

National River Flow Archive

NERC Centre for Ecology & Hydrology

NRFA PEAK FLOW DATASET VERSION 8

Note on changes from v7

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AUTHOR: KATIE MUCHAN, STEVE TURNER, CATH SEFTON, OLIVER SWAIN

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1.0	SEPTEMBER 2019	KATIE MUCHAN, STEVE TURNER, CATH SEFTON, OLIVER SWAIN	

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1 INTRODUCTION

Version 8 of the NRFA Peak Flows Dataset contains AMAX and POT data for 935 gauging stations, of which 641 are in England, 161 are in Scotland, 91 are in Wales and 42 are in Northern Ireland. A total of 543 stations are recommended for use in pooling groups ('Suitable for Pooling'), 335 stations are 'Suitable for QMED' and 57 stations are 'Suitable for Neither'.

Version 8 contains:

- Network changes (see section 2)
- An additional water year of data (updated to 30th September 2018) for all active peak flow stations in the UK (see section 3)
- Full period of record Data Review for a subset of stations in the dataset (162 stations, see section 4)
- Modifications to existing time series (see section 5).

2 NETWORK CHANGES

A number of changes have been made to the gauging stations for which peak flow data are held on the NRFA since the release of version 7. Key changes are noted in this section.

2.1 Removal of Gauging Stations

27 stations have been removed from the dataset, listed in Table 1. Daily flows are still held on the NRFA where indicated.

Table 1: Stations removed from the dataset in version 8.

Station Number	Station Name	Measuring Authority	NRFA daily flow station	Comment
8001	Spey at Aberlour	SEPA-N	Yes	Level only station since 1976, therefore data of very low confidence.
17002	Leven at Leven	SEPA-E	Yes	Complex rating history with no confidence in flood estimation.
20002	West Peffer Burn at Luffness	SEPA-E	Yes	Primarily a low flows structure with limited high flow gaugings and variable backwater effects.
33006	Wissey at Northwold Total	EA-EA	Yes	Uncertainty in sidestream data pre-1994 and FEH Neither station unlikely to be upgraded to QMED.
34004	Wensum at Costessey Mill	EA-EA	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
34011	Wensum at Fakenham	EA-EA	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
34018	Stiffkey at Warham	EA-EA	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
41025	Loxwood Stream at Drungewick	EA-SSD	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
41027	Rother at Princes Marsh	EA-SSD	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
41028	Chess Stream at Chess Bridge	EA-SSD	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
55001	Wye at Cadora	NRW	No	FEH Neither station unlikely to be upgraded to Suitable for QMED.
55011	Ithon at Llandewi	NRW	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
55015	Honddu at Tafolog	NRW	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
55017	Chwefru at Carreg-y-wen	NRW	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
56005	Lwyd at Ponthir	NRW	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
56007	Senni at Pont-Hen-Hafod	NRW	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
56015	Olway Brook at Olway Inn	NRW	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.

57003	Taff at Tongwynlais	NRW	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
57803	Clun at Cross Inn	NRW	No	FEH Neither station unlikely to be upgraded to Suitable for QMED.
58011	Thaw at Gigman Bridge	NRW	No	FEH Neither station unlikely to be upgraded to Suitable for QMED.
60004	Dewi Fawr at Glasfryn Ford	NRW	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
67002	Dee at Erbistock Rectory	NRW	No	FEH Neither station unlikely to be upgraded to Suitable for QMED.
67025	Clywedog at Bowling Bank	NRW	Yes	FEH Neither station unlikely to be upgraded to Suitable for QMED.
84006	Kelvin at Bridgend	SEPA-S	Yes	Poor confidence in flood estimations through entire record.
89004	Strae at Glen Strae	SEPA-S	Yes	Poor confidence in extrapolation above highest gauging.
201006	Drumragh at Campsie Bridge	DfIR	Yes	Station affected by backing up with confluence with Camowen downstream.
203021	Kellswater at Curry's Bridge	DfIR	Yes	Station does not meet numerical criteria for Pooling or QMED.

2.2 Addition of Gauging Stations

Six stations have been added to the dataset in version 8, listed in Table 2.

Table 2: Stations added to the dataset in version 8. A * denotes stations that are completely new to the NRFA (i.e. were not existing daily flow stations).

Station Number	Station Name	Measuring Authority	Suitability	NRFA daily flow station
8013	Feshie at Feshie Bridge	SEPA-N	Pooling	Yes
9010	Deveron at Huntly	SEPA-N	Pooling	Yes
18005	Allan Water at Bridge of Allan	SEPA-E	QMED	Yes
27097*	Aire at Bingley	EA-Y	QMED	No
75018	Derwent at Seaton Mill	EA-CL	QMED	Yes
84035	Kittoch Water at Waterside	SEPA-S	Pooling	Yes

2.3 Closure of Gauging Stations

Two stations have been closed in version 8, listed in Table 3. Previously recorded flow data for these stations are still contained in the dataset and shown on the NRFA website, but there will be no further updates in future.

Table 3: Gauging stations closed in version 8.

Station Number	Station Name	Measuring Authority	NRFA daily flow station	Comment
39002	Thames at Days Weir	EA-T	Yes	Station closed 01/02/2018 due to issues with knowledge of gate movements.
75009	Greta at Low Briery	EA-CL	No	Station closed 05/12/2015 due to flood damage, and will be relocated upstream.

2.4 Changes to Station Numbers

Station numbers have changed at three stations in England, listed in Table 4. All data and metadata are now held under these new station numbers on the NRFA website and data are presented in files with these station numbers in the download for use in WINFAP.

Table 4: Station number changes in version 8.

Station Name	Measuring Authority	V7 Station Number	V8 Station Number
Water Forlornes at Driffield	EA-Y	26803	26014
Derwent at Malton A64 Road Bridge	EA-Y	27858	27099
Eden at Great Musgrave Bridge	EA-CL	76806	76021

2.5 Changes to FEH Indicative Suitabilities

Indicative suitabilities have changed at 14 stations in Scotland, 13 in England, two in Wales and one in Northern Ireland, listed in Table 5.

Table 5: Stations with changes to indicative suitability in version 8.

NRFA Station	Station Name	Measuring Authority	V7 Suitability		V8 Suitability	
			QMED	POOLING	QMED	POOLING
4005	Meig at Glenmeanie	SEPA-N	YES	YES	YES	NO
15010	Isla at Wester Cardean	SEPA-E	YES	YES	YES	NO
16003	Ruchill Water at Cultybraggan	SEPA-E	YES	YES	YES	NO
17005	Avon at Polmonthill	SEPA-E	YES	YES	YES	NO
19004	North Esk at Dalmore Weir	SEPA-E	YES	YES	YES	NO
19011	North Esk at Dalkeith Palace	SEPA-E	YES	YES	YES	NO
21012	Teviot at Hawick	SEPA-S	YES	NO	YES	YES
21019	Manor Water at Cademuir	SEPA-S	YES	YES	YES	NO
33018	Tove at Cappenham Bridge	EA-EA	YES	YES	YES	NO
33021	Rhee at Burnt Mill	EA-EA	YES	YES	YES	NO
33028	Flit at Shefford	EA-EA	NO	NO	YES	NO

NRFA Station	Station Name	Measuring Authority	V7 Suitability		V8 Suitability	
			QMED	POOLING	QMED	POOLING
33039	Bedford Ouse at Roxton	EA-EA	NO	NO	YES	NO
33057	Ouzel at Leighton Buzzard	EA-EA	YES	YES	NO	NO
34007	Dove at Oakley	EA-EA	NO	NO	YES	NO
34008	Ant at Honing Lock	EA-EA	NO	NO	YES	NO
35004	Ore at Beversham Bridge	EA-EA	NO	NO	YES	NO
38022	Pymmes Brook at Edmonton Silver Street	EA-HNL	NO	NO	YES	NO
41016	Cuckmere at Cowbeech	EA-SSD	NO	NO	YES	NO
42011	Hamble at Frogmill	EA-SSD	YES	YES	YES	NO
49006	Camel at Camelford	EA-DC	YES	YES	YES	NO
57010	Ely at Lanelay	NRW	YES	NO	YES	YES
63003	Wyre at Llanrhystud	NRW	NO	NO	YES	NO
73014	Brathay at Jeffy Knotts	EA-CL	NO	NO	YES	NO
77003	Liddel Water at Rowanburnfoot	SEPA-S	YES	YES	YES	NO
82001	Girvan at Robstone	SEPA-S	YES	YES	YES	NO
83004	Lugar Water at Langholm	SEPA-S	YES	YES	YES	NO
84005	Clyde at Blairston	SEPA-S	YES	YES	YES	NO
84016	Luggie Water at Condorrat	SEPA-S	YES	YES	YES	NO
92002	Allt Coire nan Con at Polloch	SEPA-N	YES	YES	YES	NO
203046	Rathmore Burn at Rathmore Bridge	DfIR	YES	YES	YES	NO

2.6 Combined Peak Flow Time Series from Multiple Stations

No changes have been made to these in version 8. See the release note for v3.3.2 for the most recent changes.

2.7 Component Stations

No changes have been made to the stations that the NRFA treats as combined sites since v4.1.

