UKCEH
Our planet. Decoded.

National River Flow Archive

National River Flow Archive Peak Flow Dataset

Annual Report 2025/2026

23rd November 2026



Table of contents

1. Introduction 4

1.1 Purpose of the report 4
1.2 Scope 4
1.3 Audience 4
1.4 Timing 4

2. Dataset overview 5

2.1 Description of the dataset 5
2.2 Total number of sites in the dataset 5

3. Annual Update 6

3.1 Number of sites updated 6
3.2 Number of sites with new AMAX records 8

4. Period of Record Review 10

4.1 Overview 10
4.2 Summary statistics 10
4.2.1 Number of sites added 11

5. Dataset usage and access 13

5.1 Usage statistics 13
5.1.1 Unique peak flow users 13
5.1.2 Peak flow page views 13
5.1.3 Top 10 most accessed peak flow stations (Top 10) 13
5.1.4 NRFA Peak Flow Dataset downloads 13
5.1.5 API download statistics 14
5.2 Year-on-year trends 14
5.2.1 NRFA Peak Flow Dataset downloads 14
5.3 Summary of 2025 Engagement 15
5.4 Impacts of the NRFA Peak Flow Dataset 15

6. Efficiencies and improvements 16

6.1 Process improvements 16
6.2 Methodological changes 16
6.3 Automation or tooling updates 16
6.4 Data access enhancements 16

7. Data release and publication 18

7.1 Date of latest dataset release 18

8. Outreach activities 19

8.1 Webinars 19
8.2 Liaison Visits 19
8.3 Conferences and Workshops 19
8.4 Publications 19

9. Conclusions and next steps 20

9.1 Key takeaways from the year 20
9.2 Planned improvements for next year 20
9.3 Any known upcoming changes 21

1. Introduction

1.1 Purpose of the report

The purpose of this annual report is to provide an overview of the maintenance, development and stewardship activities undertaken for the National River Flow Archive Peak Flow Dataset (NRFA-PFD) during the reporting year. It summarises the outcomes of the annual update (AU) and Period of Record Review (PORR) processes, reports on dataset usage and accessibility, and documents improvements made to the systems and procedures used to maintain and disseminate the dataset.

- NRFA-PFD at a glance

949
Gauging stations in the dataset

823
Stations updated during the Version 15 annual update (97.5% of active stations)

12,219
Unique users accessed NRFA peak flow data in 2025

1.2 Scope

This report summarises all activities associated with the most recent annual update of the NRFA-PFD (Version 15). It covers updates to existing station records, the addition of new stations, and changes to annual maximum (AMAX) records, including the identification of new record peaks. The report also describes reviews of station periods of record, Flood Estimation Handbook (FEH) suitability classifications and Peak-over-Threshold (POT) thresholds, together with updates to data, site datums, station descriptions and station photographs. In addition, it presents usage statistics for the dataset and its associated services, impact of the dataset, and documents the efficiencies, improvements and process changes implemented during the year to support the ongoing maintenance and delivery of the dataset.

This report provides a summary of the principal activities and outcomes of the Version 15 update cycle. Readers seeking detailed information on individual station changes should refer to the NRFA Peak Flow Dataset Version 15 Release Note. Information on the implications of the release for flood estimation practice is provided in the FEH changes for Peak Flows V15 impact report.

1.3 Audience

The primary audience for this report is the UK Measuring Authorities responsible for the collection and management of hydrometric data. The report is also intended for other users of the NRFA-PFD, including hydrologists, researchers, flood risk practitioners, infrastructure planners, regulators and other stakeholders who use peak flow data for flood frequency estimation, hydrological analysis and decision-making.

1.4 Timing

The NRFA-PFD is updated annually, with this report providing a summary of activities associated with the most recent update cycle: 1st October 2025 – 30th September 2026 (Version 15). In accordance with the contract specification, the annual report is produced and published following the release of the updated dataset.

2. Dataset overview

2.1 Description of the dataset

The NRFA-PFD is the national archive of peak river flow information for the United Kingdom. It contains annual maximum (AMAX) flow series and peak-over-threshold (POT) data derived from gauging stations operated by the UK Measuring Authorities (Environment Agency, Scottish Environment Protection Agency, Natural Resources Wales, Department for Infrastructure – Rivers). The dataset provides quality-controlled records of river flow extremes and supports a wide range of applications, including flood frequency estimation, flood risk assessment, infrastructure design, reservoir safety studies and hydrological research.

The dataset is maintained through a collaborative programme involving the UK Measuring Authorities and the National River Flow Archive (NRFA). Annual maintenance activities include the review of newly available peak flow data, quality assurance of existing records, assessment of station suitability for flood estimation, and updates to supporting metadata. These activities ensure that the dataset remains a reliable and authoritative source of information on river flood extremes across the UK.

The dataset includes information on station characteristics, annual maximum peak flows, peak-over-threshold events, and flood estimation suitability classifications. Where required, records are amended to reflect changes in hydrometric data, station datums, catchment information and other metadata. Updates are incorporated into annual releases to provide users with the most complete and up-to-date representation of observed high flow behaviour.

