

UK Flood Risk and Flood Management

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Last updated: 1 July 2016

Responsibility for managing flood risk in the UK is distributed among a range of public bodies. Currently most open datasets about flood risk and flood management are published by the Environment Agency for England. However useful data is also held by government departments, devolved administrations, local authorities, water and sewerage companies, and others.

This guide is intended to help potential data users find public datasets about flood risk and flood management. Users should read any information warnings and documentation available to support the data, and may need to research further to judge whether the data is suitable for their purposes.

This discovery guide is not endorsed by any data publisher or public authority.

England

Live flood information and forecasts

The **Real Time flood-monitoring API** provides access to real time information covering flood warnings and flood alerts, measurements of water levels and flows, and a forecast of flood risks over the next three days. This service also covers Wales.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [API reference](#)
- Download: [Measurement readings archive](#)
- Download: [Flood Warning Areas and Flood Alert Areas](#)
- [Supporting information](#)

[Shootherill APIs](#) also offer access to Environment Agency open data feeds.

Fluvial (river) and coastal flood risk

Risk of Flooding from Rivers and Sea (RoFRS), previously known as NaFRA, is a set of data products that indicate the chance of flooding from rivers or the sea based on 50m cells. Each cell has a risk category that takes into account

flood defences. RoFRS is available as [spatial boundaries](#), as a [postcode-level dataset](#) with address counts, and at [address level](#). (The address dataset includes address identifiers but not full addresses.)

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)
- [Visualisation](#)

Risk of Flooding from Rivers and Sea – key summary information is a collection of spreadsheets that provide a geographic breakdown of the number of people, properties and deprived properties in areas at risk of flooding from rivers and sea.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

Flood Map for Planning (Rivers and Sea) is a set of spatial data layers that indicate areas of land at risk of flooding from rivers or the sea. This product is aligned with the planning process and includes layers for **Flood Zone 2, Flood Zone 3, Flood Storage Areas, Spatial Flood Defences (without standardised attributes)**, and **Areas Benefitting from Defences**.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)
- [Visualisation](#)

Spatial Flood Defences (including standardised attributes) is a separate spatial dataset that provides substantially more detail about flood defences than the unattributed Flood Map layer.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

Modelled fluvial flood depth data created 2004 is a collection of modelled fluvial flood depth data on a 5x5m grid, for both the 1% and 0.1% annual chance of flooding. This data was produced as a by-product from a 2004 generalised modelling project.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

Pluvial (rain) and surface water flood risk

Flood Risk Areas is a spatial dataset defined by Lead Local Flood Authorities to show areas where the risk of surface water flooding has most impact on residential buildings and critical infrastructure. This dataset was produced for purposes of the European Floods Directive and is highly generalised.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

Flood history

Recorded Flood Outlines, previously known as Historic Flood Outlines, is an attributed spatial dataset that shows the recorded extents of historic flooding from rivers, the sea, groundwater and surface water. Recorded outlines go back to 1946, though the data is more robust for later flood events.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

Historic Flood Map is a spatial dataset that shows the combined extents of historic flooding from rivers, the sea, groundwater and surface water. This dataset is similar to Recorded Flood Outlines but without disaggregation and attribution of individual flood events.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

Historic Flood Warnings is a list of Flood Warnings and Flood Alerts issued since Environment Agency's Floodline Warnings Direct service went live in 2006.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

Remotely Sensed Flood Estimates is a spatial dataset containing a collection of estimated flood outlines derived from remote sensing data captured during flood incidents in late 2013 and early 2014.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

Other flood-related open data

Coastal Design/Extreme Sea Levels is a specialist package of spatial data and supporting information, used for coastal flood modelling, scheme design, strategic planning and flood risk assessments. This package covers England and Wales.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

Central Government Funding for Flood and Coastal Erosion Risk

Management in England is a document that contains official statistics on budget allocations and historical expenditure since 2005/06. (The document is re-usable under an open licence but the statistics are not published in a re-usable data format.)

- Publisher: [Defra](#)
- Licence: [OGL](#)
- [Download](#)

Flood and Coastal Erosion Risk Management Programmes of Work is a spreadsheet that contains information on FCERM projects at three different stages of development. The information includes investment, location,

estimated timescales, projected number of households that will benefit from protection, and estimated economic benefits.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Supporting information](#)

River and Coastal Maintenance Programme is an annual spreadsheet that shows Environment Agency planned maintenance work, including for flood management purposes, by location.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- Download: [Archives](#)
- [Metadata](#)

Objections to planning on the basis of flood risk is an annual spreadsheet that lists Environment Agency objections to planning applications on the basis of flood risk and water quality.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)

Non-open datasets

Risk of Flooding from Surface Water (RoFfSW), previously known as Updated Flood Map for Surface Water (uFMfSW), is a package of spatial data layers that indicate the annual chance of surface water flooding with different criteria: depths, extents, hazard ratings, maximum depths, maximum speeds, and dominant flow direction. The package also includes data on model details and suitability by location. RoFfSW is not yet open data, though Environment Agency had [stated an intention](#) to release the package as open data in May 2016.

