued heavy into the evening. Drains were unable to cope. Water rose to 2 feet deep in low-lying parts of the city especially in the Newton district. Parham Beck was in flood and found its way into houses in Bright St and Peel St. The bowling Green at Newton was a small lake. The water made its way down Port Road into Caldewgate where Carr biscuit factory bakehouse was flooded. A large part of Crown St was also under water. The water rushed round into Botchergate where pools collected in front of the Palace Theatre. Water collected at the bottom of Rickergate. Lightning caused a fire at Portland Square. At Dalston 3 horses were killed and a chimney stack was demolished. One man was killed by lightning at Great Salkeld.

The storm had a very local character, notably in the Carlisle area and south of Penrith but many parts of the lake District escaped. North of Carlisle the rainfall did not affect the district beyond Scotch Dyke (There was no rain at Allonby on the Solway coast). It is 4 years since we have had a storm of such severity – September 1926 – not previously identified.

[Several people killed in other parts of England; cloudburst at new mills Peak Dist when the water rose so rapidly that 3 men were drowned – one swept away from his own window; others killed by lightning at Ascot,

20 Aug 1930 Westmorland Gazette 30 Aug 20 Aug 1931 Yorkshire Post 20 Aug Westmorland Gazette 22 Aug	It was reported to be the hottest August for 54 years. The thunderstorm was a prelude to a heatwave reaching 90F Thunderstorm	Manchester and Southport] The Congregational Church Spire was struck at Kirkby Stephen. Ullswater was reported to be at its highest level in summer months. The pier at Glenridding was under water and the boats stopped operating.
		Following a cloudburst on Helvellyn a great volume of water rushed down the hillside carrying away walls and boulders making a noise like the heaviest thunder. Villagers were aroused at 5.30 to find their homes under several feet of water and mud. Extensive damage to hotels and houses occurred in Glenridding.
		For the second time in four years Keppel dam burst. The water overtopped the bridge in the centre of the village and swept down to St Patrick's Well. Since the event in 1927 the dam had been rebuilt but it was found that a breach 30 feet long had been made. Near Greenside Mine many small bridges were washed away. Visitors saw a giant wave sweep down the valley. At Rattlebeck cottage the house was filled with silt and the road outside was boulder strewn. Water entered the Coop Stores as well as Ullswater House, Glenridding Hotel and Beech House. Trout were picked up on the main road.
3 Nov 1931 Hay (1934) British Rainfall 1931 Yorkshire Post 4 Nov Westmorland Gazette 7 Nov	Cumberland Ullswater (Hallsteads) 3.92 Cumberland Penrith (Hutton John) 3.09 Patterdale (Greenside Mine) 5.26 Penrith (Lowther Castle) 3.65	Glenridding, Patterdale affected 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.
		Enormous floods joined Ullswater and Brotherswater Lakes . Three inches of rain fell in 3 hours. Streams for Helvellyn grew into raging torrents overnight and roads were flooded to several feet.
		Widespread rainfall occurred in Westmoreland. In the Patterdale area walls were washed away and great cavities created in roads. Boulders gravel and sand litter the meadows around hartsop and Ullswater where the flood was said to be the worst for 47 years. Glenridding Hotel, The Coop the Parish Hall and Rose Cottage were again flooded. The foundations of the bridge were seriously damaged. Battlebeck Bridge was impassable, the earthwork at one end being carried away. Approaches to hartsop were flooded to a depth of 4 feet and the village was cut off. Three landslides occurred, the largest at Dodd end Hartsop where huge trees were buried or carried away. Walls surrounding three cottages at Brothersfield were washed away and the cottages flooded. There was damage to the road over Kirkstone Pass.
18 Dec 1932 Cumberland	Keswick 4" Borrowdale valley more than 8" during the storm period. Keswick daily rainfall nearly	Eden and Patteril were both in flood. Brunton Park football ground flooded, as well as Rickerby Park, and isolated the two counties cenotaph. The Edenside cricket ground was also submerged. There is no reference to houses flooded in Carlisle in the Carlisle Journal.

News 24 Dec	3" and Borrowdale 6" Cockermount Castle 5.2"(132 mm) in six days. Carlisle 0.70" Rain over 24 hours was accompanied by a gale with mild temperatures	The Eden Petteril and Caldew burst their banks in places but the floods were not of record dimensions. At Eden bridge the level was 18 feet 10 inches
Carlisle Journal 20 & 23 Dec		Cumberland Journal has photo of enlarged Eden bridge Carlisle
CBHE 20 Aug 1932 Westmorland Gazette 27 Aug 17 Dec 1932 Westmorland Gazette Dec 24 26 Jul 1936 Yorks Post & Leeds Intell 27 Jul 24 Oct 1936 BR	Thunderstorm at Patterdale and Martindale Ullswater (Hallsteads) 2.5 Thirlmere (Dale Head H.) 2.62 Hawes Water (Burn Bks.) 3.38 Patterdale Hall 3.41 Hawes Water (Burn Bks.) 3.72 Patterdale Hall 3.22	Marttindale: Sheep were killed by lightning. Some roads were flooded in Patterdale. [Heavy rainfall also occurred on 1 September but the only effects were to spoil shows at Kirkby Stephen and Brough] Extensive flooding occurred in Patterdale. Meadowland at Hartsop and Deepdale was submerged. Brotherswater and Ullswater were again said to be joined. A heavy thunderstorm broke over the Ullswater district and heavy rain almost ruined Penrith Market that was being held at the time.
13 Dec 1936 BR 5 Sep 1937 BR Carlisle journal Sep 7/10 Cumberland news 11/18 29 July 1938	Sedbergh (The Leyes) 2.53 Heavy rain for more than 24	No reference to storm or flood in either newspaper. The River Eden at Carlisle was swollen far beyond its normal volume but except for one or two places it kept

