





European Flood Awareness System

EFAS Bulletin

December 2022 – January 2023 Issue 2023(1)













NEWS

New features

Release of EFAS v4.7

The latest version of the European Flood Awareness System, EFAS v4.7, is to be released operationally ton Monday 12 December 2022.



Figure 1: Global Flood Monitoring (GFM) products shown on the EFAS map viewer

This release will enable the visualisation of the new Global Flood Monitoring (GFM) products in the CEMS EFAS map viewer. The GFM provides continuous monitoring of floods worldwide, by automatically processing and analysing in near real-time all incoming Synthetic Aperture Radar imagery acquired by the EU's Copernicus Sentinel-1 satellites.

The GFM product is based on 3 different flood detection algorithms running in parallel and is composed of 11 different layers, roughly grouped into 4 categories: water bodies (Observed Flood Extent, Observed Water Extent, Reference Water Mask), uncertainty-related (Exclusion mask, Uncertainty values, Advisory flags), S1 data specifics (metadata, footprint, schedule) and impacts estimate (Affected population, Affected land cover).

With a spatial resolution of 20m and a revisit time ranging from 3 to 14 days depending on S-1 overpasses, the full dataset of the product output layers is made available in raster format both separately and in bulk.

The information about the specifics of the GFM products and how to access the data are provided through the Product User Manual and the Product Description Document available here.

New Partner – Denmark

150 active stations for Denmark and Greenland have been integrated in the data collection



Figure 2: Active Danmarks Meteorologiske Institut stations integrated in EFAS on 03-12-2022

In December 2022, the CEMS MDCC team integrated the meteorological station data from Danmarks Meteorologiske Institut (DMI) into the operational processing routines. DMI provides precipitation, temperature, dewpoint temperature, relative air humidity, sunshine duration, solar radiation, cloud cover as well as wind speed and direction data in 10minute, hourly, 12-hourly or daily resolution. Data of 150 active meteorological stations are loaded into the CEMS MDCC database in the daily routine. The data are processed and included into the gridded precipitation, temperature, solar radiation and wind speed fields produced every day as input for the EFAS forecasts as well as for EFFIS. Temperature and precipitation data are also used for the SPI (Standard Precipitation Index) and HCWI (Heat and Cold Wave Index) calculated for EDO.

CEMS MDCC would like to thank Danmarks Meteorologiske Institut very much for providing their data and making them accessible via their API.

New Partner - Belgium

95 active stations of the Service public de Wallonie have been integrated in the data collection



Figure 3: Service public de Wallonie active stations integrated in EFAS in December 2022 (Wallonia, Belgium)

In December 2022, the CEMS MDCC team integrated the meteorological station data from the Service public de Wallonie (SPW) into the operational processing routines. SPW provides precipitation data of 95 active rain gauges on an hourly basis, which are now loaded into the CEMS MDCC database and used in the daily routine. The data are processed and included into the precipitation grids produced every day as input for the EFAS forecasts as well as for EFFIS. Further, the precipitation data are used for the SPI (Standard Precipitation Index), which is calculated for EDO.

CEMS MDCC would like to thank SPW very much for providing their data and for their support during the integration process.

RESULTS

Summary of EFAS Flood and Flash Flood Notifications

The 78 formal and 80 informal EFAS flood notifications issued in December 2022 – January 2023 are summarised in Table 1. The locations of all notifications are shown in Figure 19 and Figure 21 in the appendix.

604 Flash flood notifications were issued in December 2022 – January 2023. They are summarised in Table 2. The locations of all notifications are shown in Figure 20 and Figure 22 in the appendix.

Meteorological situation

As of February 2022, reporting of the meteorological situation by the Meteorological Data Collection Centre (MDCC) will no longer be published in the EFAS bulletin. Instead, the state of recent meteorology will

be conducted by the Copernicus Climate Change Service (C3S) and published as monthly <u>Climate Bulletins</u>.

Hydrological situation

by EFAS Hydrological Data Collection Centre

December 2022

During the month of December, there were 200 stations with exceedances, more than in the previous month. Most of the stations are in Spain (43) and Italy (28) where exceedances relate to water levels. Other countries also stand out with exceedances, for example, Slovenia (25), Croatia (24), and Bosnia and Herzegovina (20).

In addition, there are 11 stations in Germany and Serbia, eight in Ukraine, and seven in Poland. Several countries show exceedances to a lesser extent this month: Hungary (5), Romania (5), Slovakia (3), Ireland (3), Iceland (2), and only one station with values above the threshold in Austria, Lithuania, Belgium, Switzerland, and the Czech Republic.

As with the previous month, the most prominent river basin with values above the threshold is the Danube, with 87 stations spanning across ten different countries with Croatia, Slovenia, and Bosnia-Herzegovina standing out. The Minho river in Spain and the Po river in Italy are the next highlighted basins with the highest number of stations, 20 and 19 respectively.

In terms of the stations that recorded values above the 90% quantile, 106 exceeded this threshold in December. This month, Spain is the country with the most stations in this situation (37). Poland (16) and Norway (15) are the second and third countries with the highest number of stations. The Spanish stations are distributed in 13 different basins, highlighting Jucar and Guadiana Basins. In Ukraine, ten stations show values above this quantile. In Serbia, there are six stations that exceed this cliff and four in Croatia. Other stations exceed the 90% quantile value in up to nine countries.

By river basin, it is the Danube River the one that stands out with 17 stations. The Danube River has exceedances in six countries, with the highest number of stations in Serbia (6). The Vistula river basin shows 15 stations in Poland and one in Ukraine. A total of 33

different river basins have exceedances over the 90% quantile.

Finally, and according to the number of stations recording mean values below the 10% quantile, we can find a decrease of around 40%. In the month of December, there were 62 stations with average values below this cliff, which indicates 10 different countries.

This month, Norway (13) and Spain (14) are the countries with the most stations, followed by Poland with nine stations. France has seven stations with values below this threshold, followed by Germany with five stations. Sweden, Romania, Italy, Austria, and the United Kingdom all have different numbers of stations in this situation.

In terms of river basins, this month the Ebro is the river with the highest number of cases, with 10 stations with an average discharge below the 10% quantile. The Oder river, in Germany and Poland, has seven stations in the same situation. The Danube river, in Austria and Romania, and the Loire river in France have six and four stations under this cliff. In total, as many as thirty-two different basins have values below this limit.

January 2023

During the month of January, there were 257 stations with exceedances, 29% more than in the previous month. The majority of stations are in Spain (44) and in Italy (27) with exceedances related with water levels. Croatia (23), Bosnia and Herzegovina (22) and Sweden (19) also stand out this month.

In addition to these areas, there are also stations in Germany and Ireland (17 each), Serbia (15), Poland (12) and Ukraine (11). Several countries have less than ten exceedances this month: Hungary and Slovakia (9 each), Slovenia (8), Belgium (6), Romania and Norway (4 each), Iceland and Luxembourg (3), Kosovo (2), and only one station with values above the threshold in Austria and Lithuania.

As for the river basins, the main one with values above the threshold is again the Danube, with 91 stations in ten different countries, with Croatia, Bosnia-Herzegovina, and Serbia standing out with more than ten exceedance each. The Minho river in Spain is the next basin with the highest number of stations (26) showing exceedances for water level and discharge.

The Rhine river basin, in Germany and Luxembourg has 18 threshold exceedances.

In terms of the stations that recorded values above the 90% quantile, 219 exceeded this threshold in January, more than twice the previous month. In January, Spain was the country with the most stations in this situation (57), twenty more than in December. Norway (27), and Sweden and Ukraine (21 each), are the countries with the next highest number of stations. The Spanish stations are distributed in 11 different basins, highlighting the Minho river, with more than the half of the exceedance from Spain. In Norway, the Glomma river basin has the highest number of exceedance in the country. In Poland, 13 stations show values above this quantile. In Croatia there are seven stations that exceed this cliff, and six in Hungary. Other stations exceed the 90% quantile value in up to 19 countries.

By river basin, it is the Danube River that stands out with 61 stations. This river has exceedances in nine countries, with the highest number of stations (11) in Romania and Slovenia. The aforementioned Minho river basin is the second with the highest number of stations over this cliff. A total of 64 different river basins have exceedances over the 90% quantile in January.

Finally, and according to the number of stations recording mean values below the 10% quantile, we can find a decrease of about 34%. In the month of January, there were 41 stations with average values below this cliff, which occurred across ten different countries.

This month, Spain is the country with the most stations (18), followed by Poland with five stations. Germany and Austria have four stations with values below this threshold, followed by Norway with three stations. France, Italy, Romania, the United Kingdom, and Bulgaria also have a different number of stations in this situation.

In terms of river basin, this month the Ebro is once again the river with the highest number of cases, with 11 stations with an average discharge below the 10% quantile. The Danube river, in Austria, Romania, Germany and Bulgaria, has seven stations in the same situation. The Llobregat river, in Spain, and the Oder river in Poland have six and five stations under this cliff. In total, as many as 14 different basins have values below this limit.

Verification

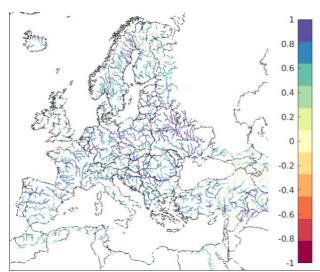


Figure 4: EFAS CRPSS at lead-time 1 day for December-January2022, for catchments >2000km2. The reference score is persistence of using previous day's forecast.

Figure 4 and Figure 5 shows the EFAS headline score, the continuous ranked probability skill score (CRPSS) for lead times 1 and 5 days for December 2022 - January 2023 across the EFAS domain for catchments larger than 2000km². A CRPSS of 1 indicates perfect skill, 0 indicates that the performance is equal to that of the reference, and any value <0 (shown in orangered on the maps) indicates the skill is worse than the reference. The reference score is using yesterday's forecast as today's forecast, which is slightly different than we used previously and very difficult to beat.

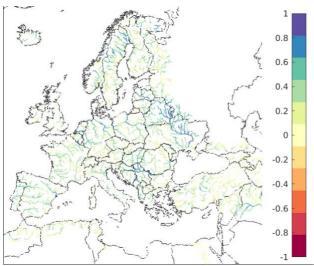


Figure 5. EFAS CRPSS at lead-time 5 days for December-January2022 for catchments >2000km2. The reference score is persistence of using previous day's forecast.

These maps indicate that across much of Europe for forecasts are more skilful than persistence at both lead times. Regions shown in blue are those where EFAS forecasts are more skilful than persistence, with darker shading indicating better performance.

The skill of the forecast was quite good over the period, and similar to the same period last year (Figure 6). An inter-annual variability of the scores is to be expected. The long-term trend is neutral over the first two years since the domain was extended, but there is an indication of increase in skill with EFAS 4.0, especially for the areas with generally lower skill.

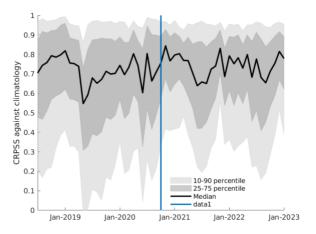


Figure 6. Monthly means of CRPSS the for lead-time 5 days for all the major river points in Europe with ECMWF ENS as forcing. Reference forecast was climatology. The skill is largest during the winter months, when there is less variation in the flow in large parts of Europe. The blue line indicates the release of EFAS 4.0.

ARTICLES

Floods in Portugal and Spain, December 2022 by Richard Davies, <u>floodlist</u>

Two severe weather events in the Iberian Peninsula triggered flooding in Portugal and Spain during December 2022. The capital cities Lisbon and Madrid were both affected.

Flash flooding swept through the streets of Lisbon, capital of Portugal, after heavy rainfall on 07 December 2022.



Figure 7: Floods in Extremadura, 13 December 2022. Photo: Junta de Extremadura

The government of Lisbon district urged people to stay indoors after heavy rainfall triggered flooding in several areas including Alcântara, Campo Grande, Campo Pequeno and Baixa. Buildings including a hospital were damaged, roads cut, and vehicular tunnels closed. Parts of the airport were also flooded. Portugal's Civil Protection authority reported incidents of flooding and damage from severe weather in over 100 locations.

One person died in a flooded basement home in Algés in the municipality of Oeiras. Another person managed to escape the building unharmed.

According to figures from the Portuguese Institute for Sea and Atmosphere (IPMA), the Tapada da Ajuda weather station in Lisbon recorded 82.3 mm of rain in 24 hours on 07 December.

In response to the flood event, the mayor of Lisbon, Carlos Moedas, promised the construction of two drainage tunnels by 2025.

Southern parts of Portugal saw heavy rain and flooding in the previous days. The city of Faro recorded 19.1 mm in 1 hour early on 05 December 2022.

On 05 December Portugal's Civil Protection reported almost 200 occurrences related to the adverse weather situation, mostly in the municipalities of Faro, Loulé, Tavira and Albufeira. Firefighters rescued a person trapped in a vehicle after rising water in the municipality of Tavira.

