

# Drought Response and Planning in South Carolina

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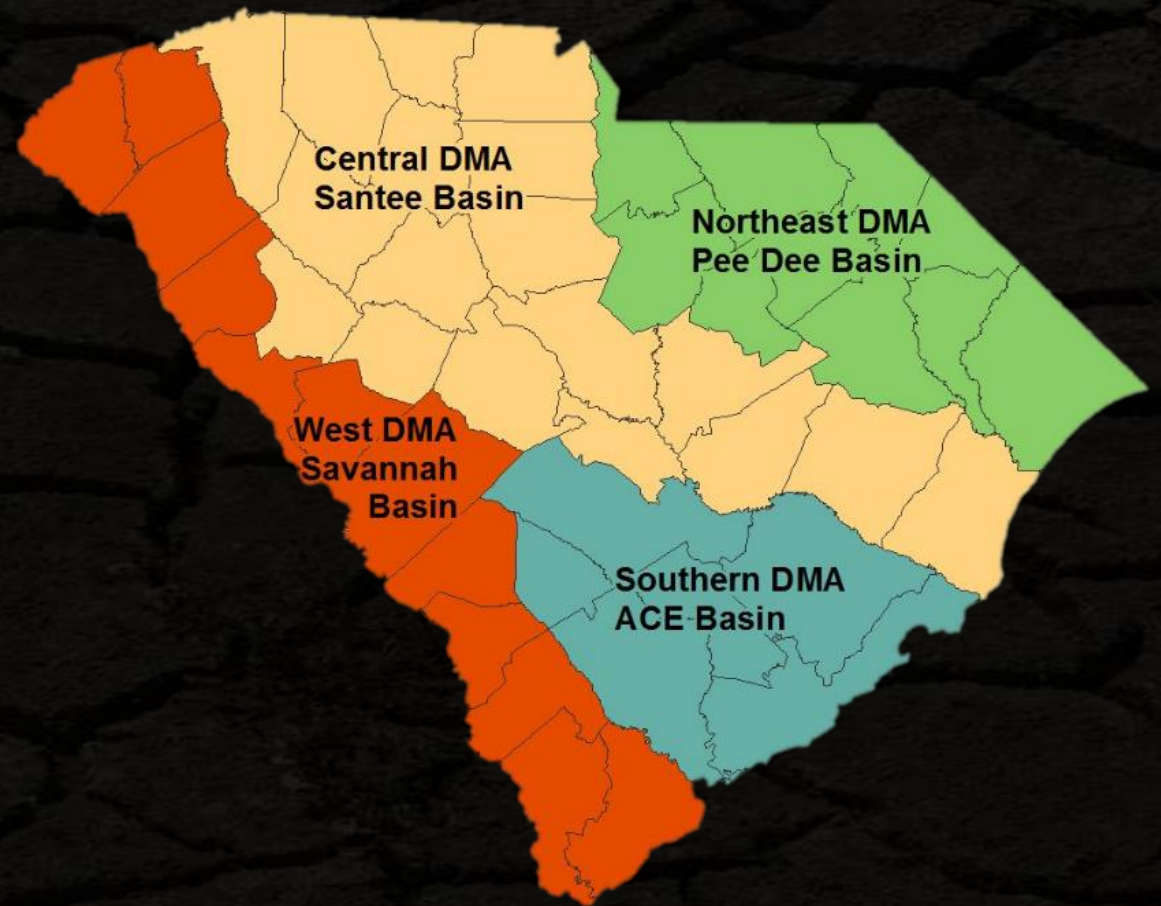


