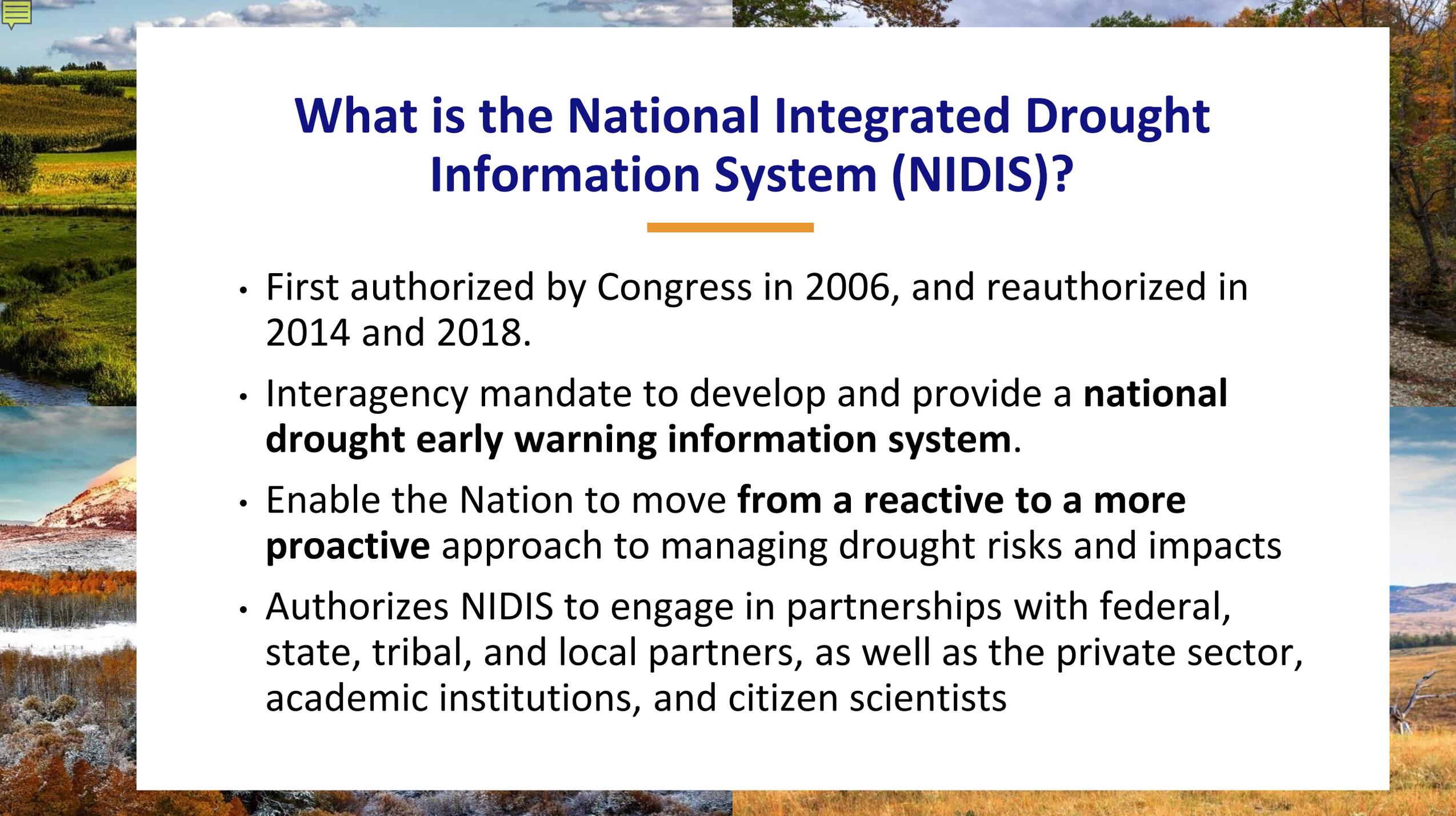




# Communicating and Reporting Drought: Tools and Resources from the updated U.S. Drought Portal

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Meredith Muth  
Southeast USDM Meeting  
Feb 4-5, 2020



# What is the National Integrated Drought Information System (NIDIS)?

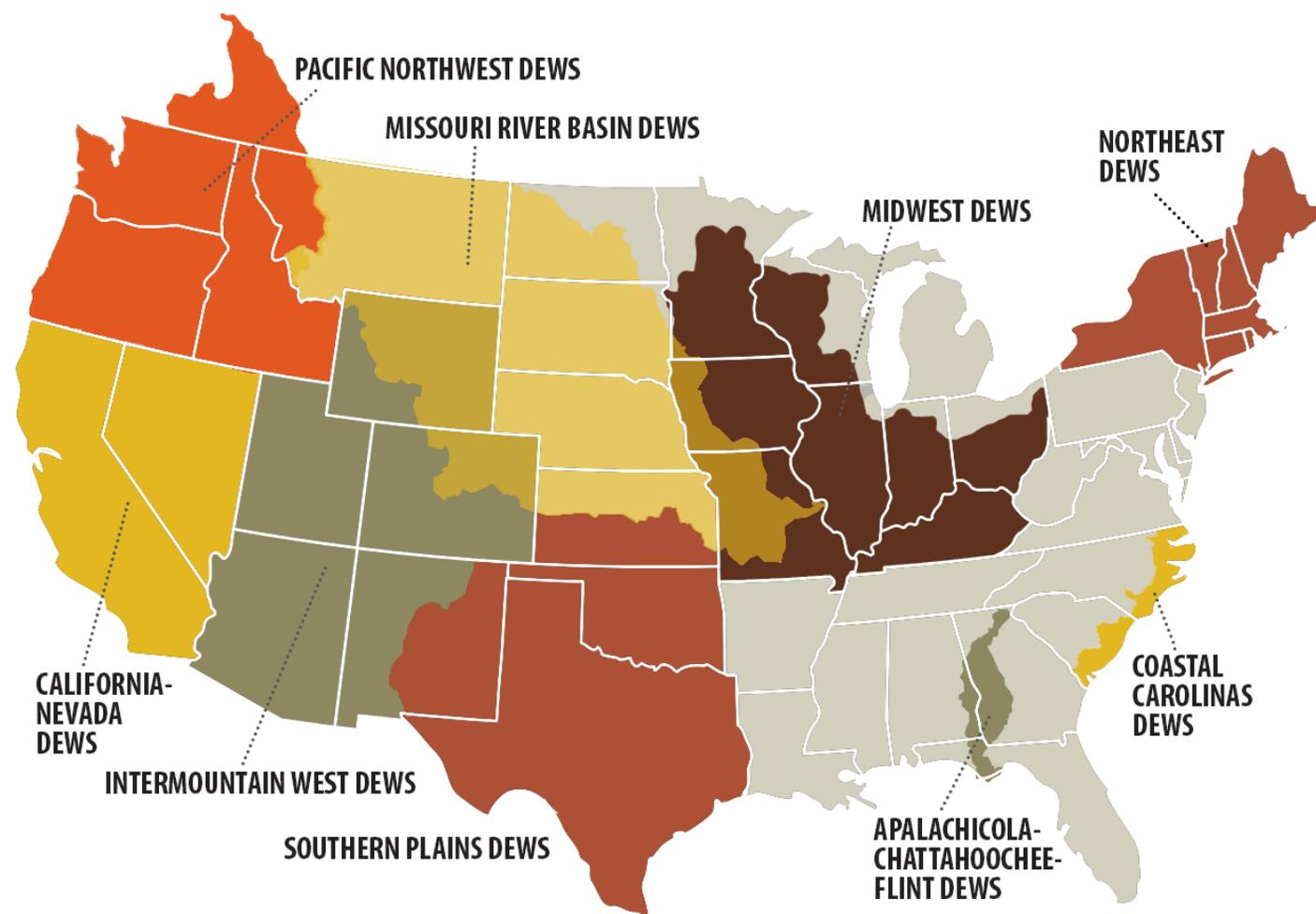
---

- First authorized by Congress in 2006, and reauthorized in 2014 and 2018.
- Interagency mandate to develop and provide a **national drought early warning information system**.
- Enable the Nation to move **from a reactive to a more proactive** approach to managing drought risks and impacts
- Authorizes NIDIS to engage in partnerships with federal, state, tribal, and local partners, as well as the private sector, academic institutions, and citizen scientists

