



Hydrologic reference stations



The Hydrologic reference stations (HRS) are high-quality streamflow monitoring stations. They're used to identify long-term trends in streamflow, such as variability, availability and change, across all Australian hydro-climatic regions.

What is the HRS service?

The HRS network includes 467 stations, from all Australian hydro-climatic regions, that meet strict selection criteria. Each site is unaffected by water-related development such as dams and irrigation, and has at least 30 years of high-quality streamflow measurements. A set of statistical tests applied to key streamflow variables show variability and trends in a time-series analysis of data from each station.

How does the service work?

We gather and quality check streamflow data from Australian and State water agencies, and missing data are filled using a hydrological model. We use an HRS toolkit to detect general long-term trends in streamflow and changes in high- and low-flow patterns. The toolkit also generates graphical products, data and statistical summary tables.

Using the online tool, you can select a station, explore and display streamflow data as an annual, seasonal, monthly or daily time series. You can also explore trends in streamflow using the trend explorer. You can view and download streamflow information for each station across the different time frames, or analyse for long-term trends.

What are the benefits?

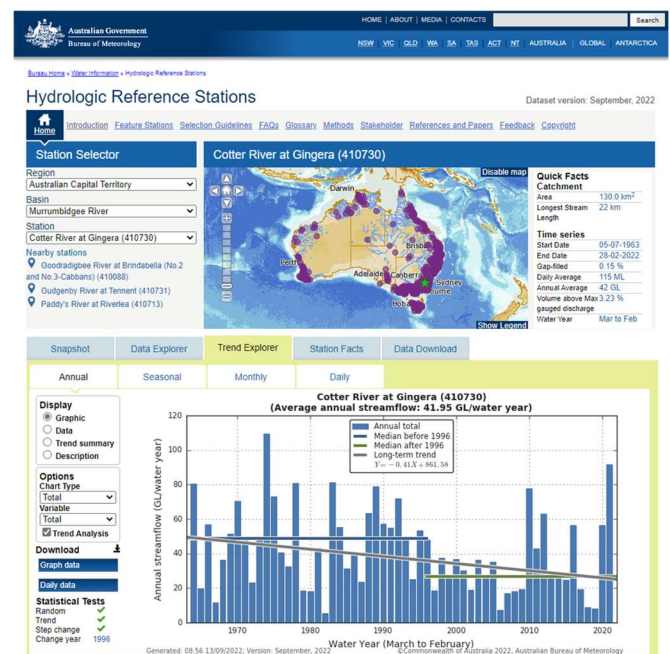
HRS information provides insight into long-term, nation-wide trends in water availability across Australia. Practitioners dealing with environmental issues can use it to help them:

- plan the location of new storages
- develop irrigation areas
- share water between basins
- identify the need for new water sources.

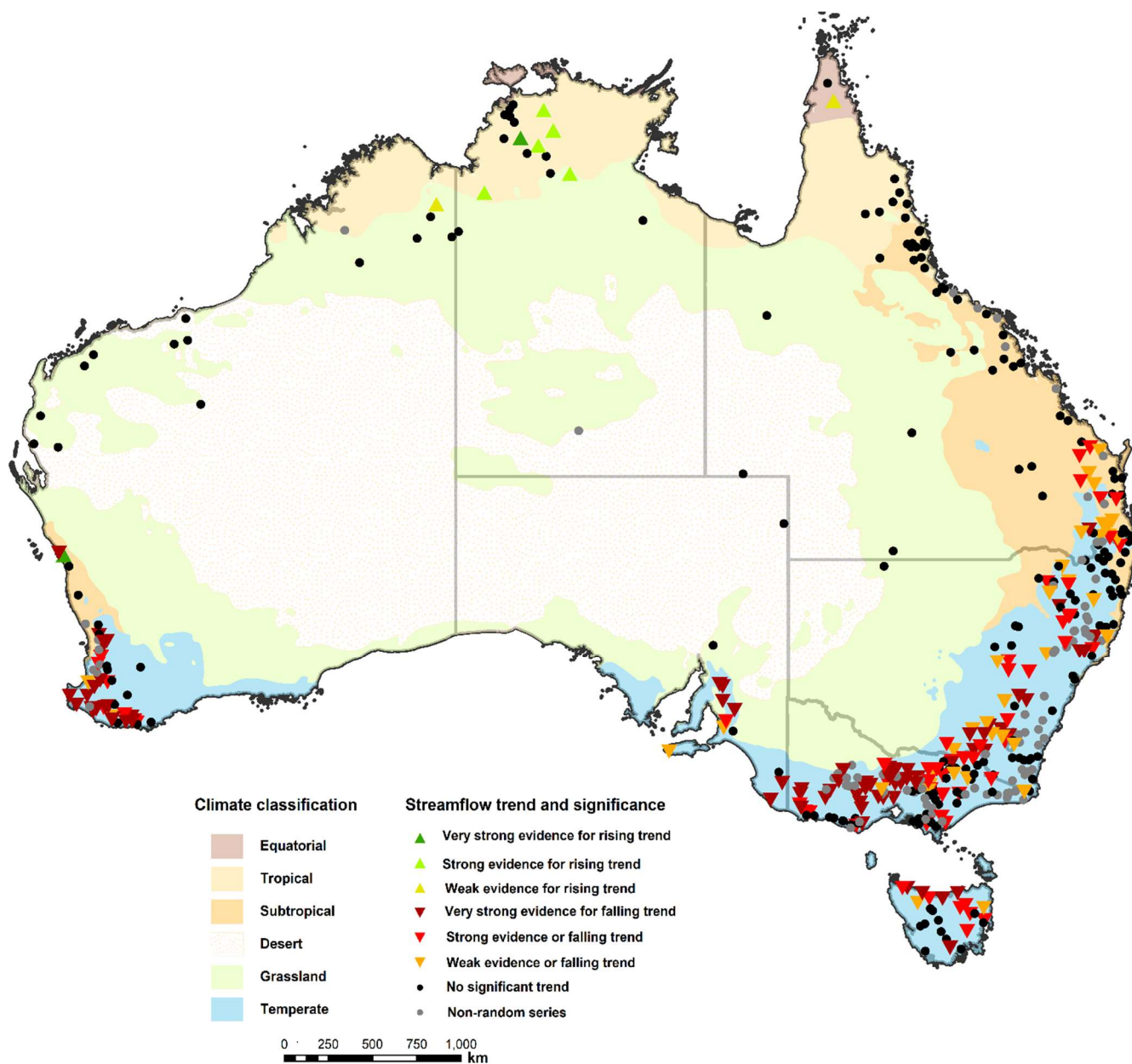
Research communities in Australia and overseas can use the service to examine impacts of climate stressors

on water resources when developing new hydrologic tools and models. This research can help us better predict future droughts and floods, ultimately leading to better use of our limited water resources.

Researchers, consulting engineers and hydrologists use the service. This has resulted in many published reports and over 30 scientific papers in Australia and overseas. HRS data have been used by international organisations for their own research and interpretation. Data have also been included in Global Runoff Data Centre (GRDC), which operates under the auspices of the World Meteorological Organization.



The web portal through which you can browse and download data for sites of interest.



Location of HRS sites across Australia showing long-term streamflow trends.

Next steps

We plan to release regular data and trend updates.

What is the Bureau's role?

The Bureau provides a comprehensive and reliable picture of Australia's water resources to support research, policy, planning and operations. It provides water information such as the HRS service as part of its water information role and responsibilities under the *Water Act 2007*.