Title: Dataset of monitoring approaches to assess hydrological conditions in small Natural Flood Management (NFM) catchments

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Description: This dataset includes identified records from a systematic review of streamflow monitoring approaches in small catchments (<25 km²) with Natural Flood Management (NFM) interventions. Studies were only included in this dataset if they provided sufficient detail and met the following three key criteria: (i) a catchment size under 25 km², (ii) implementation of an NFM-type intervention (e.g., leaky dams, land-use change, ponds), and (iii) recorded evidence of hydrological monitoring of streamflow. This dataset includes 65 catchments. Each record contains: paper ID, catchment name, publication type (academic, thesis, or grey literature), monitoring duration (expressed in years as a decimal, e.g., 1.25 years = 15 months), data collection period (month/year to month/year), data collection frequency (e.g. 15 minutes), catchment size (km²), rural or urban classification, country, NFM interventions used, NFM monitoring cost requirements, model output type (1D, 2D, 1D-2D, or bespoke), rainfall monitoring, study purpose, monitoring equipment, control section, streamflow monitoring method (e.g., direct measurement, velocity-area, formed constriction, non-contact), and overall NFM project cost. Catchment data was extracted through a two-stage process: (1) Initial searches were conducted using the "AskYourPDF.v2" plugin in ChatGPT. (2) Outputs were subsequently manually assessed, revised, and verified. It is important to acknowledge the primary caveats associated with the size and structure of this dataset, which was developed exclusively from publicly available data. First, the dataset was compiled using a limited set of search terms, and all searches were conducted in English. The review timeframe spans from January 2007 to September 2024, with records identified from academic papers, theses, and grey literature published within this period. Grey literature sources were limited to JBA Consulting, the Environment Agency (EA), Natural Resources Wales (NRW), the Scottish Environment Protection Agency (SEPA), and the first 150 results returned by Google. Although a broad range of NFM interventions is included, the list is not exhaustive, and intervention types have been abbreviated where appropriate. For the most current information, users are encouraged to search individual catchment names directly. Where streamflow monitoring methodologies were not fully described, supplementary reports from the same catchment were reviewed to ascertain and extract as much information as possible. Assessments based solely on NRFA (National River Flow Archive) stations were excluded from the review. However, where such gauges were used in conjunction with additional NFM-related work, such studies were included. Results are presented in alphabetical order by the author identified in the search. Monitoring equipment and methods are listed alongside available instrumentation details.

Date of Data Collection: October 2024

Coded terms: NR: Not recorded in reviewed papers. Mins: minutes. Costs (k = thousand | m = million)

Paper ID	Catchment Name	Authors	Publication Type	Monitoring Duration (years)	Duration of Data Collection (Years)	Data Collection Frequency	Catchment Size (km²)	Rural or Urban	Country	NFM Interventions	NFM Monitoring Cost Requirements	Model Output	Rainfall Monitoring	Study Purpose	Monitoring Equipment	Control Section	Streamflow Monitoring	NFM Project Cost
1	Gav-Darreh	(Amini et al., 2014)	A	0.8	Rainfall: May 2011 - March 2012 Streamflow: May 2011- March 2012	Rainfall: NR Streamflow: NR	6.27	Rural	Iran	- 31 boulder and gabion check dams - 8.3ha afforestation - 3ha agro-forestry	NR	Model Type: 1D Model Name: HEC-HMS	✓	Comparison between simulated streamflow data from rainfall model to observed event data to assess the impact of watershed managements on runoff storage and peak flow	Rainfall: Not installed as part of study – adjacent data from Sanandaj Airport Station Streamflow: Event - 17 May 2011. Instrumentation: Limnigraph	None	Velocity-Area Methods Hand-held Velocity Meter	US$31,000
2	Veneto Region	(Baggio et al., 2023)	A	2	Rainfall: 2 years (2020-2021) Streamflow: 2 years (2020-2021)	Rainfall: 5 mins Streamflow: 2 mins (1 hour below weir)	0.004	Rural	Italy	- 3 No. NBS structures (rain garden – 67m², bioretention area 44m², rain garden 172m²)	NR	NR	✓	To assess the hydrological impact of the NFM structures following two years of monitoring at the inlet and outlet of the interventions	Rainfall: 0.8km from interventions. Instrumentation: HD2015 Tipping Bucket Rain Gauge Streamflow: Stage Measurement with a crest weir Instrumentation: Datalogger Dipper PT	Crested weir	Formed constriction methods Weir Methods	NR
