National Environmental Public Health Tracking Network
Standard Precipitation Index (SPI) Metadata

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Background	The Standardized Precipitation Index (SPI) is a widely used index to characterize meteorological drought on a range of timescales. On short timescales, the SPI is closely related to soil moisture, while at longer timescales, the SPI can be related to groundwater and reservoir storage. The SPI can be compared across regions with markedly different climates. It quantifies observed precipitation as a standardized departure from a selected probability distribution function that models the raw precipitation data. The raw precipitation data are typically fitted to a gamma or a Pearson Type III distribution, and then transformed to a normal distribution. The SPI values can be interpreted as the number of standard deviations by which the observed anomaly deviates from the long-term mean. The SPI can be created for differing periods of 1-to-36 months, using monthly input data. For the operational community, the SPI has been recognized as the standard index that should be available worldwide for quantifying and reporting meteorological drought. The dataset includes one-month SPI values for every contiguous US county and the District of Columbia monthly from 1895-2016. The dataset has been compiled to estimate wetness and dryness of a particular area. This is important for the agriculture as well as health sectors. The data can be used to examine local and national trends in drought information.
Data Values	Range from -3 (dry) to +3 (wet). 0 indicates normal conditions. Missing data is noted as -99.99.
Geographic Scale & Scope	Data includes all counties in the lower 48 states plus the District of Columbia.
Time Period	January 1, 1895 – December 31, 2016. Known to be accurate as of time period end date.
Raw Data Processing	Data downloaded from the National Oceanic and Atmospheric Administration (NOAA) server and were originally provided as monthly values at a 5km grid. Distance weighting functions were applied to constrain the drought values to a specific US county. No data were lost or omitted during calculation. All data that were available were used. Data will be updated on an ad hoc basis, when necessary.
Additional Information	Keyantash, John & National Center for Atmospheric Research Staff (Eds). Last modified 02 Mar 2016. "The Climate Data Guide: Standardized Precipitation Index (SPI)." Retrieved from https://climatedataguide.ucar.edu/climate-data/standardized-precipitation-index-spi. McKee, T.B., N. J. Doesken, and J. Kliest, 1993: The relationship of drought frequency and duration to time scales. In Proceedings of the 8th Conference of Applied Climatology, 17-22 January, Anaheim, CA. American Meterological Society, Boston, MA. 179-18