

ANTWERP HEAT STRESS EXPOSURE MAPS METADATA BASE SCENARIO - 1986-2005

Versions

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1 OVERVIEW MAPS AND DATASETS

1.1 Maps availability

This document contains a description of the content of Antwerp Heat Stress Exposure maps and delivered datasets for the Base scenario and for 1986-2005 time frame.

The following table is a list of all provided maps. The maps described in this document are highlighted in yellow.

CITY	TYPE	THEME	EXPOSURE MAP VARIABLE	MODELLED HEAT STRESS VARIABLE	BASE SCENARIOS			URBAN PLANNING SCENARIOS				
					PAST - PRESENT (1986-2005)	NEAR FUTURE (2026-2045)	FAR FUTURE (2081-2100)	PAST - PRESENT (1986-2005)	NEAR FUTURE (2026-2045)			
Antwerp	Exposure maps	Population	Total population 2014	Average number of heatwave days per year	X							
			Population density inhabitants per hectare 2014	Average number of heatwave days per year	X							
			Total population 2030	Average number of heatwave days per year							X	
			Population density inhabitants per hectare 2030	Average number of heatwave days per year							X	
			Number of inhabitants aged 0 to 4 years 2014	Average number of heatwave days per year		X						
			Number of inhabitants aged 0 to 17 years 2014	Average number of heatwave days per year		X						
			Number of inhabitants aged 18 to 65 years 2014	Average number of heatwave days per year		X						
			Number of inhabitants aged +65 years 2014	Average number of heatwave days per year		X						
			Number of schools 2014	Average number of heatwave days per year		X						
			Number of childcare centers 2014	Average number of heatwave days per year		X						
			Number of hospitals 2014	Average number of heatwave days per year		X						
			Number of elderly stay facilities 2014	Average number of heatwave days per year		X						
			Heat stress maps			Average number of heatwave days per year per grid cell	Average number of heatwave days per year per grid cell	X		X		X
						Average number of heatwave days per year per statistic units	Average number of heatwave days per year per statistic units	X		X		X
UHI effects at 11pm per grid cell	UHI effects at 11pm per grid cell	X										
			UHI effects at 11pm per statistic units	UHI effects at 11pm per statistic units	X							

Table 1: Antwerp Heat Stress Exposure maps list

1.2 Credits

The heat stress exposure data (e.g. average number of heat wave days per year) are extracted from local urban climate simulations (UrbClim model) performed by VITO over the period 1986-2005.

<https://vito.be/en/land-use/sustainable-cities/urban-climate-services>

Data such as 3D buildings, land use/cover and socio-economic data related to the considered maps is provided by city of Antwerp.

<https://www.antwerpen.be>

The UrbClim input data (e.g. land surface parameters), output results (e.g. daily temperature statistics) and the socio-economic data are processed by GIM.

<http://www.gim.be/en>

2 DESCRIPTION OF THE MAPS AND DATASETS

2.1 General Metadata

2.1.1 Map coordinate projection

The coordinate projection of maps and data is projected Belgian Lambert 1972 (EPSG 31370).

2.1.2 Maps style

Two versions of maps are generated per socio-economic theme.

The first one (“_ backgr”) has World Imagery Service Layer as background of the map.

The second one (“_ nobackgr”) doesn’t contain any background.

2.2 Map Specific Metadata

2.2.1 Total population 2014

2.2.1.1 Maps delivered

Maps are delivered in PDF format and named accordingly:

- antwerp_bsc_1986-2005_nrhwdays_pop_backgr.pdf
- antwerp_bsc_1986-2005_nrhwdays_pop_nobackgr.pdf

2.2.1.2 Layer delivered

Layer name	Format	Attributes	Description
antwerp_bsc_1986-2005_nrhwdays_pop	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of population per statistical unit in 2014
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 1986 to 2005
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		

2.2.2 Population density 2014

2.2.2.1 Maps delivered

Maps are delivered in PDF format and named accordingly:

- antwerp_bsc_1986-2005_nrhwdays_pop_dens_backgr.pdf
- antwerp_bsc_1986-2005_nrhwdays_pop_dens_nobackgr.pdf

2.2.2.2 Layer delivered

Layer name	Format	Attributes	Description
antwerp_bsc_1986-2005_nrhwdays_pop_dens	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: population density per ha and per statistical unit in 2014
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 1986 to 2005
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		

2.2.3 Number of inhabitants aged 0 to 4 years 2014

2.2.3.1 Maps delivered

Maps are delivered in PDF format and named accordingly:

