

Talking the Same Language

Updated with learning from the 2012 Floods

Golden rules

- **Risk** is a combination of:
 - **Chance, likelihood** and **probability**, which all mean the same thing
AND
 - **Impacts** and **disruption**, which are interchangeable terms
- **Confidence** and **judgement** are used interchangeably
- **Widespread** usually means an area defined by Heavy Rainfall Alert areas or multiple counties
- **Localised** usually means a single site, community or small catchment
- **Best case** scenario usually means the most realistic forecast
- **Worst Case, Reasonable Worst Case** or **Very Low Probability** all mean something with less than a 20% probability of occurring.
- An **extreme scenario** can be taken as something outlying climatology and with less than 5% probability of occurring.

Introduction

When working together, it's important we understand each other – particularly when our role means we need to communicate clearly to enable an effective response to flooding. We'd like to remove all jargon, but working across organisations and disciplines inevitably means confusion can creep in; hence this quick guide defines what we mean as plainly as possible.

The following glossary of terms – which was originally produced in 2010 as part of the Integration Project – has been updated following our experience of the 2012 floods. This list does not include every meteorological, hydrological, incident management or emergency response term but focuses on those we use as part of the forecasting services we provide.

We see this as a live document so please contact us if you would like to see any additions or suggested amendments: ffcenquiries@environment-agency.gov.uk

Russell Turner, Hydrometeorology Services Manager, 4 January 2013

Audience

This information is aimed at strategic, tactical and operational managers within the Environment Agency, FFC and Met Office to support discussions with responders.

Briefing method

This document is best used in discussion and in conjunction with wider flood forecasting and guidance product training material.

Common terms

Accuracy

A measurement of the closeness with which an observation, series of observations or a forecast compares to a verified quantity.

Advice

Information that provides support and guidance to a customer in their decision making process. Advice can be delivered alongside another rainfall or flood related products or services or in its own right.

Alert

An issued product, which typically has a longer lead time than a warning. It is an early notice to take action or be prepared to take action and to expect further alerts or warnings as the hazard draws closer.

Best Case Scenario or Forecast

This is a most likely and not an extreme scenario. Generally it has a higher probability and lower impact potential than the reasonable worst case.

Confidence

A forecaster's judgement of a particular scenario happening. This is usually expressed in terms of high, medium or low confidence.

Extreme (event, scenario or forecast)

An occurrence which is out of the ordinary, less frequent and usually on the upper boundaries of what we can expect from our climate with (typically) less than 5% probability of occurring (also see severe).

Flood

Flooding is when there is too much water, which overflows and reaches roads, fields, villages, towns and cities, often affecting homes and businesses. It can happen at any time and affect anywhere. The main natural sources of flooding are:

- Rivers – when a river, stream or other natural watercourse is at its maximum capacity and the water overtops or breaches the riverbanks. The overflowing water floods onto nearby land, potentially affecting homes and businesses in its path;
- Coastal / tidal – tides and storms can cause flooding around coasts and tidal river stretches, including overtopping or breaching of defences. Low pressure systems (stormy weather) can create surges, causing water levels to be higher than tide table predictions and lead to flooding;
- Surface water – flooding happens following or during intense rain as drainage and sewage systems are overwhelmed by the rain or water running off roads, fields or hard surfaces;

- Groundwater – flooding happens when water in rocks rises to or above ground level. This generally happens after a long wet spell and can be prolonged.

Forecasts

A prediction of the future state, for a particular area or location, that is derived from observations, model outputs and forecaster skills and experience. Forecasts can be categorised according to their length:

- Nowcasts - start from the current situation and combine with forecast model data to predict the weather up to six hours ahead
- Short-period forecasts - up to 48 hours ahead
- Medium-range forecasts - 2 to 15 days
- Long-range forecast period - beyond 15 days, including seasonal forecasts
- Forecasts can also be subdivided depending on the modelling techniques used:
 - Deterministic forecasts that provide one possible solution for the future
 - Probabilistic forecasts indicate the range of possibilities of different weather events occurring. These probabilities use ensembles, where multiple deterministic solutions are created with slightly different starting conditions to obtain a range of possible scenarios. These scenarios have a percentage probability attached to them, for example, 'there is 40% probability of more than 10mm of rain falling today'.

Guidance

Help or advice towards doing something. Guidance is typically offered in two ways: issued products or telephone consultation.

Hazard

A natural weather-related event that has the potential to cause adverse impacts, disruption and possibly loss of life.

Impact

The physical effects the weather has on the environment and people. For example, flooding will initially cause minor impacts, such as flooding of low lying land and roads, but as the depth and extent of the floodwater increase it can cause significant or severe impacts: flooding of major road and infrastructure networks, structural collapse of bridges, roads and buildings, isolation of whole communities and even loss of life.

Intensity

In relation to rainfall, a depth, typically in millimetres (mm), per unit time, typically in hours (hr). For example 30mm/hr. It is generally used to describe an instantaneous rainfall rate.

Likelihood

The chance of something happening. This may be expressed as a percentage. It can be used interchangeably with probability. For example, the likelihood a heavy rainfall alert will be issued or the likelihood of breaching a specific depth/duration threshold.

Localised

Typically affecting individual small catchments, communities or sites especially raingauges, although it is relative to the product in question.

Outlook

What is likely to happen; for example the weather outlook. Typically a summary of the weather providing context to the main forecast product.

Probability

The chance of a forecast weather phenomenon happening at a particular location and time, for example, the probability of a thunderstorm. It is also frequently used as the value of a weather parameter exceeding a defined threshold, such as the probability of 30 millimetres of rain at a particular location. Probability can be used interchangeably with likelihood.

Note: Probability is not the same as confidence and should not be used as such. *NB Heavy Rainfall Alerts currently incorrectly label probability as confidence – this is being fixed.*

Reasonable Worst Case Scenario or Forecast

This is a realistic and more extreme scenario than the best case and is typically any forecast with less than 20% probability. Anything less than (typically) 5% would be classed as an extreme scenario in the context of climatology. It generally has a lower probability and higher impact potential than the best case.

Risk

Combination of the likelihood or probability of an occurrence of a hazardous event and the severity of impact that it may cause.

Severe

An occurrence which is out of the ordinary, less frequent and usually on the upper boundaries of what we can expect from our climate (also refer to 'extreme').

Warning

A specific formatted message to stimulate immediate action.

Widespread

The same conditions affect a wide geographical area such as multiple counties, catchments, heavy rainfall alert areas and many individual sites, for example raingauges and flow sites, and it is relative to the product in question.

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