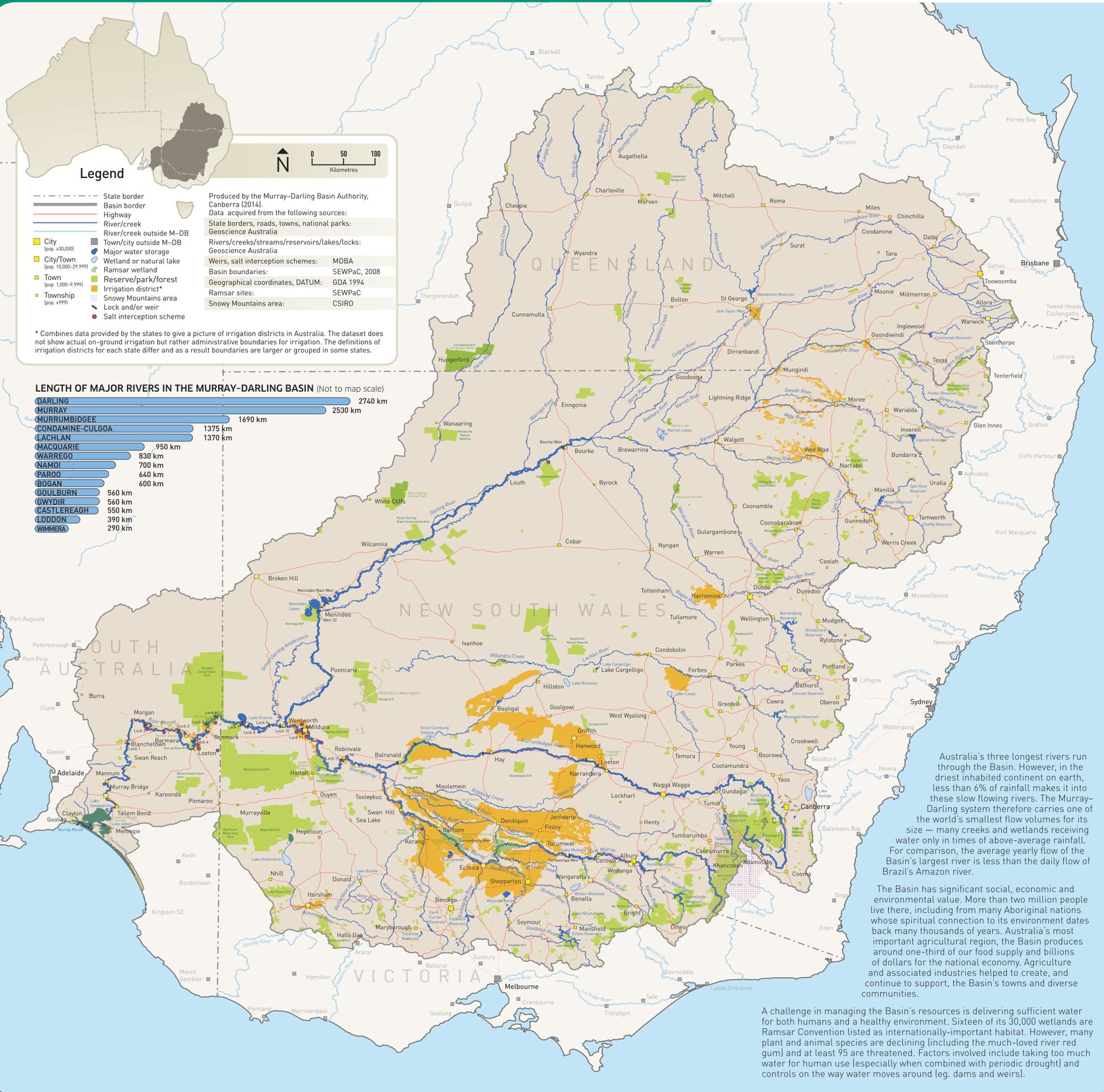
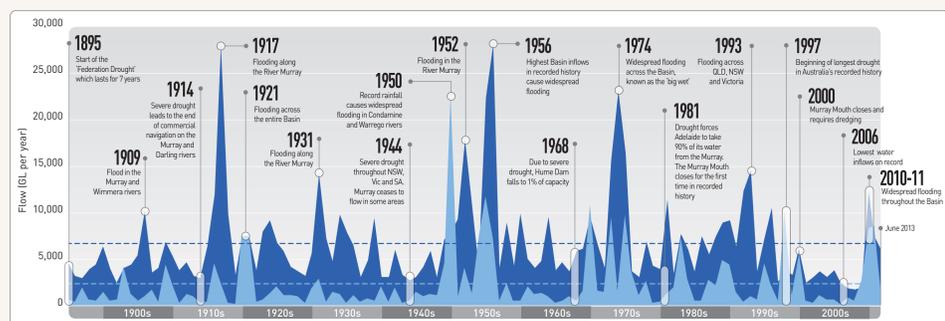


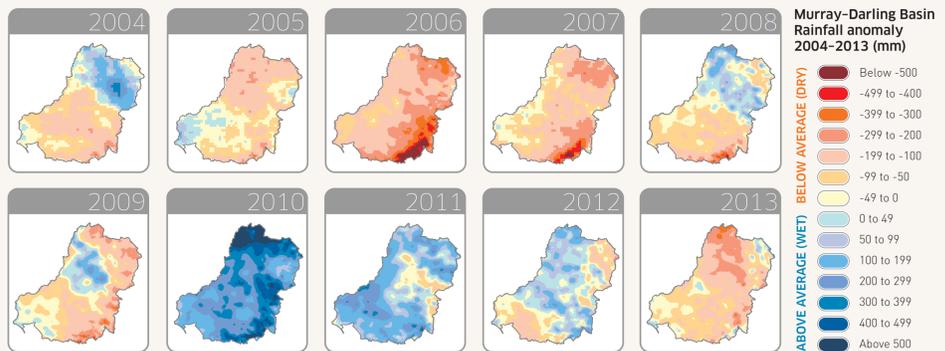
# The Murray-Darling Basin



## Significant flood and drought events



## Rainfall variability



Water inflows in the Murray-Darling Basin can be highly variable from year to year and differ between the north and south. This above graphic of the last 116 years of river flows of the River Murray at Euston and the Darling River at Bourke demonstrates this.

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

There are obvious peaks of well above average-flows, as well as troughs for significant periods of below-average flows. The River Murray peaks of 1917, 1931, 1952, 1956, 1974, 1993 and 2010 are particularly prominent. The Darling has two peaks in the early and mid 1950s and three peaks in the 1970s. The three periods 1895-1902, 1940-1948 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. Take the year 1909; 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 throughout Australia can be generally described as variable. The Murray-Darling Basin is no exception to this. The annual rainfall anomaly graphic (above) illustrates this variability throughout the Murray-Darling 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 plots for the years 2004-2013 show that within the Murray-Darling Basin, there was significant variability in rainfall anomalies from year to year. 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 2006 and 2007 were very dry years 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, where rainfall is highly variable. Regulation structures managed by 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]