

FLOOD FORECASTING CENTRE

A working partnership between



FLOOD GUIDANCE STATEMENT USER GUIDE

JANUARY 2020



INTRODUCTION

THIS USER GUIDE HAS BEEN PRODUCED BY THE FLOOD FORECASTING CENTRE (FFC) FOR USE BY THE UK AND WELSH GOVERNMENTS AND ALL CATEGORY 1 & 2 RESPONDERS ACROSS ENGLAND AND WALES FOR WINTER 2017/18 ONWARDS.

It replaces the previous version (dated January 2017) in full, and now includes relevant parts of the 'Talking the Same Language' forecasting glossary that was available separately. We have combined and simplified these documents to make this a 'one stop shop' for information on using flood forecasts.

We welcome your feedback. Please contact us by telephone: **0300 12345 01** or email: ffcenquiries@environment-agency.gov.uk



OVERVIEW

THE FLOOD GUIDANCE STATEMENT (FGS) PROVIDES A DAILY FLOOD RISK FORECAST FOR THE UK AND WELSH GOVERNMENTS AND CATEGORY 1 & 2 EMERGENCY RESPONDERS TO ASSIST WITH STRATEGIC, TACTICAL AND OPERATIONAL PLANNING DECISIONS.

This assessment of flood risk is shown by county and unitary authority across England and Wales over five days. It is based on a reasonable worst case scenario which identifies situations that could cause flooding, threaten communities and pose a risk to lives and livelihoods. The FGS covers all types of natural flooding – coastal/tidal, river, groundwater and surface water.

It is produced by the FFC and local Environment Agency and Natural Resources Wales flood forecasting teams, joining up national and local information. The FGS presents the best combined understanding of overall flood risk based on weather forecasts, flood forecasts, catchment conditions and the operational status of flood defences and assets.

The FGS is issued by the FFC every day at 10:30am and at other times, day or night, if the flood risk assessment changes. It is made available on the Met Office Hazard Manager and Cabinet Office Resilience Direct systems after publication.

The FGS is supported by National and Local Flood Advisory Services. These advisory services are run as telephone conferences to initiate early discussion of flood risk. They help to ensure emergency responders receive consistent and timely information from the Met Office, FFC, Environment Agency and Natural Resources Wales.

The FGS is specifically produced and circulated only to registered Category 1 and 2 emergency responders, and organisations involved in flood response. It should be used together with the Advisory Services, rather

than in isolation. We separately produce a public flood risk forecast which is available from the [Environment Agency](#) and [Natural Resources Wales](#) websites and these services should be promoted to customers outside the emergency response community.

The FFC operates a 365 day 24/7 service and you can speak to us directly on **0300 1234501** to discuss the FGS. You can also contact your local Environment Agency or Natural Resources Wales flood teams or Met Office Advisor (civil contingencies) for information about the local situation.

HOW TO RECEIVE AND VIEW THE FGS

THE FGS IS DISTRIBUTED VIA EMAIL AS A PDF DOCUMENT AND YOU CAN REGISTER TO RECEIVE IT [HERE](#).

You can select which counties or unitary authorities you are interested in, and whether you wish to receive the FGS at different flood risk levels. We'd advise receiving the FGS at all flood risk levels so you receive all the information available in the lead up to any floods.

We encourage individuals to register rather than use generic accounts so we can maintain contact details, circulate service messages, user guide updates and customer surveys.

You can register for the Hazard Manager system to view the FGS online, together with a range of weather information [here](#). The system offers you the ability to view and filter by flood source and flood impact level.

The FGS is available on Resilience Direct Maps which uses the FGS open data. Users can create a map and add the FGS Area of Concern layer. The 'Feature Info' section provides a link to the full FGS document.

We have also made the data for the FGS available as open data [here](#) for England and [here](#) for Wales.

