

Climatic Trends in the Water Cycle for the Miami Valley Region

MVRPC Climate Change Seminar
Dayton Board of Realtors, Dayton, OH
Second Floor Conference Center
Mike Ekberg, Miami Conservancy District
February 24, 2020

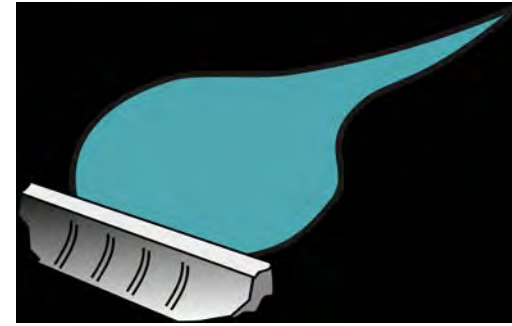
PROTECTING. PRESERVING. PROMOTING.



Miami Valley

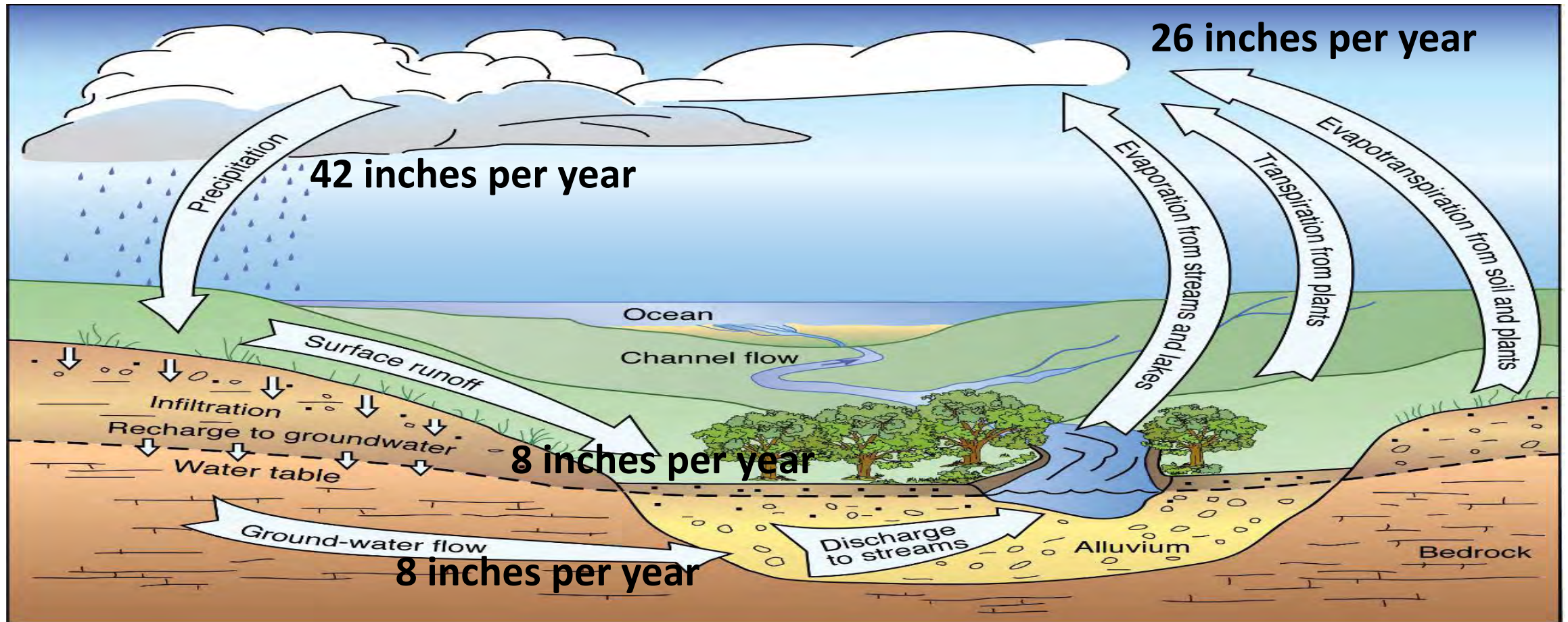


Water Budget



$$\text{INFLOWS} = \text{OUTFLOWS} \pm \Delta \text{STORAGE}$$

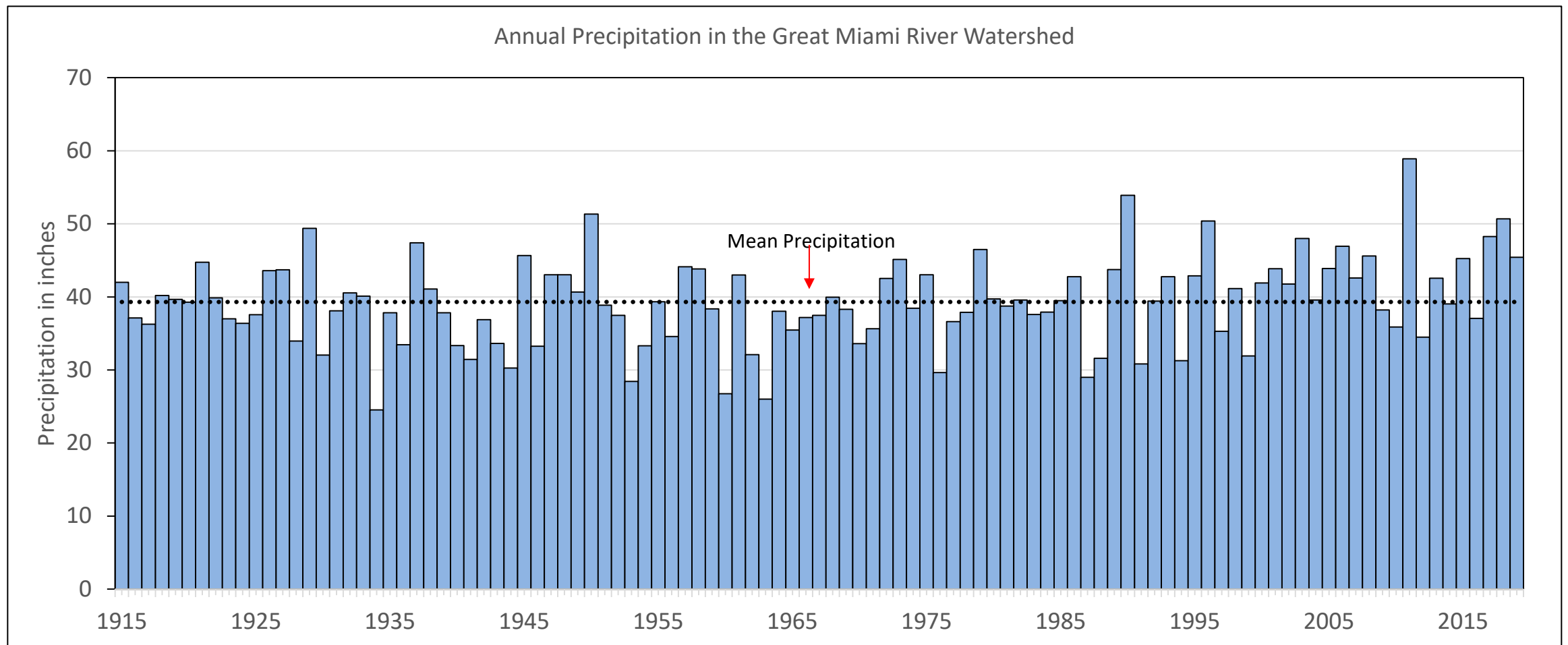