Version 15 contains data from 949 gauging stations distributed across England, Scotland, Wales and Northern Ireland, representing one of the most comprehensive collections of peak flow information available anywhere in the world. The dataset continues to grow through the addition of new stations and the extension of existing records, providing an increasingly valuable evidence base for understanding flood risk and hydrological extremes across the UK.

The NRFA-PFD serves a diverse user community, including the UK Measuring Authorities, government agencies, consultants, researchers, academic institutions and flood risk practitioners. It forms a key component of the evidence base used for flood estimation in the UK and supports the methods and guidance contained within the Flood Estimation Handbook (FEH).

2.2 Total number of sites in the dataset

Version 15 of the NRFA-PFD contains AMAX and POT data for 949 gauging stations, of which 636 are in England, 181 in Scotland, 94 in Wales and 38 in Northern Ireland. A total of 558 stations are recommended for use in pooling groups ('Suitable for Pooling'), 366 stations are classified as 'Suitable for QMED' only, and 25 stations are considered 'Suitable for Neither'. Compared with Version 14, the total number of stations increased by 24 following the addition of new stations identified through annual review and wider network assessment activities.

3. Annual Update

3.1 Number of sites updated

Version 15 of the NRFA-PFD contains records for 949 gauging stations, of which 105 are classified as closed. During the annual update process, peak flow data supplied by the UK measuring authorities for the water year 2024/2025 were subject to quality assurance and review by the NRFA Regional Representatives, prior to inclusion in the dataset. A total of 823 stations were updated to include the latest year of data.

The remaining 21 stations were not updated as part of Version 15 because their peak flow records are currently frozen pending further review, investigation, or administrative action. In most cases, records are awaiting rating reviews following significant flood events, engineering works, channel instability, or other hydrometric issues that may affect the reliability of recorded peak flows. Table 1 lists the stations that were not updated and summarises the reasons for their current status.

Annual Update at a glance

823
Stations updated with water year 2024/2025 peak flow data

97.5%
Of active stations successfully updated

24
New AMAX1 records identified across the UK

In addition to receiving the water year 2024/2025 update, two stations that experienced very high flows in Wales were provisionally updated to include data from the water year 2025/2026, where these data were available at the time of processing.

Overall, 97.5% of active stations in the dataset were updated during the Version 15 update cycle, with records withheld only where further investigation was required to ensure the quality and integrity of the NRFA-PFD.

Table 1 Sites not updated in Version 15 of the NRFA-PFD

Station Number	Station Name	Operator	Most recent water year	Comment
3002	Carron at Sgodachail	SEPA-NW	2021	Awaiting completion of rating review.
11001	Don at Parkhill	SEPA-NE	2005	Record frozen pending review of the stage-discharge rating.
12006	Gairn at Invergairn	SEPA-NE	2021	Awaiting completion of rating review following the extreme flood event of 2022.
12007	Dee at Mar Lodge	SEPA-NE	2013	Awaiting completion of rating review following the extreme flood event associated with the remnants of Hurricane Bertha in 2014.

Station Number	Station Name	Operator	Most recent water year	Comment
13001	Bervie at Inverbervie	SEPA-NE	2005	Record frozen pending review of the stage-discharge rating.
14001	Eden at Kemback	SEPA-NE	2005	Record frozen pending review of the stage-discharge rating.
15013	Almond at Almondbank	SEPA-NE	2009	Awaiting completion of rating review following engineering works and instability of the hydraulic control and channel banks.
16001	Earn at Kinkell Bridge	SEPA-NE	2005	Record frozen pending review of the stage-discharge rating.
17004	Ore at Balfour Mains	SEPA-SE	2018	Record frozen due to channel vegetation affecting rating stability.
21006	Tweed at Boleside	SEPA-SE	2023	Awaiting completion of rating review.
21019	Manor Water at Cademuir	SEPA-SE	2015	Awaiting completion of rating review due to ongoing degradation of the weir control.
21025	Ale Water at Ancrum	SEPA-SE	2005	Record frozen pending review of the stage-discharge rating.
21027	Blackadder Water at Mouth Bridge	SEPA-SE	2023	Awaiting completion of rating review.
45004	Axe at Whitford	EA-DC	2021	Awaiting completion of rating review.
45818	Withiel Florey Stream at Bessom Bridge	EA-DC	2023	Awaiting completion of rating review.
48803	Carnon at Bissoe	EA-DC	2021	Record frozen pending resolution of rating application issues.
54022	Severn at Plynlimon flume	UKCEH	2010	Record frozen pending investigation of data quality issues.
73012	Kent at Victoria Bridge	EA-CL	2018	Awaiting closure of the station and transfer to the replacement station within the NRFA.
76003	Eamont at Udford	EA-CL	2015	Station closed following Storm Desmond; awaiting formal closure documentation.
83004	Lugar Water at Langholm	SEPA-SW	2005	Record frozen pending review of the stage-discharge rating.
96001	Halladale at Halladale	SEPA-NW	2005	Record frozen pending review of the stage-discharge rating.

