Barwon-Darling cease to flow analysis

May 2021

What do we know about the climate based on the last ~130 years?

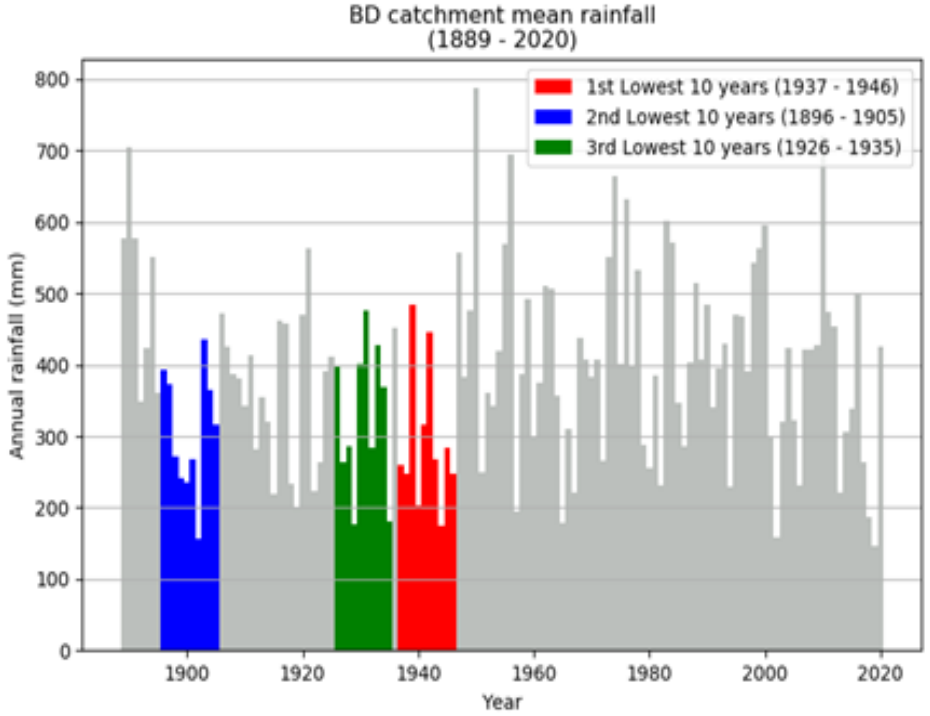
Western NSW cycles between wet and dry periods

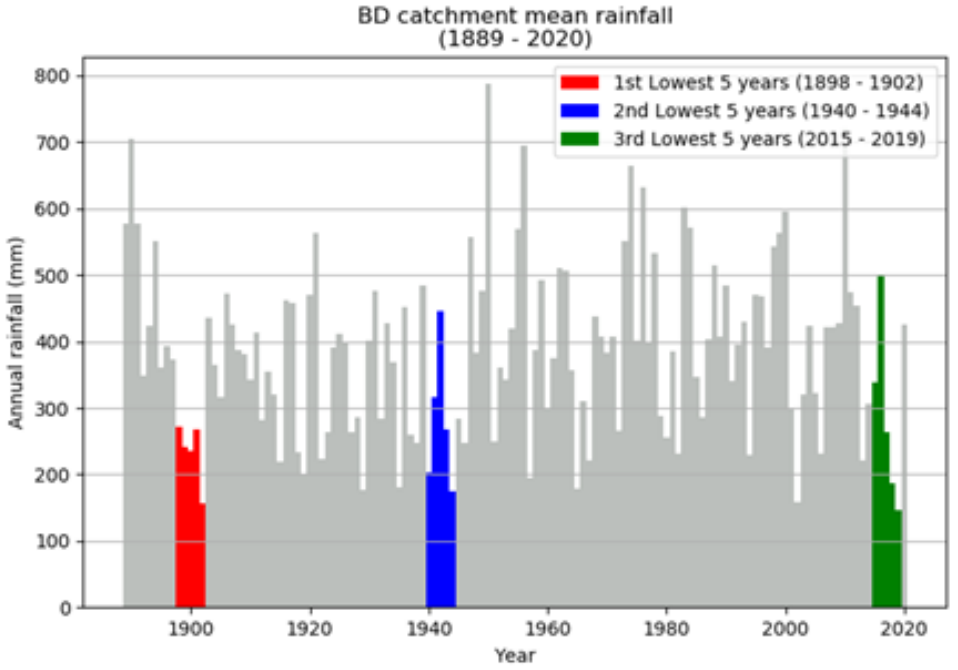
- 1900s – 1950s: comparatively dry
- 1950s – 1990s: comparatively wet
- Since the millennium drought: returning to drier conditions

The driest recorded decadal (10-year) happened during these periods for ALL northern valleys

What do we know about the climate based on the last ~130 years?

