



# Copernicus Emergency Management Service Hydrological Data Collection Centre

## Frequently Asked Questions

Hydrological in situ measurements of water level, discharge, and reservoir data are essential to improve the **Copernicus Emergency Management Service (CEMS) European Flood Awareness System (EFAS)**. This leaflet provides answers to frequently asked questions about the collection of hydrological in situ measurements for EFAS.

## 1. Hydrological in-situ data for EFAS: What are the minimum data requirements?

## What variables do we collect?

We collect river discharge, water level, and reservoir data. Specifically, for reservoirs, we collect reservoir level, volume (absolute and percentage), inflow discharge, and outflow discharge.

## Is there a minimum catchment drainage area?

Yes, the minimum size of the drainage area is 50 km<sup>2</sup>.

## What is the temporal resolution needed for EFAS?

EFAS needs ideally data with a 6-hourly or higher (e.g. hourly, 15 minutes, etc.) temporal resolution. If 6-hourly temporal resolution is not available also daily measurements are acceptable.

## Does EFAS need near real-time or historic data?

EFAS ideally needs both, near real-time and historic data. We collect historic data from 1970 onwards.

## What metadata does EFAS need?

For each gauge station and each reservoir, the coordinates, measurement units and time zone are strictly required. If available, drainage area and flood threshold values of discharge (and water level) are very important pieces of information. Furthermore, we need station (reservoir) name, river name (inflow and outflow for reservoirs), and basin name. Availability of other important metadata such as presence of lakes or reservoirs nearby the gauge station or any other relevant piece of information (e.g. height above mean sea level) are highly appreciated.

## 2. What are the data license conditions if I share my data with EFAS?

If your hydrological in-situ data is already available as open-source data, then there is no need to sign a data license.

If your institution is part of EUMETNET then the hydrological data provided to EFAS is governed by this <u>data license</u> which was signed by EUMETNET and Copernicus.

If your institution is not part of EUMETNET you will have to sign a Copernicus data license that is very similar to the one for EUMETNET partners.





## 3. How is my data used in EFAS?

#### **Reporting points layer:**

Gauging stations that provide discharge data are added as fixed reporting point to the *Reporting Points* layer in the EFAS map viewer. Once your station is added to this layer you can click on it and visualize a wide variety of information such as the flood forecasts for this station, forecast persistence tables, meteorological info, etc. Detailed information about *Reporting Points* layer is available from <u>EFAS Reporting Points</u> - <u>Copernicus Emergency Management Service</u> - <u>CEMS</u> - <u>ECMWF</u> <u>Confluence Wiki.</u> Newly provided hydrological stations are typically included twice per year into the *Reporting Points* layer.

#### Calibration and validation of the hydrological model in EFAS:

Historical time series of measured discharge data and reservoir data (in the future) are used to calibrate (or tune) the parameters of the hydrological model Open Source <u>LISFLOOD</u> in EFAS and to validate EFAS simulations. Typically, the hydrological model in EFAS is calibrated every two years. It should therefore be noted that when hydrological in-situ data is provided it may take a while until this data is also used for the hydrological model calibration in EFAS. Furthermore, not all hydrological stations which are collected for EFAS are used for model calibration as there is a selection process of these calibration stations depending on various criteria. The calibration methodology and the calibration stations used for the current operational version of EFAS are explained <u>in this page</u>.

#### **EFAS post-processed hydrographs:**

Where near-real-time and historical river discharge measurements are available, EFAS provides postprocessed hydrographs. Those hydrographs are bias-corrected using the near real-time discharge measurements at the station with the aim to diminish the systematic errors of the hydrological model. When available, local flood threshold values of discharge are shown in the hydrographs. A detailed description of EFAS post-processing methodology is available from <u>EFAS Post-processing -</u> <u>Copernicus Emergency Management Service - CEMS - ECMWF Confluence Wiki</u>. Newly provided hydrological stations are typically included twice per year into the EFAS post-processed hydrographs.

#### National Flood Monitoring Layer

The *National Flood Monitoring* layer in the EFAS map viewer aims to provide an overview of the ongoing national/regional flood threshold exceedances. Stations that provide in near-real time discharge and/or water level and for which information on flood thresholds (either discharge or water level) is available, will be included into the *National Flood Monitoring* layer.

#### Verification for flash flood forecast skill

Stations with small drainage area and a relatively high temporal resolution (at least 6-hourly) will be used to assess the skill of the EFAS flash flood forecasts in the future.





## 4. What do I need to do to share my data with EFAS?

- 1) Contact the CEMS Hydrological Data Collection Centre by sending an email to <u>info@efas.eu</u> (object: hydrological data sharing)
- 2) Sign the data licence (if applicable)
- 3) Establish data transfer with the help of the CEMS Hydrological Data Collection Centre
- 4) The CEMS Hydrological Data Collection Centre inserts the stations metadata and data in the EFAS database

## 5. Whom do I contact if I have questions about sharing my data?

Please contact the CEMS Hydrological Data Collection Centre directly or send an email to info@efas.eu .

The European Flood Awareness System (EFAS) is a Copernicus Emergency Management Service (CEMS) product. The European Commission Joint Research Center (JRC) is the entrusted entity of CEMS EFAS and therefore it is responsible for CEMS EFAS in terms of management, technical implementation, and evolution. The CEMS Hydrological Data Collection Centre (CEMS HDCC) is responsible for the collection, quality control, harmonisation and internal distribution of hydrological observations. GHENOVA Digital is the designated contractor to implement the operational functionalities of the CEMS HDCC.

