



## Case Study

# Climate Heat Map of Australia

Whilst extreme heat is nothing new to most Australians, climate change is gradually increasing the frequency and impact of heatwaves. A detailed analysis by the Climate Council projects that by the end of the century Australian capital cities are set to swelter through twice as many days above 35°C.

Spatial Vision worked with the Climate Council to develop a user-friendly web application for the general public to educate and inform, as well as garner media attention for wider promotion. The goal is for Australia to wholly embrace renewable energy and phase out pollution from coal, oil and gas to help protect communities from unliveable temperatures.

App users can input their suburb or postcode into the heat map interface to see how varying climate pollution outcomes can affect the number of extreme heat occurrences in their area. Thousands of data points from CSIRO and the Bureau of Meteorology's Climate Change in Australia project were collated to ensure the projections are based on scientific data.

The storytelling aspect of the heat map is enhanced by a feature that details various impacts around the country, such as on the food bowl, the Great Barrier Reef, vital infrastructure and rainforests. The map makes it clear that beyond the inherent health risks, extreme heat has potentially far-reaching and dire consequences on people's work, the liveability of certain locations and the nation's economy.

**"The project required a huge amount of data processing, with little to no room for error, and they breezed through it. The team was very receptive to multiple rounds of feedback on design and user experience modifications of the app and were very solutions-focused. The team were always happy to explain technical decisions and work with our other external groups to ensure the tool launched without a glitch. Can't wait to work with them in the future and would highly recommend the team to other organisations."**

Tahlia Ludlow, Climate Council  
Digital Content & Web Advisor

## Customer Profile

[www.climatecouncil.org.au](http://www.climatecouncil.org.au)

## Company

Climate Council

## Location

NSW

## Industry

Environmental Advocacy

## Products

Media and Communications

## Solution

Spatial Vision developed an interactive map that illustrates how cutting climate pollution will limit extreme heat in our neighbourhoods. It projects the average number of hot and very hot days, as well as very hot nights, for each suburb by 2050 and 2090, and across three scenarios: no action, continuing with existing action, and taking necessary action in line with Climate Council's recommendations..

## Benefits

- A compelling, graphic representation of complex data that appeals to media and general public
- A tool to facilitate education and generate action

## The Issue

Climate change is driven by the burning of coal, oil and gas supercharging our weather systems. One of the most devastating effects, extreme heat, causes fatalities, severe health issues, impacts our way of living and causes damage to the environment and ecosystems. Exposure to extreme heat has become increasingly frequent and severe. Heatwaves have been described as 'silent killers', causing more deaths since the 1890s than bushfires, cyclones, earthquakes, floods and severe storms combined (Hughes, L, Hanna, E & Fenwick, J., *Climate Council* 2016).

It is predicted heatwaves will escalate considerably unless governments help facilitate real reductions in emissions. The voting public needs to be informed and feel empowered to influence decision makers to protect the health and prosperity of our communities.



## The Solution

The Climate Council had a clear idea of what they wanted for this public-facing app. Without it being overly complex, it needed to communicate a large volume of data clearly to tell an evidence-based story. The map also needed to be a web-based app so it was sharable and integrated well within a website.

"We needed to visualise a high volume of complex data, simply and clearly. Climate Council are experts in communication, so we focused on the user journey and how to tell the story in a way that was compelling and informative," said Spatial Vision's Geospatial Analyst and map developer, Tom Hollands.

"The approach for the design was one that was honest and effective, leveraging previous experience in this field. Working in collaboration with the client to synthesise what they wanted to translate into user requirements, the focus was on the message and usability."

The app itself is a custom build, using modern open-source web frameworks. This approach boasted zero ongoing licensing fees, and a flexible, extendible base on which to build the custom features required (and improve into the future).

The main technical challenge of visualising large-scale data (15k+ suburbs across Australia, with 39 data points each) is performance. Data was prepared using geometry simplification, and then split and indexed to ensure that the map would display well on all devices and browsers. Application design reflected this, and the app is built to carefully load data without sacrificing performance.

The Climate Council started small with their first app project. This time, there was more investment because of the proven value and impact experienced. Building this data-based, interactive visual tool required passion and collaboration, something both the client and Spatial Vision brought to the table for this project..

[spatialvision.com.au](https://spatialvision.com.au)

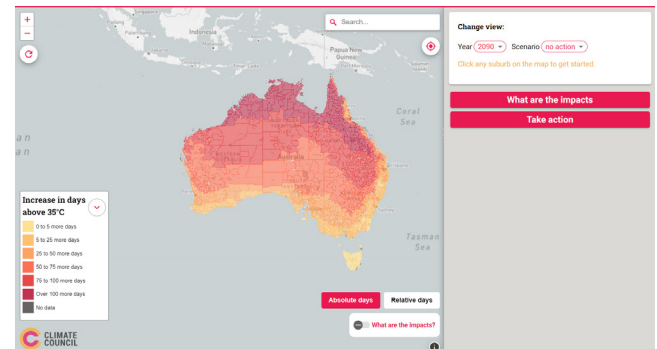
Level 8, 575 Bourke Street  
Melbourne 3000 Australia

[info@spatialvision.com.au](mailto:info@spatialvision.com.au)  
+61 3 9691 3000

## The Benefits

The scope of work undertaken assisted the Climate Council in several ways:

- ✔ Effectively communicates the severity of extreme heat scenarios across location, time and emission scenarios
- ✔ Compelling data visualisations such as the interactive Heat Map attract strong response from the public and mainstream media
- ✔ Exposure for the Climate Council is enhanced and enables them to educate and raise awareness to a broader audience
- ✔ Provides a user-friendly mechanism to facilitate ground-up advocacy



The Extreme Heat Climate Map of Australia assists the public to understand the uncomfortable and potentially fatal effects of extreme heatwaves under various action or non-action climate responses. The web map also highlights other outcomes impacting the environment and communities.

If you'd like to know more, [please get in touch.](#)

**Spatial  
Vision**