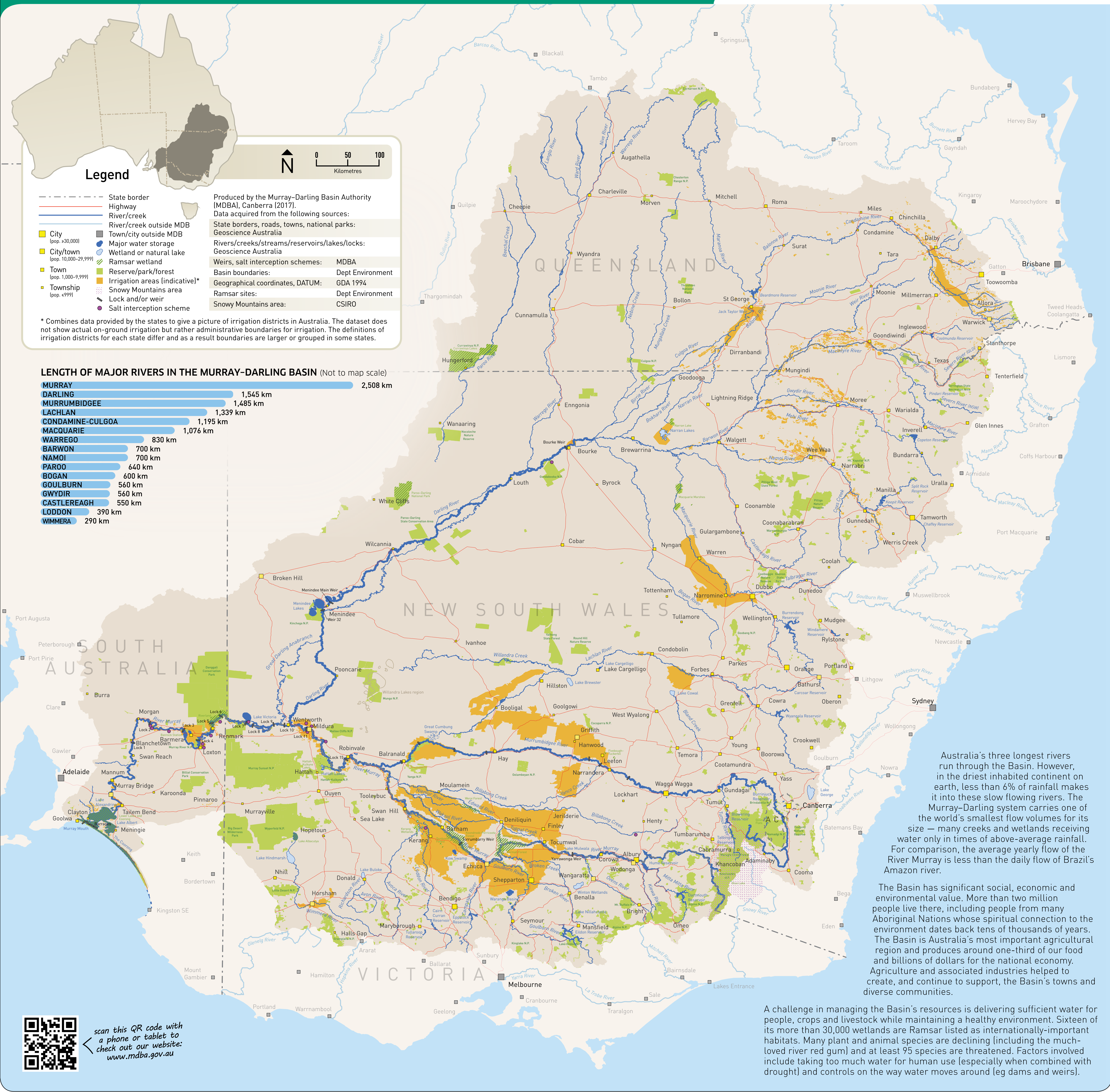


The Murray-Darling Basin

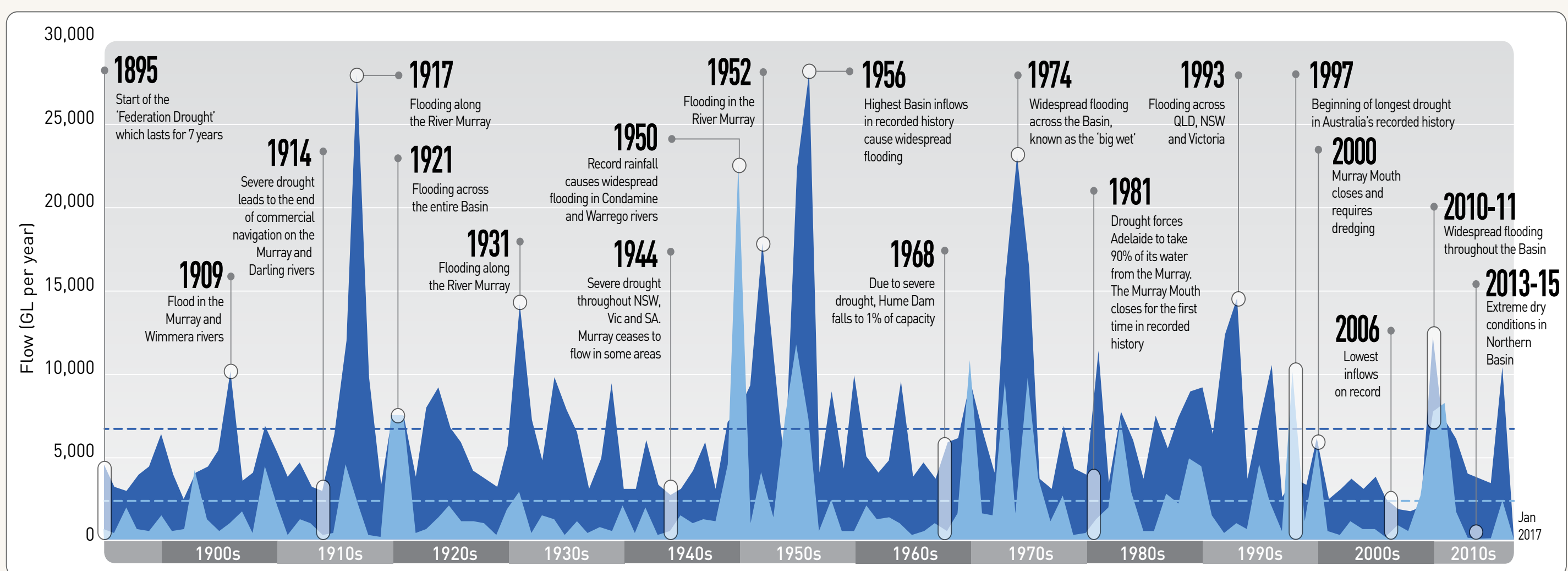


Australia's three longest rivers run through the Basin. However, in the driest inhabited continent on earth, less than 6% of rainfall makes it into these slow flowing rivers. The Murray-Darling system carries one of the world's smallest flow volumes for its size — many creeks and wetlands receiving water only in times of above-average rainfall. For comparison, the average yearly flow of the River Murray is less than the daily flow of Brazil's Amazon river.

The Basin has significant social, economic and environmental value. More than two million people live there, including people from many Aboriginal Nations whose spiritual connection to the environment dates back tens of thousands of years. The Basin is Australia's most important agricultural region and produces around one-third of our food and billions of dollars for the national economy. Agriculture and associated industries helped to create, and continue to support, the Basin's towns and diverse communities.