3	Eye Brook	(Biggs et al., 2014, 2021; Villamizar et al., 2024)	A	8	Rainfall: January 2012-2020 Streamflow: January 2012-2020	Rainfall: Daily Streamflow: 15 mins	10.8	Rural	UK	- Permeable dams - Bunded ditch - Flood Storage Basin - Field edge wetlands - Support for improved soil management	NR	Model Type: 1D Model Name: MIKE11 Hydrological SWAT Model	✓	A demonstration project aimed at evaluating the effectiveness of large-scale mitigation measures to reduce the impact of rural land use on streams, while maintaining the profitability of farm businesses	Rainfall: Only shown as daily totals – distance not referenced Streamflow: Initially calculated (2012) using manual gauging. Streamflow has been monitored continuously (2013 onwards)	None	Velocity-Area Methods Hand-held Velocity Meter (2012) Current Meter (2013 onwards)	£200k (including Barkby Brook)

4	Stonton Brook	(Biggs et al., 2014, 2021; Villamizar et al., 2024)	A	8	Rainfall: January 2012-2020 Streamflow: January 2012-2020	Rainfall: Daily Streamflow: 15 mins	7.7	Rural	UK	- Clean water ponds - Log bunded ditch - Woody debris dam	NR	Model Type: 1D Model Name: MIKE11 Hydrological SWAT Model	✓	A demonstration project aimed at evaluating the effectiveness of large-scale mitigation measures to reduce the impact of rural land use on streams, while maintaining the profitability of farm businesses	Rainfall: Only shown as daily totals – distance not referenced Streamflow: Initially calculated (2012) using manual gauging. Streamflow (2013 onwards)	None	Velocity-Area Methods - Hand-held Velocity Meter (2012) - Current Meter (2013 onwards)	£200k (including Eye Brook)
5	Craigburn	(Black et al., 2021; Comins, 2021)	A	12.7	Rainfall: 2012-Present Streamflow: 2012-Present	Rainfall: 15 mins Streamflow: 15 mins	4.34	Rural	UK	- Flow restrictors - 3No. of ponds - 300m length of re-meandering - 3.4ha riparian planting	£205k	NR	✓	Assessment of NFM on lag time and peak flow across multiple small sub-catchments within the wider Eddleston catchment study	Rainfall: Multiple in wider Eddleston catchment plus SEPA gauge Instrumentation: ARG100 rain gauges RIMCO RIM8020 rain gauges Streamflow: Stage measurement with manual gauging for rating curve validation Instrumentation: Pressure (unvented)	None	Velocity-Area Methods Hand-held Velocity Meter	£1.4m (total Eddleston Project)
5	Middle Burn	(Black et al., 2021)	A	12.7	Rainfall: 2012-Present Streamflow: 2012-Present	Rainfall: 15 mins Streamflow: 15mins	2.3	Rural	UK	- Flow restrictors - 2ha riparian planting	£205k	NR	✓	Assessment of NFM on lag time and peak flow across multiple small sub-catchments within the wider Eddleston catchment study	Rainfall: Multiple within wider Eddleston catchment plus SEPA gauge Instrumentation: ARG100 rain gauges RIMCO RIM8020 rain gauges Streamflow: Stage measurement with manual gauging for rating curve validation Instrumentation: Pressure (unvented)	None	Velocity-Area Methods Hand-held Velocity Meter	£1.4m (total Eddleston Project)
5	Eddleston School	(Black et al., 2021)	A	12.7	Rainfall: 2012-Present Streamflow: 2012-Present	Rainfall: 15 mins Streamflow: 15mins	6.89	Rural	UK	- 7.5ha riparian planting	£205k	NR	✓	Assessment of NFM on lag time and peak flow across multiple small sub-catchments within the wider Eddleston catchment study	Rainfall: Multiple within wider Eddleston catchment plus SEPA gauge Instrumentation: ARG100 rain gauges RIMCO RIM8020 rain gauges Streamflow: Stage measurement with manual gauging for rating curve validation Instrumentation: Pressure (unvented)	None	Velocity-Area Methods Hand-held Velocity Meter	£1.4m (total Eddleston Project)
5	Swindale	(Bond et al., 2020)	A	0.5	Rainfall: NR Streamflow: April-November 2019	Rainfall: NR Streamflow: 1 min	2.66	Rural	UK	- Grassland management through grazing and cutting	NR	Model Type: N/A Model: Bespoke	X	Study aims to quantify how seasonal vegetation changes influence overland flow velocities in headwater hillslopes, to better understand their role in delaying downstream flood peaks	Rainfall: NR Streamflow: Flow velocity measured with Fluorescein Tracer Testing. Instrumentation: Seapoint Rhodamine fluorometer wired to CR220X data logger	Yes – portable hillslope flume	Formed Constriction Methods - Flume Method - Fluorescent Tracer	NR
6	Budleigh Brook	(Brazier et al., 2020; Graham, 2022; Puttock et al., 2021)	G	12.5	Rainfall: November 2015-March 2019 Streamflow: July 2009-2022	Rainfall: 5 mins Streamflow: 15mins	6.3 (5.5 control site)	Rural	UK	- Beaver Dams	NR	Model Type: N/A Model: Generalized Additive Models (GAMs)	✓	Whether flow regimes and flow responses to storm events were altered following the building of beaver dams and whether a flow attenuation effect could be significantly attributed to beaver activity	Rainfall: Radar data derived from the NIMROD system was used Streamflow: Non-rated EA gauge that has been rated with flow meter for 2 months (between December 2019 - February 2020) Instrumentation: NivuFlow Mobile 750	V-Notch Weir	Formed Constriction Methods Weir Methods	NR
7	Loddington	(Deasy et al., 2014)	A	5	Rainfall: November 2017 – April 2018 Streamflow: November 2017–April 2018	Rainfall and runoff: 5 mins for 17 hillslope areas	~0.0017	Rural	UK	- Land use changes	NR	Model Type: N/A Model: Mixed-modelling approach	X	Study considers runoff data from arable in-field land management options to investigate their potential to reduce downstream flooding	Rainfall and Runoff: 20 No. adapted tipping buckets for runoff capture for downstream comparison	None	Direct Measurement Methods Volumetric Gauging	NR
