

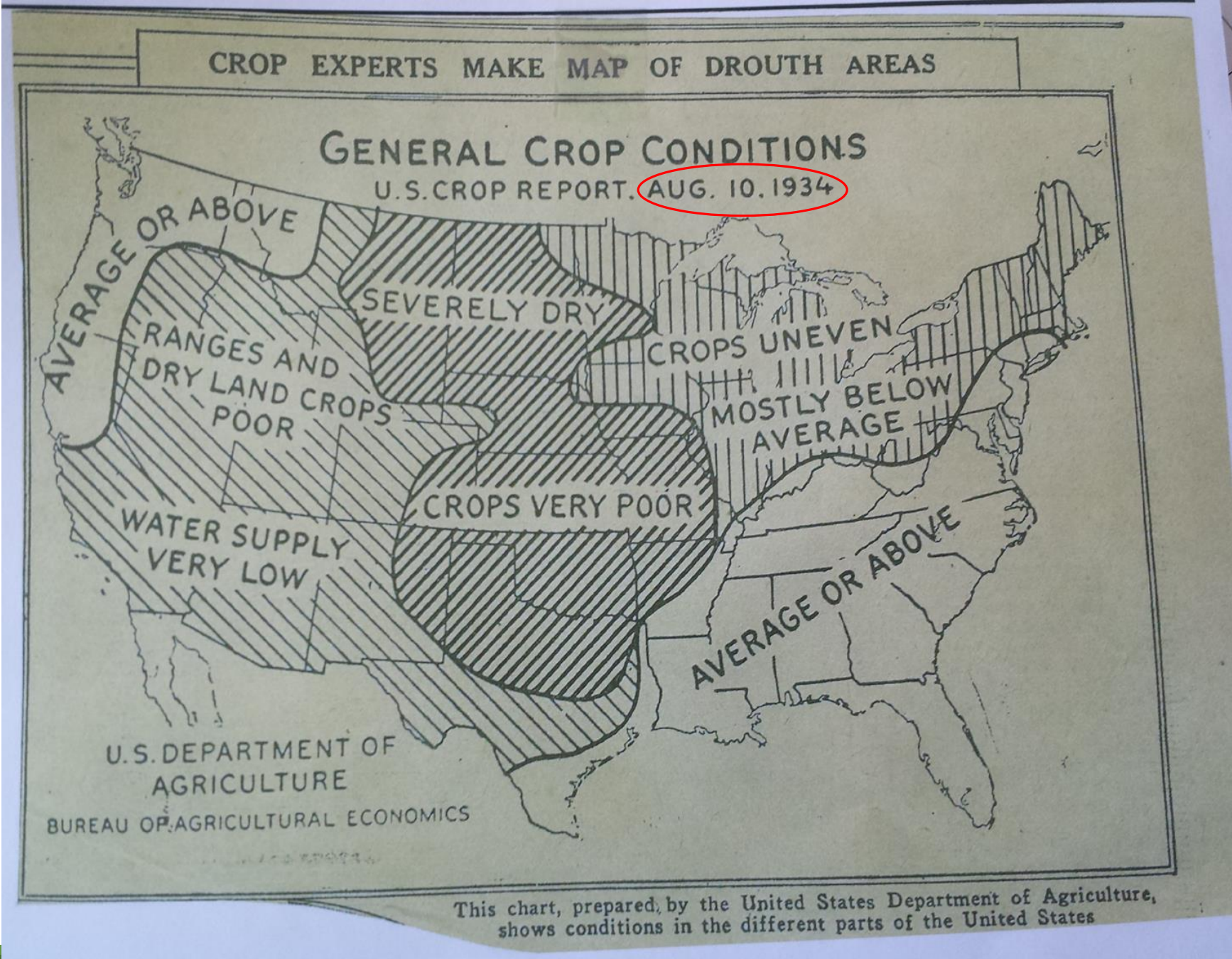
# The United States Drought Monitor Process: What is it and how is the map made?

**Brian Fuchs**  
**National Drought Mitigation Center**  
**University of Nebraska-Lincoln**  
**School of Natural Resources**





Scientists have been trying to monitor and map drought conditions for a long time



# Instead of using a single indicator/index, a Hybrid Approach is used: U.S. Drought Monitor (USDM)

**Objective**  
indicators &  
indices

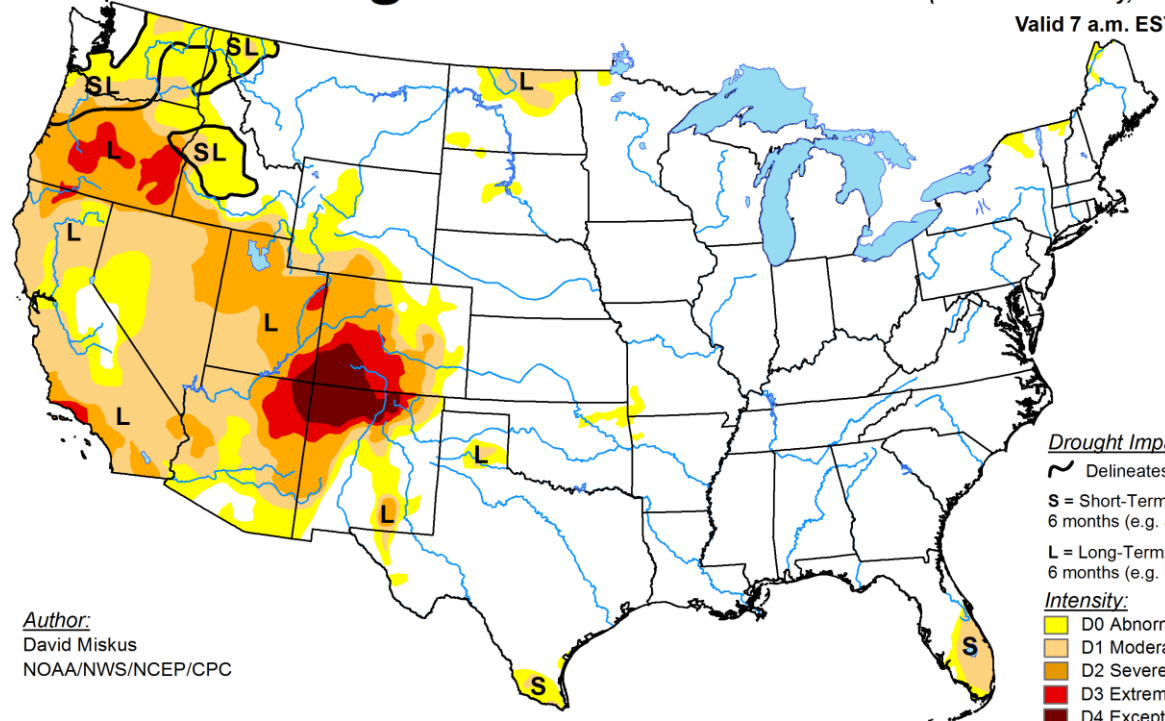


**Subjective**  
expertise  
and impacts



## U.S. Drought Monitor

January 1, 2019  
(Released Thursday, Jan. 3, 2019)  
Valid 7 a.m. EST

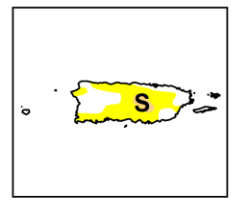
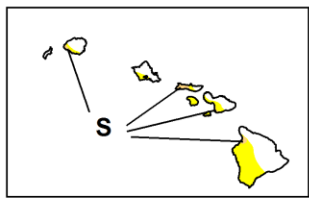
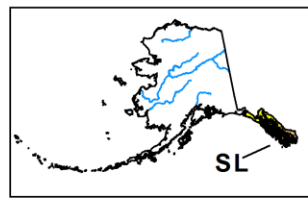


Author:  
David Miskus  
NOAA/NWS/NCEP/CPC

**Drought Impact Types:**  
~ Delineates dominant impacts  
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)  
L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

**Intensity:**  
D0 Abnormally Dry  
D1 Moderate Drought  
D2 Severe Drought  
D3 Extreme Drought  
D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>

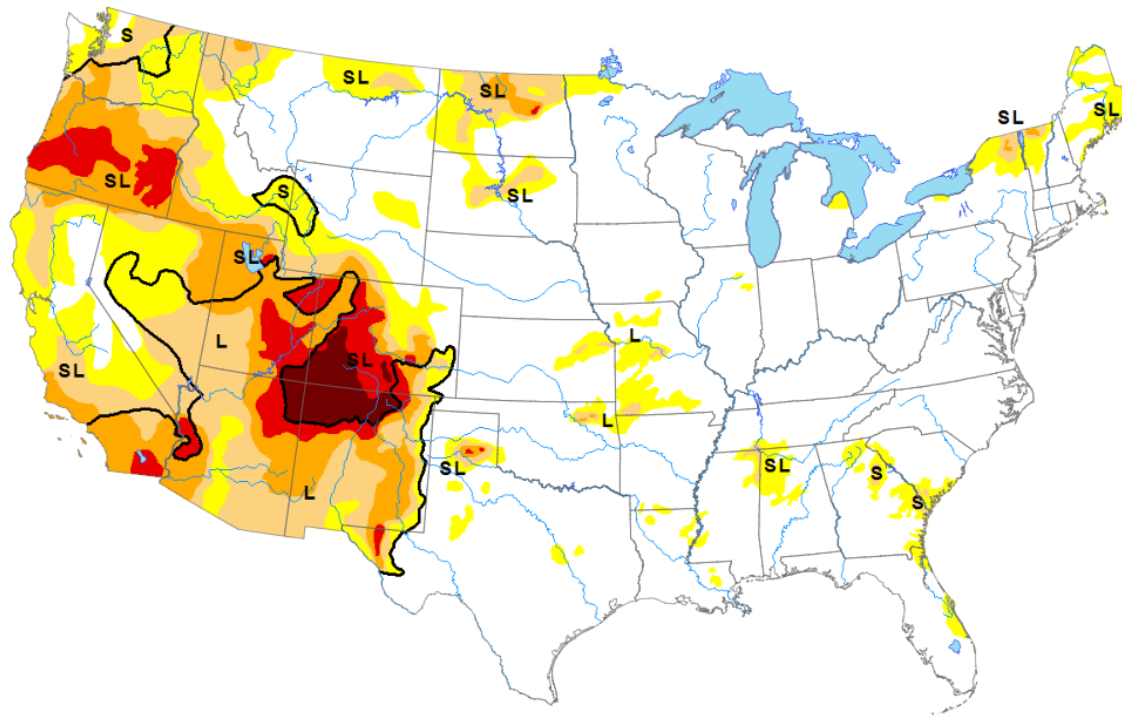


# The United States Drought Monitor

- Hosted by the NDMC as part of a 3-way partnership with NOAA and USDA
- Over 12.5 million hits a year (more during significant drought events)
- Used in several USDA programs
- Used by the IRS for tax deferrals
- Many others !

Map released: October 18, 2018

Data valid: October 16, 2018 | Author: [Eric Luebehusen](#), U.S. Department of Agriculture



The data cutoff for Drought Monitor maps is each Tuesday at 8 a.m. EDT. The maps, which are based on analysis of the data, are released each Thursday at 8:30 a.m. Eastern Time.



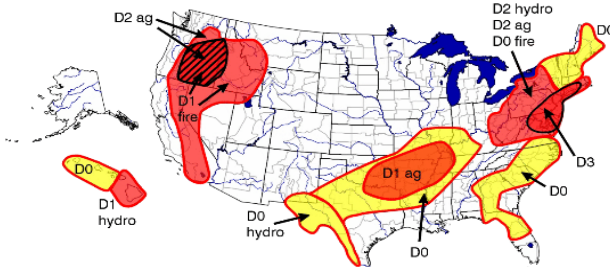
# The U.S. Drought Monitor

Since 1999, NOAA (CPC, NCEI, WRCC), USDA, and the NDMC in an EQUAL Partnership

have produced a weekly composite drought map -- the U.S. Drought Monitor -- with input from numerous federal and non-federal agencies

- **11** current authors and 2 legacy authors
- **Western Region Climate Center** on board 2008 (David Simeral)
- **Incorporate** relevant information and products from all entities (and levels of government) dealing with drought (RCC's, SC's, federal/state agencies, etc.) **(450+ experts)**

August 3, 1999  
**Experimental U.S. Drought Monitor**

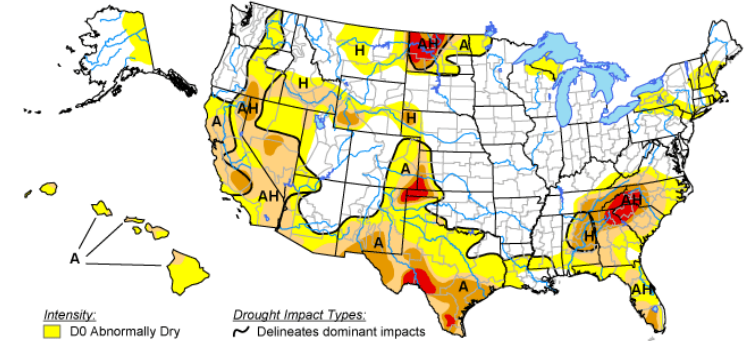


"Drought" means moisture shortages leading to damaged crops or pastures, high wildfire risk, or water shortages. The map is based on information from many sources, including both satellite and surface data, and it focuses on widespread drought. Local conditions may vary.

**Yellow (D0)** = Drought Watch Area (abnormally dry but not full drought status)  
**Red (D1-D4)** = Current drought ranging in severity from standard (D1) to severe (D2-D3) to extreme (D4)  
 Crosshatching ( ) = Overlapping drought type areas  
 Drought type: Used when impacts differ  
 Ag = agricultural (crops, grasslands)  
 Fire = forestry (wildfire potential)  
 Hydro = hydrological (rivers, wells, reservoirs)  
 Plus (+) = Forecast to intensify  
 Minus (-) = Forecast to diminish



**U.S. Drought Monitor** June 10, 2008  
Valid 8 a.m. EDT



**Intensity:**  
 Yellow D0 Abnormally Dry  
 Orange D1 Drought - Moderate  
 Red D2 Drought - Severe  
 Dark Red D3 Drought - Extreme  
 Black D4 Drought - Exceptional

**Drought Impact Types:**  
 ~ Delineates dominant impacts  
 A = Agricultural (crops, pastures, grasslands)  
 H = Hydrological (water)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

