

Is the current dry spell due to Chance or Climate Change?

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Large parts of the Wimmera and Mallee have experienced drier than average conditions since 1996 – in fact for many growers 1996 was their last big production year! This is putting pressure on farm viability and many farmers have asked themselves whether there is a future in farming. The questions often raised are: ‘Is this dry spell a permanent feature? Is it just due to chance? Is it a periodic event?’

We looked at long term rainfall data from the Wimmera (Longerenong 1889 to 2004) and Southern Mallee (Birchip 1891 to 2004) and investigated long term trends.

- 1. Long term Average Growing Season Rainfall (GSR):** Longerenong 290mm; Birchip 240mm
- 2. Is rainfall less now than earlier last century?** For both sites the first half of the last century was slightly drier on average than the second half of the century (by about 10mm of GSR). There was no general decreasing trend of rainfall over the last century.
- 3. How unusual is it to have a long dry spell?** The decade of the 1940s was also a very dry period. How does it compare to the current dry spell?

Wimmera: the 1940s had 9 out of 11 seasons drier than average. Since 1994 Longerenong has had 8 out of 11 dry seasons (Table 1).

Table 1. Rainfall at Longerenong during the decade of the 1940s and mid 1990s. Reported as Deviation from Average Growing Season Rainfall.

Longerenong 1940 to 1950			Longerenong mid 1994 to 2004		
Yr	GSR mm	Deviation from ave GSR mm	Yr	GSR mm	Deviation from ave GSR mm
1940	184	-108	1994	182	-110
1941	249	-43	1995	359	65
1942	430	139	1996	368	77
1943	233	-59	1997	238	-54
1944	152	-140	1998	285	-7
1945	223	-68	1999	199	-92
1946	217	-75	2000	235	-57
1947	290	-2	2001	254	-37
1948	335	43	2002	145	-146
1949	205	-86	2003	309	17
1950	282	-9	2004	219	-73

Southern Mallee: the 1940s had 9 out of 11 seasons drier than average. Since 1994 Birchip has had 7 out of 11 dry seasons (Table 2).

Table 2. Rainfall at Birchip during the decade of the 1940s and mid 1990s. Reported as Deviation from Average Growing Season Rainfall.

Birchip 1940 to 1950			Birchip 1994 to 2004		
Year	GSR mm	Deviation from average GSR mm	Year	GSR mm	Deviation from ave GSR mm
1940	110	-129	1994	104	-135
1941	190	-49	1995	402	163
1942	270	31	1996	289	50
1943	145	-94	1997	200	-39
1944	133	-106	1998	173	-66
1945	206	-33	1999	240	1
1946	165	-74	2000	240	1
1947	205	-34	2001	179	-60
1948	208	-31	2002	111	-128
1949	165	-74	2003	216	-23
1950	273	34	2004	171	-68

4. Trends in Growing Season Rainfall. A 5 year moving average shows the periods of long dry and wet seasons experienced in the Wimmera and Southern Mallee over the last 115 years. It does not appear that this current dry spell is unusual in its severity or duration (Figures 1 and 2).