Parts of neighbouring Andalusia Region in Spain also experienced severe weather at this time.

Heavy rain caused flooding in Algeciras and La Línea in Cadiz Province. Basements of houses, garages and commercial premises were flooded, emergency services said. Some minor flooding also impacted the

town of Estepona in Málaga Province. Wind damage and a possible tornado were also reported in the province, leaving one person injured

Storm Efraín, Portugal and Spain, Mid-December 2022 Storm Efraín brought strong winds and further heavy rain to parts of Portugal and Spain from 12 to 14 December 2022.

The weather station at Tapada da Ajuda in Lisbon recorded 65.6 mm of rain in 3 hours early on 13 December. A red alert was issued and residents once again urged to stay home.

As of early 13 December, emergency teams had responded to over 150 incidents across the Lisbon district, including floods and landslides. The worst affected municipalities are Cascais, Oeiras, Loures, Odivelas, Sintra, Amadora and the city of Lisbon. Several people were rescued or evacuated from flooding in the Campolide neighbourhood. Around 20 roads and tunnels in the city were closed.

Several severe weather-related incidents were also reported in the district of Setúbal. The city of Almada in Setúbal recorded 59.7 mm of rain in 5 hours.

Storm Efraín also affected areas of Spain, with flood damage reported in the regions of Extremadura, Castilla-La Mancha, Madrid, Andalusia and Castile and León where one person died attempting to cross an overflowing stream in a vehicle in Salamanca Province. According to figures from Spain's State Meteorological Agency AEMET, Navalvillar de Ibor in Cáceres Province of Extremadura recorded 120.4 mm of rain in 24 hours on 13 December.

The 112 Emergency Center in Extremadura responded to over 200 incidents related to severe weather, including rescues in La Roca de la Sierra, Valdebótoa and Gévora in the province of Badajoz. Around 20 residents evacuated after homes were flooded in Zarza de Granadilla in Cáceres Province.



Figure 8: Floods destroyed a road in Extremadura, 13 December 2022. Photo: Junta de Extremadura

Emergency services in Castilla-La Mancha Region reported over 120 incidents related to floods and severe weather in the region, including in Toledo, Ciudad Real, Cuenca, Guadalajara, and Albacete. One person was rescued from the roof of a vehicle trapped in flood waters in San Martín de Pusa in Toledo.

Emergency services in the Community of Madrid responded to 156 incidents, mostly in the south of the region. Firefighters reported flooding damaged homes in Majadahonda. Metro train services were interrupted in central parts of the city after tracks and several stations were flooded.

Emergency Services in Andalusia reported over 350 incidents related to the storm as of 14 December. In Seville Province, 1 person was rescued from a car trapped in floods and mud in Alcalá de Guadaíra. Homes were flooded in municipalities such as Écija, Dos Hermanas, Carmona, Alcalá de Guadaíra, La Rinconada, Morón de la Frontera, among others. Flooding was reported in central parts of Grenada and 3 homes were damaged in Cúllar, Grenada Province.

In Jaén, floods in Torredonjimeno severely damaged a house leaving it at risk of collapsing. Two people were rescued from a vehicle trapped in floods in Castellar, Jaén Province, in the early hours of 16 December.

Floods in the Balkans, January 2023 by Richard Davies, <u>floodlist</u>

Flooding affected several Balkan countries from 17 January 2023, in particular Kosovo* and Serbia where hundreds of people were evacuated from their homes.

Serbia

The Republic Hydrometeorological Service of Serbia (RHMZ) issued warnings of heavy rain in the region on 15 January, with as 150 mm of rain expected in some areas of southern Serbia, Bosnia, Kosovo and Montenegro from 17 January.

Numerous rivers broke their banks, including the Grabovica River in Sjenica, the Lim river in Brodarevo and the Toplica river in Kuršumlija and Prokuplje. The Graševačka and Rasina rivers both overflowed in the municipality of Brus.

Serbia's Ministry of Interior said numerous municipalities declared a state of emergency, including Brus, Priboj, Prijepolje, Novi Pazar, Prokuplje and Kursumlija. Serbian Red Cross reported a total of 3,000 people were affected and around 540 displaced.

In Novi Pazar, two people were reported missing and later found dead after being swept away by floods while attempting to protect their homes. Minister of the Interior Bratislav Gasic said six specialist rescue teams were deployed to the area to assist with the search.

Kosovo

In Kosovo, some of the worst of the flooding was reported in town of Mitrovica, where 120 families evacuated their homes. In the town of Skenderaj, local authorities declared a state of emergency after floods swept through streets in the town leaving vehicles. Local media also reported flooding in Vushtrria, Peja, Istog, Klina and Decan. Drinking water supply was interrupted in several areas including the capital Pristina.

Copernicus Emergency Management Service (EMS) Rapid Mapping (link: https://emergency.copernicus.eu/mapping/list-of-components/EMSR646) was activated to estimate the flood impact on agriculture and urban areas for emergency support. Maps were produced for flooded areas of Klina, Veri, Istogu and Skenderaj.

Copernicus Emergency Management Service (EMS) Rapid Mapping Grading Product for Veri, north of Pristina, using optical VHR imagery.

Copernicus Emergency Management Service (EMS) Rapid Mapping Grading Product for Veri, north of Pristina, using optical VHR imagery.

Albania

In Albania, wide areas of agricultural land were underwater in Shkodër County. The Ministry of Defence said the Buna river flooded around 275 hectares of farmland in Muriqan and Oblikë. Landslides in the country have caused traffic problems. Local media also reported flooding blocked roads in parts of the Lezhë district.

Montenegro

Heavy rain caused rivers to overflow in northern Montenegro, where landslides were also reported. Flooding and landslides in areas including Pljevlja, Mojkovac and Rozaje cut road and rail connections.

One person died in rough seas near the coastal town of Herceg Novi.

Bosnia

Rivers were swollen in parts of neighbouring Bosnia, in particular the Lim near Rudo. No serious flooding was reported, however.

*This designation is without prejudice to positions on status and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

Summary of EFAS Notifications in 2022

by Eric Sprokkereef (RWS)

Figure 9 shows the number of formal, informal and flash flood notifications issued each month throughout 2022. With a total number of 1073 EFAS notifications in the year 2022 the number of notifications decreases by about 42% compared to the previous year. The year 2022 has the lowest number of notifications since 2019. Compared to 2021, the EFAS Dissemination Centre (DISS) issued 7% less formal, 4% more informal and 50% less flash flood notifications. December was the most active month with 290 notifications, which is about 27% of the annual sum for 2022. December saw the highest number of all three types of notifications, whereas the months May till October were extremely quiet in terms of flood notifications. In total 136 formal, 175 informal and 762 flash flood notifications were issued in 2022.

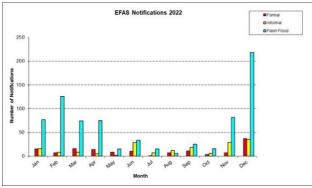


Figure 9: Number of EFAS formal (red), informal (yellow) and flash flood (blue) notifications issued in 2022

Remarkable periods in 2022 were:

- 1. <u>Storm Franklin causing floods in Northern</u> <u>Europe in February</u>
- 2. Southern and Central Spain early May

- 3. France May to early June
- 4. Austria in June
- 5. Northern Italy in August
- 6. Portugal, Spain, Italy and Croatia in September
- 7. Greece in October
- 8. Scotland and the UK in November
- 9. Portugal and Spain in December

For comparison, Figure 10 indicates the total number of EFAS notifications per year for the past 10 years. 2022 was relatively 'normal' for formal and informal notifications. The number of flash flood notifications decreased significantly compared to 2021

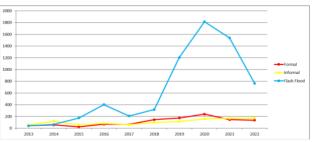


Figure 10: Total number of EFAS formal (red), informal (yellow), and flash flood (blue) notifications issued per year from 2013-2022.

Figure 11 breaks down the number of notifications over the past 5 years into seasons (December-January-February [DJF], March-April-May [MAM], June-July-August [JJA] and September-October-November [SON]).

Excluding the extremely high number of flash flood notifications in January and February 2021, there is little difference between winter, spring, and autumn. The number of notifications in the summer months is significantly lower. If one only looks on formal and informal notifications, then the most active seasons were the spring of 2018, the winter, spring, and summer of 2020.

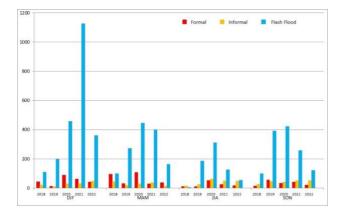


Figure 11: Number of EFAS formal (red), informal (yellow) and flash flood (blue) notifications issued per season over the past 5 years (2018-2022)

Based on the number of notifications issued from 2018-2022, the most formal flood notifications are issued in spring (60 per year on average), the most informal flood notifications in autumn (44 per year on average) and the most flash flood notifications in winter (450 per year on average). The figure for flash flood notifications is distorted due to the adjustment of the issuance criteria from February 2021. The season with the lowest number of formal notifications is the summer (24 per year on average).

In 2022 in total 37 countries received 1070 notifications (136 formal, 171 informal and 763 flash flood notifications). Spain received the highest number of notifications (20 formal, 12 informal and 99 flash flood notifications). The highest number of formal notifications has also been sent to Spain (20), followed by Italy (13). The highest number of informal notifications was sent to Italy (29), followed by Greece (18), and the highest amount of flash flood notifications to Spain (99) and Romania (72).

In 2022 EFAS DISS has continued with the analysis of the results from the floodlist information system (https://floodlist.com/) on an operational basis, using the Global Reporting Tool (GRT). Reported flood situations for large river basin throughout the world were analyzed on a daily basis Verified information was released for publication on the Global Disaster Alerting Coordination System (GDACS; https://www.gdacs.org/) that is used by the UN and the EU to coordinate disaster relief actions. In total 923 flood reports have been verified and released for publication in GDACS by EFAS DISS in 2022. 133 events

occurred in Africa, 267 in Asia, 189 in Europe, 145 in North America, 161 in South America, and 28 in Australia and Oceania. The total amount of 2022 is comparable to 2021.

EFAS trainings for the partners in Georgia and Denmark

by CEMS-Flood Analytics and Dissemination Centre (DISS)

All EFAS partners can request a training on the EFAS service and products to better make use of the available information. During autumn 2022, the CEMS-Flood Analytics and Dissemination Centre (DISS) held two full-day trainings for the EFAS partners in Georgia and Denmark. In total, about 60 participants from the different partners and associated organisations received an introduction to the various products and services accessible in the EFAS information system (EFAS-IS), making this year's autumn season quite efficient in terms of user engagement and support.



Figure 12: Participants from NEA, IHE Delft and CENN together with Assoc. Prof. Ilias Pechlivanidis (CEMS-Flood Analytics and Dissemination Centre) in Georgia.

On 12 October, representatives from DISS and from the Meteorological Data Collection Centre (MDCC) conducted a training for participants from the Georgian EFAS partner, the National Environmental Agency (NEA), who were accompanied by colleagues from IHE Delft visiting NEA as well as participants from the Caucasus Environmental Knowledge Portal (CENN). The training was held in a hybrid format with Assoc. Prof. Ilias Pechlivanidis from DISS being present at NEA and all other lecturers joining online. This setup worked exceptional well thanks to a very professional preparation on the technical side at NEA.

The training focused on:

Introduction to the EFAS service and existing products, including a presentation on the new products and the 6-hourly calibration; Hands-on training on how to use the EFAS-IS and extract hydro-meteorological information for forecasted extreme events; Demonstration on how to provide feedback for received flood notifications.

Moreover, NEA presented the various ongoing nationally and internationally funded projects that aim to develop the hydrological forecast and warning service in Georgia. The introduction sparked a discussion regarding data-sharing between EFAS and NEA in both directions, hydrological and meteorological in-situ data from NEA and gridded weather data from MDCC.

All Georgian participants were very active during the whole day of training and there were many fruitful discussions that will further improve future trainings and the service as a whole.

The second EFAS partner training was held on 22nd November for the recently joined Danish EFAS partner, the Danish Meteorological Institute (DMI). This training differed somewhat from the usual setup because the target audience included the meteorological forecasters at DMI, who received the training in the first place. Nevertheless, the hydrological unit at DMI, which still is in a start-up phase, joined the training as well.

In general, the topics covered followed the same structure as in the training for the Georgian partner; however, the presentation setup was adjusted to be efficiently communicated to the meteorologists (e.g. less in-depth presentation of the hydrological model used, and rather more focus on hands-on instructions how to interpret the products and flood notifications). Furthermore, the group of DMI meteorologists had to be subdivided into two groups (group 1 and 2) following their duty schedule. In order to provide training to all forecasters, the in-person training during the first day was recorded and presented to the group 2 officers on 5th December 2022. On that day, DISS was available to answer questions. Even if technical aspects could be improved for similar situations in the future, this way of conducting the training still proved efficient.