## REGIONS

# Drought Early Warning Systems

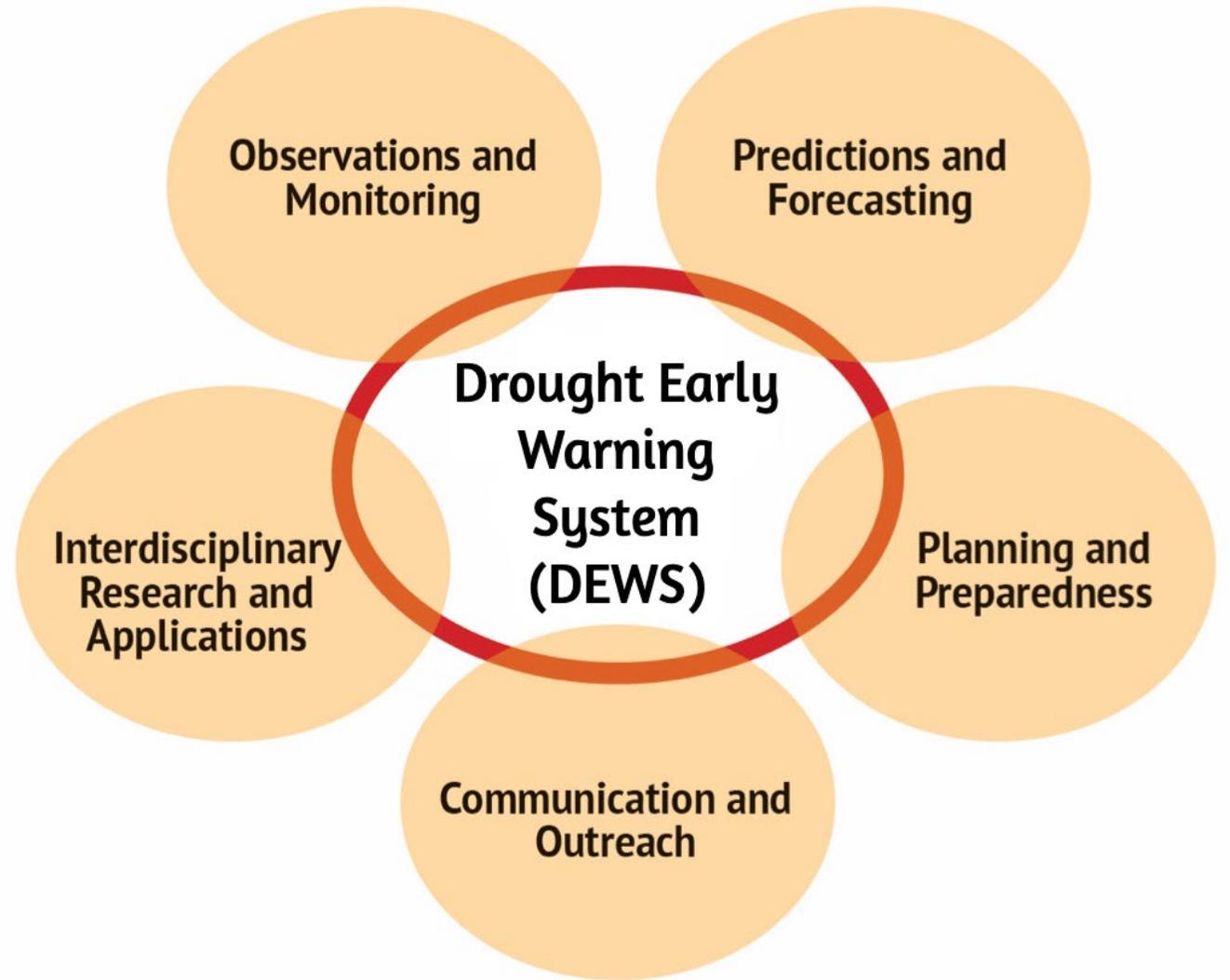
A Drought Early Warning System (DEWS) utilizes new and existing networks of federal, tribal, state, local and academic partners to make climate and drought science accessible and useful for decision makers.

