# Flood Zones - Product Description

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# What are the Flood Zone datasets

## Flood Zones Overview

The Environment Agency categorises land based on its likelihood of flooding. Flood Zones represent an annual probability of flooding from rivers and the sea. They do not take account of the presence and effect of flood defences, unless they increase the area potentially at risk of flooding.

## Why Flood Zones are created

The Environment Agency has the delegated responsibility from UK government to:

- produce mapped extents for Flood Zones 2 and 3.
- make mapped extents for Flood Zones 2 and 3 available to planning authorities in England to support the implementation of government planning policy.

Flood Zones are designed for both strategic spatial and development planning purposes in England.

The Flood Zone datasets are shared through the Flood Map for Planning digital service and the Defra Data Services Platform to raise awareness of flood risk for informing planning policy with our partner organisations.

## What the Flood Zone datasets show

### Flood Zones

The Flood Zones show the extent of land at present day risk of flooding from rivers and the sea, ignoring the benefits of flood defences, for the following annual probabilities which are defined in Table 1 of the Planning Practice Guidance:

- Flood Zone 1 – Land having a less than 0.1% (1 in 1000) annual probability of flooding
- Flood Zone 2 – Land having between 0.1% - 1% (1 in 1000 and 1 in 100) annual probability of flooding from rivers or between 0.1% - 0.5% (1 in 1000 and 1 in 200) annual probability of flooding from the sea, or accepted recorded flood outlines
- Flood Zone 3 – Areas shown to be at a 1% (1 in 100) or greater annual probability of flooding from rivers or 0.5% (1 in 200) or greater annual probability of flooding from the sea

Flood Zone 3b represents the Functional Floodplain. This zone shows land where water has to flow or be stored in times of flood. The Environment Agency are not required to map the outer boundary of the extent of Flood Zone 3b, and it is usually included within our mapped extent of Flood Zone 3.

### Flood Zones plus climate change

The Flood Zones plus climate change dataset shows how the combined extent of Flood Zones 2 and 3 could increase with climate change over the next century, ignoring the benefits of any existing flood defences. We have assumed no changes to flood defences or land-use that could occur in future. The effects of climate change on flood risk we may see in the future could be different to those currently considered.

The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5.

The datasets shown on Flood Map for Planning are aimed at supporting planners and developers to make long-term decisions about the location and design of development and the use of land. Such decisions need to account for the full anticipated lifetime of the development being planned. We have therefore chosen:

- the 'Central' allowance for the 2080s epoch (2070-2125) for risk of flooding from rivers
- the 'Upper End' allowance for risk of flooding from the sea, accounting for cumulative sea level rise to 2125

# How the Flood Zone datasets are managed

## How the Flood Zone datasets are created

The Flood Zones are created using local flood model outputs, recorded flood outlines and national flood model information. These are combined to generate extents of land at flood risk, with the aim of using the best available flood risk information in any one location.

For particular areas, sections of the previous Flood Zone dataset (November 2023) have been retained whilst we make improvements to the data. These are due to be replaced in the future.

The Flood Zones plus climate change dataset is created using the above information and by adding climate change scenarios from local and national modelling, using the maximum extents from:

- Rivers and sea with defences 3.3%, 1%/0.5% and 0.1% AEPs
- Rivers and sea without defences 1%/0.5% and 0.1% AEPs

The extents are merged to create a single outline.

Where areas of previous Flood Zone data have been retained, we will not have 'Flood Zones plus climate change' information in these locations until the improvements have been made.

## Update frequency

In the future we plan to publish the data every three months and update it in locations where new local flood model information is available. Ahead of this, flood risk updates will be less frequent as our new processes are established. Updates on these timescales can be found on Defra Data Services Platform

# Uses and limitations

## Who uses the Flood Zone datasets and why

The Flood Zones are used by local planning authorities to know when to consult the Environment Agency on planning applications in line with Schedule 4 of the Town and Country Planning (Development Management Procedure) Order 2015.

Flood Zones are also used by decision-makers when applying government policy and guidance to proposed development.

The Flood Zones plus climate change data should be used to help planners and developers identify the need for:

- A site-specific flood risk assessment
- The sequential test

It can also help to inform the preparation of strategic flood risk assessments.

Further information can be found on: How to use rivers and sea data - Flood map for planning - GOV.UK

## Suitability and limitations

The Flood Zone datasets are designed to only give an indication of flood risk from rivers and the sea to an area of land and are not suitable for showing whether an individual property is at risk of flooding. This is because we cannot know all the details about each property.

