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NRFA PEAK FLOW DATASET VERSION 12.1

Note on changes from v12

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DOCUMENT VERSION CONTROL

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1.0	NOVEMBER 2023	STEVE TURNER, CATHERINE SEFTON, RAFAEL BARBEDO, OLIVER SWAIN	Release note for NRFA Peak Flow Dataset version 12.1

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1 INTRODUCTION

Version 12.1 of the NRFA Peak Flows Dataset contains AMAX and POT data for 917 gauging stations, of which 617 are in England, 168 are in Scotland, 94 are in Wales and 38 are in Northern Ireland. A total of 545 stations are recommended for use in pooling groups ('Suitable for Pooling'), 349 stations are 'Suitable for QMED' and 23 stations are 'Suitable for Neither'.

Version 12.1 contains:

- Correction at some sites to the catchment descriptor update which was applied in Version 12.

There are no other changes to the data files or flow data since Version 12. For changes between Version 11.1 (released in March 2023) and Version 12 (released in September 2023), users should refer to the [release note for Version 12](#).

2 CORRECTIONS TO CATCHMENT DESCRIPTORS

2.1 Cumulative Catchment Area (CCAR)

In Version 12, a new method was developed to snap points to their representative point in the digital terrain model (DTM) in order to better represent the real location of gauging stations on the digital drainage network. It is these locations on the digital drainage network which are used to compute FEH catchment descriptors. The new method led to updates which were on the whole, very minor and an improvement to what was held previously.

At a handful of gauging stations, manual interventions are required to best reflect what is happening on the ground, where the DTM does not perform appropriately.

In Version 12, a number of the manual values were overwritten by automated values. In Version 12.1, catchment descriptor values at these sites have been reverted to the manual value.

Table 1 below shows the CCAR values which have changed and a comment on the reason for the change. All other stations in the Peak Flow Dataset are unchanged.

Table 1 CCAR Catchment Descriptor for the past 3 Peak Flow Dataset versions and reason for change

Station	CCAR v11.1	CCAR v12	CCAR v12.1	Comment
8004	540.7475	540.6925	540.6925	Minor change - Improvement
18023	2.2	2.195	2.195	Minor change - Improvement
21016	118.93	118.865	118.865	Minor change - Improvement
26016	15.85	15.845	15.85	Reverted to 11.1 manual value (large groundwater catchment)
26017	14.203	14.2025	14.2025	Minor change - Improvement
27021	1252.8725	1252.87	1252.87	Minor change - Improvement
27025	351.1	354.945	351.1	Reverted to 11.1 manual value until it can be reviewed
27095	66.2	66.26	66.26	Minor change - Improvement
27096	215.185	215.22	215.22	Minor change - Improvement
27097	464.773	464.8175	464.8175	Minor change - Improvement
27098	715.745	715.7175	715.7175	Minor change - Improvement
28043	344.3375	344.365	344.365	Minor change - Improvement
30003	199.48	199.49	199.49	Minor change - Improvement
30013	23.9275	23.88	23.88	Minor change - Improvement
31002	337.9	159.05	337.9	Reverted to 11.1 manual value - Compound site - v12 only accounted for 1 site
31023	4.315	4.38	4.38	Minor change - Improvement
33023	105.95	131.5575	105.95	Reverted to 11.1 manual value until it can be reviewed
33030	40.35	38.8125	38.8125	Minor change - Improvement
33052	33.133	21.3375	33.133	Reverted to 11.1 manual value until it can be reviewed
34003	161.27	161.4	161.4	Minor change - Improvement
36002	85.6175	85.6275	85.6275	Minor change - Improvement
36010	27.5825	27.5475	27.5475	Minor change - Improvement
39003	177.66	177.665	177.66	Reverted to 11.1 manual value until it can be reviewed
39026	204.585	207.2275	207.2275	Minor change - Improvement
39054	32.334	32.3275	32.3275	Minor change - Improvement
39104	471.363	471.3575	471.3575	Minor change - Improvement
40021	32.084	32.0925	32.0925	Minor change - Improvement
40035	17.963	17.9625	17.9625	Minor change - Improvement