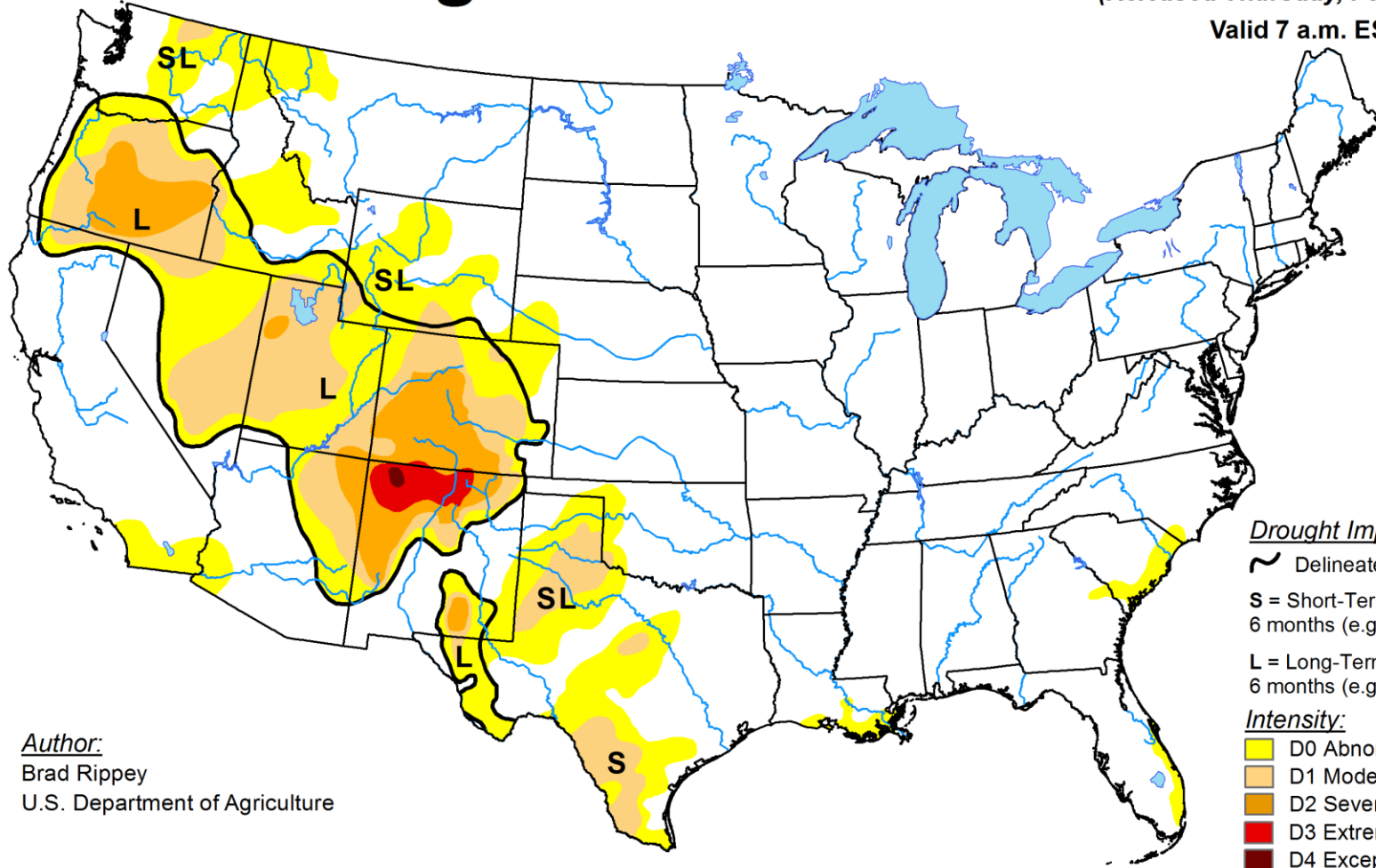
<http://drought.unl.edu/dm>



Released Thursday, June 12, 2008  
Author: Mark Svoboda, National Drought Mitigation Center

# U.S. Drought Monitor

February 26, 2019  
(Released Thursday, Feb. 28, 2019)  
Valid 7 a.m. EST



Timescales  
of potential  
impacts  
delineated

### Drought Impact Types:

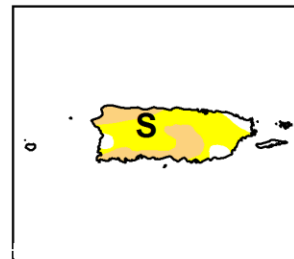
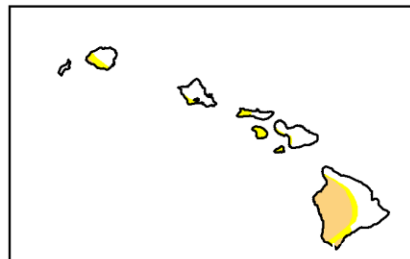
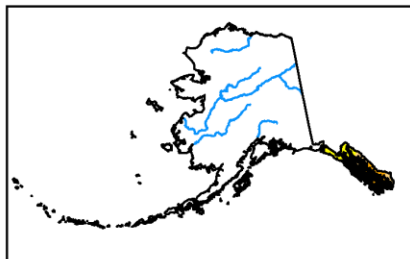
- ~ Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

### Intensity:

- Yellow D0 Abnormally Dry
- Light Orange D1 Moderate Drought
- Dark Orange D2 Severe Drought
- Red D3 Extreme Drought
- Dark Red D4 Exceptional Drought

Author:  
Brad Rippey  
U.S. Department of Agriculture

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

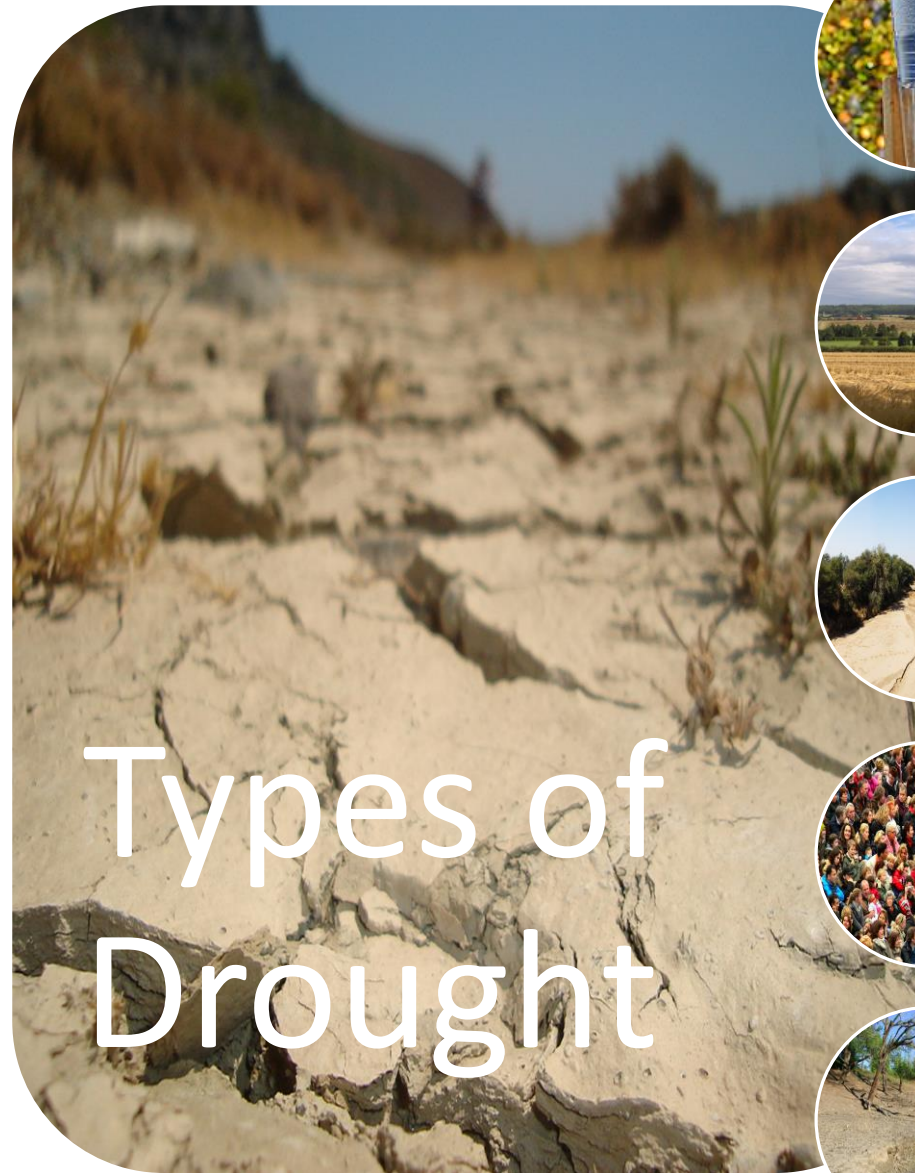


<http://droughtmonitor.unl.edu/>



The map is...

An attempt to  
represent different  
types of drought all  
on one map



# Types of Drought



Meteorological



Agricultural



Hydrological








Socio-  
economic



Ecological

5 levels of intensity on the map, 4 are considered drought, 1 is not

*Intensity:*

-  D0 Abnormally Dry } Not Drought
-  D1 Moderate Drought
-  D2 Severe Drought
-  D3 Extreme Drought
-  D4 Exceptional Drought

4 Drought intensities

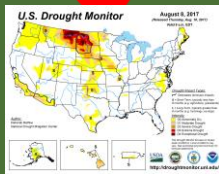


# U.S. Drought Monitor Approach

## “Convergence of Evidence”

- Many types of drought “information” can be collectively analyzed
  - ***Determining if the majority of information is ‘converging’ (telling the same story)*** about the accuracy, or inaccuracy, of the drought as depicted by the U.S. Drought Monitor
  - Several **dozen** inputs are considered in any given week
- Authors need to ***look at 100% of the data, BUT don’t believe in any one piece of data input 100%*** in making a decision...
- ***Multiple indicators and many types of information are part of the analysis***
  - These data will identify different climatic and hydrologic parameters which are needed to understand the complete picture of a drought indicator’s performance and how they interact in each part of the country
- ***Impacts are the “ground truth”***, yet aren’t monitored to the extent which other data are....**you can’t measure what you don’t monitor!**

# U.S. Drought Monitor Objectives



- Assessment of **current** conditions and **current** impacts
- The U.S. Drought Monitor is **NOT** a model
  - The map is made manually each week based off the previous week's map
- The U.S. Drought Monitor is **NOT** interpreting only precipitation
- The U.S. Drought Monitor is **NOT** a forecast or drought declaration
  - Can be used by decision makers in this way though
- Identifying **impacts**
  - “**S**” short-term impacts, “**L**” long-term impacts or “**SL**” for a combination of both
  - “**S**”-6 month time scales or less, “**L**”-greater than 6 month time scales
- Incorporate **local expert** input
  - Accomplished via email and impact reports
  - Validation of Objective Indicators
- Authors try to be as **objective** as possible (using the percentiles methodology) and the **“Convergence of evidence”** approach
  - The physical data, drought indices/ indicators **must** support the depiction on the map
  - Impact data validates physical data








# Percentiles and the U.S. Drought Monitor

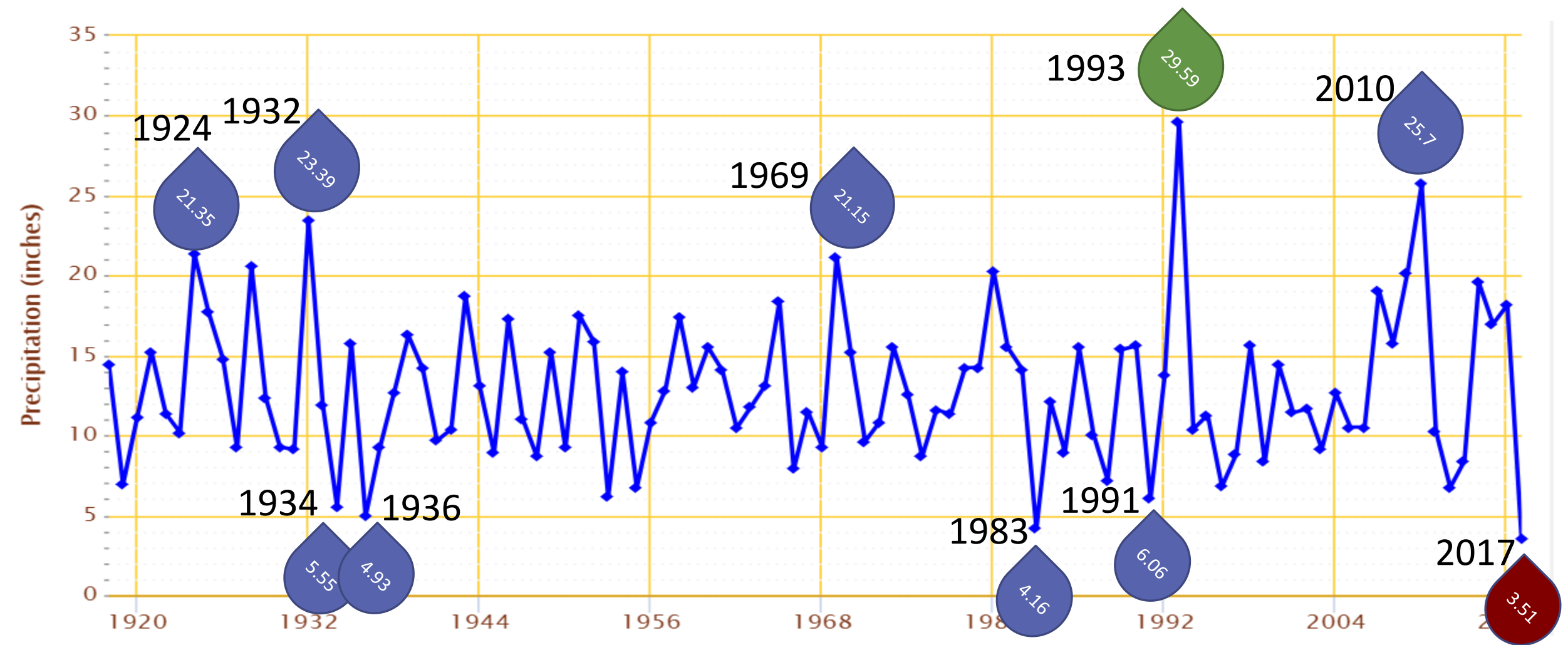
Every input can be put into percentiles to compare current data to historical records

## Advantages of percentiles:

- Can be applied to any parameter used in the drought analysis
- Can be used for indicators of any length of data record
- Puts drought in historical perspective:

**How many occurrences in a given period of time**

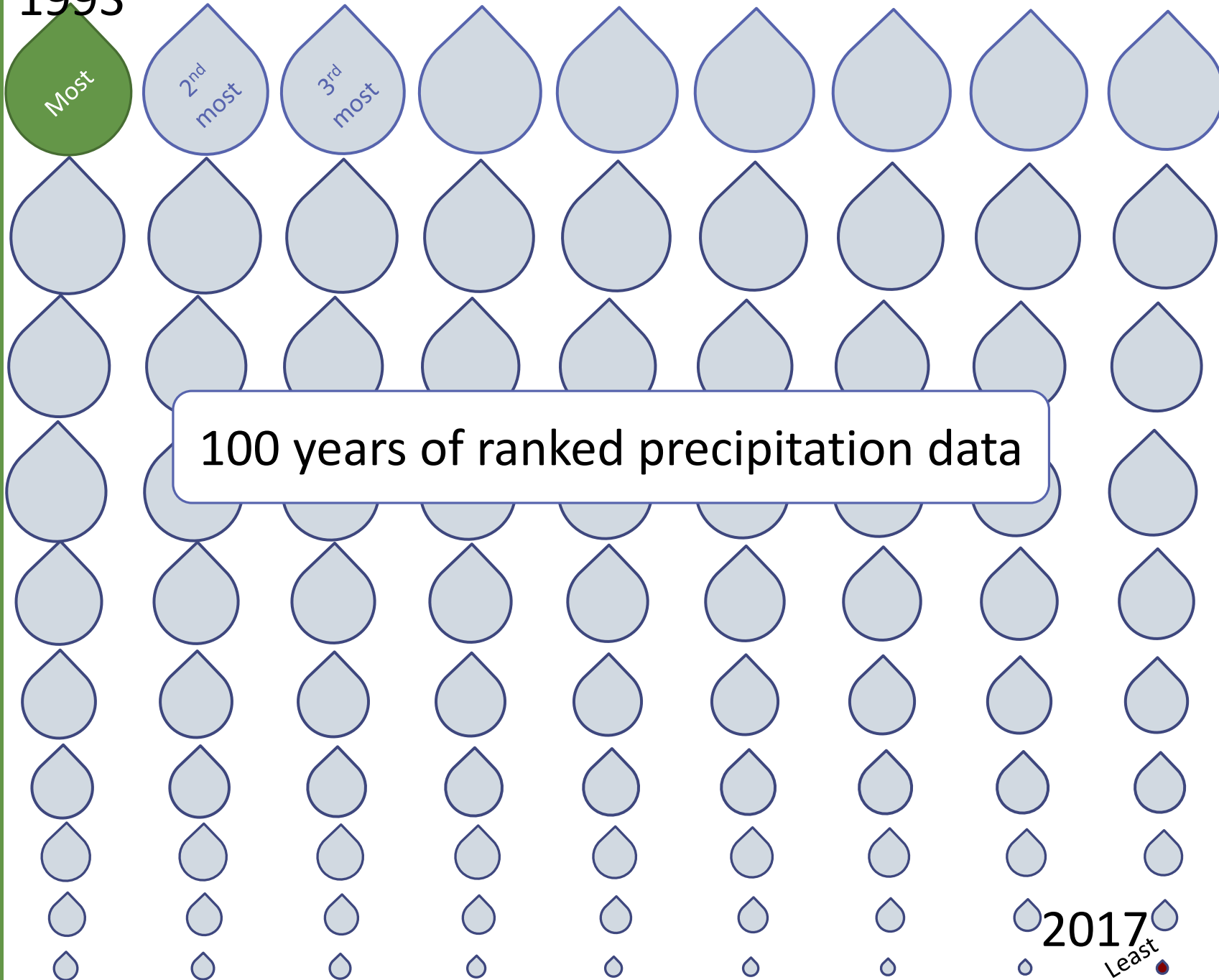
D4: Exceptional Drought		( <i>1<sup>st</sup>-2<sup>nd</sup></i> percentile)
D3: Extreme Drought		( <i>3<sup>rd</sup>-5<sup>th</sup></i> percentile)
D2: Severe Drought		( <i>6<sup>th</sup>-10<sup>th</sup></i> percentile)
D1: Moderate Drought		( <i>11<sup>th</sup>-20<sup>th</sup></i> percentile)
D0: Abnormally Dry		( <i>21<sup>st</sup>-30<sup>th</sup></i> percentile)



