

## Percentage of Urban Morphological Zones (UMZ) potentially exposed to river flooding (1 in 100 years return period; 2071 - 2100), Jan. 2020

The dataset provides the proportion of the Urban Morphological Zone (densely built-up urban area) potentially at risk of river flooding (1 in 100 years return period), modelled for the future (period 2071 - 2100) for a series of individual European cities (included in Urban Audit). This is based on the modelling of river discharge within LISFLOOD model (JRC).

The indicator values are based on elevation and do not include flood protection measures like dams, dikes, etc., as data for these are not yet available. Areas shown here as potentially at risk of flood might in reality be protected by flood defences. However, since flood protection measures can fail in certain circumstances, the flood risk remains.

### Simple

<b>Date (Creation)</b>	2019-01-08T00:00:00
<b>Date (Publication)</b>	2019-01-18T00:00:00
<b>Edition</b>	01.00
<b>Citation identifier</b>	eea_v_4258_100_k_umz-river-flooding_p_2071-2100_v01_r00

### Point of contact

No information provided.

<b>Maintenance and update frequency</b>	Not planned
<b>GEMET - INSPIRE themes, version 1.0</b>	<ul style="list-style-type: none"> <li>• <a href="#">Natural risk zones</a></li> </ul>
<b>Keywords</b>	
<b>Keywords</b>	
<b>GEMET</b>	<ul style="list-style-type: none"> <li>• climate</li> <li>• climate change impact</li> <li>• risk</li> <li>• climate change adaptation</li> <li>• flooding</li> <li>• disaster</li> <li>• city</li> </ul>
<b>Continents, countries, sea regions of the world.</b>	<ul style="list-style-type: none"> <li>• Norway</li> <li>• EU27 (from 2020)</li> <li>• Iceland</li> <li>• United Kingdom</li> <li>• Switzerland</li> </ul>
<b>Spatial scope</b>	<ul style="list-style-type: none"> <li>• <a href="#">European</a></li> </ul>

## Resource constraints

No information provided.

<b>Access constraints</b>	Other restrictions
<b>Other constraints</b>	<a href="#">no limitations to public access</a>
<b>Use constraints</b>	Other restrictions
<b>Other constraints</b>	<p>This dataset is derived from the use of the LISFLOOD model provided by the Joint Research Centre (JRC) therefore is in principle following the JRC Open Data Policy ( <a href="https://publications.jrc.ec.europa.eu/repository/bitstream/JRC115832/kjna27163enn.pdf">https://publications.jrc.ec.europa.eu/repository/bitstream/JRC115832/kjna27163enn.pdf</a>).</p> <p>As this dataset is also derived from the Copernicus product "Urban Atlas 2012", it also applies the Copernicus data and information policy: Access to data is based on a principle of full, open and free access as established by the Copernicus data and information policy Regulation (EU) No 1159/2013 of 12 July 2013. This regulation establishes registration and licensing conditions for GMES /Copernicus users. Free, full and open access to this data set is made on the conditions that:</p> <ol style="list-style-type: none"> <li>1. When distributing or communicating Copernicus dedicated data and Copernicus service information to the public, users shall inform the public of the source of that data and information.</li> <li>2. Users shall make sure not to convey the impression to the public that the user's activities are officially endorsed by the Union.</li> <li>3. Where that data or information has been adapted or modified, the user shall clearly state this.</li> <li>4. The data remain the sole property of the European Union. Any information and data produced in the framework of the action shall be the sole property of the European Union. Any communication and publication by the beneficiary shall acknowledge that the data were produced "with funding by the European Union".</li> </ol> <p>The geometry of the dataset is derived from the Urban Audit Cities 2011-2014 dataset is publicly available and can be used for non commercial purposes. The source and intellectual property have always to be acknowledged for the original data and for derived data. For the centroid geometry: (c) EuroGeographics.</p>
<b>Spatial representation type</b>	Vector
<b>Denominator</b>	100000
<b>Language of dataset</b>	English
<b>Topic category</b>	<ul style="list-style-type: none"> <li>• Environment</li> <li>• Climatology, meteorology, atmosphere</li> </ul>
<b>Begin date</b>	2071-01-01
<b>End date</b>	2100-12-31



<b>CRS identifier</b>	<a href="#">EPSG:4258</a>
<b>Distribution format</b>	<ul style="list-style-type: none"> <li>• GDB ( )</li> <li>• SHP ( )</li> </ul>

### OnLine resource

No information provided.