8	Higher Boode Farm	(Devon County Council,	G	4	Rainfall: January 2017 – 2020	Rainfall: 15mins	2	Rural	UK	- Log jams - Hedgerows	£7k	Not referenced	✓	Investigating how log jams and hedgerows can mitigate downstream flooding	Rainfall: Rain gauge located 2 km from NFM interventions Instrumentation: Kalyx tipping bucket rain	None	Velocity-Area Methods	£101k

		2023)			Streamflow: January 2017 – 2020	Streamflow: 15mins									gauge Streamflow: Level sensor and Area Velocity Flow Meter		Hand-held Velocity Meter	
9	Backstone Beck	(European Commission , 2023)	G	5.7	Rainfall: NR Streamflow: September 2019-Present	Rainfall: NR Streamflow: 15mins	0.75	Urban	UK	- Leaky barriers - Earth bunds	NR	NR	X	Build an open-source rain-on-grid catchment and river model for the Backstone Beck to assess the effects of NFM interventions on downstream flooding	Rainfall: NR Streamflow: Water level at three locations (Ilkley Moor, Sacred Hart and Leeds Road) Instrumentation: 4-20mA pressure sensors plus Hydro-Logic data loggers	NR	Velocity-Area Methods - Hand-held Velocity Meter -Fluorescent Tracer	£417k
10	Calder	(Ferguson & Fenner, 2020)	A	5.7	Rainfall: July 2004-2020 Streamflow: January 2013 gauge)- 2017	Rainfall: 5 mins Streamflow: 15mins	18	Urban	UK	- Tree planting - In-channel woody debris	NR	Model Type: 1D-2D Model: Dynamic TOPMODEL, HEC-RAS, Infoworks ICM	✓	The rural response to NFM interventions characterized using hydrological (Dynamic TOPMODEL) and hydraulic (HEC-RAS) models	Rainfall: Not installed as part of study – 2 No. rain gauges in adjacent catchment Streamflow: Rated an EA gauge that had previously not been rated using a Manning's equation	None	Formed Constriction Methods Formed Constriction Methods - Culvert	£500k
11	Bodenham Brooks	(Herefordshire Council, 2024)	G	5.7	Rainfall: 2019 – Present Streamflow: 2019 – Present	Rainfall: 15 mins Streamflow: 15 mins	10.1	Rural	UK	- Land use changes - Tree planting	£77k (with other sites)	NR	✓	Assessed flood risk reduction in Herefordshire communities, with £20.3k spent on monitoring across seven sites under a £77k contract with Hydro International Data	Rainfall: Telemetered rainfall monitoring station, station distance not referenced Streamflow: -Stage measurements telemetered and available online converted with flow gauging -Fixed point photography monitoring with volunteer involvement	None	Velocity-Area Methods Hand-held Velocity Meter	£1.27m (for 7 sites in total)
11	Norton, Red & Twyford Brooks	(Herefordshire Council, 2024)	G	5.7	Rainfall: 2019 – Present Streamflow: 2019 – Present	Rainfall: 15 mins Streamflow: 15 mins	8.9	Rural	UK	- Land use changes - Tree planting	£77k (with other sites)	NR	✓	Assessed flood risk reduction in Herefordshire communities, with £20.3k spent on monitoring across seven sites under a £77k contract with Hydro International Data	Rainfall: Rain gauge installed as part of assessment; station distance not referenced Streamflow: -Stage measurements telemetered and available online converted with flow gauging -Fixed point photography monitoring with volunteer involvement	None	Velocity-Area Methods Hand-held Velocity Meter	£1.27m (for 7 sites in total)
11	Pentaloe Brook	(Herefordshire Council, 2024)	G	1	Rainfall: 2019 – Present Streamflow: 2019 – Present	Rainfall: 15 mins Streamflow: 15 mins	9	Rural	UK	- Leaky dams - In-ditch seepage barrier - Land use changes - Tree planting	£77k (with other sites)	NR	✓	Assessed flood risk reduction in Herefordshire communities, with £20.3k spent on monitoring across seven sites under a £77k contract with Hydro International Data	Rainfall: Telemetered rainfall monitoring station, station distance not referenced Streamflow: -Stage measurements telemetered and available online converted with flow gauging -Fixed point photography monitoring with volunteer involvement	None	Velocity-Area Methods Hand-held Velocity Meter	£1.27m (for 7 sites in total)
11	Tedstone Brook	(Herefordshire Council, 2024)	G	8	Rainfall: 2019 – Present Streamflow: 2019 – Present	Rainfall: 15 mins Streamflow: 15 mins	20.7	Rural	UK	- Leaky dams - In-ditch seepage barrier - Land use changes - Tree planting	£77k (with other sites)	NR	✓	Assessed flood risk reduction in Herefordshire communities, with £20.3k spent on monitoring across seven sites under a £77k contract with Hydro International Data	Rainfall: Telemetered rainfall monitoring station, station distance not referenced Streamflow: Stage measurements telemetered and available online converted with flow gauging -Fixed point photography monitoring with volunteer involvement	None	Velocity-Area Methods Hand-held Velocity Meter	£1.27m (for 7 sites in total)
12	Bateman Creek	(Janzen & Westbrook, 2011)	A	3	Rainfall: June-August in 2006 and 2007 Streamflow: June-August in 2006 and 2007	Rainfall: NR Streamflow: 15 mins	0.63	Rural	Canada	- Beaver Dams	NR	NR	✓	This study investigates how beaver dams influence vertical and lateral hyporheic exchange in channelled peatlands, aiming to improve understanding of stream–riparian connectivity and subsurface water flow pathways in peat systems	Rainfall: Rain gauge located 0.005km from site Instrumentation: HOBO tipping bucket rain gauge Streamflow: Piezometer nests were included (3 in total) with a total of 70 piezometer sensors	None	Velocity-Area Methods Hand-held Velocity Meter	NR