# June-July-August Precipitation Fairfield, IA 1919-2018

# Categories based on historical likelihood

1993



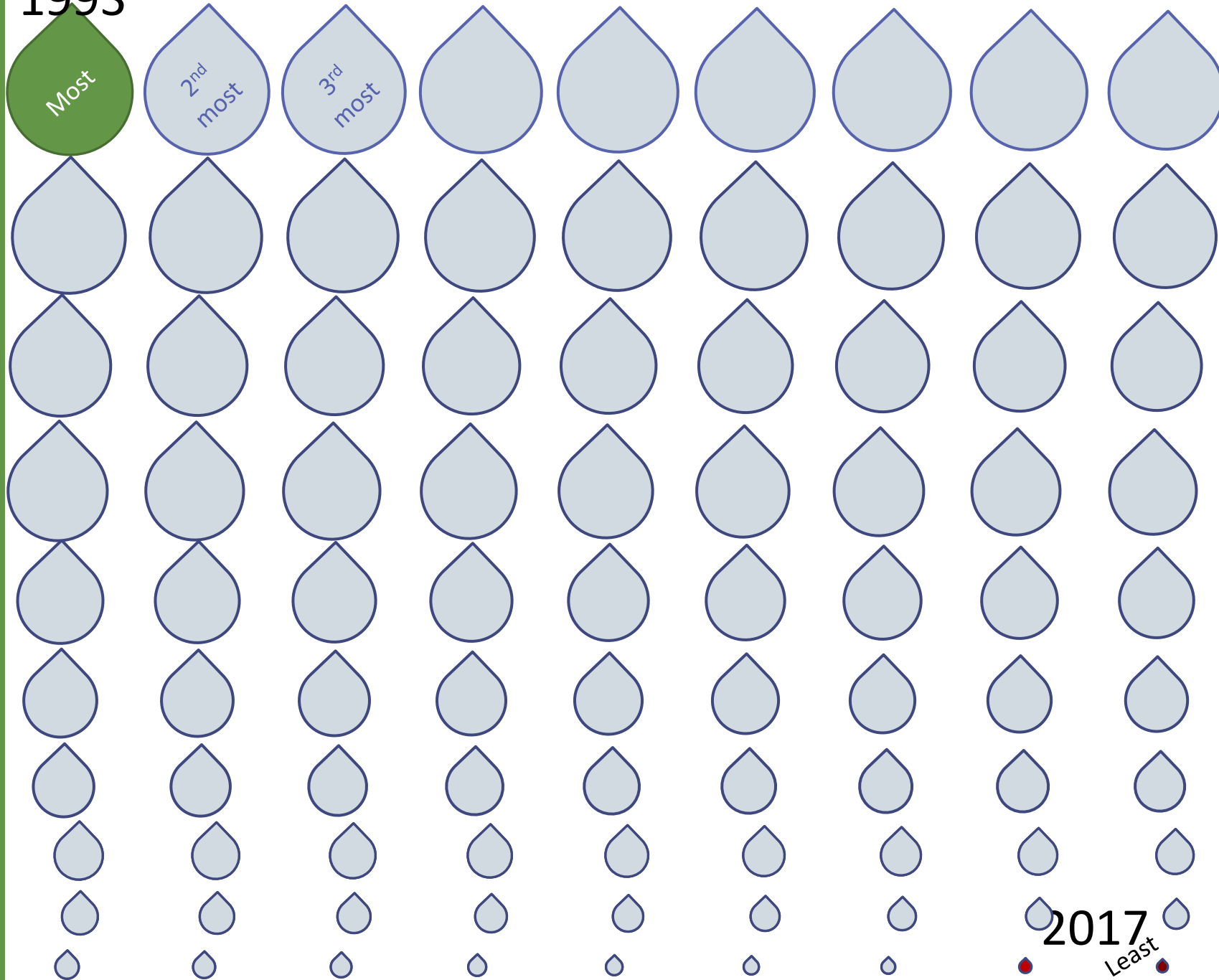
100 years of ranked precipitation data

			Percentile
	D0	Abnormally Dry	21-30
	D1	Moderate Drought	11-20
	D2	Severe Drought	6-10
	D3	Extreme Drought	3 - 5
	D4	Exceptional Drought	1 - 2



# Categories based on historical likelihood

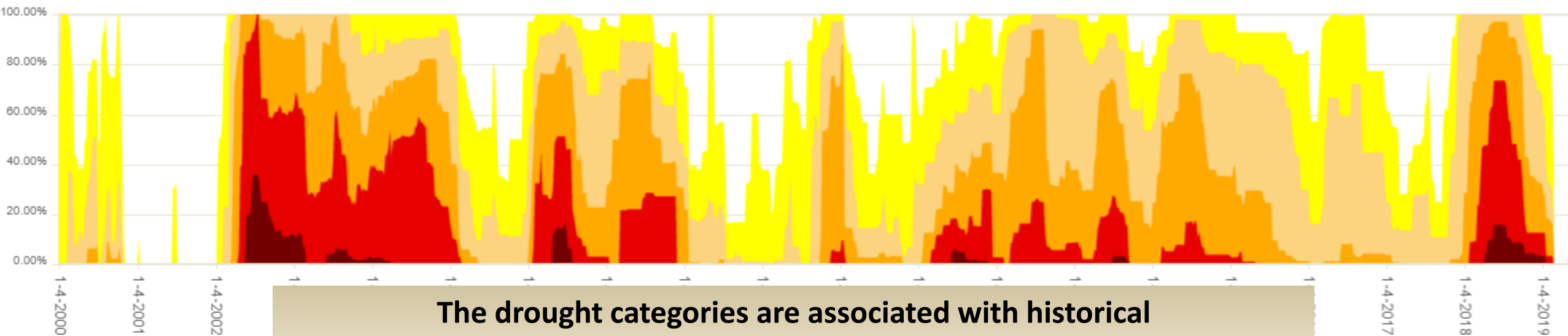
1993



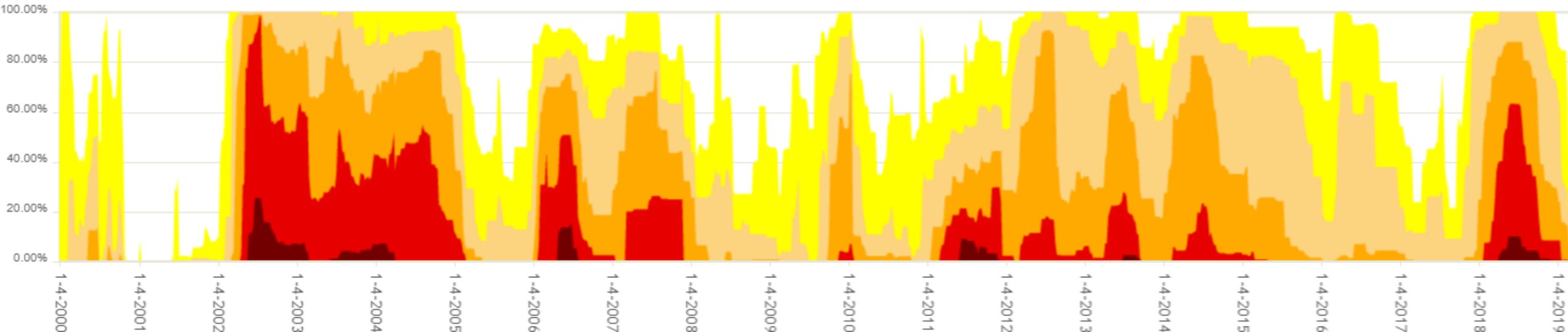
Percentile

D0	Abnormally Dry	21-30
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D2	Severe Drought	6-10
D3	Extreme Drought	3 - 5
D4	Exceptional Drought	1 - 2

Arizona Percent Area



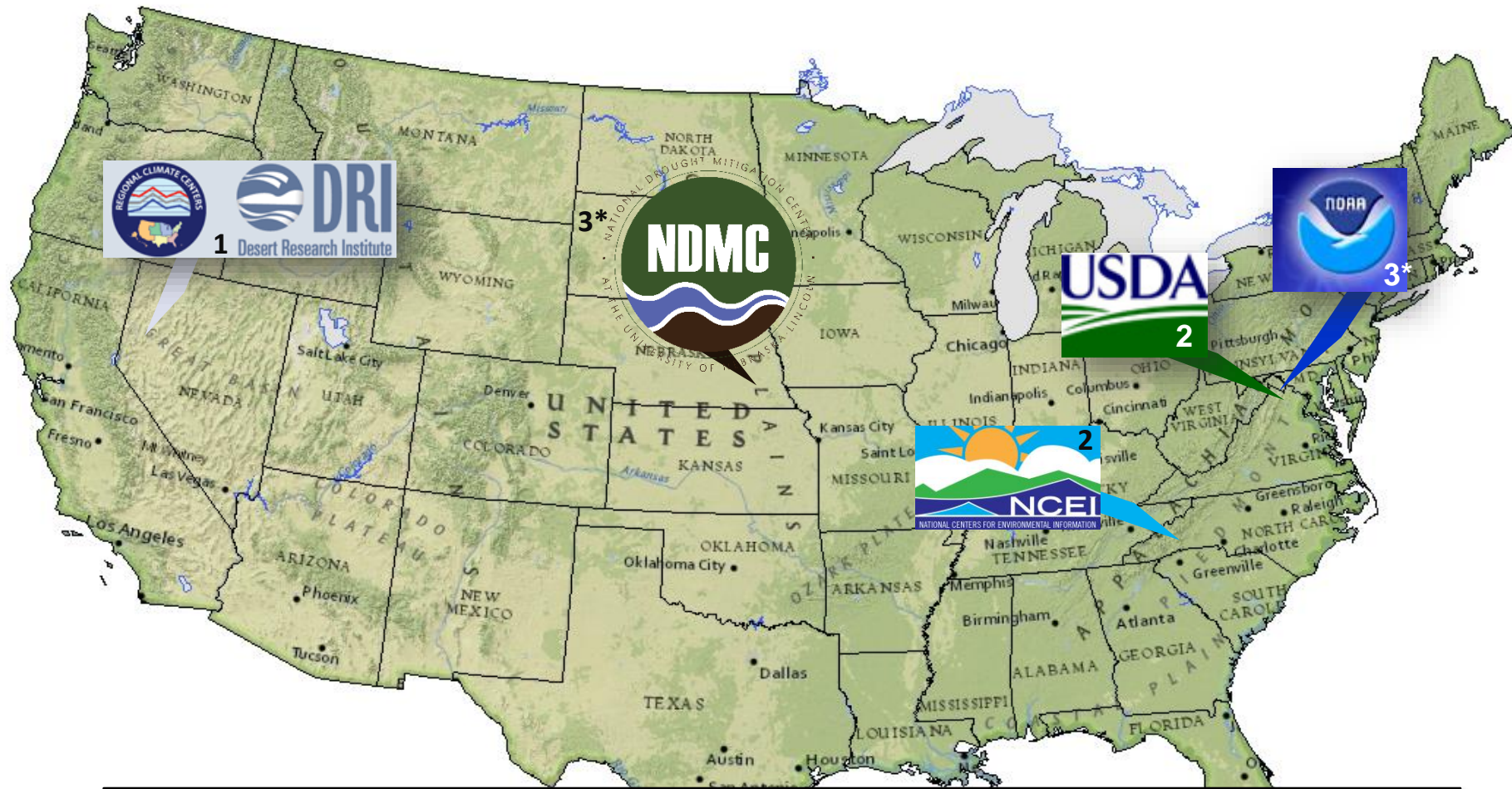
15 (Lower Colorado) Percent Area



How is all of this done?







**Requirement: Authors must work at a regional or national “center”, government or academia/research**

**There are currently 11\* authors, and all are volunteers**

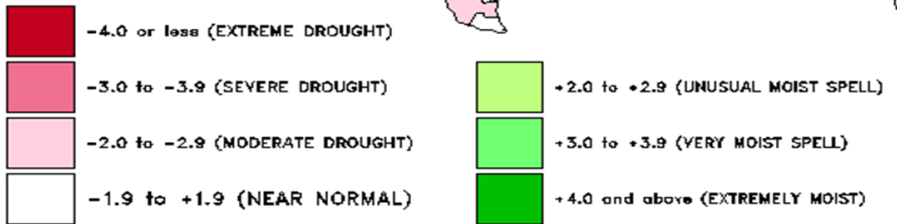
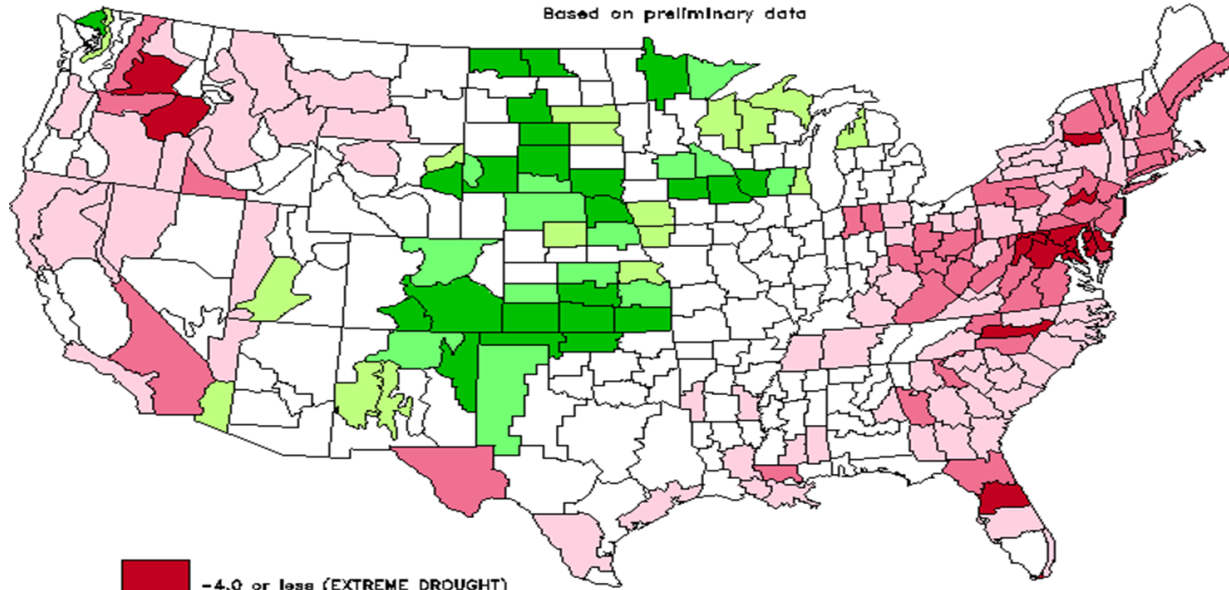