At a number of gauging stations, flows are derived from measurements taken at more than one location (for example low flows may be measured at a weir and high flows measured at a gauged section a short distance up/downstream). There are a number of such stations around the UK that the NRFA and/or Measuring Authority treat as a combined station.

In some cases, the peak flow data may be derived from only one component of the combined dataset and as such the source for the POT and AMAX data may not be the same as that presented for the daily flow record.

2.8 Stations Where No POT Data are Presented

No POT data are presented on the NRFA website or given in the dataset for stations listed in Annex 1. Nine stations were added to the list in version 8, marked with a * in Annex 1.

Stations are usually listed as 'POT excluded' because the gauged catchment response does not lend itself to POT analysis. Such catchments are usually, but not exclusively, those dominated by baseflow and are therefore concentrated on the large chalk aquifers of southern and eastern England.

3 ANNUAL UPDATE

As part of the new stewardship arrangements for the national peak flows dataset put in place when CEH took over the management as part of the NRFA, a programme of annual updates has been implemented. It is intended that all currently operating NRFA Peak Flow stations are updated each year with the addition of one water year of data.

3.1 Extension of AMAX and POT Records

The version 8 files contain AMAX and POT time-series data updated to 30 September 2018 for all currently operational peak flow gauging stations in the UK, with the exception of four stations that were not able to be updated due to issues with the station or the hydrometric archive (Table 6).

Table 6: Stations not updated in version 8.

Station Number	Station Name	Measuring Authority
37014	Roding at High Ongar	EA-HNL
47013	Withey Brook at Bastreet	EA-DC
47023	Tamar at Tamarstone Bridge	EA-DC
76005	Eden at Temple Sowerby	EA-CL

In addition, data were submitted at five stations in Wales for water year 2018/2019 (shown in Table 7) following extreme flows experienced during Storm Callum in October 2018. The rank of the 2018/2019 AMAX is given and where AMAX 1, the percentage of the previous AMAX 1.

A full update of water year 2018/2019 for all stations will be provided in NRFA Peak Flows Dataset Version 9, expected to be released in autumn 2020.

Table 7: NRW stations with data for water year 2018/2019 in version 8.

Station Number	Station Name	Measuring Authority	18/19 AMAX rank	% of previous AMAX 1
60001	Tywi at Ty Castell	NRW	2	
60002	Cothi at Felin Mynachdy	NRW	2	
60006	Gwili at Glangwili	NRW	1	103%
62001	Teifi at Glanteifi	NRW	1	122%
62002	Teifi at Llanfair	NRW	1	116%

3.2 New AMAX 1 records

For 8 stations, new AMAX 1 records were set in water year 2017/2018, listed in Table 8 with the percentage of the previous AMAX 1.

Table 8: New AMAX 1 records set in water year 2017/2018.

Station Number	Station Name	Measuring Authority	% of previous AMAX 1
28039	Rea at Calthorpe Park	EA-WM	112%
33029	Stringside at Whitebridge	EA-EA	103%
34012	Burn at Burnham Overy	EA-EA	103%
57006	Rhondda at Trehafod	NRW	104%
57017	Rhondda Fawr at Tynewydd	NRW	117%
65004	Gwyrfaai at Bontnewydd	NRW	103%
72014	Conder at Galgate	EA-CL	125%
73015	Keer at High Keer Weir	EA-CL	120%

4 PERIOD OF RECORD REVIEW

As part of the stewardship arrangements for the national Peak Flows Dataset put in place when CEH took over the management through the NRFA, a programme of period of record reviews was implemented. It is intended that a subset of the NRFA Peak Flow stations are subject to a Period of Record Review each year and released in the next scheduled release of files for use in WINFAP.

The Period of Record Review is extensive and covers a full period of record review of:

- Flow and stage data (including extension of recent and where applicable, early records)
- Gaugings and ratings
- Missing data periods
- FEH Suitability
- Metadata (station descriptions, station type, datum history, POT threshold, bankfull stage)
- Unrepresentative data periods and rejected data

This section lists the stations and time periods included in the Period of Record Review published in version 8. Major changes to the use of the data – POT thresholds, unrepresentative periods and rejected data – are detailed in Section 5.

4.1 Stations Included

The Period of Record Review covered 18 stations in Scotland, 117 stations in England, 19 stations in Wales and 8 stations in Northern Ireland, listed in Table 9. At the fourteen existing peak flow stations in Scotland, the period of record has been extended by 12 water years to end with water year 2017/2018.

Table 9: Stations included in the period of record review in version 8. New stations to the dataset are shown with a *.

Station Number	Station Name	Measuring Authority	Start date	End date
2002	Brora at Bruachrobie	SEPA-N	1992/1993	2017/2018
8013*	Feshie at Feshie Bridge	SEPA-N	1992/1993	2017/2018
9010*	Deveron at Huntly	SEPA-N	2009/2010	2017/2018
11003	Don at Bridge of Alford	SEPA-E	1973/1974	2017/2018
16003	Ruchill Water at Cultybraggan	SEPA-E	1989/1990	2017/2018
17001	Carron at Headswood	SEPA-E	2006/2007	2017/2018
17005	Avon at Polmonthill	SEPA-E	2006/2007	2017/2018
18005*	Allan Water at Bridge of Allan	SEPA-E	1996/1997	2017/2018
19004	North Esk at Dalmore Weir	SEPA-E	2006/2007	2017/2018
21012	Teviot at Hawick	SEPA-S	2002/2003	2017/2018
21019	Manor Water at Cademuir	SEPA-S	1967/1968	2017/2018
22001	Coquet at Morwick	EA-NE	1981/1982	2017/2018
22006	Blyth at Hartford Bridge	EA-NE	1981/1982	2017/2018
22009	Coquet at Rothbury	EA-NE	1981/1982	2017/2018
23033	Rede at Otterburn	EA-NE	2000/2001	2017/2018
24003	Wear at Stanhope	EA-NE	1981/1982	2017/2018
25004	Skerne at Darlington South Park	EA-NE	1981/1982	2017/2018
25006	Greta at Rutherford Bridge	EA-NE	1981/1982	2017/2018
25011	Langdon Beck at Langdon	EA-NE	2000/2001	2017/2018
25012	Harwood Beck at Harwood	EA-NE	1981/1982	2017/2018
26003	Foston Beck at Foston Mill	EA-Y	1976/1977	2017/2018
26014	Water Forlornes at Driffield	EA-Y	1997/1998	2017/2018
27003	Aire at Beal Weir	EA-Y	1976/1977	2017/2018

Station Number	Station Name	Measuring Authority	Start date	End date
27007	Ure at Westwick Lock	EA-Y	1970/1971	2017/2018
27024	Swale at Richmond	EA-Y	1965/1966	1980/1981
27029	Calder at Elland	EA-Y	1970/1971	2017/2018
27033	Sea Cut at Scarborough	EA-Y	1969/1970	2017/2018
27034	Ure at Kilgram Bridge	EA-Y	1970/1971	2017/2018
27083	Foss at Huntington	EA-Y	1987/1988	2017/2018
27089	Wharfe at Tadcaster	EA-Y	1990/1991	2017/2018
27092	Esk at Briggswath	EA-Y	1992/1993	2017/2018
27097*	Aire at Bingley	EA-Y	1999/2000	2017/2018
27099	Derwent at Malton A64 Road Bridge	EA-Y	2001/2002	2017/2018
28003	Tame at Water Orton	EA-WM	1993/1994	2017/2018
28018	Dove at Marston on Dove	EA-WM	1974/1975	2017/2018
28033	Dove at Hollinsclough	EA-WM	1964/1965	2017/2018
28039	Rea at Calthorpe Park	EA-WM	1966/1967	2017/2018
28040	Trent at Stoke-On-Trent	EA-WM	1967/1968	2017/2018
28041	Hamps at Waterhouses	EA-WM	1999/2000	2017/2018
28055	Ecclesbourne at Duffield	EA-EM	1971/1972	2017/2018
28058	Henmore Brook at Ashbourne	EA-WM	1999/2000	2017/2018
28060	Dover Beck at Lowdham	EA-EM	1971/1972	2017/2018
28115	Maun at Mansfield the Dykes	EA-EM	1991/1992	2017/2018
29003	Lud at Louth	EA-LN	1979/1980	2017/2018
29004	Ancholme at Bishopbridge	EA-LN	1979/1980	2017/2018
29009	Ancholme at Toft Newton	EA-LN	1979/1980	2017/2018
30003	Bain at Fulsby Lock	EA-LN	1979/1980	2017/2018
30013	Heighington Beck at Heighington	EA-LN	1979/1980	2017/2018
30014	Pointon Lode at Pointon	EA-LN	1979/1980	2017/2018
33028	Flit at Shefford	EA-EA	1979/1980	2017/2018
33029	Stringside at Whitebridge	EA-EA	1979/1980	2017/2018
33033	Hiz at Arlesey	EA-EA	1979/1980	2017/2018
33037	Bedford Ouse at Newport Pagnell Total	EA-EA	1979/1980	2017/2018
33039	Bedford Ouse at Roxton	EA-EA	1979/1980	2017/2018
33044	Thet at Bridgham	EA-EA	1966/1967	2017/2018
33057	Ouzel at Leighton Buzzard	EA-EA	1976/1977	2017/2018
34007	Dove at Oakley Park	EA-EA	1979/1980	2017/2018
34008	Ant at Honing Lock	EA-EA	1992/1993	2017/2018
35004	Ore at Beversham Bridge	EA-EA	1980/1981	2017/2018
36002	Glem at Glemsford	EA-EA	1961/1962	2017/2018
36004	Chad Brook at Long Melford	EA-EA	1979/1980	2017/2018
36007	Belchamp Brook at Bardfield Bridge	EA-EA	1965/1966	2017/2018
37007	Wid at Writtle	EA-EA	1979/1980	2017/2018
37008	Chelmer at Springfield	EA-EA	1979/1980	2017/2018
37009	Brain at Guithavon Valley	EA-EA	1962/1963	2017/2018
37031	Crouch at Wickford	EA-EA	1993/1994	2017/2018
37033	Eastwood Brook at Eastwood	EA-EA	1979/1980	2017/2018
38003	Mimram at Panshanger Park	EA-HNL	1981/1982	2017/2018
38007	Canons Brook at Elizabeth Way	EA-HNL	1986/1987	2017/2018