# Drought Monitoring and Response in SC

## South Carolina Drought Response

**Program** consists of legislation, regulations, and procedures that establish recommended and required response.

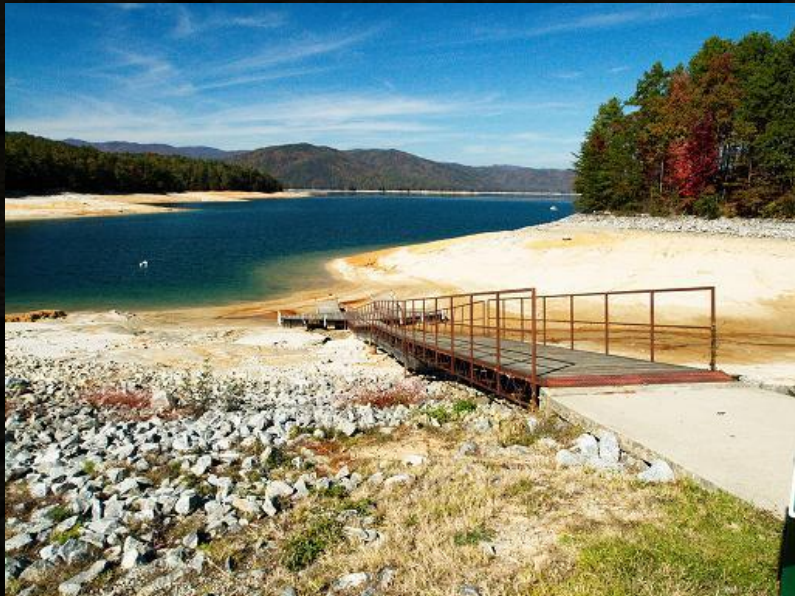
The **South Carolina Drought Response Act (2000)** and the **supporting regulations** formally establish and describe the responsibilities of the South Carolina State Climatology Office and the South Carolina Drought Response Committee, the major drought decision-making entities in the State.



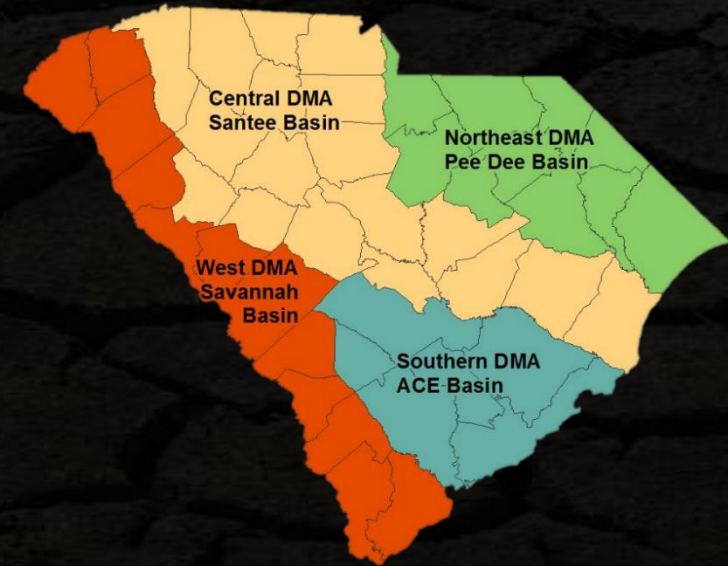
# Drought Monitoring and Response in SC

**Why:** To carefully and closely monitor, conserve, and manage the State's water resources in the best interest of all South Carolinians.

**Who:** Drought Response Committee and Department of Natural Resources – State Climatology Office



<http://www.scdrought.com/gallery.html>

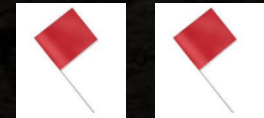


## Statewide members

- Forestry Commission
- Department of Agriculture
- Emergency Management Division
- Department of Health and Environmental Control
- Department of Natural Resources









## Local members (12 per Drought Management Area)

- Water Utilities
- Industry
- Regional Council of Governments
- Power Generation Facilities
- Soil and Water Conservation Districts










## West Drought Management Area

Counties: Oconee, Pickens, Anderson, Abbeville, McCormick, Edgefield, Aiken, Barnwell, Allendale, Hampton, Jasper, Beaufort

Group	Committee Member	County	Contact Information
Agriculture	Reg Williams Appointment 06/06/2002	Edgefield	
Commission of Public Works	Vacant		
Counties	Vacant		
Domestic User	<a href="#">Pickens Williams - Appointment 03/01/2018</a>	Barnwell	
Industry	<a href="#">David Evans - Appointment 03/01/2018</a>	Pickens	
Municipalities	Vacant	Aiken	
Power Generation Facilities	<a href="#">Preston Pierce - Appointment 03/01/2018</a>	Oconee	
Private Water Supplier	<a href="#">J. Scott Willett - Reappointment 03/01/2018</a>	Anderson	
Public Service District	<a href="#">Chris Rasco - Appointment 03/01/2018</a>	Anderson	
Regional Council of Governments	Vacant		
Soil & Water Conservation Dist.	<a href="#">Yvonne Kling - Appointment 03/01/2018</a>	Aiken	
Special Purpose District	<a href="#">Ed Saxon - Appointment 03/01/2018</a>	Beaufort	