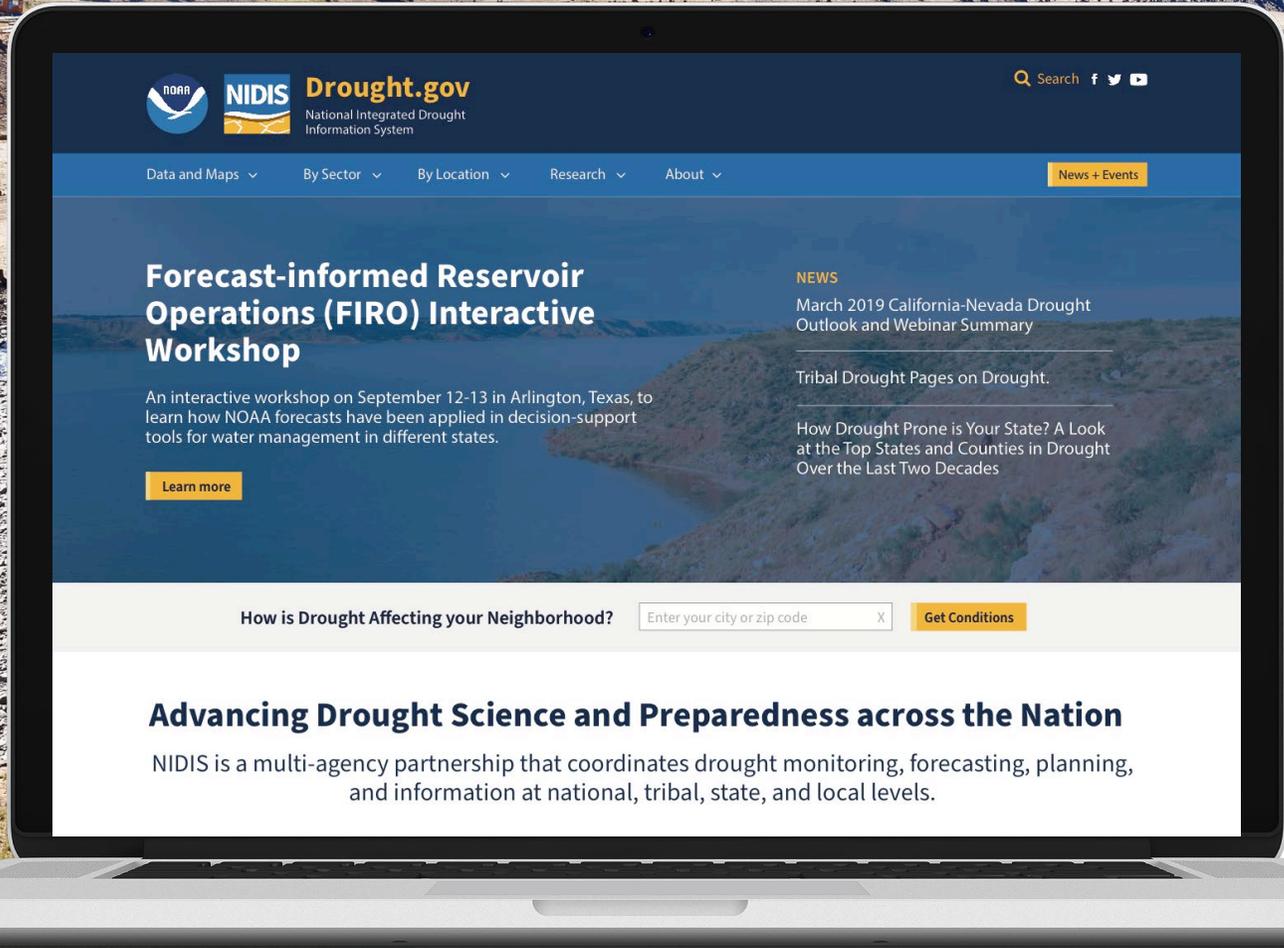


APPROACH

# Drought Early Warning

“Provision of timely and effective information, through identified institutions, that allows individuals exposed to a hazard to take action to avoid or reduce their risk and prepare for effective response.”





# Drought.gov Relaunch

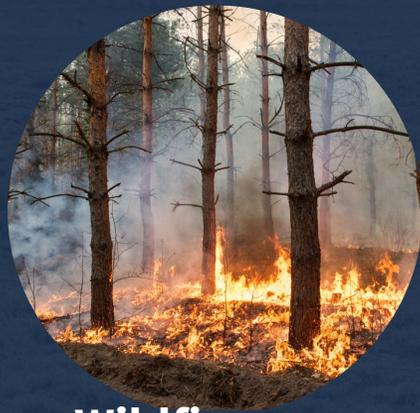
Spring  
2020

- By Sector
- Data, Maps, Tools
- Local Information

—  
**Sector**  
Pages



**Water  
Utilities**



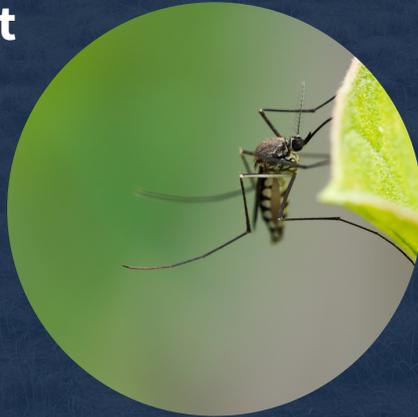
**Wildfire  
Management**



**Agriculture**



**Energy**



**Public  
Health**



**Ecosystems**



**Manufacturing**



**Recreation & Tourism**



**Navigation and  
Transportation**



**Hazards Planning**

# Sector Pages



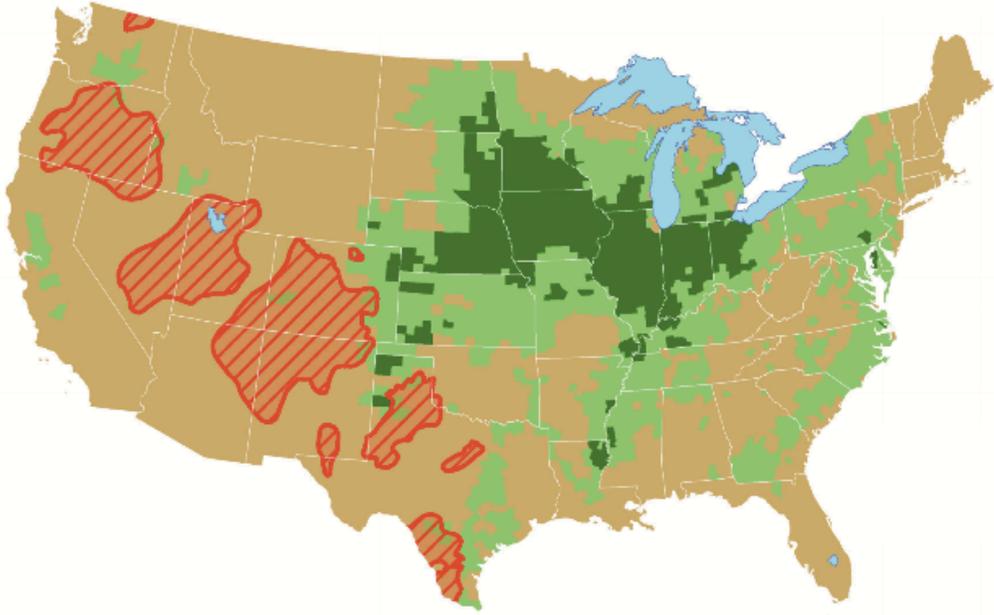
## U.S. Crops and Livestock in Drought | July 10, 2019

[Corn](#) [Soybeans](#) [Hay](#) [Cattle](#) [Winter Wheat](#)

The USDA produces monthly maps and charts displaying locations and percentages of drought-affected areas corn, soybeans, hay, cattle, and winter wheat.

-  15% Drought Areas
-  21% Major Corn Area
-  5% Minor Corn Area

[View more agriculture maps](#)



**2,870**  
counties with crops experiencing drought conditions.

**1,267,850**  
acres of crops experiencing drought conditions.

**2,345,700**  
cattle currently experiencing drought conditions.

**5**  
counties with drought declarations.

# Sector Pages

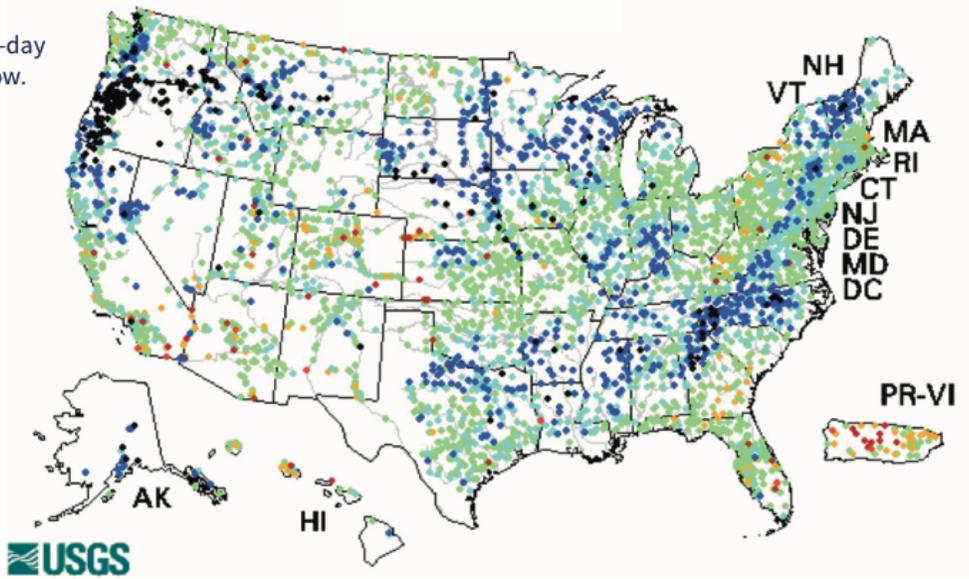


## U.S. Water Supply Conditions | July 9, 2019

**Streamflow**    **Snowpack (Seasonal)**    **Precipitation Outlook**

The USGS creates maps of hydrologic drought and streamflow in real time, daily, 7-day, 14-day, and 28-day levels as well as comparisons to historical streamflow.