13	Highland Water	(Kitts, 2010)	T	7.1	Rainfall: NR	Rainfall: NR	12.5	Rural	UK	- Large woody debris	NR	Model Type: 2D Model: Hydro2de	✓	Examines the role that large wood plays at a range of scales in a low-order forested stream	Rainfall: Not installed as part of study but already in the vicinity, nearby but distance unspecified	None	Velocity-Area Methods	£2.9m
					Streamflow: 1998-2006 (1 Gauge) 2003-2006 (4 Gauges)	Streamflow: Up to 5 mins									Streamflow: Salt dilution gauging to get stage-Streamflow relationship Instrumentation: Thalimedes Shaft Encoder -Druck PDCR1830 PT -Trans-America PT		Salt Dilution Gauging	
14	Brackenhurst	(Labadz et al., 2021; Nottinghamshire Council, 2023; Wells, 2019)	A	5.2	Rainfall: Not specified	Rainfall: 5 mins	6	Rural	UK	- Lowered floodplain - Online storage - Bunds in corner fields - Woody debris dams	£17.5k	Model Type: 1D-2D Model: ISIS TUFLOW	✓	Assess the extent to which NFM can help reduce future fluvial flood occurrence in Southwell	Rainfall: 3 No. rain gauges located 0.7km from site. Instrumentation: Casella tipping bucket rain gauge	None	Formed Constriction Methods	£100k
					Streamflow: December 2013 – 2021 November 2015 - 2021	Streamflow: 5 mins									Streamflow: 5No. water level and 2No. telemetered level gauges. To develop the rating curve for each bund, they calculated storage volume at 10 cm water level intervals and used this plot to estimate storage volume. Instrumentation: Electromagnetic flow meter		- Formed Constriction Methods – Culvert - Bund - Electromagnetic method	
15	Cebu	(Lalisan & Fornis, 2020)	A	0.1	Rainfall: October 1-8, 2018	Rainfall: 15 mins	3	Urban	Philippines	- Detention ponds	NR	Model Type: 1D Model: HEC-HMS	✓	This study evaluates the flood attenuation performance of runoff storage basins in a small, steep urban catchment in Cebu, to determine their effectiveness and justify land use trade-offs, using field-calibrated simulations	Rainfall: Rain gauge already in vicinity, less than <2km from the site	None	Velocity-Area Methods	NR
					Streamflow: October 1-8, 2018	Streamflow: Not specified									Streamflow: Stage measurement with velocity measurements, full details not provided		Hand-held Velocity Meter	
16	Halsewater	(Lockwood, 2022)	T	2.7	Rainfall: April 2018 – December 2020	Rainfall: 1 min	6.18	Rural	UK	- Two floodplain storage ponds with inlet channels and outlet tunnels	NR	NR	✓	Monitor the hydraulic performance of NFM features in a working catchment, assess how interventions affect flow attenuation and peak discharge	Rainfall: Rain gauge deployed next to interventions. Instrumentation: HOBO RG3-M	None	Velocity-Area Methods	NR
					Streamflow: April 2018 – December 2020	Streamflow: 5 mins									Streamflow: 4 No. gauges in-channel (upstream/downstream), in-pond (upstream/downstream)		Hand-held Velocity Meter	
16	Merriott	Lockwood, 2022)	T	2.1	Rainfall: November 2018 – December 2020	Rainfall: 1 min	6.1	Rural	UK	- Two floodplain storage ponds with inlet and outflow channels	NR	NR	✓	Monitor the hydraulic performance of NFM features in a working catchment, assess how interventions affect flow attenuation and peak discharge	Rainfall: Rain gauge deployed next to interventions Instrumentation: HOBO RG3-M	None	Velocity-Area Methods	NR
					Streamflow: November 2018 – December 2020	Streamflow: 5 mins									Streamflow: 4 No. gauges in-channel (upstream/downstream), in-pond (upstream/downstream)		Hand-held Velocity Meter	
16	Wellhams	Lockwood, 2022)	T	2/1	Rainfall: November 2018 – December 2020	Rainfall: 1 min	0.96	Rural	UK	- Two sections of in-channel - Leaky woody dams	NR	NR	✓	Monitor the hydraulic performance of NFM features in a working catchment, **a**ssess how interventions affect flow attenuation and peak discharge	Rainfall: Rain gauge deployed next to interventions	None	Velocity-Area Methods	NR
					Streamflow: November 2018 – December 2020	Streamflow: 5 mins									Streamflow: 2 No. gauges in-channel (upstream/downstream pond)		Hand-held Velocity Meter	

16	Marcombe Lake	Lockwood, 2022)	T	2	Rainfall: December 2018 – December 2020 Streamflow: December 2018 – December 2020	Rainfall: 1 min Streamflow: 5 mins	1.05	Rural	UK	- Two online ponds	NR	NR	✓	Monitor the hydraulic performance of NFM features in a working catchment, **a**ssess how interventions affect flow attenuation and peak discharge	Rainfall: Deployed at Wellhams for Marcombe Bay. Tipping bucket - EA Gauge Streamflow: 4 No. gauges in-channel	None	Velocity-Area Methods Hand-held Velocity Meter	NR