Of the 21 stations not updated, the majority are associated with ongoing rating reviews, highlighting the continuing importance of maintaining robust stage-discharge relationships for peak flow monitoring. Many of these stations have experienced significant flood events, channel instability or engineering changes that require further investigation before additional data can be incorporated into the dataset. The NRFA welcomes updates to these stations as reviews are completed by the relevant Measuring Authorities.

3.2 Number of sites with new AMAX records

New AMAX records (AMAX 1), the highest ranking in the period of record, were set at 24 stations in the water year 2024/2025, listed in Table 2 with the percentage change from the previous AMAX 1.

Table 2 New AMAX 1 records set in water year 2024/2025.

Station Number	Station Name	Operator	% Increase	Date of new AMAX 1	Record Length (years)
18023	Monachyle Burn at Upper Monachyle	SEPA-SE	1.05	24/01/2025	12
28026	Anker at Polesworth	EA-WM	9.35	06/01/2025	56
28082	Soar at Littlethorpe	EA-EM	3.68	06/01/2025	40
28086	Sence at South Wigston	EA-EM	27.94	06/01/2025	38
30005	Witham at Saltersford Total	EA-LN	13.28	06/01/2025	51
46014	Teign at Chudleigh	EA-DC	42.56	24/11/2024	20
49006	Camel at Camelford	EA-DC	1.27	15/04/2025	18
54018	Rea Brook at Hookagate	EA-WM	37.61	17/10/2024	62
54097	Hore at Upper Hore flume	UKCEH	0.28	23/11/2024	39
55018	Frome at Yarkhill	EA-WM	0.48	06/01/2025	56
55029	Monnow at Grosmont	NRW	2.19	24/11/2024	52
57014	Rhymney at Bargoed	NRW	3.16	24/11/2024	23
57017	Rhondda Fawr at Tynewydd	NRW	9.76	24/11/2024	23
58001	Ogmore at Bridgend	NRW	4.03	24/11/2024	64
58007	Llynfi at Coytrahen	NRW	1.54	24/11/2024	54
67005	Ceiriog at Brynkinalt Weir	NRW	4.11	23/11/2024	27
69007	Mersey at Ashton Weir	EA-GMMC	14.4	01/01/2025	66
69020	Medlock at London Road	EA-GMMC	5.5	01/01/2025	55
69027	Tame at Portwood	EA-GMMC	48.85	01/01/2025	81
69028	Mersey at Brinksway	EA-GMMC	15.7	01/01/2025	68
69041	Tame at Broomstairs	EA-GMMC	39.13	01/01/2025	56
69043	Irk at Collyhurst Weir	EA-GMMC	2.88	01/01/2025	28
69045	Bollin at Bollington Mill Total	EA-GMMC	0.2	01/01/2025	24
203043	Oonawater at Shanmoy	DfIR	2.5	23/11/2024	37

The 24 new AMAX 1 records were distributed across all four UK nations, demonstrating the widespread hydrological significance of the major flood events experienced during the 2024/25 water year. The majority of records were associated with flooding in November 2024 and January 2025, with notable clusters occurring in Wales and north-west England. Several stations recorded substantial increases on their previous maximum flow, including Tame at Portwood (+48.9%), Teign at Chudleigh (+42.6%), Tame at Broomstairs (+39.1%) and Rea Brook at Hookagate (+37.6%). Such increases are particularly noteworthy where long periods of record already exist. Nine of the new AMAX 1 records occurred at stations with records exceeding 50 years in length, providing further evidence of the exceptional nature of the flood events responsible for these peaks.