Station Number	Station Name	Measuring Authority	Start date	End date
38018	Upper Lee at Water Hall	EA-HNL	1986/1987	2017/2018
38022	Pymmes Brook at Edmonton Silver Street	EA-HNL	1986/1987	2017/2018
39014	Ver at Hansteads	EA-HNL	1988/1989	2017/2018
39134	Ravensbourne East at Bromley South	EA-KSL	1992/1993	2017/2018
40005	Beult at Stilebridge	EA-KSL	1969/1970	2017/2018
40013	Darent at Otford	EA-KSL	1992/1993	2017/2018
40017	Dudwell at Burwash	EA-KSL	1968/1969	2017/2018
41016	Cuckmere at Cowbeech	EA-SSD	1981/1982	2017/2018
42011	Hamble at Frogmill	EA-SSD	1980/1981	2017/2018
43005	Avon at Amesbury	EA-WX	1973/1974	2017/2018
43007	Stour at Throop	EA-WX	1986/1987	2017/2018
43008	Wylfe at South Newton	EA-WX	1969/1970	2017/2018
43009	Stour at Hammoon	EA-WX	1967/1968	2017/2018
43012	Wylfe at Norton Bavant	EA-WX	1969/1970	2017/2018
44011	Asker at East Bridge Bridport	EA-WX	1996/1997	2017/2018
45001	Exe at Thorverton	EA-DC	1955/1956	2017/2018
45002	Exe at Stoodleigh	EA-DC	1959/1960	2017/2018
45004	Axe at Whitford	EA-DC	1964/1965	2017/2018
45008	Otter at Fenny Bridges	EA-DC	1974/1975	2017/2018
46007	West Dart at Dunnabridge	EA-DC	1972/1973	2017/2018
47001	Tamar at Gunnislake	EA-DC	1955/1956	2017/2018
47005	Ottery at Werrington Park	EA-DC	1978/1979	2017/2018
47014	Walkham at Horrabridge	EA-DC	1973/1974	2017/2018
47024	Tavy at Tavistock Abbey Bridge	EA-DC	1993/1994	2017/2018
48001	Fowey at Trekeivesteps	EA-DC	1968/1969	2017/2018
51003	Washford at Beggearn Huish	EA-WX	1966/1967	2017/2018
52006	Yeo at Pen Mill	EA-WX	1962/1963	2017/2018
52010	Brue at Lovington	EA-WX	1964/1965	2017/2018
52014	Tone at Greenham	EA-WX	1973/1974	2017/2018
53004	Chew at Compton Dando	EA-WX	1958/1959	2017/2018
53006	Frome (Bristol) at Frenchay	EA-WX	1983/1984	2017/2018
53013	Marden at Stanley	EA-WX	1972/1973	2017/2018
53023	Sherston Avon at Fosseyway	EA-WX	1976/1977	2017/2018
54002	Avon at Evesham	EA-WM	1994/1995	2017/2018
54012	Tern at Walcot	EA-WM	1972/1973	2017/2018
54014	Severn at Abermule	NRW	1969/1970	2017/2018
54027	Frome at Ebley Mill	EA-WM	1968/1969	2017/2018
54028	Vyrnwy at Llanymynech	NRW	1969/1970	2017/2018
54036	Isbourne at Hinton on the Green	EA-WM	1973/1974	2017/2018
54040	Meese at Tibberton	EA-WM	1973/1974	2017/2018
54041	Tern at Eaton upon Tern	EA-WM	1976/1977	2014/2015
54080	Severn at Dolwen	NRW	2000/2001	2017/2018
55007	Wye at Erwood	NRW	1980/1981	2017/2018
55012	Irfon at Cilmerly	NRW	1978/1979	2017/2018
55016	Ithon at Dissersyth	NRW	1987/1988	2017/2018
55026	Wye at Ddol Farm	NRW	1984/1985	2017/2018

Station Number	Station Name	Measuring Authority	Start date	End date
57009	Ely at St Fagans	NRW	1981/1982	2017/2018
57010	Ely at Lanelay	NRW	1981/1982	2017/2018
58009	Ewenny at Keepers Lodge	NRW	1971/1972	2017/2018
59001	Tawe at Ynystanglws	NRW	1973/1974	2017/2018
60006	Gwili at Glangwili	NRW	1973/1974	2017/2018
61002	Eastern Cleddau at Canaston Bridge	NRW	1981/1982	2017/2018
63001	Ystwyth at Pont Llolwyn	NRW	1988/1989	2017/2018
63003	Wyre at Llanrhystud	NRW	1968/1969	2017/2018
64006	Leri at Dolybont	NRW	1981/1982	2013/2014
65007	Dwyfor at Garndolbenmaen	NRW	1981/1982	2017/2018
66004	Wheeler at Bodfari	NRW	1976/1977	2017/2018
67006	Alwen at Druid	NRW	1969/1970	2017/2018
69022	Irwell at Irwell Vale	EA-GMMC	1995/1996	2017/2018
69024	Croal at Farnworth Weir	EA-GMMC	1976/1977	2017/2018
69028	Mersey at Brinksway	EA-GMMC	1973/1974	2017/2018
69041	Tame at Broomstairs	EA-GMMC	1973/1974	2016/2017
69044	Irwell at Bury Ground	EA-GMMC	1995/1996	2017/2018
69047	Roch at Littleborough	EA-GMMC	1993/1994	2017/2018
70003	Douglas at Wigan	EA-CL	1999/2000	2017/2018
71001	Ribble at Samlesbury	EA-CL	1975/1976	2017/2018
71004	Calder at Whalley Weir	EA-CL	1975/1976	2017/2018
71006	Ribble at Henthorn	EA-CL	1975/1976	2017/2018
72004	Lune at Caton	EA-CL	1978/1979	2017/2018
72005	Lune at Killington	EA-CL	1981/1982	2017/2018
72015	Lune at Lunes Bridge	EA-CL	1981/1982	2017/2018
73008	Bela at Beetham	EA-CL	1976/1977	2017/2018
73010	Leven at Newby Bridge	EA-CL	1976/1977	2017/2018
74005	Ehen at Braystones	EA-CL	1982/1983	2017/2018
74006	Calder at Calder Hall	EA-CL	1978/1979	2017/2018
75018*	Derwent at Seaton Mill	EA-CL	2010/2011	2017/2018
76014	Eden at Kirkby Stephen	EA-CL	1980/1981	2017/2018
76021	Eden at Great Musgrave Bridge	EA-CL	1999/2000	2017/2018
77003	Liddel Water at Rowanburnfoot	SEPA-S	2006/2007	2017/2018
79003	Nith at Hall Bridge	SEPA-S	1959/1960	2017/2018
84013	Clyde at Daldowie	SEPA-S	1986/1987	2017/2018
84016	Lugie Water at Condorrat	SEPA-S	1998/1999	2017/2018
84035*	Kittoch Water at Waterside	SEPA-S	1991/1992	2017/2018
96002	Naver at Apigill	SEPA-N	1977/1978	2017/2018
97002	Thurso at Halkirk	SEPA-N	1971/1972	2017/2018
202001	Roe at Ardnargle	DfIR	1983/1984	2017/2018
203010	Blackwater at Maydown Bridge	DfIR	1969/1970	2017/2018
203024	Cusher at Gamble's Bridge	DfIR	1970/1971	2017/2018
203046	Rathmore Burn at Rathmore Bridge	DfIR	1981/1982	2017/2018
203093	Main at Shane's Viaduct	DfIR	1983/1984	2017/2018
205020	Enler at Comber	DfIR	1983/1984	2017/2018
236005	Colebrooke at Ballindarragh Bridge	DfIR	1975/1976	2017/2018

Station Number	Station Name	Measuring Authority	Start date	End date
236007	Sillees at Drumrainey Bridge	DfIR	1980/1981	2017/2018

5 MODIFICATIONS TO EXISTING TIME SERIES

5.1 POT Independence

For stations in England operated by the Environment Agency and in Wales operated by Natural Resources Wales, the rules for independence between POT events have been clarified such that the minimum discharge in the trough between the two peaks must be less than two-thirds of the discharge of **both peaks** (FEH guidelines states the first peak, but this requires subsequent manual re-processing to remove spurious peaks). Previous Environment Agency data updates by the NRFA and under the HiFlows-UK initiative may also have utilised the 'both peaks rule'.