Carlisle Journal Aug 2 and Aug 5	hours. Patterdale had 6.39 inches in 33 hours Hawes Water (Burn Banks) 3.04	within its banks. To the north of the city the flooding was very severe with flooding of the Lyne and Esk. The Carlisle Edinburgh road was flooded to a depth of nearly 3 feet at West Linton near Longtown. Carlisle suffered little.
Westmoreland Gazette 6 Aug 2-6 Oct 1938 BR	Patterdale Hall 4.41 Hawes Water (Burn Banks) 3.3 Patterdale Hall 4.09	Patterdale: Many roads were impassable and campers were washed out of their tents. The Hartsop road was flooded to a depth of 5 feet.
7 Jan 1939 Westmorland Gazette 14 Jan		WG shows a photo of flooding at Appleby but there is no accompanying text.
28 Jan 1943 BR	Hawes Water (Burn Banks) 2.52 Patterdale Hall 2.7	
5 Apr 1947 BR	Hawes Water Burn Bks 2.80 Patterdale Hall 3.05	
21 Apr 1947 BR	Watermillock Lake View 3.10 Penrith Hutton John 2.75 Troutbeck Well bank 2.79	On 21 st there was more than an inch over most of England north of Kendal Storm Sweeps Solway shore; damage in Silloth: widespread floods inland: the damage in Silloth was mainly tidal. The overflow from the Eden covered a wider expanse at Carlisle than at any time during the winter. At Eden bridge the level was 19 feet 5 inches on 22 nd . The bowling green was under water. At Botcherby it covered holmes below Rose Hill and extended nearly to houses in Warwick Road.
Carlisle Journal 25 Apr Cumberland News 26 Apr	Hawes water burn Bks 3.21 Patterdale Hall 3.66 Penrith Lowther Gdns 2.76	Rain has twice caused flooding of the Eden Caldew and Petteril. At Low Cummersdale one house was flooded from the Caldew.
30 May 1947 BR	Penrith Hutton John 0.92 in 20 mins Watermillock 0.84 in 30 mins	No rain or flood information given.
Carlisle journal 30 May/3 Jun Cumberland News 31 May/7 Jun		CN reports 'A heat wave in Carlisle' with Monday 26 th being the hottest day of the year 84 F. Thunderstorms and rain also visited the district (but does not specify where). Thunder was heard on the night of Tuesday to Wednesday 27/28 th .

18 Jul 1947 BR Carlisle journal 18/23/25 Jul Cumberland news 19/26 Jul	Temple Sowerby 2.24 in 1 hr Tot=2.24	Flooding occurred in the centre of the village; water had to be pumped out at the Kings Arms Hotel. No rain or flood information given in either paper.
11 May 1948 BR Cumberland news 4/11 Jun Carlisle journal 14/18 May	Temple Sowerby 1.97 in 3 hrs	No reference to rain or flood in either paper.
23 Jan 1949 BR	Caldbeck 2.55	
1 Jun 1949 BR Carlisle journal 3 Jun	Caldbeck Upton Sch. (R Caldew) 0.79 in 30 mins	Terrifying crash heralded thunderstorm: The storm started at 6.45 am and was followed by torrential rain centred over the area between Lowther Street and Abbey Street. Two small fires were caused by lightning.
25 Oct 1949 BR	Carlisle (Spital Cemetery) 2.95 Braithwaite (Blackwood) 2.6 Patterdale Hall 3.01	
22 Jul 1951 Westmorland Gazette Jul 28		An inquest was held on the death of a boy drowned in the River Eden at Kirkby Stephen. 'A wall of water drowned a boy'. A seven year old boy was swept off Bolam Bridge steps and drowned by a wall of water several feet high down the River Eden. He had been playing with friends on the steps when the wall assumed to be caused by a cloudburst on Mallerstang, carried him off. He could not get clear in time; an oil drum caught on the crest hit him.
26 May 1953 Yorkshire Post 26 May		Wetheral: Five cattle were killed by lightning at Croft Farm. No reports of flooding. [Widespread thunderstorms around the country]