A challenge in managing the Basin's resources is delivering sufficient water for people, crops and livestock while maintaining a healthy environment. Sixteen of its more than 30,000 wetlands are Ramsar listed as internationally-important habitats. Many plant and animal species are declining (including the much-loved river red gum) and at least 95 species are threatened. Factors involved include taking too much water for human use (especially when combined with drought) and controls on the way water moves around (eg dams and weirs).

Significant floods and droughts



Water inflows in the Murray-Darling Basin can be highly variable from year to year and differ between the north and south.

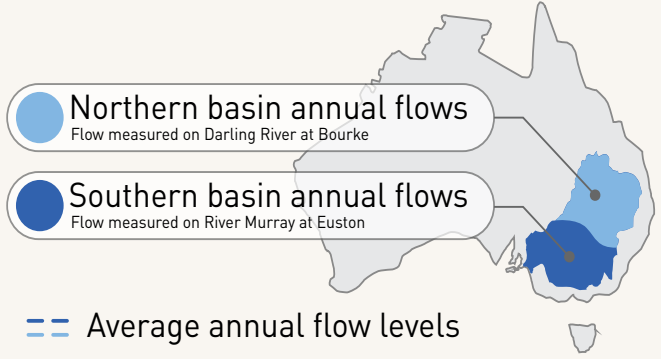
Flows of the Darling River at Bourke (shaded light blue) are generally representative of flows in the northern Basin rivers. Flows of the River Murray at Euston (shaded dark blue), are generally representative of flows in the southern Basin rivers.

The River Murray peaks of 1917, 1931, 1952, 1956, 1974, 1993 and 2010 are particularly prominent. The Darling had two peaks in the early and mid 1950s and three peaks in the 1970s. The three periods 1895-1902, 1940-48 and 1998-2010 were dry in both the northern and southern Basin.