- antwerp_bsc_1986-2005_nrhwdays_age0-4yr_backgr.pdf
- antwerp_bsc_1986-2005_nrhwdays_age0-4yr_nobackgr.pdf

2.2.3.2 Layer delivered

Layer name	Format	Attributes	Description
antwerp_bsc_1986-2005_nrhwdays_age0-4yr_	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of inhabitants aged from 0 to 4 years old per statistical unit in 2014
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 1986 to 2005
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		

2.2.4 Number of inhabitants aged 0 to 17 years 2014

2.2.4.1 Maps delivered

Maps are delivered in PDF format and named accordingly:

- antwerp_bsc_1986-2005_nrhwdays_age0-17yr_backgr.pdf
- antwerp_bsc_1986-2005_nrhwdays_age0-17yr_nobackgr.pdf

2.2.4.2 Layer delivered

Layer name	Format	Attributes	Description
antwerp_bsc_1986-2005_nrhwdays_age0-17yr	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of inhabitants aged from 0 to 17 years old per statistical unit in 2014
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 1986 to 2005
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		

2.2.5 Number of inhabitants aged 18 to 65 years 2014

2.2.5.1 Maps

Maps are delivered in PDF format and named accordingly:

- antwerp_bsc_1986-2005_nrhwdays_age18-65yr_backgr.pdf
- antwerp_bsc_1986-2005_nrhwdays_age18-65yr_nobackgr.pdf

2.2.5.2 Layer delivered

Layer name	Format	Attributes	Description
antwerp_bsc_1986-2005_nrhwdays_age18-65yr	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of inhabitants aged from 18 to 65 years old per statistical unit in 2014
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 1986 to 2005
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		

2.2.6 Number of inhabitants aged +65 years 2014

2.2.6.1 Maps delivered

Maps are delivered in PDF format and named accordingly:

- antwerp_bsc_1986-2005_nrhwdays_age65+yr_backgr.pdf
- antwerp_bsc_1986-2005_nrhwdays_age65+yr_nobackgr.pdf

2.2.6.2 Layer delivered

Layer name	Format	Attributes	Description
antwerp_bsc_1986-2005_nrhwdays_age65+yr	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of inhabitants aged 65 years and older per statistical unit in 2014
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 1986 to 2005
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		

2.2.7 Number of schools 2014

2.2.7.1 Maps delivered

Maps are delivered in PDF format and named accordingly:

- antwerp_bsc_1986-2005_nrhwdays_nr_schools_backgr.pdf
- antwerp_bsc_1986-2005_nrhwdays_nr_schools_nobackgr.pdf

2.2.7.2 Layer delivered

Layer name	Format	Attributes	Description
antwerp_bsc_1986-2005_nrhwdays_nr_schools	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of schools per statistical unit in 2014
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 1986 to 2005
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		

2.2.8 Number of childcare centres 2014

2.2.8.1 Maps delivered

Maps are delivered in PDF format and named accordingly:

- antwerp_bsc_1986-2005_nrhwdays_nr_childcare_centres_backgr.pdf
- antwerp_bsc_1986-2005_nrhwdays_nr_childcare_centres_nobackgr.pdf

2.2.8.2 Layer delivered

Layer name	Format	Attributes	Description
antwerp_bsc_1986-2005_nrhwdays_nr_childcare_centres	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of childcare centres per statistical unit in 2014
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 1986 to 2005
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		

2.2.9 Number of hospitals 2014

2.2.9.1 Maps delivered

Maps are delivered in PDF format and named accordingly:

- antwerp_bsc_1986-2005_nrhwdays_nr_hospitals_backgr.pdf
- antwerp_bsc_1986-2005_nrhwdays_nr_hospitals_nobackgr.pdf

2.2.9.2 Layer delivered

Layer name	Format	Attributes	Description
antwerp_bsc_1986-2005_nrhwdays_nr_hospitals	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of hospitals per statistical unit in 2014
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 1986 to 2005
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		

2.2.10 Number of rest homes and day-care 2014

2.2.10.1 Maps delivered

Maps are delivered in PDF format and named accordingly:

- antwerp_bsc_1986-2005_nrhwdays_nr_resthomes-daycare_backgr.pdf
- antwerp_bsc_1986-2005_nrhwdays_nr_resthomes-daycare_backgr.pdf

2.2.10.2 Layer delivered

Layer name	Format	Attributes	Description
antwerp_bsc_1986-2005_nrhwdays_nr_resthomes-daycare	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of rest homes and day-care facilities per statistical unit in 2014
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 1986 to 2005
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		