An EFAS partner who wishes to receive a training can get in touch with the CEMS-Flood Analytics and Dissemination Centre, either by using the contact form on the EFAS homepage or by sending an email to info@efas.eu. Note that partners who have not received a training before are being prioritised.

Acknowledgements

The following partner institutes and contributors are gratefully acknowledged for their contribution:

- DG DEFIS Copernicus and DG ECHO for funding the EFAS Project
- All data providers including meteorological data providers, hydrological services & weather forecasting centres
- The EFAS Operational Centres
- Richard Davies, Floodlist.com

Cover image: Floods destroyed a road in Extremadura, 13 December 2022. Photo: Junta de Extremadura

Appendix - figures

As of February 2022, reporting of the meteorological situation by the Meteorological Data Collection Centre (MDCC) will **no longer** be published in the EFAS bulletin. Instead, the state of recent meteorology will be conducted by the Copernicus Climate Change Service (C3S) and published as monthly <u>Climate Bulletins</u>.

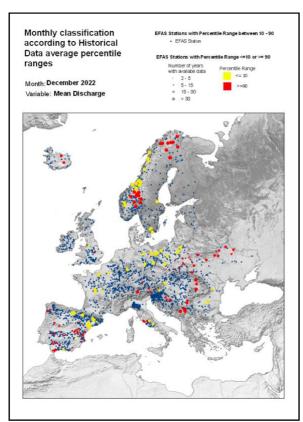


Figure 13: Monthly discharge anomalies December 2022.

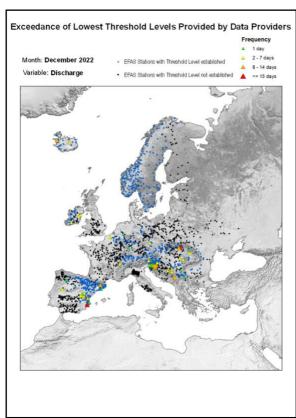


Figure 14: Lowest alert level exceedance for December 2022.

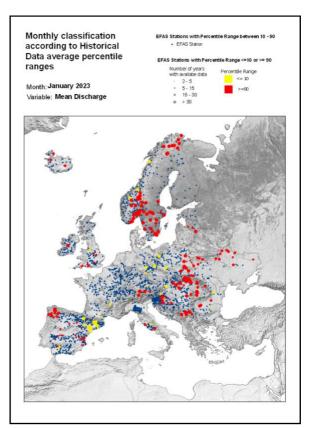


Figure 15: Monthly discharge anomalies January 2023.

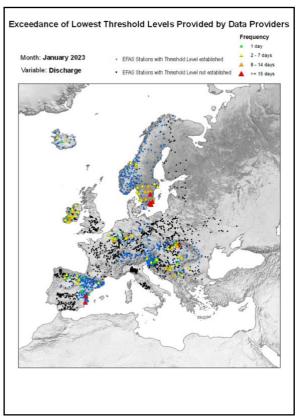
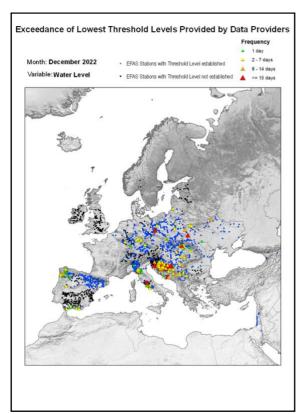


Figure 16: Lowest alert level exceedance for January 2023.



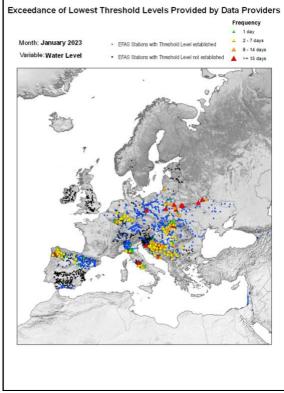


Figure 17: Lowest threshold exceedance for December 2022.

Figure 18: Lowest threshold exceedance for January 2023.

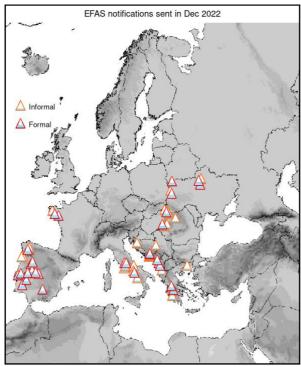


Figure 19: EFAS flood notifications sent for December 2022.

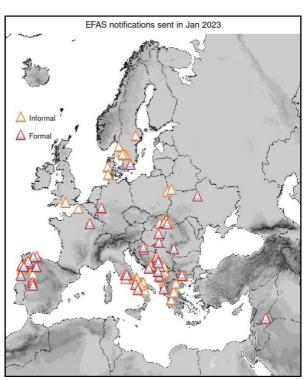


Figure 21: EFAS flood notifications sent for January 2023.

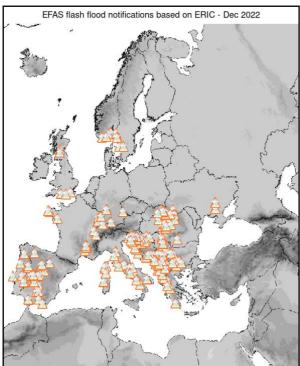


Figure 20: Flash flood notifications sent for December 2022.

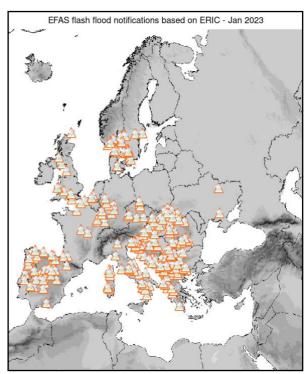


Figure 22: Flash flood notifications sent for January 2023.

Appendix - tables

Table 1: EFAS flood notifications sent in December 2022 – January 2023

Туре	Forecast Date	Issue Date	Lead Time	River	Country
Informal	30/12/2022 00 UTC	30/12/2022	84	Bug	Poland
Informal	29/12/2022 12 UTC	30/12/2022	42	Aulne	France
Formal	28/12/2022 00 UTC	28/12/2022	90	Bug	
Formal	28/12/2022 00 UTC	28/12/2022	96	Mino	Spain
Formal	27/12/2022 12 UTC	28/12/2022	78	Blavet	France
Formal	27/12/2022 12 UTC	28/12/2022	84	Oust	France
Formal	26/12/2022 12 UTC	27/12/2022	96	Pripyat	
Formal	26/12/2022 00 UTC	26/12/2022	0	Tietar	Spain
Informal	26/12/2022 00 UTC	26/12/2022	0	Cavado	Portugal
Informal	23/12/2022 00 UTC	23/12/2022	36	Mino	Spain
Formal	23/12/2022 00 UTC	23/12/2022	54	Tisza	
Informal	18/12/2022 00 UTC	18/12/2022	42	Cavado	Portugal
Informal	17/12/2022 12 UTC	18/12/2022	24	Tisza	
Informal	17/12/2022 00 UTC	17/12/2022	18	Crisul Alb	Romania
Formal	16/12/2022 00 UTC	16/12/2022	30	Tisza	
Informal	16/12/2022 00 UTC	16/12/2022	42	Drina	Serbia
Informal	16/12/2022 00 UTC	16/12/2022	24	Neretva	Croatia
			2.4		Bosnia and
Informal	16/12/2022 00 UTC	16/12/2022	24	Neretva	Herzegovina
Formal	15/12/2022 12 UTC	16/12/2022	54	Koros	Hungary
Informal	15/12/2022 12 UTC	16/12/2022	36	Somesul Mare	Romania
Informal	15/12/2022 12 UTC	16/12/2022	54	Tisza	
Formal	15/12/2022 12 UTC	16/12/2022	84	Blavet	France
Formal	15/12/2022 00 UTC	15/12/2022	24	Guadiana	Portugal
Informal	15/12/2022 00 UTC	15/12/2022	54	Latorica	Slovakia
Informal	15/12/2022 00 UTC	15/12/2022	54	Tisza	Ukraine
Informal	15/12/2022 00 UTC	15/12/2022	42	Crisul Negru	Romania
Informal	14/12/2022 12 UTC	15/12/2022	48	Galeria	Italy
Informal	14/12/2022 12 UTC	15/12/2022	42	Tiber	Italy
Informal	14/12/2022 12 UTC	15/12/2022	48	Galeria	Italy
Informal	14/12/2022 12 UTC	15/12/2022	42	Tiber	Italy
Formal	14/12/2022 12 UTC	15/12/2022	60	Mati	Albania
	= -,, 12 0 . 0	-5,, 2522			Bosnia and
Formal	14/12/2022 00 UTC	14/12/2022	54	Neretva	Herzegovina
Formal	14/12/2022 00 UTC	14/12/2022	18	Bojana/Buna	Albania
Informal	13/12/2022 00 UTC	13/12/2022	18	Sele	Italy
Formal	12/12/2022 12 UTC	13/12/2022	24	Rivilla	Spain
Formal	12/12/2022 12 UTC	13/12/2022	54	Velino	Italy
Formal	12/12/2022 12 0TC 12/12/2022 00 UTC	12/12/2022	36	Guadalquivir	Spain
Formal	12/12/2022 00 UTC	12/12/2022	18	Alberche	Spain
Formal	12/12/2022 00 UTC	12/12/2022	72	Mati	Albania
Formal	12/12/2022 00 UTC	12/12/2022	66	Nera	Italy
Formal	12/12/2022 00 UTC	12/12/2022	0	Volturno	Italy
Formal	12/12/2022 00 01C 11/12/2022 12 UTC	12/12/2022	48		Portugal
				Tajo Drini	
Formal	11/12/2022 12 UTC	12/12/2022	84	Drini	Montenegro

Formal	11/12/2022 00 UTC	11/12/2022	54	Tagus	Portugal
Informal	11/12/2022 00 UTC	11/12/2022	36	Tisza	
Formal	10/12/2022 12 UTC	11/12/2022	18	Duoro	
Informal	10/12/2022 00 UTC	10/12/2022	36	Latorica	Slovakia
Informal	09/12/2022 12 UTC	10/12/2022	30	Somesul Mare	Romania
Formal	09/12/2022 00 UTC	09/12/2022	0	Tajo	Spain
Informal	09/12/2022 00 UTC	09/12/2022	78	Oster	Ukraine
Informal	09/12/2022 00 UTC	09/12/2022	60	Tisza	Hungary
Informal	09/12/2022 00 UTC	09/12/2022	48	Alfeios	Greece
Informal	09/12/2022 00 UTC	09/12/2022	42	Shkumbin	Albania
Informal	09/12/2022 00 UTC	09/12/2022	36	Gacka	Croatia
Formal	08/12/2022 12 UTC	09/12/2022	96	TRUBEZH	Ukraine
Formal	08/12/2022 12 UTC	09/12/2022	90	Oster	Ukraine
Informal	08/12/2022 00 UTC	08/12/2022	48	Sangro	Italy
Formal	07/12/2022 12 UTC	08/12/2022	66	Velino	Italy
Informal	07/12/2022 12 UTC	08/12/2022	84	Coastal zone	Greece
Informal	07/12/2022 12 UTC	08/12/2022	84	Coastal zone	Greece
Formal	07/12/2022 12 UTC	08/12/2022	84	Coastal zone	Greece
Formal	07/12/2022 12 UTC	08/12/2022	48	Duero	Spain
Informal	07/12/2022 00 UTC	07/12/2022	90	Evinos	Greece
Formal	07/12/2022 00 UTC	07/12/2022	84	Acheloos	Greece
Formal	06/12/2022 12 UTC	07/12/2022	42	Alagon	Spain
Formal	06/12/2022 00 UTC	06/12/2022	78	Volturno	Italy
Formal	04/12/2022 12 UTC	05/12/2022	24	Tietar	Spain
Informal	03/12/2022 00 UTC	03/12/2022	0	Sangro	Italy
Informal	03/12/2022 00 UTC	03/12/2022	0	Volturno	Italy
Informal	26/01/2023 00 UTC	26/01/2023	18	OFANTO	Italy
Informal	26/01/2023 00 UTC	26/01/2023	18	OFANTO	Italy
Informal	25/01/2023 00 UTC	25/01/2023	18	Acheloos	Greece
Informal	24/01/2023 00 UTC	24/01/2023	48	Pineios	Greece
Informal	22/01/2023 12 UTC	23/01/2023	30	Loudias	Greece
Formal	21/01/2023 00 UTC	21/01/2023	48	Sava	Croatia
Formal	21/01/2023 00 UTC	21/01/2023	48	Danube	Croatia
Formal	21/01/2023 00 UTC	21/01/2023	60	Tisza	Serbia
Formal	21/01/2023 00 UTC	21/01/2023	54	Tisza	Hungary
Informal	20/01/2023 00 UTC	20/01/2023	18	Coastal zone	Italy
Informal	20/01/2023 00 UTC	20/01/2023	18	Biferno	Italy
Informal	20/01/2023 00 UTC	20/01/2023	18	Sele	Italy
Informal	19/01/2023 12 UTC	20/01/2023	36	Drinos	Albania
Formal	19/01/2023 12 UTC	20/01/2023	36	Drinos	Albania
Informal	19/01/2023 12 UTC	20/01/2023	18	Bug	7
Informal	18/01/2023 12 UTC	19/01/2023	36	Nestos	Greece
Informal	18/01/2023 12 UTC	19/01/2023	24	Laborec	Slovakia
Informal	18/01/2023 00 UTC	18/01/2023	18	Tiber	Italy
Formal	18/01/2023 00 UTC	18/01/2023	48	Nestos	Bulgaria
Informal	18/01/2023 00 UTC	18/01/2023	24	BODVAJ	Hungary
Formal	17/01/2023 00 UTC	17/01/2023	60	Bodrog	Hungary
Formal	17/01/2023 00 UTC	17/01/2023	60	Bodrog	Slovakia
Informal	17/01/2023 00 UTC	17/01/2023	36	Uzh	Slovakia
Informal	17/01/2023 00 UTC	17/01/2023	36	Uzh	Ukraine
Informal	16/01/2023 12 UTC	17/01/2023	48	Muchavec	Belarus
	_0,01,2023 12 010	1.,01,2023	.5	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Delalas