Water Cycle



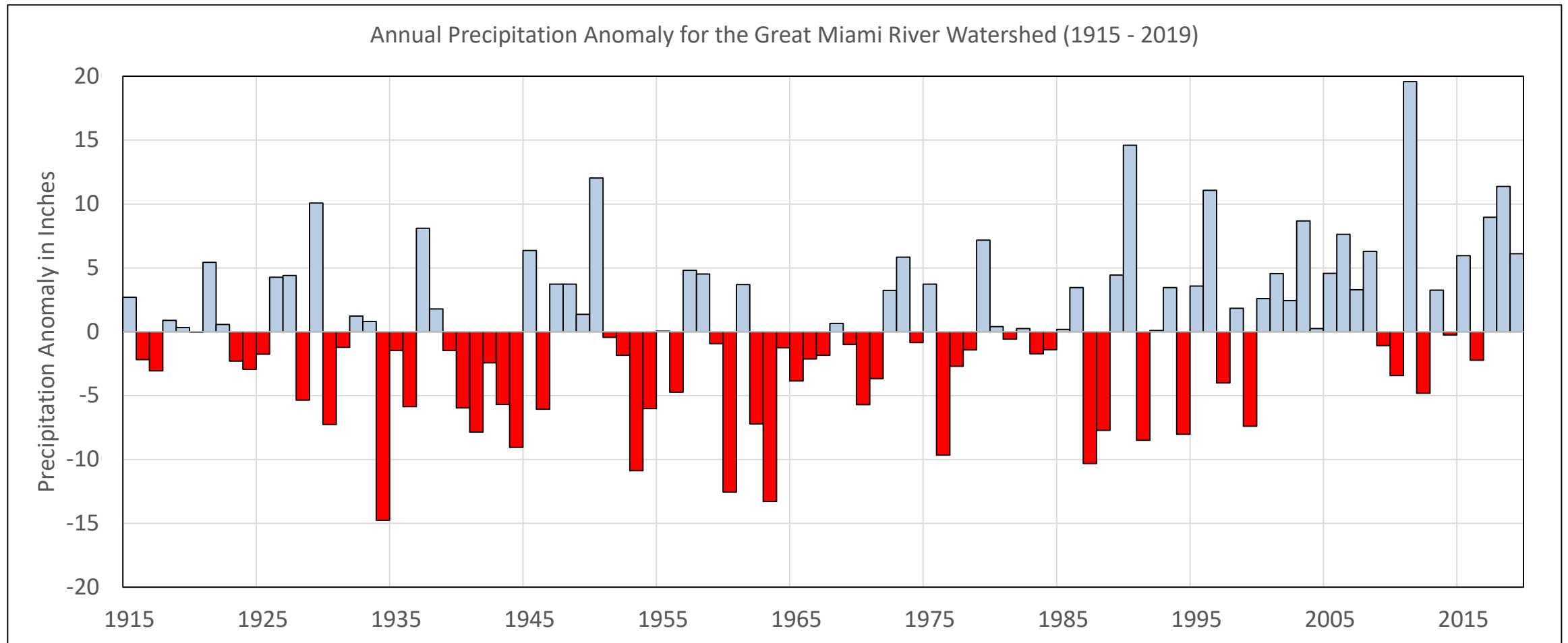
Collect water data



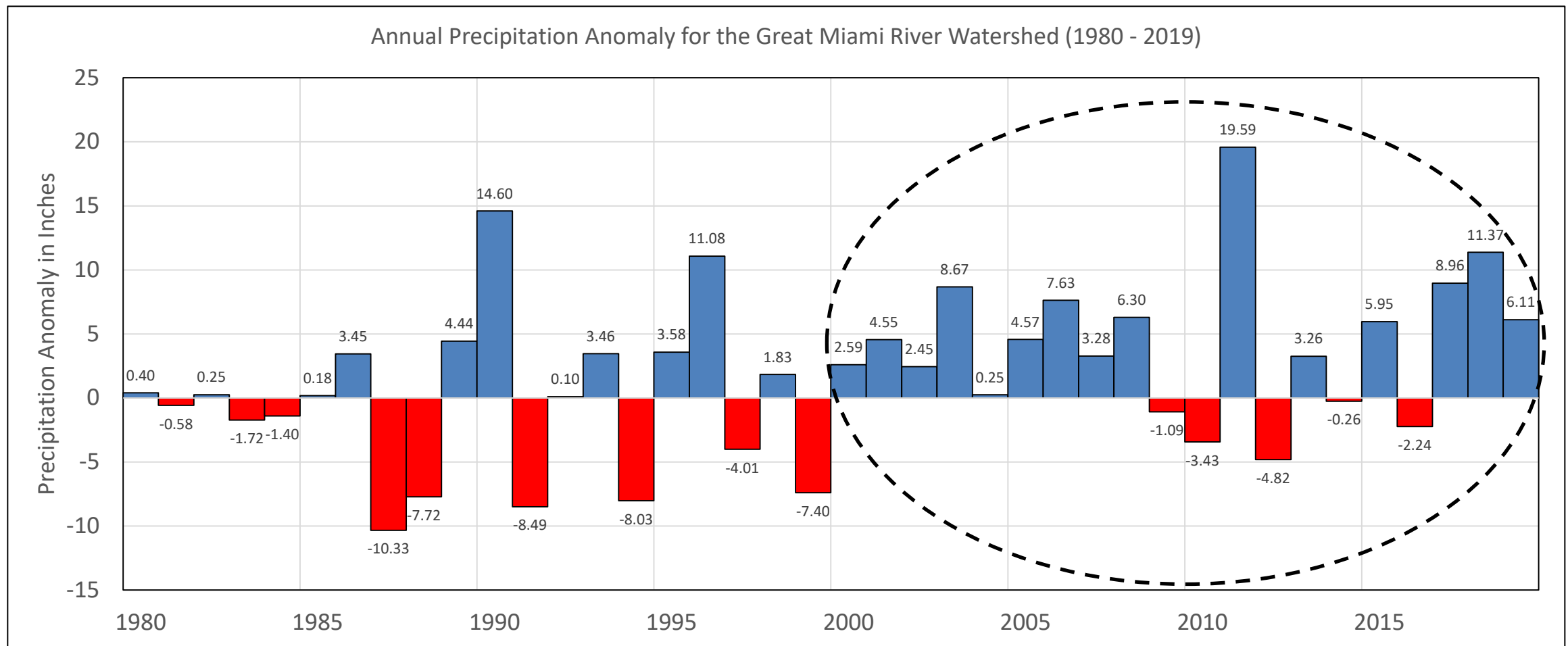
Assess the trends



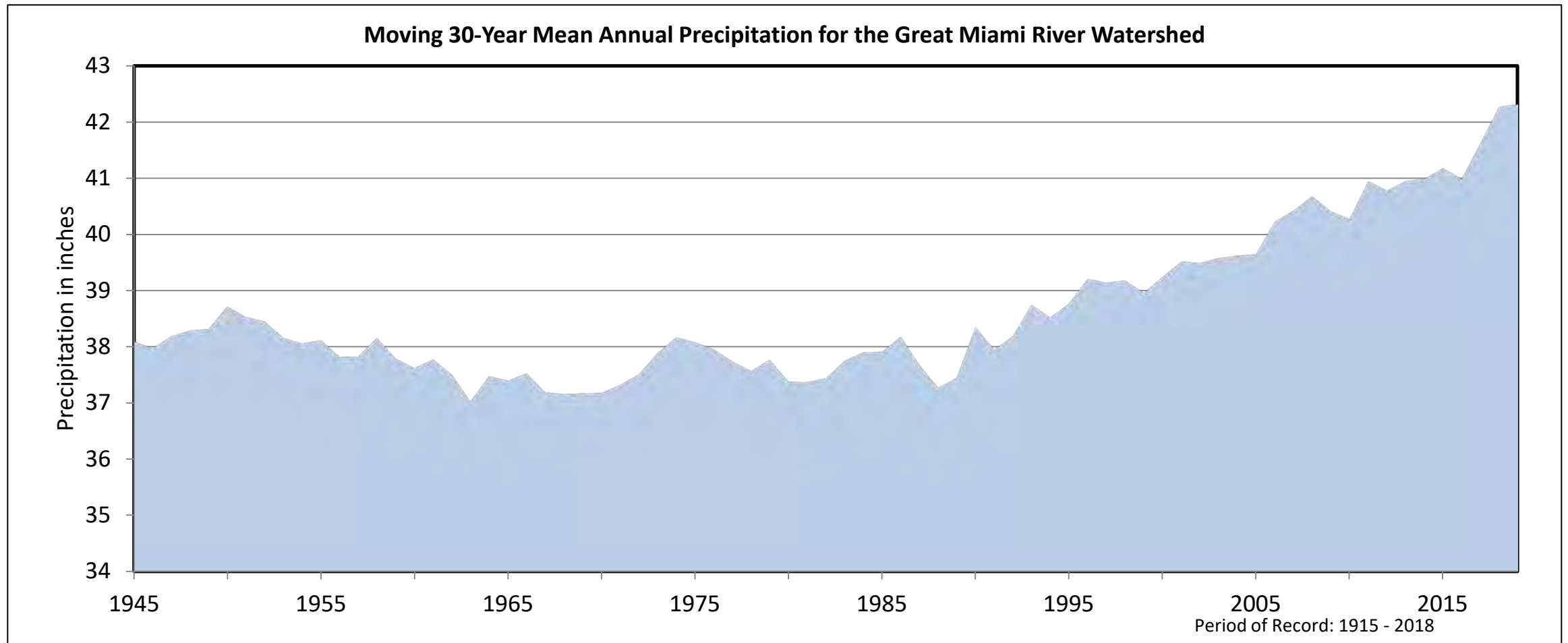
Assess the trends



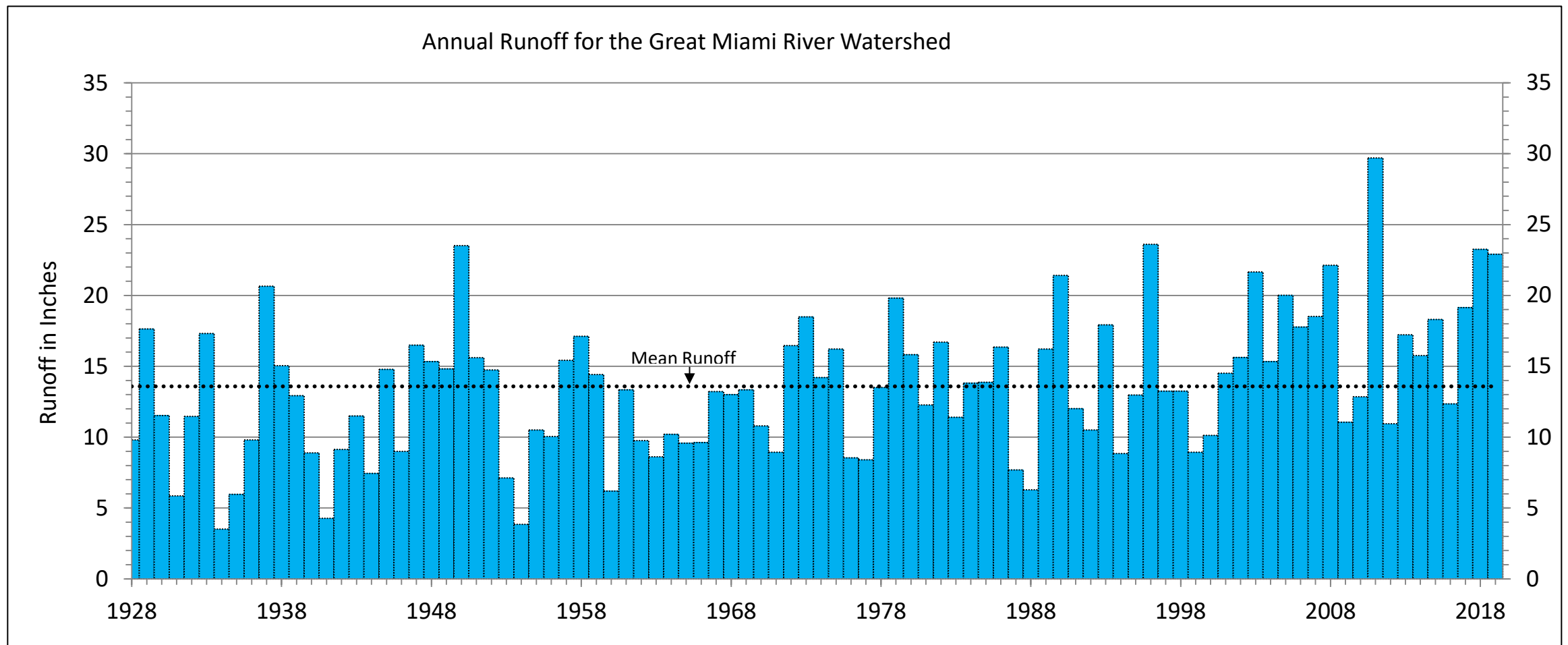