Station	CCAR v11.1	CCAR v12	CCAR v12.1	Comment
41014	382.69	396.845	382.69	Reverted to 11.1 manual value until it can be reviewed
42010	339.9	327.8125	339.9	Reverted to 11.1 manual value - Compound site - v12 only accounted for 1 site
43014	85.8275	84.63	84.63	Minor change - Improvement
44015	12.59	10.7475	10.7475	Minor change - Improvement
49003	21.61	21.735	21.61	Reverted to 11.1 manual value until it can be reviewed
50014	78.06	78.0475	78.06	Reverted to 11.1 manual value until it can be reviewed
52010	137.815	137.865	137.865	Minor change - Improvement
53029	78.1375	78.115	78.115	Minor change - Improvement
54092	3.2175	3.1875	3.1875	Minor change - Improvement
55008	10.5025	11.565	11.565	Minor change - Improvement
55033	3.8425	3.83	3.83	Minor change - Improvement
58005	74.2125	74.295	74.295	Minor change - Improvement
60002	298.73	298.735	298.73	Reverted to 11.1 manual value until it can be reviewed
60016	580.874	580.87	580.87	Minor change - Improvement
63003	40.55	40.5525	40.55	Reverted to 11.1 manual value until it can be reviewed
68021	17.8825	17.8725	17.8725	Minor change - Improvement
71008	258.135	258.15	258.15	Minor change - Improvement
72017	230.675	230.695	230.695	Minor change - Improvement
73012	183.195	183.22	183.22	Minor change - Improvement
75018	665.7975	665.8	665.8	Minor change - Improvement
76023	33.9725	33.9125	33.9125	Minor change - Improvement
91802	6.535	6.5225	6.5225	Minor change - Improvement
92002	8.055	8.1475	8.1475	Minor change - Improvement

2.2 Flood attenuation by reservoirs and lakes (FARL)

In catchments where a reservoir was built halfway through the record and the post-reservoir data are rejected, the FARL value provided in the datafiles needs to represent the pre-reservoir catchment. In Version 12, the FARL at five such catchments was for the post-reservoir catchment rather than the pre-reservoir catchment.

Table 2 shows the FARL values which have been manually reverted to their pre-reservoir value plus any additional changes resulting from updates due to changes in catchment area above. All other stations in the Peak Flow Dataset are unchanged.

Table 2 FARL Catchment Descriptor for the past 3 Peak Flow Data versions and reason for change

Station	FARL v11.1	FARL v12	FARL v12.1	Comment
23002	0.996	0.835	0.996	Reverted to 11.1 manual FARL value (pre-reservoir)
23003	0.991	0.936	0.991	Reverted to 11.1 manual FARL value (pre-reservoir)
28002	0.998	0.873	0.998	Reverted to 11.1 manual FARL value (pre-reservoir)
30013	0.963	0.962	0.962	Minor change – due to improved area method
31002	0.99	0.986	0.99	Reverted to 11.1 manual value - Compound site - v12 area method only accounted for 1 site
33030	0.975	0.974	0.974	Minor change – due to improved area method
39026	0.95	0.951	0.951	Minor change – due to improved area method

Station	FARL v11.1	FARL v12	FARL v12.1	Comment
41014	0.958	0.959	0.958	Reverted to 11.1 manual value until area method can be reviewed
44015	0.928	0.916	0.916	Minor change – due to improved area method
48009	0.982	0.637	0.982	Reverted to 11.1 manual FARL value (pre-reservoir)
48011	0.985	0.92	0.985	Reverted to 11.1 manual FARL value (pre-reservoir)

2.3 BFIHOST19

In Version 12 and Version 12.1 an update to BFIHOST19 removed open water as a class, and HOST class percentages were recalculated relative to this for all sites. The overall method of deriving BFIHOST19 is unchanged. A full description will come out in a report of the updated QMED equation in 2024, however any changes were minor.