This pattern is similar for the Barwon-Darling





The driest 10-year droughts in terms of rainfall occurred before 1950

The driest 5-year droughts in terms of rainfall occurred in the first half of last century and during the millennium drought

Cease to flow analysis

Cease to flow periods - last ~130 years

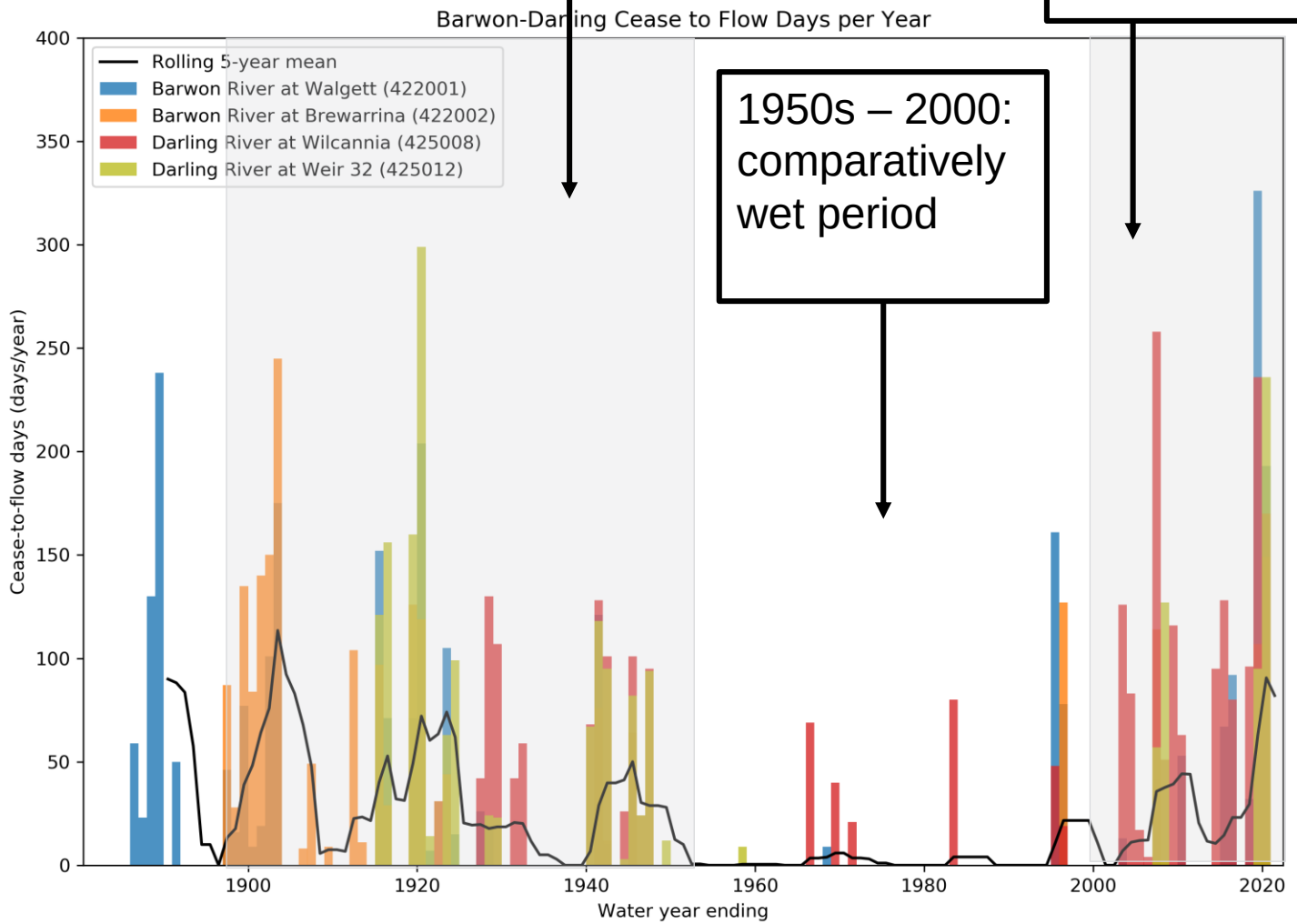
The river has stopped flowing during dry periods