- 15% ■ Low
- 21% ■ Much below normal
- 5% ■ Below normal
- 15% ■ Normal
- 21% ■ Above normal
- 18% ■ Much above normal
- 5% ■ High



[View more water supply maps](#)



Reservoir name  
(city, state)



Reservoir name  
(city, state)



Reservoir name  
(city, state)



Reservoir name  
(city, state)

# Sector Pages

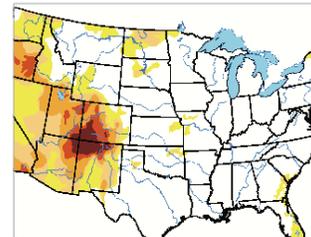


## Explore Drought in this Sector



### Observation & Monitoring

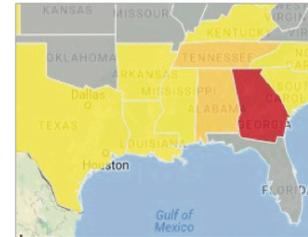
- National Soil Moisture Network
- Community Collaborative Rain, Hail & Snow Network
- Drought Impact Reporter
- Agricultural Commodities in Drought
- Mesonet
- Monitoring Tools - National Drought Mitigation Center
- Handbook of Drought Indicators & Indices
- Catalogue of Major Drought Indices
- Drought Risk Atlas
- Groundwater and Soil Moisture Conditions



#### U.S. Drought Monitor

A map updated each Thursday to show the location and intensity of drought across the country.

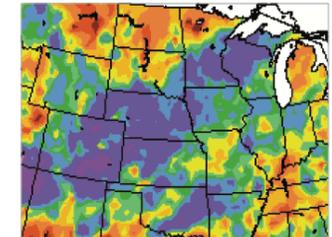
🕒 2000 - Present    📄 csv, images, shapefile, text (ascii)



#### Drought Impact Reporter

A map updated each Thursday to show the location and intensity of drought across the country.

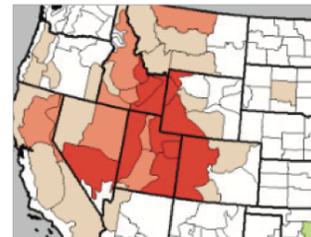
🕒 2000 - Present    📄 csv, images, shapefile, text (ascii)



#### ACIS Climate Map

A map updated each Thursday to show the location and intensity of drought across the country.

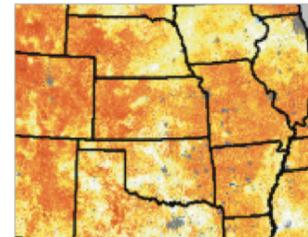
🕒 2000 - Present    📄 csv, images, shapefile, text (ascii)



#### Standardized Precipitation Index

A map updated each Thursday to show the location and intensity of drought across the country.

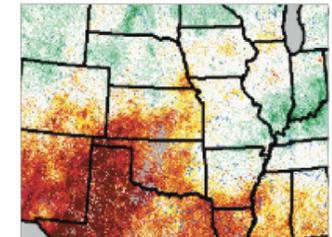
🕒 2000 - Present    📄 csv, images, shapefile, text (ascii)



#### Quick Drought Response Index

A map updated each Thursday to show the location and intensity of drought across the country.

🕒 2000 - Present    📄 csv, images, shapefile, text (ascii)



#### Vegetation Drought Response Index

A map updated each Thursday to show the location and intensity of drought across the country.

🕒 2000 - Present    📄 csv, images, shapefile, text (ascii)



### Planning & Preparedness

- American Planning Association
- Disaster Program
- Crop Decision Dashboard
- Drought Management Database

The screenshot shows the Drought.gov website interface. At the top left, there are logos for NOAA and NIDIS (National Integrated Drought Information System). The main header includes navigation links: Data and Maps, By Sector, By Location, Research, About, and a highlighted News + Events button. A search bar with social media icons is also present. The main content area features a large background image of an irrigation system. The heading 'DATA & MAPS Agriculture' is displayed, followed by a paragraph explaining agricultural drought. A yellow button asks 'Drought in your area?' with a 'Report Impacts' link. A sidebar titled 'On this page' lists links for Agricultural Drought, Data, Maps and Tools, Current Conditions, Data and Maps Gallery, Agricultural Impacts, and Research and Resources. Below this, a section titled 'Agricultural Drought' includes a circular image of a plant in a dry field and a descriptive paragraph.

NOAA NIDIS Drought.gov National Integrated Drought Information System

Data and Maps By Sector By Location Research About News + Events

DATA & MAPS  
**Agriculture**

Agricultural drought links certain drought conditions, such as soil moisture, to agricultural impacts. It is present when drought conditions result in adverse crop responses.

**Drought in your area?**  
Report Impacts

**On this page**

- Agricultural Drought
- Data, Maps and Tools
- Current Conditions
- Data and Maps Gallery
- Agricultural Impacts
- Research and Resources

**Agricultural Drought**



Agricultural drought refers to circumstances when soil moisture is insufficient, usually in short-term drought situations, and results in the lack of crop growth and production. Agriculture can either rebound or be impaired, depending on precipitation occurrence.

## Expanded

# Data, Maps, and Tools

- Agriculture
- Wildfire
- Soil Moisture
- Paleoclimate
- Water Supply
- Temperature and Precipitation
- Snow Drought

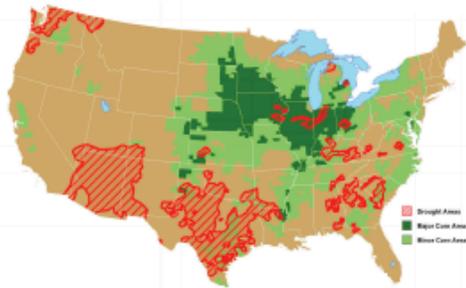
## Data, Maps, and Tools

Monitoring agricultural drought focuses on precipitation shortages, differences between actual and potential evapotranspiration, soil water deficits, and reduced groundwater or reservoir levels.

### Current Agriculture Conditions | March 18, 2019

#### Agriculture in Drought

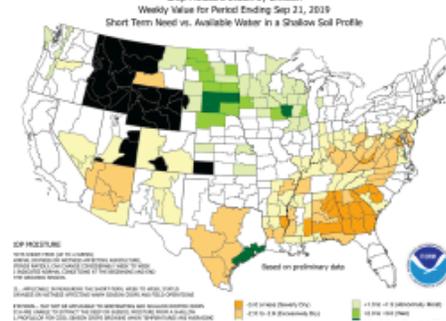
**This Week**   **Last Week**



The USDA produces monthly maps and charts showing locations and percentages of drought-affected areas which produce corn, soybeans, hay, cattle, and winter wheat.

#### Crop Moisture Index

**This Week**   **Last Week**



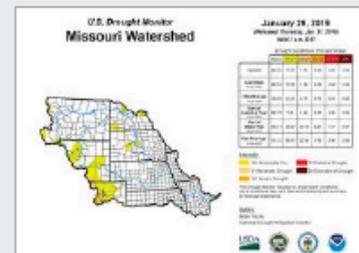
The CMI gives the short-term or current status of purely agricultural drought or moisture surplus and can change rapidly from week to week. The CMI can be used to measure the status of dryness or wetness affecting warm season crops.

# Expanded Data, Maps, and Tools

## Dashboard of conditions

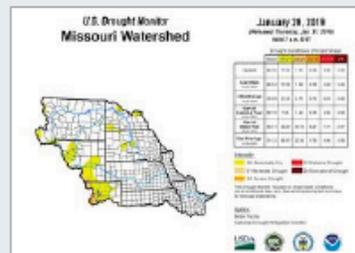
## Data and Map Gallery

A selection of tools to monitor soil, crops, weather, and other conditions for drought impacts on agriculture.