Formal	16/01/2023 12 UTC	17/01/2023	54	Bojana/Buna	Albania
Informal	16/01/2023 12 UTC	17/01/2023	48	White Drin	Kosovo
Formal	16/01/2023 12 UTC	16/01/2023	12	Nalon	Spain
Informal	16/01/2023 00 UTC	16/01/2023	48	Mati	Albania
Informal	16/01/2023 00 UTC	16/01/2023	48	Ibar	Kosovo
			60		Bosnia and
Formal	16/01/2023 00 UTC	16/01/2023	00	Drina	Herzegovina
Formal	16/01/2023 00 UTC	16/01/2023	66	Jiu	Romania
Formal	15/01/2023 12 UTC	16/01/2023	90	Drina	Serbia
Formal	15/01/2023 12 UTC	16/01/2023	72	Lim	Montenegro
Informal	15/01/2023 12 UTC	16/01/2023	66	Drini	
			66		Bosnia and
Informal	15/01/2023 12 UTC	16/01/2023	00	Neretva	Herzegovina
Formal	15/01/2023 12 UTC	16/01/2023	66	Neretva	Croatia
Formal	15/01/2023 12 UTC	16/01/2023	84	Tisza	
Informal	15/01/2023 12 UTC	16/01/2023	78	Tisza	Ukraine
Informal	15/01/2023 12 UTC	16/01/2023	54	Agri	Italy
Formal	15/01/2023 00 UTC	15/01/2023	48	Orbigo	Spain
Formal	14/01/2023 12 UTC	15/01/2023	54	Sil	Spain
Formal	14/01/2023 12 UTC	15/01/2023	36	Morrumsan	Sweden
Formal	14/01/2023 00 UTC	14/01/2023	78	MINHO	Portugal
			111		Bosnia and
Formal	14/01/2023 00 UTC	14/01/2023	114	Lim	Herzegovina
Informal	14/01/2023 00 UTC	14/01/2023	84	Ofanto	Italy
Informal	13/01/2023 12 UTC	14/01/2023	66	Cavado	Portugal
Formal	13/01/2023 12 UTC	14/01/2023	66	Lima	Portugal
Informal	13/01/2023 12 UTC	14/01/2023	96	VolturnoCalore	Italy
Formal	13/01/2023 12 UTC	14/01/2023	120	Lim	Serbia
Formal	13/01/2023 12 UTC	14/01/2023	108	Drini	Montenegro
Formal	13/01/2023 00 UTC	13/01/2023	84	Navia	Spain
Formal	13/01/2023 00 UTC	13/01/2023	60	Saulx	France
Formal	13/01/2023 00 UTC	13/01/2023	0	Sieg	Germany
Informal	13/01/2023 00 UTC	13/01/2023	12	Gota alv	Sweden
Formal	13/01/2023 00 UTC	13/01/2023	108	Nera	Italy
Formal	13/01/2023 00 UTC	13/01/2023	108	Velino	Italy
Formal	12/01/2023 12 UTC	13/01/2023	108	Mino	Spain
Formal	12/01/2023 12 UTC	13/01/2023	114	Volturno	Italy
Informal	12/01/2023 12 UTC	13/01/2023	6	Nissan	Sweden
Formal	12/01/2023 12 UTC	13/01/2023	120	Sele	Italy
Formal	12/01/2023 12 UTC	13/01/2023	120	Sele	, Italy
Informal	12/01/2023 00 UTC	12/01/2023	30	Orekilsalven	Sweden
Informal	11/01/2023 12 UTC	12/01/2023	30	Sieg	Germany
Informal	10/01/2023 00 UTC	10/01/2023	54	Canche	France
Formal	10/01/2023 00 UTC	10/01/2023	72	Saulx	France
Informal	09/01/2023 12 UTC	10/01/2023	18	Norrström	Sweden
Informal	08/01/2023 12 UTC	09/01/2023	30	Ätran	Sweden
Informal	08/01/2023 12 UTC	08/01/2023	24	Duero	Spain
Informal	08/01/2023 00 UTC	08/01/2023	18	Viskan	Sweden
Informal	07/01/2023 12 UTC	08/01/2023	30	Mino	Spain
Informal	07/01/2023 12 UTC	08/01/2023	30	Mino	Spain
Formal	07/01/2023 12 UTC	08/01/2023	48	Sele	Italy
	,,	,,	. •		1

Informal	07/01/2023 00 UTC	07/01/2023	48	Norrström	Sweden
Formal	06/01/2023 12 UTC	07/01/2023	48	Vouga	Portugal
Formal	05/01/2023 12 UTC	06/01/2023	0	Tajo	Spain
Formal	05/01/2023 00 UTC	05/01/2023	72	Tietar	Spain
Formal	05/01/2023 00 UTC	05/01/2023	96	Mino	Spain
Informal	04/01/2023 00 UTC	04/01/2023	0	Tajo	Spain
Formal	04/01/2023 00 UTC	04/01/2023	78	Lima	Portugal
Informal	04/01/2023 00 UTC	04/01/2023	0	TEST	United Kingdom
Informal	03/01/2023 12 UTC	04/01/2023	0	Cavado	Portugal
Informal	02/01/2023 12 UTC	03/01/2023	42	Skjern	Denmark
Informal	02/01/2023 12 UTC	03/01/2023	36	Muchavec	Belarus
Formal	02/01/2023 12 UTC	03/01/2023	114	Dnepr	Ukraine
Informal	02/01/2023 00 UTC	02/01/2023	0	MINHO	Portugal
Formal	02/01/2023 00 UTC	02/01/2023	42	Jordan	Jordan
Informal	02/01/2023 00 UTC	02/01/2023	60	Arna	Denmark

^{*} Lead time [days] to the first forecasted exceedance of the 5-year simulated discharge threshold.

Table 2: EFAS flash flood notifications sent in December 2022 – January 2023

Туре	Forecast Date	Issue Date	Lead Time	Region	Country
Flash Flood	30/12/2022 00 UTC	30/12/2022	24	Norway	Norway
Flash Flood	30/12/2022 00 UTC	30/12/2022	24	Norway	Norway
Flash Flood	29/12/2022 12 UTC	30/12/2022	48	English Channel Coast	France
Flash Flood	29/12/2022 12 UTC	30/12/2022	36	Norway	Norway
Flash Flood	29/12/2022 12 UTC	30/12/2022	36	Norway	Norway
Flash Flood	29/12/2022 00 UTC	29/12/2022	48	Norway	Norway
Flash Flood	29/12/2022 00 UTC	29/12/2022	36	Forth	United Kingdom
Flash Flood	29/12/2022 00 UTC	29/12/2022	36	Scotland	United Kingdom
Flash Flood	29/12/2022 00 UTC	29/12/2022	48	Vilaine	France
Flash Flood	29/12/2022 00 UTC	29/12/2022	42	Danube	Romania
Flash Flood	28/12/2022 12 UTC	29/12/2022	42		
Flash Flood	28/12/2022 12 UTC	29/12/2022	42	Tajo	Spain
Flash Flood	28/12/2022 12 UTC	29/12/2022	48	Danube	Romania
Flash Flood	27/12/2022 12 UTC	28/12/2022	24	Sweden	Sweden
Flash Flood	27/12/2022 12 UTC	28/12/2022	48	Sweden	Sweden
Flash Flood	27/12/2022 12 UTC	28/12/2022	24	Dnepr	Ukraine
Flash Flood	26/12/2022 00 UTC	26/12/2022	48	Dnepr	Ukraine
Flash Flood	25/12/2022 00 UTC	25/12/2022	30		
Flash Flood	24/12/2022 12 UTC	25/12/2022	36	Duero	Spain
			48	Common to Norway-	
Flash Flood	24/12/2022 12 UTC	25/12/2022	40	Sweden	Sweden
Flash Flood	24/12/2022 00 UTC	24/12/2022	48		
Flash Flood	23/12/2022 00 UTC	23/12/2022	24	Rhine	France
Flash Flood	23/12/2022 00 UTC	23/12/2022	18	Rhine	France
Flash Flood	23/12/2022 00 UTC	23/12/2022	24	Rhone	France
Flash Flood	23/12/2022 00 UTC	23/12/2022	30	Danube	Slovakia
Flash Flood	22/12/2022 12 UTC	23/12/2022	36		
Flash Flood	22/12/2022 12 UTC	23/12/2022	48	Danube	Ukraine

Flash Flood	22/12/2022 12 UTC	23/12/2022	48	Danube	Romania
Flash Flood	22/12/2022 12 UTC	23/12/2022	48	Danube	Romania
Flash Flood	22/12/2022 12 UTC	23/12/2022	42		
Flash Flood	22/12/2022 00 UTC	22/12/2022	48		
Flash Flood	22/12/2022 00 UTC	22/12/2022	42	Rhine	France
Flash Flood	22/12/2022 00 UTC	22/12/2022	48		
Flash Flood	21/12/2022 12 UTC	22/12/2022	42	Rhine	Germany
Flash Flood	21/12/2022 12 UTC	22/12/2022	48	Rhine	Germany
	, ,			Common to Norway-	,
Flash Flood	20/12/2022 12 UTC	21/12/2022	48	Sweden	Sweden
Flash Flood	19/12/2022 00 UTC	19/12/2022	42	Tajo	Spain
Flash Flood	19/12/2022 00 UTC	19/12/2022	42	,-	-
Flash Flood	19/12/2022 00 UTC	19/12/2022	36		
Flash Flood	19/12/2022 00 UTC	19/12/2022	30		
Flash Flood	18/12/2022 12 UTC	19/12/2022	48	Mino/Minho	Spain
Flash Flood	18/12/2022 12 UTC	19/12/2022	48	Tajo	Portugal
Flash Flood	18/12/2022 12 UTC	19/12/2022	48	Tajo	Spain
Flash Flood	17/12/2022 12 UTC	18/12/2022	48	Medway	United Kingdom
Flash Flood	17/12/2022 12 UTC	18/12/2022	42	South England	United Kingdom
Flash Flood	17/12/2022 12 01C 17/12/2022 00 UTC	17/12/2022	48	South England	United Kingdom
Flash Flood	17/12/2022 00 UTC	17/12/2022	48	English Channel Coast	France
Flash Flood	16/12/2022 12 UTC	17/12/2022	18	Danube	Romania
Flash Flood	16/12/2022 12 UTC	17/12/2022	24	Danube	Romania
Flash Flood	16/12/2022 12 UTC	17/12/2022	24	Danube	Serbia
Flash Flood	16/12/2022 12 UTC	17/12/2022	24	Crni Drim / Drin	Serbia
Flash Flood	16/12/2022 12 01C 16/12/2022 00 UTC	16/12/2022	18		Cnain
Flash Flood	16/12/2022 00 UTC	16/12/2022	36	Tajo Danube	Spain Romania
Flash Flood			24	Danube	Slovakia
Flash Flood	16/12/2022 00 UTC 16/12/2022 00 UTC	16/12/2022	36		Serbia
Flash Flood	16/12/2022 00 UTC	16/12/2022	30 42	Danube	Serbia
Flash Flood		16/12/2022	42 36	Danube	Serbia
	16/12/2022 00 UTC	16/12/2022		Danube	Serbia
Flash Flood	16/12/2022 00 UTC	16/12/2022	42	Danube	
Flash Flood	16/12/2022 00 UTC	16/12/2022	30	Danube	Serbia
Flash Flood	16/12/2022 00 UTC	16/12/2022	30	Crni Drim / Drin	Caratia
Flash Flood	16/12/2022 00 UTC	16/12/2022	24	Danube	Croatia
e e	45 /42 /2022 42 UTO	46/42/2022	36	5	Bosnia and
Flash Flood	15/12/2022 12 UTC	16/12/2022		Danube	Herzegovina
Flash Flood	15/12/2022 12 UTC	16/12/2022	42	Danube	Romania
Flash Flood	15/12/2022 12 UTC	16/12/2022	42		
Flash Flood	15/12/2022 12 UTC	16/12/2022	42		
Flash Flood	15/12/2022 12 UTC	16/12/2022	48	Danube	Romania
Flash Flood	15/12/2022 12 UTC	16/12/2022	42	Danube .	Hungary
Flash Flood	15/12/2022 12 UTC	16/12/2022	42	Crni Drim / Drin	
Flash Flood	15/12/2022 12 UTC	16/12/2022	36	Adriatic Coast	Croatia
Flash Flood	15/12/2022 12 UTC	16/12/2022	30		
Flash Flood	15/12/2022 00 UTC	15/12/2022	30	Corsica	
Flash Flood	15/12/2022 00 UTC	15/12/2022	36	Guadiana	Spain
Flash Flood	15/12/2022 00 UTC	15/12/2022	36	Danube	Hungary
Flash Flood	15/12/2022 00 UTC	15/12/2022	48	Danube	Ukraine
Flash Flood	15/12/2022 00 UTC	15/12/2022	36	Danube	Hungary
Flash Flood	15/12/2022 00 UTC	15/12/2022	48	Danube	Romania