Assess the trends



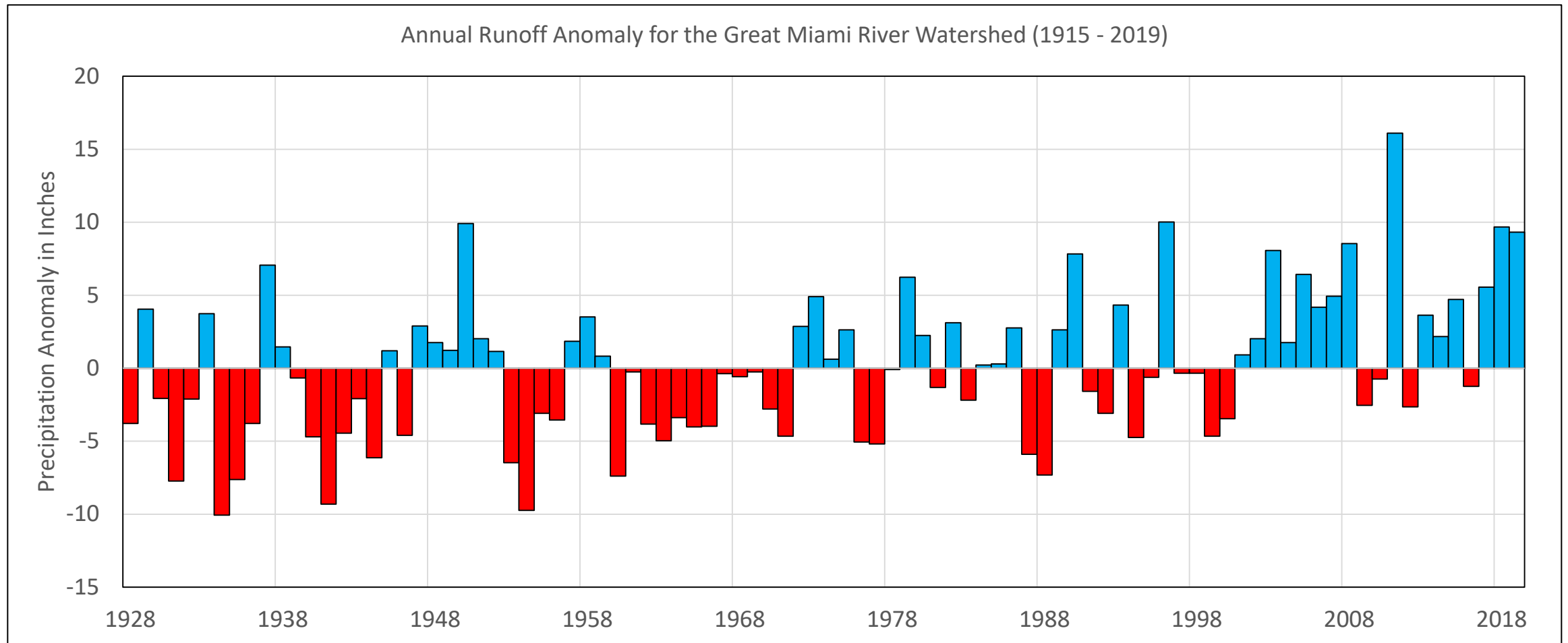
Assess the trends



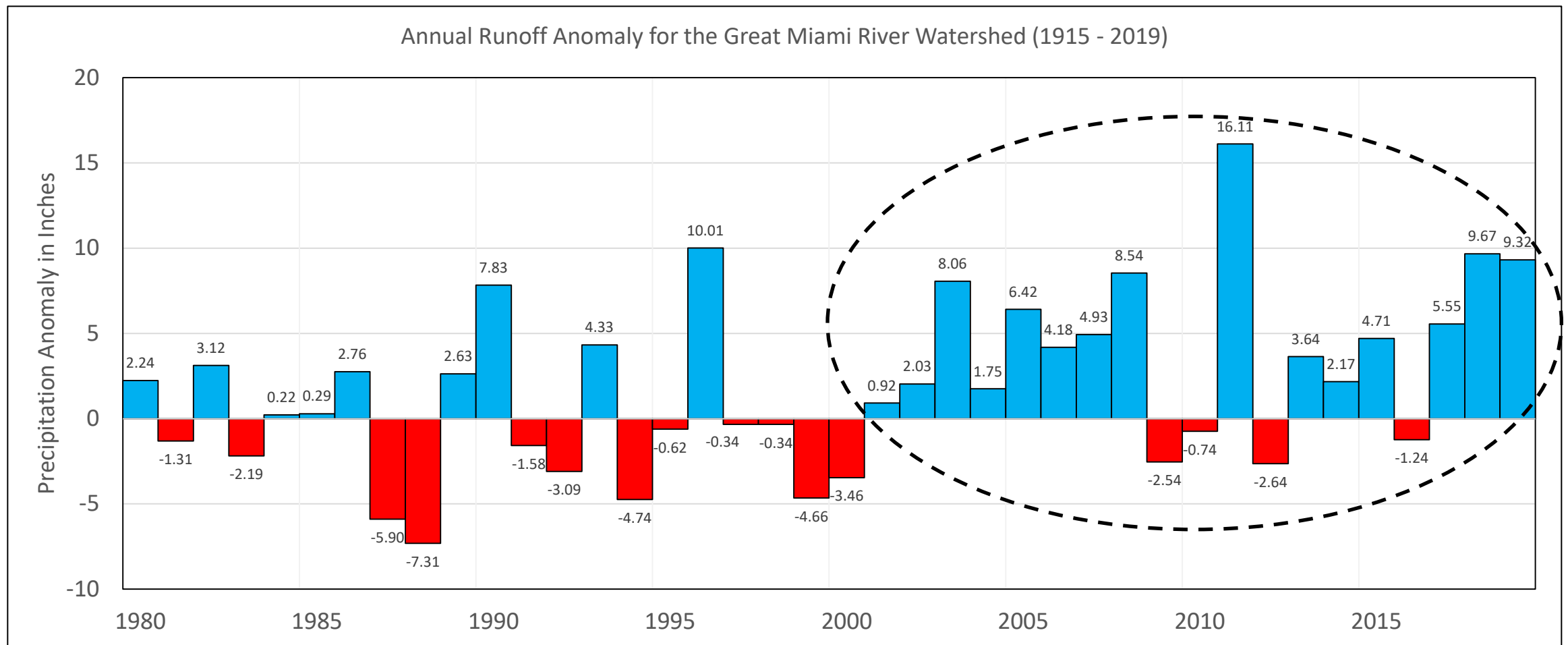
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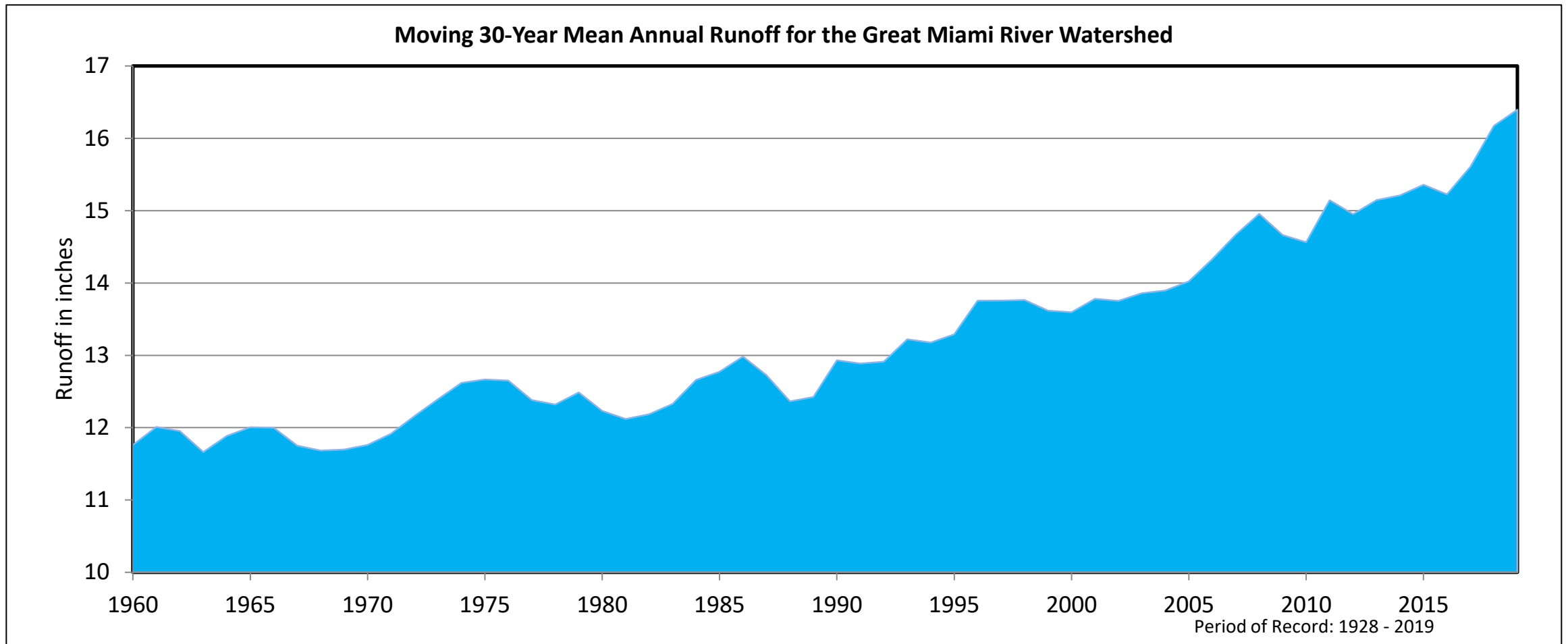
Assess the trends