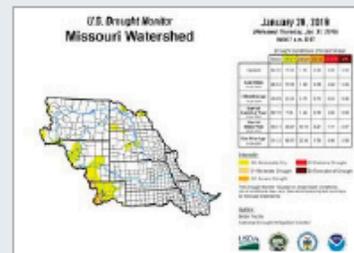
### U.S. Drought Monitor

A map updated each Thursday to show the location and intensity of drought across the country.



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A map updated each Thursday to show the location and intensity of drought across the country.



### U.S. Drought Monitor

A map updated each Thursday to show the location and intensity of drought across the country.

## U.S. Drought Monitor

10/17/19 Updated every Thursday

### Percent Area of the U.S. Land Area (Full Statistics)

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
This Week 9/24/2019	64.43%	35.57%	16.23%	3.72%	0.40%	0.00%
Last Week 9/17/2019	67.47%	32.53%	13.72%	3.90%	0.51%	0.00%

## Palmer Index

10/21/19 Updated daily

### Percent Area of the U.S. Land Area (Full Statistics)

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
This Week 9/24/2019	64.43%	35.57%	16.23%	3.72%	0.40%	0.00%
Last Week 9/17/2019	67.47%	32.53%	13.72%	3.90%	0.51%	0.00%

## Precipitation Anomaly

10/21/19 Updated daily

### Percent Area of the U.S. Land Area (Full Statistics)

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
This Week 9/24/2019	64.43%	35.57%	16.23%	3.72%	0.40%	0.00%
Last Week 9/17/2019	67.47%	32.53%	13.72%	3.90%	0.51%	0.00%

## Temperature Anomaly

10/21/19 Updated daily

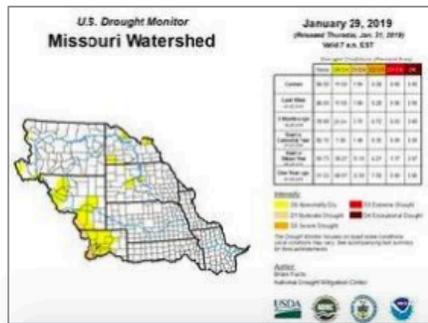
### Percent Area of the U.S. Land Area (Full Statistics)

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# Expanded Data, Maps, and Tools

Data Map Gallery

Indicators  
including the U.S.  
Drought Monitor



## Agricultural Impacts

### Reduced Crop Yields

Agricultural drought by definition refers to conditions that result in adverse crop responses, which can range from reduced crop yields to total crop failure.

### Widespread Economic Impacts

The costs of agricultural drought impacts are spread across the food system, affecting everyone from farmers to consumers.

### Increased Expenses for Feeding/Watering Livestock

During agricultural drought, farmers and ranchers face increased expenses for feeding and watering livestock. In severe drought conditions, they may be forced to sell their livestock.

### Agricultural Sector

The agricultural sector makes an important contribution to the U.S. economy, from promoting food and energy security to providing jobs in rural communities across the country.

[View this Sector Page](#)

## Agriculture Research and Resources

### Peer-Reviewed Publications

Date Published | Name of Journal

**Perspectives on the Causes of Exceptionally Low 2015 Snowpack in the Western United States**

Date Published | Name of Journal

**Seasonal Hydrologic Responses to Climate Change in the Pacific Northwest**

Date Published | Name of Journal

**Effects of Climate Change on Snowpack and Fire Potential in the Western USA**

Date Published | Name of Journal

**Projected changes in snowfall extremes and interannual variability of snowfall in the western United States**

Date Published | Name of Journal

**Exploring the Origins of Snow Drought in the Northern Sierra Nevada, California**

Date Published | Name of Journal

**Declining Snowpack Over the Western U.S.**

### Web Resources

**Defining Snow Drought and Why It Matters**

**The Climate CIRCulator: Snowpack & Drought Blog**

**The Climate CIRCulator: Snow Drought Declines in the American West**

**Earth Observatory: Snow Drought in the Rockies**

**2018 Western Snow Conference Videos: Trailer; Peter Marshall; Kate Hale; David Gutzler; Ryan Currier; Noah Molotch; John Lea; Anne Heggli; Randy Julander; McKenzie Skiles; Adrian Harpold; Ron Abramovich**

#### **Pacific Northwest**

**CIRC Pacific Northwest Snowpack, Hydrology, and Drought Resources**

**Seasonal Hydrologic Responses to Climate Change in the Pacific Northwest**

#### **Sierra Nevada, California**

**CNAP Sierra Nevada Snowpack Handout**

—  
**Expanded**  
Data, Maps, and  
Tools

Impacts

Research and  
Resources

# By Location Drought by Scale

National



Tribal



Regional



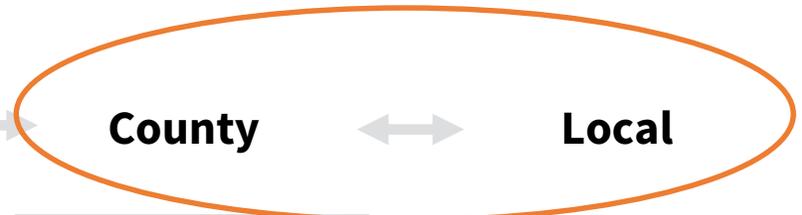
State



County



Local



**National Current Conditions | January 23-29, 2019**

1.2 million acres of cropland in severe drought, up from 1.1 million in the week prior.

8.1% of cropland in moderate drought, up from 7.8% in the week prior.

16.0 million acres of cropland in any drought, up from 15.7 million in the week prior.

35.8% of cropland in any drought, up from 35.5% in the week prior.

U.S. Drought Monitor, Palmer Index, Precipitation Assembly, Temperature Assembly, Soil Moisture, Impacts.

**Tribal Nations**

Tribal Drought Conditions | November, 2019

32,870 acres of cropland in severe drought, up from 32,800 in the week prior.

15,395 acres of cropland in moderate drought, up from 15,300 in the week prior.

35 acres of cropland in any drought, up from 35 in the week prior.

57 acres of cropland in any drought, up from 57 in the week prior.

Key Drought Impacts on Tribes: Environmental, Health, Cultural, Tribal Background.

**California-Nevada**

Regional Drought Updates

Featured Upcoming Events

Regional Activities

Observation & Monitoring, Planning & Preparedness, Prediction & Forecasting, Communication & Outreach, Research & Applications

Observation & Monitoring in California-Nevada

Regional Data and Maps

**Montana**

Current Conditions | March 15, 2019

1,267,850 acres of cropland in severe drought, up from 1,267,000 in the week prior.

45,700 acres of cropland in moderate drought, up from 45,700 in the week prior.

5 acres of cropland in any drought, up from 5 in the week prior.

45,700 acres of cropland in any drought, up from 45,700 in the week prior.

Drought in Montana from 2000-Present

Events, Documents, Montana Resources

**Buncombe County**

Current Conditions | October 18, 2019

367 acres of cropland in severe drought, up from 367 in the week prior.

2.1% of cropland in moderate drought, up from 2.1% in the week prior.

1,005 acres of cropland in any drought, up from 1,005 in the week prior.

55.8% of cropland in any drought, up from 55.8% in the week prior.

Precipitation and Temperature for Buncombe County

Agriiculture in Buncombe County | October 18, 2019

Water Supply in Buncombe County | October 18, 2019

Public Health in Buncombe County | October 18, 2019

**Asheville, NC (Huncombe County)**

Current Conditions | October 18, 2019

7 acres of cropland in severe drought, up from 7 in the week prior.

