# Title

**Abstract** 

NSW Heat Vulnerability Index to ABS Statistical Area Level 1 2016

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

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).

analysis (nei) local government areas

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

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

2016

Description:

Vulnerability in Sydney Greater

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

Metropolitan Area, 2016

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 3351a474-87be-4356-90bf-211a48891019

Presentation form

Map digital

Edition

1

Dataset language

English

### Metadata standard

Name ISO 19115

Edition 2016

Dataset URI <a href="https://www.planningportal.nsw.gov.au/opendata/dataset/3351a474-87be-4356-90bf-">https://www.planningportal.nsw.gov.au/opendata/dataset/3351a474-87be-4356-90bf-</a>

211a48891019

Purpose urban environmental planning, green infrastructure

Status	Completed	
Spatial representation		
Туре	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 eat (temperature classes), sensitivity to heat (vegetation area, road area, population ensity, elderly, very young, persons needing care) and adaptivity to heat (SEIFA-IRSD nd SEIFA-IEO). Index data is provided at the SA Level.1. Each statistical area is rated or each index on a scale of $1 - 5$ . on a scale of $1 \text{ to } 5$ based on quintiles, $1 \text{ represents}$ to exposure, low sensitivity or high adaptive capacity and $5 \text{ represents}$ high exposure, igh sensitivity or low adaptive capacity. A $0 \text{ (zero)}$ indicates no population resides here (pop. density = $0$ ).	
Topic category	environment	

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			
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		
Full postal address	NSW		
	Australia		
	data.broker@environment.nsw.gov.au		
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.

### Constraint set

Use constraints

This data is provided under a Creative Commons Attribution 4.0 licence <a href="http://creativecommons.org/licenses/by/4.0">http://creativecommons.org/licenses/by/4.0</a>. Attribute 'NSW Department of Climate Change, Energy, the Environment and Water' in publications using this data.

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

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Responsible party role pointOfContact

Metadata point of contact

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Responsible party role pointOfContact

Metadata date 2024-02-26T13:17:15.042751

Metadata language