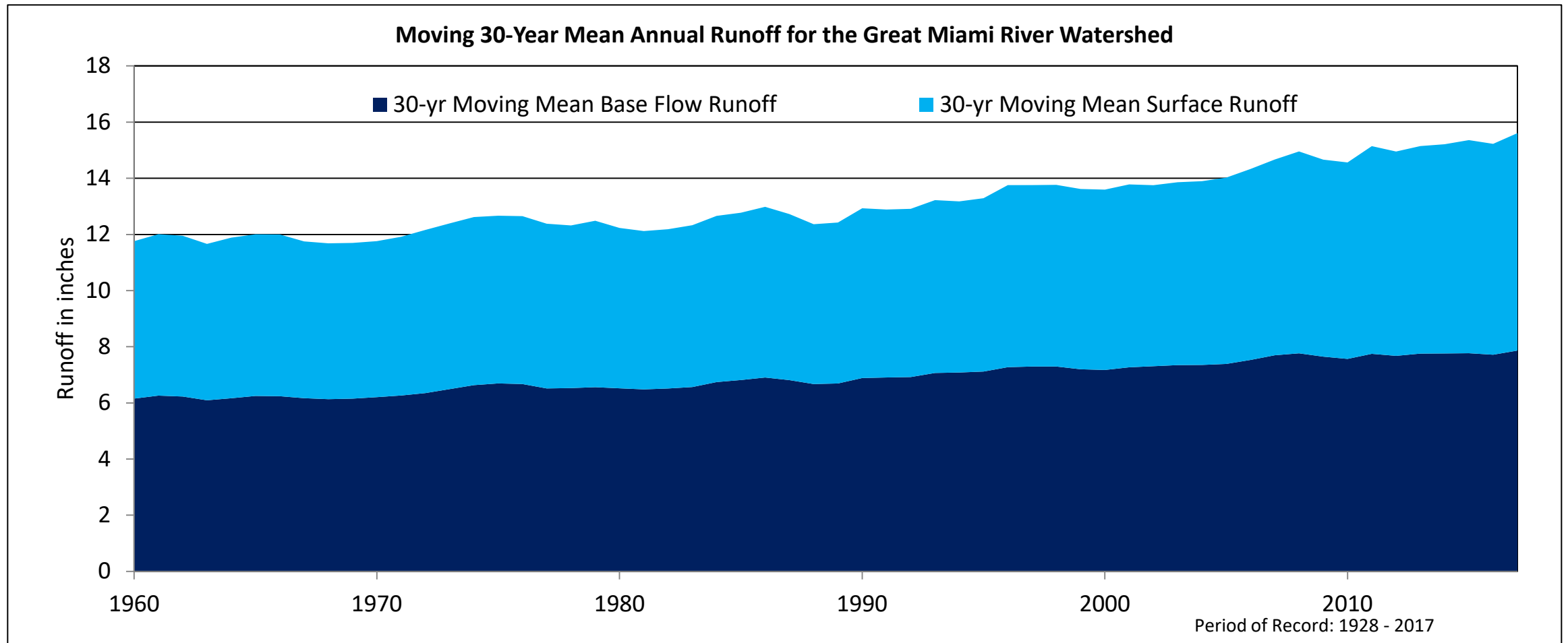
Assess the trends



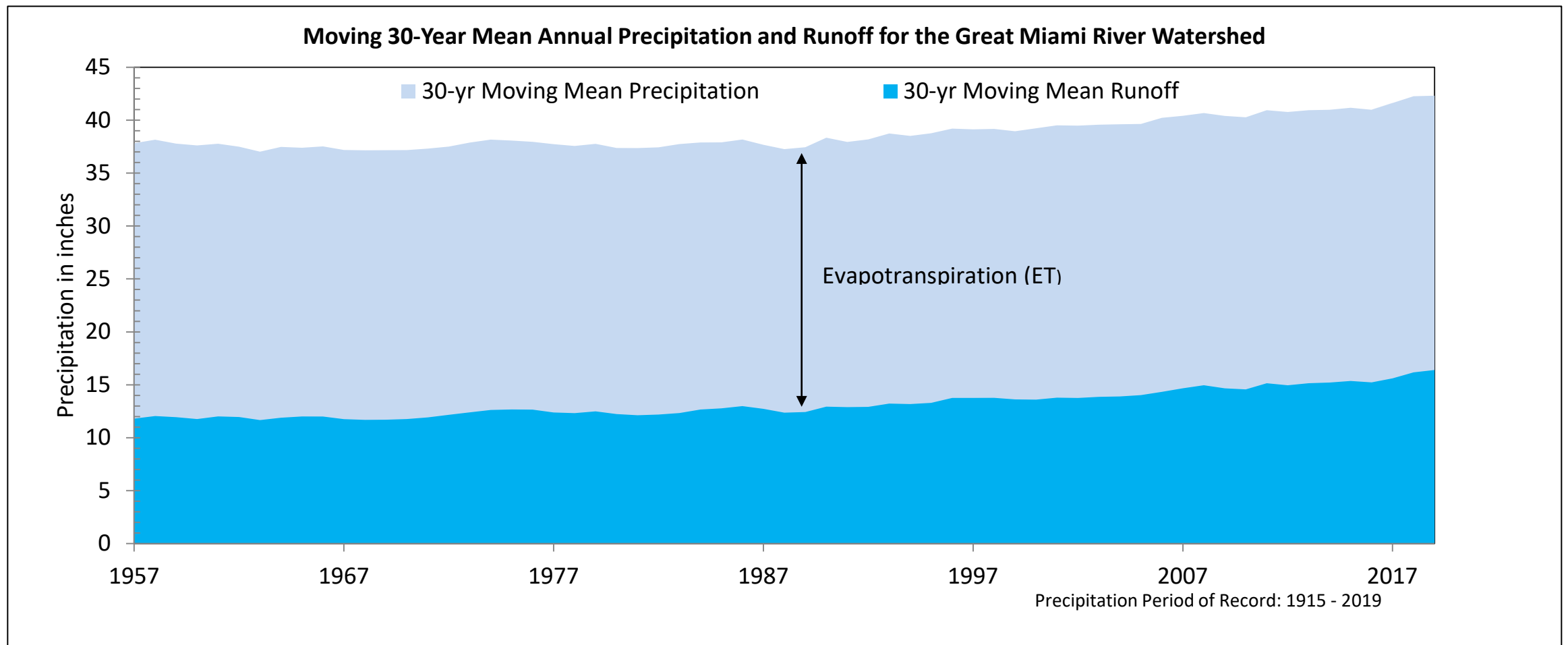
Assess the trends



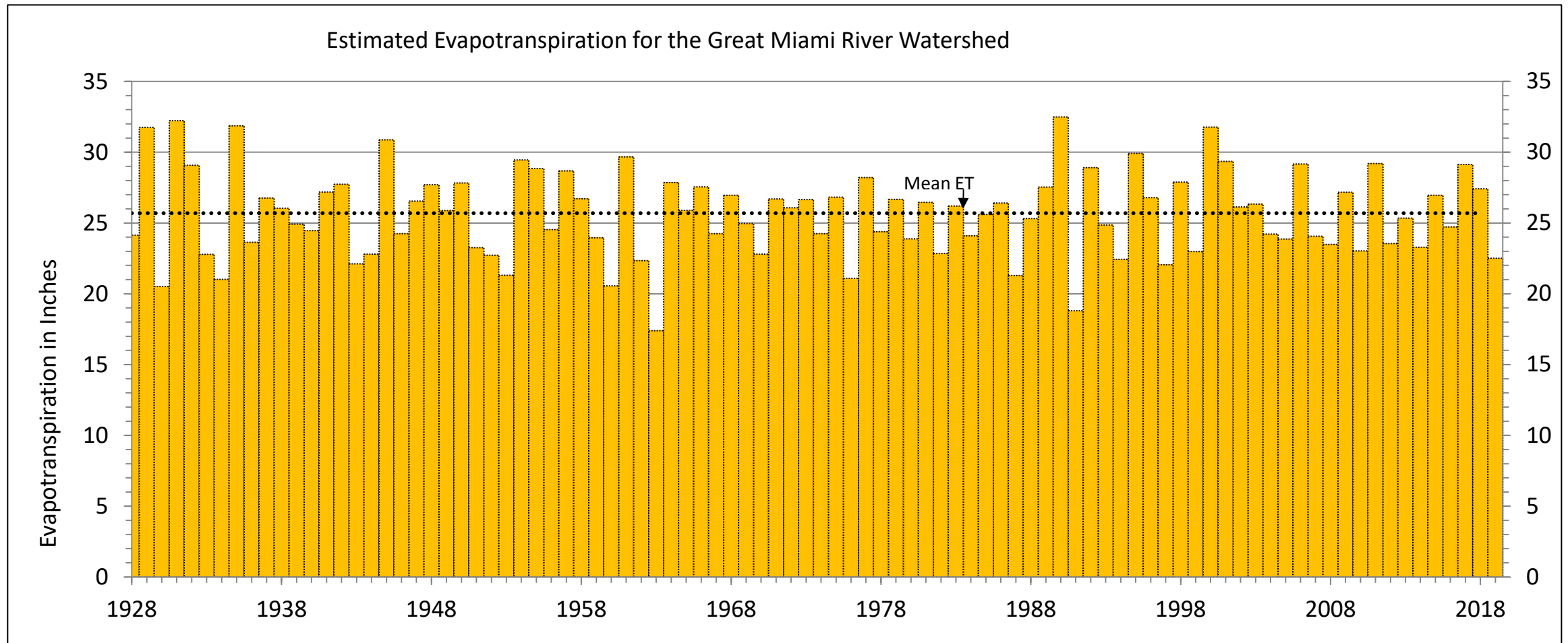
Assess the trends



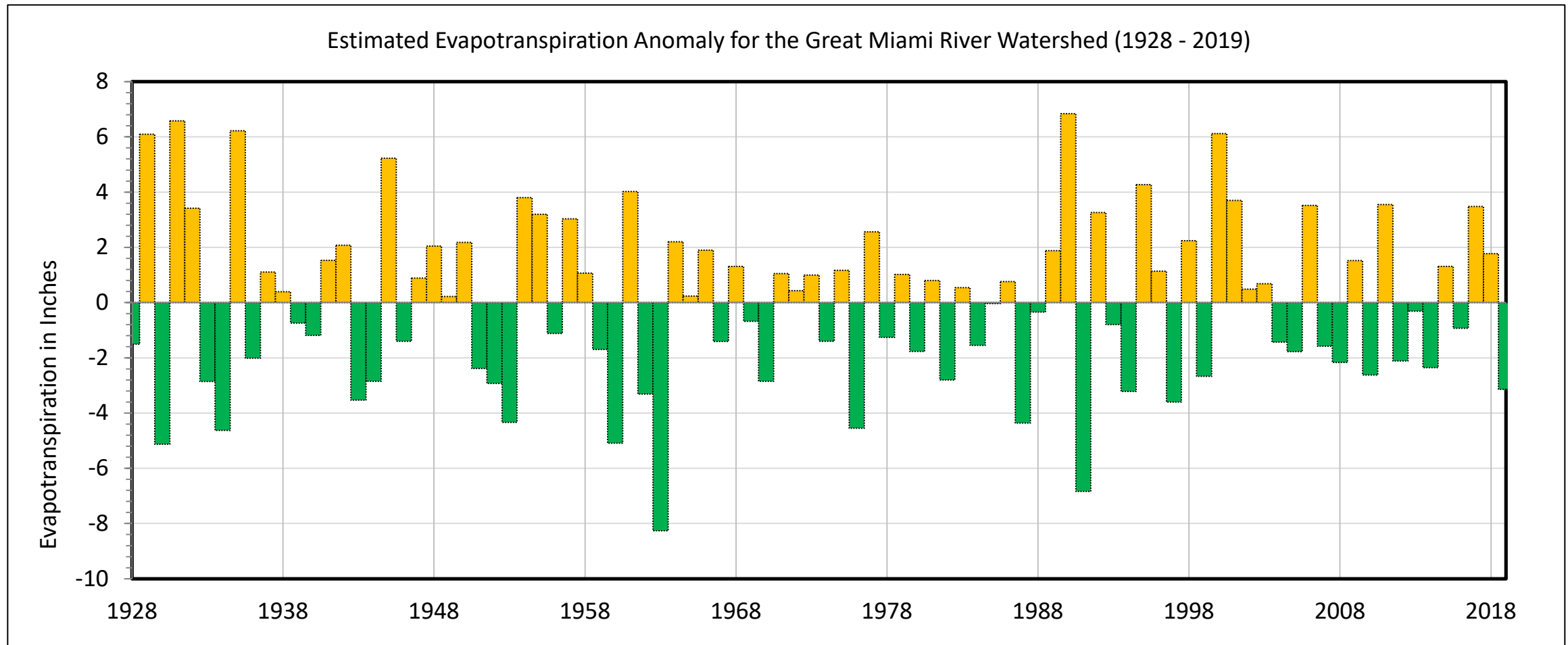
Assess the trends



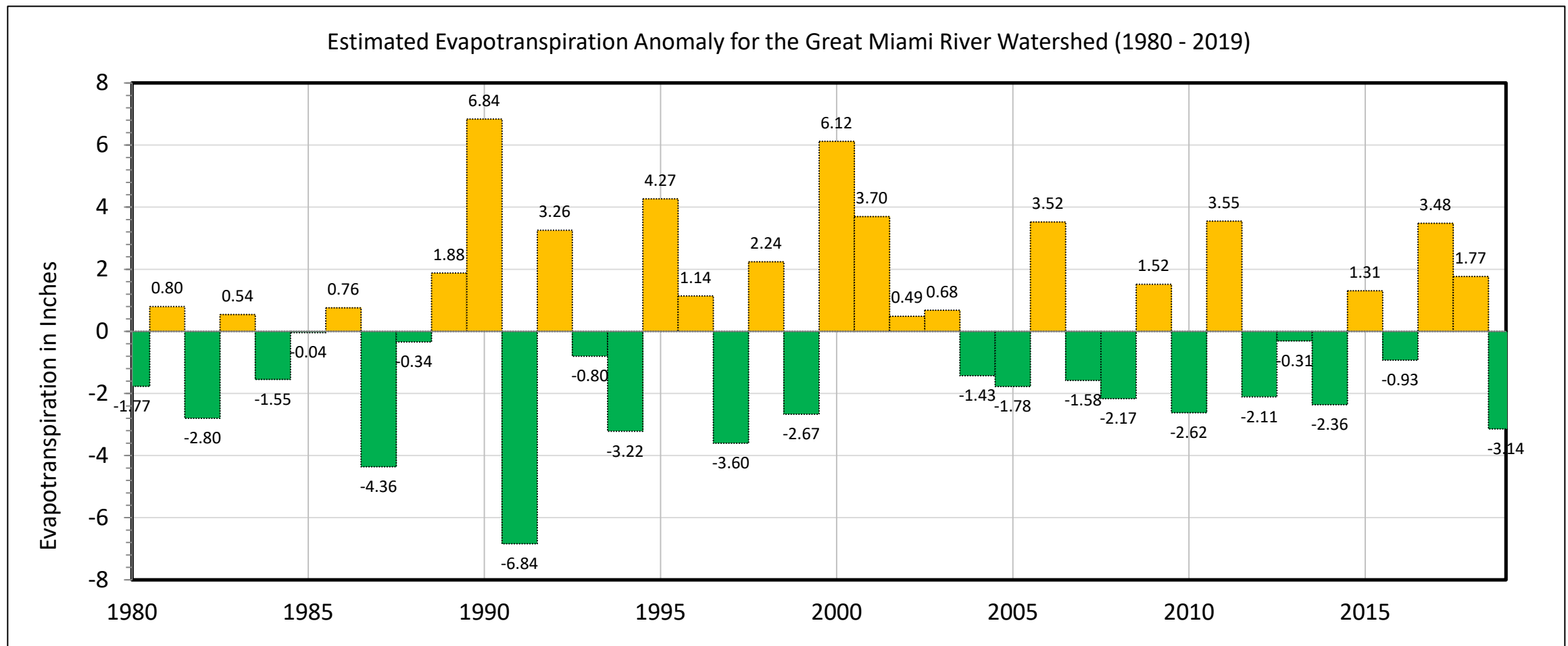
Assess the trends