- Cease to flow periods correlate with the dry periods in our climate
- The river has stopped flowing frequently during the dry periods – even before there was any significant development in regional NSW
- However, most people's experience in living memory only extends back to the wet period
- The cease to flow conditions we have seen since 2000 have been severe, but not unusual when compared to the dry conditions in the first half of last century.

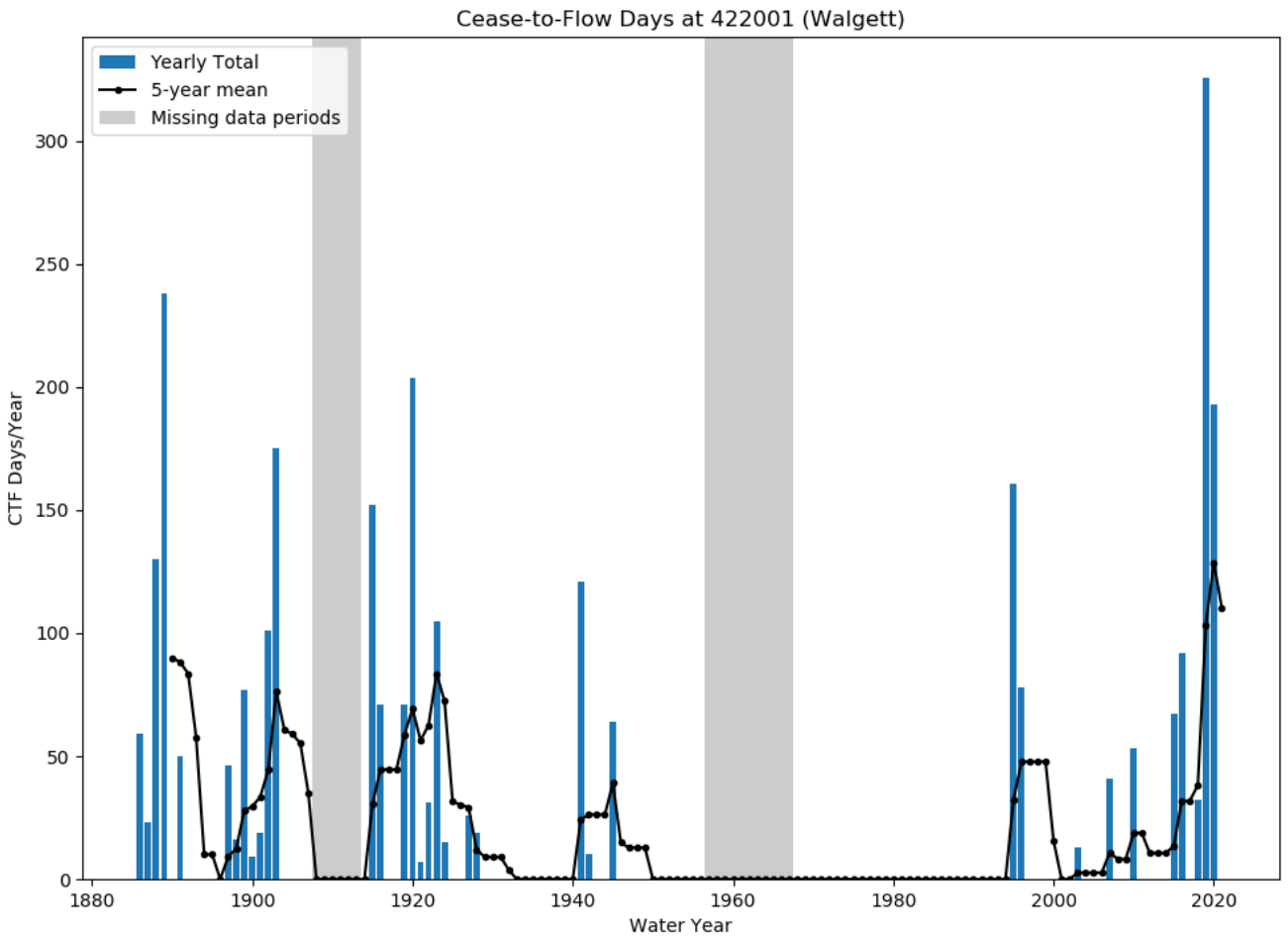
1900s – 1950: comparatively dry period

Post 2000s: comparatively dry period

1950s – 2000: comparatively wet period

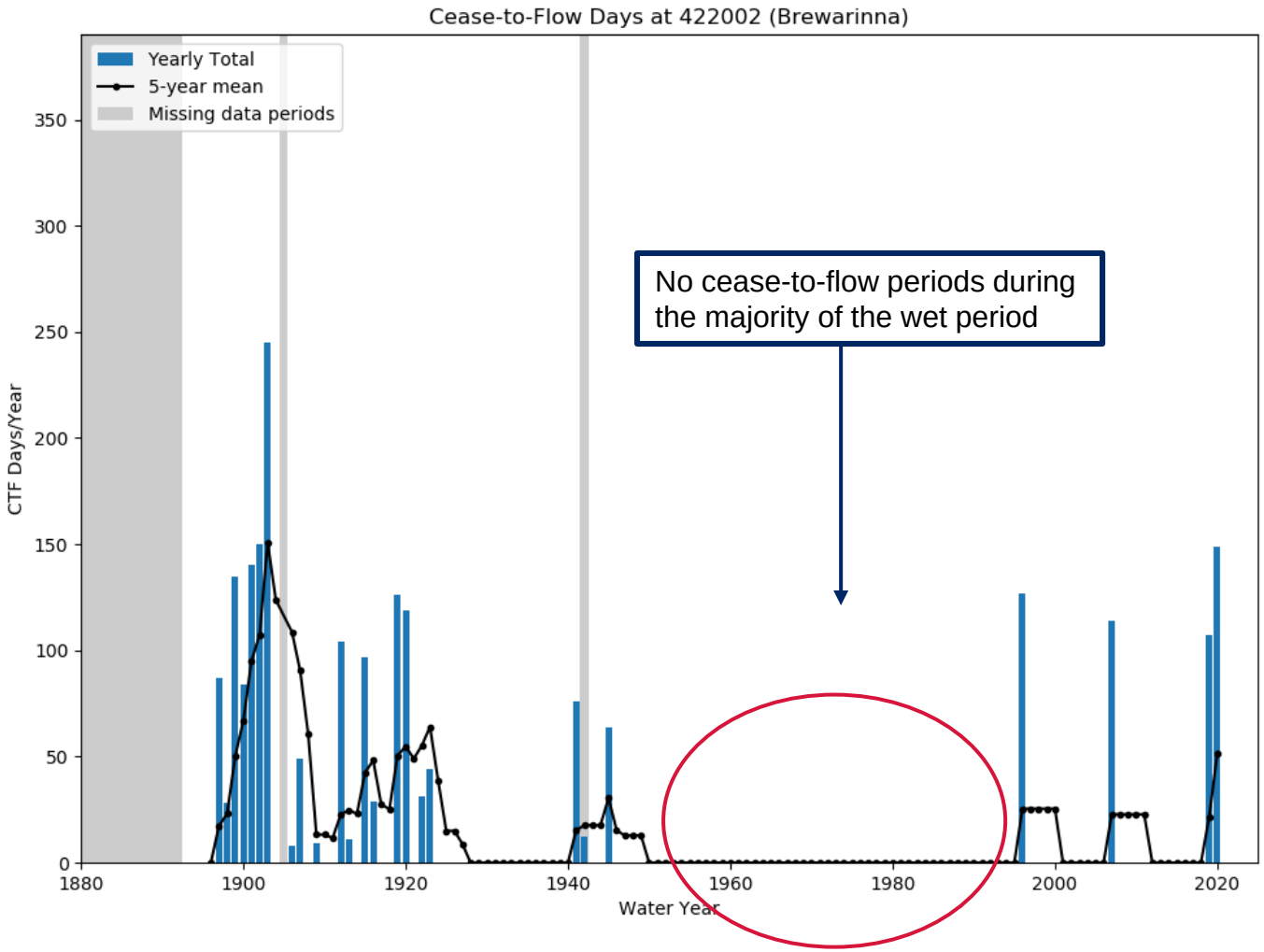


Cease to flow – Walgett



Period	Average number of CTF events per year	Average duration of CTF periods	Duration of longest CTF period
1900 – 1950	0.5	50 days	270 days
1950 – 2000	0.1	60 days	156 days
2000 - 2021	0.7	42 days	326 days