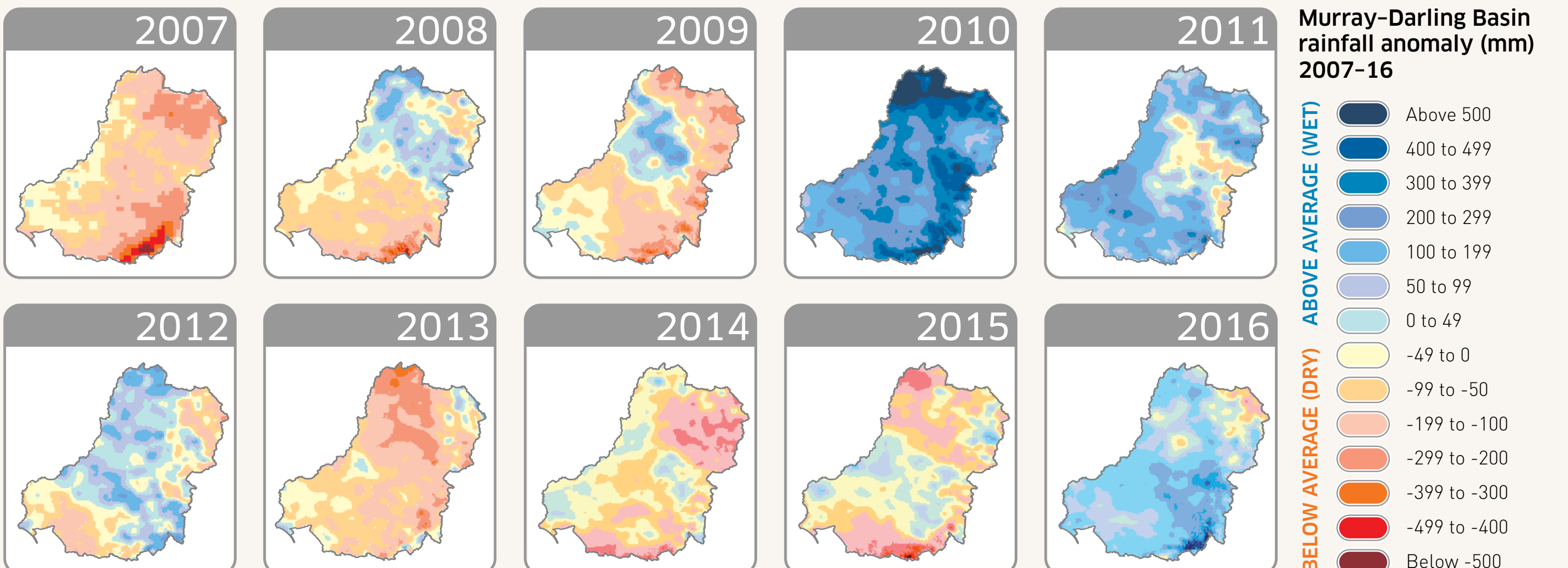
Looking closer at the graph you will notice that above-average flows in the northern and southern Basin do not necessarily coincide. What might be a very wet year with higher flows in the southern Basin does not always turn out to be a wet year with higher flows in the northern Basin and vice versa. In 1909, for example, the Murray experienced flow levels almost twice its average and it flooded.

The Darling at Bourke experienced flows of about half its average. There are years such as 1950 where the flows for the Darling were almost 10 times its average, and the Murray only slightly above average.

(Data source: MDBA/Bureau of Meteorology)



Rainfall variability



Rainfall throughout Australia can be variable. The Murray-Darling Basin is no exception to this. The annual rainfall anomaly graphic (above) illustrates this variability throughout the Basin.

An annual rainfall anomaly is a measurement of the difference between actual rainfall received in any year compared to the long-term average rainfall. If a given location experiences a year where it receives above average precipitation, the rainfall anomaly will have a positive number (shades of blue). If a location has a drier than average year, the rainfall anomaly will be a negative number (shades of red).

The rainfall maps show that there was significant variability in rainfall anomalies from year to year in the Murray-Darling Basin. For example, in 2008 a significant proportion of the northern Basin was wetter than average, while the southern Basin experienced drier than normal conditions throughout. Across the entire Basin, 2010 stands out as an extremely wet year, while 2007 was very dry throughout the Basin.

One of the challenges faced by the Murray-Darling Basin Authority in managing the water resources of the Basin is delivering sufficient water for both human and environmental needs on an ongoing basis, as rainfall is

highly variable. Regulation structures managed by the MDBA in cooperation with Basin states such as dams and weirs assist in maintaining appropriate water supply through drought periods.

(Data source: Bureau of Meteorology)

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