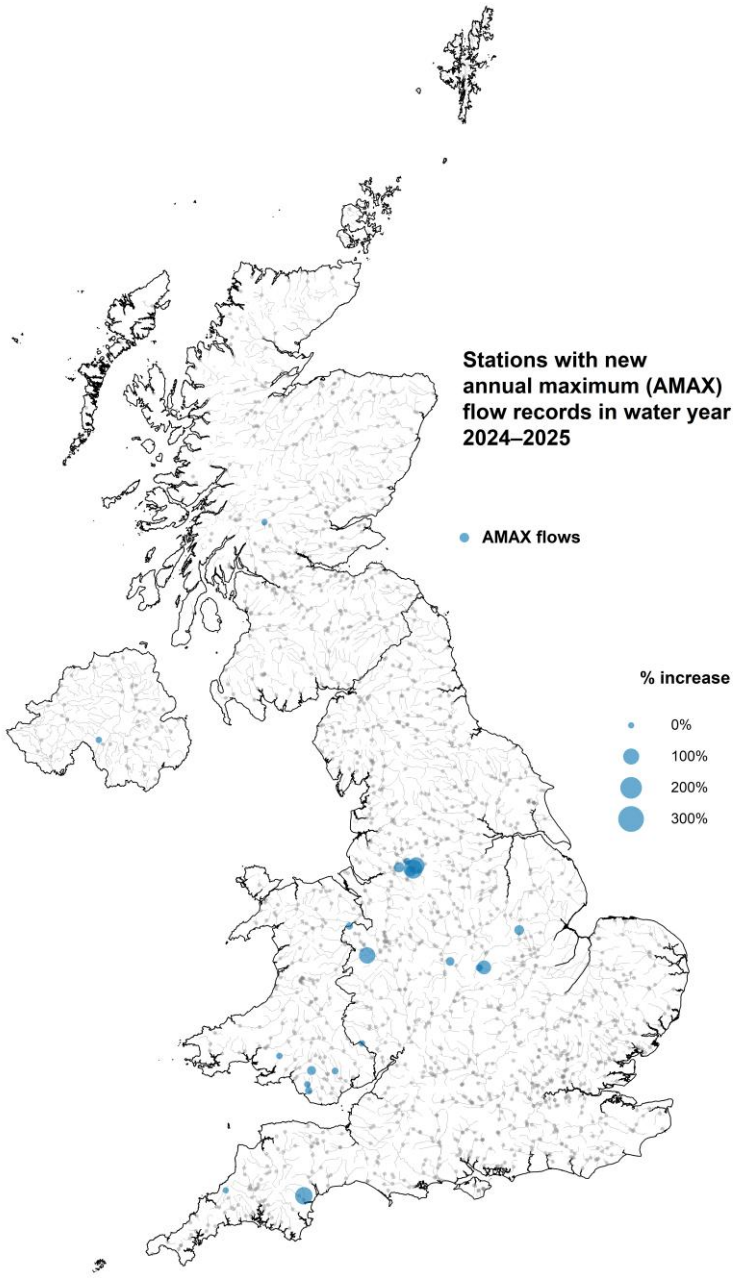


Figure 1 New AMAX1 records were established at 24 stations during water year 2024/2025 across the UK.

4. Period of Record Review

4.1 Overview

A programme of Period of Record Reviews (PORRs) is undertaken as part of the stewardship of the NRFA-PFD. Each year, a subset of stations undergoes a PORR, with any resulting data and metadata changes incorporated into the next scheduled dataset release. In addition, wider network review activities are often undertaken to assess specific metadata items or issues across larger groups of stations or, in some cases, an entire Measuring Authority region.

PORR at a glance

79
Stations completed a Period of Record Review

24
New stations added to the dataset

558
Stations updated through the bankfull and structure-full review

4.2 Summary statistics

For Version 15, a PORR was completed for 79 stations, comprising 17 stations in Scotland, 45 in England, 10 in Wales and 7 in Northern Ireland.

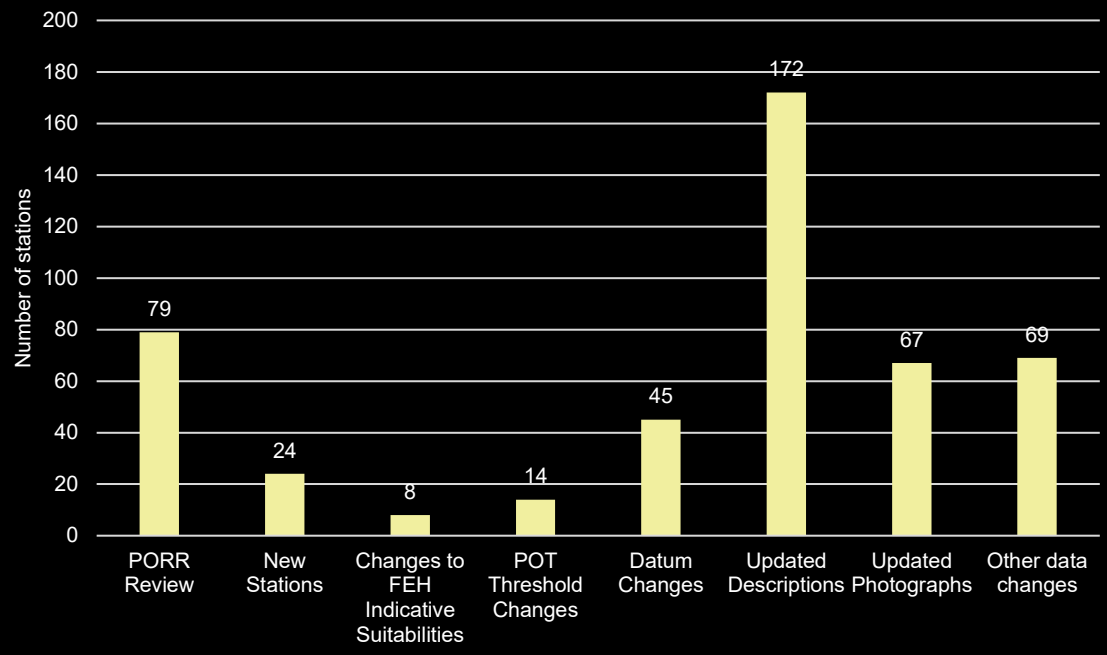
The review programme also included several related activities:

- In England, Scotland and Northern Ireland, a review of bankfull and structure-full levels was undertaken, resulting in updates at 558 stations.
- In Northern Ireland, a review of Peaks-over-Threshold (POT) thresholds was completed, and the resulting changes were incorporated into the dataset.
- In England, the findings and recommendations from the non-stationarity project (FRS18087) were reviewed and implemented where appropriate.
- A review of candidate stations for inclusion in the NRFA-PFD was also undertaken in England, resulting in the addition of 21 new stations through this activity. Together with additions elsewhere in the UK, a total of 24 new stations were added to Version 15.