Flash Flood	15/12/2022 00 UTC	15/12/2022	48	Crni Drim / Drin	
Flash Flood	15/12/2022 00 UTC	15/12/2022	48	Adriatic Coast	Croatia
Flash Flood	15/12/2022 00 UTC	15/12/2022	48	Moraca/Bojana	Montenegro
Flash Flood	15/12/2022 00 UTC	15/12/2022	30	Danube	Croatia
Flash Flood	15/12/2022 00 UTC	15/12/2022	42	Adriatic Coast	Croatia
Flash Flood	15/12/2022 00 UTC	15/12/2022	42		
Flash Flood	15/12/2022 00 UTC	15/12/2022	42	Isonzo / Soca	Slovenia
Flash Flood	15/12/2022 00 UTC	15/12/2022	36	Reno	Italy
Flash Flood	15/12/2022 00 UTC	15/12/2022	42	Corsica	,
Flash Flood	14/12/2022 12 UTC	15/12/2022	48	Danube	Romania
Flash Flood	14/12/2022 12 UTC	15/12/2022	42	Danube	Croatia
Flash Flood	14/12/2022 12 UTC	15/12/2022	42	Danube	Croatia
Flash Flood	14/12/2022 12 UTC	15/12/2022	42	Golo	France
Flash Flood	14/12/2022 12 UTC	15/12/2022	24	Spain (South-East Coast)	Spain
Flash Flood	14/12/2022 12 UTC	15/12/2022	12	Tajo	Spain
Flash Flood	14/12/2022 12 UTC	15/12/2022	30	Rhone	France
Flash Flood	14/12/2022 12 UTC	15/12/2022	30	Rhone	France
Flash Flood	14/12/2022 12 OTC	14/12/2022	48	Rhone	France
Flash Flood	14/12/2022 00 UTC	14/12/2022	48	Corsica	Traffee
Flash Flood	14/12/2022 00 UTC	14/12/2022	48	Corsica	
Flash Flood	14/12/2022 00 UTC	14/12/2022	18	Tajo	Spain
Flash Flood	14/12/2022 00 UTC	14/12/2022	36	Tajo	Spairi
Flasii Flood	14/12/2022 00 010	14/12/2022	30		Bosnia and
Flash Flood	14/12/2022 00 UTC	14/12/2022	24	Adriatic Coast	Herzegovina
Flash Flood	14/12/2022 00 UTC	14/12/2022	36	Danube	Kosovo
Flash Flood	14/12/2022 00 UTC	14/12/2022	24	Danube	KOSOVO
Flash Flood	14/12/2022 00 UTC	14/12/2022	30	Danube	Serbia
Flash Flood	14/12/2022 00 UTC	14/12/2022	30	Danube	Serbia
Flash Flood	14/12/2022 00 UTC	14/12/2022	30	Danube	Serbia
Flash Flood	14/12/2022 00 UTC	14/12/2022	30	Mati	Albania
Flash Flood	14/12/2022 00 UTC	14/12/2022	24	iviati	Albailla
Flash Flood	14/12/2022 00 UTC	14/12/2022	42	Ombrone	Italy
Flash Flood	14/12/2022 00 UTC	14/12/2022	18	Offibroffe	italy
Flash Flood	14/12/2022 00 UTC	14/12/2022	18	Toyoro	Italy
Flash Flood	14/12/2022 00 UTC	14/12/2022	18	Tevere	Italy
	14/12/2022 00 UTC			Pescara	Italy
Flash Flood Flash Flood		14/12/2022	12	Volturno	Italy
	13/12/2022 12 UTC	14/12/2022	24	Consica	
Flash Flood	13/12/2022 00 UTC	13/12/2022	48	Crni Drim / Drin	Montonogra
Flash Flood	13/12/2022 00 UTC	13/12/2022	48	Moraca/Bojana	Montenegro
Flash Flood	13/12/2022 00 UTC	13/12/2022	24	Consi Doine / Doin	
Flash Flood	13/12/2022 00 UTC	13/12/2022	48	Crni Drim / Drin	
Flash Flood	13/12/2022 00 UTC	13/12/2022	48	Crni Drim / Drin	
Flash Flood	13/12/2022 00 UTC	13/12/2022	48	Crni Drim / Drin	Con a to
Flash Flood	13/12/2022 00 UTC	13/12/2022	42	Guadalquivir	Spain
Flash Flood	12/12/2022 12 UTC	13/12/2022	36	Portugal (West Coast)	Portugal
Flash Flood	12/12/2022 12 UTC	13/12/2022	36	Talla	Con a to
Flash Flood	12/12/2022 12 UTC	13/12/2022	30	Тајо	Spain
Flash Flood	12/12/2022 00 UTC	12/12/2022	42		
Flash Flood	12/12/2022 00 UTC	12/12/2022	36		
Flash Flood	12/12/2022 00 UTC	12/12/2022	42	- .	
Flash Flood	12/12/2022 00 UTC	12/12/2022	42	Tajo	Spain

			•	ukr
	• •			Spain
			Tajo	Spain
			Acheloos	Greece
10/12/2022 12 UTC	11/12/2022	24	Mati	Albania
		2/1	Albania/Greece (Adriatic	
10/12/2022 12 UTC		24	Coast)	Albania
10/12/2022 00 UTC	10/12/2022	24	Danube	Hungary
10/12/2022 00 UTC	10/12/2022	30	Danube	Hungary
10/12/2022 00 UTC	10/12/2022	36	Danube	Romania
10/12/2022 00 UTC	10/12/2022	18	Danube	Croatia
10/12/2022 00 UTC	10/12/2022	36		
10/12/2022 00 UTC	10/12/2022	42	Danube	Bulgaria
		26	Albania/Greece (Adriatic	
10/12/2022 00 UTC	10/12/2022	36		Albania
10/12/2022 00 UTC		30		Spain
10/12/2022 00 UTC	10/12/2022	42	Danube	Serbia
			Crni Drim / Drin	
			•	
			Danube	Croatia
	• •			Romania
				Serbia
				Kosovo
				Bulgaria
				Daigaria
			Strimonas(GR)/Struma(RG)	Bulgaria
			Strinonas(Grt)/Straina(BG)	Daigaria
			Guadalquivir	Spain
			Gadaiqaivii	Spani
			Taio	Spain
			-	Macedonia
				Macedonia
				Greece
			` '	Greece
				Greece
• •			, ,	Albania
			·	Albania
				Albania
09/12/2022 12 UTC	10/12/2022	48	Crni Drim / Drin	Dania and
00/42/2022 42 UTC	40/42/2022	30	Danisha	Bosnia and
• •		26		Herzegovina
				Croatia
				Croatia
09/12/2022 12 010	10/12/2022	24	_	Italy
00/40/2022 45 ::==	40/10/5555	36		
			· · · · · · · · · · · · · · · · · · ·	Italy
				Romania
				Romania
09/17/2022 ON HTC	09/12/2022	48	Danube	Croatia
	10/12/2022 00 UTC 10/12/2022 00 UTC 10/12/2022 00 UTC 10/12/2022 00 UTC 10/12/2022 00 UTC 10/12/2022 00 UTC 10/12/2022 00 UTC	11/12/2022 12 UTC	11/12/2022 12 UTC	11/12/2022 12 UTC

Flash Flood	09/12/2022 00 UTC	09/12/2022	42	Danube	Croatia
Flash Flood	09/12/2022 00 UTC	09/12/2022	48	Crni Drim / Drin	
Flash Flood	09/12/2022 00 UTC	09/12/2022	48	Vardar(YG)/Axios(GR)	Macedonia
Flash Flood	09/12/2022 00 UTC	09/12/2022	48		
Flash Flood	09/12/2022 00 UTC	09/12/2022	48	Crni Drim / Drin	
Flash Flood	09/12/2022 00 UTC	09/12/2022	48	Arachthos	Greece
Flash Flood	09/12/2022 00 UTC	09/12/2022	36	Corsica	
Flash Flood	09/12/2022 00 UTC	09/12/2022	42	Liri	Italy
Flash Flood	08/12/2022 12 UTC	09/12/2022	30	Guadalquivir	Spain
			42		Bosnia and
Flash Flood	08/12/2022 12 UTC	09/12/2022	42	Adriatic Coast	Herzegovina
Flash Flood	08/12/2022 12 UTC	09/12/2022	48	Adriatic Coast	Croatia
Flash Flood	08/12/2022 12 UTC	09/12/2022	48	Danube	Croatia
Flash Flood	08/12/2022 12 UTC	09/12/2022	48	Danube	Romania
Flash Flood	08/12/2022 12 UTC	09/12/2022	42	Danube	Romania
Flash Flood	08/12/2022 12 UTC	09/12/2022	42	Danube	Ukraine
			48	Italy (Ligurian	
Flash Flood	08/12/2022 12 UTC	09/12/2022	40	Sea/Tyrrhenian Sea)	Italy
Flash Flood	08/12/2022 00 UTC	08/12/2022	42	Spain (South-East Coast)	Spain
Flash Flood	08/12/2022 00 UTC	08/12/2022	60	Corsica	
Flash Flood	08/12/2022 00 UTC	08/12/2022	48	Adriatic Coast	Croatia
Flash Flood	08/12/2022 00 UTC	08/12/2022	48	Danube	Croatia
Flash Flood	08/12/2022 00 UTC	08/12/2022	48	Danube	Romania
Flash Flood	08/12/2022 00 UTC	08/12/2022	48		
Flash Flood	08/12/2022 00 UTC	08/12/2022	48	Danube	Ukraine
Flash Flood	08/12/2022 00 UTC	08/12/2022	48	Danube	Slovakia
Flash Flood	08/12/2022 00 UTC	08/12/2022	48	Danube	Hungary
Flash Flood	08/12/2022 00 UTC	08/12/2022	48	Moraca/Bojana	Montenegro
Flash Flood	08/12/2022 00 UTC	08/12/2022	48	Adriatic Coast	Croatia
Flash Flood	08/12/2022 00 UTC	08/12/2022	42	Danube	Slovenia
Flash Flood	08/12/2022 00 UTC	08/12/2022	48		
Flash Flood	08/12/2022 00 UTC	08/12/2022	42		
Flash Flood	08/12/2022 00 UTC	08/12/2022	42	Venetian Coast	Slovenia
Flash Flood	08/12/2022 00 UTC	08/12/2022	42	Reno	Italy
Flash Flood	08/12/2022 00 UTC	08/12/2022	42	Arno	Italy
Flash Flood	07/12/2022 12 UTC	08/12/2022	30	Crni Drim / Drin	
Flash Flood	07/12/2022 00 UTC	07/12/2022	42	Dnepr	Ukraine
Flash Flood	07/12/2022 00 UTC	07/12/2022	48	Dnepr	Ukraine
Flash Flood	06/12/2022 12 UTC	07/12/2022	48	Tajo	Spain
Flash Flood	05/12/2022 00 UTC	05/12/2022	42	Danube	Romania
Flash Flood	03/12/2022 12 UTC	04/12/2022	48	Tajo	Spain
Flash Flood	03/12/2022 12 UTC	04/12/2022	30	•	•
				Italy (Adriatic Sea/Ionian	
Flash Flood	03/12/2022 12 UTC	04/12/2022	24	Sea)	Italy
		, ,		Italy (Ligurian	,
Flash Flood	03/12/2022 00 UTC	03/12/2022	30	Sea/Tyrrhenian Sea)	Italy
Flash Flood	03/12/2022 00 UTC	03/12/2022	48	Moraca/Bojana	Montenegro
Flash Flood	29/01/2023 12 UTC	30/01/2023	12	Sweden	Sweden
Flash Flood	29/01/2023 00 UTC	29/01/2023	24	Sweden	Sweden
Flash Flood	28/01/2023 00 UTC	28/01/2023	48	Sweden	Sweden
1 10311 1 1000	20,01,2023 00 010	20,01,2023	70	SWEGET	JWCGCII