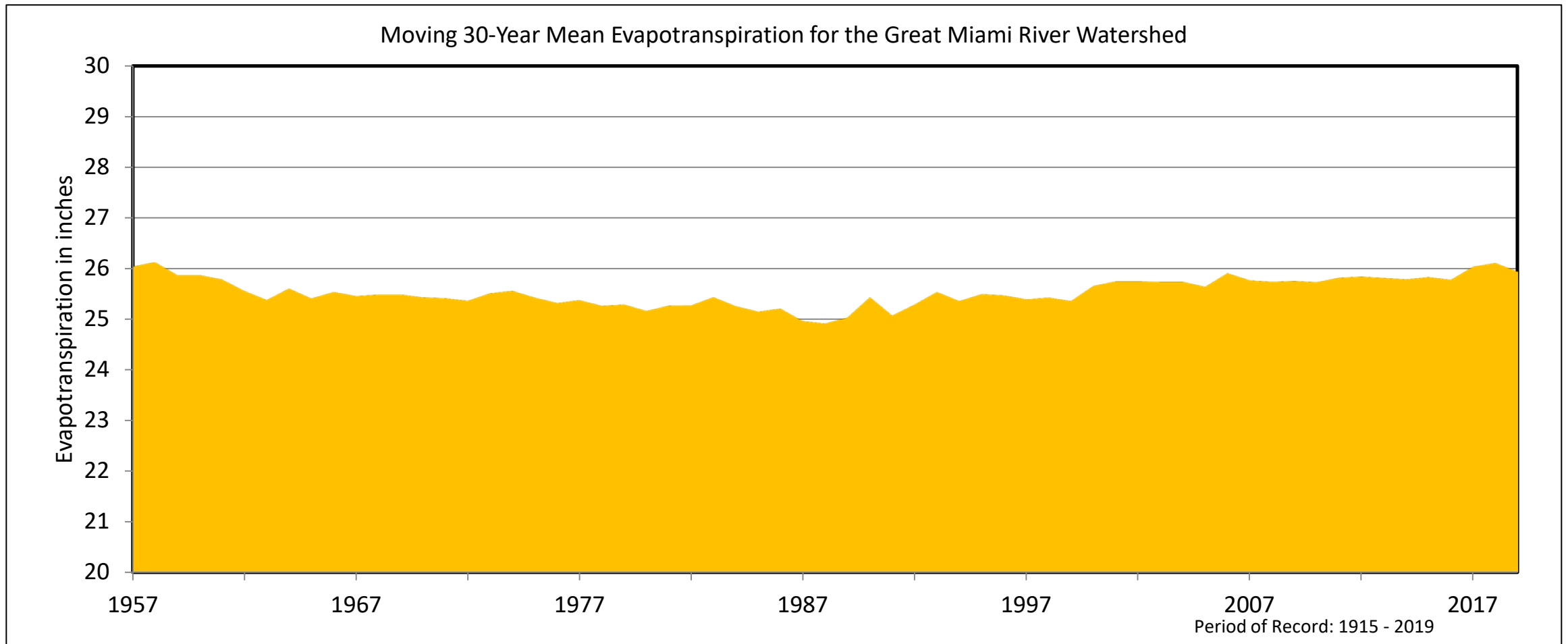
Assess the trends



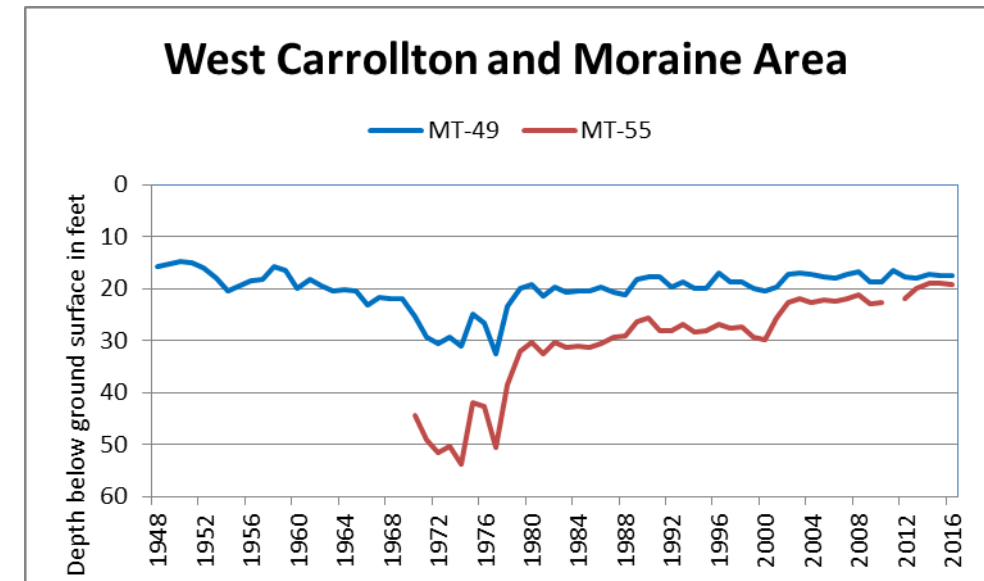
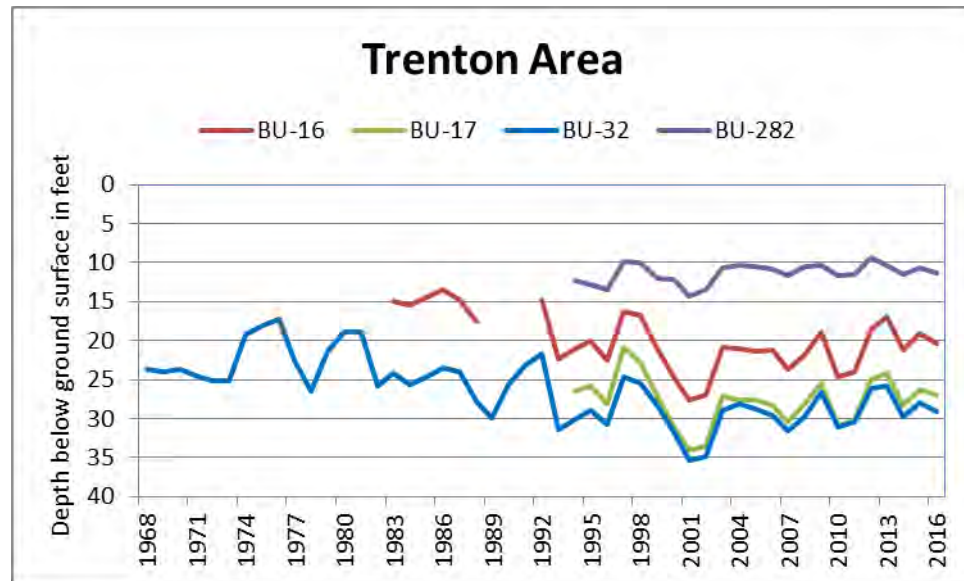
Assess the trends



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Assess the trends

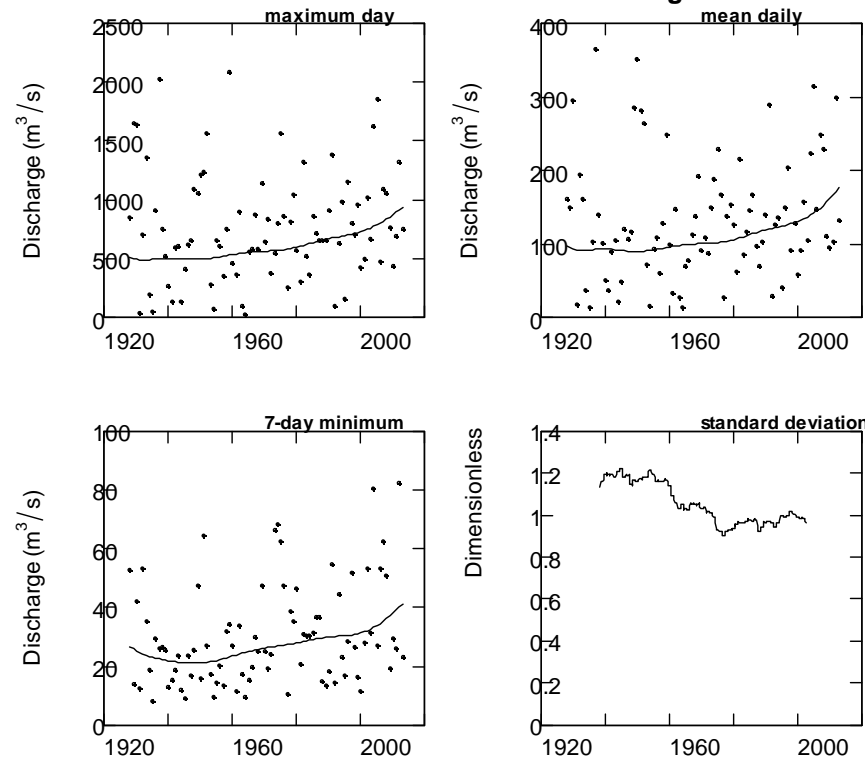


Assess the trends

