



CASE STUDY

CUSTOMER

Commercial, research, regulators and UK and devolved governments

DELIVERABLE

Over 22 million records of daily and peak river flow from over 1,500 points across the UK

OUTCOMES

Estimated savings of £95 million to flood risk consultants and regulators over the next 25 years
Information and data which underpin UK hydrological science and policy

“The often hidden work which is put in by both the Centre for Ecology & Hydrology and the measuring authorities in maintaining this nationally important information source underpins UK catchment management. SEPA and Scotland at large benefit enormously by having such high quality datasets.”

Dr David Pirie
Executive Director, SEPA

Managing the nation’s freshwater data

The National River Flow Archive’s freshwater data underpin effective water research and management all across the UK

The problem

Water resources are critical for a range of sectors including agriculture, industry and power generation. Freshwater is variable throughout the UK, however, with some parts of the country having less available water per person than Mediterranean regions.

Floods also pose significant risks to lives and infrastructure, with one in six properties in England at risk from floods and annual flood damage costs in England estimated at around £1.1 billion per year.

Understanding and managing the UK’s freshwater environment is therefore critical, and requires accurate information about the past and present states of river flows across the UK.

The research

The National River Flow Archive (NRFA), hosted by the Centre for Ecology & Hydrology (CEH), holds over 60,000 station-years of data, making the NRFA the focal point for hydrometric data in the UK. We offer access to over 22 million records of daily and peak river flow from more than 1,500 gauging stations across the UK, some of which have been in continuous operation since the 1880s.

Our staff support the hydrometric monitoring activities of our partner organisations, helping ensure the country collects and stores river flow records which are crucial to the current and future management of our environment.



The National River Flow Archive provides the respected and trusted voice of hydrological monitoring... and is a key factor in enabling UK hydrological research to punch above its weight on the world stage"

Dr Andrew Black
Senior Lecturer,
University of Dundee



The NRFA website is a superb resource for UK river flow data. I use it nearly every day and appreciate the integration of the daily and peak flow datasets and the easy-to-use search and filtering tools"

Duncan Faulkner
JBA Consulting



Photo: Katie Muchan, CEH

The CEH projects described here have multiple partners across the UK, Europe and worldwide that are too numerous to mention individually. Please visit our website for partner details.

The outcomes

Our products and services are used all over the UK by industries, government agencies, environmental regulators, researchers and international organisations to manage the freshwater environment.

Our flood peaks dataset, for example, is estimated to save UK regulators and environmental consultants £5.4m per year. It is the foundation for national flood risk assessment methodologies and informs developers, regulators and the general public.

The NRFA also forms the foundation of evidence-based freshwater science and policy development, providing hydrological data to the UK and international research communities. Our data are widely used in high-impact scientific products and services which then yield major economic and societal benefits to the UK, including a national assessment of climate change impacts on the water cycle, and the development of environmental flow standards as part of the implementation of the European Union Water Framework Directive.

The UK Government uses data provided by the NRFA to meet international reporting obligations and contribute to the data-sharing initiatives of UNESCO (United Nations Educational, Scientific and Cultural Organization) and the World Meteorological Organization, while water companies, developers and energy providers use our data in such areas as water resource assessment, hydro-power development and abstraction control.

Through delivering definitive, state-of-the-art hydrological data from across the UK, we ensure researchers and operational hydrologists have the information required to understand and manage our freshwater environment.

The NRFA is maintained in close partnerships with the operators of UK gauging stations, including the Environment Agency, Natural Resources Wales, Scottish Environment Protection Agency and Rivers Agency (Northern Ireland).



Photo: Stephen Turner, CEH