			42	Italy (Adriatic Sea/Ionian	
Flash Flood	25/01/2023 12 UTC	26/01/2023	42	Sea)	Italy
Flash Flood	25/01/2023 12 UTC	26/01/2023	42	Greece (South)	Greece
Flash Flood	25/01/2023 00 UTC	25/01/2023	36	Greece (North)	Greece
Flash Flood	23/01/2023 12 UTC	24/01/2023	24	Danube	Kosovo
Flash Flood	23/01/2023 00 UTC	23/01/2023	30		
			2.4	Albania/Greece (Adriatic	
Flash Flood	23/01/2023 00 UTC	23/01/2023	24	Coast)	Macedonia
Flash Flood	23/01/2023 00 UTC	23/01/2023	30	Danube	Croatia
Flash Flood	23/01/2023 00 UTC	23/01/2023	30	Danube	Croatia
Flash Flood	23/01/2023 00 UTC	23/01/2023	24		
Flash Flood	23/01/2023 00 UTC	23/01/2023	12	Danube	Croatia
Flash Flood	22/01/2023 12 UTC	23/01/2023	42		
Flash Flood	22/01/2023 12 UTC	23/01/2023	42	Crni Drim / Drin	
Flash Flood	22/01/2023 12 UTC	23/01/2023	42	•	
Flash Flood	22/01/2023 12 UTC	23/01/2023	36	Danube	Croatia
Flash Flood	22/01/2023 12 UTC	23/01/2023	48	Danube	Slovenia
	,,	,,		Italy (Adriatic Sea/Ionian	
Flash Flood	22/01/2023 12 UTC	23/01/2023	18	Sea)	Italy
Flash Flood	22/01/2023 00 UTC	22/01/2023	48	Seman	ALBANIA
Flash Flood	22/01/2023 00 UTC	22/01/2023	48	Kalamas	Greece
Flash Flood	22/01/2023 00 UTC	22/01/2023	48	Vardar(YG)/Axios(GR)	Greece
Flash Flood	22/01/2023 00 UTC	22/01/2023	48	Vardar(YG)/Axios(GR)	Macedonia
Flash Flood	22/01/2023 00 UTC	22/01/2023	12	Danube	Romania
Flash Flood	22/01/2023 00 UTC	22/01/2023	30	Moraca/Bojana	Montenegro
Flash Flood	22/01/2023 00 UTC	22/01/2023	48	Danube	Kosovo
Flash Flood	22/01/2023 00 UTC	22/01/2023	48	Danabe	1105070
	,,	,,			
Flash Flood	22/01/2023 00 UTC	22/01/2023	48	Danube	Serbia
Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 00 UTC	22/01/2023 22/01/2023	48 48	Danube Danube	Serbia Serbia
Flash Flood	22/01/2023 00 UTC	22/01/2023	48	Danube	Serbia
Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 00 UTC	22/01/2023 22/01/2023	48 36		
Flash Flood Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC	22/01/2023 22/01/2023 22/01/2023	48 36 48	Danube Danube	Serbia Croatia
Flash Flood Flash Flood Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023	48 36 48 48	Danube	Serbia
Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023	48 36 48 48 48	Danube Danube Danube	Serbia Croatia Croatia
Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023	48 36 48 48 48	Danube Danube	Serbia Croatia
Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC 22/01/2023 00 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023	48 36 48 48 48 48	Danube Danube Danube	Serbia Croatia Croatia Slovenia
Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 12 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023	48 36 48 48 48 48 48	Danube Danube Danube Danube Danube	Serbia Croatia Croatia Slovenia Croatia
Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 12 UTC 21/01/2023 12 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023	48 36 48 48 48 48 48 48	Danube Danube Danube	Serbia Croatia Croatia Slovenia
Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023	48 36 48 48 48 48 48 48	Danube Danube Danube Danube Danube Danube	Serbia Croatia Croatia Slovenia Croatia Serbia
Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023	48 36 48 48 48 48 48 48 48 30	Danube Danube Danube Danube Danube Danube Danube Danube	Serbia Croatia Croatia Slovenia Croatia Serbia Romania
Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023	48 36 48 48 48 48 48 48 48 30 36	Danube Danube Danube Danube Danube Danube Danube Danube Danube	Serbia Croatia Croatia Slovenia Croatia Serbia
Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 10 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 21/01/2023	48 36 48 48 48 48 48 48 48 30	Danube Danube Danube Danube Danube Danube Danube Danube Italy (Ligurian	Serbia Croatia Croatia Slovenia Croatia Serbia Romania Romania
Flash Flood Flash Flood	22/01/2023 00 UTC 22/01/2023 12 UTC 21/01/2023 10 UTC 21/01/2023 00 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 21/01/2023	48 48 48 48 48 48 48 48 30 36	Danube Danube Danube Danube Danube Danube Danube Lanube Danube Italy (Ligurian Sea/Tyrrhenian Sea)	Serbia Croatia Croatia Slovenia Croatia Serbia Romania Romania
Flash Flood	22/01/2023 00 UTC 21/01/2023 12 UTC 21/01/2023 00 UTC 21/01/2023 00 UTC 21/01/2023 12 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 21/01/2023 21/01/2023 21/01/2023	48 36 48 48 48 48 48 48 30 36 24	Danube Danube Danube Danube Danube Danube Danube Laly (Ligurian Sea/Tyrrhenian Sea) Biferno	Serbia Croatia Slovenia Croatia Serbia Romania Romania Italy Italy
Flash Flood	22/01/2023 00 UTC 22/01/2023 12 UTC 21/01/2023 00 UTC 21/01/2023 00 UTC 20/01/2023 12 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 21/01/2023 21/01/2023 21/01/2023 21/01/2023 20/01/2023	48 36 48 48 48 48 48 48 48 30 36 24 12 18	Danube Danube Danube Danube Danube Danube Danube Lanube Danube Italy (Ligurian Sea/Tyrrhenian Sea) Biferno Danube	Serbia Croatia Croatia Slovenia Croatia Serbia Romania Romania Italy Italy Hungary
Flash Flood	22/01/2023 00 UTC 22/01/2023 12 UTC 21/01/2023 00 UTC 20/01/2023 00 UTC 20/01/2023 00 UTC 20/01/2023 00 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 21/01/2023 21/01/2023 21/01/2023 20/01/2023 20/01/2023	48 36 48 48 48 48 48 48 48 30 36 24 12 18 24	Danube Danube Danube Danube Danube Danube Danube Lanube Danube Italy (Ligurian Sea/Tyrrhenian Sea) Biferno Danube Danube	Serbia Croatia Croatia Slovenia Croatia Serbia Romania Romania Italy Italy Hungary Hungary
Flash Flood	22/01/2023 00 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 00 UTC 21/01/2023 00 UTC 20/01/2023 00 UTC 20/01/2023 00 UTC 20/01/2023 00 UTC 20/01/2023 00 UTC 19/01/2023 12 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 21/01/2023 21/01/2023 21/01/2023 20/01/2023 20/01/2023 20/01/2023 20/01/2023	48 36 48 48 48 48 48 48 30 36 24 12 18 24 48	Danube Danube Danube Danube Danube Danube Danube Laly (Ligurian Sea/Tyrrhenian Sea) Biferno Danube Danube Danube Moraca/Bojana	Serbia Croatia Croatia Slovenia Croatia Serbia Romania Romania Italy Italy Hungary Hungary Montenegro
Flash Flood	22/01/2023 00 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 00 UTC 21/01/2023 00 UTC 20/01/2023 12 UTC 20/01/2023 12 UTC 20/01/2023 12 UTC 20/01/2023 12 UTC 19/01/2023 12 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 21/01/2023 21/01/2023 20/01/2023 20/01/2023 20/01/2023 20/01/2023 20/01/2023 20/01/2023	48 36 48 48 48 48 48 48 30 36 24 12 18 24 48 30	Danube Danube Danube Danube Danube Danube Danube Danube Italy (Ligurian Sea/Tyrrhenian Sea) Biferno Danube Danube Danube Danube Danube Danube	Serbia Croatia Croatia Slovenia Croatia Serbia Romania Romania Italy Italy Hungary Hungary Hungary Montenegro Romania
Flash Flood	22/01/2023 00 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 00 UTC 21/01/2023 00 UTC 20/01/2023 12 UTC 20/01/2023 12 UTC 20/01/2023 00 UTC 19/01/2023 12 UTC 19/01/2023 12 UTC 19/01/2023 12 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 21/01/2023 21/01/2023 21/01/2023 20/01/2023 20/01/2023 20/01/2023 20/01/2023 20/01/2023 20/01/2023 20/01/2023	48 36 48 48 48 48 48 48 48 30 36 24 12 18 24 48 30 30 30 30 30 30 30 30 30 30	Danube Danube Danube Danube Danube Danube Danube Danube Italy (Ligurian Sea/Tyrrhenian Sea) Biferno Danube Danube Moraca/Bojana Danube Danube Danube	Serbia Croatia Croatia Slovenia Croatia Serbia Romania Romania Italy Italy Hungary Hungary Hungary Montenegro Romania Romania
Flash Flood	22/01/2023 00 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 12 UTC 21/01/2023 00 UTC 21/01/2023 00 UTC 20/01/2023 12 UTC 20/01/2023 12 UTC 20/01/2023 12 UTC 20/01/2023 12 UTC 19/01/2023 12 UTC	22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 22/01/2023 21/01/2023 21/01/2023 20/01/2023 20/01/2023 20/01/2023 20/01/2023 20/01/2023 20/01/2023	48 36 48 48 48 48 48 48 30 36 24 12 18 24 48 30	Danube Danube Danube Danube Danube Danube Danube Danube Italy (Ligurian Sea/Tyrrhenian Sea) Biferno Danube Danube Danube Danube Danube Danube	Serbia Croatia Croatia Slovenia Croatia Serbia Romania Romania Italy Italy Hungary Hungary Hungary Montenegro Romania

			36	Italy (Ligurian	
Flash Flood	19/01/2023 12 UTC	20/01/2023		Sea/Tyrrhenian Sea)	Italy
e e	40/04/2022 42 UTC	20/04/2022	48	Italy (Ligurian	
Flash Flood	19/01/2023 12 UTC	20/01/2023	40	Sea/Tyrrhenian Sea)	Italy
Flash Flood	19/01/2023 12 UTC	20/01/2023	18	Corsica	
Flash Flood	18/01/2023 12 UTC	19/01/2023	48	Mesta(BG)/Nestos(GR)	Greece
Flash Flood	18/01/2023 12 UTC	19/01/2023	48	Mesta(BG)/Nestos(GR)	Bulgaria
Flash Flood	18/01/2023 12 UTC	19/01/2023	36	Acheloos	Greece
Flash Flood	18/01/2023 12 UTC	19/01/2023	42	Danube	Bulgaria
Flash Flood	18/01/2023 12 UTC	19/01/2023	36	Seman	Albania
Flash Flood	18/01/2023 12 UTC	19/01/2023	48	Vardar(YG)/Axios(GR)	Macedonia
Flash Flood	18/01/2023 12 UTC	19/01/2023	24	Danube	Serbia
Flash Flood	18/01/2023 12 UTC	19/01/2023	42	Danube	Serbia
Flash Flood	18/01/2023 12 UTC	19/01/2023	30		
Flash Flood	18/01/2023 12 UTC	19/01/2023	24	Danube	Romania
Flash Flood	18/01/2023 12 UTC	19/01/2023	24	Danube	Hungary
Flash Flood	18/01/2023 12 UTC	19/01/2023	24	Danube	Slovakia
Flash Flood	18/01/2023 00 UTC	18/01/2023	48	Nervion	Spain
Flash Flood	18/01/2023 00 UTC	18/01/2023	12	Danube	Ukraine
Flash Flood	18/01/2023 00 UTC	18/01/2023	12	Danube	Slovakia
			2.4	Italy (Ligurian	
Flash Flood	18/01/2023 00 UTC	18/01/2023	24	Sea/Tyrrhenian Sea)	Italy
			4.0	Italy (Ligurian	,
Flash Flood	18/01/2023 00 UTC	18/01/2023	18	Sea/Tyrrhenian Sea)	Italy
Flash Flood	18/01/2023 00 UTC	18/01/2023	48	Danube	Bulgaria
Flash Flood	18/01/2023 00 UTC	18/01/2023	30	Danube	Kosovo
Flash Flood	18/01/2023 00 UTC	18/01/2023	36	Crni Drim / Drin	
Flash Flood	18/01/2023 00 UTC	18/01/2023	24	Crni Drim / Drin	
Flash Flood	18/01/2023 00 UTC	18/01/2023	48	J 7 2	
Flash Flood	18/01/2023 00 UTC	18/01/2023	42	Danube	Romania
Flash Flood	18/01/2023 00 UTC	18/01/2023	30	Danube	Romania
Flash Flood	18/01/2023 00 UTC	18/01/2023	30	Danube	Hungary
. 10011 1 1000	10,01,2020 00 010	10,01,2020	50	Danabe	Bosnia and
Flash Flood	18/01/2023 00 UTC	18/01/2023	24	Adriatic Coast	Herzegovina
Flash Flood	17/01/2023 12 UTC	18/01/2023	36	Adriatic Coust	Ticizegoviila
Flash Flood	17/01/2023 12 UTC	18/01/2023	24	Danube	Hungary
Flash Flood	17/01/2023 12 UTC	18/01/2023	24	Adriatic Coast	Croatia
Flash Flood	17/01/2023 12 UTC	18/01/2023	48	Danube	Serbia
11831111000	17/01/2023 12 010	10/01/2023	40	Albania/Greece (Adriatic	Serbia
Flash Flood	17/01/2023 12 UTC	18/01/2023	48	Coast)	Albania
Flash Flood	17/01/2023 12 01C 17/01/2023 00 UTC	17/01/2023	42	Wisla	Poland
			42		
Flash Flood	17/01/2023 00 UTC	17/01/2023	12	Norway	Norway
Flash Flood	17/01/2023 00 UTC	17/01/2023	30	Danube	Romania
Flash Flood	17/01/2023 00 UTC	17/01/2023	24	5 .	Cl l:
Flash Flood	17/01/2023 00 UTC	17/01/2023	30	Danube	Slovakia
Flash Flood	17/01/2023 00 UTC	17/01/2023	42	- 1	
Flash Flood	17/01/2023 00 UTC	17/01/2023	18	Danube	Croatia
Flash Flood	17/01/2023 00 UTC	17/01/2023	24	Adriatic Coast	Croatia
Flash Flood	17/01/2023 00 UTC	17/01/2023	30	Mati	cal
			30	Italy (Adriatic Sea/Ionian	
Flash Flood	17/01/2023 00 UTC	17/01/2023		Sea)	Italy

