

Queensland Future Climate Dashboard

Understanding the need to provide reliable regional scale simulations of future climate, the Science Division from the Department of Environment and Sciences (DES) has downscaled 11 state-of-the-art global climate models to 10 km grid-cells. Higher spatial resolution means that Regional Climate Models (RCMs) take into account local biophysical properties such as topography, vegetation and land-sea contrast and better simulate local climate as a result. Another relevant improvement in Queensland's future climate simulation is the continuous projections until the end of the century rather than previously used time-windows. However, improving spatial and temporal resolutions produces larger files and creates new barriers for data accessibility.

In order to facilitate data access and support climate adaptation policies and management, DES has conceptualized and implemented a new online platform with information about future climate. The ***Queensland Future Climate Dashboard*** summarises information of 11 state-of-the-art climate models with regional scale simulations until 2099. The dashboard is a visualisation platform composed of drop-down menus, maps, plots and tables whereby users can customise, visualise and export summarised future climate information according to their interest.

The ***Queensland Future Climate Dashboard*** provides high resolution simulations for **30 different metrics** grouped in six climate themes: (i) **Mean Climate**; (ii) **Heatwaves**; (iii) **Extreme Temperature Indices**; (iv) **Extreme Precipitation Indices**; (v) **Droughts**; and (vi) **Floods**. The spatial information for regional projections was spatially aggregated from 10 km pixel-size grids to specific regions. The following five specific regions in which regional projections are presented are: (i) **Local Government Areas**; (ii) **Regional Plan Areas**; (iii) **Bioregions**; (iv) **Major River Basins**; and (v) **Disaster Districts**. In addition, users can visualize and download future climate data across **calendar seasons, wet and dry periods** as well as **annual basis**. Information is summarized for four 20-year time slices centred in **2030, 2050, 2070** and **2090**.

The ***Queensland Future Climate Dashboard*** offers a fully interactive interface; that is users can customise maps and plots, as well as download summary statistics, screenshots and spatial data for different purposes such as local and regional planning, biodiversity management, water management and emergency services. By combining cutting-edge high resolution climate models and latest trends in big data visualization within an interactive visualisation platform, DES expects to bridge climate science and adaptation through an enjoyable experience for end-users (see Fig 1).

High Resolution Climate Change Projections

Queensland Future Climate Dashboard

More... »

- Mean Climate
- Heatwaves
- Extreme temperature indices
- Extreme precipitation indices
- Droughts
- Floods

Queensland's climate is highly variable in space and time, ranging from tropical wet to arid in space and from extremely wet to extremely dry over time. Understanding how our future climate and variability is subject to changes is crucial for adaptation and preparedness.

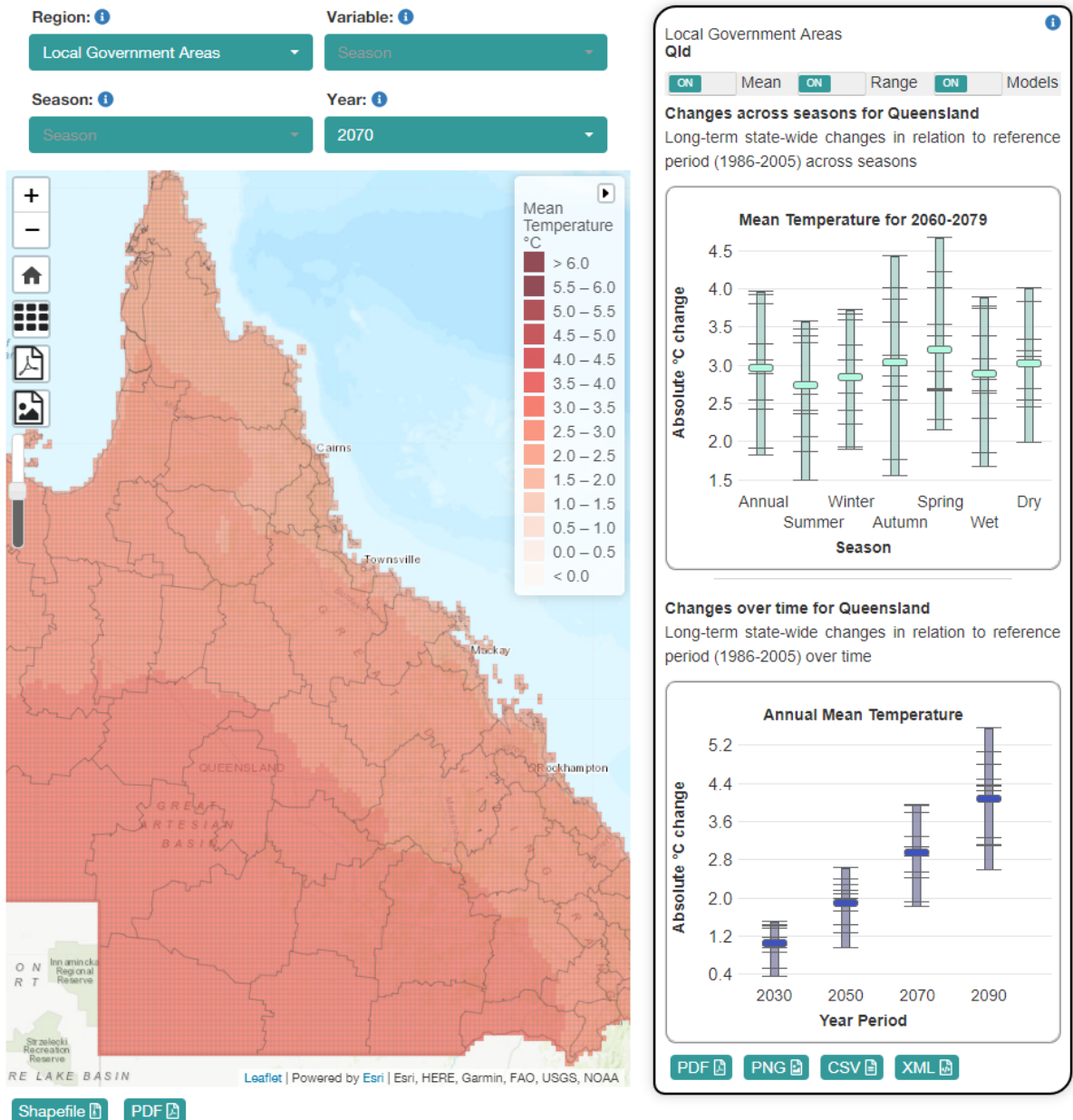


Figure 1. Queensland Future Climate Dashboard, an interactive geovisualization platform for high resolution climate simulations.