

The website of the Flood Warning Service is a rich source of information for all flood-related issues.

Whether floods or no floods – the website of the Flood Warning Service gives access to detailed background information and to the latest water level readings and recorded measurements.

Maps and Charts give a quick overview of the current status at any time. These sites give access to water level and run-off data from river and lake monitoring stations as well as to measurements provided by precipitation and snow depth monitoring stations.

In a flood event the Status report gives an overview of the flood situation and a

forecast of the expected further development. The status report is updated several times a day.

In their Warnings the state offices for water management provide a detailed description of current and predicted flooding for each one of their county districts that are threatened.

You will also find reports on past flood Events as well as Links, addresses and phone numbers of other contact partners.

How are floods predicted?

Using special computer models designed specifically for the respective river basin, experts calculate the levels expected for the hours ahead. In this process, they convert the measured water levels into run-off. The measured precipitation and rainfall predicted by meteorological services are also input in the calculations.

The respective weather conditions, size and status of the river basin can have a substantial impact on the uncertainty associated with a flood forecast.

Internet, TV, phone – use these sources for information on the latest water levels and the flood warning status.

Internet

Flood Warning Service (HND): www.hnd.bayern.de
 Mobile version: m.hnd.bayern.de
 Flood portal for all German federal states www.hochwasserzentralen.de

Bavarian Television (Bayerisches Fernsehen), Bayertext:

- Page 647: Status report
 - Pages 648 and 649: Gauge levels

Floodline

- Status report +49 (0)821 9071-5976
 - Readings taken at individual gauging stations, floodline phone numbers under www.hnd.bayern.de: Messwertansage

Information service for areas threatened by flooding: www.iug.bayern.de

Flood control: www.naturgefahren.bayern.de > Hochwasser > Vorbeugung & Schutz

Insurance against flood damage www.elementar-versichern.bayern.de

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 Bürgermeister-Ulrich-Straße 160
 86179 Augsburg
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 Fax: +49 (0)821 9071-5556
 e-mail: poststelle@lfu.bayern.de
 Internet: www.lfu.bayern.de

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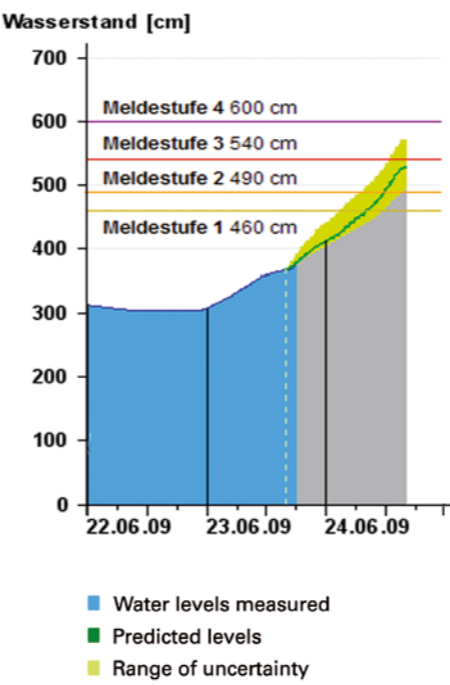
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Flood forecast with uncertainty range (gauging station at Kelheim, called up on 23.6.2009 through the internet site of the Flood Warning Service)



Homepage of the Flood Warning Service (HND) of 2.6.2013 highlighting areas hit by floods and indicating the alert levels reached.

Flood Warning Service

It is impossible to completely prevent flooding – timely warnings reduce flood damage.

Floods are a natural phenomenon. There are no structural or technical measures that can provide complete protection against floods. An early warning system for people living in areas prone to flooding and timely mobilisation of emergency services are therefore essential in order to reduce the danger of flooding and the damage it causes.

The Flood Warning Service monitors and analyses water levels and issues flood alerts.

Flood warning systems for river and lakes are the responsibility of the German federal states. For this purpose, Bavaria has set up a Flood Warning Service that collects data on water levels, run-off and precipitation, analyses this information, draws up flood alert plans and warns people affected.