Flack Flack	16/01/2023 12 UTC	17/01/2022	42	Donuba	Damania
Flash Flood	•	17/01/2023		Danube	Romania
Flash Flood	16/01/2023 12 UTC	17/01/2023	36	Danube	Hungary
Flash Flood	16/01/2023 12 UTC	17/01/2023	48	Danube	Romania
Flash Flood	16/01/2023 12 UTC	17/01/2023	48		
Flash Flood	16/01/2023 12 UTC	17/01/2023	42	Aoos / Vjose	Albania
Flash Flood	16/01/2023 12 UTC	17/01/2023	36	Arachthos	Greece
Flash Flood	16/01/2023 12 UTC	17/01/2023	48	Vardar(YG)/Axios(GR)	Macedonia
Flash Flood	16/01/2023 12 UTC	17/01/2023	48	Strimonas(GR)/Struma(BG)	Bulgaria
Flash Flood	16/01/2023 12 UTC	17/01/2023	48	Danube	Serbia
Flash Flood	16/01/2023 12 UTC	17/01/2023	48	Danube	Croatia
Flash Flood	16/01/2023 12 UTC	16/01/2023	24	Duero	Spain
Flash Flood	16/01/2023 12 UTC	16/01/2023	18		•
Flash Flood	16/01/2023 00 UTC	16/01/2023	42	Guadalquivir	Spain
Flash Flood	16/01/2023 00 UTC	16/01/2023	30	Tajo	Spain
Flash Flood	16/01/2023 00 UTC	16/01/2023	30	Adour	France
Flash Flood	16/01/2023 00 UTC	16/01/2023	42	Pescara	Italy
Flash Flood	16/01/2023 00 UTC	16/01/2023	48	Mati	Albania
11031111000	10/01/2023 00 010	10,01,2023		Albania/Greece (Adriatic	Albama
Flash Flood	16/01/2023 00 UTC	16/01/2023	48	Coast)	Albania
Flash Flood	16/01/2023 00 UTC	16/01/2023	48	Crni Drim / Drin	Albailla
11831111000	10/01/2023 00 010	10/01/2023	40	emi biliny bilin	Bosnia and
Flash Flood	16/01/2023 00 UTC	16/01/2023	48	Adriatic Coast	Herzegovina
Flash Flood	16/01/2023 00 UTC	16/01/2023	48	Crni Drim / Drin	Herzegovina
				-	Carbia
Flash Flood	16/01/2023 00 UTC	16/01/2023	48	Danube	Serbia
Flash Flood	16/01/2023 00 UTC	16/01/2023	36	0	6
Flash Flood	16/01/2023 00 UTC	16/01/2023	48	Cetina	Croatia
el 1 el 1	46/04/2022 00 UTO	45/04/2022	42		Bosnia and
Flash Flood	16/01/2023 00 UTC	16/01/2023		Adriatic Coast	Herzegovina
			42	Italy (Adriatic Sea/Ionian	
Flash Flood	16/01/2023 00 UTC	16/01/2023		Sea)	Italy
Flash Flood	16/01/2023 00 UTC	16/01/2023	36	Albegna	Italy
Flash Flood	15/01/2023 12 UTC	16/01/2023	42	Duero	Spain
Flash Flood	15/01/2023 12 UTC	16/01/2023	42	Tajo	Spain
Flash Flood	15/01/2023 12 UTC	16/01/2023	42	Tajo	Spain
Flash Flood	15/01/2023 12 UTC	16/01/2023	42	Duero	Spain
Flash Flood	15/01/2023 12 UTC	16/01/2023	48		
Flash Flood	15/01/2023 12 UTC	16/01/2023	42		
Flash Flood	15/01/2023 12 UTC	16/01/2023	48	Corsica	
Flash Flood	15/01/2023 12 UTC	16/01/2023	48	Corsica	
Flash Flood	15/01/2023 12 UTC	16/01/2023	42	Danube	Slovakia
Flash Flood	15/01/2023 12 UTC	16/01/2023	48	Danube	Slovakia
Flash Flood	15/01/2023 12 UTC	16/01/2023	48	Danube	Hungary
Flash Flood	15/01/2023 12 UTC	16/01/2023	48	Danube	Ukraine
Flash Flood	15/01/2023 12 UTC	16/01/2023	48	Danube	Romania
Flash Flood	15/01/2023 12 UTC	16/01/2023	48	Crni Drim / Drin	
Flash Flood	15/01/2023 12 UTC	16/01/2023	48	Crni Drim / Drin	
Flash Flood	15/01/2023 12 UTC	16/01/2023	24	Danube	Croatia
Flash Flood	15/01/2023 12 UTC	16/01/2023	48	Tevere	Italy
Flash Flood	15/01/2023 12 UTC	16/01/2023	48 48	Tevere	Italy
Flash Flood	15/01/2023 12 UTC				•
		16/01/2023	48 40	Coastal zone	Italy
Flash Flood	15/01/2023 12 UTC	16/01/2023	48	Corsica	

Flash Flood	15/01/2023 00 UTC	15/01/2023	48	Adour	France
Flash Flood	15/01/2023 00 UTC	15/01/2023	36	Loire	France
Flash Flood	15/01/2023 00 UTC	15/01/2023	48	Adour	France
Flash Flood	15/01/2023 00 UTC	15/01/2023	48		
Flash Flood	15/01/2023 00 UTC	15/01/2023	48	Pivierda	Spain
Flash Flood	15/01/2023 00 UTC	15/01/2023	48	Mino/Minho	Spain
Flash Flood	15/01/2023 00 UTC	15/01/2023	48	Mino/Minho	Spain
Flash Flood	15/01/2023 00 UTC	15/01/2023	48	•	•
Flash Flood	15/01/2023 00 UTC	15/01/2023	42	Crni Drim / Drin	
Flash Flood	15/01/2023 00 UTC	15/01/2023	36	Moraca/Bojana	Montenegro
Flash Flood	15/01/2023 00 UTC	15/01/2023	30	Venetian Coast	Slovenia
Flash Flood	15/01/2023 00 UTC	15/01/2023	12		
Flash Flood	15/01/2023 00 UTC	15/01/2023	18		
Flash Flood	15/01/2023 00 UTC	15/01/2023	6	Sweden	Sweden
Flash Flood	15/01/2023 00 UTC	15/01/2023	6	Sweden	Sweden
		0, 0, _0_0		Common to Norway-	
Flash Flood	15/01/2023 00 UTC	15/01/2023	24	Sweden	Sweden
11031111000	13/01/2023 00 010	13,01,2023		Common to Norway-	Sweden
Flash Flood	14/01/2023 12 UTC	15/01/2023	24	Sweden	Sweden
Flash Flood	14/01/2023 12 UTC	15/01/2023	30	Danube	Czech Republic
Flash Flood	14/01/2023 12 UTC	15/01/2023	48	Ason	Spain
Flash Flood	14/01/2023 12 OTC	14/01/2023	42	A3011	Spain
Flash Flood	14/01/2023 00 UTC	14/01/2023	30	Meuse / Maas	France
Flash Flood	14/01/2023 00 UTC	14/01/2023	42	Wedse / Waas	Trance
Flash Flood	14/01/2023 00 UTC	14/01/2023	30	Oder	Poland
Flash Flood	13/01/2023 00 OTC 13/01/2023 12 UTC	14/01/2023	24	Odei	roialiu
Flash Flood	13/01/2023 12 UTC 13/01/2023 12 UTC	14/01/2023	24	Wales (except Severn)	United Kingdom
Flash Flood	13/01/2023 12 UTC	14/01/2023	48	Rhine	France
Flash Flood	13/01/2023 12 UTC 13/01/2023 12 UTC	14/01/2023	40 42	Meuse / Maas	France
riasii rioou	13/01/2023 12 010	14/01/2023	42	Coastal Catchment North	ridiice
Flash Flood	13/01/2023 12 UTC	14/01/2023	42	Sea	United Kingdom
Flash Flood	13/01/2023 12 UTC 13/01/2023 12 UTC	14/01/2023	42	Sea	Officea Kingaoffi
Flash Flood					
	13/01/2023 00 UTC 13/01/2023 00 UTC	13/01/2023	48	Dhino	Гиомоо
Flash Flood		13/01/2023	48	Rhine	France
Flash Flood	13/01/2023 00 UTC	13/01/2023	48	Rhine	Germany
Flash Flood	13/01/2023 00 UTC	13/01/2023	48	Name	NI
Flash Flood	13/01/2023 00 UTC	13/01/2023	42	Norway	Norway
Electrical	42/04/2022 00 LITC	42/04/2022	48	Common to Norway-	Considera
Flash Flood	13/01/2023 00 UTC	13/01/2023	40	Sweden	Sweden
Flash Flood	13/01/2023 00 UTC	13/01/2023	48	51.	
Flash Flood	13/01/2023 00 UTC	13/01/2023	48	Rhine	Germany
Flash Flood	12/01/2023 12 UTC	13/01/2023	48	South England	United Kingdom
Flash Flood	12/01/2023 00 UTC	12/01/2023	48	Norway	Norway
Flash Flood	12/01/2023 00 UTC	12/01/2023	30	Weser	Germany
Flash Flood	12/01/2023 00 UTC	12/01/2023	24	English Channel Coast	Belgium
	40/04/0005 55 ::==	10/01/2222	24	Rhine/Rhein(DL) (except	
Flash Flood	12/01/2023 00 UTC	12/01/2023		Mosel)	Netherlands
Flash Flood	11/01/2023 12 UTC	12/01/2023	42		_
Flash Flood	11/01/2023 12 UTC	12/01/2023	30	IJzer	France
Flash Flood	11/01/2023 00 UTC	11/01/2023	48	Rhine	Germany
Flash Flood	11/01/2023 00 UTC	11/01/2023	48		