10 Sep 1954 BR	Wet Sleddale (Mirethwaite) 3.15	In September there was a steady succession of depression passing across or to the north of Scotland
17/18 Oct 1954	Patterdale Hall 2.98 Martindale (Howtown) 2.53	There was a 48-hour total of 6.00 inches at Wet Sleddale (Lowther/Eden) on 17 th /18 th .
23 Oct 1954 BR	Wet Sleddale (Mirethwaite) 3.00	The mountains in the west received abundant rain throughout the month.
29 Oct 1954 BR Carlisle Journal	Wet Sleddale (Mirethwaite) 2.97 Haweswater (Burn Banks) 4.10	Highest at Carlisle since 1945; probably 1941 (snowmelt?) was higher. But a note indicates that the bed of the river at Eden bridge has been lowered by 4 feet (Date?).
27 -30 Nov – 1 Dec 1954 BR	27 th Wet Sleddale (Mirethwaite) 2.53 Haweswater (Burn Banks) 2.96 Patterdale Hall 2.78 Martindale (Howtown) 3.26 30 th Wet Sleddale (Mirethwaite) 2.75 Haweswater (Burn Banks) 3.00 1 Dec Patterdale Hall 3.24	The unsettled weather continued in December and there was a fall of 6.32 inches at West Sleddale for 1 st /2 nd bringing the three day total to 9.07 inches.
2 Dec 1954 Carlisle Journal		Farmers were flooded for the fourth time in the latest downpour.
13 Jul 1955 Lancc Evg Post 16 Jul		A 13 year old boy was killed by lightning at Appleby
23 Jun 1956	Penrith Arthur St 0.59 in 10 mins	The Penrith observer noted that a downspout unable to take the hailstones burst during the brief violent thunderstorm.
4 & 8 Jan 1957 BR	4 th Patterdale (Greenside Mine) 2.73 8 th Martindale (Howtown) 2.5	

13 May 1959
Lancs Evg Post
13 May

25 Aug 1961
Hiflows UK

15 Jan 1962	Hallin Bank	3.04
BR	Hutton John	2.05
	Burn Banks	3.45
	Penruddock	2.27

11 Feb 1962	Hutton John	2.37
BR	Penruddock	3.05

2 Apr 1962	Mallerstang	2.52
BR	Burn Banks	3.72
	Spadeadam	2.17

10 Jul 1962
Westmorland
Gazette 13 Jul

26 Aug 1962
Hiflows UK
Carlisle
Journal

31 Aug
Mar 1963
7 Jul 1964

Hiflows UK
Cumberland
News and
Carlisle
journal.

10 Jan 1965	Patterdale Hall	95.8
BR	Burn Banks	103.4
	Spadeadam	52.8
	Ashycroft	52.3

Penrith: Worst hit was the Town Head district where the water was several feet deep on the road and several inches deep in houses. The flood affected a 2 mile stretch of the main A6 road from Penrith to Carlisle. Water tore turnips and other crops out of fields on to the road and breached walls. At Plumpton 4 miles north of Penrith a cow was killed by lightning and farm buildings flooded. Penrith main street was turned into a river. LEP has 2 photos showing cars stuck in deep mud.

Eamont at Udford 1961-09 AMS rank 3 AM 50

Winds S to SW strong; frontal, orographic; warm and cold fronts moving east – vigorous depression in the Atlantic. High rainfall mainly in Lowther catchment.

Winds W strong to gale; frontal orographic; warm and cold fronts moving quickly east.

Wind SW fresh to strong; frontal, orographic; warm front and cold front with wave moving east.

Shap: Traffic was delayed as a downpour washed boulders and gravel across the A6

Lowther at Eamont bridge 1962-09 AMS Rank 1 AM 26

Some city flooding occurred on the weekend. Water was in cellars at George Street Maternity Home and 2 houses in Mardale were also threatened.

Snowmelt flood

Eden at Temple Sowerby 1964-09 AMS Rank 2 AM 46

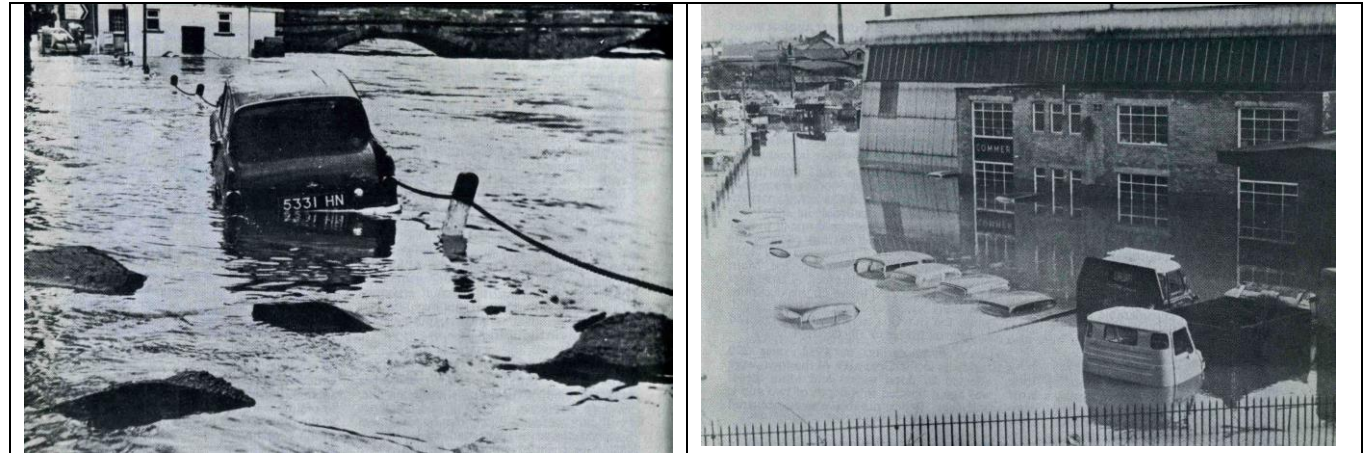
Rain hit school sports – nothing else!