These rules apply at all Environment Agency and Natural Resources Wales operated stations to POT events for water years 2014/2015 onwards. Additionally, for the stations listed in Annex 2, due to changes to stage-discharge relationships or other re-processing, the new independence rules apply from the date shown to the end of the period of record. Users should therefore be aware that at these stations the independence criteria used to generate the POT series updates may therefore vary throughout the flow record.

No changes have been made to the independence extraction criteria for POT data in Scotland or Northern Ireland.

5.2 POT Thresholds

The POT Threshold has changed at 20 stations, listed in Table 10.

Table 10: Stations with changes to POT Thresholds in version 8.

NRFA Station	Station Name	Measuring Authority	V7 POT Threshold	V8 POT Threshold
2002	Brora at Bruachrobie	SEPA-N	85.103	72.5
27003	Aire at Beal Weir	EA-Y	207.298	170
28055	Ecclesbourne at Duffield	EA-EM	7.918	6.185
28081	Tame at Bescot	EA-WM	19.633	25.8
28083	Trent at Darlaston	EA-WM	19.85	18.955
40013	Darent at Otford	EA-KSL	7.067	6.2
40017	Dudwell at Burwash	EA-KSL	16.949	6.6
47001	Tamar at Gunnislake	EA-DC	177.126	163.218
47005	Ottery at Werrington Park	EA-DC	42.375	35.111
47011	Plym at Carn Wood	EA-DC	16.407	25.5
48001	Fowey at Trekeivesteps	EA-DC	11.933	10.782
49006	Camel at Camelford	EA-DC	5.128	5.7
54012	Tern at Walcot	EA-WM	17.888	19.556
57009	Ely at St Fagans	NRW	43.179	36
71001	Ribble at Samlesbury	EA-CL	243.895	412
202001	Roe at Ardnargle	DfIR	101.764	101.32
203018	Six-Mile Water at Antrim	DfIR	47.186	46.924
203024	Cusher at Gamble's Bridge	DfIR	30.193	33.33
205020	Enler at Comber	DfIR	11.283	10.803
236007	Sillees at Drumrainey Bridge	DfIR	17.835	15.763

5.3 Minor Changes to AMAX and POT Records

Minor changes to individual events in time series were made at two stations, listed in Table 11. For more significant reprocessing of time series due to rating changes, see section 5.4.

Table 11: Stations with minor changes to time series in version 8.

Station Number	Station Name	Measuring Authority	Details of change
20003	Tyne at Spilmersford	SEPA-E	Change to 1989/1990 AMAX V7: 0.55m, 0.771m ³ s ⁻¹ on 17/12/1989 V8: 1.09m, 13.156 m ³ s ⁻¹ on 17/02/1990
75009	Greta at Low Briery	EA-CL	Change in Storm Desmond (5 th December 2015) stage and flow. V7: 3.094m, 339.635m ³ s ⁻¹ V8: 3.75m, 400m ³ s ⁻¹

5.4 Changes to Stage-Discharge Ratings and Reprocessed Data

For stations included in the Period of Record Review (see Table 9), ratings have been reviewed and data re-processed as required. Stage-discharge ratings have changed at an additional 21 stations as part of the routine Annual Update of the dataset. The time period of re-processed flow data is listed in Table 12, all stations have been re-processed to the end of the record (water year 2017/2018).

Table 12: Stations with rating changes and re-processed data in version 8.

Station Number	Station Name	Measuring Authority	Start date of re-processed data
7002	Findhorn at Forres	SEPA-N	06/06/2017
27098	Calder at Dewbury	EA-Y	Full period of record
28043	Derwent at Chatsworth	EA-EM	03/04/2018
28046	Dove at Izaak Walton	EA-WM	02/01/1988
28080	Tame at Lea Marston Lakes	EA-WM	01/01/2001
37012	Colne at Poolstreet	EA-EA	Full period of record
39056	Ravensbourne at Catford Hill	EA-KSL	01/10/1987
40012	Darent at Hawley	EA-KSL	Full period of record
44015	Hooke at Hooke	EA-WX	Full period of record
49006	Camel at Camelford	EA-DC	Full period of record
54114	Avon at Warwick	EA-WM	15/06/2007
56004	Usk at Llandetty	NRW	14/11/2009
60001	Tywi at Ty Castell	NRW	02/10/1999
62002	Teifi at Llanfair	NRW	18/05/2002
64001	Dyfi at Dyfi Bridge	NRW	11/01/1990
70004	Yarrow at Croston Mill	EA-CL	Full period of record
73014	Brathay at Jeffy Knots	EA-CL	Full period of record
75004	Cocker at Southwaite Bridge	EA-CL	27/11/1976
76007	Eden at Sheepmount	EA-CL	Full period of record
76017	Eden at Kirkby Stephen	EA-CL	Full period of record
81002	Cree at Newton Stewart	SEPA-S	30/12/2015
95004	Abhainn a'Chnocain at Elphin	SEPA-N	16/11/2015

5.5 Unrepresentative Data Periods

Some periods of data are unsuitable for use in WINFAP because they are unrepresentative of the hydrological behaviour of the catchment. These are shown on the NRFA website by pink shading on the AMAX and POT graphs. The unrepresentative periods occur in two main situations:

1. Where there is a clear change in the catchment during the period of record. The most common example is where a large reservoir has been built and therefore caused a change in the FARL (Flood Attenuation by Reservoirs and Lakes) value.
2. Where data quality has changed significantly during the period of record, the indicative suitability has been based on the better data, providing the length of record is reasonable. In these cases, the years of poorer quality have been rejected.

New unrepresentative periods have been added at 17 stations (Table 13). The end dates for ongoing unrepresentative periods at a further ten were extended to 30 September 2018.

Table 13: Unrepresentative periods added in version 8.

NRFA Station	Station Name	Measuring Authority	Start Date	End Date	Comments
16003	Ruchill Water at Cultybraggan	SEPA-E	01-OCT-1959 09.00.00	01-OCT-1970 08.45.00	Uncertainty in record and rating before 1970.
17001	Carron at Headswood	SEPA-E	01-OCT-1968 09.00.00	01-OCT-1989 08.45.00	Flows not fit for flood estimation prior to weir installation due to channel instability and lack of gaugings above low flows.
20001	Tyne at East Linton	SEPA-E	01-OCT-1981 09.00.00	01-OCT-2017 08.45.00	Data is validated by flood gaugings up to the bridge rebuild only in 1982. As this bridge acts as the flood control, a new relationship is required post bridge rebuild.
21019	Manor Water at Cademuir	SEPA-S	01-OCT-1967 09:00:00	01-OCT-1969 08:45:00	Data pre-weir construction uncertain.
27007	Ure at Westwick Lock	EA-Y	01-OCT-1955 09.00.00	01-OCT-1970 08.45.00	Uncertainty in record and rating before 1970.
28003	Tame at Water Orton	EA-WM	01-SEP-1982 09.00.00	01-OCT-1992 08.45.00	Flow processing abandoned due to the channel control becoming unstable following re-grading in 1974.
28018	Dove at Marston on Dove	EA-WM	31-MAY-1973 09.00.00	01-SEP-1973 08.45.00	Data suspect - levels appear too high.
33037	Bedford Ouse at Newport Pagnell Total	EA-EA	01-OCT-1969 09.00.00	01-OCT-1979 08.45.00	Uncertainty in stage record and rating for combined site pre-1979.
34008	Ant at Honing Lock	EA-EA	01-OCT-1966 09.00.00	01-OCT-1992 08.45.00	Unable to re-process stage data as a result of datum change pre-1992.
43005	Avon at Amesbury	EA-WX	01-OCT-1965 09:00:00	01-OCT-1989 08.45.00	Pre-1987 truncated and no 15 min data available.
47005	Ottery at Werrington Park	EA-DC	03-FEB-1961 09.00.00	13-NOV-1978 08.45.00	Historical evidence suggests levels backed up so flows over-estimated.

NRFA Station	Station Name	Measuring Authority	Start Date	End Date	Comments
52014	Tone at Greenham	EA-WX	01-FEB-1967 09.00.00	01-OCT-1973 08.45.00	High resolution 15 minute data is missing for this time period.
52014	Tone at Greenham	EA-WX	06-MAY-1983 09.00.00	10-JAN-1984 08.45.00	High resolution 15 minute data is missing for this time period.
55021	Lugg at Butts Bridge	EA-WM	01-MAR-1969 09:00:00	01-JAN-1985 08:45:00	Low confidence in pre-digital rating but OK for pooling after 01/01/1985.
63003	Wyre at Llanrhystud	NRW	01-OCT-1999 09.00.00	01-OCT-2018 08.45.00	Rating not suitable for QMED.
84015	Kelvin at Dryfield	SEPA-S	01-OCT-1998 00:00:00	30-DEC-2005 00:00:00	Station operated as level only after July 1998 to present.
84016	Luggie Water at Condorrat	SEPA-S	01-OCT-1967 09.00.00	01-OCT-1997 08.45.00	Uncertainty in record and rating before 1997.
203024	Cusher at Gamble's Bridge	Dfir	28-JUN-1971 09:00:00	14-NOV-1979 08:45:00	Weir constructed in 1980 appears to have substantially altered flows.
203024	Cusher at Gamble's Bridge	Dfir	21-SEP-1983 09:00:00	06-NOV-1984 08:45:00	Values are low, likely problem with the weir during this period.