Figure 2 shows the principal review categories assessed during the Version 15 PORR, together with the number of stations for which updates were made in each category. The category "Other data changes" includes minor amendments to AMAX and POT records, updates to stage-discharge ratings and reprocessed data, and changes relating to unrepresentative or rejected periods.

For more details on individual station changes, please refer to the Version 15 Release Note: https://nrfa.ceh.ac.uk/data/peak-flow-dataset.

Figure 2 Summary of the number of key changes made to stations



Overall, the Version 15 review programme resulted in changes to a wide range of station data and metadata, reflecting both routine stewardship activities and targeted network-wide reviews. In addition to the 79 stations subject to a full PORR, substantial metadata improvements were delivered through reviews of bankfull and structure-full levels, station descriptions, photographs and station datums. The addition of 24 new stations further expanded the geographical coverage and diversity of hydrological environments represented within the dataset.

4.2.1 Number of sites added

24 stations have been added to the dataset in Version 15, listed in Table 3. As part of the usual additions to the dataset, Version 15 also benefited from a concerted effort through wider network activities to identify and incorporate suitable Environment Agency stations that were not previously included in the dataset.

Table 3 Stations added to the dataset in Version 15 of the NRFA-PFD.

Station Number	Station Name	Operator	Suitability	Catchment Area (km^2)
13007	North Esk at Logie Mill	SEPA-NE	QMED	747.04
27054	Hodge Beck at Cherry Farm	EA-Y	QMED	37.43
27074	Spen Beck at Northorpe	EA-Y	QMED	45.82
28051	Soar at Narborough	EA-EM	QMED	205.24
38012	Stevenage Brook at Bragbury Park	EA-HNL	QMED	35.11
38017	Mimram at Whitwell	EA-HNL	POOLING	38.4

Station Number	Station Name	Operator	Suitability	Catchment Area (km²)
38028	Stansted Brook at Gypsy Lane	EA-HNL	QMED	26.37
38029	Quin at Griggs Bridge	EA-HNL	QMED	50.41
39030	Gade at Croxley Green	EA-HNL	POOLING	182.35
39102	Misbourne at Denham Lodge	EA-HNL	QMED	93.24
40042	Medway at Allington	EA-KSL	POOLING	1376.79
43016	Stour at Wimborne (A31)	EA-WX	POOLING	1013.81
43022	Moors River at Hurn Court	EA-WX	POOLING	149.14
43026	Bourne at Salisbury Bourne	EA-WX	QMED	166.23
43027	Allen at All Hallows	EA-WX	QMED	36.16
49007	Camel at Bodmin Dunmere	EA-DC	QMED	138.85
52001	Axe at Wookey	EA-WX	QMED	11.7
53024	Tetbury Avon at Brokenborough	EA-WX	QMED	79.54
54088	Little Avon at Berkeley Kennels	EA-WX	QMED	133.06
54095	Severn at Buildwas	EA-WM	POOLING	3722.67
54098	Cam at Cambridge	EA-WM	QMED	29.54
69026	Irwell at Kearsley	EA-GMMC	POOLING	519.83
92003	Strontian at Ariundle	SEPA-NW	POOLING	25.17
108001	Weisdale Burn at Weisdale Mill	SEPA-NW	POOLING	12.71

Of the 24 additions, 8 were classified as ‘Suitable for Pooling’ and 16 as ‘Suitable for QMED’. Catchment areas ranged from 11.7 km² (Axe at Wookey) to 3722.7 km² (Severn at Buildwas), further broadening the range of hydrological environments represented within the dataset. The majority of new additions arose from a targeted review of Environment Agency stations, demonstrating the value of wider network assessment activities in identifying suitable stations for inclusion within the NRFA-PFD.

5. Dataset usage and access

5.1 Usage statistics

The NRFA remains an important and accessible resource of hydrometric information for a broad spectrum of users. The statistics below are for the calendar year 2025.

5.1.1 Unique peak flow users

A total of 12,219 unique users accessed NRFA peak flow data during 2025. This metric represents the actual number of individual people who accessed NRFA peak flow pages in 2025. By deduplicating the data, it ensures that repeat visits by the same person are not counted multiple times, giving us an accurate measure of our true audience reach.

5.1.2 Peak flow page views

A total of 42,431 peak flow website views were recorded in 2025. This tracks the total volume of traffic, counting every instance the Peak Flow pages were loaded or refreshed.

5.1.3 Top 10 most accessed peak flow stations

Table 4 presents the ten most accessed peak flow stations in 2025, ranked by their combined website page views.