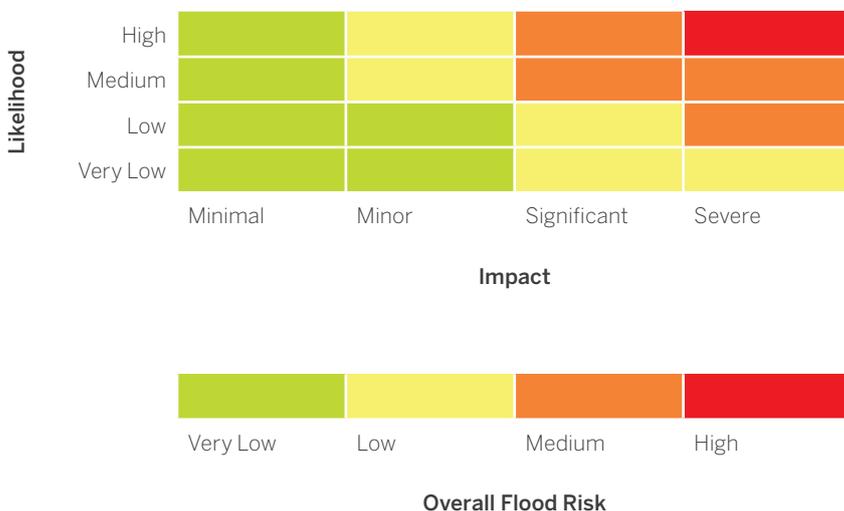


FLOOD RISK ASSESSMENT AND MATRIX

TO ASSESS THE LEVEL OF RISK WE TAKE INTO ACCOUNT A LARGE NUMBER OF WEATHER, CATCHMENT AND COASTAL FACTORS AND INFORMATION ON THE POTENTIAL IMPACT OF THESE FACTORS ON LOCAL COMMUNITIES.

Assessments are made in different ways for coastal/tidal, river, surface water and ground-water. These are then presented on a coloured, 4x4 risk matrix depending on the forecast impact and likelihood.

The flood risk matrix shows the assessment of impacts against likelihood for counties and unitary authorities in England and Wales for the five day period, for all sources of flooding.



FLOOD RISK MATRIX GUIDANCE ON IMPACTS

This table shows typical examples of impacts from flooding and aligns with the four columns in the Flood Risk Matrix. Detailed local impacts are shared at Flood Advisory Service telephone conferences.

FLOOD IMPACTS TABLE

| | Minimal Impacts | Minor Impacts | Significant Impacts | Severe Impacts |
|--------------|---|--|---|---|
| Risk to Life | Not expected | Individual risk for the more vulnerable or for those making decisions in unfamiliar situations (e.g. when crossing fords or rescuing pets) | Danger to life from fast flowing / deep water / wave overtopping / wave inundation and physical hazards (e.g. getting stuck in water) | Danger to life from fast flowing / deep water / wave overtopping / wave inundation and physical, chemical or utility hazards (e.g. electrocution) |
| Communities | Isolated and localised flooding of low-lying land and roads | Localised flooding of land and roads | Some communities temporarily inaccessible due to flooded access routes | Communities cut off |
| | Isolated instances of spray/wave overtopping on coastal promenades | Localised flooding (inc. waves) affecting individual properties | Flooding affecting properties and parts of individual or multiple communities | Widespread flooding affecting large numbers of properties and whole communities |
| | Not expected | Local damage due to age and/or condition of structure | Damage to buildings/structures | Extensive damage to and/or collapse of buildings/structures |
| Transport | Little disruption to travel although wet roads and fords could lead to difficult driving conditions | Local and short term disruption to travel | Widespread or long duration disruption to travel | Widespread and long duration disruption to travel. Motorists/passengers becoming stranded |
| | | | Damage to transport network (some route closures) | Widespread damage to transport network and widespread route closures |
| Utilities | Not expected | Localised and short term disruption to utilities and services | Disruption to utilities and services | Widespread/prolonged disruption through loss of utilities and services |

FLOOD RISK MATRIX GUIDANCE ON LIKELIHOOD

This table shows everyday language to describe the likelihood of impacts occurring with some examples and aligns with the four rows in the Flood Risk Matrix.

| | Very Low | Low | Medium | High |
|----------|--|---|--|---|
| | Possible but not expected | Possibly / Possible | Probably / Probable | Expected |
| Examples | Minor impacts are possible but not expected due to high river levels in... | Minor surface water flooding impacts are possible from further heavy rain in... | Significant flooding impacts due to high river levels are probable across the north east of England... | Minor surface water flooding impacts are expected from further heavy rain in... |

USING THE FLOOD RISK MATRIX

Our ability to assess flood risk varies across England and Wales.

Some floods can be forecast with greater accuracy than others at different lead times. The weather, the nature of catchments and coastlines and the condition of assets all affect how well we can assess flood risk.

The Local and National Flood Advisory Service telephone conferences have an important role in communicating consistent understanding of the overall flood risk, local detail and the confidence in our forecasts. This enables responders to prepare for the right level of response to minor, significant or severe floods.

For responders familiar with scenario planning terminology as part of their risk management approach, the FGS provides an assessment of the reasonable worst case for flood impacts by source and county over time. This is defined in the forecasting glossary later in this document.

The flood risk matrix (below) shows some of the different flood risk assessments that can be made, yet still share a common flood risk level and colour. A feel for the frequency of these assessments is also provided.