0.1% of cropland in moderate drought, up from 0.1% in the week prior.

0.1% of cropland in any drought, up from 0.1% in the week prior.

0.1% of cropland in any drought, up from 0.1% in the week prior.

Drought Indicators

Short-Term Drought Indicators

Long-Term Drought Indicators

Future Conditions for Buncombe County

Historical Conditions for Buncombe County

BY LOCATION

# Drought Conditions for Buncombe County

Get notified when conditions change

[Sign up for alerts](#)

<b>367</b> people in Buncombe County are affected by drought ↑ 2% since last week ↑ 6% since last month	<b>2.1%</b> of people in Buncombe County are affected by drought ↑ 25% since last week ↑ 15% since last month	<b>1,005</b> acres of crops in Buncombe County are experiencing drought ↓ 13% since last week ↓ 23% since last month	<b>35.8%</b> of crops in Buncombe County are experiencing drought conditions ↑ 21% since last week ↑ 35% since last month
--	--	---	--

[Learn more about these stats](#)

## Precipitation and Temperature for Buncombe County

### Short-Term Drought Indicator Blend

6/6/19 - Updated weekly

The short-term map approximates impacts that respond to precipitation over the course of several days to a few months, such as agriculture, topsoil moisture, unregulated streamflows, and most aspects of wildfire.



### Long-Term Drought Indicator Blend

6/10/29 - Updated daily

The short-term map approximates impacts that respond to precipitation over the course of several days to a few months, such as agriculture, topsoil moisture, unregulated streamflows, and most aspects of wildfire.



# By Location County Pages

Stats

Current Condition  
Maps

Sector Maps

Future Conditions

Historical Conditions

[Corn](#) [Soybeans](#) [Hay](#) [Cattle](#) [Winter Wheat](#)

The USDA produces monthly maps and charts displaying locations and percentages of drought-affected areas corn, soybeans, hay, cattle, and winter wheat.

- 15% Drought Areas
- 21% Major Corn Area
- 5% Minor Corn Area

[View more agriculture maps](#)



**2,870**  
counties with crops experiencing drought conditions.

**1,267,850**  
acres of crops experiencing drought conditions.

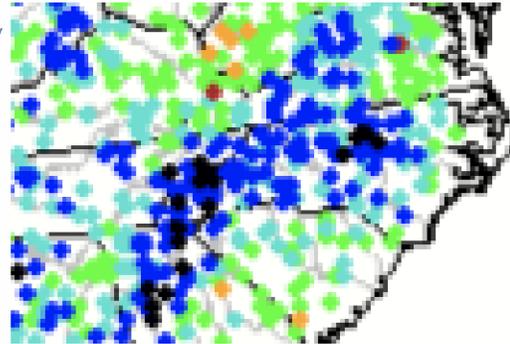
**2,345,700**  
cattle currently experiencing drought conditions.

**5**  
counties with drought declarations.

[Streamflow](#) [Snowpack \(Seasonal\)](#) [Precipitation Outlook](#)

The USGS creates maps of hydrologic drought and streamflow in real time, daily, 7-day, 14-day, and 28-day levels as well as comparisons to historical streamflow.

- 15% Low
- 21% Much below normal
- 5% Below normal
- 15% Normal
- 21% Above normal
- 18% Much above normal
- 5% High



Reservoir name (city, state)



Reservoir name (city, state)



Reservoir name (city, state)



Reservoir name (city, state)

# By Location County Pages

Stats

Current Condition  
Maps

Sector Maps

Future Conditions

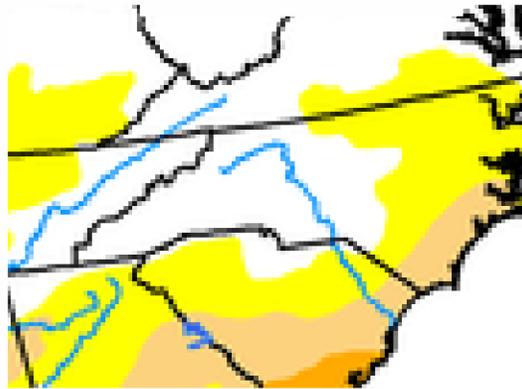
Historical Conditions

## Future Conditions for Buncombe County

### Evaporative Demand (EDDI)

6/6/19 - Updated weekly

This Week Last Week Last Month



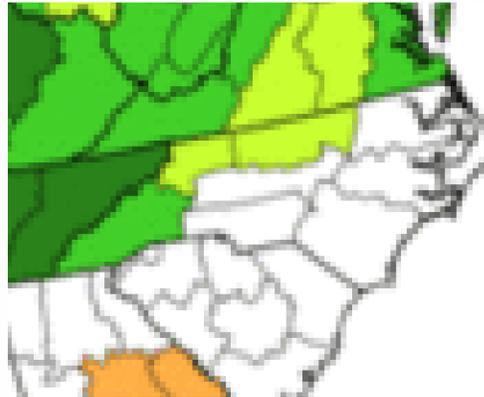
Percent Area of the U.S. Land Area (Full Statistics)

Week	None	D1-D4	D1-D4	D2-D4	D3-D4	D4
This Week 6/04/2019	88.05%	11.94%	4.57%	0.70%	0.14%	0.00%
Last Week 5/28/2019	88.74%	11.26%	3.53%	0.28%	0.14%	0.00%

### CPC Outlooks

6/10/29 - Updated daily

Monthly Seasonal



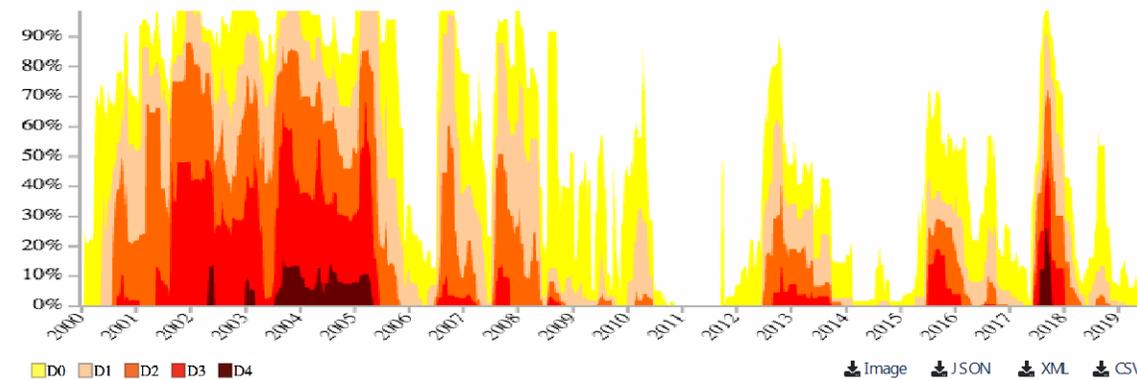
Percent Area of Contiguous U.S. in Palmer Drought Index Moderate to Extreme

Last Saturday 6/01/2019	4.59%
Previous Saturday 5/25/2019	2.71%

## Historical Conditions for Buncombe County

2000 - Present (U.S. Drought Monitor)

1895 - Present (Palmer Drought Severity Index)



# By Location County Pages

Stats

Current Condition  
Maps

Sector Maps

Future Conditions

Historical Conditions



# Local Pages

**Alerts**  
Local level (zipcode) drought alerts via email

**Current Conditions**  
Information on a variety of indicators for your location

How is Drought Affecting your Neighborhood?

