

The Palmer Drought Severity Index (PDSI) has been the most commonly used drought index in the United States and was developed to measure intensity, duration, and spatial extent of drought. PDSI values are derived from measurements of precipitation, air temperature, and local soil moisture, along with prior values of these measures. Values range from -6.0 (extreme drought) to +6.0 (extreme wet conditions), and have been standardized to facilitate comparisons from region to region.

This drought index has been used to evaluate drought impact on agriculture. Because of the time scale built into this index, it is not suitable for the determination of longer-term hydrologic drought such as those that impact stream flow, reservoirs, and aquifers. The PDSI treats all precipitation as rain, so the index does not perform as well in higher elevations in the western U.S. in winter where much of the precipitation falls as snow.