Cold front moving eastward

24 Jul 1965 BR Carlisle Journal and Cumberland News	Appleby Castle 79.0 Appleby,Highfield 76.5	Orographic, thundery; unstable air mass Nothing on rain or flooding in either paper but reference to a swimmer struck by lightning in Lake Windermere.
13 Aug 1966 BR Hiflows UK Cumberland News Aug 19 th Carlisle Journal Aug 19	Hutton John 50.5 Geltsdale 62.0 Carlisle 32.8 St Bees 64.5 Penrith had its wettest day of the year but with only 0.75” and Temple Sowerby ‘over an inch’	Depression, frontal orographic, thundery; wave depression off southwest England deepening and moving north- north-east. Also northeast England and much of Scotland. Eden at Temple Sowerby 1964-09 AMS Rank 1 AM 38 Saturday nights storm caused some of the worst flooding in living memory following wet weather during the previous 2 weeks but it was concentrated in Borrowdale and Langdale. Flooding was reported in the Ullswater area. The Greenside Youth hostel at Glenridding was flooded when the Glenridding beck cleared the stone bridge and was diverted straight down the valley into the hostel [No ref to flooding in Glenridding]. The cellar of the Sun Hotel in Pooley bridge to about 2 inches. [Flooding was also reported at Dumfries (River Nith) and at Longtown]. CJ notes great variation in damage. Borrowdale was badly hit but Penrith, Carlisle and Wigton escaped reasonably lightly. Longtown also suffered torrential rains and high winds. Lightning struck the bridge Street surgery which was destroyed by fire. In the Carlisle area water had to be pumped out of Harraby Secondary School and Harraby Community Centre. People were rescued from cars stuck in floods under a railway bridge at Cumwhinton and under a bridge in St Ninians Road Carlisle. Wigton Fire engine got stuck at Moorhouse Hall in 2 feet of water on the way to Little Bampton. There was a four foot flood at Aspatria but firemen managed to stop water getting into a new housing estate at Beacon Close. Three cottages in Queen Street and 3 at Parsonby had a foot of water in them. At Silloth Cumberland cottages had about a foot of water in their cellars. Eamont at Udford 1961-09 AMS Rank 1 AM 32 Lowther at Eamont Bridge 1962-09 AMS Rank 2 AM 29 In Carlisle Harraby community centre was again flooded. Tilbury Road was blocked by water. Roads around Longtown were under water including the A7 between Carlisle and Edinburgh. The road from Longtown to Brampton was flooded at Brisco Hill. Homes flooded included Haelin Cottage near Penton and a cottage on the
4 Sep 1966 Hiflows UK Carlisle and Cumberland journal 9 Sep		

			border near March bank. Floodwater on the hospital Roadswept into Rayfield Estate with 3 houses flooded to a depth of 3 feet. [More to add to the Derwent file]
			Borrowdale was twice devastated. Water again flowed through Seathwaite farm (photo in CJ) and through the house to a depth of 3 feet. The road to Seathwaite was covered by huge mounds of boulders and pockmarked by gaping holes. Rosthwaite escaped the brunt of the new floods
23 Aug 1967 BR Cumberland News 25 Aug	Temple Sowerby 37.0 in 1 hr 30 mins		No reference to rain or flooding was found
16 Oct 1967 BR	Threlkeld 70.6 Quarry Hill Filter Wks52.6 Renwick 78.5 Geltsdale 74.4 Castle Carrock 71.6		Depression, frontal orographic, thundery; warm sector depression occluding and moving northeast over northern England. Very widespread and heavy rain, some totals over 100 mm in Wales.
23 Mar 1968 BR	Eden Place 54.1 Appleby Castle 50.8 Appleby, Highfield 58.4 Burn Banks 96.5 Spadeadam 67.1		(Not sure if this is the same event as noted below for which there is no date. There was snowmelt in Mar 1968.)
March 1968			A large number of towns and villages were flooded including Kirkby Stephen, Warwick Bridge, Eden Hall, Crosby on Eden, Brampton, Lanercost, Wetheral, Grange, Penrith and Carlisle. Cumberland Journal reported the loss of two bridges, one at Langwathby which had stood for 280 years and the Jubilee bridge at Appleby. Caldewgate in Carlisle suffered even more than in 1925 because of a new industrial estate at Willow Holme which was flooded with up to 6 feet of water. Over 600 houses were flooded along Warwick Road and Botcherby; 150 families had to be evacuated and 6000 people were affected in some way. The football pitch at Brunton Park was under 7 feet of water.
Tobin (1979)			The vagaries of climate, often assumed to be of less concern in our modern era, brought a flood as great as any in recorded history in March 1968. Bridge Street, St. Lawrence's Church, the Police Station, the Methodist Church on the Sands and many houses were flooded, probably without the loss in wines and spirits that depressed the citizens of 1771, but with a far longer bill for repairs. The Jubilee Bridge at Bongate [built 1887] was irreparably damaged by this flood...." "1970: Jubilee Bridge replaced.