5.6 Rejected Data

AMAX and POT data that are unsuitable for use in flood estimation are marked as rejected in the dataset and not included in flood estimation calculations. These are shown by red bars (for AMAX) and red crosses (for POTs) on the AMAX and POT graphs respectively. All data falling within unrepresentative periods (see section 5.5 Unrepresentative Data Periods) are rejected.

In addition, where periods of missing data are likely to have included the true AMAX, any AMAX recorded during that water year is rejected. Where the true AMAX is recorded, the event is not rejected.

Rejected AMAX values have been added at 33 stations (Table 14) and removed at seven stations (Table 15).

Table 14: AMAX data now classed as rejected in version 8.

NRFA Station	Station Name	Measuring Authority	Rejected water year(s)
17001	Carron at Headswood	SEPA-E	1968
19004	North Esk at Dalmore Weir	SEPA-E	2005
25004	Skerne at Darlington South Park	EA-NE	1985
26003	Foston Beck at Foston Mill	EA-Y	1970
27033	Sea Cut at Scarborough	EA-Y	1978
27034	Ure at Kilgram Bridge	EA-Y	1979
27062	Nidd at Skip Bridge	EA-Y	2017
28019	Trent at Drakelow Park	EA-WM	1992
28039	Rea at Calthorpe Park	EA-WM	1966
29003	Lud at Louth	EA-LN	1966

29004	Ancholme at Bishopbridge	EA-LN	1968
33021	Rhee at Burnt Mill	EA-EA	2017
33029	Stringside at Whitebridge	EA-EA	1993
33057	Ouzel at Leighton Buzzard	EA-EA	1992, 1993
34007	Dove at Oakley Park	EA-EA	1978, 1988
34008	Ant at Honing Lock	EA-EA	1982
36002	Glem at Glemsford	EA-EA	1967
40005	Beult at Stilebridge	EA-KSL	1984, 1988
40017	Dudwell at Burwash	EA-KSL	1970, 1984, 1985, 1988
43005	Avon at Amesbury	EA-WX	1965, 1970
43008	Wylde at South Newton	EA-WX	1988, 1989
45008	Otter at Fenny Bridges	EA-DC	1973
47005	Ottery at Werrington Park	EA-DC	1981
47014	Walkham at Horrabridge	EA-DC	1973
47024	Tavy at Tavistock Abbey Bridge	EA-DC	1993
54027	Frome at Ebley Mill	EA-WM	1968
54041	Tern at Eaton upon Tern	EA-WM	1974
75005	Derwent at Portinscale	EA-CL	2017
75018	Derwent at Seaton Mill	EA-CL	2010
84015	Kelvin at Dryfield	SEPA-S	1947, 1948
203010	Blackwater at Maydown Bridge	DfIR	1969
236005	Colebrooke at Ballindarragh Bridge	DfIR	1974, 1985, 1986

Table 15: AMAX data no longer classed as rejected in version 8.

NRFA Station	Station Name	Measuring Authority	Water year re-instated
26014	Water Forlornes at Driffield	EA-Y	2001
28019	Trent at Drakelow Park	EA-WM	1988
28033	Dove at Hollinsclough	EA-WM	1982
28058	Henmore Brook at Ashbourne	EA-WM	1973, 1992
33057	Ouzel at Leighton Buzzard	EA-EA	1999
36002	Glem at Glemsford	EA-EA	1962
84016	Luggie Water at Condorrat	SEPA-S	1967

5.7 Datum Changes

A short table is provided on the NRFA website for each station, which details the datum history over the period of record, with dates of applicability. The datum history has been updated at 54 stations listed in Annex 3.

ANNEX 1 POT EXCLUDED STATIONS

NRFA Station	Station Name	Measuring Authority
26003	Foston Beck at Foston Mill	EA-Y
26009	West Beck at Snakeholme Lock	EA-Y
26010	Driffield Canal at Snakeholme Lock	EA-Y
26013	Driffield Trout Stream at Driffield	EA-Y
26014	Water Forlornes at Driffield	EA-Y
26802	Gypsy Race at Kirby Grindalythe	EA-Y
27073	Brompton Beck at Snainton Ings	EA-Y
28033*	Dove at Hollinsclough	EA-WM
29005	Rase at Bishopbridge	EA-LN
30005	Witham at Saltersford Total	EA-LN
30006	Slea at Leasingham Mill	EA-LN
30013	Heighington Beck at Heighington	EA-LN
30015	Cringle Brook at Stoke Rochford	EA-LN
31004	Welland at Tallington Total	EA-LN
33005	Bedford Ouse at Thornborough Mill	EA-EA
33007	Nar at Marham	EA-EA
33012	Kym at Meagre Farm	EA-EA
33032	Heacham at Heacham	EA-EA
33049	Stanford Water at Buckenham Tofts	EA-EA
33052	Swaffham Lode at Swaffham Bulbeck	EA-EA
33054	Babingley at Castle Rising	EA-EA
33057*	Ouzel at Leighton Buzzard	EA-EA
34007	Dove at Oakley Park	EA-EA
34008*	Ant at Honing Lock	EA-EA
34012	Burn at Burnham Overy	EA-EA
35003	Alde at Farnham	EA-EA
35004	Ore at Beversham Bridge	EA-EA
35010	Gipping at Bramford	EA-EA
36002	Glem at Glemsford	EA-EA
36003	Box at Polstead	EA-EA
36004*	Chad Brook at Long Melford	EA-EA
36005	Brett at Hadleigh	EA-EA
36006	Stour at Langham	EA-EA
36007	Belchamp Brook at Bardfield Bridge	EA-EA
36008	Stour at Westmill	EA-EA
36009	Brett at Cockfield	EA-EA
36010	Bumpstead Brook at Broad Green	EA-EA
36011	Stour Brook at Sturmer	EA-EA
36012	Stour at Kedington	EA-EA
36015	Stour at Lamarsh	EA-EA
37003	Ter at Crabbs Bridge	EA-EA
37005	Colne at Lexden	EA-EA
37007*	Wid at Writtle	EA-EA
37008*	Chelmer at Springfield	EA-EA
37009	Brain at Guithavon Valley	EA-EA

NRFA Station	Station Name	Measuring Authority
37010	Blackwater at Appleford Bridge	EA-EA
37012	Colne at Poolstreet	EA-EA
37013	Sandon Brook at Sandon Bridge	EA-EA
37016	Pant at Copford Hall	EA-EA
37017	Blackwater at Stisted	EA-EA
37031*	Crouch at Wickford	EA-EA
37033*	Eastwood Brook at Eastwood	EA-EA
38011	Mimram at Fulling Mill	EA-HNL
39010	Colne at Denham	EA-HNL
39021	Cherwell at Enslow Mill	EA-T
39033	Winterbourne Stream at Bagnor	EA-T
39034	Evenlode at Cassington Mill	EA-T
39037	Kennet at Marlborough	EA-T
39089	Gade at Bury Mill	EA-HNL
40033	Dour at Crabble Mill	EA-KSL
41015	Ems at Westbourne	EA-SSD
41023	Lavant at Graylingwell	EA-SSD
42005	Wallop Brook at Broughton	EA-SSD
42006	Meon at Mislingford	EA-SSD
42007	Alre at Drove Lane Alresford	EA-SSD
42008	Cheriton Stream at Swards Bridge	EA-SSD
42009	Candover Stream at Borough Bridge	EA-SSD
42010	Itchen at Highbridge & Allbrook Total	EA-SSD
42012	Anton at Fullerton	EA-SSD
42017	Hermitage Stream at Havant	EA-SSD
43003	Avon at East Mills Total	EA-WX
43004	Bourne at Laverstock	EA-WX
43005	Avon at Amesbury	EA-WX
43008	Wylye at South Newton	EA-WX
43010	Allen at Loverley Farm	EA-WX
43012	Wylye at Norton Bavant	EA-WX
43018	Allen at Walford Mill	EA-WX
44002	Piddle at Baggs Mill	EA-WX
44004	Frome at Dorchester Total	EA-WX
44006	Sydling Water at Sydling St Nicholas	EA-WX
44008	South Winterbourne at Winterbourne Steepleton	EA-WX
44009	Wey at Broadwey	EA-WX
44013	Piddle at Little Puddle	EA-WX
44014	Piddle at Briantspuddle	EA-WX
54027	Frome at Ebley Mill	EA-WM
55035	Iago at Iago flume	CEH
68007	Wincham Brook at Lostock Gram	EA-GMMC
71003	Croasdale Beck at Croasdale Flume	EA-CL
84013*	Clyde at Daldowie	SEPA-S
85001	Leven at Linnbrane	SEPA-S
205034	Woodburn at Control	DfIR

