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Managing the water resources of the Murray-Darling Basin, Australia

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The Murray-Darling Basin in south-eastern Australia is one of the world's largest rivers, draining an area of just over 1 million square kilometres. The basin drains about one-seventh of the Australian land mass and is the 16th longest river in the world. However, being located on the driest continent on Earth, its discharge is relatively small, averaging just 767 m³/s, far smaller than the discharge from any other similarly sized river worldwide.

Despite the relative lack of water, the Murray-Darling Basin is one of the most significant agricultural areas in Australia. In order to manage the water in the basin, in 2008 the Murray-Darling Basin Authority was formed with a mandate to manage the Murray-Darling Basin in an integrated and sustainable manner. Water reform in the basin has been a world-first in terms of the scale of intervention, but it has led to numerous conflicts in terms of access to water. The ability to manage the basin adequately relies on appropriate research being carried out in order to determine how much water is currently available, where it is currently being used, and how water availability and use are likely to change into the future.

Like much of southern Australia, the Murray-Darling Basin is already feeling the impacts of climate change, with more hotter days, fewer cold days, and a reduction in cool-season precipitation. These changes are only likely to increase over the coming decades. Additionally, as of January 2020, the Murray-Darling Basin finds itself in the grip of the worst drought in 120 years of records. This follows on the back of the second worst drought on record, the Millennium drought from 1997-2009.

This presentation will summarise the research being carried out by CSIRO in order to assist the MDBA to appropriately manage the water resources of the basin.