CBHE



A. Appleby March 1968. Note bridge in background B. Carlisle March 1968

15 Jul 1968 BR	Renwick	61.2	Frontal, orographic, thundery; depression over central North Sea with trough extending over northern England.
31 Oct 1968 BR	Hutton John Askham Hall Johnby, Hill Cottage	56.6 56.1 54.1	Depression, frontal, thundery; complex depression extending from southwest Ireland to North Sea with front moving slowly south over Northern Ireland and Northern England.
20 Aug 1969 Hiflows UK Cumberland news 22 Aug			Irthing at Greenholme 1967-09 AMS Rank 3 AM 28 Coal Burn at Coalburn 1967-09 AMS Rank 2 AM 13 Reference only to heavy rain showers
http://www.cumbria.gov.uk/eLibrary/Content/Internet/536/4042394623.pdf			Freak T-storm Bewcastle 4" (100mm) Rainfall
14 Aug 1971 Hiflows UK	Appleby 1.74 Carlisle 1.40 St bees 0.50		Eden at Sheepmount 1967-09 AMS Rank 1 AM 37 (no other summer AM floods at Sheepmount) Petteril at Harraby G 1969-09 AMS Rank 1 AM 24 (no other summer AM floods at Harraby G)

Cumberland
News 20 Aug
Cumberland
Evg. News 14
Aug
30 Aug 1975

Hiflows UK
Archer 2010

Cumberland
News Aug 29
Cumberland
Evg news 30
Aug

15 Apr 1976

Hiflows UK

Cumberland
Evg news 17
Apr

6 Jun 1982
Evening News
4/5/7 Jun

Thunderstorm

Met Office Carlisle reported
1.5 inches rain in 3 hours.
Temperatures were in the
mid 20s F.

Heavy rainfall in 2 blocks
centred on Carlisle and
Skipton.

Harvey, A.D.M
(1986)

Carlisle Daily 66mm and 32.5
mm in 1 hr.

No reference to flooding; only an agriculture report which said 'the harvest may be saved despite the rain' and referred to 'last weekend's storms and torrential rain'.

Downpour flattened harvest hopes. Continuous overnight rain and fierce winds in Cumberland and N Westmoreland caused delays on roads. Slight flooding was reported on minor roads

Irthing at Greenholme 1967-09 AMS Rank 1 AM 6

Coal Burn at Coalburn 1967-09 AMS Rank 1 AM 1

Reference to recent thunder and rains as being welcome for agriculture after the long drought.
Evening news has nothing on floods

Eamont at Pooley Bridge 1970-09 AMS Rank 2 AM 35 (No more summer AM floods)

No reference was found to flooding.

EN 4th Thunderstorms swept West Cumbria and cut power to 4500 homes especially in the Salterbeck area of Workington and Harrington. Floods destroyed foodstuffs at Whitehaven Coop. Water started coming in under the door about as soon as the storm started.

EN 5th notes that Brampton was swamped *again*. Another fierce thunderstorm swamping the same area as 48 hours ago. The White Lion had 6 inches of water in just 15 minutes – the pub having been flooded on Thursday. Milburn's ironmonger on High Cross Street was also hit. Serious flooding had occurred on Thursday (3rd) at Wellmeadow Terrace 8 houses which were evacuated. The problem was said to be a nearby beck and culvert which failed to take the heavy amount of rainwater. Flooding also occurred on Dacre Road, Berry Moor road and a number of shops in the centre. Ruts up to 4 feet deep had appeared in some roads and a large crater had appeared near the old brewery. A boy was drowned in the river Gelt by a '10 foot wall of water'. 65000 homes were left without power. Lightning injuries were sustained at Dalston Lime House School which was also flooded and Lowther Wildlife Park. Carlisle's worst affected areas were Caldewgate, Raffles, Newton Road, Harraby and Warwick Road. Wades furniture store was both flooded and hit twice by lightning, damaging their roof. Houses in Raffles Avenue were flooded to 4-5 inches ('It's the second time in 6 months we have been hit'). In Caldewgate the Pheasant Inn cellars and the bar were flooded. Morton Street was flooded. In the City

centre near the City hall, cars were surrounded and the Police CID quarters also suffered from flooding Wigton and Thursby were also hit.

Carlisle City Council is to rehouse residents of Wellmeadow Terrace Brampton



June Twiss points out the tide mark on her



Man the pumps . . . the flood water threatens a Caldewgate petrol station.

17 Jul 1983
Westmorland
Gazette 22 Jul
Eden (2008)

Thunderstorm
Appleby Castle 98 mm
Honister Pass 112 mm

After only 10 minutes of torrential rain, Appleby's houses shops and hotels started flooding. Streets near the river were flooded and houses on higher ground were soaked where blocked drain could not take the sudden force of the water. Thirty houses were flooded and at the royal Oak Inn the water came in front and back in just 19 minutes leaving no time to move anything. The Fire station was also affected by flooding.