NRFA Station	Station Name	Measuring Authority
206006	Annalong at Recorder	BCDWC

ANNEX 2 POT INDEPENDENCE CHANGES

Station Number	Station Name	Measuring Authority	Start date of POT independence change	Released in
21035	Till at Heaton Mill	EA-NE	Full period of record	V7
22001	Coquet at Morwick	EA-NE	04/01/1982	V8
22006	Blyth at Hartford Bridge	EA-NE	04/01/1982	V8
22009	Coquet at Rothbury	EA-NE	04/01/1982	V8
22003	Usway Burn at Shillmoor	EA-NE	Full period of record	V7
23001	Tyne at Bywell	EA-NE	01/12/1992	V6
23001	Tyne at Bywell	EA-NE	04/01/1982	V7
23004	South Tyne at Haydon Bridge	EA-NE	Full period of record	V7
23008	Rede at Rede Bridge	EA-NE	04/01/1982	V7
23011	Kielder Burn at Kielder	EA-NE	23/11/1981	V7
23018	Ouse Burn at Woolsington	EA-NE	24/12/1983	V7
23033	Rede at Otterburn	EA-NE	Full period of record	V8
24003	Wear at Stanhope	EA-NE	04/01/1982	V8
24004	Bedburn Beck at Bedburn	EA-NE	04/02/1982	V7
25004	Skerne at Darlington South Park	EA-NE	12/10/2012	V6
25004	Skerne at Darlington South Park	EA-NE	04/01/1982	V8
25006	Greta at Rutherford Bridge	EA-NE	01/10/2008	V5
25006	Greta at Rutherford Bridge	EA-NE	04/01/1982	V8
25011	Langdon Beck at Langdon	EA-NE	25/09/2001	V8
25012	Harwood Beck at Harwood	EA-NE	03/01/1982	V8
25019	Leven at Easby	EA-NE	04/01/1982	V7
26802	Gypsy Race at Kirby Grindalythe	EA-Y	01/10/2013	V7
27003	Aire at Beal Weir	EA-Y	14/09/1993	V5
27003	Aire at Beal Weir	EA-Y	Full period of record	V8
27006	Don at Hadfields Weir	EA-Y	15/07/1968	V7
27007	Ure at Westwick Lock	EA-Y	07/01/1971	V8
27008	Swale at Leckby Grange	EA-Y	03/11/1968	V7
27022	Don at Rotherham Weir	EA-Y	09/11/2005	V7
27023	Dearne at Barnsley Weir	EA-Y	24/03/1965	V5
27024	Swale at Richmond	EA-Y	14/08/1966	V8
27028	Aire at Armley	EA-Y	28/12/1978	V6
27028	Aire at Armley	EA-Y	Full period of record	V7
27029	Calder at Elland	EA-Y	19/10/1971	V8
27030	Dearne at Adwick	EA-Y	11/02/1977	V6
27033	Sea Cut at Scarborough	EA-Y	22/12/1969	V8
27034	Ure at Kilgram Bridge	EA-Y	14/08/1971	V8
27035	Aire at Kildwick Bridge	EA-Y	09/07/1971	V5
27041	Derwent at Buttercrambe	EA-Y	Full period of record	V7
27053	Nidd at Birstwith	EA-Y	Full period of record	V7
27055	Rye at Broadway Foot	EA-Y	Full period of record	V7
27059	Laver at Ripon	EA-Y	Full period of record	V7
27065	Holme at Queens Mill	EA-Y	Full period of record	V7
27071	Swale at Crakehill	EA-Y	Full period of record	V7
27080	Aire at Lemonroyd	EA-Y	20/12/1996	V6
27080	Aire at Oulton Lemonroyd	EA-Y	Full period of record	V7

Station Number	Station Name	Measuring Authority	Start date of POT independence change	Released in
27083	Foss at Huntington	EA-Y	01/10/2013	V7
27083	Foss at Huntington	EA-Y	Full period of record	V8
27086	Skell at Alma Weir	EA-Y	22/11/2012	V5
27086	Skell at Alma Weir	EA-Y	Full period of record	V6, V7
27088	Calder at Mytholmroyd	EA-Y	Full period of record	V6, V7
27089	Wharfe at Tadcaster	EA-Y	Full period of record	V8
27092	Esk at Briggswath	EA-Y	Full period of record	V8
27094	Wiske at Romanby Viewly Bridge	EA-Y	Full period of record	V7
27095	Pickering Beck at Pickering	EA-Y	Full period of record	V7
27096	Wharfe at Netherside Hall	EA-Y	Full period of record	V7
27097	Aire at Bingley	EA-Y	Full period of record	V8
27098	Calder at Dewsbury	EA-Y	Full period of record	V7, V8
27099	Derwent at Malton A64 Road Bridge	EA-Y	Full period of record	V8
28003	Tame at Water Orton	EA-WM	01/11/1993	V7, V8
28008	Dove at Rocester Weir	EA-WM	25/11/2011	V5
28012	Trent at Yoxall	EA-WM	01/10/2010	V5
28018	Dove at Marston on Dove	EA-WM	07/11/2000	V5
28018	Dove at Marston on Dove	EA-WM	28/11/1974	V8
28019	Trent at Drakelow Park	EA-WM	27/08/1996	V7
28024	Wreake at Syston Mill	EA-WM	30/11/2009	V5
28026	Anker at Polesworth	EA-WM	Full period of record	V7
28033	Dove at Hollinsclough	EA-WM	05/12/1972	V5
28039	Rae at Calthorpe Park	EA-WM	Period of record	V7, V8
28040	Trent at Stoke-On-Trent	EA-WM	01/10/2013	V7
28040	Trent at Stoke-On-Trent	EA-WM	Full period of record	V8
28041	Hamps at Waterhouses	EA-WM	01/10/2000	V7
28041	Hamps at Waterhouses	EA-WM	18/02/2000	V8
28046	Dove at Izaak Walton	EA-EM	02/01/1988	V8
28047	Oldcotes Dyke at Blyth	EA-EM	Full period of record	V7
28049	Ryton at Worksop	EA-EM	Full period of record	V7
28052	Sow at Great Bridgford	EA-WM	01/10/2013	V7
28053	Penk at Penkridge	EA-WM	01/01/2012	V5
28053	Penk at Penkridge	EA-WM	Full period of record	V7
28055	Ecclesbourne at Duffield	EA-EM	Full period of record	V8
28056	Rothley Brook at Rothley	EA-EM	Full period of record	V7
28058	Henmore Brook at Ashbourne	EA-WM	29/10/2000	V8
28060	Dover Beck at Lowdham	EA-EM	Full period of record	V8
28061	Churnet at Basford Bridge	EA-WM	06/11/2000	V5
28061	Churnet at Basford Bridge	EA-WM	Full period of record	V6
28066	Cole at Coleshill	EA-WM	Full period of record	V7
28080	Tame at Lea Marston Lakes	EA-WM	Full period of record	V7
28080	Tame at Lea Marston Lakes	EA-WM	01/01/2001	V8
28081	Tame at Bescot	EA-WM	Full period of record	V6, V8
28083	Trent at Darlaston	EA-WM	Full period of record	V6, V8
28091	Ryton at Blyth	EA-EM	Full period of record	V7
28095	Tame at Hopwas Bridge	EA-WM	01/01/1998	V5

Station Number	Station Name	Measuring Authority	Start date of POT independence change	Released in
28095	Tame at Hopwas Bridge	EA-WM	Full period of record	V7
28115	Maun at Mansfield the Dykes	EA-EM	Full period of record	V7, V8
29001	Waithe Beck at Brigsley	EA-LN	27/08/1986	V7
29002	Great Eau at Claythorpe Mill	EA-LN	14/12/1979	V7
29003	Lud at Louth	EA-LN	14/12/1979	V8
29004	Ancholme at Bishopbridge	EA-LN	14/12/1979	V8
29009	Ancholme at Toft Newton	EA-LN	14/12/1979	V8
30001	Witham at Claypole Mill	EA-LN	11/12/1979	V7
30003	Bain at Fulsby Lock	EA-LN	14/12/1979	V8
30004	Lymn at Partney Mill	EA-LN	15/12/1979	V7
30014	Pointon Lode at Pointon	EA-LN	21/11/2012	V6
30014	Pointon Lode at Pointon	EA-LN	14/12/1979	V8
31025	Gwash South Arm at Manton	EA-LN	Full period of record	V7
32002	Willow Brook at Fotheringhay	EA-LN	30/12/1981	V7
32010	Nene at Wansford	EA-LN	01/01/1998	V7
33012	Kym at Meagre Farm	EA-EA	01/10/2013	V7
33014	Lark at Temple	EA-EA	09/02/1980	V7
33018	Tove at Cappenhams Bridge	EA-EA	28/12/1979	V7
33021	Rhee at Burnt Mill	EA-EA	11/12/1979	V7
33024	Cam at Dernford	EA-EA	22/01/1985	V7
33028	Flit at Shefford	EA-EA	15/12/1979	V8
33029	Stringside at Whitebridge	EA-EA	26/11/2012	V6
33029	Stringside at Whitebridge	EA-EA	28/12/1979	V7, V8
33030	Clipstone Brook at Clipstone	EA-EA	01/10/2012	V5
33037	Bedford Ouse at Newport Pagnell	EA-EA	29/12/1979	V8
	Total			
33039	Bedford Ouse at Roxton	EA-EA	17/12/1979	V7, V8
33044	Thet at Bridgham	EA-EA	01/10/2013	V7
33045	Wittle at Quidenham	EA-EA	14/12/1979	V7
33051	Cam at Chesterford	EA-EA	29/12/1979	V7
33057	Ouzel at Leighton Buzzard	EA-EA	Full period of record	V8
34003	Bure at Ingworth	EA-EA	03/02/1971	V7
35008	Gipping at Stowmarket	EA-EA	25/05/1981	V7
37014	Roding at High Ongar	EA-HNL	21/10/2012	V6
38003	Mimram at Panshanger Park	EA-HNL	27/05/1982	V8
38007	Canons Brook at Elizabeth Way	EA-HNL	19/07/1987	V8
38018	Upper Lee at Water Hall	EA-HNL	07/04/1987	V8
38022	Pymmes Brook at Edmonton Silver Street	EA-HNL	27/02/1987	V8
39001	Thames at Kingston	EA-T	05/11/2012	V6
39003	Wandle at South Wimbledon	EA-KSL	09/10/1987	V8
39014	Ver at Hansteads	EA-HNL	16/03/1989	V8
39007	Blackwater at Swallowfield	EA-T	01/10/2013	V7
39035	Churn at Cerney Wick	EA-T	01/01/2013	V5
39056	Ravensbourne at Catford Hill	EA-KSL	04/06/1987	V8
39134	Ravensbourne East at Bromley South	EA-KSL	Full period of record	V8
40005	Beult at Stilebridge	EA-KSL	24/01/1970	V8