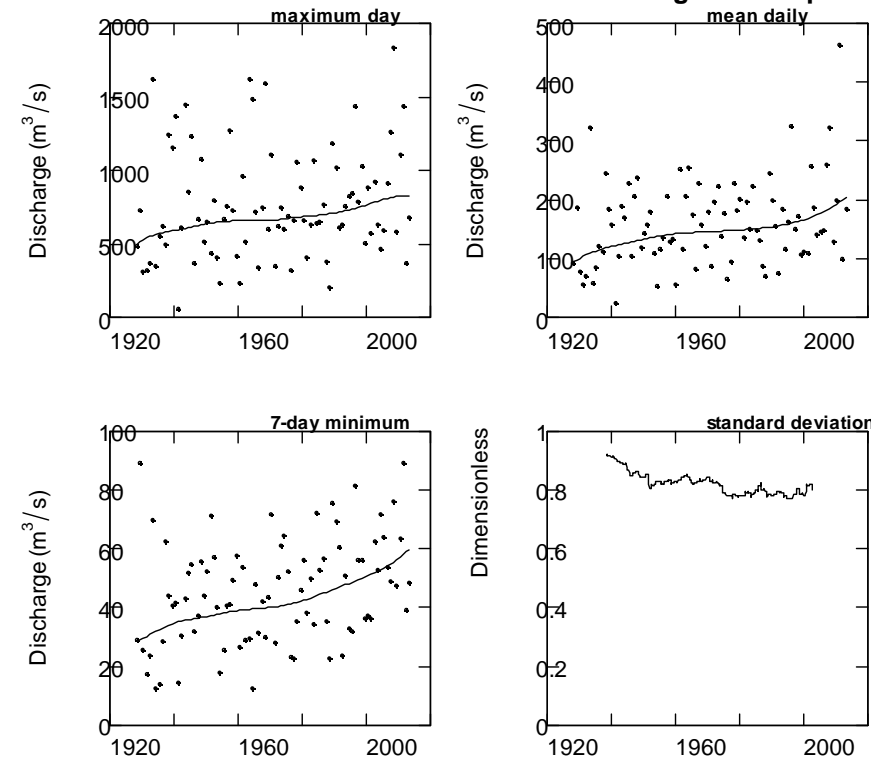
Kendall's tau Correlation Test				
Parameter	Tau correlation	S	z	p
Precipitation (1915 – 2018)	0.140	74	2.101	0.0356
Precipitation (1980 – 2018)	0.224	166	1.996	0.0459
Runoff (1928 – 2018)	0.249	1021	3.497	0.0005
Runoff (1980 – 2018)	0.232	172	2.069	0.0386