# The USDM has continuously evolved from past efforts to monitor drought to early efforts of the USDM

Single Index/Indicator such as the PDSI

DROUGHT SEVERITY INDEX BY DIVISION  
(LONG TERM PALMER)

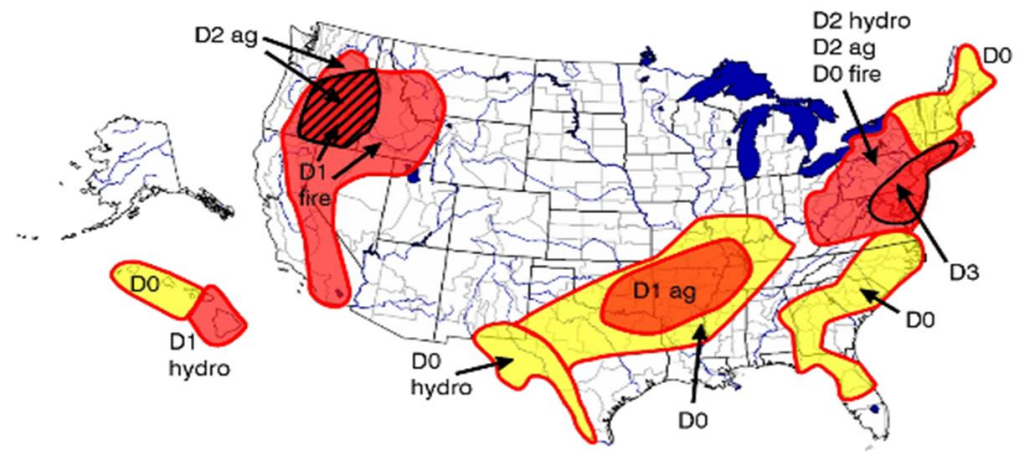
AUG 7, 1999  
Based on preliminary data



CLIMATE PREDICTION CENTER, NOAA

Hybrid Approach (made in Corel Draw)

## August 3, 1999 Experimental U.S. Drought Monitor



"Drought" means moisture shortages leading to damaged crops or pastures, high wildfire risk, or water shortages. The map is based on information from many sources, including both satellite and surface data, and it focuses on widespread drought. Local conditions may vary.

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Plus (+) = Forecast to intensify  
 Minus (-) = Forecast to diminish





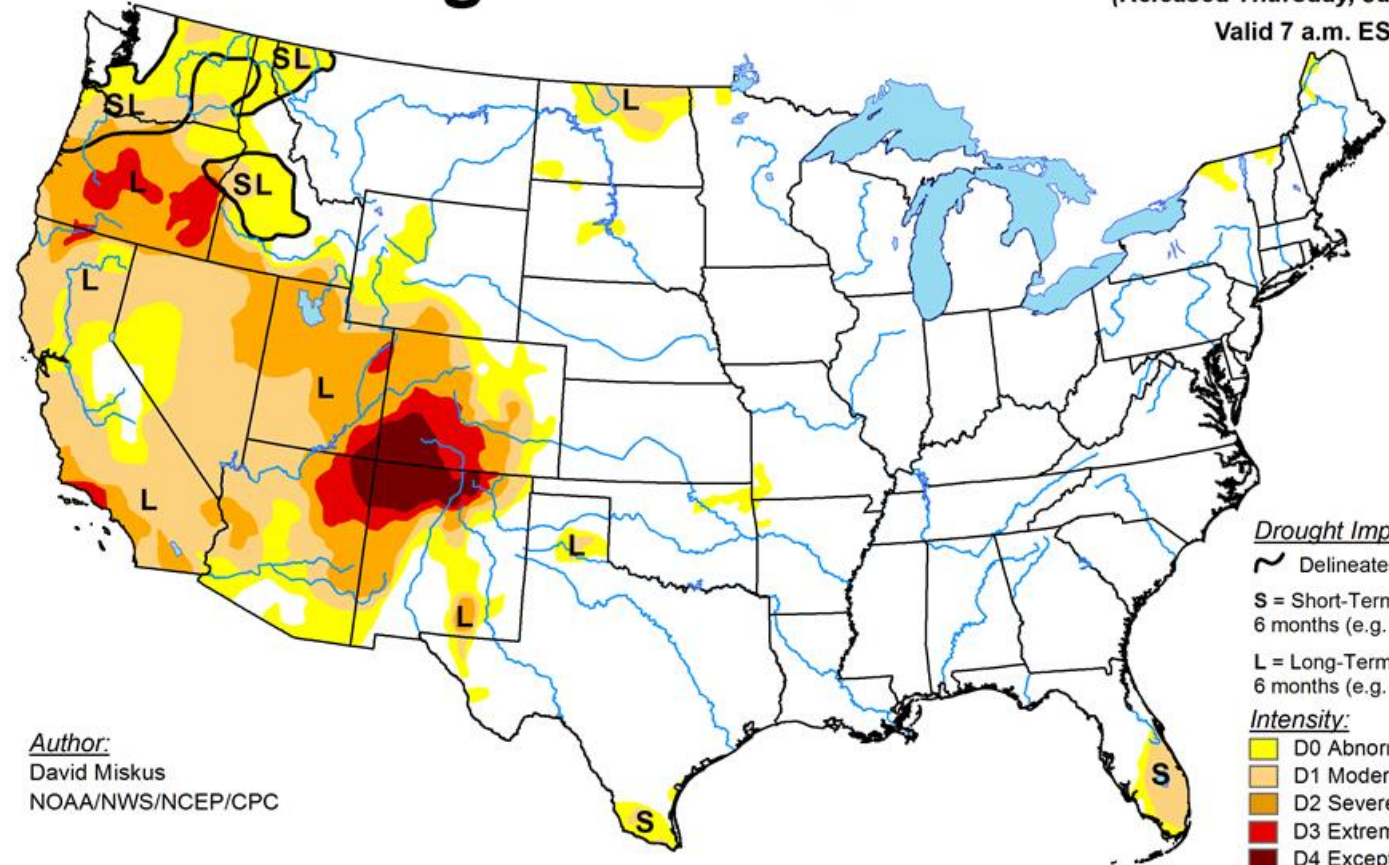
To what we see today ....

Made in Arc GIS and utilizing data analyzed within the Arc GIS project framework

# U.S. Drought Monitor

January 1, 2019  
(Released Thursday, Jan. 3, 2019)

Valid 7 a.m. EST



*Author:*  
David Miskus  
NOAA/NWS/NCEP/CPC

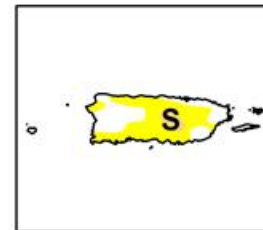
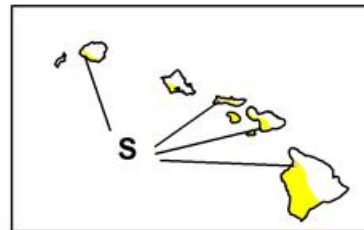
***Drought Impact Types:***

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***Intensity:***

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- Dark Red: D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

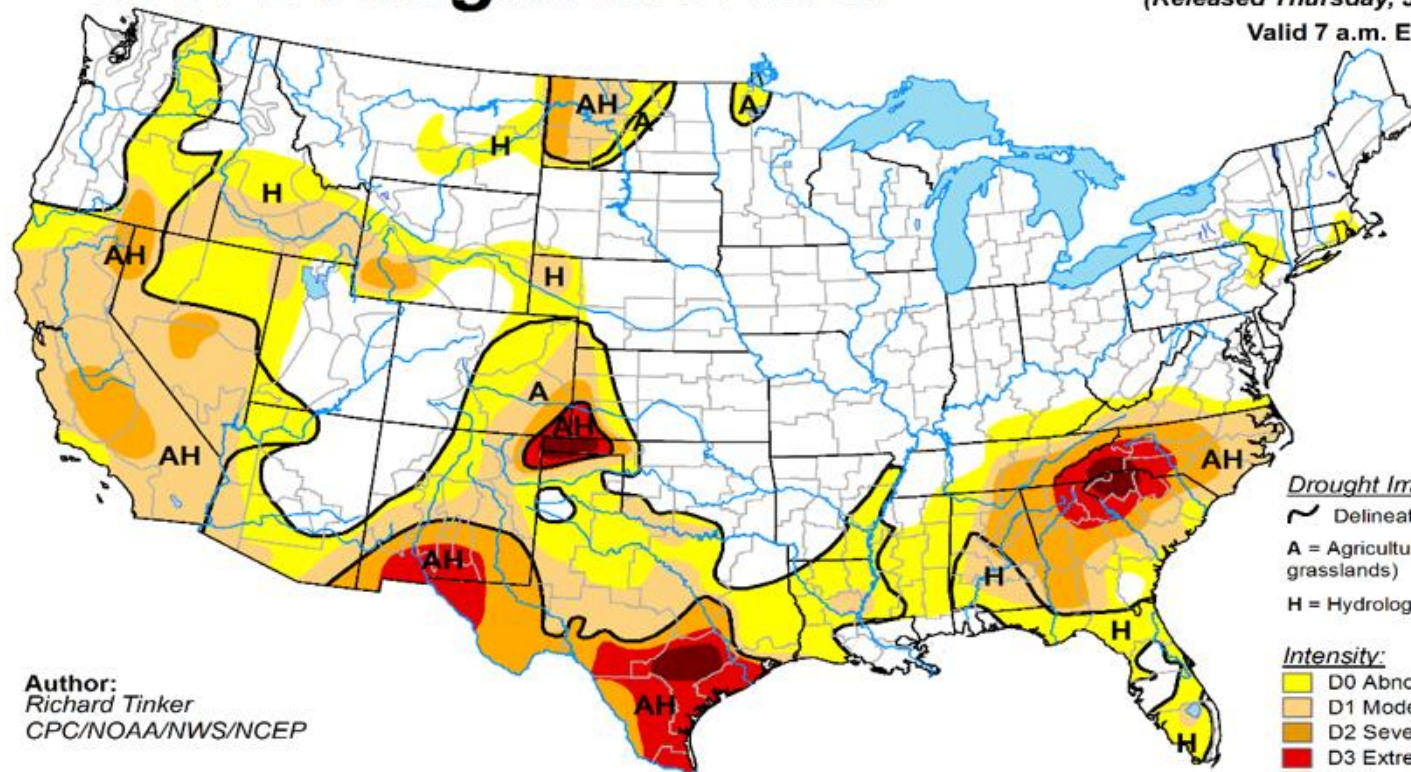


<http://droughtmonitor.unl.edu/>

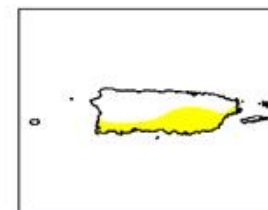
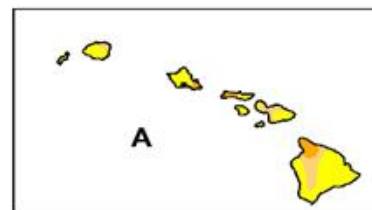


# U.S. Drought Monitor

July 1, 2008  
(Released Thursday, Jul. 3, 2008)  
Valid 7 a.m. EST



Author:  
Richard Tinker  
CPC/NOAA/NWS/NCEP



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



Released Thursday, December 14, 2000

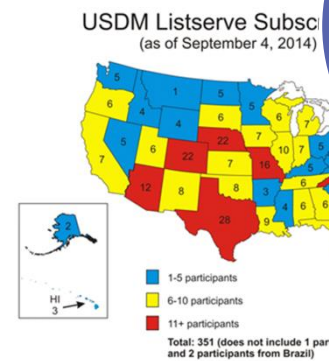
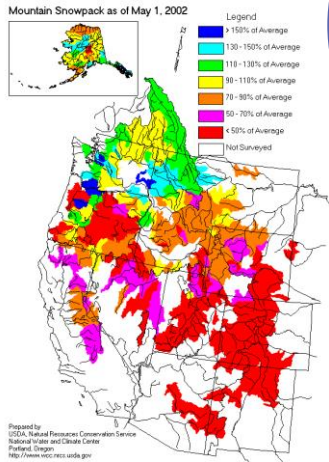
Author: David Miskus, NOAA/CPC/JAWF

<http://drought.unl.edu/dm>

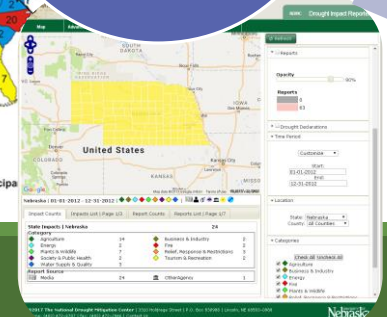
But the map did not always look this way and it too has evolved over time as technology has allowed and data products have been developed with the USDM in mind



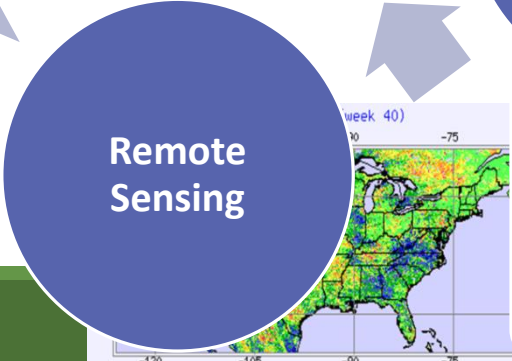
### Precipitation and Snow



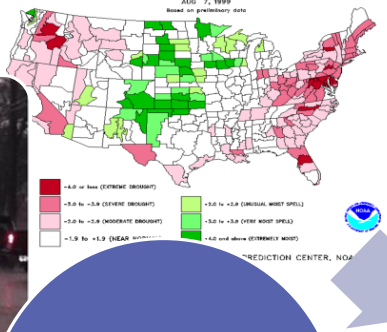
### Expert Local Input and Impacts



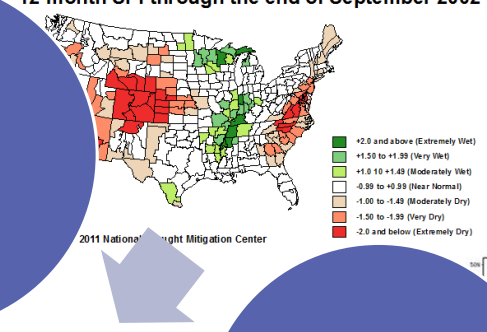
### Remote Sensing



### Indices: SPI/PDSI

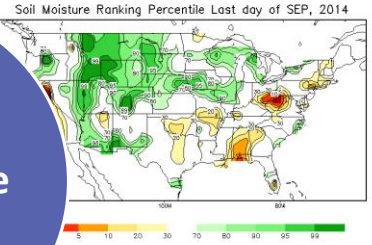


12-month SPI through the end of September 2002

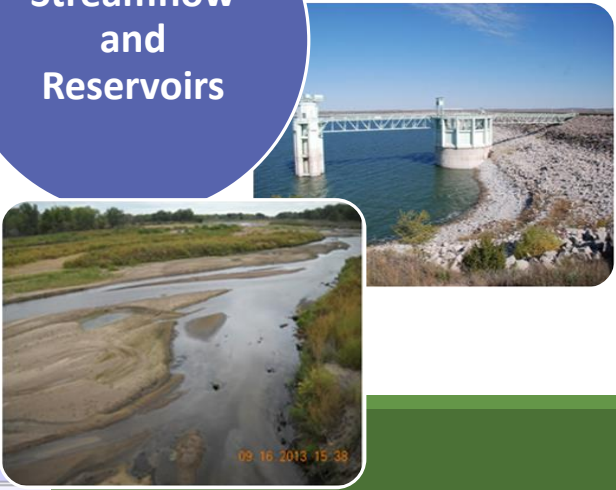
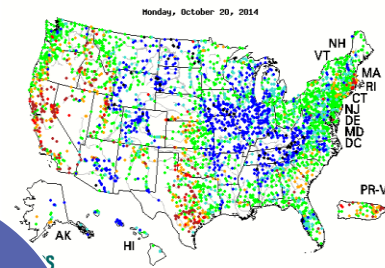


Most of the information analyzed each week falls into one of these categories. Authors now use roughly **40-50 unique indicators** while creating the U.S. Drought Monitor map, but not all areas are represented equally by all pieces of data.

