

Title

NSW Heat Vulnerability Index to ABS Statistical Area Level 1 2016

Abstract

The NSW Heat Vulnerability Index (HVI) dataset identifies areas to monitor where populations in the Sydney Greater Metropolitan Area are more vulnerable to the adverse effects of urban heat, as of Summer 2015-2016. HVI utilises indicators for exposure, sensitivity and adaptive capacity to calculate an overall heat vulnerability index. Expressed through the data, a vulnerability of 1 represents a combination of low exposure, low sensitivity and/or high adaptive capacity. A vulnerability of 5 represents high exposure, high sensitivity and/or low adaptive capacity. The calculation of HVI and the inputs to the exposure, sensitivity and adaptive capacity indicators are explained in the metadata. The HVI data is aggregated to the Australian Bureau of Statistics (ABS) Statistical Area Level 1 (SA1) polygon dataset to enable spatial analysis to support local policy and decision making. It can be used in conjunction with the NSW urban vegetation cover dataset for the same time period for broader analysis of the relationship of heat to green cover.

Resource locator[Show on SEED Web Map](#)

Name: Show on SEED Web Map

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Display dataset on SEED's map

Function: download

[Data Quality Statement](#)

Name: Data Quality Statement

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Data quality statement for NSW Heat Vulnerability Index to the ABS Statistical Area Level 1 (SA1) 2016

Function: download

[Estimation of Land Surface Temperature and Urban Heat Island effect for Australian urban centres \(CSIRO EP173542\)](#)

Name: Estimation of Land Surface Temperature and Urban Heat Island effect for Australian urban centres (CSIRO EP173542)

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

The citation for this report is Devereux D and Caccetta PA (2017) Estimation of Land Surface Temperature and Urban Heat Island effect for Australian urban centres. Report CSIRO Data61, Australia. This report was used to derive this HVI dataset. The report was from work undertaken as part of Horticulture Innovation Australia (HIA) project NY16005 "Where Should All The Trees Go?", in collaboration with RMIT, CSIRO Data61 and the University of Western Australia.

Function: download

[User guide for OEH urban heat and green cover datasets](#)

Name: User guide for OEH urban heat and green cover datasets

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Guidance and data description for use by NSW Local Government Areas for local environmental planning. This document contains detailed guiding information on the use conditions and descriptions for the NSW Office of Environment and Heritage (OEH) urban heat and vegetation cover datasets, especially for use in support of multi-scale analysis (i.e., local government areas and regional).

Function: download

[Download Package](#)

Name: Download Package

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Data (Shapefile & Geodatabase)

Function: download

[ArcGIS Layer files for mapping Urban Heat Island and Heat Vulnerability Index](#)

Name: ArcGIS Layer files for mapping Urban Heat Island and Heat Vulnerability Index

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Layer files for symbology when using ArcGIS/ArcMap v. 10.x for displaying the dataset. The compressed file (zip) contains two layer files, one for each Urban Heat Island (manual classification of temperature ranges) and Heat Vulnerability Index (discrete attribute classes 0 to 5). Temperature ranges for UHI map degrees Celsius deviation from the reference, and include less than 0 (i.e., cooler than reference), 0 to 3 degrees warmer, 3 to 6 degrees warmer, 6 to 9 degrees warmer and warmer than 9 degrees from the reference. Two colour variations of the layer file are included.

Function: download

[ArcGIS REST Service - Heat Vulnerability Index](#)

Name: ArcGIS REST Service - Heat Vulnerability Index

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

An ArcGIS Server web service represents a GIS resource—such as a map, locator, or image—that is located on an ArcGIS Server site and is made available to client applications. Depending on the layers enabled, this web service allows a user to query its features and/or visualise the dataset. This service is aimed at advanced geographical information users, and will require access to geographical information system (GIS) software such as ArcGIS/ArcMap.

Function: download

[WMS - Heat Vulnerability Index](#)

Name: WMS - Heat Vulnerability Index

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Web Map Service (WMS) is a standard protocol for serving georeferenced map images over the internet that are generated by a map server using data from a GIS Database (NSW Government - Spatial Web Services Register June 2015). WMS allows a user to spatially visualise the dataset, but not query its features. This service is aimed at advanced geographical information users, and will require access to geographical information system (GIS) software such as QGIS and ArcGIS/ArcMap

Function: download

[Urban Heat Island and Heat Vulnerability in Sydney Greater Metropolitan Area, 2016](#)

Name: Urban Heat Island and Heat Vulnerability in Sydney Greater Metropolitan Area, 2016

Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

Methodology Report for Heat Vulnerability Index in Sydney Greater Metropolitan Area, utilising 2016 Urban Heat Island data, 2016 Urban Vegetation (Tree Canopy) data, and ABS SA1 level socio-economic and demographic data