Cease to flow – Brewarrina

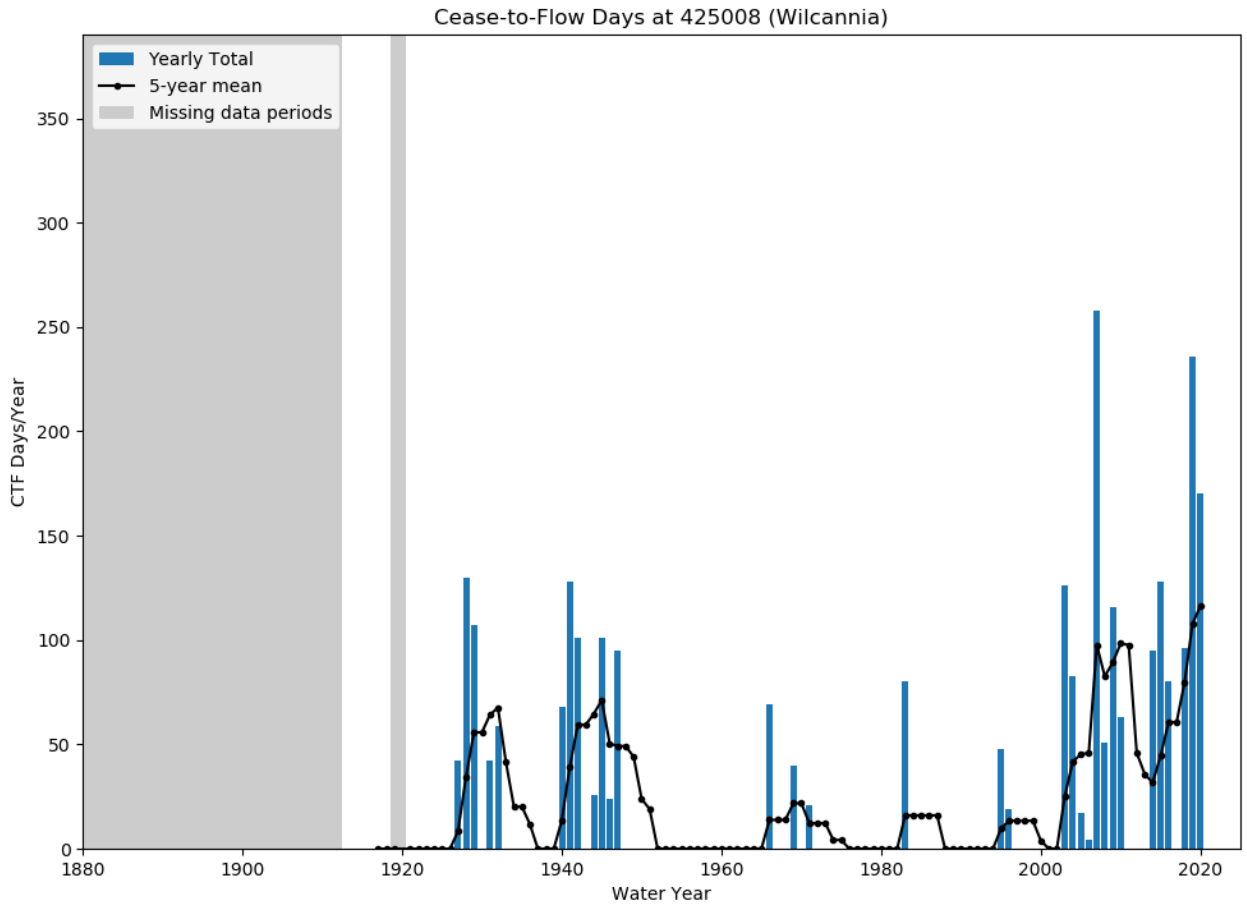


Period	Average number of CTF events per year	Average duration of CTF periods	Duration of longest CTF period
1900 – 1950	0.54	51 days	296 days
1950 – 2000	0.02	127 days	127 days*
2000 - 2021	0.15	74 days	114 days