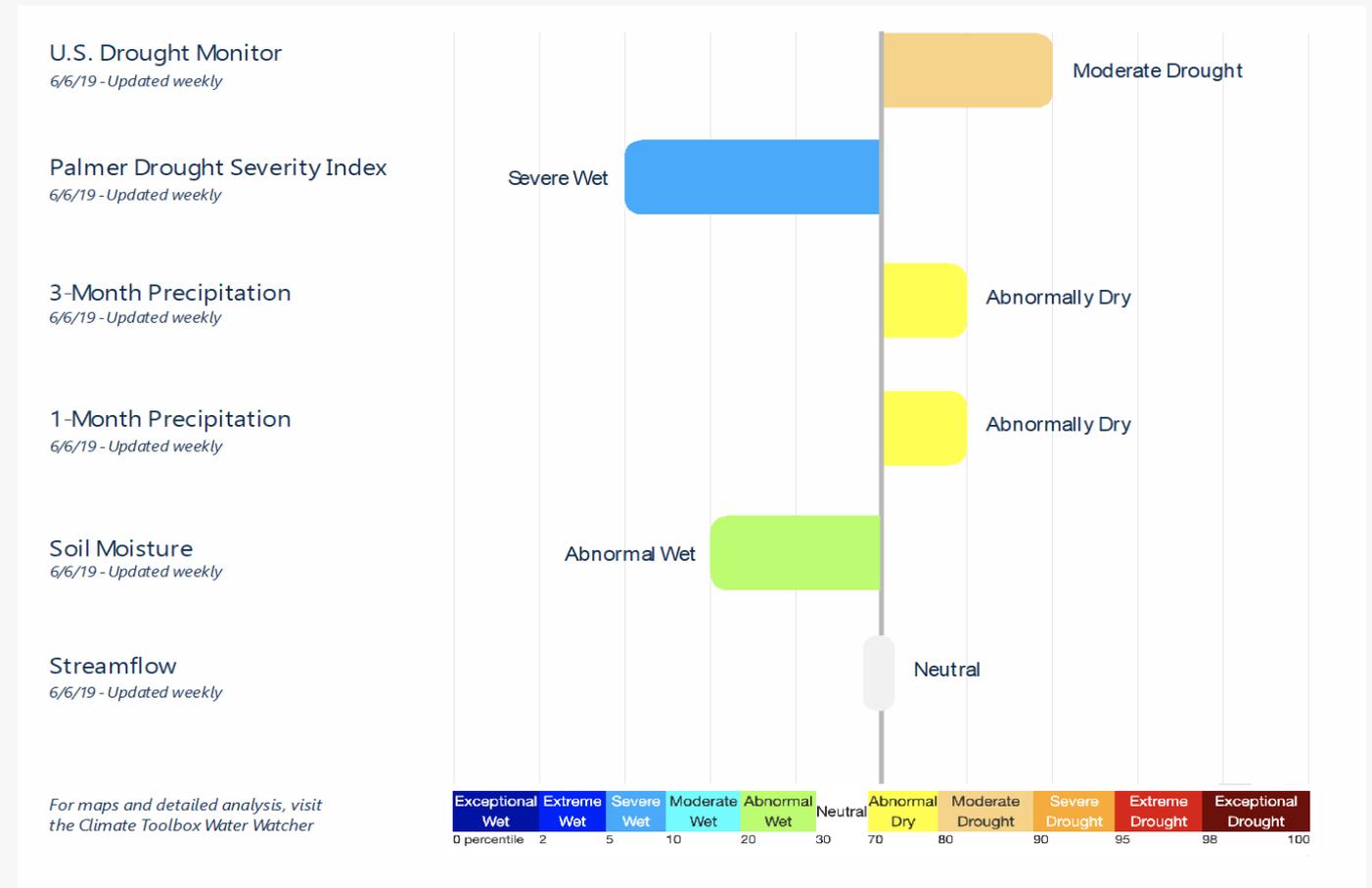
 X 

**Future Conditions**  
Outlooks and forecasts for your location

**Historical Conditions**  
Timeseries graphs of U.S. Drought Monitor and Palmer Drought Severity Index

## Drought Indicators

Indicators are variables used to describe drought conditions (i.e. precipitation, temperature, streamflow, groundwater and reservoir levels, soil moisture and snowpack). In order to get a complete picture of drought conditions, several drought indicators should be examined.



# Local Pages

How is Drought Affecting your Neighborhood?

Get Conditions

## Alerts

Local level (zipcode) drought alerts via email

## Current Conditions

Information on a variety of indicators for your location

## Future Conditions

Outlooks and forecasts for your location

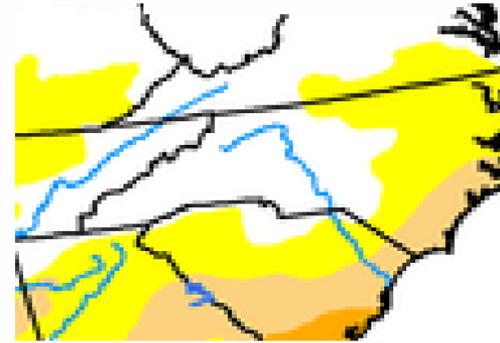
## Historical Conditions

Timeseries graphs of U.S. Drought Monitor and Palmer Drought Severity Index

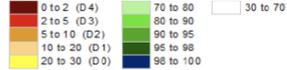
### Short-Term Drought Indicator Blend

6/6/19 - Updated weekly

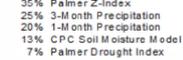
The short-term map approximates impacts that respond to precipitation over the course of several days to a few months, such as agriculture, topsoil moisture, unregulated streamflows, and most aspects of wildfire.



Percentile (D0-to-D4 equivalent)



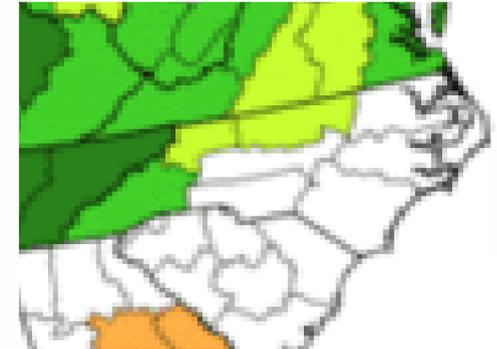
Inputs (as percentiles):



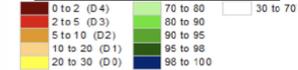
### Long-Term Drought Indicator Blend

6/10/29 - Updated daily

The long-term map approximates impacts that respond to precipitation over the course of several months to a few years, such as reservoir content, groundwater depth, and lake levels.



Percentile (D0-to-D4 equivalent)



Inputs (as percentiles):



### Drought Indicator Frequently Asked Questions

Q Does a shortage of rain mean that a drought will occur? +

Q Does a shortage of rain mean that a drought will occur? +

Q Does a shortage of rain mean that a drought will occur? +

# Local Pages

How is Drought Affecting your Neighborhood?

[Get Conditions](#)

## Alerts

Local level (zipcode) drought alerts via email

## Current Conditions

Information on a variety of indicators for your location

## Future Conditions

Outlooks and forecasts for your location

## Historical Conditions

Timeseries graphs of U.S. Drought Monitor and Palmer Drought Severity Index

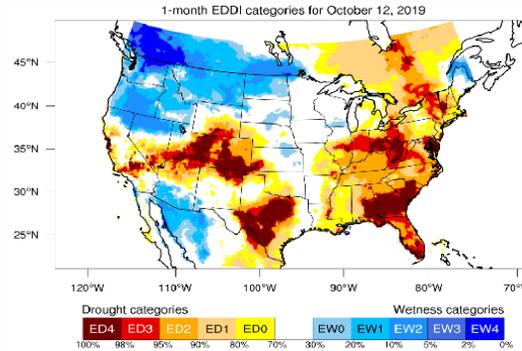
## Future Conditions for Buncombe County

### Evaporative Demand (EDDI)

6/6/19 - Updated weekly

EDDI is an experimental tool that can serve as an indicator of both rapidly evolving "flash" droughts (developing over a few weeks) and sustained droughts (developing over months but lasting up to years).