16 Aug 1985
Hiflows UK
22 Sep 1985
Hiflows UK
Evening News
and Star 23
Sep

Eamont at Udford 1961-09 AMS Rank 2 AM 45
Eamont at Pooley Bridge 1970-09 AMS Rank 1 AM 32
Haweswater at Burnbanks 1978-09 AMS Rank 1 AM 20
Irthing at Greenholme 1967-09 AMS Rank 2 AM 10
Eden at Kirkby Stephen 1971-09 AMS rank 3 AM 33

Downpour causes flood chaos. Roads in Carlisle and area were blocked by floods on 21st Areas in the Raffles, Botcherby, and the city Centre were worst hit. Pensioner's homes in Longtown's Lochinvar Close were hit for 3rd time in 6 weeks having been previously

			flooded last week. It was also said to be the 6 th time in 10 years since they were built. Flooding also occurred at the centre of Rockcliffe village.
7 Jun 1989	Thunderstorm with hail		River Eden has fallen although Rickerby Park is still under water; the Caldew is still high.
Westmorland Gazette 9 Jun			A fatal accident occurred on the M6 just outside Rosehill, Carlisle as a result of a sudden extreme hailstorm which covered the carriageway to 2 inches deep and made the road very slippery. One car with a caravan stopped on the roadside and was then hit by a series of further vehicles. One man was killed and several injured.
19 Feb 1990	Kirkby Stephen	87.0	A very deep depression passed between Scotland and Iceland on 19 th with its associated frontal system moving quickly across Scotland but becoming slow moving across northern England causing flooding.
COL	Carlisle	21.1	
MO Rainfall			
8 Jun 1992	Wetheral	56.5	On 8 th thunderstorms developed over NW England SW Scotland and the Midlands.
COL			No reference to rain or flooding in N&S
Evening news & Star			
23 Feb 1995	More than 2 inches in 12 hours		Appleby: 5 houses, six shops and a pub were flooded from the River Eden.
Ncl Evg Chronicle 23 Feb			
2 Oct 1995	Haweswater Burnbanks	64.0	No reference to rain or floods in N & S
COL	Penrith Newton Rigg	32.2	
Evening News & Star			
28 Sep 1996	Shap	77.0	Warm/cold fronts swept across Ireland and Scotland during the night of 28 th /29 th . The cold front moved more slowly across England and minor waves formed along it.
COL			
Hiflows UK	There were no reports of thunder		Lowther at Eamont Bridge 1962-09 AMS Rank 3 AM 41
Westmorland Gazette 4 Oct			No reference to rain or floods in News & Star
13 Jul 1997	Wetheral	54.7	The Sykeside campsite at Brotherswater was covered to a depth of 2 feet
COL	Drumburgh	32.9	A cold front crossed the UK on 13 th . Drumburgh observer reports a thunderstorm with 25 mm in 40 mins.
News & Star	Carlisle	33.0	Wetheral observer reports a torrential shower.
13 Jul			Flash floods left Carlisle knee deep in water after heavy rains overloaded drains. Worst hit was the Harraby estate with some houses 2 feet deep. Children from Pennine Way Junior School were sent home leaving teachers to mop up. The water came down Pennine Way and entered nearly every classroom, hall and dining hall. The Infants school escaped damage. Harraby N Cumbria Technical College had damp carpets. Some

16 Sep 1997			flooding occurred at Carnaud Metalbox factory. Residents at Welsh Road cul-de-sac in Harraby were cut off. Several houses were flooded at Pennine Way. Other flooded streets included Haig Road, Allendale Road and Edgehill Road opposite the Technology College. At Carlisle Golf Course 'it was the worst flooding for 45 years'.
Hiflows UK			Caldew at Cummersdale 1997-09 AMS Rank 1 AM
News & Star			No reference to rain or floods in N & S
16-18 Sep			
19 Sep 2000	Penrith	45.9	Eden at Great Musgrave Bridge 2000-09 AMS Rank 1 AM 6 (No other Summer AM floods)
COL	Edenhall	37.8	Dacre Beck at Dacre 1997-09 AMS Rank 3 AM 7
Hiflows UK	Wetheral	36.1	
News & Star			No reference was found to heavy rain or flooding
19 Sep			
24 May 2002	Shap Fell	43.0	
COL			
30 Jul 2002	Wetheral	45.6	A thundery day reported
COL			Dacre Beck at Dacre 1997-09 AMS Rank 1 AM 1
Hiflows UK			Floods: Cumbria mops up after downpour: A fortnight's rain in just three hours: Rain caused floods all over the county. Penrith was worst hit as the Leisure Centre, police Hq and many of its major shops were flooded. The Somerfield supermarket in Friargate was flooded. Some streets had 4 to 5 inches of water. Properties in Scotland Road were also flooded as was an antique shop in Duke St. Roads became dangerous including the A66 between Reghed Centre and Threlkeld and the A686 near Alston. The Rose and Crown pub in Low Hesketh had to be pumped out by fire crews.
News & Star			
31 Jul			
9/10 Aug	Wetheral (9 th)	39.4	Coal Burn at Coalburn 1967-09 AMS Rank 3 AM 14
2004	Wetheral (10 th)	26.0	11 th Days of torrential downpours: EA said the rivers coped with the rain but localised flooding occurred. Water was 18 inches deep under the rail bridge at Kingsmoor Road between Carlisle and Cargo. Roads were flooded near Unthank, Scotby and Hutton in the Forest.
COL	Brampton 10 th)	33.6	12 th More than 13 mm fell in 1 hour at Carlisle last night at 5 pm. Earlier hot summer sunshine had persisted till late afternoon. Flooding occurred at St Peter's Drive and Naworth Drive but to small depths.
Hiflows UK	Penrith (10 th)	41.0	Dacre beck at Dacre 1997-09 AMS Rank 2 AM 5
News & Star	Carlisle	19.8	
11 Aug			
20 Aug 2004			
Hiflows UK			
News & star			Wet weather and lightning but no floods reported.
20-23 Aug			
3 Oct 2004	Shap	39.6	

