

Working Draft of “Glossary of Terms” for the update of Indiana’s Water Shortage Plan

April 15, 2007

7Q10: 7Q10 is set by environmental water standards. In short, it is the minimum quantity of stream flow necessary to protect habitat during a drought situation. This is the lowest stream flow for seven consecutive days that would be expected to occur once in ten years. (7Q50 would be expected to occur once every 50 years)

Anomaly: Difference between a given quantity or observation and its average value. This is the same as “departure from average.” For example, if the average rainfall for June is 5 inches, but this year there is 100 inches of rainfall in June, then the anomaly is +95 inches.

Aquifer: An underground geological formation able to store and yield water.

Climate - The average of weather over at least a 30-year period. Note that the climate taken over different periods of time (30 years, 1000 years) may be different. The old saying is climate is what we expect and weather is what we get.

Climate: The general or typical atmospheric conditions for a place and/or period of time. Conditions include rainfall, temperature, thunderstorms, lightening, freezes, etc.

Climate Change - A non-random change in [climate](#) that is measured over several decades or longer. The change may be due to natural or human-induced causes.

Climate Division: A region within a state that is reasonably homogeneous with respect to climatic and hydrologic characteristics. Arizona is divided into 7 climate divisions and New Mexico, into 8.

Climate Model - Mathematical model for quantitatively describing, simulating, and analyzing the interactions between the atmosphere and underlying surface (e.g., ocean, land, and ice).

Climate Outlook - A climate outlook gives probabilities that conditions, averaged over a specified period, will be below-normal, normal, or above-normal.

Climate Prediction Center (CPC) - This Center is one of several centers under the [National Centers for Environmental Prediction \(NCEP\)](#) part of the [National Weather Service \(NWS\)](#) in the [National Oceanic and Atmospheric Administration \(NOAA\)](#). The Center serves the public by assessing and forecasting the impacts of short-term climate variability, emphasizing enhanced risks of weather-related extreme events, for use in mitigating losses and maximizing economic gains. (See <http://www.cpc.ncep.noaa.gov>)

Climatological Outlook - An outlook based upon climatological statistics for a region, abbreviated as CL on seasonal outlook maps. CL indicates that the climate outlook has an equal chance of being above normal, normal, or below normal.

Climatology - (1) The description and scientific study of climate. (2) A quantitative description of [climate](#) showing the characteristic values of climate variables over a region.

Conservation: The use of water-saving methods to reduce the amount of water needed for homes, lawns, farming, and industry, and thus increasing water supplies for optimum long-term economic and social benefits

Crop Moisture Index - In 1968, Palmer developed the index to assess short-term crop water conditions and needs across major crop-producing regions. This index is a useful tool in forecasting short-term drought conditions. (See [Palmer Drought Severity](#) & Crop Moisture [Indices](#))

Crop Moisture Index (CMI): The CMI is derived from the Palmer Drought Severity Index and shows short-term moisture supply across major agricultural regions.

Drought: There is no definitive definition of drought based on measurable processes; scientists evaluate precipitation, temperature, and soil moisture data for the present and recent past to determine drought status. Very generally, it refers to a period of time when precipitation levels are low, impacting agriculture, water supply, and wildfire hazard.

Drought - Drought is a deficiency of moisture that results in adverse impacts on people, animals, or vegetation over a sizeable area. NOAA together with its partners provides short- and long-term [Drought Assessments](#).

Drought: An extended period with little or no precipitation; often affects crop production and availability of water supplies.

Forecast: A prediction of future conditions by analysis of data. For example, precipitation forecasts are based on meteorological data.

Ground water: Water found in the spaces between soil particles and cracks in rocks underground (located in the saturation zone). Ground water is a natural resource that is used for drinking, industry, and growing crops.

Hydrologic cycle: (also known as the water cycle) The path water takes through its various states—vapor, liquid, solid—as it moves throughout the ocean, atmosphere, ground water, streams, etc.