Assess the trends

**Great Miami River at Hamilton OH
Season Consisting of Dec Jan Feb**

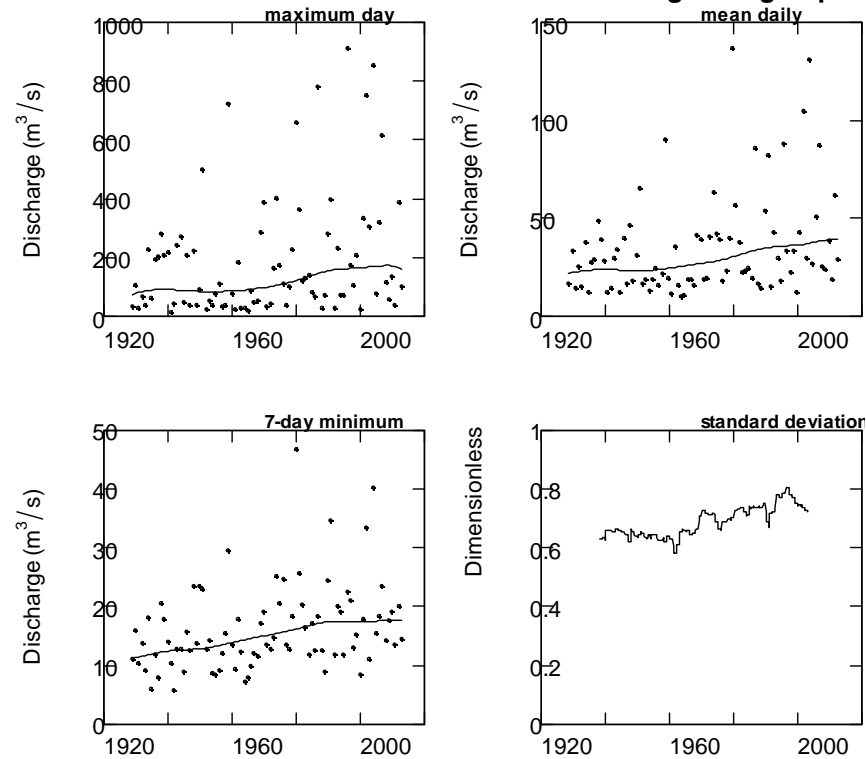


**Great Miami River at Hamilton OH
Season Consisting of Mar Apr May**

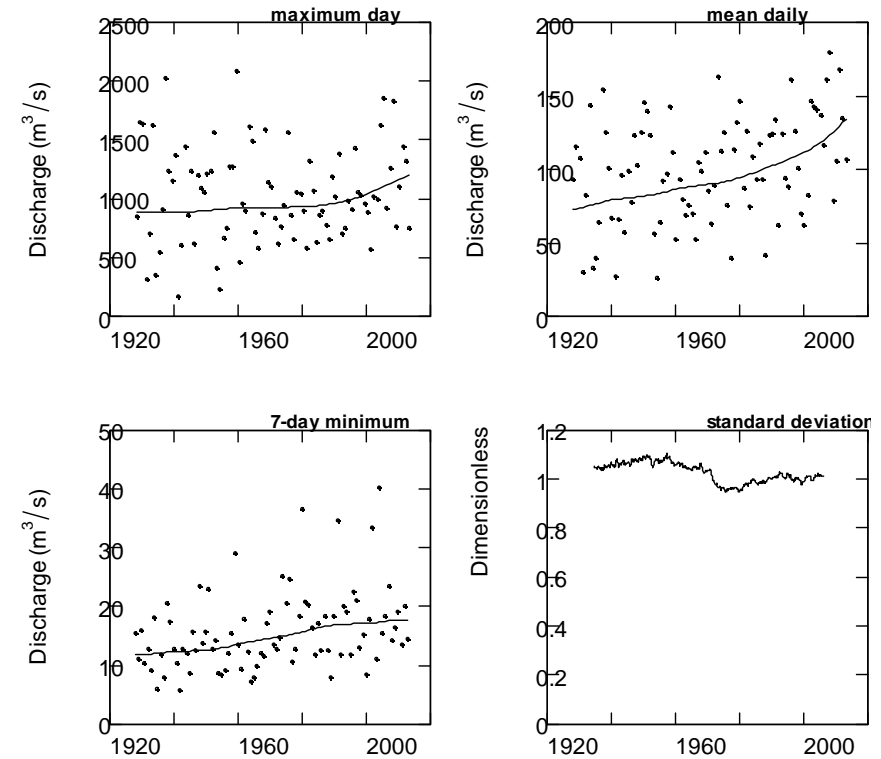


Assess the trends

Great Miami River at Hamilton OH
Season Consisting of Aug Sep Oct

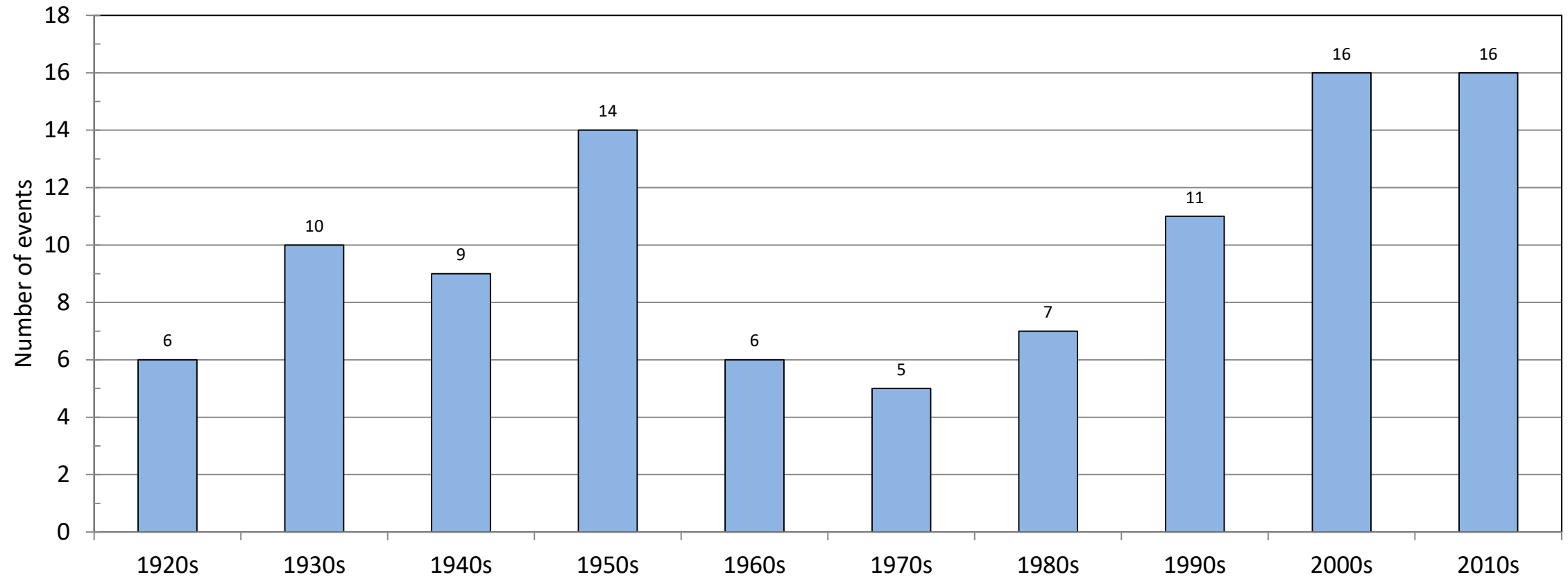


Great Miami River at Hamilton OH
Water Year



Assess the trends

Top 100 Storage Events by Decade



Water Cycle Intensifying



Water Cycle Intensifying



MCD's Vision

Thriving communities, a healthy watershed,
and a higher quality of life – sustained by
well-managed water resources throughout
the watershed.