[This Week](#) [Next Week](#) [Next Month](#)

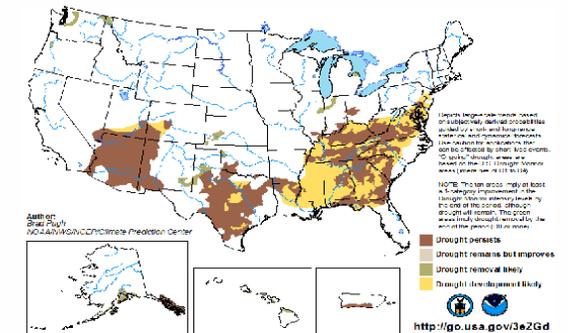


### CPC Outlooks

6/10/29 - Updated daily

The Monthly Drought Outlook is issued at the end of each calendar month and is valid for the upcoming month. The Outlook predicts whether drought will emerge, stay the same or get better over the next 30 days or so.

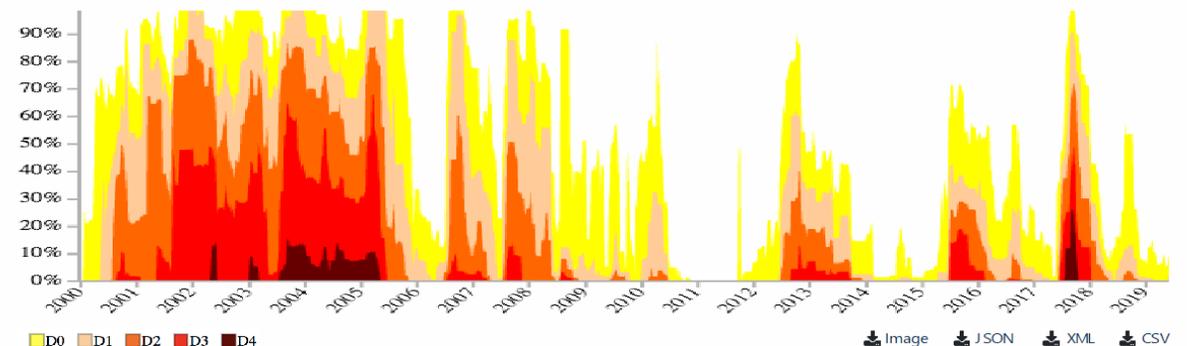
[Monthly](#) [Seasonal](#)



## Historical Conditions for Buncombe County

2000 - Present (U.S. Drought Monitor)

1895 - Present (Palmer Drought Severity Index)



## Report Impacts

The Drought Impact Report (DIR) is an online archive that collects and display drought condition reports and impacts across the United States. Categories include agriculture, business, energy, fire, plants and wildlife, public health, tourism and recreation, and water supply.

**Drought in your area?**  
**Report Impacts**

## Explore More Locations

**Get local conditions**

Enter your zip code

**Get Conditions**

**Or jump to:**

State



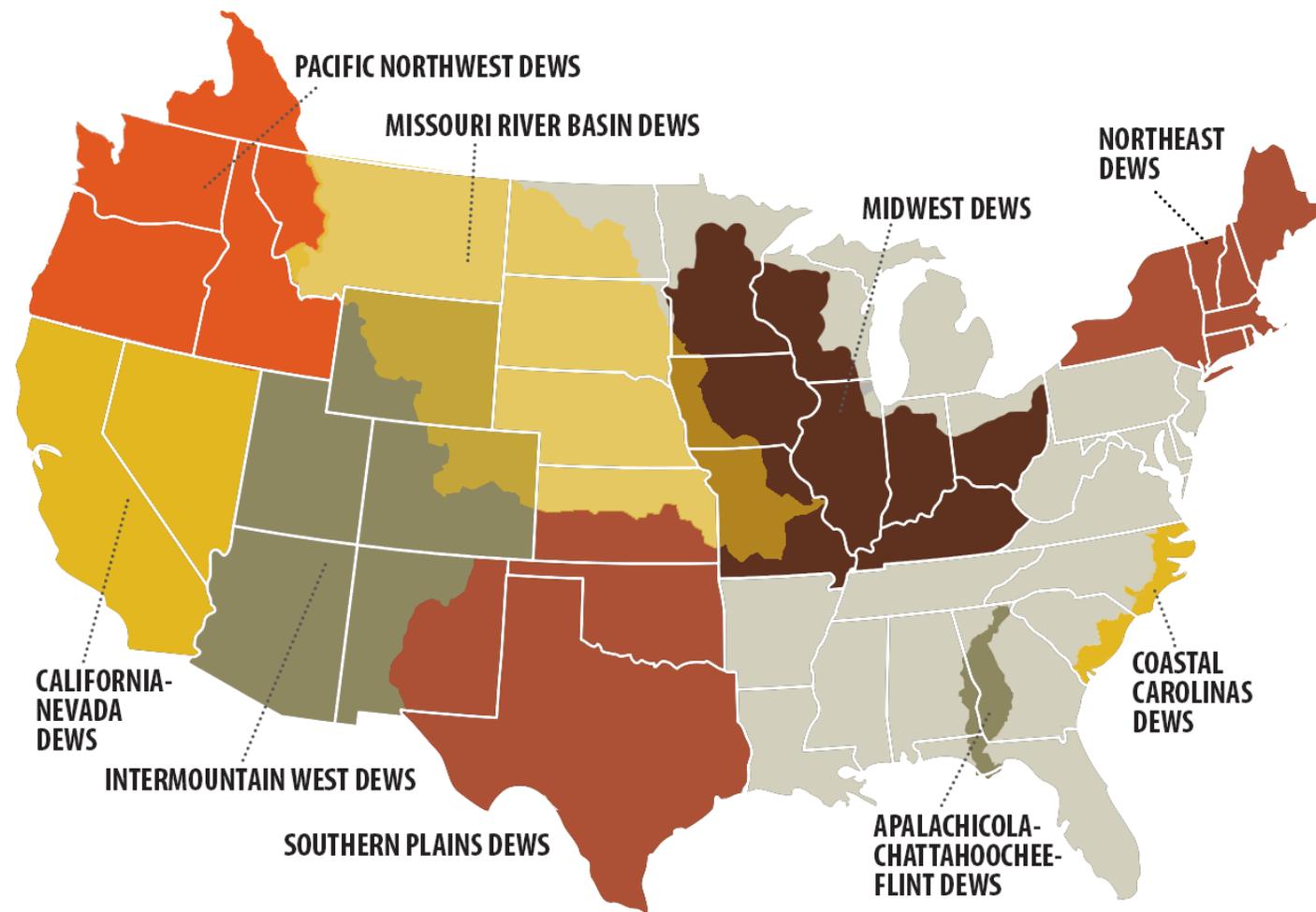
Region





# Upcoming NIDIS opportunities for the Southeast

- ACF Drought Dashboard (FL/AL/GA)
- Southeast DEWS proposal
- Southeast monthly climate webinar – starting in March
- Drought and Human Health
- Southeast Drought workshop



Thank you!  
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