COL	Wetheral	27.0	
	Brampton	29.1	
13 Apr 2005			Haweswater at Burnbanks 1978-09 AMS Rank 2 AM 28
Hiflows UK			
23 Aug 2005	Shap	53.0	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.
COL			No thunder reported
11 Oct 2005	Carlisle	109.2	Brampton: This has been the wettest month since I started in 1999, total fall was 180.7mm; the average is around 100mm for October. It also includes the wettest day as well, with a staggering 62.3mm, 18mm of this falling in one hour.
COL	Drumburgh	76.3	
News & Star	Wetheral	69.7	
12-13 Oct	Brampton	62.3	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.
	Penrith	51.3	
<p>With rainfall on Friday night at least 65 homes were flooded in N and W Cumbria. Photos show flooding at Warwick Road (refurbished after major January floods) and Cumwhinton Road. Flooding occurred at Milbourne Street Denton Holme (where 140 homes were flooded in January floods). In one house water was coming in through the window. On Brunton Crescent the water reached 1 foot in depth with the maximum at 9 pm. Brunton Avenue was also flooded. On Greystone Road water was 10 inches deep on one side of the road. On Corporation Road the water was up to the first step of the Magistrate's court. Parts of Harraby were also flooded despite escaping the worst of January's floods. Residents on Allandale Road were flooded from water streaming from a nearby hill.</p> <p>Schools were flooded; Harraby Inglewood Infants was flooded to 6 inches. The Technology College boiler room was flooded to 5 feet Harraby Community Centre will be out of action for 6 months Pennine Way primary was also flooded. Longtown Primary school was flooded. Businesses in the Willowholme industrial estate were inundated up to 2 feet deep with water bubbling up through the drains</p>			
23 Apr 2007	Shap	54.0	After a generally sunny month, the 23rd was rather on the cloudy side as frontal bands of cloud and rain spread
COL	Spadeadam	32.0	E'wards across the British Isles.
11/12 Jun	Brampton	42.1	The afternoon of 11 th brought some heavy showers over Wales, N Ireland and N England with some flooding
2007	Wetheral	42.1	occurring in parts of Wales. Torrential rain and thunderstorms were also reported across parts of Lancashire
COL			and Cheshire.

News & Star
12-16 Jun
20 Jun 2007
COL
News & Star
20/21 Jun
19 Jul 2007
Hiflows UK
News & Star
19-21

Penrith Maulds Meaburn,: 30 mm fell in just 1 hour on 11th.

No reference was found to heavy rain or flooding in N&S

Heavy, thundery rain moved NE through the NE Midlands and N England during the early hours, with the Met Office reporting 11.6mm of rain in one hour at Shap Fell.

No reference was found to heavy rain or flooding

Eden at Kirkby Stephen 1971-09 AMS Rank 1 Am 9

Flash floods hit Armathwaite and Ainstable; rain poured into the villages from fields and becks. Up to 5 feet of water reached Drybeck farmhouse in Armathwaite and up to 4 feet in Ainstable. Carlisle largely escaped. The New Crown lost barrels of beer as water flowed into the cellar and caused the electricity supply to fail.

At Gelt Hall Farm Castle Carrock the house was flooded and cows in the fields were up to their stomachs. The occupants said ' we have lived here since 1979 and never seen anything like this'

In Low Row near Brampton neighbours knocked down the wall of a house next door to prevent a couple's home being swamped with floodwater.

[Serious flooding also occurred in Gloucestershire]

Rain spread N during the morning of 21st, with heavy falls over N Ireland and parts of N England in the afternoon. By the evening the rain had reached S Scotland - with cloudy and damp conditions continuing further S. According to the Met Office there were thunderstorms over parts of Wales and Northern Ireland and the heavy rain in Ireland was also thundery. No thunder reported for Cumbria

21 Jun 2008	Carlisle	41.4
COL	Spadeadam	37.8
	Drumburgh	31.3
	Edenhall	29.7
	Wetheral	29.3
	Shap	28.2
	Brampton	25.2
31 Jul 2008	Spadeadam	50.6
COL	Warcop	43.6
	Brampton	33.3
	Spittal	31.8
	Wetheral	31.8
5/6 Sep 2008	Spadeadam	46.0
COL	Shap	30.2
	6 th	
	Penrith	32.9
25 Oct 2008	Shap	79.8
COL	Spadeadam	52.0
	Penrith	30.9
	Carlisle	29.4

Low pressure remained close to Ireland during the 31st and pushed a sequence of fronts and troughs E across W and Cent parts of the British Isles.

