



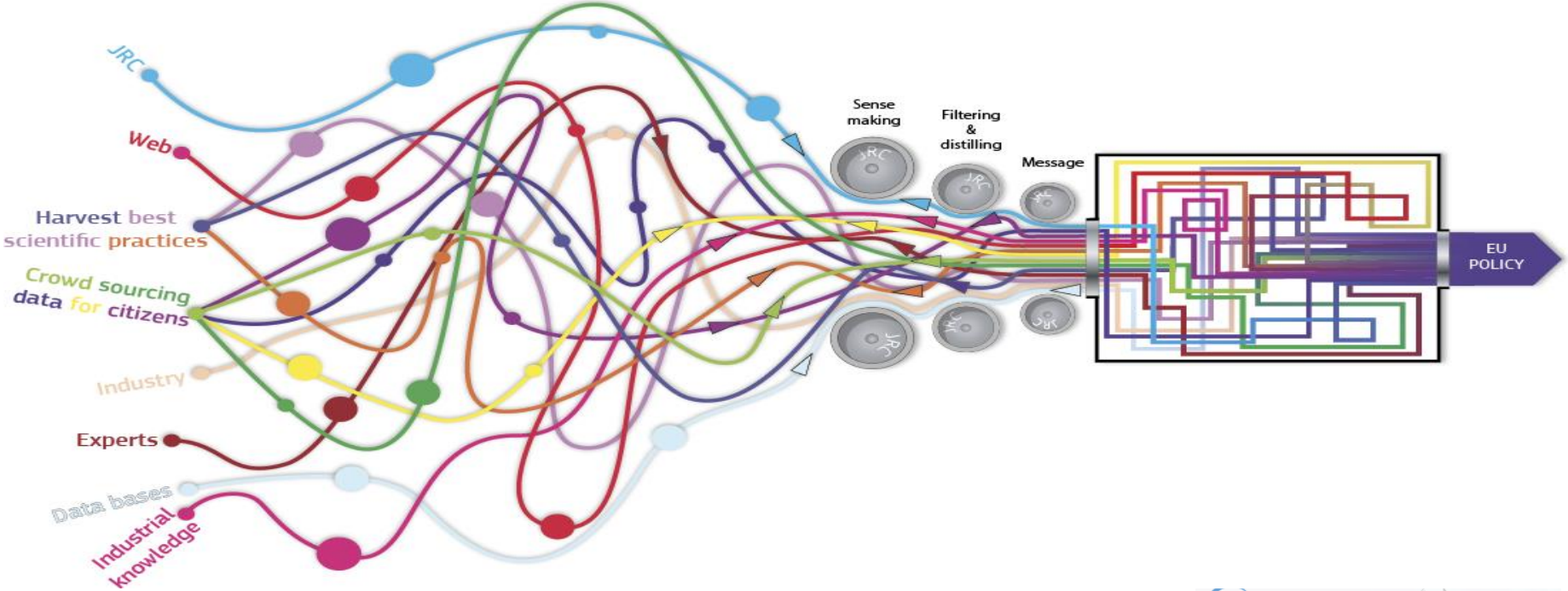
Emergency Management

Copernicus Emergency Management Service

DG Joint Research Centre
October 2019



Science for policy and Policy for science





Copernicus is a European Union Programme, coordinated and managed by the European Commission, aimed at **developing European information services based on satellite Earth Observation and in situ (non-space) data.**

Six **Copernicus Core Services** transform satellite and in situ data into **value-added information**, specifically:



Atmosphere
(CAMS)



Marine
(CMEMS)



Land
(CLMS)



Climate
(C3S)



Emergency
(EMS)



Security





- **Supporting all phases of the disaster management cycle:**
 - ✓ Warnings & risk assessments
 - ✓ Information on the impact of natural and man-made disasters
- **Complementary to national efforts**
- **Supporting the EU's Emergency Response & Coordination Centre (DG ECHO-ERCC)**

**On-demand Mapping
(all disasters)**

**European & Global
Flood Awareness
Systems
(EFAS & GloFAS)**



**European Forest Fire
& Global Wildfire
Information Systems
(EFFIS & GWIS)**

**European & Global
Drought Observatory**

Flood Awareness Systems (EFAS, GloFAS) to forecast river flooding and inundation

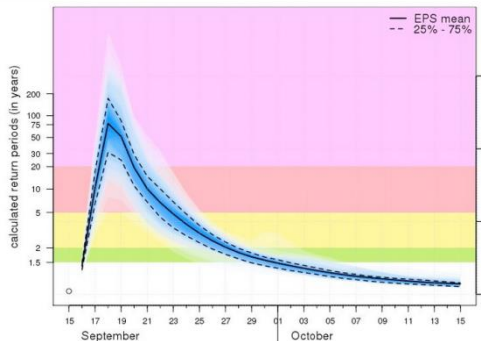


Figure 4. GloFAS streamflow forecasts for Georgetown, South Carolina, based on ensemble output from the ECMWF global model run initialized at 02 Saturday, September 15, 2018 (8 pm EDT Friday). Image credit: GloFAS, courtesy James Bealanger.