FORECASTING GLOSSARY

WE AIM TO USE PLAIN ENGLISH WHERE WE CAN. WE KNOW FROM EXPERIENCE THAT WITH MANY INDIVIDUALS FROM MANY SECTORS INVOLVED IN PREPARING FOR, AND RESPONDING TO, FLOODING IT IS WORTH SHARING OUR KEY CONCEPTS AND DEFINITIONS TO HELP REDUCE ANY CONFUSION.

DEFINITIONS

Confidence: A forecaster's expert judgement of an outcome or risk assessment occurring, expressed in terms of low, medium or high confidence.

Impact: The effects of flooding on people and the environment. For flooding we categorise impacts as minimal, minor, significant or severe.

Likelihood: A qualitative term describing the chance of something happening, normally in terms of very low, low, medium or high likelihood, and with the everyday phrases possible but not expected, possible, probable and expected.

Risk: Risk is the combination of likelihood and impact.

Scenario planning: A method used to plan for the future based on agreed scenarios. For flood forecasting we use two scenarios: a **Best Estimate** and a **Reasonable Worst Case**.

- **Best Estimate Scenario: what should happen.** A forecaster's assessment of the middle range of rainfall, river or groundwater levels or coastal conditions and impacts that may occur.
- **Reasonable Worst Case Scenario: what could happen.** A forecaster's assessment of the upper range of rainfall, river or groundwater levels or coastal conditions and impacts that may occur. This scenario is presented in the FGS.

KEY CONCEPTS

- **Risk** is a combination of **likelihood** and **impact**.
- **Certainty** and **uncertainty** exist in forecasting both **likelihood** and **impact**.
- **Confidence** is used to qualify our forecasts; it is usually described qualitatively as low, medium or high, taking **uncertainty** into account.

The likelihood of either scenario occurring changes over time (and we describe likelihood in terms of possible but not expected, possible, probable or expected)

Stress testing

Where flood models are manipulated to test the scenarios that are under consideration. Stress testing is done at times of higher flood risk for rivers and the coast.

Uncertainty (and certainty)

Having limited knowledge so it is impossible to exactly describe the environment (e.g. the weather) a future outcome (e.g. river forecasts) or more than one possible outcome (e.g. significant or severe impacts).

FGS SECTIONS

DAILY MAPS BY COUNTY AND UNITARY AUTHORITY

Five maps of England and Wales showing overall flood risk from any flood source for each county or unitary authority.

TREND SINCE LAST FGS

Below the daily maps, a trend arrow gives a **national** overview of the overall forecast trend direction compared to the previous FGS issue. Each forecast day is compared against the same day from the previous issue and the national trend highlighted. There are three options – **increased, decreased or steady.**

HEADLINE

The headline emphasises the impact severity first and then the likelihood. This should enable responders to understand more rapidly the scale of action which may be required.

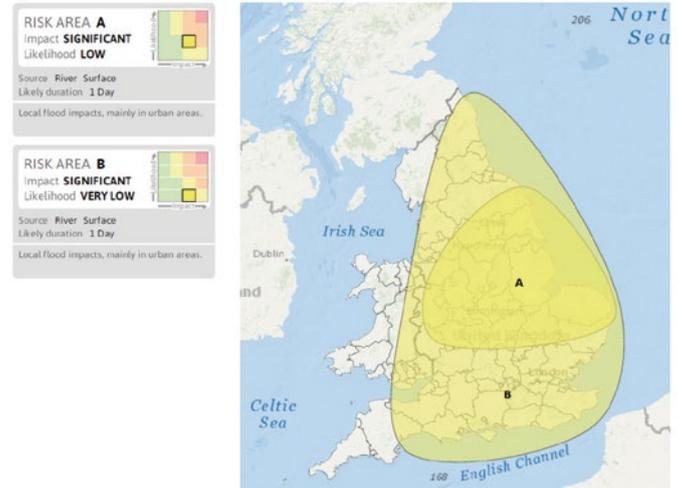
AMENDMENTS IN THIS UPDATE

An optional section which provides the reason for issuing an updated FGS. This can be to amend a forecast, add extra information, or correct a mistake.

SPECIFIC AREA OF CONCERN MAPS

One or more detailed maps are included as needed, even for Very Low risk situations when minor impacts are possible. Each flood risk area is labelled with the impact, likelihood, flood source, duration, position in the flood risk matrix and any additional information. In situations when there are multiple sources of flooding with different risk levels, letters indicating the sources are shown in the mini flood risk matrices.