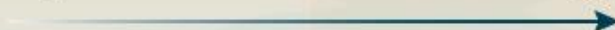
# Drought Monitoring and Response in SC

**How:** The State uses multiple indicators and indices to monitor drought and determine drought severity levels.

Percent of Normal Rainfall		<ul style="list-style-type: none"><li>• Cumulative dryness or wetness compared to long-term averages</li></ul>
Crop Moisture Index (CMI)		<ul style="list-style-type: none"><li>• Agricultural growing season short-term (up to 4 weeks) dryness or wetness</li></ul>
Palmer Drought Severity Index (PDSI)		<ul style="list-style-type: none"><li>• Prolonged (month, years) abnormally dry or wet conditions</li></ul>
 Water Resources		<ul style="list-style-type: none"><li>• Streamflow levels</li><li>• Lake levels</li><li>• Groundwater levels</li></ul>
Keetch-Byram Drought Index (KBDI)		<ul style="list-style-type: none"><li>• Daily forest fire potential</li></ul>
U.S. Drought Monitor for South Carolina		<ul style="list-style-type: none"><li>• General areas of drought, labeled by intensity on a weekly basis</li></ul>

# Conditions and Response

## SC Drought Response Act and Regulations

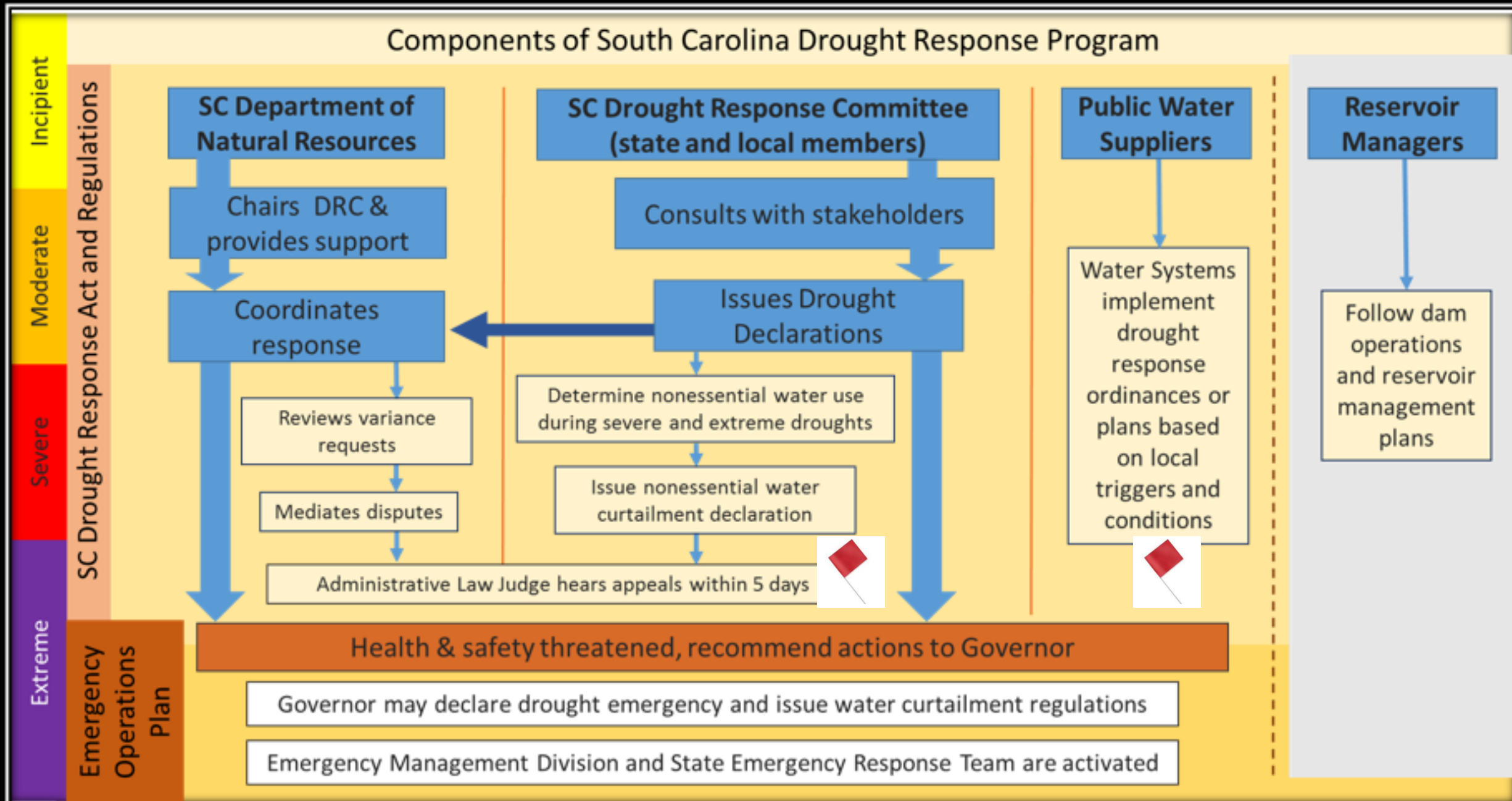
Incipient	Moderate	Severe	Extreme