- Publisher: [Environment Agency](#)
- Licence: [Conditional Licence](#)
- [WMS](#)
- [Metadata](#)
- Background: [What is the updated Flood Map for Surface Water?](#)

Reservoir Flood Map Maximum Flood Outline (Extent) is a spatial dataset that contains attributed inundation maps for more than 2,000 large raised reservoirs. This dataset is available under licence but not as open data.

- Publisher: [Environment Agency](#)
- [Metadata](#)
- [Visualisation](#)

Areas to Benefit is a package of spatial data that shows areas likely to benefit from new or improved flood defence projects.

- Publisher: [Environment Agency](#)
- Licence: [Conditional Licence](#)
- [WMS/WFS](#)
- [Metadata](#)

Susceptibility to Groundwater Flooding is a national hazard spatial dataset for groundwater flooding. The dataset covers Great Britain and is available on commercial terms.

- Publisher: [British Geological Survey](#) (BGS)
- [Description](#)
- [Metadata](#)

Geological Indicators of Flooding is a spatial dataset that shows floodplains and coastal plains in Great Britain without taking into account the effects of human development. The dataset is available on commercial terms.

- Publisher: [British Geological Survey](#) (BGS)
- [Description](#)
- [Metadata](#)

Wales

As noted above the **Real Time flood-monitoring API** and **Coastal Design/Extreme Sea Levels** package include data for Wales as well as England.

There is currently a lack of other open flood data for Wales. However as a guide to non-open public flood data see the Natural Resources Wales [Flood Risk Map](#) and the Welsh Government's Interactive [TAN 15 Development Advice Map](#).

Scotland

There is also a lack of open flood data for Scotland. As a guide to non-open public flood data see SEPA's [Flood Maps](#) and [Live Flooding Information](#).

Northern Ireland

There is also a lack of open flood data for Northern Ireland. As a guide to non-open public flood data see the Rivers Agency's [Strategic Flood Map](#).

Complementary datasets

Following is a list of open datasets that are not specifically about flood risk or flood management but are particularly likely to be of interest to users of flood data.

OS Open Rivers is an attributed spatial dataset that provides a high-level view of watercourses in Great Britain.

- Publisher: [Ordnance Survey](#)
- Licence: [OGL](#)
- [Download](#)
- [Documentation](#)
- [Metadata](#)

Statutory Main River Map is an attributed spatial dataset that shows statutory watercourses designated by the Environment Agency as main rivers. This dataset includes some watercourses not shown in OS Open Rivers.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

Water Framework Directive (WFD) spatial datasets are available that show the extents of water bodies and catchments in England. The WFD is mainly concerned with the ecological and chemical status of surface waters. However WFD boundaries are useful for analytic re-use of flood data because, unlike administrative and postcode geography, they are hydrologically significant.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)

- [Metadata](#)

Hydrometric Monitoring Points is a spatial dataset that shows the general location of current sites used for monitoring water quantity in England.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

Aerial **LIDAR** (Light Detection and Ranging) digital elevation data for much of England, captured primarily for purposes of flood modelling, is available in a range of packages (point cloud, composite DTM, composite DSM, etc.)

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

Composite **LIDAR** digital elevation data for much of Wales is also available.

- Publisher: [Natural Resources Wales](#)
- Licence: [OGL](#)
- [Download](#)

DTM and DSM **LIDAR** digital elevation data for river basins in Northern Ireland is also available.

- Publisher: [Land & Property Services](#)
- Licence: [OGL](#)
- [Download and metadata](#)

Vertical Aerial Photography is a collection of aerial photographic images captured by the Environment agency since 2006, including during incident response e.g. flood events. The images are georeferenced and ortho-rectified.

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- Download
- Metadata

Oblique Aerial Photography is a collection of aerial photographic images captured by the Environment Agency during incident response since 2010. (There are also plans to release a collection of vertical aerial photography.)

- Publisher: [Environment Agency](#)
- Licence: [OGL](#)
- [Download](#)
- [Metadata](#)

The **Copernicus Emergency Management Service** publishes rapid mapping of disasters around the world, including significant flood events in the UK.

Outputs include open spatial data.

- Publisher: [Copernicus EMS](#)
- [Download](#)

Additional notes and commentary

In addition to the metadata available on Data.gov.uk, Environment Agency publishes an [Information for Re-Use Register](#).

Environment Agency's [Acorn mailing list](#) and the papers of the [Environment Agency Data Advisory Group](#) (EADAG) are potential sources of news and background information on EA data releases.

Users of public flood data should be aware of competing commercial flood data models such as those maintained by [JBA Risk Management](#) and [Ambiental](#). These models are mainly used in the insurance and property sectors. [Flood Re](#), a flood reinsurance scheme developed with support from Government, makes use of both public and commercial flood data.

The [FCERM R&D programme](#) run by Environment Agency, Defra and other bodies is a potential source of underpinning knowledge.

The [Multi-Coloured Manual](#) produced by the Flood Hazard Research Centre (FHRC) at Middlesex University is a standard technical authority on the impacts of flooding and coastal erosion.