### Soil Moisture



### Streamflow and Reservoirs





# U.S. Drought Monitor

## Integrates Key Drought Indicators:

- Palmer Drought Index
- SPI
- SPEI
- KBDI
- Modeled Soil Moisture
  - NLDAS
- 7-14 Day Avg. Streamflow
- Precipitation Anomalies
- AHPS Precipitation
- Other data which are available

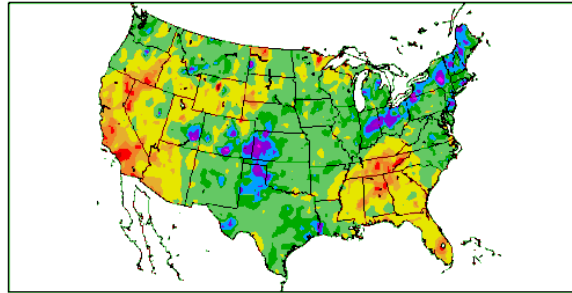
## Growing Season:

- Crop Moisture Index
- Sat. Veg. Health Index
- VegDRI/ESI/etc.
- Soil Moisture
- Mesonets
- State/Regional data

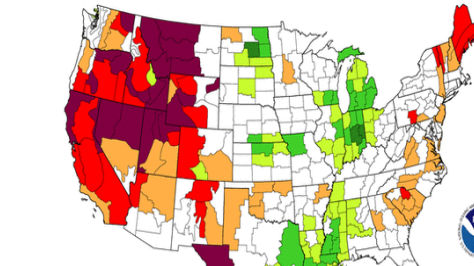
## In The West:

- SWSI
- Reservoir levels
- Snowpack (SNOTEL)
- SWE
- Streamflow

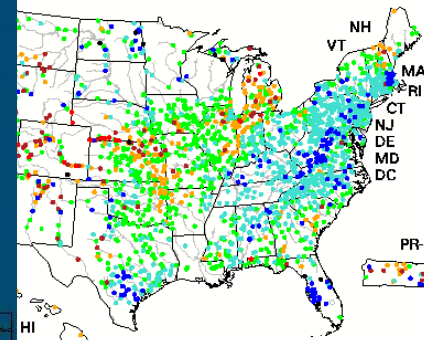
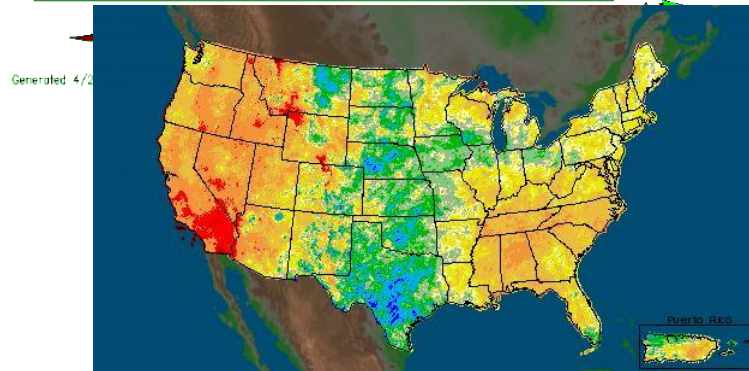
Water Year SPI  
10/1/2006 - 4/19/2007



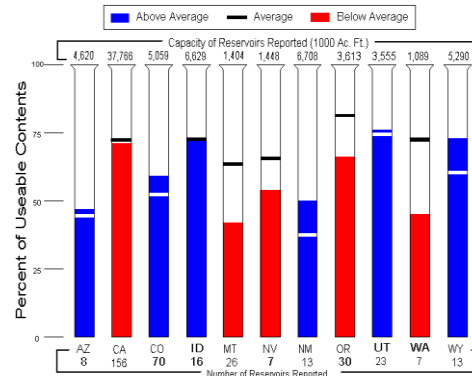
Palmer Drought Index  
Long-Term (Meteorological) Conditions  
October 21, 2001 - October 27, 2001



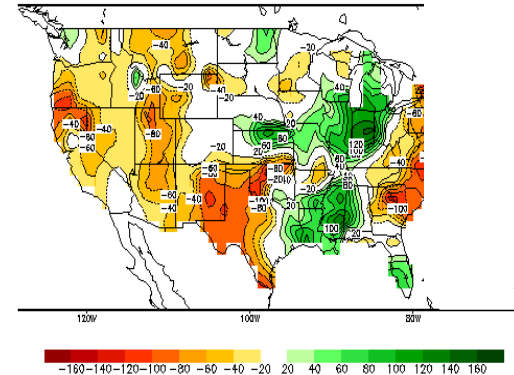
Sunday, December 22, 2002



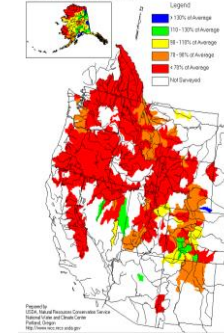
Reservoir Storage as of May 1, 2001



Calculated Soil Moisture Anomaly (mm)  
OCT 31, 2001



Mountain Snowpack as of May 1, 2001



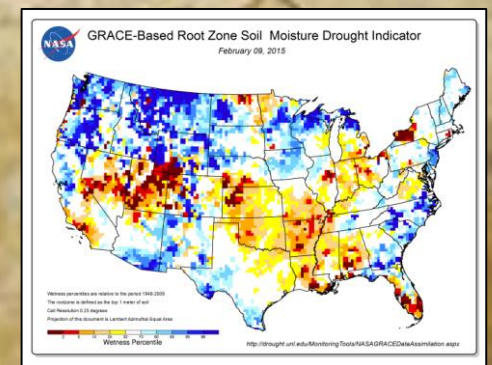
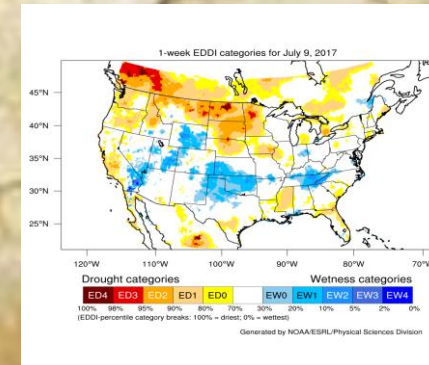
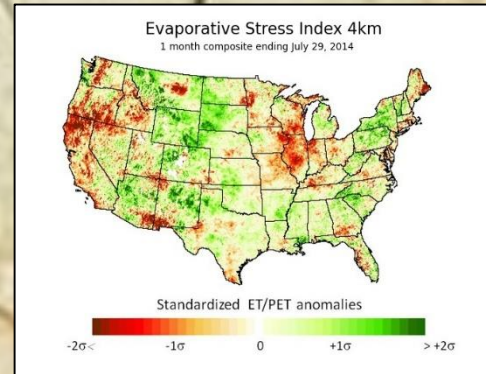
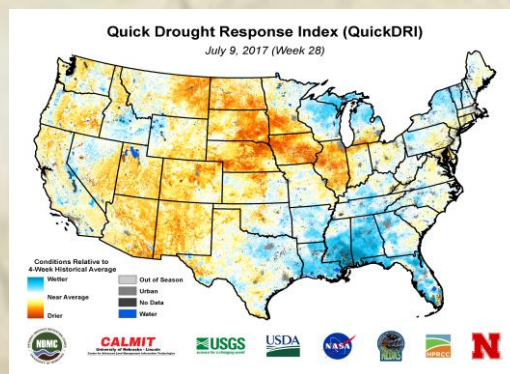
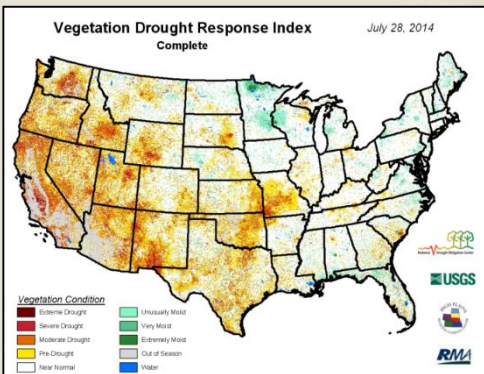
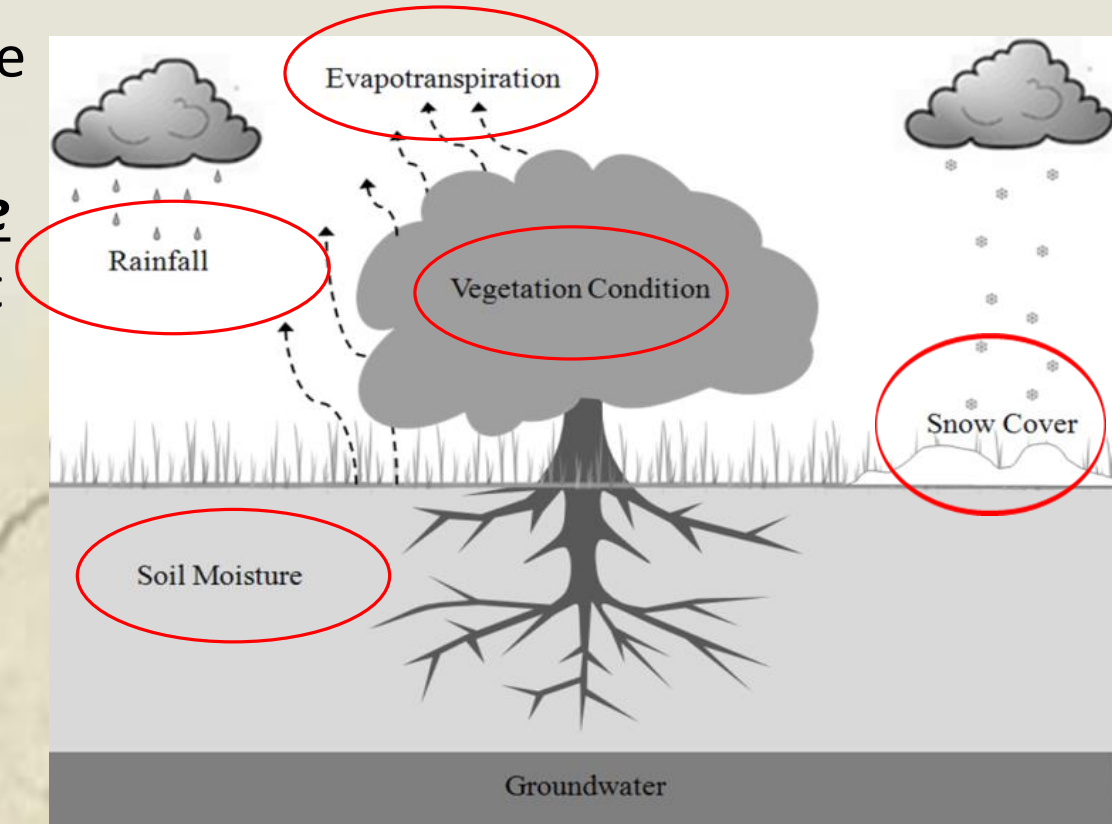


# The USDM incorporates Emerging Satellite-based Observations and Products

Over the past 10+ years, a number of satellite remote sensing-based tools and products characterizing different parts of the hydrologic cycle that influence drought conditions allowing new composite drought indicators to be developed.

## Examples

- Evaporative Stress Index (ESI)
- Quick Drought Response Index (QuickDRI)
- Evaporative Demand Drought Index (EDDI)
- GRACE soil moisture and groundwater anomalies
- Vegetation Drought Response Index (VegDRI)



Authorship  
rotates:  
2 week shifts

Wk	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
<b>26</b> Jun-26 Jul-2	26	27	28	29	30	1	2
		<b>NCEI</b>		6	7	8	9
<b>27</b> Jul-3 Jul-9	3	4					
	<b>NDMC</b>		12	13	14	15	16
<b>28</b> Jul-10 Jul-16	10	11					
	17	18	19	20	21	22	23
<b>29</b> Jul-17 Jul-23							
	24	25	26	27	28	29	30
<b>30</b> Jul-24 Jul-30		<b>NCEI</b>					
<b>31</b> Jul-31 Aug-6	31	1	2	3	4	5	6
	<b>CPC</b>						
<b>32</b> Aug-7 Aug-13	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
<b>33</b> Aug-14 Aug-20							
	21	22	23	24	25	26	27
<b>34</b> Aug-21 Aug-27		<b>NCEI</b>					
<b>35</b> Aug-28 Sep-3	28	29	30	31	1	2	3

\*Also Western Regional Climate Center

Wk	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
<b>22</b> May-29 Jun-4	29	30	31	1	2	3	4
<b>23</b> Jun-5 Jun-11	5	6	7	8	9	10	11
<b>24</b> Jun-12 Jun-18	12	13	14	15	16	17	18
<b>25</b> Jun-19 Jun-25	19	20	21	22	23	24	25
<b>26</b> Jun-26 Jul-2	26	27	28	29	30	1	2
<b>27</b> Jul-3 Jul-9	3	4	5	6	7	8	9

**7:00 AM**

Data for the map released on 6/29

Data Cutoff : 12Z (7 AM CDT)

Wk	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
<b>22</b> May-29 Jun-4	29	30	31	1	2	3	4
<b>23</b> Jun-5 Jun-11	5	6	7	8	9	10	11
<b>24</b> Jun-12 Jun-18	12	13	14	15	16	17	18
<b>25</b> Jun-19 Jun-25	19	20	21	22	23	24	25
<b>26</b> Jun-26 Jul-2	26	27	28	29	30	1	2
<b>27</b> Jul-3 Jul-9	3	4	5	6	7	8	9

7:00 AM

Data for the map released on 6/29

Draft 1  
4:00 PM

Draft 2

Near Final Dr

Input Cuto

Final files &  
narrative se  
5:00 PM

Map  
Released  
7:30 AM



Times in CDT



Once the map is completed and published for the week, the map is final and no changes will be made retroactively!