<ul style="list-style-type: none"> <li>• Drier than normal</li> <li>• Soil moisture declines</li> <li>• Water demand increases</li> </ul>	<ul style="list-style-type: none"> <li>• Water levels decrease</li> <li>• Crops and plants wither</li> <li>• Irrigation increases</li> </ul>	<ul style="list-style-type: none"> <li>• Water levels continue to drop</li> <li>• Number of wildfires increases</li> <li>• Poor grazing and agricultural conditions</li> </ul>	<ul style="list-style-type: none"> <li>• Widespread impacts to agriculture, forestry, water utilities, and water dependent businesses</li> </ul>
<p>SCDNR, SCO and DRC monitor conditions, share information, and make recommendations to manage drought. State and federal agencies, water utilities, and reservoir managers monitor conditions.</p>			
<p>Water utilities review drought plans and ordinances.</p>	<p>Water utilities implement drought plans and ordinances. DRC may recommend voluntary or mandatory water conservation.</p>		
<p><i>As drought conditions and impacts become more severe, response actions increase accordingly.</i></p> 		<p>State agencies increase monitoring and communications. Citizens may see local notices for burn bans, boat ramp closings, and water use restrictions. The Governor may request voluntary or mandatory water conservation. The Governor may assist with managing impacts, including requesting disaster declarations by the US Dept. of Agriculture and activating the National Guard to assist with wildfire suppression.</p>	

