



Drought Basics

What is Drought?

Defining Drought

Drought is generally **defined** as “a deficiency of precipitation over an extended period of time (usually a season or more), resulting in a water shortage.”

As the different definitions at right illustrate, though, drought can be difficult to define—so difficult, in fact, that in the early 1980s researchers found **more than 150** published definitions of drought, reflecting differences in regions, needs, and approaches.

Some drought definitions are conceptual—an idea or concept—which can be important in establishing drought policy. Others are operational, describing how drought functions or operates in ways that can be measured (**NDMC**).

Merriam-Webster Dictionary: “A period of dryness especially when prolonged.”

American Meteorological Society: “A period of abnormally dry weather sufficiently long enough to cause a serious hydrological imbalance.”

NOAA’s National Weather Service: “A deficiency of moisture that results in adverse impacts on people, animals, or vegetation over a sizeable area.”



Types of Drought

To help with drought classification and monitoring, scientists have defined several types of drought:



Meteorological Drought
When dry weather patterns dominate an area.



Hydrological Drought
When low water supply becomes evident in the water system.



Agricultural Drought
When crops become affected by drought.



Socioeconomic Drought
When the supply and demand of various commodities is affected by drought.



Ecological Drought
When natural ecosystems are affected by drought.

Challenges of Predicting and Monitoring Drought

Drought is the absence of precipitation, rather than the presence of an event such as a hurricane, tornado, or fire. It's often described as a "creeping phenomenon" because it slowly impacts many sectors of the economy and operates on many different timescales.

Just as drought is difficult to define, it's also difficult to predict and monitor—particularly when marking the beginning and end of a period of drought.

Drought's effects also vary from region to region. Due to climatic differences, what might be considered a drought in one part of the country may not be a drought somewhere else.

Examples of Drought Impacts

Drought can lead to a wide range of environmental, social, and economic impacts. Below are just a few examples of the far-reaching consequences of drought.

Agriculture

Drought can reduce the water availability and quality necessary for productive farms, ranches, and grazing lands. It can also contribute to insect outbreaks, increases in wildfire, and altered rates of carbon, nutrient, and water cycling—impacting agricultural production and critical ecosystem services.

Transportation

Drought impacts port and waterway transportation and supply chains, resulting in increased transportation costs. Higher temperatures that coexist with drought can impact roads, airport runways, and rail lines.

Wildfire

Drought can be a contributing factor to wildfire. Dry, hot, and windy weather combined with dried out (and more flammable) vegetation can increase the probability of large-scale wildfires.

Public Health

Drought can cause significant human health outcomes, including decreased water quantity and quality, increased incidence of illness and disease (e.g., Valley Fever), adverse mental health outcomes as livelihoods are challenged, and overall, increased mortality rates.

Ecosystems

Drought can alter or degrade critical functions of healthy ecosystems, including reduced plant growth, reduction or extinction of local species, and landscape-level transitions (e.g., a forest being replaced by a grassland).

Water Quality

During drought, decreased water levels, warmer temperatures, and soil runoff can lead to algal growth, lower dissolved oxygen levels, and increased turbidity, posing health risks for human and aquatic life.



Source: <https://www.drought.gov/what-is-drought/drought-basics>

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