

Climatic suitability index values for tiger mosquito (*Aedes albopictus*) 2008-2009 (90th percentile), Jan. 2020

This vector dataset provides the climate suitability index values (0-100%) for tiger mosquito (*Aedes albopictus*) for 100 European cities for the years 2008-2009 (P90 - 90th percentile).

Aedes Albopictus has become a common occurrence in Southern Europe and transmits diseases such as Zika, dengue and chikungunya. The climatic suitability for tiger mosquito depends on factors such as sufficient amounts of rainfall, high summer temperatures and mild winters. Climate change is anticipated to further facilitate the spread of tiger mosquitoes across Europe by changing temperature and precipitation patterns, thereby increasing the suitable habitat.

In the framework of the Copernicus Climate Change Service (C3S) SIS European Health, VITO (<https://vito.be/en>) has provided to the Climate Data Store 100m resolution hourly temperature data for 100 European cities, based on simulations with the urban climate model UrbClim (De Ridder et al., 2015). From this dataset, this climate suitability dataset has been generated based on annual precipitation and the average temperature in January and during the summer period (months June, July and August) for the years 2008-2009, following the methodology by European Centre for Disease Prevention and Control (ECDC, 2009). This approach considers empirical suitability functions, which link a number of (aggregated) climate variables to the suitability of a habitat for a given vector species, e.g. for a species to be active a minimum threshold of temperature is required below which the species is not active. Similarly some species cannot overwinter if the winter is too cold (e.g. January temperature lower than a given value).

The P90 indicator represents the specific exposure of single cities and is independent of the model domain or size of a city. The 100 European cities for the urban simulations were selected based on user requirements within the health community.

Simple

Date (Creation)	2020-01-08T00:00:00
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Edition	01.00
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Point of contact

No information provided.

Maintenance and update frequency	Not planned
GEMET - INSPIRE themes, version 1.0	<ul style="list-style-type: none"> Human health and safety
Keywords	
Keywords	
GEMET	<ul style="list-style-type: none"> climate change impact vector of human diseases urban environment, urban stress climate change adaptation climate health city
Continents, countries, sea regions of the world.	<ul style="list-style-type: none"> Bulgaria Latvia Belgium Italy

	<ul style="list-style-type: none"> • Czechia • Luxembourg • Ireland • Serbia • Albania • Slovakia • Austria • Greece • Denmark • Norway • United Kingdom • Switzerland • France • North Macedonia • Portugal • Bosnia and Herzegovina • Iceland • Slovenia • Croatia • Netherlands • Finland • Sweden • Lithuania • Romania • Poland • Spain • Estonia • Germany • Hungary • Montenegro
Spatial scope	<ul style="list-style-type: none"> • European
EEA topics	<ul style="list-style-type: none"> • Climate adaptation

Resource constraints

No information provided.

Access constraints	Other restrictions
Other constraints	no limitations to public access
Use constraints	Other restrictions
Other constraints	<p>This dataset is based on different sources:</p> <p>*Terms and conditions for use of EDCD data: https://www.ecdc.europa.eu/en/copyright</p>

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Spatial representation type	Vector
Denominator	100000
Language of dataset	English
Topic category	<ul style="list-style-type: none">• Environment• Climatology, meteorology, atmosphere• Health
Begin date	2008-01-01
End date	2009-12-31

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Additional Information	The scale provided is approximate.
Coordinate reference system identifier	EPSG:4326
Distribution format	<ul style="list-style-type: none"> SHP ()

OnLine resource

No information provided.

Hierarchy level	Dataset
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Conformance result

Date (Publication)	2010-12-08
Explanation	See the referenced specification

Statement	<p>In the framework of the Copernicus Climate Change Service (C3S) SIS European Health, VITO has provided to the Climate Data Store 100m resolution hourly temperature data for 100 European cities, based on simulations with the urban climate model UrbClim (De Ridder et al., 2015). From this dataset, this climate suitability dataset has been generated based on annual precipitation and the average temperature in January and during the summer period (months June, July and August) for the years 2008-2009, following the methodology by European Centre for Disease Prevention and Control (ECDC, 2009).</p> <p>This approach considers empirical suitability functions, which link a number of climate variables to the suitability of a habitat. The suitability for tiger mosquito is zero when the annual rainfall is lower than 450 mm, and maximum suitability is reached when the annual rainfall is higher than 800 mm. For summer temperatures, the suitability is zero when temperatures were lower than 15°C and higher than 30°C, and maximum suitability is between 20°C and 25°C. For January temperatures, the suitability is zero when temperatures were lower than -1°C and maximum when temperatures were higher than 3°C.The different suitability functions are then entered into a weighted linear combination approach and the results were rescaled to a range between 0 and 100.</p> <p>The P90 indicator represents the specific exposure of single cities and is independent of the model domain or size of a city. Since it is the 90th percentile, there are a number of grid cells (areas) in a city with an even higher suitability value, so it should be considered as a rather conservative value.</p> <p>References:</p> <p>* ECDC (2009): Development of Aedes albopictus Risk Maps, Technical Report 0905. See: https://ecdc.europa.eu/sites/portal/files/media/en/publications/Publications/0905_TER_Development_of_Aedes_Albopictus_Risk_Maps.pdf</p> <p>* Copernicus Climate Change Service (2019): Web application: Climatic suitability of the Aedes albopictus mosquito in European cities from 2008 to 2017 derived from reanalysis: http://136.156.132.3/cds-forms-c3s/app-health-urban-aedes-albopictus-suitability-climatology/Web_Application_URBAN.3_v1_latest.pdf</p> <p>* De Ridder, K, Lauwaet D. and Maiheu, B. (2015): UrbClim – A fast urban boundary layer climate model, Urban Climate, Vol. 12, pp. 21–48. https://doi.org/10.1016/j.uclim.2015.01.001.</p>
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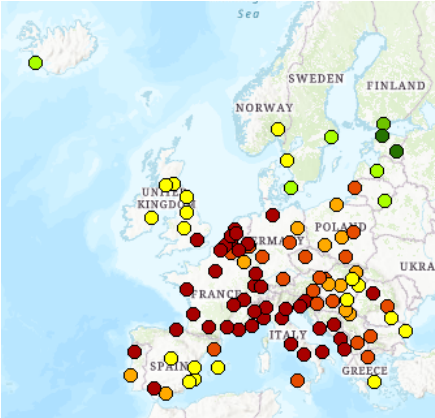
Source

- [Climatic suitability index modelling for tiger mosquito \(Aedes albopictus\) 2008-2009, Jan. 2020](#)

Metadata

File identifier	3accfd8c-20c7-4c0e-b77f-d632e476191a XML		
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Metadata standard name	ISO 19115/19139		
Metadata standard version	1.0		
Metadata author	Organisation name	Individual name	Electronic mail addressWebsite Role
	European Environment Agency		sdi@eea.europa.euPoint of contact

Overviews



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