## State Emergency Operations Plan



- Water systems and citizens are without, or losing access to water.
- Public safety, health, and welfare are threatened.
- The State Emergency Response Team (SERT) is activated to lead state-level response to the water shortage emergency.

# Components of South Carolina Drought Response Program



# Essential vs Nonessential Water Use

## Essential Water Use:

Water used for firefighting purposes, health and medical purposes, agricultural operations for food production, minimum stream flow requirements, minimum water levels in potable drinking water supplies and the above and below ground water tables, and the use of water to satisfy federal, state, or local public health and safety requirements

## Highest Priority in Essential Category:

Water used to maintain minimum water levels in the potable drinking water supply and water used for public safety purposes

Agricultural operations for nonfood production, and nonessential water users that may suffer a critical economic loss as a result of mandatory curtailment, have priority over other nonessential water users

- Must certify to the DRC the nature of the loss in order to qualify for the higher priority nonessential use.



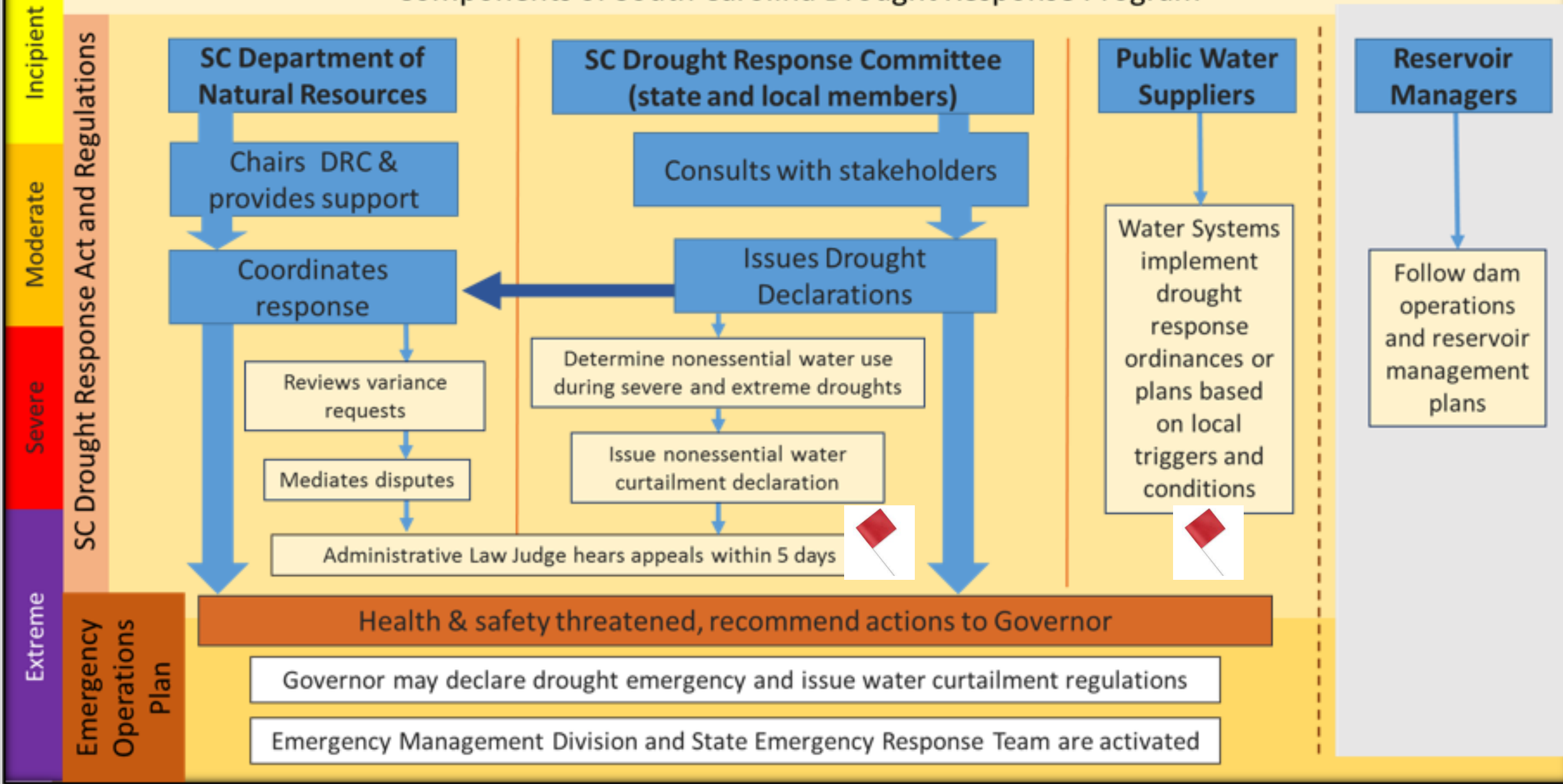


**At Severe or Extreme Drought if DRC determines that mandatory curtailment is necessary they would determine which category of use would be curtailed after reviewing the following standards:**

- (1) purpose of the use;
- (2) suitability of the use to the watercourse, lake, or aquifer;
- (3) economic value of the use;
- (4) social value of the use;
- (5) extent and amount of the harm it causes;
- (6) practicality of avoiding the harm by adjusting the use or method of use of one proprietor or the other;
- (7) practicality of adjusting the quantity of water used by each proprietor;
- (8) protection of existing values of water uses, land, investments, and enterprises;
- (9) consumptive or nonconsumptive nature of the use.