17	Tebay Dams	(Mindham et al., 2023)	A	3.6	Rainfall: May 2019-December 2022 Streamflow: May 2019-December 2022	Rainfall: 5mins Streamflow: 5 mins	0.0071	Rural	UK	- Enhanced Hillslope Storage (in peat)	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Tebay Gill	(Mindham et al., 2023)	A	3.9	Rainfall: January 2019-December 2022 Streamflow: January 2019-December 2022	Rainfall: 5mins Streamflow: 5 mins	0.1163	Rural	UK	- Enhanced Hillslope Storage (in peat)	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Fallgill Syke	(Mindham et al., 2023)	A	4.3	Rainfall: August 2018-December 2022 Streamflow: August 2018-December 2022	Rainfall: 5mins Streamflow: 5 mins	0.1439	Rural	UK	- Enhanced Wet-Canopy Evaporation ('scrub planting')	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Bareleg	(Mindham et al., 2023)	A	3.7	Rainfall: April 2019-December 2022 Streamflow: April 2019-December 2022	Rainfall: 5mins Streamflow: 5 mins	0.154	Rural	UK	- Enhanced In-Channel Storage - Enhanced Floodplain Storage	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Sedbergh	(Mindham et al., 2023)	A	3.3	Rainfall: October 2018-February 2022 Streamflow: October 2018-February 2022	Rainfall: 5mins Streamflow: 5 mins	0.1732	Rural	UK	- Enhanced In-Channel Storage ('debris dams')	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Penny Gill	(Mindham et al., 2023)	A	3.9	Rainfall: January 2019-December 2022 Streamflow: January 2019-December 2022	Rainfall: 5mins Streamflow: 5 mins	0.2118	Rural	UK	- Enhanced In-Channel Storage ('horse-jump' log dams)	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Sware Gill	(Mindham et al., 2023)	A	4.3	Rainfall: August 2018-December 2022 Streamflow: August 2018-December 2022	Rainfall: 5mins Streamflow: 5 mins	0.2356	Rural	UK	- Grassland reference for managed conifer basin	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR

17	Eggerslack	(Mindham et al., 2023)	A	4.3	Rainfall: August 2018-December 2022 Streamflow: August 2018-December 2022	Rainfall: 5mins Streamflow: 5 mins	0.3054	Rural	UK	- Enhanced Wet-Canopy	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Setterah	(Mindham et al., 2023)	A	2.2	Rainfall: October 2020-December 2022 Streamflow: October 2020-December 2022	Rainfall: 5mins Streamflow: 5 mins	0.3749	Rural	UK	- Enhanced In-Channel Storage (beaver dams)	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Stock Beck East	(Mindham et al., 2023)	A	2	Rainfall: October 2020-October 2022 Streamflow: October 2020-October 2022	Rainfall: 5mins Streamflow: 5 mins	0.4725	Rural	UK	- Enhanced Hillslope Storage (bunds, stone wall, wooden walls) - Enhanced Wet-Canopy Evaporation	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Ravensgill Beck	(Mindham et al., 2023)	A	3.8	Rainfall: February 2019-December 2022 Streamflow: February 2019-December 2022	Rainfall: 5mins Streamflow: 5 mins	0.587	Rural	UK	- Enhanced Soil Permeability (blade aeration)	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Whale Beck	(Mindham et al., 2023)	A	4.3	Rainfall: June 2020-November 2022 Streamflow: June 2020-November 2022	Rainfall: 5 mins Streamflow: 5 mins	1.1432	Rural	UK	- Enhanced Floodplain Storage (swale)	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Back Greenrigg	(Mindham et al., 2023)	A	4.3	Rainfall: September 2018-December 2022 Streamflow: September 2018-December 2022	Rainfall: 5mins Streamflow: 5 mins	1.9474	Rural	UK	- Enhanced Floodplain Storage (swale)	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Bessy Gill	(Mindham et al., 2023)	A	4.3	Rainfall: September 2018-December 2022 Streamflow: September 2018-December 2022	Rainfall: 5mins Streamflow: 5 mins	2.5371	Rural	UK	- Enhanced Floodplain Storage (swale)	NR	Model Type: N/A Model: Transfer Function Model	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions influence hydrograph shape in upland UK micro-basins	Rainfall: Telemetered tipping-bucket rain gauge next to flume Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size	FRPB Trapezoidal Flume	Formed Constriction Methods Flume Methods	NR
17	Rais Beck	(Mindham et al., 2023)	A	2.3	Rainfall: November 2019-March 2022	Rainfall: 5mins	2.7329	Rural	UK	- Enhanced Floodplain Storage (swale)	NR	Model Type: N/A Model:	✓	This study uses a data-based mechanistic approach to investigate how varying antecedent conditions	Rainfall: Telemetered tipping-bucket rain gauge next to flume	FRPB Trapezoidal Flume	Formed Constriction Methods	NR

					Streamflow: November 2019-March 2022	Streamflow: 5 mins						Transfer Function Model		influence hydrograph shape in upland UK micro-basins	Streamflow: FRPB trapezoidal flume (maximum capacity of 430 l/s) with a known rating curve and a known basin size		Flume Methods	
18	Wilde Brook	(Muhaweni mana et al., 2023)	A	0.4	Rainfall: April 2019-June 2021) Streamflow: April-September 2019	Rainfall: 15 mins Streamflow: 15 mins	5.3	Rural	UK	- 105No. Leaky barriers	NR	Future modelling study of the reach	✓	Quantify the hydrological impacts of NFM interventions implemented at a catchment scale by comparing flow responses between a treated catchment (with NFM measures) and a control catchment (without interventions)	Rainfall: Rain gauge installed 2km from interventions. Instrumentation: Lambrecht Tipping Bucket rain gauge Streamflow: Water level and flow velocity Instrumentation: -OTT Orpheus Mini pressure level sensor -AV 9000 Area Velocity Sensor with a Hach FL900 Flow Logger	None	Velocity-Area Methods Hand-held Velocity Meter	NR