See Northeast flood history

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

	Edenhall	27.0	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.
	Brampton	25.6	
16/17 Jul 2009	16 th		A low pressure centre crossed the UK on the 17th to give a cool and wet day across Britain. Overnight rain affected much of England, Wales, S and E Scotland with falls also in E Ireland. Thunder in parts of Cent S England around dawn later affected East Anglia as the heaviest rain moved N and E. By the evening rain was falling across much of E Scotland and S'wards to the N Midlands. No thunder reported in the area Eden at Kirkby Stephen 1971-09 AMS Rank 2 AM 17
COL	Wetheral	26.8	
	17 th		
	Edenhall	36.5	
	Penrith	36.2	
Hiflows UK	Wetheral	27.2	
28 Jul 2009	Shap	44.8	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.
COL			Brampton: Exceptionally heavy and at times torrential rain during the afternoon of the 22nd, brought 42.9mm of rainfall. This was the third wettest day in 11 years of records.
22 Jun 2011			
COL			
17 Jul 2011	Around an unseasonably deep depression over eastern Scotland, there were two thundery areas. The second affected parts of southern Scotland and northern England.		Wetheral: Flash flooding was reported from Great Corby (E of Carlisle) and, nearby, marble-sized hailstones (just over 10 mm diameter) were noted; 44 mm of rain was recorded at Wetheral in three hours. Wetheral: A garden patio was washed away, there was damage to a school and flooding of houses at Great Cosby. A little further away hailstones the size of marbles fell, described at more than 1cm in diameter. The raingauge was emptied at 1301GMT (10.1mm), 1600GMT (33.7mm), 0900GMT/18th (12.8mm) making a day's total of 56.6mm.
COL			
28 Jun 2012			Penrith Maulds Meaburn,: Started with a slight deposit of sand that had fallen in approximately 1.0 mm of rain during the early hours. A muggy day that then saw a thunderstorm during 1330-1455 h with 29.6 mm of rain falling during 1335-1455 h. At its highest intensity the rain rate was 169.4 mm/h and caused some flooding on local roads.
COL			
24 Sep 2012			Penrith, Maulds Meaburn: Significant rainfall of 55.8 mm (45% of month's total, of which the majority fell in the early hours of 25th); it was the second wettest day at this site.
COL			

27 Jul 2013
COL

Drumburgh 34.2
Brampton 64.2 between
midnight and 0800 h on the
28th, with a steady 20 mm
per hour being recorded
between 0600 h and 0800 h.
Penrith Maulds mMeaburn
62.6

Drumburgh (NW of Carlisle): A record highest daily September rainfall of 41.8 mm (1991).
Brampton It was the wettest day in records in 13 years of recording. There was little reported flooding in the area. Fortunately the rivers coped very well and were quickly back to normal levels. Not a thunderstorm

References

- Bennett, M. R. & Doyle, P. 1998. *Issues in Environmental Geology: A British Perspective*. x + 438 pp. London, Bath: Geological Society of London.
- Carling P A. 1997. Sedimentology of the 1749 flood deposit. In Boardman J (ed.) *Geomorphology of the Lake District: a Field Guide*. British Geomorphological Research Group, London 23-29.
- Carling P A, Glaister M S. 1987. Reconstruction of a flood resulting from a moraine dam failure using geomorphological evidence and dam-break modelling. In Mayer L, Nash D (eds.) *Catastrophic Floods*. Allen & Unwin, Winchester MA, 181-200.
- Crisp, D.T., Rawes, M, Welch, D. (1964) A Pennine peat slide. *Geog. Jnl.* 130 519-24.
- Harvey, A.D.M (1986) Geomorphic effects of a 100-year storm in the Howgill Fells, North West England. *Zeitschrift für Geomorphologie*, 30 70-91.
- Hay, T. (1934) *Geographical Journal* 138-9, British Rainfall 1931.
- Huddleston, F. (1930) The cloudbursts on Stainmore June 18 1930 *British Rainfall* 287-92
- Parson and White, (1829) *History, Directory and Gazetteer of the Counties of Cumberland and Westmoreland with that Part of the Lake District in Lancashire Forming the Lordships of Furness and Cartmel*, Leeds.
- Sedgwick, A. (1868) Memorial by the Trustees of Cowgill Chapel. 37-50.
- Smith, G. (1754) Dreadful storm in Cumberland. *Gentleman's Magazine* 24 476-7.
- Smith, K. and Tobin, G.A. (1979) *Human adjustment to the flood hazard*, Longman, New York 130pp.
- Tobin, G. A. (1979) When the waters rose in Cumbria, Cumbria, *Lake District Life* 29, 2 78-81.
- Webb, J.D.C. (1988) Hailstorms and intense local rainfalls in the British Isles, *J. Meteorology* 13 (129) *Proc of second TORRO Conference on Tornadoes and Storms*. 166-182.
- Webb, J.D.C. (1993) Britain's severest hailstorms and 'hailstorm outbreaks' 1893 – 1992, *Journal of Meteorology* 18, 193, 313-327.
- West, T. (1812) *Guide to the Lakes in Cumberland, Westmoreland and Lancashire*, Kendal.