Locations may also be at risk from other sources of flooding, such as high groundwater levels, or failure of infrastructure such as sewers and storm drains. These sources **are not** represented in these datasets.

The mapping of Flood Zone datasets covers all of England, down to catchments with an area of 3km$^2$. Where we have suitable data for smaller catchments, we will also show this.

It is important to note that not all rivers are included in the maps and, if a development is to take place near one of these rivers, further investigations and modelling may be required. In these locations it should therefore not be assumed that there is no flood risk. Flood Zones are a planning tool and they do not necessarily mean somewhere will or will not flood.

# How to access the Flood Zone datasets

## Flood Map for Planning digital service

The Environment Agency presents the Flood Zone datasets on maps via GOV.UK. Anyone can access the datasets if they have a place name, postcode or co-ordinates.

On this digital service the data is presented as a multi-layered map which displays the latest Flood Zone datasets, plus information on flood defences and water storage areas.

From this service customers can also request a Flood Risk Assessment (FRA) Product 1 (Flood Zone Map) and Product 4 (Detailed FRA map).

## Data Services Platform (DSP)/ data.gov.uk

The Flood Zone datasets are available in a variety of formats from the Defra Data Services Platform and data.gov.uk

- Flood Map for Planning - Flood Zones
- Flood Map for Planning – Flood Zones plus climate change

# Product Contents and Schemas

Schemas for the datasets available on the Defra Data Services Platform schemas are provided on the following pages and describe the geometry and the attributes of the data. When delivered, some file formats may truncate the fieldnames.

# Flood Map for Planning - Flood Zones

| Simple Feature Class | | | | | Geometry: | | Polygon | |
|---|---|---|---|---|---|---|---|---|
| Flood_Zones_2_3_Rivers_and_Sea | | | | | Contains M Values: [1] | | No | |
| | | | | | Contains Z Values: [2] | | No | |
| Field name | Description | Data type | Allow nulls | Default value | Domain | Precision | Scale | Length |
| OBJECTID | Unique object identifier | Object ID | | | | | | |
| Shape | Geometry data type | Geometry | | | | | | |
| Origin | Source of data (modelled, recorded, direct rainfall model, local evidence) | Text | Yes | - | - | | | 64 |
| Flood_zone | Assigned Flood Zone (Flood Zone 2 or 3) | Text | Yes | - | - | | | 3 |
| Flood_source | Source of flooding (river and/or sea and/or undefined) | Text | Yes | - | - | | | 32 |

A layer file is also provided alongside this dataset for use in ESRI applications. This contains the recommended symbology information, reflecting how the data is displayed on Environment Agency systems. Users of other GIS applications can apply the symbology for each flood likelihood category manually using the RGB information provided in the table below:

| | **Flood Zone** | **RGB** | **HEX#** |
|---|---|---|---|
| | Flood Zone 3 | 58-68-135 | 3A4487 |
| | Flood Zone 2 | 156-208-252 | 9CD0FC |

# Flood Map for Planning - Flood Zones plus climate change

| Simple Feature Class | | | | | Geometry: | | | Polygon |
|---|---|---|---|---|---|---|---|---|
| Flood_Zones_2_3_Rivers_and_Sea_CCP1 | | | | | Contains M Values: [1] | | | No |
| | | | | | Contains Z Values: [2] | | | No |
| Field name | Description | Data type | Allow nulls | Default value | Domain | Precision | Scale | Length |
| OBJECTID | Unique object identifier | Object ID | | | | | | |
| Shape | Geometry data type | Geometry | | | | | | |
| Flood_source | Source of flooding (river and/or sea and/or undefined) | Text | Yes | - | - | | | 32 |
| Name | | Text | Yes | - | - | | | 32 |

A layer file is also provided alongside this dataset for use in ESRI applications. This contains the recommended symbology information, reflecting how the data is displayed on Environment Agency systems. Users of other GIS applications can apply the symbology for each flood likelihood category manually using the RGB information provided in the table below:

| | **Name** | | **RGB** | **HEX#** |
|---|---|---|---|---|
| | Flood Zones plus climate change | Solid fill | 244-165-130 | F4A582 |
| • • • • • • | Unavailable | Circle marker symbol | 0-0-0 | 000000 |