19	Belford	(Nicholson et al., 2021; Nicholson et al., 2020; Roberts et al., 2024; Wilkinson et al., 2010)	A	6	Rainfall: 2007-2013 Streamflow: 2007-2013 (intensive monitoring)	Rainfall: 15 mins Streamflow: Rivergauge 5 mins, 15 mins RAF – 5mins	5.7	Rural	UK	- 4 No. RAFs (Runoff Attenuation Features) (September 2009) - 35 No. RAFs (Summer 2012) - 10 No. RAFs (2011)	NR	Model Type: 2D Model: Pond Network Model	✓	To monitor RAFs to show that they are able to have a significant impact on the flood peak in small to medium events	Rainfall: 3 No. rain gauge deployed in catchment. 1 No. rain gauge in vicinity Streamflow: 5 No. river gauge on 5-minute time series. 1 No. river gauge on 15-minute time series. 8 No. stage gauges on 5-minute time series in RAFs. Instrumentation: In-Situ Rugged TROLL 100 and van Essen Mini-Diver	None	Velocity-Area Methods Hand-held Velocity Meter	£450k
20	Coalburn	(Birkinshaw et al., 2014; Nisbet, 2021)	A	33.7	Rainfall: 1967-Present Streamflow: 1991-Present	Rainfall: Sub-Daily Streamflow: 60 mins	1.5	Rural	UK	- Upland land management	NR	NR	✓	Improve understanding of how changes in upland land management impact flood risk at the catchment scale	Rainfall: 4 No. rain gauges less than 0.5km from interventions Streamflow: Water level with V notch weir	V notch weir	Formed Constriction Methods Weir Methods	NR
20	Pontbren	(Birkinshaw et al., 2014; Nisbet, 2021; Wheater et al., 2008)	A	3	Rainfall: 2005-2008 Streamflow: 2005-2008	Rain gauge 10 mins Streamflow: 10 mins	12	Rural	UK	- Upland land management	NR	Model Type: N/A Model: Bespoke Physics-Based Model	✓	Improve understanding of how changes in upland land management impact flood risk at the catchment scale	Rainfall: 6No. Rain gauges in and out of catchment, less than 1km Streamflow: 13 No. stream flow sites (bed mounted ADV meters)	None	Velocity Area Methods Bed ADCP	NR
21	Two Lads	(Norbury et al., 2021)	A	5.1	Rainfall: August 2019 - Present Streamflow: August 2019 - Present	Rainfall: 15 mins Streamflow: 15 mins	0.72	Rural	UK	- 5No. Log jams	NR	Future modelling study of the reach	✓	This study evaluates the effectiveness of willowed engineered log jams as a intervention by monitoring pre- and post-installation hydrological responses at a river reach scale	Rainfall: 1No. rain gauge as part of study located 0.09km from catchment Streamflow: 3 No. Water level sensors. All conversions of water level to streamflow are based on ratings derived from repeat spot gauging. Wildlife cameras show filling and emptying of leaky dam structures Instrumentation: HOBO U20L-04	None	Velocity-Area Methods Hand-held Velocity Meter	NR
22	Chevral	(Nyssen et al., 2011)	A	0.5	Rainfall: September 2009 – March 2010 Streamflow: September 2009 – March 2010	Rainfall: Not referenced Streamflow: Not referenced	14	Rural	Belgium	- Beaver dams	NR	NR	✓	Investigates the hydrological impacts of a series of beaver dams, assessing their influence on flood peak reduction and low flow enhancement both locally and across a sub-basin scale	Rainfall: Rain gauge already in the vicinity (8km from interventions) Streamflow: 8 No. water level sensors. Float method to determine flow velocity	None	Velocity-Area Methods Float Method	NR
23	Yorkshire	(Puttock et al., 2021)	A	3.3	Rainfall: November 2015-March 2019 Streamflow: November 2015-March 2019	Rainfall: NR Streamflow: 15 mins	7.47	Rural	UK	- Beaver dams	NR	Model Type: N/A Model: Generalized Linear Models	✓	Study determines whether flow regimes and responses to storm events were altered following the building of beaver dams and whether a flow attenuation effect could be significantly attributed to beaver activity	Rainfall: Radar data derived from the NIMROD system (Met Office, 2003) was used across sites Streamflow: An area-velocity flow meter with a stage gauge. Instrumentation: NivuFlow Mobile 750 (Flow Meter), MX2001, HOBO ONSET (Pressure)	None	Velocity-Area Methods Hand-held Velocity Meter	NR

23	Forest of Dean	(Puttock et al., 2021)	A	3.3	Rainfall: November 2015-March 2019	Rainfall: NR	4.1	Rural	UK	- Beaver dams	NR	Model Type: N/A Model: Generalized Linear Models	✓	Study determines whether flow regimes and flow responses to storm events were altered following the building of beaver dams and whether a flow attenuation effect could be significantly attributed to beaver activity	Rainfall: Radar data derived from the NIMROD system (Met Office, 2003) was used across sites	Culvert	Formed Constriction Methods	NR
					Streamflow: November 2015-March 2019	Streamflow: 15 mins									Streamflow: In-situ submersible pressure transducer, water level through the culvert was converted to Streamflow using Manning's equation Instrumentation: MX2001		Formed Constriction Methods - Culvert	
23	Woodland Valley	(Puttock et al., 2021)	A	3.3	Rainfall: November 2015-March 2019	Rainfall: NR	1.34	Rural	UK	- Beaver dams	NR	Model Type: N/A Model: Generalized Linear Models	✓	Study determines whether flow regimes and flow responses to storm events were altered following the building of beaver dams and whether a flow attenuation effect could be significantly attributed to beaver activity	Rainfall: Radar data derived from the NIMROD system (Met Office, 2003) was used across sites	Culvert	Formed Constriction Methods	NR
					Streamflow: November 2015-March 2019	Streamflow: 15 mins									Streamflow: An in-situ submersible pressure transducer, water level through the culvert was converted to Streamflow using Manning's equation Instrumentation: IMSL–GO100		Formed Constriction Methods - Culvert	
