Southern Oscillation Index (SOI)

The Southern Oscillation Index (SOI) is a measure of the atmospheric pressure difference between Tahiti and Darwin, Australia. It is used to track the development of El Niño and La Niña events, which are significant climate phenomena affecting the Southern Hemisphere. The SOI data is sourced from the Australian Bureau of Meteorology (www.bom.gov.au). Interpolation and adjustment of the SOI data have been performed to allow for late-forming El Niño or La Niña years.

Inter-decadal Pacific Oscillation (IPO)

The Inter-decadal Pacific Oscillation (IPO) is a slower, multi-decadal variation in Pacific Ocean sea surface temperatures off the coast of Peru, now more generally referred to as the Inter-decadal Pacific Oscillation (IPO). Originally referred specifically to a warming of the sea surface temperatures in the eastern equatorial Pacific Ocean temperatures are near the long-term average. It is generally associated with extended periods of drought in the western United States as well as wetter periods in the eastern United States. The IPO can be linked to the ENSO cycle and has been modified to allow for late-forming El Niño or La Niña years.

Classification of years

- **El Niño** years are classified based on the Southern Oscillation Index (SOI) data. The threshold value of positive SOI is used to establish the onset of an El Niño event. The SOI is considered positive when the pressure difference between Tahiti and Darwin is greater than a specific threshold, typically above 30. When the SOI is negative, it is considered a La Niña event. The classification of years changes based on the threshold values used.

Rainfall classification

- **Highest on record**: rainfall values recorded for all annual periods, at that location.
- **Extremely high rainfall**: rainfall values recorded for all annual periods, at that location.
- **Above average**: rainfall values recorded for all annual periods, at that location.
- **Average**: rainfall values recorded for all annual periods, at that location.
- **Below average**: rainfall values recorded for all annual periods, at that location.
- **Extremely low rainfall**: rainfall values recorded for all annual periods, at that location.
- **Lowest on record**: rainfall values recorded for all annual periods, at that location.

Tropical Cyclone data

- Tropical Cyclone tracks have been sourced from Australian Bureau of Meteorology Tropical Cyclone Track Database.
- Tropical Cyclone data is available from 1890 to 2019. The ranking is expressed as a percentage of the total number of tropical cyclones that have occurred in each year.