

ECMWF GloFAS - Harvey Flood Area Grids

These datasets were obtained from ECMWF/GloFAS on November 13, 2017, to include the flood forecast (area grid) for Hurricanes Harvey and Irma in the USA from August 15 - September 15, 2017. These are contained in netCDF files, one file per day.

Note that while folders and files may have the words "areagrid_for_Harvey" in the name, all the data here are for the southeast USA, encompassing both Harvey and Irma impact areas.

Dataset variables

- **dis** = forecasted discharge (for all forecast step 1+30 as initial value and 30 daily average values, with ensemble members as 1+50 where the first is the so-called control member and the 50 perturbed members)
- **ldd** = local drainage direction within routing model
- **ups** = upstream area of each point within routing model
- **rl2,rl5,rl20** = forecast exceedance thresholds for 2-, 5- and 20-year return period flows, based on gumbel distribution from ERA-interim land reanalysis driven through the lisflood routing.

Models used

- **Hydrology**: River discharge is simulated by the Lisflood hydrological model (van der Knijff et al., 2010) for the flow routing in the river network and the groundwater mass balance. The model is set up on global coverage with horizontal grid resolution of 0.1° (about 10 km in mid-latitude regions) and daily time step for input/output data.
- **Meteorology**: To set up a forecasting and warning system that runs on a daily basis with global coverage, initial conditions and input forcing data must be provided seamlessly to every point within the domain. To this end, two products are used. The first consists of operational ensemble forecasts of near-surface meteorological parameters. The second is a long-term dataset consistent with daily forecasts, used to derive a reference climatology.

(see [2] for further details)

Suggestions for usage

- Selected software: ArcGIS or QGIS

- Select dis for example, then any of the bands (51*31 in total), then set the range manually to 0-1000 or something like that.

Agency

GloFAS: From its public website [1]: "The Global Flood Awareness System (GloFAS), jointly developed by the European Commission and the European Centre for Medium-Range Weather Forecasts (ECMWF), is independent of administrative and political boundaries. It couples state-of-the art weather forecasts with a hydrological model and with its continental scale set-up it provides downstream countries with information on upstream river conditions as well as continental and global overviews. GloFAS produces daily flood forecasts in a pre-operational manner since June 2011."

References

[1] GloFAS home page [<http://www.globalfloods.eu/>]

[2] Data and methods [<http://www.globalfloods.eu/user-information/data-and-methods>]