

Australian climate tool identifies end of winter by 2050

March 11 2019



Dr Geoff Hinchliffe and Assoc. Prof. Mitchell Whitelaw designed the tool.
Credit: Jack Fox

Academics from the School of Art & Design have teamed up with colleagues from the ANU Climate Change Institute on a design project, which takes existing data and communicates the impacts of climate change in a way that people can engage with and better understand.

The resulting new [climate](#) tool visualises data which shows by 2050, Australians will no longer enjoy winter as they know it today and will experience a new season the designers are calling "New Summer".

New Summer represents a period of the year where temperatures will consistently peak in many cases well above 40°C for a sustained period.

Using the tool, people can click on thousands of locations across Australia to see how the local weather in their home town will change by 2050.

"We looked at the historical average temperatures of each season and compared them to the projected data and what we find everywhere is that there's really no period of a sustained or lasting winter," said Dr Geoff Hinchliffe, Senior Lecturer (SOA&D).

"In 30 years' time winter as we know it will be non-existent. It ceases to be everywhere apart from a few places in Tasmania," he said.

The tool - which uses data from the Bureau of Meteorology (BoM) and Scientific Information for Land Owners (SILO) - shows how many degrees the average temperature will rise by in each location and how many more days over 30 or 40 degrees a place will have in 2050 compared with today.

"As well as the data, we also focused on developing the most effective visual forms for conveying how [climate change](#) is going to affect specific locations," said Dr Hinchliffe.

"That meant using colour, shape and size around a dial composition showing a whole year's worth of temperature values in a single snapshot.

"It makes it visually rich and interesting and gives a lot of detail in a way

that connects emotionally with people by locating it in their own town," he said.

"We concentrate on visualisation and storytelling. We don't want to misrepresent the data or suggest things that aren't true so the visualisation was instrumental in conveying the data in a way that can be interrogated. It's like a graph, but more poetic," said Associate Professor Mitchell Whitelaw.

"The research and innovation here is in the visualisation and compilation of all this data. Our innovation is in the way this existing data is communicated and presented - hopefully in a memorable, engaging way," he said.

The visual climate tool was prepared for the Australian Conservation Foundation and can be viewed here: <https://myclimate.acf.org.a>

About the data:

Data extracted from Queensland Government LongPaddock project, which uses the SILO database (www.longpaddock.qld.gov.au/silo) and is operated by the Science Division of the Queensland Department of Environment and Science (DES) with support from the Queensland Department of Agriculture and Fisheries (DAF).

The climate 'change factors' used to calculate consistent climate scenarios data have been estimated using: Coupled Model Intercomparison Research Program 3 (CMIP3) patterns of change data (projected changes per degree of 21st Century global warming) supplied by the CSIRO and the UK Met Office/Hadley Centre; and data from AR4 SRES scenario temperature response curves (projected amounts of [global warming](#)) supplied by the CSIRO.

These [data](#) sources are available in the following locations:

- The CMIP3 global model database: http://www-pcmdi.llnl.gov/ipcc/about_ipcc.php
- OzClim: <http://www.csiro.au/ozclim>
- UK Met Office/Hadley Centre:
<http://www.metoffice.gov.uk/climate-change/resources/hadley>

Data modelling

- Perturbation method: Linear Mixed Effect State Space (LMESS)
- Q5
- Global warming sensitivity: High
- IPCC assessment report: AR5
- Emission scenario: RCP8.5

Climate model: ACCESS 1.3

Provided by Australian National University

Citation: Australian climate tool identifies end of winter by 2050 (2019, March 11) retrieved 27 April 2024 from <https://phys.org/news/2019-03-australian-climate-tool-winter.html>

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