24	Hepscott	(Quinn et al., 2013)	A	2	Rainfall: 2 years pre-interventions	Rainfall: Not referenced	8	Rural	UK	- Leaky Barrier - Leaky Ponds	NR	NR	✓	This study evaluates the effectiveness of a catchment-based flood mitigation approach to try to demonstrate the potential of small-scale NFM in rapidly responding rural catchments	Rainfall: 1 No. Rain gauge installed as part of the study	None	Velocity-Area Methods	NR
					Streamflow: 2011-2013 2 years pre-interventions	Streamflow: Not referenced									Streamflow: 4 No. Stream gauge		Hand-held Velocity Meter	
24	Powburn	(Quinn et al., 2013)	A	2	Rainfall: 2 years pre-interventions	Rainfall: Not referenced	10.7	Rural	UK	- Leaky Barrier - Leaky Ponds	NR	NR	✓	This study evaluates the effectiveness of a catchment-based flood mitigation approach to try to demonstrate the potential of small-scale NFM in rapidly responding rural catchments	Rainfall: 1 No. Rain gauge installed as part of the study	None	Velocity-Area Methods	NR
					Streamflow: 2011-2013 2 years pre-interventions	Streamflow: Not referenced									Streamflow: 4 No. Stream gauge		Hand-held Velocity Meter	
25	Glendey	(Richard, 2017)	G	11	Rainfall: Not referenced	Rainfall: Not referenced	2	Rural	UK	- Land use changes	NR	Model Type: 1D Model: 1D Hydraulic Model	X	Investigating land use changes that included clear-felling of the plantation forest, removal of the gully woodland, introduction of tree debris to the watercourse	Rainfall: NR	None	Velocity-Area Methods	NR
					Streamflow: 2006-2017	Streamflow: 15 mins									Streamflow: Water level sensor with velocity measurements, full details not provided		No details on flow conversion	
26	Blairfindy	(Fennell et al., 2020, 2023b, 2023a)	A	5.9	Rainfall: January 2015 – December 2020	Rainfall: 15 mins	6.6	Rural	UK	- Wooden leaky barrier - Earth leaky barrier	NR	Model Type: 1D-2D Model: MIKE SHE/MIKE 11 MODEL	✓	To investigate the impacts of drought on water quantity and temperature in an upland catchment used by the distilling industry, to reveal the role of groundwater in maintaining streamflow	Rainfall: 2 No. rain gauges within 1km vicinity of the site Instrumentation: ARG100 tipping bucket rain gauge	None	Formed Constriction Methods	RAFs: Mobilization ~£2k; Installation ~£3.5k 31.5k; Materials ~£0.5k–9k
					Streamflow: January 2015 – December 2020	Streamflow: 15 mins									Streamflow: 2 No. Water level in rated section (50 Streamflow gauging across the full range of stage observations) Instrumentation: Rugged TROLL100 level-logger		Weir Method	
27	O	(Shuttleworth et al., 2019)	A	4.5	Rainfall: June 2010-December 2014	Rainfall: 10 mins	0.04448	Rural	UK	- Peatland restoration	NR	NR	✓	To assess the hydrological impacts of NFM interventions at multiple spatial scales, using detailed empirical monitoring to evaluate changes in runoff, flow pathways, and peak flow reduction	Rainfall: 2 No. rain gauges within 1km vicinity of the site for June 2010-September 2011 (pre-intervention) then April 2012-December 2014 (post-intervention)	V notch weir	Formed Constriction Methods	NR
					Streamflow: June 2010-December 2014	Streamflow: 10 mins									Streamflow: Level sensor detecting flow over a v-notch weir, converted to streamflow and normalised to catchment area for June 2010-September 2011 (pre-intervention) then April 2012-December 2014 (post-intervention)		Weir Method	

27	N	(Shuttleworth et al., 2019)	A	4.5	Rainfall: June 2010-December 2014 Streamflow: June 2010-December 2014	Rainfall: 10 mins Streamflow: 10 mins	0.070 96	Rural	UK	- Peatland restoration - Gully blocking	NR	NR	✓	To assess the hydrological impacts of NFM interventions at multiple spatial scales, using detailed empirical monitoring to evaluate changes in runoff, flow pathways, and peak flow reduction	Rainfall: 2 No. rain gauges within 1km vicinity of the site for June 2010-September 2011 (pre-intervention) then April 2012-December 2014 (post-intervention) Streamflow: Level sensor detecting flow over a v-notch weir, converted to streamflow and normalised to catchment area for June 2010-September 2011 (pre-intervention) then April 2012-December 2014 (post-intervention)	V notch weir	Formed Constriction Methods Weir Method	NR
28	Prinknash Abbey	(Taylor & Clarke, 2021)	A	0.6	Rainfall: Not referenced Streamflow: January – August 2020	Rainfall: Not referenced Streamflow: Not referenced	1.65	Rural	UK	- Leaky barriers	NR	NR	X	This project focuses on evaluation of the leaky barriers on the connectivity, hydrology and geomorphology	Rainfall: NR Streamflow: Water level sensors on the stream with free flood warning service to residents	None	Velocity-Area Methods Hand-held Velocity Meter	NR
28	Workman's Wood	(Taylor & Clarke, 2021)	A	0.6	Rainfall: Not referenced Streamflow: January – August 2020	Rainfall: Not referenced Streamflow: Not referenced	5.27	Rural	UK	- Leaky barriers	NR	NR	X	This project focuses on evaluation of the leaky barriers on the connectivity, hydrology and geomorphology	Rainfall: NR Streamflow: Water level sensors on the stream with free flood warning service to residents	None	Velocity-Area Methods Hand-held Velocity Meter	NR
