EEA geospatial data catalogue

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

This raster dataset provides the modelling of the climate suitability index values (0-100%) for tiger mosquito (Aedes albopictus) for 100 European cities for the years 2008-2009, with a resolution of 100 m.

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 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).

The 100 European cities for the urban simulations were selected based on user requirements within the health community.

Simple

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Point of contact

No information provided.

Maintenance and update frequency	Not planned
GEMET - INSPIRE themes, version 1.0	• Human health and safety
Keywords	
Keywords	
GEMET	• vector of human diseases • climate • climate change adaptation • climate change impact • city • health • urban environment, urban stress
Continents, countries, sea regions of the world.	• Slovenia • Italy • Austria • Belgium • Bosnia and Herzegovina

	• Bulgaria • Croatia • Finland • Iceland • Lithuania • Norway • Serbia • Sweden • Germany • United Kingdom • Montenegro • Luxembourg • North Macedonia • Portugal • Albania • Czechia • Netherlands • Poland • Switzerland • Hungary • France • Slovakia • Greece • Ireland • Denmark • Estonia • Spain • Latvia • Romania
Spatial scope	• European
EEA topics	• Environmental health impacts • Climate adaptation • Climate mitigation

Resource constraints

No information provided.

Access constraints	Other restrictions
Other constraints	no limitations to public access
Use constraints	Other restrictions
Other constraints	EEA standard re-use policy: unless otherwise indicated, re-use of content on the EEA website for commercial or non-commercial purposes is permitted free of charge, provided that the source is acknowledged (http://www.eea.europa.eu/legal/copyright).

	Copyright holder: European Environment Agency (EEA), Copernicus Climate Change Service (C3S).
Spatial representation type	Grid
Distance	100 m
Language of dataset	English
Topic category	• Environment • Health • Climatology, meteorology, atmosphere
Begin date	2008-01-01
End date	2009-12-31

67.35	N	35.85	S	41.15	E	-25.05	W

Coordinate reference system identifier	EPSG:3035
Distribution format	• GeoTIFF ( )

OnLine resource

Protocol	Linkage	Name
EEA:FILEPATH	https://sdi.eea.europa.eu/webdav/datastore/public/eea_r_3035_100_m_tiger-mosquito-modelling_p_2008-2009_v01_r00/Suitability_maps_combined.tif	
WWW:LINK-1.0-http--link	https://climate-adapt.eea.europa.eu/knowledge/tools/urban-adaptation	
WWW:URL	https://sdi.eea.europa.eu/data/93070b8d-bb1a-4f4a-9b71-531676496125	Direct download
ESRI:REST	https://climate.discomap.eea.europa.eu/arcgis/rest/services/UAMV/climatic_suitability_tiger_mosquito_cities_high_res/MapServer	
OGC:WMS	https://climate.discomap.eea.europa.eu/arcgis/services/UAMV/climatic_suitability_tiger_mosquito_cities_high_res/MapServer/WMSServer?request=GetCapabilities&service=WMS	

Hierarchy level	Dataset

Conformance result

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

Statement

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 the European Centre for Disease Prevention and Control (ECDC 2009).

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.

References:

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

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://datastore.copernicus-climate.eu/c3s/published-forms/c3sprod/app-health-urban-aedes-albopictus-suitability-climatology/Web_Application_URBAN.3_v1_latest.pdf).

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.2015.01.00 1.

Metadata

File identifier	93070b8d-bb1a-4f4a-9b71-531676496125 XML
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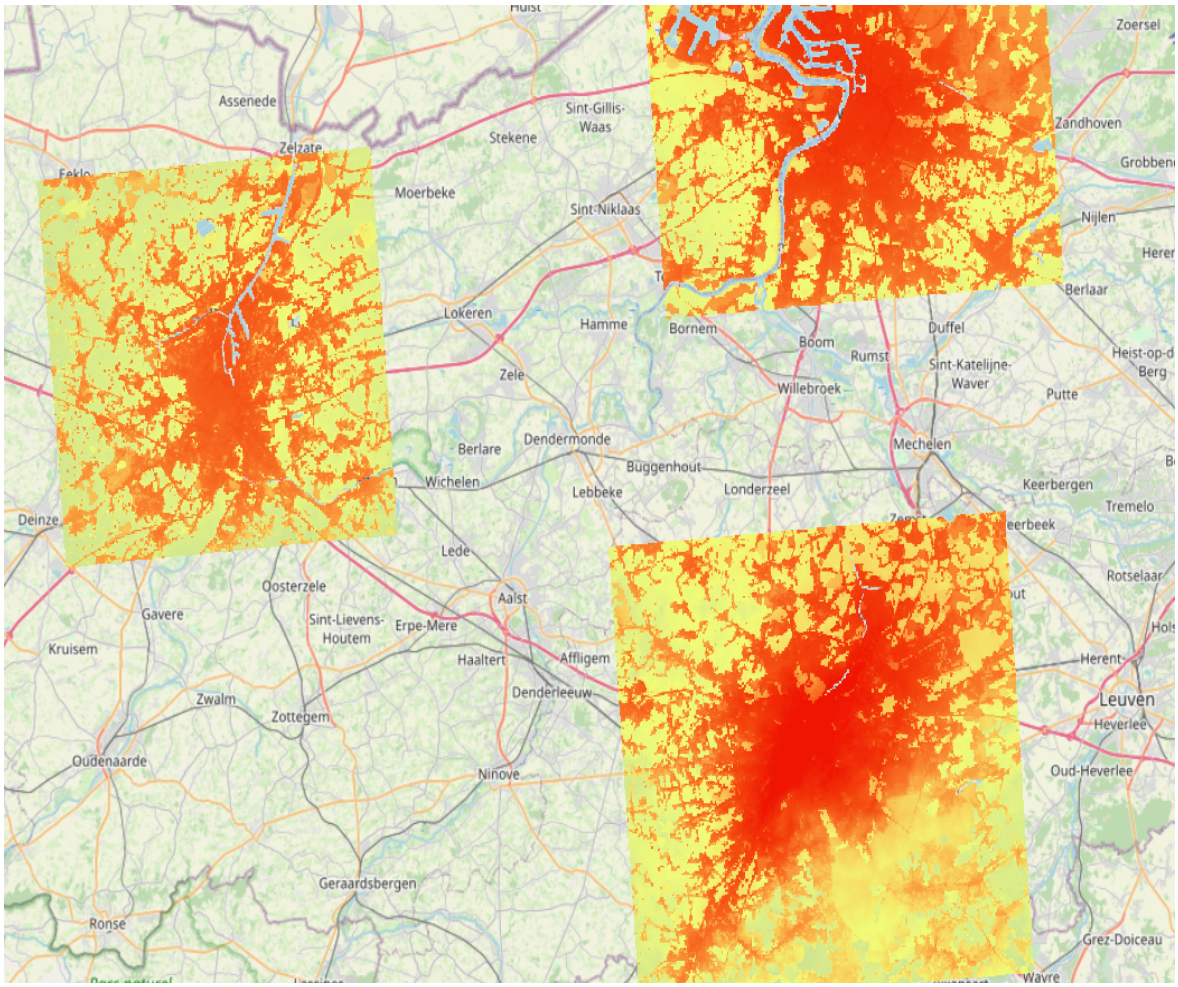
Hierarchy level	Dataset
Date stamp	2021-08-23T14:43:29.029Z
Metadata standard name	ISO 19115/19139
Metadata standard version	1.0
Metadata author	**Organisation name** / **Individual name** / **Electronic mail address** / **Website** / **Role** European Environment Agency / / sdi@eea.europa.eu / / Point of contact

Overviews



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