Specific Areas of Concern Map 1: Thursday 6 July



ASSESSMENT OF FLOOD RISK

Our professional judgement and confidence in the flood risk assessment and the factors considered when determining the appropriate risk level, for each source of flooding. Sections in priority order may include whether the flood risk is improving, staying the same or deteriorating.

6-10 DAY FORECAST

Description of any significant or severe flood impacts in this period will be included as needed.

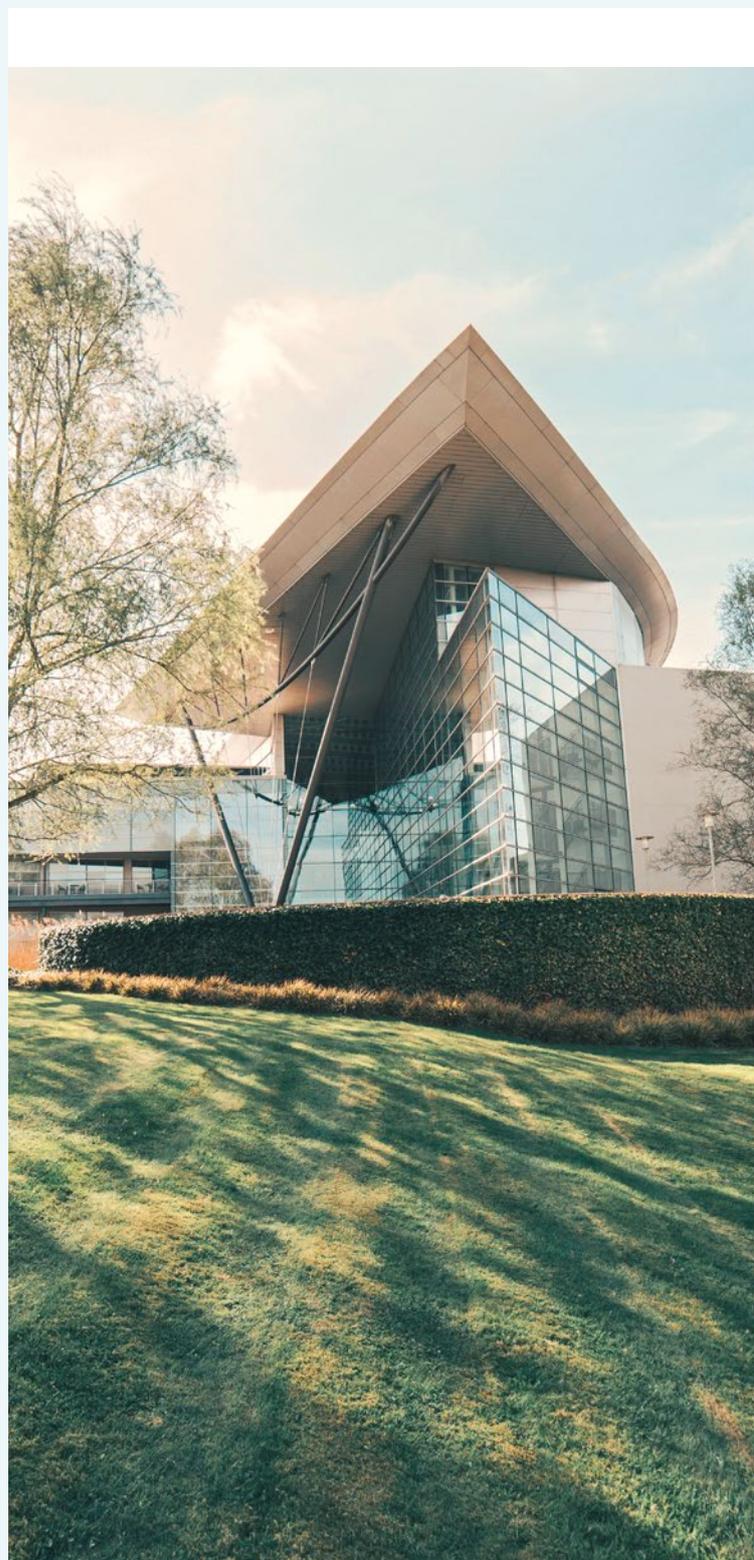
NEXT STATEMENT DUE

This time and date will tell you when the next planned FGS is due, which is useful in periods of heightened flood risk when multiple statements may be issued.

CONTACT DETAILS

Our consultancy service for the FGS is available for all Category 1 & 2 responders. For detailed local discussion we advise you to use your local Environment Agency, Natural Resources Wales and Met Office contacts.

We welcome your feedback. Please contact us by telephone: [0300 12345 01](tel:03001234501) or email: ffcenquiries@environment-agency.gov.uk



Email ffcenquiries@environment-agency.gov.uk

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