

## Title

2022 Heat Vulnerability Index for the Greater Sydney Region

## Abstract

The 2022 Heat Vulnerability Index (HVI) for Greater Sydney aims to combine information on urban heat, built form and population demographics to provide a fine-grained understanding of the spatial distribution of heat vulnerable populations.

The Index combines indicators of heat exposure, sensitivity to heat, and adaptive capacity to produce the composite vulnerability index. The 2022 HVI dataset is built upon the methodology established in the creation of the 2016 Sydney HVI dataset (Sun et al 2018), integrating land cover, urban heat, and demographic data, aggregated to Statistical Area Level 1 (SA1) of the Australian Statistical Geography Standard (ASGS) produced by the Australian Bureau of Statistics (ABS).

Broad comparisons can be made between the 2022 and 2016 HVI datasets, however there are multiple factors that may limit direct comparability over time. This includes variations in underlying datasets, the relative nature of the HVI, and the change in size of the study area between 2016 and 2022. When undertaking comparison it is recommended to examine the changes in the underlying datasets and the absolute values of the heat exposure, sensitivity and adaptive capacity indicators. This approach helps to explain the variations in HVI and informs effective heat mitigation strategies.

The 2022 HVI is most useful at the SA1 scale. It is not recommended to aggregate the HVI dataset to larger scales (i.e. average HVI for a suburb or LGA). Aggregating spatially specific and individual data to geographic areas smooths out local variation, losing locational specificity and population variation. In cases where individual human exposure is of concern, this may either increase or decrease the representation of the actual exposure of a given individual, causing the neighbourhood effect averaging problem (NEAP) (Kwan 2018).

Please refer to the methodology report for more information.

## 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 2022 Heat Vulnerability Index for the Greater Sydney Region

Function: download

### [2022 Heat Vulnerability Index Dataset Methodology Report](#)

Name: 2022 Heat Vulnerability Index Dataset Methodology Report

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

Description:

This report provides an explanation of the methodology, quality assurance and limitations of the 2022 Heat Vulnerability Index for Greater Sydney.

Function: download

### [2022 Heat Vulnerability Index for Greater Sydney Geodatabase](#)

Name: 2022 Heat Vulnerability Index for Greater Sydney Geodatabase

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

Description:

This .zip folder includes the geodatabase files for the 2022 Heat Vulnerability Index for Greater Sydney. Note this file may not work for some versions of ArcMap. If using ArcMap, refer to the geopackage file.

Function: download

[2022 Heat Vulnerability Index for Greater Sydney Geopackage](#)

Name: 2022 Heat Vulnerability Index for Greater Sydney Geopackage  
Protocol: WWW:DOWNLOAD-1.0-http--download

Description:

This file provides the 2022 Heat Vulnerability Index for Greater Sydney in GeoPackage format.

Function: download

[2022 Heat Vulnerability Index Tabular Data](#)

Name: 2022 Heat Vulnerability Index Tabular Data

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

Description:

This spreadsheet provides the tabular data for the 2022 Heat Vulnerability Index dataset.

Function: download

[2022 Heat Vulnerability Index for Greater Sydney Metadata](#)

Name: 2022 Heat Vulnerability Index for Greater Sydney Metadata

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

Description:

This document provides metadata for the 2022 Heat Vulnerability Index for Greater Sydney dataset.

Function: download

[Land Surface Temperature for Greater Sydney Summer 2022-2023](#)

Name: Land Surface Temperature for Greater Sydney Summer 2022-2023

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

Description:

This file includes the land surface temperature data that was used to create the 2022 Heat Vulnerability Index for Greater Sydney, in .tif format.

Function: download

[Metadata for Greater Sydney LST Summer 2022-2023](#)

Name: Metadata for Greater Sydney LST Summer 2022-2023

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

Description:

This document provides metadata for the land surface temperature data that was used to calculate the 2022 Heat Vulnerability Index for Greater Sydney.

Function: download

[Esri REST Service](#)

Name: Esri REST Service

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

Description:

REST Service

Function: download

Unique resource identifier

Code 08c39277-8b70-4c4d-905e-5c931c2eef08

Presentation form Table digital

Edition 1

Dataset language English

**Metadata standard**

Name ISO 19115

Edition 2016

Dataset URI <https://datasets.seed.nsw.gov.au/dataset/08c39277-8b70-4c4d-905e-5c931c2eef08>

Purpose Green infrastructure, tree canopy and urban heat planning and mitigation. management

Status Completed

**Spatial representation**

Type vector

**Spatial reference system**

Code identifying the spatial reference system 4283

Spatial resolution 30 m

**Topic category****Keyword set**

keyword value CLIMATE-AND-WEATHER-Climate-change  
CLIMATE-AND-WEATHER-Extreme-weather-events  
CLIMATE-AND-WEATHER-Temperature  
HUMAN-ENVIRONMENT-Housing  
HUMAN-ENVIRONMENT-Planning  
HUMAN-ENVIRONMENT-Livability

**Originating controlled vocabulary**

Title ANZLIC Search Words

Reference date 2008-05-16

**Geographic location**

West bounding longitude 150.16937

East bounding longitude 151.52

North bounding latitude -34.48392

South bounding latitude -33.46811

NSW Place Name 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 2021-01-06

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 Planning, Housing and Infrastructure

Telephone number 131555

Email address [data.broker@environment.nsw.gov.au](mailto:data.broker@environment.nsw.gov.au)

Web address <https://www.nsw.gov.au/departments-and-agencies/department-of-planning-housing-and-infrastructure>

Responsible party role pointOfContact

## Lineage

The overall heat vulnerability index is calculated based on exposure, sensitivity, and adaptive capacity and uses quintiles, with 1 representing low vulnerability and 5 representing high vulnerability.

More information regarding the methodology used to develop the dataset can be found in the Methodology Report.

## Limitations on public access

## Responsible party

Contact position Data Broker

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Telephone number 131555

Email address [data.broker@environment.nsw.gov.au](mailto:data.broker@environment.nsw.gov.au)

Web address <https://www.nsw.gov.au/departments-and-agencies/department-of-planning-housing-and-infrastructure>

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Responsible party role pointOfContact

Metadata date 2025-04-22T05:38:24.762590

Metadata language