

Airborne Thermal Imaging for Urban Heat Island Mapping



Diurnal temperature changes

- These two images show how temperatures have changed between day and night.
- This data can be used to identify regions which cool down more than others.
- Temperature change can be correlated to landcover.
- Changing the landcover (e.g. planting more trees) can affect the rate of cooling.



What is airborne thermal imaging?

Airborne thermal imaging measures heat emitted by objects on the ground, enabling the creation of “heat maps”.

Hotter objects emit more heat than cooler ones, so airborne thermal imaging gives an indication of the temperature of objects.

In an urban context, those objects can be buildings, roads, vegetation, creeks etc.

Why use airborne thermal imaging?

- Measure temperature differences across suburbs or LGA
- Identify areas of high temperatures (heat islands)
- Correlate temperature with landcover
- Monitor diurnal temperature changes
- Accurate, repeatable measurements

How is the data acquired?

- Thermal sensor is mounted on a manned aircraft (not a UAV!)
- Data is acquired either during the day, or during the night (or even both)
- Thermal data is aligned to existing orthophotography, giving a resulting accuracy of better than 2m

Do I need to be a GIS expert?

- No! We can provide data in a range of formats, as well as written reports derived from the image data.

Who is “Remote Sensing Australia”?

- A business unit of Spatial Scientific
- Over 10 years experience in aerial imaging and thermal remote sensing
- A leading supplier of airborne thermal imagery to LGAs in Australia

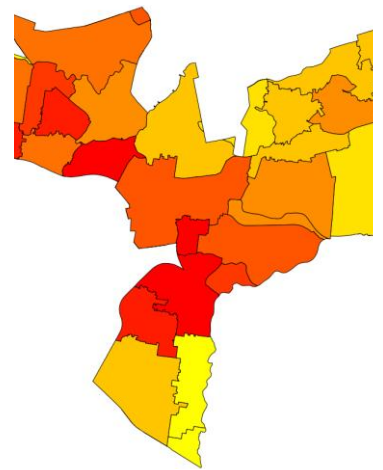
What next?

- Call us to discuss your needs
- Send us a shape file or kml file so that we can give you a quote
- Browse our website for more info

Climate change and urban heat

In a changing climate, the need to manage heat within urban and semi-urban areas has become paramount for many councils in Australia.

By acquiring airborne thermal imagery, councils have been able to better understand heat distribution within their suburbs, and propose new ways in which they can mitigate heat problems.



Spatial heat maps

Heat maps can be created on a suburb-by-suburb, or ward-by-ward basis, allowing temperature comparisons to be made between different administrative regions.

Suburbs that cool fastest or slowest between day and night can easily be identified.



Spatial Scientific, the parent company of Remote Sensing Australia, is an authorised reseller and integrator of FLIR Systems imaging products. We have been working with FLIR imaging technology for over 10 years.