29	Great Triley Wood	(Robinwood, 2007; Thomas & Nisbet, 2021) (Robinwood, 2007)	G	19.7	Rainfall: 2005-Present Streamflow: 2005-Present	Rainfall: 5 mins Streamflow: 5 mins	22.9	Rural	UK	- 9 No. large woody dams - Native woodland planting	NR	Model Type: 1D Model: Infoworks	✓	To measure how trees, undergrowth and woody debris affect the hydraulic roughness of the floodplain and therefore the storage and passage of flood flows	Rain Gauge: 1 No. rain gauge installed as part of project Streamflow: 4 No. water level recorders upstream and downstream of woody dams	None	Velocity-Area Methods Hand-held Velocity Meter	£160k
30	Littlestock Brook	(Trill et al., 2022)	A	3.9	Rainfall: March 2017-February 2021 Streamflow: March 2017-February 2021	Rainfall: 2 mins Streamflow: 5 mins	16.3	Rural	UK	- 27 No. Woody dams (total) - 15 No. riparian bunds - Woodland Planting	NR	Model Type: 1D Model: InfoWorks ICM	✓	The purpose of the study was to evaluate the effectiveness of a five-year NFM trial in reducing flood risk and improving water quality, through the implementation of a range of landscape-scale interventions	Rainfall: 1 No. rain gauge installed and 1 No. already in vicinity. 1 No Storage rain gauge. Stored rainwater was emptied into a graduated cylinder for validation. Instrumentation: Casella Tipping Bucket Rain Gauge Streamflow: 8 No. Water level, velocity, flow (spot gaugings). Salt dilution gauging for low flows. Instrumentation: Level TROLL 100 and 500 (Level), Valeport Electromagnetic Current Meter (Spot gauging)	None	Velocity-Area Methods Salt Dilution	NR
31	Burnieshed Burn	(van Biervliet, 2024)	A	1.6	Rainfall: August 2017 – March 2019 Streamflow: August 2017 – March 2019	Rainfall: 15 mins Streamflow: 15 mins	1.6	Rural	UK	- Beaver dams	NR	Model Type: 1D Model: MIKE 11	✓	To better understand the hydrological effects of beaver dams at spatial scales from the individual beaver dam to the sub-catchment scale using field and numerical modelling approaches	Rainfall: 1 No. rain gauge installed, no reference to distance Streamflow: 3 No. V notch weirs with stilling wells and pressure transducers. Ultrasonic Doppler Flow Meter. Salt Dilution and Volumetric Gauging	V-notch weir	Velocity-Area Methods - Weir Method - Salt Dilution - Volumetric Gauging	NR
31	Woods Lake	(van Biervliet, 2024; Burns & McDonnell, 1998)	A	1.9	Rainfall: NR Streamflow: November 1988-October 1990	Rainfall:NR Streamflow: 15 mins	0.413	Rural	USA	- Beaver dams	NR	NR	X	This study investigates how a beaver pond influences runoff processes and the neutralization of acidic precipitation	Rainfall: NR Streamflow: Parshall Flume with water level	Parshall Flume	Formed Constriction Methods Flume Method	NR
31	Talladega	(van Biervliet, 2024; Chaubey &	A	1	Rainfall: 1994-1995	Rainfall: 5 mins	3.86	Rural	USA	- Beaver dams	NR	NR	✓	This study examines the hydrologic balance of a natural riparian wetland in the southeastern USA, offering	Rainfall: Two gauges were installed in open areas to obtain the total rainfall, while four rain gauges were installed beneath vegetation canopy to measure throughfall.	None	Velocity-Area Methods	NR

		Ward, 2006;)			Streamflow: 1994-1995	Streamflow: 5 mins								insights for modelling and managing wetlands in temperate and subtropical climates	Streamflow: Pressure transducers and dataloggers. At each gauge a stage streamflow relationship was developed using measured stage, an instantaneous flow was measured weekly (or biweekly) and the relations were updated as necessary. Instrumentation: CR10X		Hand-held Velocity Meter	
31	James Bay	(van Biervliet, 2024; Woo & Waddington, 1990)	A	1	Rainfall: 1988 only Streamflow: 1988 only	Rainfall: NR Streamflow: NR	0.008	Rural	Canada	- Beaver dams	NR	NR	✓	This study explores how beaver dams in subarctic wetlands alter streamflow, evaporation, and drainage patterns	Rainfall: Weathertronics tipping-bucket rain gauge Streamflow: Leupold-Stevens Type-F water level recorders, groundwater wells	None	Velocity-Area Methods Hand-held Velocity Meter	NR
32	Yorkshire Dales	(van Leeuwen, 2021)	A	2.4	Rainfall: Not referenced Streamflow: September 2017 – February 2020	Rainfall: 15 mins Streamflow: 1 mins	4.7	Rural	UK	- 8 No. leaky dams	NR	Model Type: 1D Model: HEC-RAS	X	To quantify the benefits and risks of installing engineered leaky dams for the purpose of NFM in an upland, headwater catchment	Rainfall: EA rain gauge 10km from the site Streamflow: Pressure gauges with salt dilution gauging for establishing stage Streamflow, calibrated with HEC-RAS model. Instrumentation: In-Situ Rugged TROLL 100	None	Velocity-Area Methods Salt Dilution	NR
33	Coverdale	(van Leeuwen et al., 2024)	A	2.4	Rainfall: Not referenced Streamflow: September 2017 – February 2020	Rainfall: Sub-Daily Streamflow: 1 mins	1.1	Rural	UK	- Leaky dams	NR	Model Type: 1D Model: HEC-RAS	X	To assess the effectiveness of NFM interventions on flood peak reduction and water quality, focusing on both hydrological and ecological outcomes	Rainfall: EA rain gauge 10km from the site Streamflow: Pressure gauges with salt dilution gauging for establishing stage Streamflow, calibrated with HEC-RAS model. Instrumentation: In-Situ Rugged TROLL 100	None	Velocity-Area Methods Salt Dilution	NR

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