<b>Hierarchy level</b>	Dataset
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### Conformance result

<b>Date (Publication)</b>	2010-12-08
<b>Explanation</b>	See the referenced specification

<b>Statement</b>	<p>Datasets used in the analysis include:</p> <p>a) Urban Morphological Zone (UMZ) from Urban Atlas 2012. UMZ is the reference unit for the city morphology. They are regarded as the best approximation of the "real" city form and defined as a set of urban areas laying less than 200 m apart, within the core city administrative boundaries. Those urban areas are defined with land cover classes contributing to the urban issue and function. UMZ are derived from the Copernicus Urban Atlas 2012 by using urban core classes (residential, industrial and commercial, green urban areas) and adding enlarged core classes if they fulfil certain neighbourhood conditions of the core classes. The UMZs are clipped by the city administrative boundaries (Urban Audit 2011-2014 polygons <a href="https://ec.europa.eu/eurostat/web/gisco/geodata/reference-data/administrative-units-statistical-units/urban-audit#ua11-14">https://ec.europa.eu/eurostat/web/gisco/geodata/reference-data/administrative-units-statistical-units/urban-audit#ua11-14</a>) to include only the areas within the city administrative area.</p> <p>b) LISFLOOD model outputs from JRC. The discharge return levels were derived for every river pixel for return periods of 100 years. For time window of 30 years (2071–2100), a Gumbel distribution was fitted to the annual maximum discharges simulated by LISFLOOD in every grid cell of the modelled domain based on 12 models and the A1B scenario (Rojas et al.,2012; Rojas et al.,2013).</p> <p>The resultant modelled flood area was intersected with the Urban Morphological Zone extent, and the proportion of potentially flooded UMZ area was calculated for each city by dividing the potentially flooded area by the total UMZ area.</p> <p>The indicator values are based on elevation and do not include flood protection measures like dams, dikes, etc., as data for these are not yet available. Areas shown here as potentially at risk of flood might in reality be protected by flood defences. However, since flood protection measures can fail in certain circumstances, the flood risk remains.</p> <p>Datasets: JRC (Lisflood model); Copernicus (Urban Atlas 2012); Eurostat (city boundaries); EEA (Urban Morphological Zone). Methodology: Rojas, R., Feyen, L., Bianchi, A. and Dosio, A., 2012, 'Assessment of future flood hazard in Europe using a large</p>
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ensemble of bias corrected regional climate simulations', Journal of Geophysical Research, 117(17) D17109; Rojas, R., Feyen, L. and Watkiss, P., 2013, 'Climate change and river floods in the European Union: socio- economic consequences and the costs and benefits of adaptation', Global Environmental Change, (23) 1737–1751.

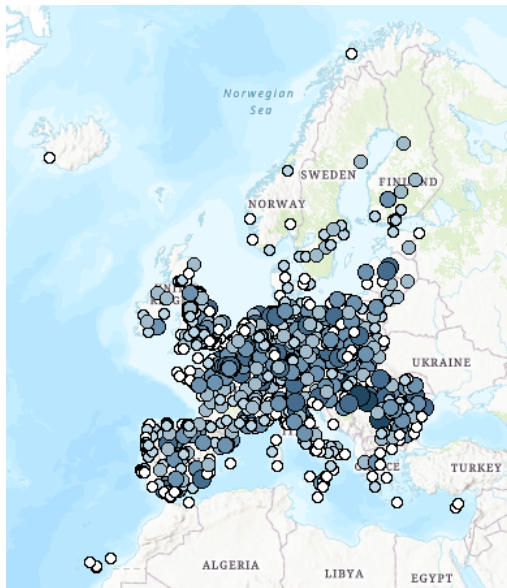
Source

- [Urban Morphological Zone \(2012\) within cities included in Urban Audit 2011-2014, Jan. 2019](#)

## Metadata

File identifier	38a57932-c278-45fe-bf68-3b658e3c75b4 <a href="#">XML</a>		
Metadata language	English		
Character set	UTF8		
Hierarchy level	Dataset		
Date stamp	2021-11-24T16:42:15.979Z		
Metadata standard name	ISO 19115/19139		
Metadata standard version	1.0		
Metadata author	<b>Organisation name</b>	<b>Individual name</b>	<b>Electronic mail address</b> <b>Role</b>
	European Environment Agency		sdi@eea.   Point eur   of sdi@eea.   contact europa.eu

## Overviews



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