Table 4 Top 10 most accessed Peak Flow stations in 2025

Station Number	Station Name	Operator	Number of Views
32008	Nene/Kislingbury at Dodford	EA-LN	1,248
24003	Wear at Stanhope	EA-NE	376
24001	Wear at Sunderland Bridge	EA-NE	352
39001	Thames at Kingston	EA-T	337
12002	Dee at Park	SEPA-NE	323
55029	Monnow at Grosmont	NRW	284
28081	Tame at Bescot	EA-WM	262
76007	Eden at Sheepmount	EA-CL	261
11001	Don at Parkhill	SEPA-NE	223
27009	Ouse at Skelton	EA-Y	221

5.1.4 NRFA Peak Flow Dataset downloads

The NRFA-PFD is available as a direct-download product for users requiring access to the dataset in a portable ZIP format, including those wishing to use the data within WINFAP. A total of 1,101 ZIP downloads of the Peak Flow dataset were recorded in 2025. Because Version 14 was released in

August 2025, this total combines the downloads of Version 13 (between January 2025 to August 2025) and Version 14 (between August 2025 and December 2025).

5.1.5 API download statistics

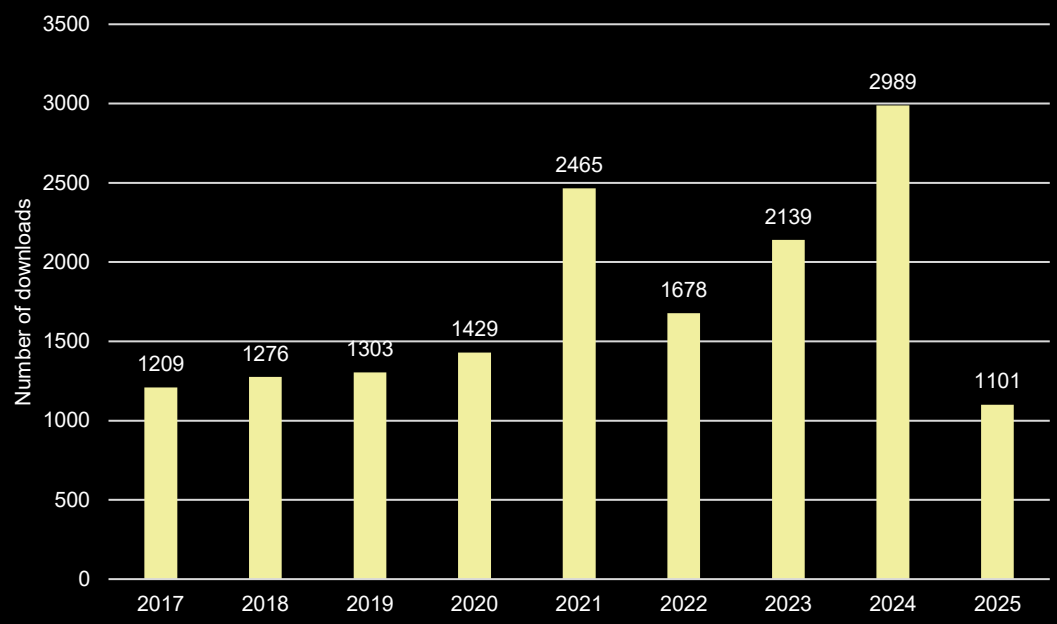
The NRFA API allows users and external applications to query metadata and data directly. Metadata downloads significantly outpaced time-series downloads in 2025 (1,610,493 compared with 846,956). This indicates that users heavily rely on descriptive, station-level metadata alongside raw river flow data. Additionally, this high volume is driven by automated integrations with external platforms, such as the EA Hydrology Data Explorer and SEPA River Levels webpages, which dynamically link back to NRFA station metadata.

5.2 Year-on-year trends

5.2.1 NRFA Peak Flow Dataset downloads

Yearly downloads of the NRFA-PFD are illustrated below in Figure 3.

Figure 3 Number of downloads of the NRFA Peak Flow Dataset.



From 2017 to 2020, recorded downloads increased gradually. There was a marked increase in 2021, followed by a decline in 2022 and renewed growth in 2023 and 2024. The 2025 value is the lowest since 2017; however, this is largely attributable to a failure of the download-statistics recording system. Statistics were not collected between 11 March and 24 July 2025, resulting in no data being recorded for Quarter 2 and incomplete statistics for Quarters 1 and 3. Consequently, the reported download figures for 2025 substantially underestimate actual usage.

Despite this limitation, the available evidence indicates continued strong engagement with NRFA Peak Flow information. The API recorded high levels of both metadata and time-series access, while

Peak Flow page views demonstrate sustained direct user engagement. Overall, the 2025 statistics demonstrate continued and diverse use of NRFA Peak Flow information through website, app, dataset download and API services.

5.3 Summary of 2025 Engagement

Despite the logging system limitation in 2025, alternative data streams prove that engagement with NRFA-PFD remains highly robust:

- More than 2.4 million API metadata and time-series downloads were recorded, demonstrating deep integration with external services.

- Direct website page views show sustained, day-to-day engagement by individual users.

Overall, the 2025 metrics validate that the NRFA continues to serve as a critical, diverse, and heavily utilised resource across the web, direct downloads, and automated API systems.

5.4 Impacts of the NRFA Peak Flow Dataset

The NRFA-PFD provides the authoritative UK archive of quality-controlled annual maximum river flow data and is a fundamental evidence source for flood risk management across the UK. The dataset underpins flood frequency analyses used to estimate design flood flows for flood alleviation schemes, flood forecasting and warning systems, strategic flood risk assessments, infrastructure design and development planning.

