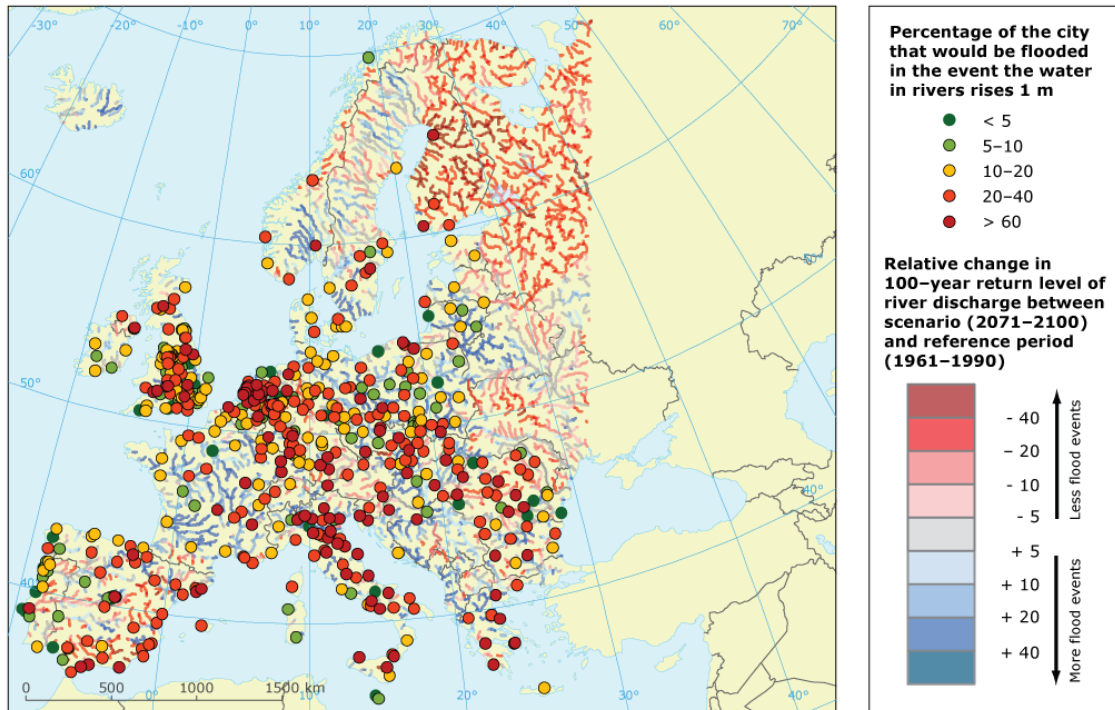


River flooding (map 2.9)



The map shows the percentage of the city that would be flooded in case water in rivers rises 1 m. Only cities with more than 100 000 inhabitants are considered. The city is defined by the part of its morphological delineation according to urban land use classes (UMZ), which intersects with the core city delineation defined by Urban Audit/Urban Atlas (see annex “Defining the city area,” <http://www.eea.europa.eu/publications/urban-adaptation-to-climate-change/defining-the-city-area>).

With a digital elevation model, areas below and above a potential water level (1 m rise) were identified. That layer was crossed with the city areas. The intersecting areas are the potential urban flood areas.

Production steps:

- 1) Potential flood areas by 1 m water rise were delineated for all Europe according to ETC/LUSI (2010).
- 2) Cities were defined by clipping UMZs inside core cities.
- 3) The resulting layers of step 1 and step 2 were crossed and, for each city the intersected area was calculated.
- 4) For each city, the flooded area (step 3) was divided by the total area (step2) in order to obtain the percentage.
- 5) Percentages obtained from the cities were grouped by quartiles in order to represent groups of cities in the map.

Note: Neither coastal floods nor flood protection measures are considered in the calculations.

The background map shows the relative change in 100-year return level of river discharge (red –decreased discharge, blue –increased discharge) between the scenario run (2071-2100) and the control run (1961-1990) under the SRES scenario A2 (elaborated by JRC/IES; published in EEA et al., 2008). It provides an idea about the change in the potential risk of river flooding and where the probability of a flooding event increases or decreases.

Data sources:

ETC/LUSI, 2010. Potential Flood Areas definition. Technical Report.

UMZ_v15_2006 Urban Morphological Zones 2006 (EEA)

<http://www.eea.europa.eu/data-and-maps/data/urban-morphological-zones-2006-umz2006-f3v0>

Urban Atlas (EEA)

<http://www.eea.europa.eu/data-and-maps/data/urban-atlas>

Urban Audit database (Eurostat)

http://epp.eurostat.ec.europa.eu/portal/page/portal/region_cities/introduction