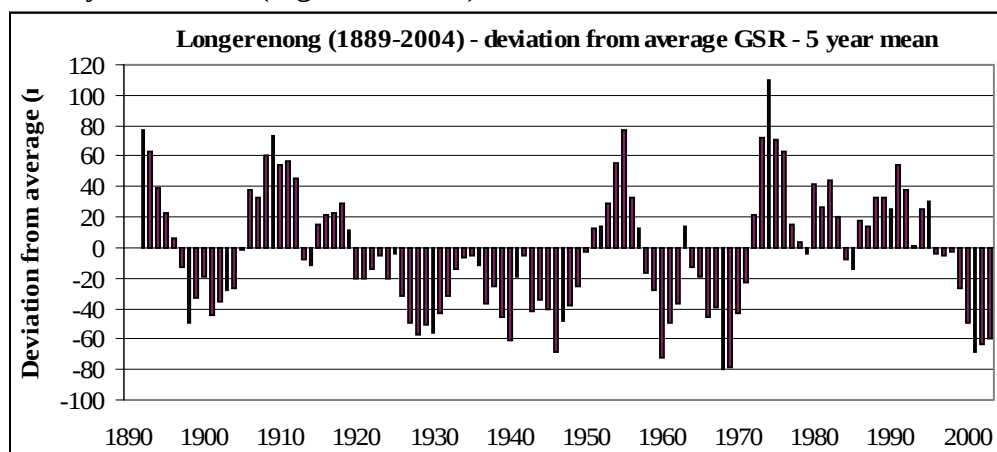


Figure 1. Deviation from average Growing Season Rainfall presented as a 5 year moving average – Longerenong (1889-2004)

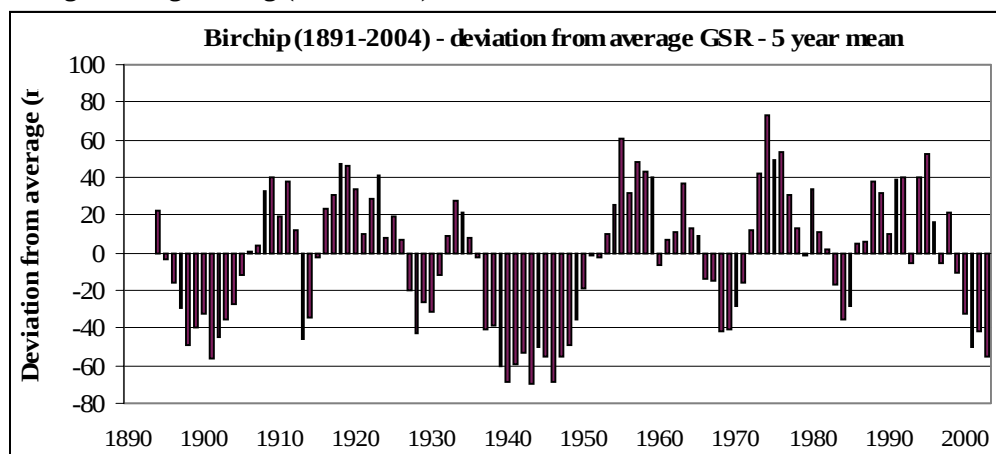


Figure 2. Deviation from average Growing Season Rainfall presented as a 5 year moving average – Birchip (1891-2004)

Summary

This quick look at rainfall patterns does not prove whether there is, or isn't, a change occurring in our climate and rainfall patterns. It does show that, although not desirable, it is not unusual to have a run of dry years – it could be just chance or a normal periodic event. Other long periods of dry seasons occurred at the start of the 20th century (1897 to 1906), mid 1920s to early 1930s; and the longest dry spell between 1938 and 1950.

Unfortunately looking at rainfall patterns using running averages (as presented in Figures 1 and 2) does not tell us when this current dry period is going to finish. It also does not mean we cannot have an average or above average season during a spell of dry conditions.

An analysis of this kind does show that we have had some periods of good years as well (the decade of 1970s and mid 1980s to early 1990s were wetter than average). The most important interpretation of this analysis is that we need to be more adaptable in our farming practices – it took many farmers a long time to realise that farming in the wet 1980s to early 1990s was very different to farming in the dry mid 1990s onwards. High rates of N and no fallowing worked during the wet periods but have not worked very well in the last decade.

We need to adapt our farming practices to prevent over-supplying inputs in low rainfall years. This must be done in a way which does not compromise potential yield if it turns out to be a wet season. We cannot change crop type once sown but can increase the proportion of cereals and fallow if there is no stored soil moisture at seeding. We can also reduce P rates in accordance with past applications and with potential yield AND we can delay N inputs until later on the season. Refer to numerous articles on these topics in this manual.