Good quality, long-term gauged high-flow data is essential for flood estimation work, whether for flood alleviation scheme design, flood risk mapping, flood forecasting, or development control. The NRFA provides users with UK-wide, quality-controlled, consistent and up-to-date flow data and metadata, which are invaluable for flood risk management and planning.

At Natural Resources Wales (NRW), the Peak Flow Dataset is used to support flood estimation activities and provides a trusted, nationally consistent source of information for flood risk assessments and investment decisions. The availability of quality-assured records allows practitioners to undertake flood frequency analyses with confidence and helps ensure that flood management decisions are based on the best available evidence.

The Environment Agency's National Flood Hydrology Team recently used NRFA-PFD Version 15 to assess whether inflow estimates for an existing flood model required updating. Using the latest peak flow data and flood estimation methods, a sensitivity analysis was undertaken at four key gauged locations. Although revised estimates were generally lower than those originally used, differences remained within operational thresholds, allowing existing hydrological inputs to be retained. This enabled the model to remain suitable for inclusion within the National Flood Risk Assessment (NaFRA2), ensuring continued use of a locally calibrated model that better represented flood risk in a complex upland catchment.

The benefits of the Peak Flow Dataset extend beyond individual studies. Across the UK, the dataset supports regulators and flood risk management authorities in the development of flood risk assessments, flood forecasting systems, flood warning services, investment planning and flood risk management strategies. In Scotland, improvements to the contribution of Scottish gauging stations to the NRFA-PFD have strengthened the evidence base used to support major flood risk management investment decisions and wider national flood resilience activities. SEPA has highlighted the

importance of high-quality peak flow data as part of the hydrometric foundation underpinning flood mapping, forecasting, warning services and strategic flood risk planning.

Beyond operational applications, the dataset also supports research into hydrological variability, climate change impacts and long-term trends in flood behaviour. By maintaining a nationally consistent archive of extreme river flow observations, the NRFA-PFD helps ensure that flood risk management policy, investment and scientific understanding are based on robust observational evidence.

6. Efficiencies and improvements

6.1 Process improvements

The established “wash-up” approach was applied systematically throughout the annual cycle. NRFA core staff were encouraged to record potential improvements and issues as they arose throughout the year. These observations were captured within a dedicated wash-up document and reviewed collectively at the end of the cycle. A wash-up meeting was then held on 15 September 2026, during which key actions were identified to improve and further enhance processes for future review cycles. See section 9.2 for specifics that will be taken forward next year. The wash-up process encouraged the early identification of issues and opportunities for improvement throughout the year, helping to ensure that lessons learned were captured systematically rather than retrospectively.

6.2 Methodological changes

There were no methodological changes to the NRFA-PFD or associated processing procedures in Version 15.

6.3 Automation or tooling updates

The Annual Update (AU) and Period of Record Review (PORR) processes identify changes to peak flow records and associated station metadata. This year, SQL-based validation was further enhanced to support the metadata update process, with additional automated checks used to compare metadata loaded into the database tables for public release against the intended updates prior to sign-off. These checks provide an additional level of quality assurance, helping to improve the accuracy and consistency of metadata updates and increasing confidence in the final dataset.

The enhanced validation process supports the identification of discrepancies between proposed and published metadata, providing a more systematic and repeatable approach to quality assurance. By automating routine verification tasks, staff effort can be focused on investigating exceptions and resolving potential issues identified during the review process.

6.4 Data access enhancements

No significant changes were made to data access arrangements during the reporting period. Peak flow data continued to be made available through WINFAP files, the NRFA website and the NRFA API, providing users with established routes to access the dataset. During 2025, these services continued to support substantial levels of user engagement, with more than 12,000 unique users accessing peak flow information and over 2.4 million API metadata and time-series downloads

recorded. This demonstrates the continuing value of maintaining multiple routes through which users can discover and access the NRFA-PFD.

7. Data release and publication

7.1 Date of latest dataset release

Version 15 of the NRFA Peak Flow Dataset marks the twelfth major update to the dataset under the NRFA. This release includes an additional water year for all active peak flow stations across England, Scotland, Wales, and Northern Ireland, extending coverage up to the end of September 2025. It also incorporates a comprehensive Period of Record Review for 79 UK stations, updating both data and metadata. The dataset was officially released on 27 August 2026.

The dataset is available to download on the NRFA Website.

8. Outreach activities

8.1 Webinars

The NRFA team contributed to a two-part webinar series organised by the Surface and Groundwater Archives (SAGA) Committee to promote awareness and use of the UK's hydrological data resources. The first webinar focused on the NRFA and National Groundwater Level Archive (NGLA), and covered the collection, quality assurance, stewardship and application of long-term hydrological data, including the NRFA-PFD. The second webinar showcased key UK hydrological monitoring and forecasting tools, including the National Hydrological Monitoring Programme, UK Hydrological Outlook, UK Water Resources Portal and Hydrological Outlooks Portal. The webinars were aimed at researchers, water managers, policy makers and UK Measuring Authority staff, helping to raise awareness of nationally important hydrological datasets and services. The webinars attracted over 200 participants from academia, government, consultancy and the UK Measuring Authorities, demonstrating continued interest in national hydrological data services.