Station Number	Station Name	Measuring Authority	Start date of POT independence change	Released in
40007	Medway at Chafford / Colliersland Bridge	EA-KSL	01/10/2013	V7
40010	Eden at Penshurst / Vexour Bridge	EA-KSL	01/10/2013	V7
40011	Great Stour at Horton	EA-KSL	01/10/2013	V7
40013	Darent at Otford	EA-KSL	Full period of record	V8
40012	Darent at Hawley	EA-KSL	26/11/1992	V6, V8
40016	Cray at Crayford	EA-KSL	01/10/2013	V7
40017	Dudwell at Burwash	EA-KSL	Full period of record	V8
40018	Darent at Lullingstone	EA-KSL	30/03/2010	V6
41016	Cuckmere at Cowbeek	EA-SSD	05/01/1982	V8
41022	Lod at Halfway Bridge	EA-SSD	07/03/1991	V7
42001	Wallington at North Fareham	EA-SSD	14/10/1982	V7
42003	Lymington at Brockenhurst	EA-SSD	Full period of record	V7
43007	Stour at Throop	EA-WX	28/03/1987	V8
43009	Stour at Hamoon	EA-WX	06/01/1988	V8
43019	Shreen Water at Colesbrook	EA-WX	Full period of record	V7
43806	Wylye at Brixton Deverill	EA-WX	Full period of record	V5
44011	Asker at East Bridge Bridport	EA-WX	01/10/2013	V7
44011	Asker at East Bridge Bridport	EA-WX	Full period of record	V8
44015	Hooke at Hooke	EA-WX	Full period of record	V7, V8
45001	Exe at Thorverton	EA-DC	01/12/2003	V7
45001	Exe at Thorverton	EA-DC	Full period of record	V8
45002	Exe at Stoodleigh	EA-DC	Full period of record	V8
45003	Culm at Woodmill	EA-DC	Full period of record	V6
45004	Axe at Whitford	EA-DC	Full period of record	V5, V8
45007	Exe at Trews Weir	EA-DC	Full period of record	V7
45008	Otter at Fenny Bridges	EA-DC	Full period of record	V8
45009	Exe at Pixton	EA-DC	Full period of record	V7
45012	Creedy at Cowley	EA-DC	Full period of record	V7
46007	West Dart at Dunnabridge	EA-DC	Full period of record	V6, V8
46013	Bovey at Bovey Parke	EA-DC	Full period of record	V7
46014	Teign at Chudleigh	EA-DC	Full period of record	V7
47001	Tamar at Gunnislake	EA-DC	Full period of record	V8
47005	Ottery at Werrington Park	EA-DC	24/12/1978	V8
47007	Yealm at Puslinch	EA-DC	21/01/1970	V7
47009	Tiddy at Tideford	EA-DC	25/09/1976	V7
47014	Walkham at Horrabridge	EA-DC	Full period of record	V8
47015	Tavy at Ludbrook	EA-DC	01/10/1994	V7
47020	Inny at Bealsmill	EA-DC	Full period of record	V7
47023	Tamar at Tamarstone Bridge	EA-DC	Full period of record	V7
47024	Tavy at Tavistock Abbey Bridge	EA-DC	Full period of record	V5, V8
48001	Fowey at Trekeivesteps	EA-DC	Full period of record	V8
48006	Cober at Helston Country Bridge	EA-DC	01/10/2012	V5
48011	Fowey at Restormel	EA-DC	Full period of record	V7
49001	Camel at Denby	EA-DC	Full period of record	V7
49002	Hayle at St Erth	EA-DC	Full period of record	V7
49006	Camel at Camelford	EA-DC	Full period of record	V7, V8

Station Number	Station Name	Measuring Authority	Start date of POT independence change	Released in
50005	West Okement at Vellake	EA-DC	01/10/2012	V5
50010	Torrige at Rockhay Bridge	EA-DC	01/10/2012	V5
51002	Horner Water at West Luccombe	EA-WX	Full period of record	V7
51003	Washford at Beggearn Huish	EA-WX	01/11/1982	V6
51003	Washford at Beggearn Huish	EA-WX	Full period of record	V8
52004	Isle at Ashford Mill	EA-WX	07/03/1972	V5
52006	Yeo at Pen Mill	EA-WX	Full period of record	V8
52010	Brue at Lovington	EA-WX	Full period of record	V8
52014	Tone at Greenham	EA-WX	09/02/1974	V8
52017	Congresbury Yeo at Iwood	EA-WX	Full period of record	V7
53002	Semington Brook at Semington	EA-WX	Full period of record	V7
53004	Chew at Compton Dando	EA-WX	Full period of record	V8
53006	Frome (Bristol) at Frenchay	EA-WX	20/12/1983	V8
53008	Avon at Great Somerford	EA-WX	Full period of record	V7
53013	Marden at Stanley	EA-WX	Full period of record	V6, V8
53018	Avon at Bathford	EA-WX	Full period of record	V7
53023	Sherston Avon at Fosseyway	EA-WX	Full period of record	V6, V8
53029	Biss at Trowbridge	EA-WX	Full period of record	V7
54002	Avon at Evesham	EA-WM	06/01/1995	V8
54005	Severn at Montford	EA-WM	24/01/1971	V7
54012	Tern at Walcot	EA-WM	03/12/1972	V8
54014	Severn at Abermule	NRW	22/02/1970	V8
54016	Roden at Rodington	EA-WM	Full period of record	V7
54020	Perry at Yeaton	EA-WM	Full period of record	V7
54028	Vyrnwy at Llanymynech	NRW	13/12/2011	V6
54028	Vyrnwy at Llanymynech	NRW	Full period of record	V8
54029	Teme at Knightsford Bridge	EA-WM	Full period of record	V7
54036	Isbourne at Hinton on the Green	EA-WM	Full period of record	V8
54040	Meese at Tibberton	EA-WM	Full period of record	V8
54041	Tern at Eaton upon Tern	EA-WM	28/01/1977	V8
54080	Severn at Dolwen	NRW	22/11/2011	V6
54080	Severn at Dolwen	NRW	Full period of record	V8
54114	Avon at Warwick	EA-WM	15/06/2007	V8
55007	Wye at Erwood	NRW	11/03/1981	V8
55012	Irfon at Cilmerly	NRW	12/12/1978	V8
55016	Irfon at Dissertth	NRW	02/01/1988	V8
55021	Lugg at Butts Bridge	EA-WM	24/11/1984	V7
55026	Wye at Ddol Farm	NRW	22/12/1985	V8
55029	Monnow at Grosmont	NRW	29/04/2012	V6
55029	Monnow at Grosmont	NRW	01/10/2009	V7
56004	Usk at Llandetty	NRW	14/11/2009	V8
57004	Cynon at Abercynon	NRW	13/02/1982	V7
57005	Taff at Pontypridd	NRW	12/11/1992	V7
57006	Rhondda at Trehafod	NRW	15/10/1983	V7
57008	Rhymney at Llanederyn	NRW	10/03/1982	V7
57009	Ely at St Fagans	NRW	Full period of record	V8