Unique resource identifier

Code 3b59f3c4-51e2-40c3-af35-e7a7a63fd207

Presentation form Map digital

Edition 1

Dataset language English

Metadata standard

Name ISO 19115

Edition	2016
Dataset URI	https://datasets.seed.nsw.gov.au/dataset/3b59f3c4-51e2-40c3-af35-e7a7a63fd207
Purpose	urban environmental planning, green infrastructure
Status	Completed
Spatial representation	
Type	vector
Geometric Object Type	surface
Spatial reference system	
Code identifying the spatial reference system	4283
Spatial resolution	1 m
Additional information source	The heat vulnerability index attribute value is modelled on three indices - exposure to heat (temperature classes), sensitivity to heat (vegetation area, road area, population density, elderly, very young, persons needing care) and adaptivity to heat (SEIFA-IRSD and SEIFA-IEO). Index data is provided at the SA Level.1. Each statistical area is rated for each index on a scale of 1 - 5. on a scale of 1 to 5 based on quintiles, 1 represents low exposure, low sensitivity or high adaptive capacity and 5 represents high exposure, high sensitivity or low adaptive capacity. A 0 (zero) indicates no population resides there (pop. density = 0).
Topic category	
Keyword set	
keyword value	HUMAN-ENVIRONMENT-Urban-Design HUMAN-ENVIRONMENT-Livability HUMAN-ENVIRONMENT-Planning CLIMATE-AND-WEATHER-Extreme-weather-events CLIMATE-AND-WEATHER-Temperature CLIMATE-AND-WEATHER-Climate-change HUMAN-ENVIRONMENT-Structures-and-Facilities
Originating controlled vocabulary	
Title	ANZLIC Search Words
Reference date	2008-05-16
Geographic location	
West bounding longitude	150.270996
East bounding longitude	152.006836
North bounding latitude	-34.597042
South bounding latitude	-32.87036

NSW Place Name Sydney Greater Metropolitan Area, Greater Sydney Region

Vertical extent information

Minimum value -100

Maximum value 2228

Coordinate reference system

Authority code urn:ogc:def:cs:EPSG::

Code identifying the coordinate reference system 5711

Temporal extent

Begin position 2015-10-01

End position N/A

Dataset reference date

Resource maintenance

Maintenance and update frequency Not planned

Contact info

Contact position Data Broker

Organisation name NSW Department of Climate Change, Energy, the Environment and Water

Telephone number 131555

Email address data.broker@environment.nsw.gov.au

Web address <https://www.nsw.gov.au/departments-and-agencies/dcceew>

Responsible party role pointOfContact

Lineage The dataset was developed through a contract with the Royal Melbourne Institute of Technology (RMIT). Data was developed following the methodology for "Estimation of Land Surface Temperature and Urban Heat Island effect for Australian urban centres", from Commonwealth Science and Research Organisation (CSIRO) (Report EP173542). The processed Landsat 8 imagery was integrated with the ABS Statistical Area Level 1 polygon dataset with the assistance of Western Australia University.

Limitations on public access

Scope	dataset
DQ Completeness Commission	
Effective date	2019-03-12
Explanation	The dataset has complete coverage for the Significant Urban Area of Sydney Greater Metropolitan Area. This includes the major urban, urban, peri-urban and other urban areas of the included Local Government Areas. The dataset has complete coverage for the Greater Sydney Region and the Local Government Areas within it.
DQ Completeness Omission	
Effective date	2019-03-12
Explanation	Local Government Area users of the data will need to double check that their known boundaries are correctly identified. In the dataset, the LGA name that is given to a Statistical Area may be inaccurate. While the Statistical Area Level 1 has a name assigned to it, it may not match entirely with the 2017 LGA boundaries. The knock on effect is that the Mesh Block may not correspond to the correct District. This issue most likely occurs with more rural SA Level 1 polygons at the boundaries, such as near Campbelltown, Wollondilly or Sutherland. As adequate data validation was performed, this issue is likely minor and not affecting every LGA. An explanation of potential omissions is explained in the attached CSIRO Report.
DQ Conceptual Consistency	
Effective date	2019-03-12
Explanation	There are no obvious conceptual inconsistencies in the dataset. An explanation of potential inconsistencies is explained in the attached CSIRO Report.
DQ Topological Consistency	
Effective date	2019-03-12
Explanation	There are no obvious topological inconsistencies in the dataset. An explanation of potential inconsistencies is explained in the attached CSIRO Report.
DQ Absolute External Positional Accuracy	
Effective date	2019-03-12
Explanation	Positional accuracy is described in the attached methodology report.
DQ Non Quantitative Attribute Correctness	
Effective date	2019-03-12
Explanation	Attribute accuracy is described in the attached methodology report. For the purpose of confidentiality, this dataset only provides the index ratings, and does not include the model source demographic, census and SEIFA data. This data is however discoverable using the statistical area codes.

Responsible party

Contact position	Data Broker
Organisation name	NSW Department of Climate Change, Energy, the Environment and Water
Telephone number	131555
Email address	data.broker@environment.nsw.gov.au
Web address	https://www.nsw.gov.au/departments-and-agencies/dcceew
Responsible party role	pointOfContact

Metadata point of contact

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Metadata date 2024-02-26T13:17:11.228903

Metadata language