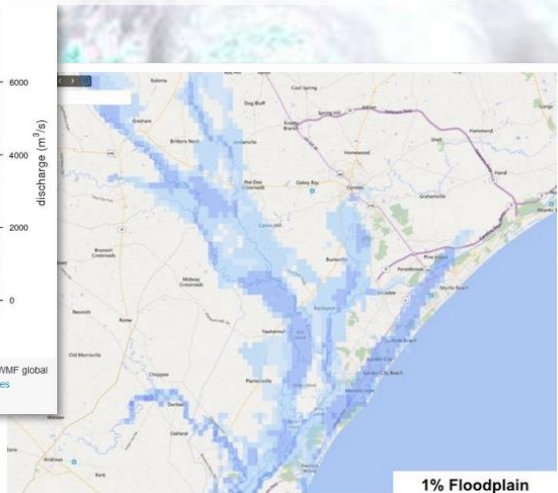


Figure 3. Snapshot of the river flooding and inundation for a flood event that has a 1% chance of occurring in a given year across portions of northeast South Carolina. Note: The effect of storm surge and coastal flooding is not included in this image.

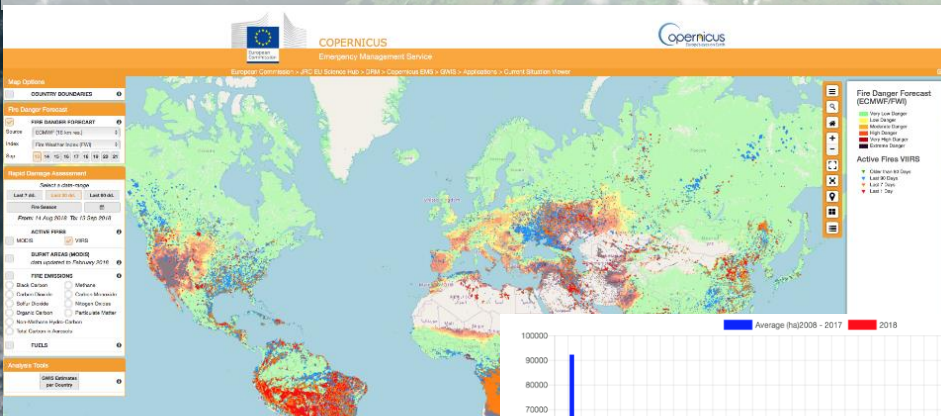
www.efas.eu www.globalfloods.eu

On-demand Mapping services to map the flood extent from satellite imagery

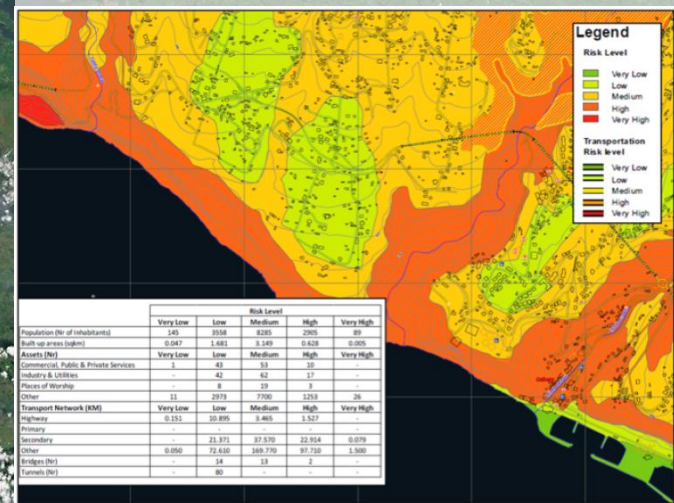


[EMSR312] Aparri: Delineation map
<http://emergency.copernicus.eu/EMSR312>

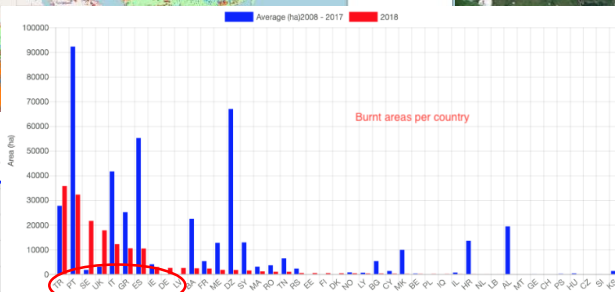
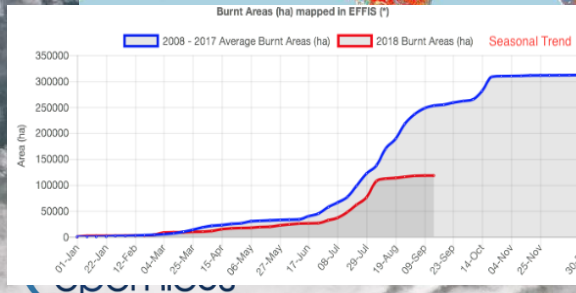
Forest Fire Information Systems (EFFIS, GWIS) to detect & monitor fires and to forecast the fire danger



On-demand Mapping services to assess damages after a forest fire & landslide risk



[EMSN031] Forest Fire Damage assessment and landslide risk, Madeira Island
<http://emergency.copernicus.eu/EMSN031>



Smoke from fires in Sweden as seen by Sentinel-2 on 20/7/2018



Challenges

- Subsidiarity
 - Once-voice principle
- Last mile alerting
 - Risk awareness
 - Risk culture
- Communicating risk
 - My facts, your facts

Useful links

- <http://data.jrc.ec.europa.eu>
- <https://drmkc.jrc.ec.europa.eu>
- <https://emergency.copernicus.eu>