Station Number	Station Name	Measuring Authority	Start date of POT independence change	Released in
57010	Ely at Lanelay	NRW	10/03/1982	V8
57014	Rhymney at Bargoed	NRW	Full period of record	V7
57017	Rhondda Fawr at Tynewydd	NRW	Full period of record	V7
58007	Llynfi at Coytrahen	NRW	06/03/1982	V7
58009	Ewenny at Keepers Lodge	NRW	22/12/1995	V8
59001	Tawe at Ynystanglws	NRW	14/10/2002	V8
60001	Twyi at Ty Castell	NRW	03/01/1982	V6, V7
60002	Cothi at Felin Mynachdy	NRW	12/02/1982	V7
60006	Gwili at Glangwili	NRW	03/01/1982	V8
60007	Tywi at Dolau Hirion	NRW	12/02/1982	V7
60009	Sawdde at Felin-y-cwm	NRW	29/12/2012	V6
60009	Sawdde at Felin-y-cwm	NRW	23/08/1985	V7
60012	Twrch at Ddol Las	NRW	12/02/1982	V7
61002	Eastern Cleddau at Canaston Bridge	NRW	10/03/1982	V8
61003	Gwaun at Cilrhedyn Bridge	NRW	24/10/2011	V6
62002	Teifi at Llanfair	NRW	08/11/2002	V8
63001	Ystwyth at Pont Llolwyn	NRW	29/10/1989	V8
63003	Wyre at Llanrystud	NRW	01/10/1999	V7
63003	Wyre at Llanrystud	NRW	Full period of record	V8
64001	Dyfi at Dyfi Bridge	NRW	18/11/2009	V6
64001	Dyfi at Dyfi Bridge	NRW	11/01/1990	V8
64002	Dysynni at Pont-y-Garth	NRW	03/03/1998	V6, V7
64006	Leri at Dolybont	NRW	24/09/1982	V8
64011	Cerist at Llaw'r Cae	NRW	Full period of record	V7
65004	Gwyrfaai at Bontnewydd	NRW	20/07/2010	V6
65004	Gwyrfaai at Bontnewydd	NRW	04/01/1982	V7
65005	Erch at Pencaenewydd	NRW	10/03/1982	V7
65006	Seiont at Peblig Mill	NRW	01/10/2013	V7
65007	Dwyfor at Garndolbenmaen	NRW	10/03/1982	V8
66004	Wheeler at Bodfari	NRW	27/01/1977	V8
67005	Ceiriog at Brynkinalt Weir	NRW	24/01/1971	V7
67006	Alwen at Druid	NRW	19/02/1970	V8
67008	Alyn at Pont-y-Capel	NRW	22/01/1970	V7
67009	Alyn at Rhydymwyn	NRW	05/02/1980	V7
68001	Weaver at Ashbrook	EA-GMMC	05/12/1979	V7
68003	Dane at Rudheath	EA-GMMC	03/02/1977	V6
68003	Dane at Rudheath	EA-GMMC	02/01/1976	V7
68005	Weaver at Audlem	EA-GMMC	22/03/1976	V7
68018	Dane at Congleton Park	EA-GMMC	01/10/2012	V6
68018	Dane at Congleton Park	EA-GMMC	05/12/1979	V7
68020	Gowy at Bridge Trafford	EA-GMMC	Full period of record	V7
68044	Dane at Hug Bridge	EA-GMMC	18/01/2007	V6
69005	Glaze Brook at Little Woolden Hall	EA-GMMC	Full period of record	V7
69007	Mersey at Ashton Weir	EA-GMMC	25/09/1976	V7
69017	Goyt at Marple Bridge	EA-GMMC	01/01/1976	V6
69020	Medlock at London Road	EA-GMMC	01/11/1992	V7

Station Number	Station Name	Measuring Authority	Start date of POT independence change	Released in
69022	Irwell at Irwell Vale	EA-GMMC	Full period of record	V6, V8
69024	Croal at Farnworth Weir	EA-GMMC	15/03/1978	V6, V8
69028	Mersey at Brinksway	EA-GMMC	11/02/1974	V7, V8
69032	Alt at Kirkby	EA-CL	28/12/1978	V7
69041	Tame at Broomstairs	EA-GMMC	03/09/1974	V6, V8
69044	Irwell at Bury Ground	EA-GMMC	06/11/1996	V8
69047	Roch at Littleborough	EA-GMMC	Full period of record	V6, V8
70003	Douglas at Wigan	EA-CL	03/12/1999	V8
70004	Yarrow at Croston Mill	EA-CL	01/10/2013	V5
70004	Yarrow at Croston Mill	EA-CL	Full period of record	V6, V8
71001	Ribble at Samlesbury	EA-CL	02/01/1976	V8
71004	Calder at Whalley Weir	EA-CL	01/01/1976	V7
71004	Calder at Whalley Weir	EA-CL	02/01/1976	V8
71006	Ribble at Henthorn	EA-CL	02/01/1976	V8
71011	Ribble at Arnford	EA-CL	Full period of record	V7
71013	Darwen at Ewood	EA-CL	Full period of record	V7
72003	Hindburn at Wray	EA-CL	23/11/1977	V6
72003	Hindburn at Wray	EA-CL	01/10/1976	V7
72004	Lune at Caton	EA-CL	07/01/1979	V8
72005	Lune at Killington	EA-CL	01/10/1981	V8
72014	Conder at Galgate	EA-CL	06/04/1978	V6
72014	Conder at Galgate	EA-CL	29/11/1976	V7
72015	Lune at Lunes Bridge	EA-CL	01/10/1981	V8
73008	Bela at Beetham	EA-CL	15/11/1978	V8
73009	Sprint at Sprint Mill	EA-CL	02/01/1976	V7
73010	Leven at Newby Bridge	EA-CL	29/11/1976	V8
73014	Brathay at Jeffy Knots	EA-CL	Full period of record	V7, v8
73015	Keer at High Keer Weir	EA-CL	01/01/1991	V6
74005	Ehen at Braystones	EA-CL	19/10/1982	V8
74006	Calder at Calder Hall	EA-CL	17/11/1978	V8
75004	Cocker at Southwaite Bridge	EA-CL	27/11/1976	V8
75005	Derwent at Portinscale	EA-CL	01/10/2011	V5
75009	Greta at Low Briery	EA-CL	02/01/1976	V7
75018	Derwent at Seaton Mill	EA-CL	Full period of record	V8
76007	Eden at Sheepmount	EA-CL	Full period of record	V8
76014	Eden at Kirkby Stephen	EA-CL	02/02/1981	V8
76015	Eamont at Pooley Bridge	EA-CL	Full period of record	V7
76017	Eden at Kirkby Stephen	EA-CL	Full period of record	V8
76021	Eden at Great Musgrave Bridge	EA-CL	Full period of record	V8

ANNEX 3 STATIONS WITH CHANGES TO DATUM HISTORY

NRFA Station	Station Name	Measuring Authority
8013	Feshie at Feshie Bridge	SEPA-N
9010	Deveron at Huntly	SEPA-N
21012	Teviot at Hawick	SEPA-S
21019	Manor Water at Cademuir	SEPA-S
22001	Coquet at Morwick	EA-NE
24003	Wear at Stanhope	EA-NE
26003	Foston Beck at Foston Mill	EA-Y
27003	Aire at Beal Weir	EA-Y
27007	Ure at Westwick Lock	EA-Y
27097	Aire at Bingley	EA-Y
28115	Maun at Mansfield the Dykes	EA-EM
29009	Ancholme at Toft Newton	EA-LN
30003	Bain at Fulsby Lock	EA-LN
33029	Stringside at Whitebridge	EA-EA
33033	Hiz at Arlesey	EA-EA
33034	Little Ouse at Abbey Heath	EA-EA
34007	Dove at Oakley Park	EA-EA
35004	Ore at Beversham Bridge	EA-EA
37009	Brain at Guithavon Valley	EA-EA
39002	Thames at Days Weir	EA-T
39014	Ver at Hansteads	EA-HNL
39016	Kennet at Theale	EA-T
39021	Cherwell at Enslow Mill	EA-T
39025	Enborne at Brimpton	EA-T
39027	Pang at Pangbourne	EA-T
39035	Churn at Cerney Wick	EA-T
39046	Thames at Sutton Courtenay	EA-T
39073	Churn at Cirencester	EA-T
40005	Beult at Stilebridge	EA-KSL
40010	Eden at Penshurst / Vexour Bridge	EA-KSL
40011	Great Stour at Horton	EA-KSL
40013	Darent at Otford	EA-KSL
40016	Cray at Crayford	EA-KSL
40017	Dudwell at Burwash	EA-KSL
40018	Darent at Lullingstone	EA-KSL
41016	Cuckmere at Cowbeech	EA-SSD
43008	Wylde at South Newton	EA-WX
43009	Stour at Hammoon	EA-WX
45002	Exe at Stoodleigh	EA-DC
45008	Otter at Fenny Bridges	EA-DC
46007	West Dart at Dunnabridge	EA-DC

NRFA Station	Station Name	Measuring Authority
47001	Tamar at Gunnislake	EA-DC
48011	Fowey at Restormel	EA-DC
52014	Tone at Greenham	EA-WX
53023	Sherston Avon at Fosseyway	EA-WX
54012	Tern at Walcot	EA-WM
54036	Isbourne at Hinton on the Green	EA-WM
55007	Wye at Erwood	NRW
62002	Teifi at Llanfair	NRW
66004	Wheeler at Bodfari	NRW
71004	Calder at Whalley Weir	EA-CL
72003	Hindburn at Wray	EA-CL
75018	Derwent at Seaton Mill	EA-CL
77003	Liddel Water at Rowanburnfoot	SEPA-S
84035	Kittoch Water at Waterside	SEPA-S