## U.S. Drought Monitor

October 9, 2018  
Tuesday, Oct. 11, 2018  
10:00 a.m. EDT



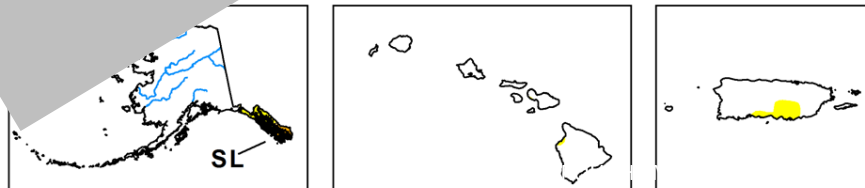
### Drought Impact Types:

- ~ Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

### Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

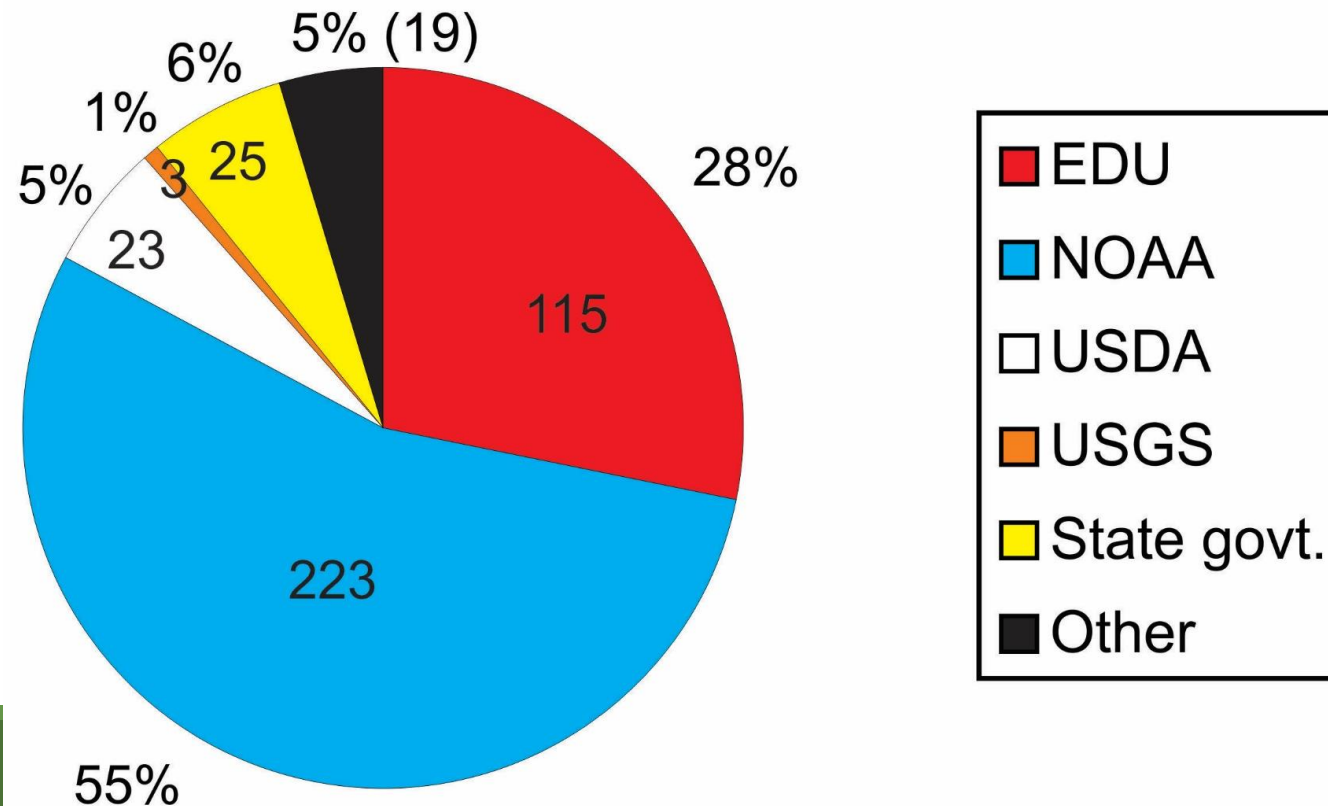
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>

# How can you participate in the USDM Process?

## USDM Listserve Subscribers (as of February 7, 2019)



# Regional and Local Feedback/Input Process

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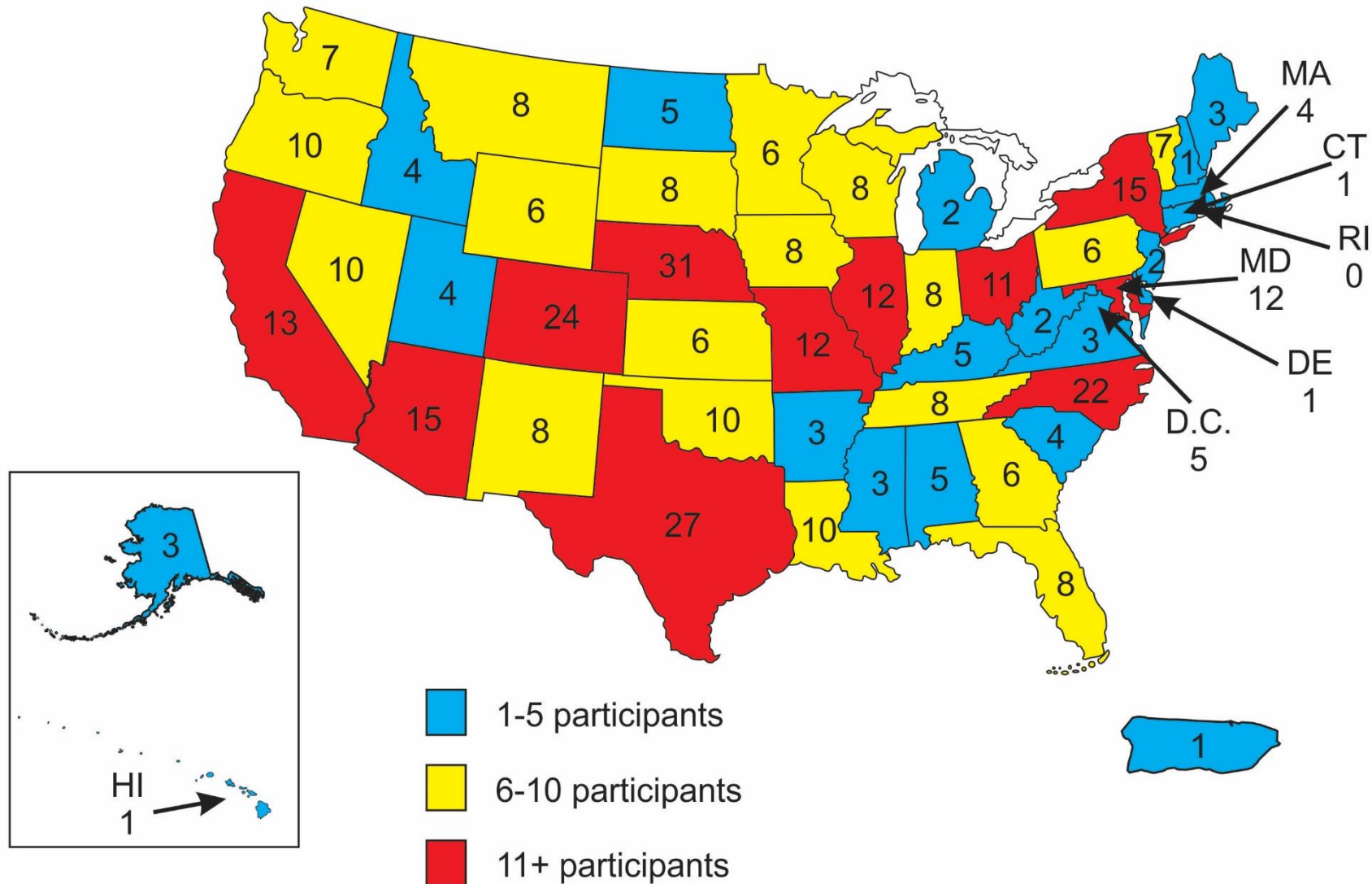
- Annual User **Feedback Forums** (USDM/NADM) since 2000
- Various webinars/telecons/reports/data/products
- **Regional Climate Centers** and NOAA **Regional Climate Service Directors and Coordinators along w/ Weather Forecast Offices (WFOs)**
- **State Climatologists**
- **USDA FSA/NRCS**
- **Native American Tribal input**
- **CoCoRaHS (impacts)**
- National Integrated Drought Information System (**NIDIS**) **Pilot RDEWS** basin webinars:
  - UCRB (Upper Colorado River Basin)
  - ACF (Apalachicola-Chattahoochee-Flint)
  - Southern Plains
  - MORB (Missouri River Basin)
  - California/Nevada
  - Pacific Northwest/Midwest (both coming online)
- **Drought Task Forces:** North Carolina, Hawaii, Oklahoma, Texas, New Mexico, Alabama, Florida, South Dakota, Kentucky, Arizona, Montana, and California

• **And MANY OTHERS !**



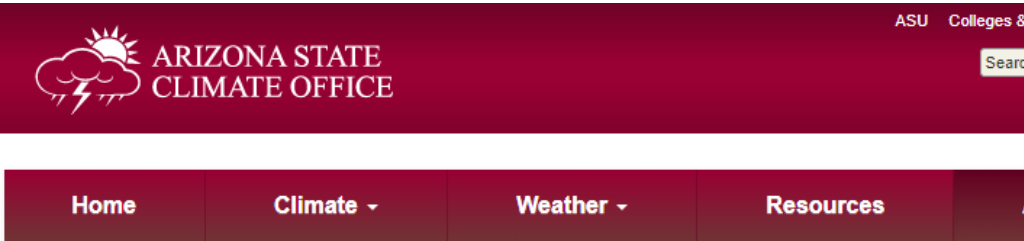
# USDM Listserve Subscribers

(as of February 7, 2019)



**Total: 404 (does not include 2 participants from Canada and 2 participants from Brazil)**

# Your observations can contribute to the making of the drought map. Here's how:



## About The Climatologist

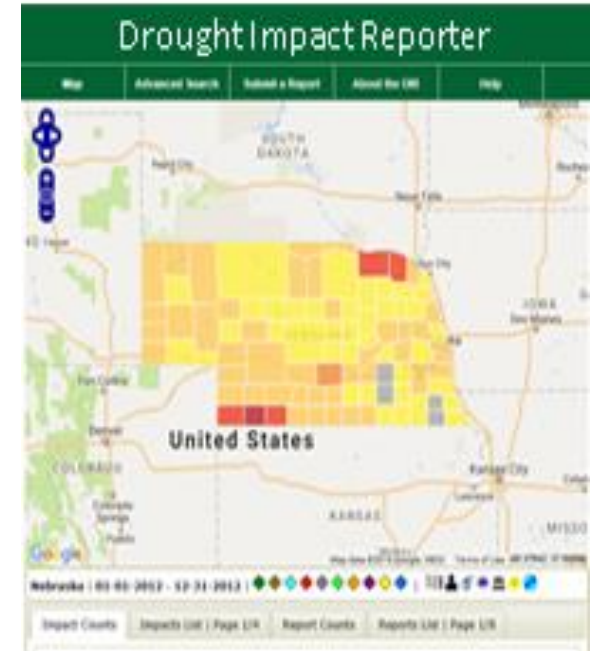
Dr. Nancy J. Selover grew up in Michigan and then the San Francisco Bay area before moving to Phoenix in 1973.

After changing careers from Technical Theater to Geography/Climatology in the late 1980s, Nancy received her BS, MA, and PhD degrees in Geography/Climatology from Arizona State University.

Nancy's main interests are field study, instrumentation, and urban climate, and she has intensively studied the climate and evaporation rates of urban lakes.



Join CoCoRaHS &  
report rain &  
drought information  
<http://cocorahs.org>



Submit reports to the Drought  
Impact Reporter  
<http://droughtreporter.unl.edu>

# Some Examples of Decision Making and Policy Using the USDM (*Science before Policy*)

---

## *Policy:*

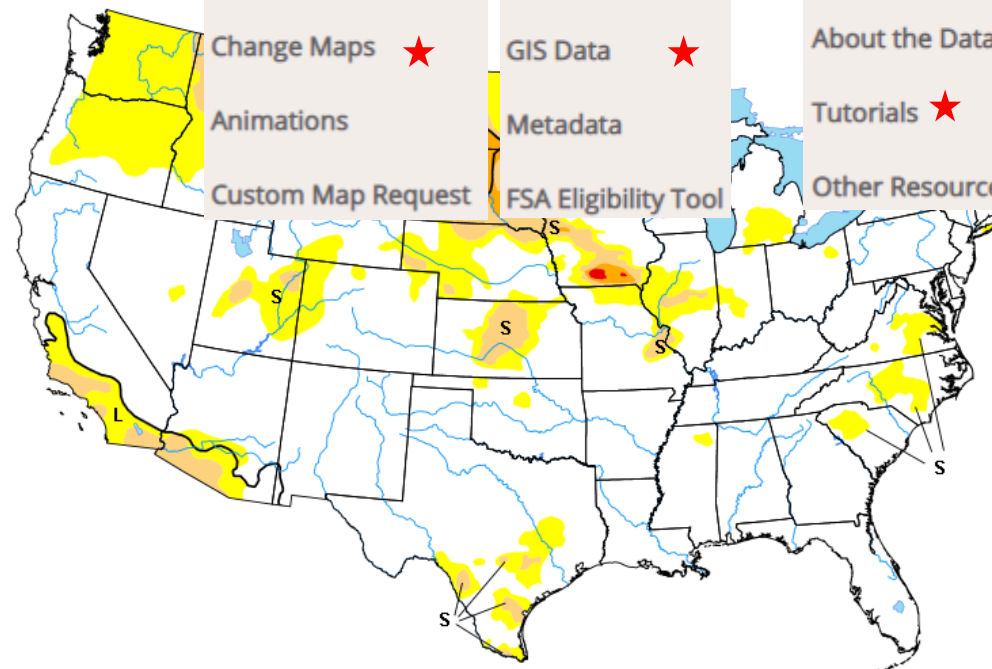
- **2008/2014 Farm Bill**
  - USDA Farm Service Agency, Natural Resources Conservation Service, Risk Management Agency
- **Internal Revenue Service**
  - Livestock tax deferral program
- **U.S. Department of Agriculture**
  - Secretarial *"Fast Track"* Drought Designations
- **NOAA National Weather Service**
  - Drought Information Statements
- **Environmental Protection Agency**
  - Water quality monitoring
- **Centers for Disease Control and Prevention**
  - Public health
- **Bureau of Land Management**
- **Several States use in their monitoring/plans**
- **Many others**



[Current Map](#)
[Maps](#)
[Data](#)
[Drought Summary](#)
[About USDM](#)
[Current Conditions and Outlooks](#)

Map for August

Data valid: August 22


[Compare Two Weeks](#) ★

[Time Series](#) ★

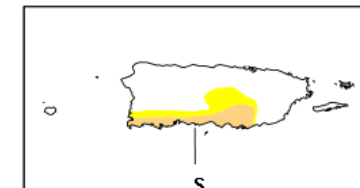
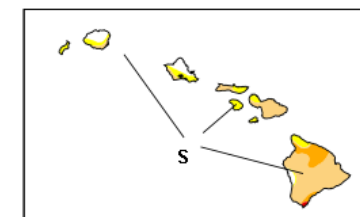
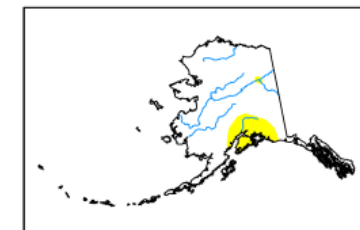
[What is the USDM](#)
[Comparison Slider](#)
[Data Tables](#) ★

[Permission](#)
[Map Archive](#) ★

[Data Download](#)
[Contact Us](#)
[Change Maps](#) ★

[GIS Data](#) ★

[About the Data](#)
[Animations](#)
[Metadata](#)
[Tutorials](#) ★

[Custom Map Request](#)
[FSA Eligibility Tool](#)
[Other Resources](#)


The data cutoff for Drought Monitor maps is each Tuesday at 8 a.m. EDT. The maps, which are based on analysis of the data, are released each Thursday at 8:30 a.m. Eastern Time.