An area-wide organisation down to community level

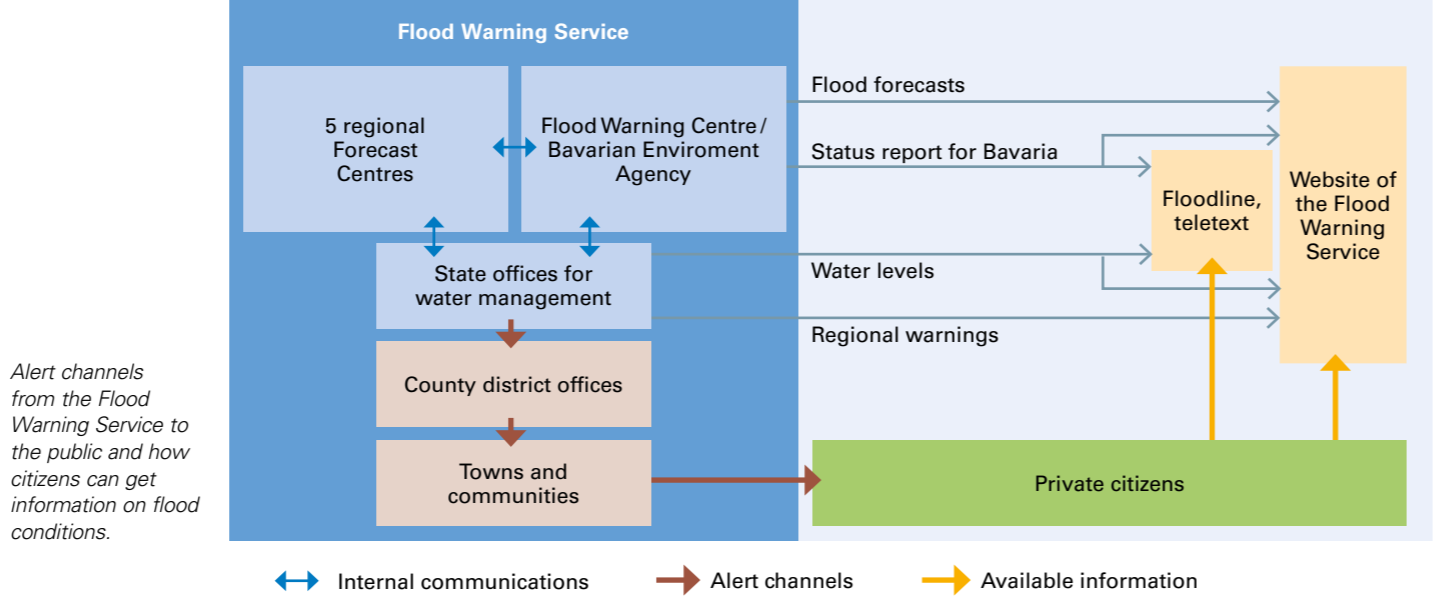
Connected to the Flood Warning Service are the state offices for water management, the county district offices, towns and communities. The coordinating unit is the Flood Warning Centre in the Bavarian Environment Agency.

Five regional Flood Forecast Centres are responsible for calculating and preparing flood predictions for the basins of the rivers Main, Danube, Isar, Iller/Lech and Inn respectively.



Mobile flood defence units prevent flooding of Würzburg city centre, January 2003.

What happens in a flood event - Alert channels and alert plans



Alert channels from the Flood Warning Service to the public and how citizens can get information on flood conditions.

When waterlevels rise the Flood Warning Service becomes active.

The respective centres are put into action as soon as rivers or lakes rise above defined thresholds. The water levels at the gauging stations are then read on an hourly basis and flood predictions are updated continuously. The state offices for water management put out regional alerts, while the Flood Warning Centre issues a flood status report for the whole of Bavaria.

The alert channels ensure that all people affected are given an early warning and mobilise the task forces.

Alert plans make sure that this information is passed on through the county district offices to the affected towns and communities.

Towns and communities form the last link in the alert channel and play a particularly important role. The alert plans stipulate who is to be warned, when and how, and what measures are to be taken at which gauge levels.

To this end, the local authorities have layout plans of endangered areas or buildings and plans for the organisation of flood defence systems.

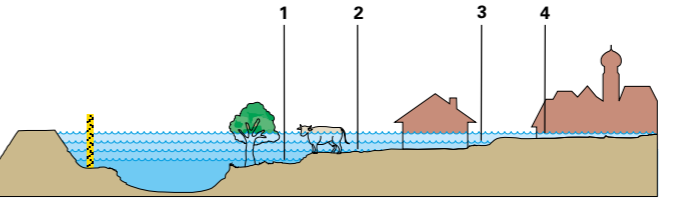


Floods in August 2005: Emergency task forces securing a dyke structure – in this case the disaster relief organisation Technisches Hilfswerk

Flood alert levels

There are 4 alert levels that provide plain and simple information on the extent of flooding.

At each individual gauging station it is determined which water levels correspond to the respective flood alert levels.



Alert levels indicate the specific flood status

- Alert level 1:** Minor overflows in some areas
- Alert level 2:** Flooding of farmland/undeveloped areas or minor hindrance to traffic on main roads and local roads
- Alert level 3:** Flooding of some buildings or cellars or impassable inter-regional roads or flood mitigation task forces required in some areas
- Alert level 4:** Extensive flooding of built-up areas or flood mitigation task forces required on a large scale

What is a gauging station?



Typical gauging station (on the river Isar during a flood)

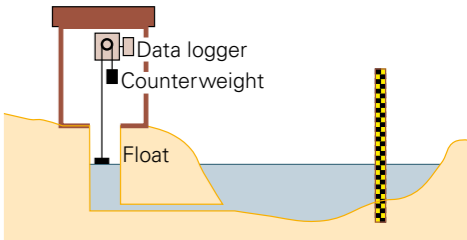
Monitoring the river – water levels are recorded in the gauging station.

The most important flood information is supplied from gauging stations installed along rivers and lakes.

A gauging station measures the water level and, in its most simple form, consists of a staff gauge with centimetre scale. The water level is read off this staff gauge.

The Flood Warning Service uses readings from some 770 gauging stations that measure the water levels and transmit the digital data to the Flood Warning Service.

To calculate flood predictions the Flood Warning Service additionally receives readings from approx. 670 precipitation stations on an hourly basis.



Section through a gauging station