



This map shows the U.S. Drought Monitor from Oct. 20, 2015. The black lines define areas of short- and long-term drought, indicated by the letters "S" and "L." In general, short-term drought is a recent development, within the past six months, and long-term drought has gone on longer than six months. The weekly update includes Hawaii, Alaska and Puerto Rico.

	<b>D0:</b> Abnormally dry		<b>D1:</b> Moderate drought
	<b>D2:</b> Severe drought		<b>D3:</b> Extreme drought
			<b>D4:</b> Exceptional drought

# What is the U.S. Drought Monitor?

Maybe you've seen it in the media: that map of the U.S. painted with blobs of yellow, orange and red. It shows drought — but how do we know which colors go where? Who decides? What does it mean for you?

## A USDM Q&A

The U.S. Drought Monitor is a map released every Thursday, showing parts of the U.S. that are in drought. The map uses five classifications: abnormally dry (D0), showing areas that may be going into or are coming out of drought, and four levels of drought: moderate (D1), severe (D2), extreme (D3) and exceptional (D4).

### What agencies or organizations are responsible for the USDM?

The Drought Monitor has been a team effort since its implementation in 1999, produced jointly by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the National Oceanic and Atmospheric Administration, and the U.S. Department of Agriculture. The NDMC hosts the web site of the drought monitor and the associated data, and provides the map and data to NOAA, USDA and other agencies. It is freely available at [droughtmonitor.unl.edu](http://droughtmonitor.unl.edu).

### Who uses it, and what do they do with it?

The USDA uses the drought monitor to trigger disaster declarations and eligibility for low-interest loans. The Farm Service Agency uses it to help determine eligibility for their Livestock Forage Program, and the Internal Revenue Service uses it for tax deferral on forced livestock sales due to drought. State, local, tribal and basin-level decision makers use it to trigger drought responses, ideally along with other more local indicators of drought.

### How does drought affect the country?

Drought is a normal part of the climate cycle. It is a slow-moving hazard, which causes people to underestimate the damage it can do, but losses from drought are as substantial as those from hurricanes, tornados and other faster-moving disasters. Drought causes losses to agriculture; affects domestic water supply, energy production, public health, and wildlife; and contributes to wildfire, to name a few of its effects.

No single federal agency is in charge of water or drought policy; response and mitigation fall to an assortment of federal authorities. The USDA leads response efforts; NOAA, through the National Integrated Drought Information System ([drought.gov](http://drought.gov)), leads monitoring; agencies such as the U.S. Geological Survey and NASA contribute data; and the Environmental Protection Agency regulates water quality. The National Drought Resilience Partnership, launched in the aftermath of widespread drought in 2012, is an effort to unify federal drought response and policy. Drought response efforts, planning, and water law vary from state to state.

### How do we know when we're in a drought?

Recognizing drought before it intensifies can reduce impacts and save money. How you recognize it depends on how it affects you. Traditional ways to measure drought are by comparing observed precipitation with what's normal (climatologic), by comparing soil moisture and crop conditions with what's normal (agricultural), or by looking at how much water is contained in snow, the level



or flow rate of moving water, water in reservoirs, or groundwater levels (hydrologic). NDMC recommends that decision makers adopt an operational definition of drought for their own circumstances, incorporating local data such as grazing conditions or streamflow at a nearby gauge.

### Who draws the map?

Several authors from the NDMC, NOAA and USDA create the map. They take turns, usually two weeks at a time.

### How do they figure out where and how bad drought is?

This is what makes the U.S. Drought Monitor unique. It is not a statistical model, although numeric inputs are many: the Palmer Drought Severity Index, the Standardized Precipitation Index, and other climatological inputs; the Keech-Byram Drought Index for fire, satellite-based assessments of vegetation health, and various indicators of soil moisture; and hydrologic data, particularly in the West, such as the Surface Water Supply Index and snowpack. Drought.gov has links to many of these sources, where you can view the types of information that help the author create the map.

The USDM relies on experts to synthesize the best available data from these and other sources and work with local observers to interpret the information. The USDM also incorporates information about how drought is affecting people, via a network of more than 425 observers across the country, including state climatologists, National Weather Service staff, Extension agents, and hydrologists. These local experts provide vital reporting of impacts, which help create the most accurate classifications on the map, particularly in areas with less monitoring capacity, such as Hawaii, Alaska and Puerto Rico.

Bear in mind that recognizing emerging drought, or knowing whether drought is over, entails understanding what is normal for a given location or season, and considering longer time frames. If an area has been in drought for a while, it typically takes more than one or two rains to end it, although one rain may be all that is needed to awaken dormant vegetation or spur crop growth.

### It's not a forecast

Unlike most of the weather maps people see in the news, the U.S. Drought Monitor is not a forecast. In fact, it looks backward. It's a weekly assessment of drought conditions, based on how much precipitation did or didn't fall, up to the Tuesday morning before the map comes out. That gives authors about two working days to review the latest data. If a lot of rain falls in a drought area on a Wednesday, the soonest drought would be erased is the following week.

Drought is a slow-moving hazard, so you can be certain that an area will still be in drought if it doesn't get rain. But it also may take more than one good rainfall to end a drought, especially if an area has been in drought for a long time.

### Get involved!

Want to contribute your observations to the USDM process? Here are some ways:

- 1. Talk to your state climatologist.**  
Find the current list at the American Association of State Climatologists website: [www.stateclimate.org](http://www.stateclimate.org).
- 2. Email.**  
Emails sent to [droughtmonitor@unl.edu](mailto:droughtmonitor@unl.edu) inform the USDM authors.
- 3. Use the NIDIS contact form.**  
Contact us online at [www.drought.gov/drought/contact-us](http://www.drought.gov/drought/contact-us).
- 4. Become a CoCoRaHS observer.**  
Submit drought reports along with daily precipitation observations. Learn more at [www.cocorahs.org](http://www.cocorahs.org).
- 5. Submit observations to the Drought Impact Reporter.**  
Submit local conditions and photos, rain or shine, at regular intervals at [droughtreporter.unl.edu](http://droughtreporter.unl.edu) or by emailing [DIRinfo@unl.edu](mailto:DIRinfo@unl.edu). We recommend a systematic technique such as using photo points to document the range of conditions. For how-to information, see [go.unl.edu/trackingdrought](http://go.unl.edu/trackingdrought) or [droughtreporter.unl.edu/submitreport](http://droughtreporter.unl.edu/submitreport).

Whether you are using CoCoRaHS or the Drought Impact Reporter, we prefer that you submit observations consistently, over time, so that we know what a particular area looks like in different seasons, in wet years and in dry years.

### What not to do

Whether we get one report or 100 saying that conditions are dry or impacts are occurring, we interpret it as "let's take a look at the data and see what it says." These efforts will not change how the U.S. Drought Monitor map looks. Only data can do that. It's like going to a doctor who is a specialist – you describe the symptom and the doctor does tests to find an underlying cause. In this case, you describe what you are experiencing, such as dry pastures, and we look at data to see whether drought is the cause. Sometimes, poor pasture conditions have other causes, such as late spring freezes or abnormally high temperatures.

To report financial hardship that may or may not be related to drought, please contact your local Farm Service Agency office, your state department of agriculture, your state climatologist, or your local agricultural extension agent. They can help judge how and when to make a report to U.S. Drought Monitor authors.



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