8.2 Liaison Visits

Although no formal liaison visits were undertaken during the reporting period, regular engagement with the UK Measuring Authorities continued through the annual update, Period of Record Review activities, workshop participation and routine technical discussions. A liaison visit to the Environment Agency North East Region is planned for October 2026 and will provide an opportunity to discuss hydrometric operations, peak flow data management and future developments relating to the NRFA-PFD.

8.3 Conferences and Workshops

The NRFA Peak Flow Workshop was held at UKCEH Lancaster on 5-6 November 2025 and brought together representatives from the UK Measuring Authorities, Wallingford HydroSolutions and UKCEH. The workshop provided an opportunity to discuss recent developments in the NRFA-PFD, flood estimation, hydrometric monitoring, metadata management and supporting systems. It also informed planning for Version 15 of the dataset. The workshop provided an important forum for sharing knowledge, discussing common challenges and identifying opportunities for future development of the NRFA-PFD. The discussions informed planning for Version 15 and helped promote consistency in data management practices across the UK Measuring Authorities.

The NRFA team attended and presented a poster at the 16th British Hydrological Society National Symposium, held at the University of Leeds on 2-3 September 2026. The poster highlighted recent developments, including enhancements to data access services and the latest Peak Flow Dataset release, and demonstrated the wide range of applications supported by NRFA data in research, operational hydrology and water management.

8.4 Publications

A manuscript describing the NRFA-PFD was submitted to *Hydrological Sciences Journal*. The paper documents the development, content and applications of the dataset, highlighting its role in flood estimation, hydrological research and the long-term stewardship of UK peak flow records. The manuscript was prepared in collaboration with the four UK Measuring Authorities, who are co-authors on the paper. At the time of writing, the paper is in review.

9. Conclusions and next steps

9.1 Key takeaways from the year

Version 15 of the NRFA-PFD was successfully delivered, with 97.5% of active stations updated to include data for the water year 2024/2025. The annual update process also incorporated two Welsh stations with provisional water year 2025/2026 data where these were available at the time of processing.

A substantial programme of stewardship and dataset development activities was undertaken alongside the annual update. This included a Period of Record Review for 79 stations across the UK, the addition of 24 new stations to the dataset, updates to bankfull and structure-full values at more than 500 stations, and the implementation of recommendations arising from the non-stationarity project (FRS18087).

The annual update identified 24 new annual maximum (AMAX) records across the UK, reflecting the significance of several major flood events during the reporting period. Continued improvements to quality assurance procedures and the automation of validation checks further enhanced the efficiency, consistency and robustness of dataset maintenance activities.

Overall, Version 15 represents a significant enhancement to the coverage, quality and accessibility of the NRFA-PFD, ensuring that it remains a trusted and authoritative source of information for flood estimation and hydrological analysis across the United Kingdom.

9.2 Planned improvements for next year

Several improvements have been identified through the Version 15 wash-up process and will be implemented during the Version 16 update cycle.

A key focus will be improving guidance and training for Regional Representatives. Updates will be made to annual update workbooks, training materials and kick-off presentations to provide clearer instructions on data loading requirements, query submission processes and the distinction between mean flow and peak flow activities. Additional emphasis will be placed on making greater use of existing supporting information before queries are raised, reducing avoidable correspondence with Measuring Authorities.

Further enhancements will be made to quality assurance and data management processes. These include additional validation checks prior to data loading, improvements to request lists and tracking tools, and clearer classification of new stations entering the dataset. These changes are intended to improve efficiency, reduce the likelihood of errors and support a smoother annual update process.

Procedures and guidance documents will also be updated to improve consistency and knowledge transfer. This includes documenting currently informal processes, updating workflow diagrams, providing clearer instructions for the setup of new stations, and refining data loading and submission guidance for both NRFA staff and Measuring Authorities.

Following the successful extension of SQL-based validation introduced during Version 15, opportunities for further automation and streamlining of quality-control activities will continue to be explored. These developments will help ensure that the NRFA-PFD remains efficient to maintain

while continuing to meet the high standards of quality, transparency and consistency expected by dataset users and stakeholders.

9.3 Any known upcoming changes

It is anticipated that the NRFA systems will transition to the new platform being developed through the Floods and Droughts Research Infrastructure (FDRI) programme by 2029. During the coming year, the NRFA team will work closely with the FDRI project to test and evaluate the emerging systems and workflows.

Where feasible, selected operational activities will be run in parallel across both the existing NRFA systems and the developing FDRI infrastructure. This will help identify any gaps, issues or opportunities for improvement, ensuring that the new systems are fit for purpose and capable of supporting the long-term stewardship of the NRFA-PFD. The parallel testing phase will also help minimise transition risks and support a smooth migration ahead of full implementation.

This work represents an important step towards modernising the technical infrastructure that underpins the NRFA and will help ensure that future data management, quality assurance and dissemination processes remain efficient, robust and sustainable.



UKCEH
Our planet. Decoded.

For more information please contact:

[EMAIL US]
Enquiries@ceh.ac.uk

[LEARN MORE]
ceh.ac.uk

[FOLLOW US]
@uk_ceh