Flash Flood	11/01/2023 00 UTC	11/01/2023	48	Rhine	Germany
Flash Flood	11/01/2023 00 UTC	11/01/2023	42	English Channel Coast	Netherlands
Flash Flood	10/01/2023 12 UTC	11/01/2023	48	English Channel Coast	France
Flash Flood	10/01/2023 12 UTC	11/01/2023	48	Thames	United Kingdom
Flash Flood	10/01/2023 12 UTC	11/01/2023	24	Danube	Romania
Flash Flood	10/01/2023 00 UTC	10/01/2023	12	Scotland	United Kingdom
Flash Flood	10/01/2023 00 UTC	10/01/2023	30		· ·
Flash Flood	10/01/2023 00 UTC	10/01/2023	36	Danube	Serbia
Flash Flood	10/01/2023 00 UTC	10/01/2023	36	Danube	Serbia
Flash Flood	10/01/2023 00 UTC	10/01/2023	18	Danube	Bulgaria
Flash Flood	10/01/2023 00 UTC	10/01/2023	36	Danube	Romania
Flash Flood	10/01/2023 00 UTC	10/01/2023	30	Norway	Norway
Flash Flood	10/01/2023 00 UTC	10/01/2023	30	Sweden	Sweden
Flash Flood	10/01/2023 00 UTC	10/01/2023	36	Sweden	Sweden
Flash Flood	09/01/2023 12 UTC	10/01/2023	42	Norway	Norway
Flash Flood	09/01/2023 12 UTC	10/01/2023	42	Norway	Norway
11000	03/01/2023 12 010	10/01/2023		Common to Norway-	Notway
Flash Flood	09/01/2023 12 UTC	10/01/2023	42	Sweden	Sweden
Flash Flood	09/01/2023 12 UTC	10/01/2023	48	Danube	Romania
Flash Flood	09/01/2023 12 UTC	10/01/2023	36	Danube	Romania
Flash Flood	09/01/2023 12 UTC	10/01/2023	48	Danube	Nomania
	09/01/2023 12 UTC	10/01/2023	30	Danube	Croatia
Flash Flood	09/01/2023 12 010	10/01/2023	30	Coastal Catchment Celtic	Croatia
Flash Flood	00/01/2022 00 LITC	00/01/2022	36	Sea and Channels	United Kinadom
	09/01/2023 00 UTC	09/01/2023	24		United Kingdom
Flash Flood	09/01/2023 00 UTC	09/01/2023	24	Danube	Croatia
	00/01/2022 00 UTC	00/04/2022	48	Danisha	Bosnia and
Flash Flood	09/01/2023 00 UTC	09/01/2023	42	Danube	Herzegovina
Flash Flood	09/01/2023 00 UTC	09/01/2023	42	Describe.	C1'-
Flash Flood	09/01/2023 00 UTC	09/01/2023	36	Danube	Croatia
Flash Flood	09/01/2023 00 UTC	09/01/2023	36	Describe.	D '-
Flash Flood	09/01/2023 00 UTC	09/01/2023	42	Danube	Romania
Flash Flood	09/01/2023 00 UTC	09/01/2023	12	Norway	Norway
Flash Flood	08/01/2023 12 UTC	09/01/2023	36	Sweden	Sweden
Flash Flood	08/01/2023 12 UTC	09/01/2023	48	Danube	Ukraine
Flash Flood	08/01/2023 12 UTC	09/01/2023	48	Danube	Slovakia
Flash Flood	08/01/2023 12 UTC	09/01/2023	42	Danube	Slovakia
Flash Flood	08/01/2023 12 UTC	09/01/2023	42	Danube	Hungary
Flash Flood	08/01/2023 12 UTC	09/01/2023	48	Danube .	Hungary
Flash Flood	08/01/2023 12 UTC	09/01/2023	36	Crni Drim / Drin	
Flash Flood	08/01/2023 12 UTC	09/01/2023	48	Danube	Croatia
Flash Flood	08/01/2023 12 UTC	09/01/2023	36	Danube	Croatia
Flash Flood	08/01/2023 12 UTC	08/01/2023	48	North England	United Kingdom
Flash Flood	08/01/2023 00 UTC	08/01/2023	48	Danube	Slovakia
Flash Flood	08/01/2023 00 UTC	08/01/2023	48	Danube	Slovakia
Flash Flood	08/01/2023 00 UTC	08/01/2023	42	Danube	Hungary
Flash Flood	08/01/2023 00 UTC	08/01/2023	48	Danube	Hungary
Flash Flood	08/01/2023 00 UTC	08/01/2023	42		
			42		Bosnia and
Flash Flood	08/01/2023 00 UTC	08/01/2023	74	Adriatic Coast	Herzegovina
Flash Flood	08/01/2023 00 UTC	08/01/2023	48	Seman	Albania
Flash Flood	08/01/2023 00 UTC	08/01/2023	18	Mondego	Portugal

Flash Flood	08/01/2023 00 UTC	08/01/2023	24	Golo	France
Flash Flood	08/01/2023 00 UTC	08/01/2023	48	Albania/Greece (Adriatic Coast)	Albania
Flash Flood	08/01/2023 00 UTC	08/01/2023	40	Sweden	Sweden
Flash Flood	08/01/2023 00 UTC		48 48	Mati	Albania
		08/01/2023			Alballia
Flash Flood	08/01/2023 00 UTC	08/01/2023	48	Crni Drim / Drin	
Flash Flood	08/01/2023 00 UTC	08/01/2023	48	Crni Drim / Drin	
Flash Flood	08/01/2023 00 UTC	08/01/2023	42	Moraca/Bojana	Montenegro
Flash Flood	08/01/2023 00 UTC	08/01/2023	30	Adriatic Coast	Croatia
Flash Flood	08/01/2023 00 UTC	08/01/2023	30	Adriatic Coast	Croatia
Flash Flood	08/01/2023 00 UTC	08/01/2023	48		
Flash Flood	08/01/2023 00 UTC	08/01/2023	42		
Flash Flood	08/01/2023 00 UTC	08/01/2023	30		
			42	Italy (Ligurian	
Flash Flood	08/01/2023 00 UTC	08/01/2023	72	Sea/Tyrrhenian Sea)	Italy
			42	Italy (Adriatic Sea/Ionian	
Flash Flood	08/01/2023 00 UTC	08/01/2023	42	Sea)	Italy
Flash Flood	08/01/2023 00 UTC	08/01/2023	24	Po	Italy
Flash Flood	07/01/2023 12 UTC	08/01/2023	42	Corsica	
Flash Flood	07/01/2023 12 UTC	08/01/2023	18	Norway	Norway
Flash Flood	07/01/2023 12 UTC	08/01/2023	12	Tajo	Spain
Flash Flood	07/01/2023 12 UTC	08/01/2023	24	•	•
					Bosnia and
Flash Flood	07/01/2023 12 UTC	08/01/2023	48	Adriatic Coast	Herzegovina
Flash Flood	07/01/2023 12 UTC	08/01/2023	48	Adriatic Coast	Croatia
Flash Flood	07/01/2023 12 UTC	08/01/2023	48	Isonzo / Soca	Slovenia
Flash Flood	07/01/2023 12 UTC	08/01/2023	42	Isonzo / Soca	Italy
	,,	,,		Italy (Ligurian	
Flash Flood	07/01/2023 12 UTC	08/01/2023	48	Sea/Tyrrhenian Sea)	Italy
Flash Flood	07/01/2023 12 UTC	08/01/2023	42	Pescara	Italy
Flash Flood	07/01/2023 12 UTC	08/01/2023	42	Tevere	Italy
Flash Flood	07/01/2023 12 UTC	08/01/2023	42	Tevere	Italy
11451111004	07/01/2020 12 010	00,01,2020		Italy (Ligurian	reary
Flash Flood	07/01/2023 12 UTC	08/01/2023	36	Sea/Tyrrhenian Sea)	Italy
Flash Flood	07/01/2023 12 UTC	08/01/2023	42	Corsica	reary
Flash Flood	07/01/2023 12 01C 07/01/2023 00 UTC	07/01/2023	42	Corsica	
11031111000	07/01/2023 00 010	07/01/2023	72	Spain (North and West	
Flash Flood	07/01/2023 00 UTC	07/01/2023	36	Coast)	Portugal
Flash Flood	07/01/2023 00 UTC	07/01/2023	26	Mino/Minho	
			36		Spain
Flash Flood	07/01/2023 00 UTC	07/01/2023	42	Duero	Spain
Flash Flood	07/01/2023 00 UTC	07/01/2023	42	Tajo	Spain
Flash Flood	07/01/2023 00 UTC	07/01/2023	42	Ebro	Spain
Flash Flood	07/01/2023 00 UTC	07/01/2023	48		
Flash Flood	07/01/2023 00 UTC	07/01/2023	48	Sweden	Sweden
Flash Flood	06/01/2023 12 UTC	07/01/2023	36	Guadiana	Spain
Flash Flood	06/01/2023 12 UTC	07/01/2023	48	_	
Flash Flood	06/01/2023 12 UTC	07/01/2023	48	Duero	Spain
Flash Flood	06/01/2023 12 UTC	07/01/2023	18	Wales (except Severn)	United Kingdom
Flash Flood	06/01/2023 12 UTC	07/01/2023	42	Norway	Norway
Flash Flood	06/01/2023 12 UTC	07/01/2023	42	Norway	Norway

			48	Common to Norway-	
Flash Flood	06/01/2023 12 UTC	07/01/2023	48	Sweden	Sweden
Flash Flood	06/01/2023 00 UTC	06/01/2023	48	Tajo	Spain
Flash Flood	06/01/2023 00 UTC	06/01/2023	48		
Flash Flood	05/01/2023 12 UTC	06/01/2023	24	Denmark	Denmark
Flash Flood	05/01/2023 00 UTC	05/01/2023	36	Dnepr	Ukraine
Flash Flood	04/01/2023 12 UTC	05/01/2023	42		
Flash Flood	04/01/2023 00 UTC	04/01/2023	36	Danube	Ukraine
Flash Flood	04/01/2023 00 UTC	04/01/2023	42	Danube	Romania
Flash Flood	04/01/2023 00 UTC	04/01/2023	36	Elbe	Czech Republic
Flash Flood	04/01/2023 00 UTC	04/01/2023	24	Denmark	Denmark
Flash Flood	03/01/2023 12 UTC	04/01/2023	48	Danube	Romania
Flash Flood	03/01/2023 12 UTC	04/01/2023	48	Danube	Romania
Flash Flood	03/01/2023 12 UTC	04/01/2023	36	Helge	Sweden
Flash Flood	03/01/2023 12 UTC	04/01/2023	36	Sweden	Sweden
Flash Flood	03/01/2023 00 UTC	03/01/2023	30	Norway	Norway
Flash Flood	03/01/2023 00 UTC	03/01/2023	36	Denmark	Denmark
Flash Flood	03/01/2023 00 UTC	03/01/2023	48	Sweden	Sweden
Flash Flood	02/01/2023 12 UTC	03/01/2023	48	Denmark	Denmark
Flash Flood	02/01/2023 12 UTC	03/01/2023	42	Norway	Norway
Flash Flood	02/01/2023 12 UTC	03/01/2023	12	Sweden	Sweden
Flash Flood	02/01/2023 12 UTC	03/01/2023	48	Helge	Sweden
Flash Flood	02/01/2023 12 UTC	03/01/2023	36	Wales (except Severn)	United Kingdom
Flash Flood	02/01/2023 00 UTC	02/01/2023	30	Sweden	Sweden
Flash Flood	01/01/2023 12 UTC	02/01/2023	18	Guadiana	Spain
Flash Flood	01/01/2023 12 UTC	02/01/2023	30	Sweden	Sweden
Flash Flood	31/12/2022 12 UTC	01/01/2023	30		
Flash Flood	31/12/2022 12 UTC	01/01/2023	30	Eo	Spain
Flash Flood	31/12/2022 12 UTC	01/01/2023	36		
Flash Flood	31/12/2022 12 UTC	01/01/2023	36	Tajo	Spain
Flash Flood	31/12/2022 12 UTC	01/01/2023	36		
Flash Flood	31/12/2022 12 UTC	01/01/2023	36	Guadiana	Spain
Flash Flood	31/12/2022 12 UTC	01/01/2023	30	Mino/Minho	Spain
Flash Flood	31/12/2022 12 UTC	01/01/2023	42	Tajo	Spain

 $[\]ensuremath{^{*}}$ Lead time [hours] to the forecasted peak of the event

The European Flood Awareness System (EFAS) produces European overviews of ongoing and forecasted floods up to 10 days in advance and contributes to better protection of the European citizens, the environment, properties and cultural heritage. It has been developed at the European Commission's in-house science service, the Joint Research Centre (JRC), in close collaboration with national hydrological and meteorological services and policy DG's of the European Commission.

EFAS has been transferred to operations under the European Commission's COPERNICUS Emergency Management Service led by DG GROW in direct support to the EU's Emergency Response Coordination Centre (ERCC) of DG ECHO and the hydrological services in the Member States.

ECMWF has been awarded the contract for the EFAS Computational centre. It is responsible for providing daily operational EFAS forecasts and 24/7 support to the technical system.

A consortium of Swedish Meteorological and Hydrological Institute (SMHI), Rijkswaterstaat (RWS) and Slovak Hydro-Meteorological Institute (SHMU) has been awarded the contract for the EFAS Dissemination centre. They are responsible for analysing EFAS output and disseminating information to the partners and the ERCC.

A Spanish contractor, Ghenova Digital (formerly Soologic), has been awarded the contract for the EFAS Hydrological data collection centre. They are responsible for collecting discharge and water level data across Europe.

A German consortium (KISTERS and DWD) has been awarded the contract for the EFAS Meteorological data collection centre. They are responsible for collecting the meteorological data needed to run EFAS over Europe. Finally, the JRC is responsible for the overall project management related to EFAS and further development of the system.

Contact details:

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