Many people's lived experience dates back to the wet period – when there were no or very few cease to flow periods

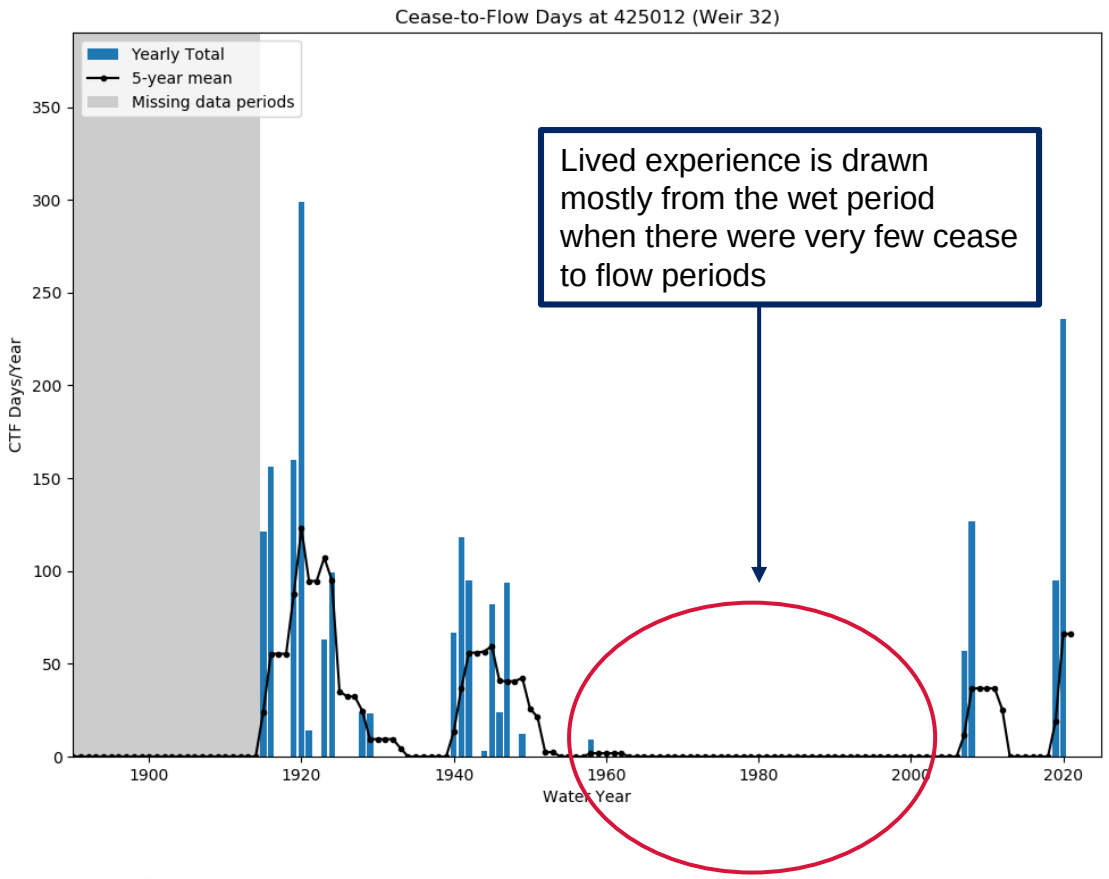
*this occurred July – November 1995

Cease to flow – Wilcannia



Period	Average number of CTF events per year	Average duration of CTF periods	Duration of longest CTF period
1923 – 1950	0.44	66 days	130 days
1950 – 2000	0.16	34 days	80 days
2000 - 2021	0.64	104 days	309 days

Cease to flow – Weir 32



Period	Average number of CTF events per year	Average duration of CTF periods	Duration of longest CTF period
1900 – 1950	0.6	66 days	263 days
1950 – 2000	0.06	3 days	4 days
2000 - 2021	0.5	32 days	97 days*

*During the last drought, there was no flow for a period of approximately 12 months from 20 February 2019 to March 2020 that was interspersed with five very small flow events. This is shown in the blue bars in the graph.

- The longest dry spell that the records show have absolutely no flow at the gauge occurred in the 1900s when the Lower Darling river remaining dry for 236 days in 1919/20.
- The Menindee Lakes scheme was implemented in the 1960s and has likely reduced the number of cease to flow periods.