## Intensity and Impacts

None

D0 (Abnormally Dry)

D1 (Moderate Drought)

D2 (Severe Drought)

D3 (Extreme Drought)

D4 (Exceptional Drought)

Delineates dominant impacts

S - Short-Term impacts, typically less than 6 months (e.g. agriculture, grasslands)

L - Long-Term impacts, typically greater than 6 months (e.g. hydrology, ecology)

# The United States Drought Monitor

A summary narrative of changes made each week, by region, can be found in the

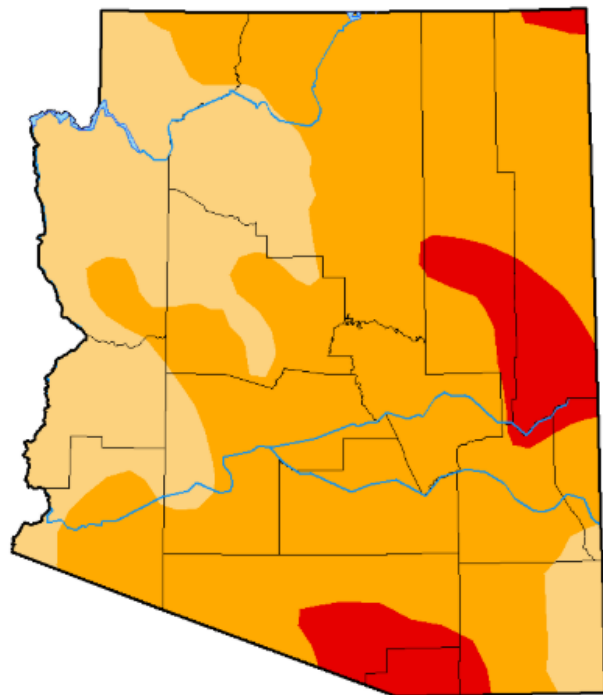
**[“Drought Summary”](#)**

**February 26, 2019**  
 Released Thursday, Feb. 28, 2019  
 Valid 7 a.m. EST

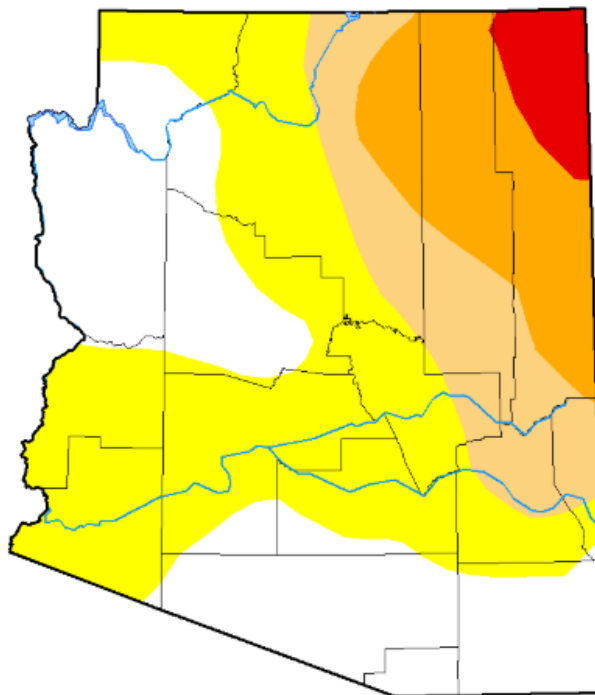
Area type: State Area: Arizona Statistics type: Cumulative Percent Area

Drought Classification

None D0 (Abnormally Dry) D1 (Moderate Drought) D2 (Severe Drought) D3 (Extreme Drought) D4 (Exceptional Drought)



February 20, 2018



February 19, 2019



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
February 20, 2018	49.94	50.06	28.29	8.23	2.71	0.18
February 19, 2019	35.42	64.58	39.67	13.08	3.83	0.31
Change	5.36	94.64	72.93	32.37	10.28	4.38
February 20, 2018	11.49	88.51	71.94	30.20	8.17	3.82
February 19, 2019	4.39	95.61	74.84	49.75	22.74	5.92
Change	2.29	97.71	68.63	43.07	4.71	0.00

Abnormally Dry D3 Extreme Drought  
 Moderate Drought D4 Exceptional Drought  
 Severe Drought

The Monitor focuses on broad-scale conditions. Conditions may vary. See accompanying text summary statements.

Department of Agriculture

Statistics Comparison

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
2018-02-20	0.00	100.00	100.00	73.22	9.27	0.00	282
2019-02-19	31.27	68.73	30.13	16.62	3.34	0.00	119
Change	31.27	-31.27	-69.87	-56.60	-5.93	0.00	-163



<http://droughtmonitor.unl.edu/>

# U.S. Drought Monitor Class Change Maps

At various time-scales of:

1 week

4 weeks

8 weeks

12 weeks

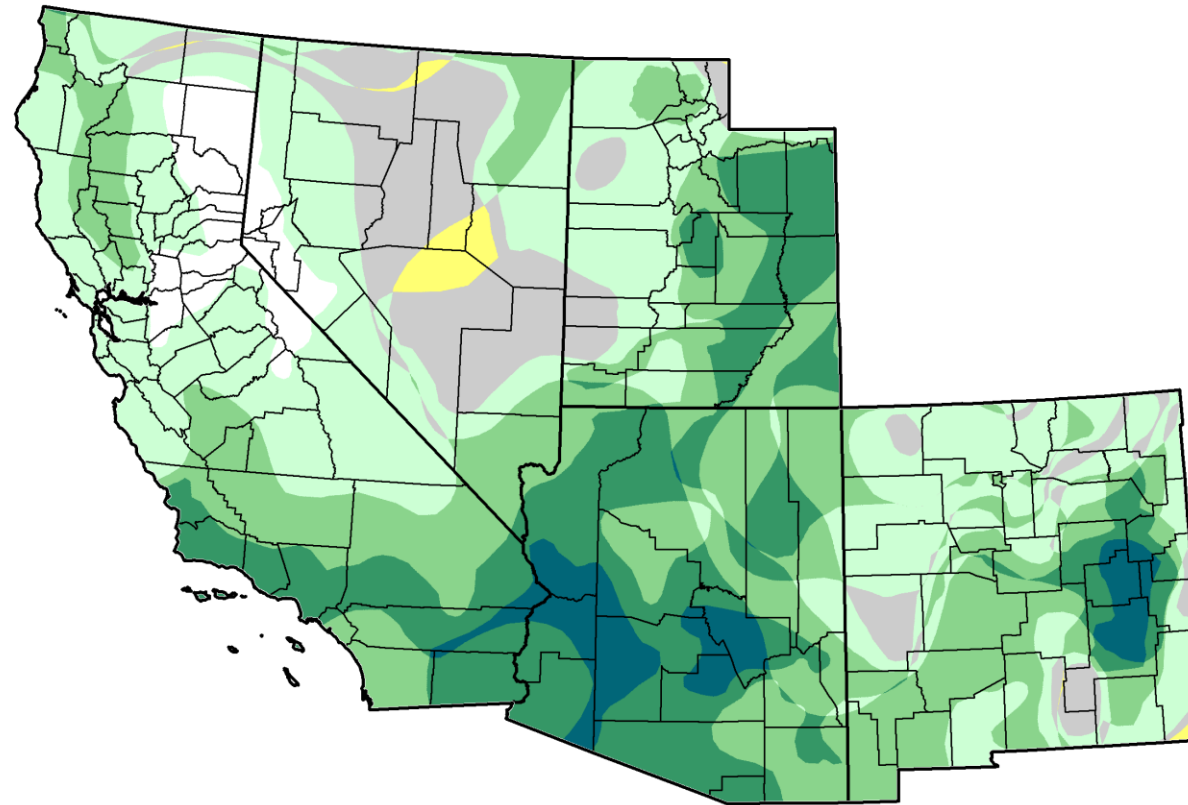
24 weeks

1 year

Calendar year

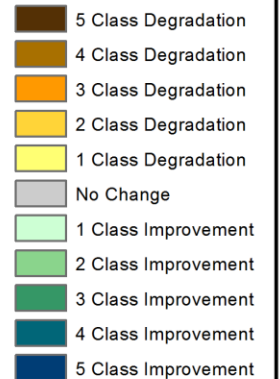
Water year

## U.S. Drought Monitor Class Change - USDA Southwest Climate Hub Start of Water Year



February 26, 2019  
compared to  
September 25, 2018

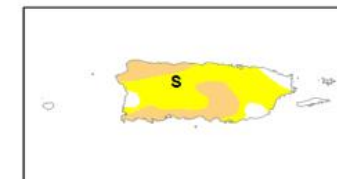
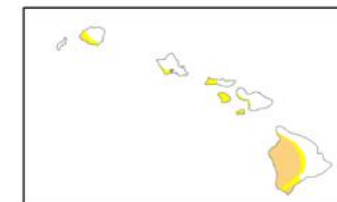
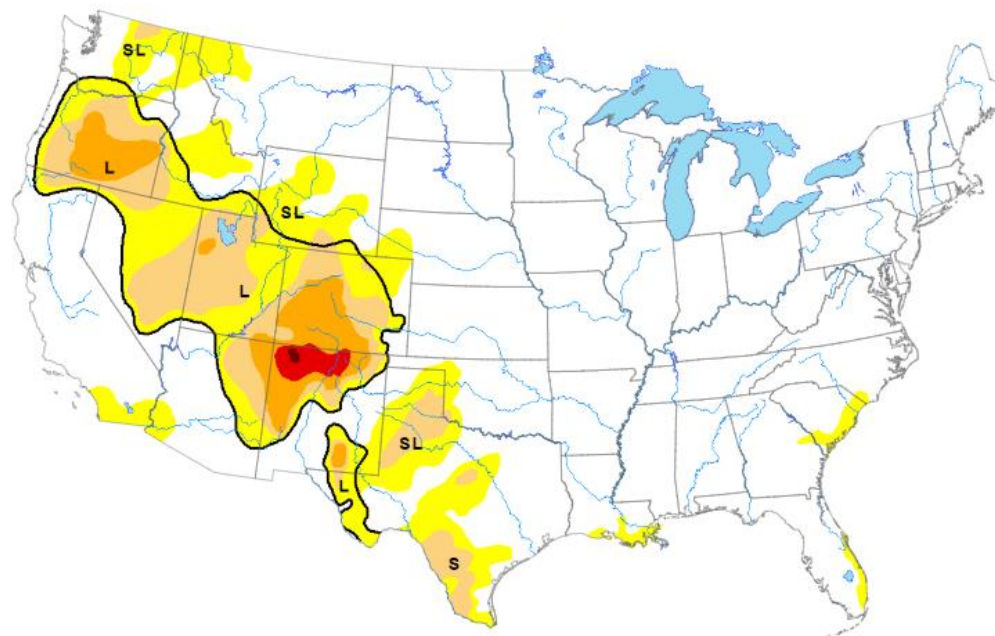
<http://droughtmonitor.unl.edu>





## Mapa para febrero 28, 2019

Datos válidos: febrero 26, 2019 | Autor: **Brad Rippey**, U.S. Department of Agriculture



El límite de datos para los mapas de Monitor de Sequía es cada martes a las 7 a.m. EST. Los mapas, que se basan en el análisis de los datos, se publican cada jueves a las 8:30 am Hora del Este.

### Intensidad e impactos

□ Ninguna

■ D0 (Anormalmente Seco)

■ D1 (Sequía moderada)

■ D2 (Sequía severa)

■ D3 (Sequía extrema)

■ D4 (Sequía excepcional)

~ - Delimita impactos dominantes

S - Período corto, típicamente menos de 6 meses (ej. agricultura, pastizales)

L - Período largo, típicamente más de 6 meses (e.g. hidrología, ecología)

### Descargar mapa

Mapa corriente: [PNG](#) [PDF](#) [JPG](#)

Mapa anterior: [PNG](#) [PDF](#) [JPG](#)

Para obtener detalles e impactos locales, comuníquese con su [climatólogo](#) o con el [Centro Regional de Clima](#).

Obtener mapas y estadísticas: [Total EE.UU.](#)

[Continental EE.UU.](#)

tern Time.

ands)

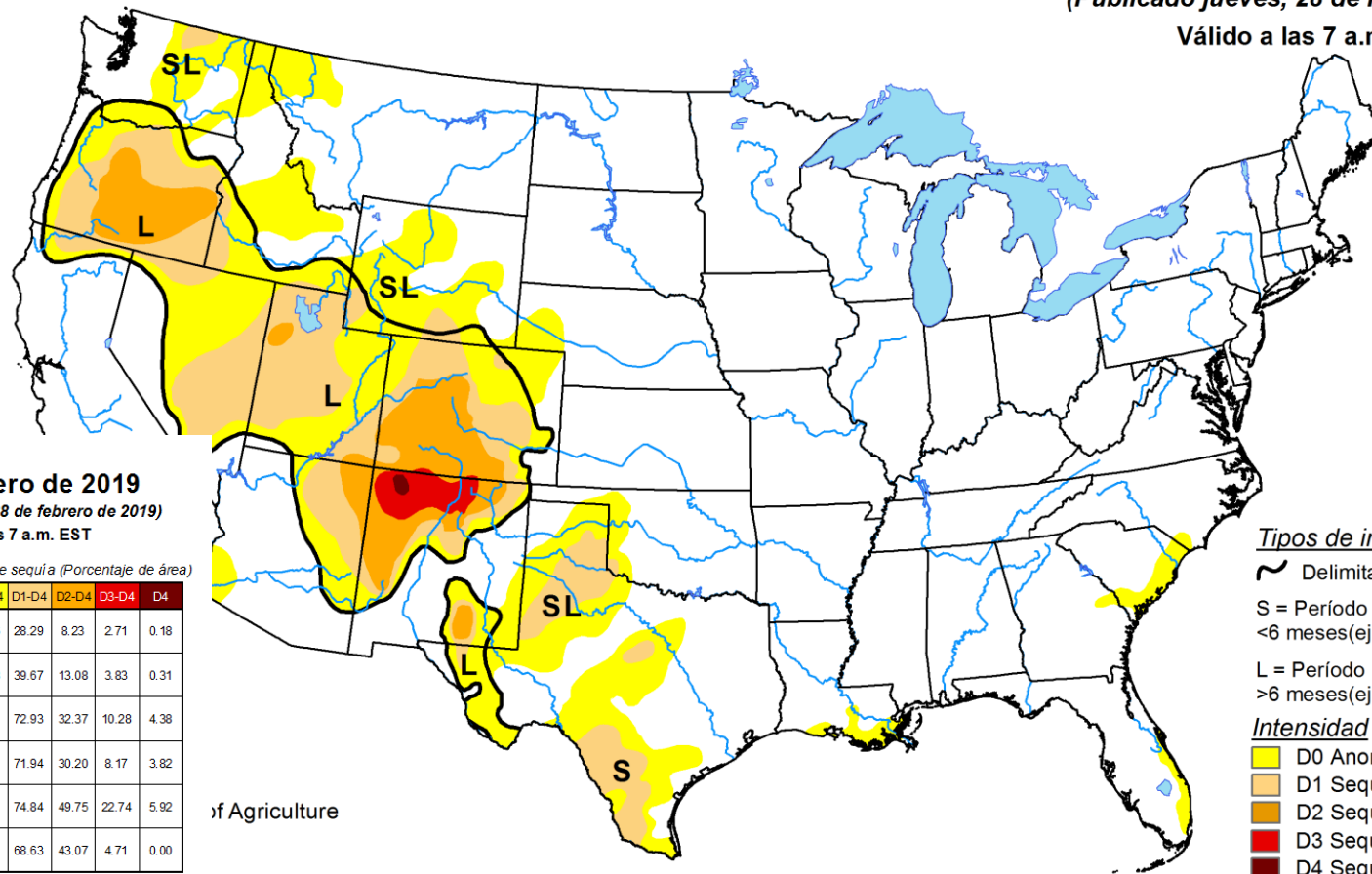
ogy)

New USDM  
maps in Spanish

# Monitor de Sequía de los Estados Unidos febrero 26, 2019

(Publicado jueves, 28 de febrero de 2019)

Válido a las 7 a.m. EST



### Tipos de impacto de la Sequía

- ~ Delimita impactos dominantes
- S = Período corto, típicamente <6 meses (ej. agricultura, pastizales)
- L = Período largo, típicamente >6 meses (ej. hidrología, ecología)

### Intensidad

- Yellow: D0 Anormalmente Seco
- Light Orange: D1 Sequía moderada
- Dark Orange: D2 Sequía severa
- Red: D3 Sequía extrema
- Dark Red: D4 Sequía excepcional

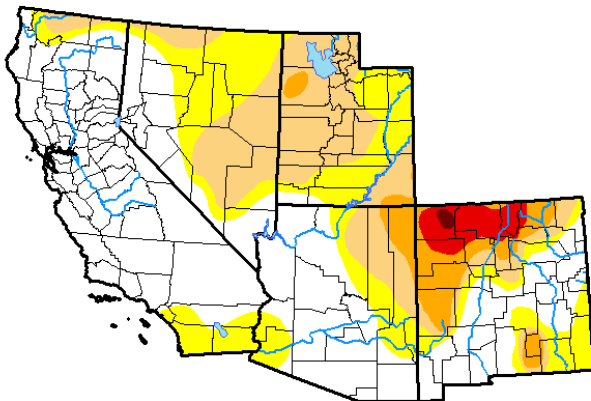
El Monitor de Sequía analiza condiciones a gran escala, por lo que las condiciones locales pueden variar. Para una mejor interpretación se recomienda ver el texto anexo.