Mg: Million gallons

Mgd: Million gallons per day

National Climatic Data Center (NCDC) - NCDC maintains the world's largest active archive of weather data. NCDC produces numerous climate publications and responds to data requests from all over the world. (See <http://www.ncdc.noaa.gov>)

National Oceanic and Atmospheric Administration (NOAA) - NOAA's historical role has been to predict environmental changes, protect life and property, provide decision makers with reliable scientific information, and foster global environmental stewardship. Today NOAA's mission remains unchanged as it describes and predicts changes in the Earth's environment, and conserves and wisely manages the Nation's coastal and marine resources. (See <http://www.noaa.gov>)

National Weather Service (NWS) - The National Weather Service (NWS) - provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community. (See <http://www.nws.noaa.gov>)

NOAA - [National Oceanic and Atmospheric Administration](#)

Normal - To understand whether precipitation and temperature is above or below normal for seasons and longer timescales, normal is defined as the average weather over 30 years. These averages are recalculated every ten years. The National Weather Service has just recalculated the baseline period for normal from 1961 to 1990 to 1971 to 2000. Since the cool decade of the 1960's has been replaced with the mild 1990's, normal temperatures in many areas have increased.

NWS - [National Weather Service](#)

Palmer Drought Severity Index (PDSI): An indicator, based on temperature, precipitation, and soil type, of long-term deficits or surpluses of soil moisture.

Palmer Drought Severity Index (PDSI) - An index that compares the actual amount of precipitation received in an area during a specified period with the normal or average amount expected during that same period. It was developed to measure lack of moisture over a relatively long period of time and is based on the supply and demand concept of a water balance equation. Included in the equation are amount of evaporation, soil recharge, and runoff and temperature and precipitation data.

Palmer Hydrological Drought Index (PHDI): An indicator, based on impacts such as groundwater and reservoir levels, of long-term, hydrological drought.

Percent of Normal (Average): A comparison of conditions, such as precipitation or temperature, at any one place or time with the historical average of that condition.

Precipitation: Rainfall, snow, sleet, hail, etc.

Precipitation: Rain, snow, hail, sleet, dew, and frost.

Precipitation Intensity: The maximum amount of precipitation in a period of time (e.g., $I_{,30}$ is the maximum precipitation over thirty minutes). Precipitation intensity can be related to discharge.

Recharge: Net accumulation of water into an aquifer from sources such as precipitation, seepage, and injection.

Reclamation Drought Index (RDI): Similar to the Surface Water Supply Index, the RDI incorporates temperature as well as precipitation, snowpack, stream flow, and reservoir levels in order to define drought on a river basin level.

Reservoir: A pond, lake, or basin, either natural or artificial, for the storage, regulation, and control of water.

Runoff: Precipitation that flows over land to surface streams, rivers, and lakes

Standard Precipitation Index (SPI): An index of soil moisture that considers both the long-term average and recent precipitation (up to the last 72 months).

Stream flow: The total flow of water, or stream discharge, past a specified point in a stream channel, and for a specified period of time.

Surface water: Water above the surface of the land, including lakes, rivers, streams, ponds, floodwater, and runoff.

Surface Water Supply Index (SWSI): The SWSI is similar to the Palmer Drought Severity Index but also includes hydrological elements such as mountain snowpack, stream flow, precipitation, and reservoir storage on a basin-to-basin basis, making it very useful in "mountain water dependent" areas.

Transpiration: Process by which water that is absorbed by plants, usually through the roots, is evaporated into the atmosphere from the plant surface, such as leaf pores.

Vegetation and Temperature Condition Index (VT): A numerical index of vegetation health that ranges from 0 (extremely poor) to 100 (excellent). It reflects, indirectly, a combination of chlorophyll (photosynthetic plant material) and moisture content in vegetation, as well as thermal conditions at the surface.

Water Supply Outlook: A summary of snowpack, reservoir, stream flow, and precipitation for watersheds and basins, which is available bi-monthly from January through April from the U.S. Department of Agriculture's National Resources Conservation Service.

Water table: The level below which the ground is completely saturated with water.

Water Year: The water year begins on October 1 and ends on September 30 of the following year. For example water year 1994 began October 1, 1993 and ended September 30, 1994.

Watershed: The land area from which surface runoff drains into a stream, channel, lake, reservoir, or other body of water; also called a drainage basin.

Weather: Describes the daily conditions (individual storms) or conditions over several days (week of record-breaking temperatures) to those lasting less than two weeks.