<http://droughtmonitor.unl.edu/>

## New USDM maps in Spanish

### Monitor de Sequía de los Estados Unidos Centro Climático del Suroeste del USDA



26 de febrero de 2019

(Publicado jueves, 28 de febrero de 2019)

Válido a las 7 a.m. EST

Condiciones de sequía (Porcentaje de área)

	Ninguna	D0-D4	D1-D4	D2-D4	D3-D4	D4
Actualmente	49.94	50.06	28.29	8.23	2.71	0.18
La semana pasada 02-19-2019	35.42	64.58	39.67	13.08	3.83	0.31
Hace tres meses 11-27-2018	5.36	94.64	72.93	32.37	10.28	4.38
Inicio del año civil 01-01-2019	11.49	88.51	71.94	30.20	8.17	3.82
Inicio del Año del Agua 08-25-2018	4.39	95.61	74.84	49.75	22.74	5.92
Hace un año 02-27-2018	2.29	97.71	68.63	43.07	4.71	0.00

### Intensidad

- Yellow: D0 Anormalmente seco
- Light Orange: D1 Sequía moderada
- Dark Orange: D2 Sequía severa
- Red: D3 Sequía extrema
- Dark Red: D4 Sequía excepcional

El Monitor de Sequía analiza condiciones a gran escala, por lo que las condiciones locales pueden variar. Para una mejor interpretación se recomienda ver el texto anexo.

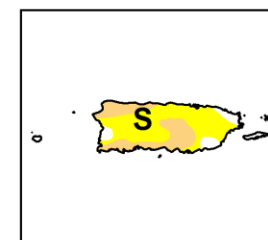
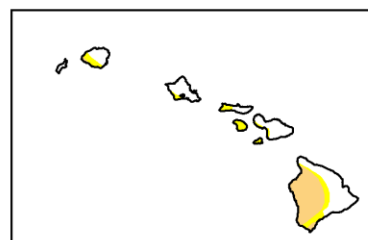
### Autor

Brad Rippey  
U.S. Department of Agriculture



<http://droughtmonitor.unl.edu/>

of Agriculture



NAL DROUGHT MITIGATION CENTER

# What is next.....

---

- ❖ Continue to work with partners on data sets/availability
- ❖ Transition to a ESRI based portal for the development of the weekly map
- ❖ USDAM tutorials
  - ❖ [http://drought.unl.edu/archive/Tutorials/USDAM\\_Tutorial/](http://drought.unl.edu/archive/Tutorials/USDAM_Tutorial/)
- ❖ Transition to operational “Objective Blends” based on gridded data
- ❖ New “potential impacts” tables being developed **for each state** based upon data collected in the Drought Impact Reporter (DIR)
- ❖ Expansion of the USDAM to the U.S. Virgin Islands (USVI) and the U.S. Affiliated Pacific Islands (USAPI)

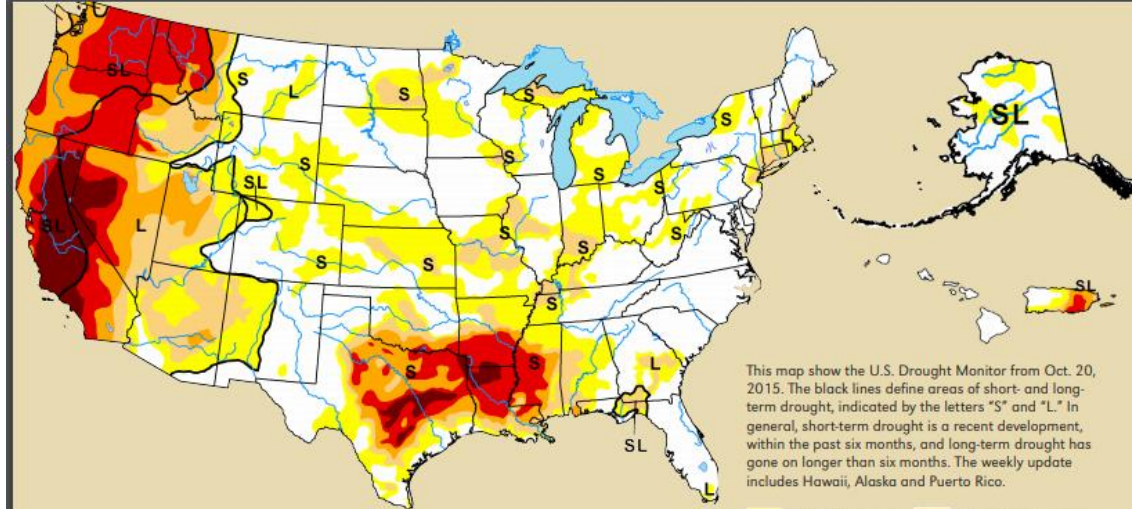


# US Drought Monitor Brochure

[https://droughtmonitor.unl.edu/data/docs/what\\_is\\_usdm.pdf](https://droughtmonitor.unl.edu/data/docs/what_is_usdm.pdf)

Also available in Spanish

NATIONAL DROUGHT MITIGATION CENT



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.

**D0:** Abnormally dry      **D1:** Moderate drought  
**D2:** Severe drought      **D3:** Extreme drought  
**D4:** 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

[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

Welcome! If you grow forage for livestock and have recently gone through drought, this website can help you find out whether you qualify for assistance. Qualifying for assistance is based on the U.S. Drought Monitor and on your county's designated grazing periods. To use this tool, you will need to know your county's grazing period. If you are not sure what it is, please consult your [local Farm Service Agency representative](#).

## 2014 Farm Bill Criteria

[Is my county eligible?](#)[Which counties are eligible?](#)

## 2008 Farm Bill Criteria

[Is my county eligible?](#)[Which counties are eligible?](#)

The FSA Eligibility Tool does not guarantee any financial aid. It simply estimates which U.S. counties meet the criteria, based on the U.S. Drought Monitor. Eligibility will be confirmed by the FSA once the signup period has begun. Please contact your [local FSA agent](#) for more details and to verify eligibility after the start of the signup period.

To read about the Livestock Forage Disaster Program, please refer to the FSA factsheet: [2014 version](#) | [2008 version](#)

To learn more about the U.S. Drought Monitor, please visit the [web site](#).

To apply for assistance, please contact your [local FSA office](#).

For help with this tool, please visit the [FSA Eligibility Tool Help](#) pages.

The National Drought Mitigation Center  
University of Nebraska-Lincoln

3310 Holdrege Street  
P.O. Box 830988  
Lincoln, NE 68583-0988

{402} 472-6707

{402} 472-2946

[Contact Us](#) | [Web Policy](#)

Find Us:



# NDMC's LFP Eligibility Tool

<http://droughtmonitor.unl.edu/fsa/Home.aspx>

# FSA Livestock Forage Disaster Program Eligibility Tool

[Home](#)[Help](#)[U.S. Drought Monitor](#)

## Single County (2014 Criteria)

The County Eligibility tool tells you which, if any, of the Livestock Forage Disaster Program requirements are met for a particular county.

The FSA Eligibility Tool does not guarantee any financial aid. It simply estimates which U.S. counties meet the criteria, based on the U.S. Drought Monitor. Eligibility will be confirmed by the FSA once the signup period has begun. Please contact your [local FSA agent](#) for more details and to verify eligibility after the start of the signup period.

If you would like information at a state or national level, please visit the [Summary Data](#) section or return to the [home page](#).

For help with this tool, please visit the [FSA Eligibility Tool Help](#) pages.

### Location

---

State

Arizona ▼

County

Maricopa Count ▼

### Grazing Period

---

Start of Grazing Period\*

04/01/2018



End of Grazing Period\*

12/31/2018



\* Grazing periods vary by location and forage type. Please check with your local FSA agent for the applicable grazing period.

### Results



# Single County (2014 Criteria)

The County Eligibility tool tells you which, if any, of the Livestock Forage Disaster Program requirements are met for a particular county.

The FSA Eligibility Tool does not guarantee any financial aid. It simply estimates which U.S. counties meet the criteria, based on the U.S. Drought Monitor. Eligibility will be confirmed by the FSA once the signup period has begun. Please contact your [local FSA agent](#) for more details and to verify eligibility after the start of the signup period.



If you would like information at a state or national level, please visit the [Summary Data](#) section or return to the [home page](#).

For help with this tool, please visit the [FSA Eligibility Tool Help](#) pages.

## Location

State	<input type="text" value="Arizona"/>
County	<input type="text" value="Maricopa County"/>

## Grazing Period

Start of Grazing Period*	<input type="text" value="04/01/2018"/>	
End of Grazing Period*	<input type="text" value="12/31/2018"/>	

\* Grazing periods vary by location and forage type. Please check with your local FSA agent for the applicable grazing period.

## Results

- ✓ Maricopa County was in D2 for at least 8 consecutive weeks (37 total weeks) between 3/27/2018 and 12/10/2018.
- ✓ Maricopa County was in D3 for at least one week during the selected time period (29 total weeks).
- ✓ Maricopa County was in D3 for at least four non-consecutive weeks during the selected time period (29 total weeks).
- ✓ Maricopa County was in D4 for at least one week during the selected time period (12 total weeks).
- ✓ Maricopa County was in D4 for at least four non-consecutive weeks during the selected time period (12 total weeks).

# Summary Data (2014 Criteria)

The Summary Data tool provides county-level data for the country or for a state to determine which counties meet the Livestock Forage Disaster Program requirements.

The FSA Eligibility Tool does not guarantee any financial aid. It simply estimates which U.S. counties meet the criteria, based on the U.S. Drought Monitor. Eligibility will be confirmed by the FSA once the signup period has begun. Please contact your [local FSA agent](#) for more details and to verify eligibility after the start of the signup period.

If you would like information for one county, please visit the [County Eligibility](#) section or return to the [home page](#).

For help with this tool, please visit the [FSA Eligibility Tool Help](#) pages.

Number of counties affected: 15

Displaying items 1 to 15 of 15

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## Criteria

- D2 for at least eight consecutive weeks during the grazing period
- D3 at any time during the grazing period
- D3 for at least four (nonconsecutive) weeks during the grazing period
- D4 at any time during the grazing period
- D4 for at least four (nonconsecutive) weeks during the grazing period

## Location

U.S.     By State   

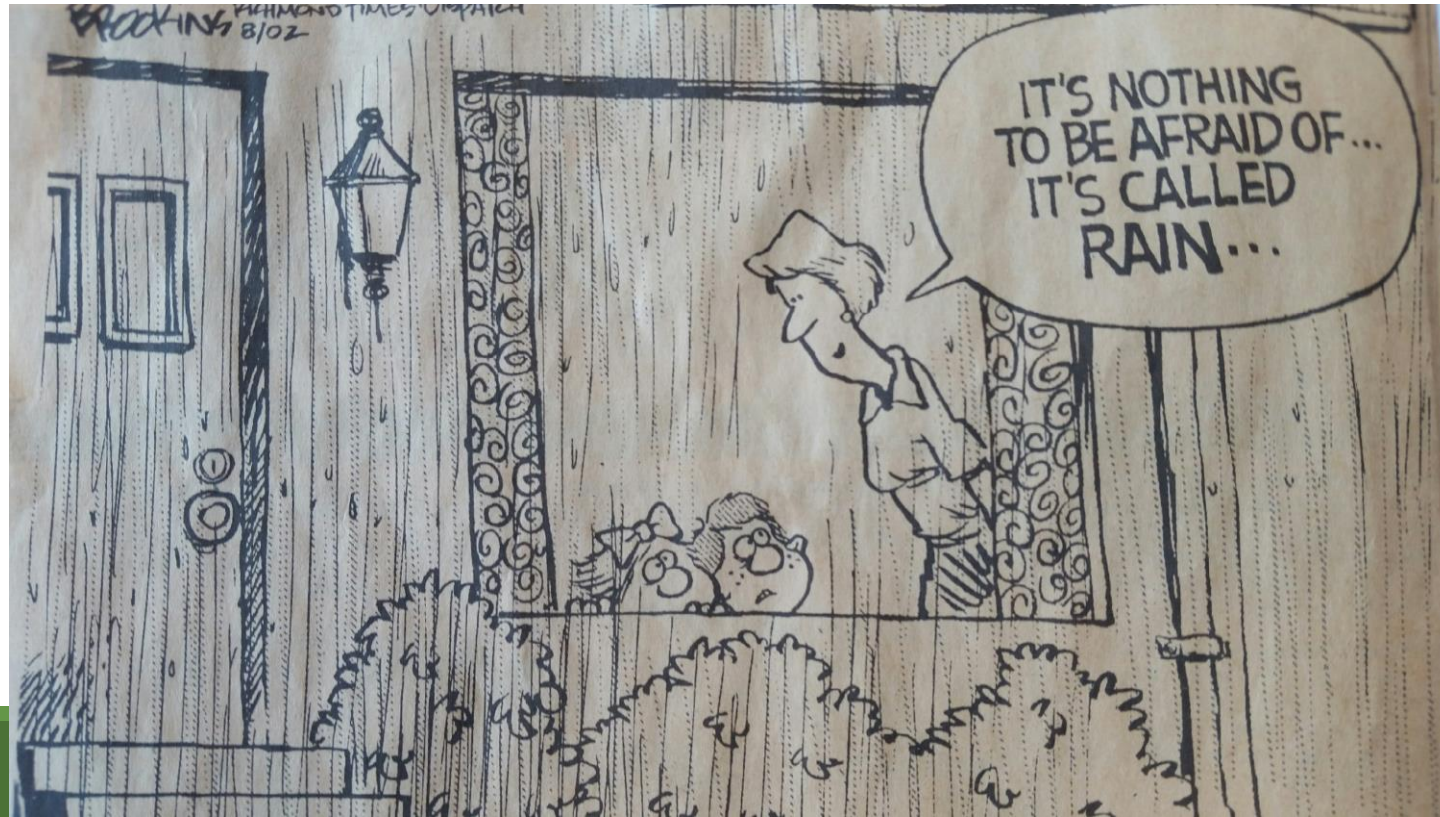
## Grazing Period

Start of Grazing Period\*   

End of Grazing Period\*   

FIPS	State	County	Consecutive Weeks	Start Date	End Date
04001	AZ	Apache County	40	2018-03-27	2018-12-31
04003	AZ	Cochise County	29	2018-03-27	2018-10-15
04005	AZ	Coconino County	40	2018-03-27	2018-12-31
04007	AZ	Gila County	40	2018-03-27	2018-12-31
04009	AZ	Graham County	40	2018-03-27	2018-12-31
04011	AZ	Greenlee County	40	2018-03-27	2018-12-31
04012	AZ	La Paz County	40	2018-03-27	2018-12-31
04013	AZ	Maricopa County	37	2018-03-27	2018-12-10
04015	AZ	Mohave County	40	2018-03-27	2018-12-31
04017	AZ	Navajo County	40	2018-03-27	2018-12-31
04019	AZ	Pima County	32	2018-03-27	2018-11-05
04021	AZ	Pinal County	29	2018-03-27	2018-10-15
04023	AZ	Santa Cruz County	29	2018-03-27	2018-10-15
04025	AZ	Yavapai County	40	2018-03-27	2018-12-31
04027	AZ	Yuma County	35	2018-03-27	2018-11-26

# OUR PARTNERS





# Any Questions ?



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 @droughtcenter

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