# Components of South Carolina Drought Response Program



# Model Drought Management Plan and Response Ordinance

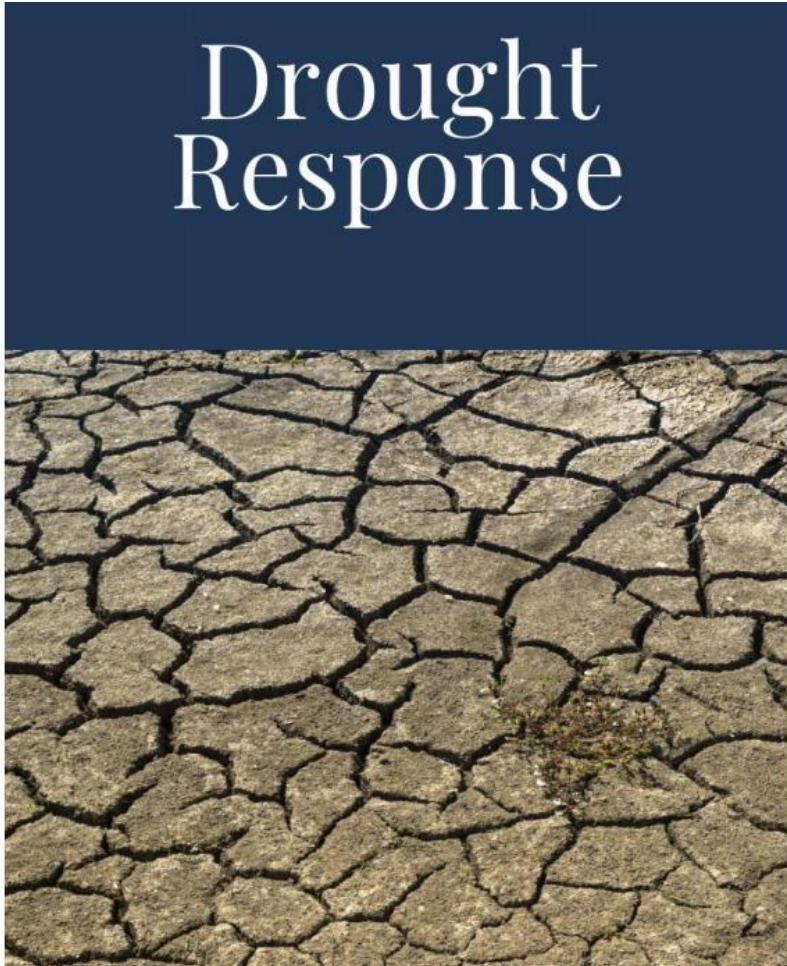
(Provided by the South Carolina Department of Natural Resources as required by the South Carolina Drought Response Act of 2000.)

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# Mount Pleasant Waterworks Drought Management and Response Plan

## Revised May 2020



**D. Identification of Water System Specific Drought or Water Shortage Indicators:** Operators of every water system must develop historical trends that are valuable indicators of a system's ability to meet demand when demand begins to outpace supply. Mount Pleasant Waterworks has developed triggers for use during drought or demand water shortages that describe when specific phases of the Drought Response Plan are implemented. Staff will monitor triggers and recommend action. The system triggers are as follows:

**Incipient Drought Phase:**

1. Drought Response Committee declaration (considering droughts can be localized.)

**Moderate Drought Phase:**

1. Drought Response Committee declaration (considering droughts can be localized.)
2. Average system storage levels fall below 60% for 48 hours.
3. Well pumping levels less than 100' above pump in one or more wells.

**Severe Drought Phase:**

1. Drought Response Committee declaration (considering droughts can be localized.)
2. Average system storage levels fall below 40% for 48 hours, and/or
3. Well pumping levels less than 75' above pump in one or more wells.

**Extreme Drought Phase:**

1. Drought Response Committee declaration (considering droughts can be localized.)
2. Average system storage levels fall below 20% for 48 hours, and/or
3. Well pumping levels less than 50' above pump in one or more wells.

## Severe Drought Phase

### Triggers:

1. Drought Response Committee (DRC) declaration, OR
2. Average system storage levels fall below 40% for 48 hours, OR
3. Well pumping levels less than 75' above pump in one or more wells.
4. Rationing when water pressure has been reduced to 40 psi and water storage levels drop below 20% for 48 hours.

### Goals: *To be implemented at Trigger #2 or #3 above*

1. **40% Reduction** of all water use
2. Voluntary reductions from customers in the use of water for all purposes
3. Mandatory restrictions on non-essential usage and restrictions on times when certain water usage is allowed

**Note:** Actions may be time-based to prescribe certain activities. For example, the request for 40% reduction in water usage may only be necessary after 30 or 45 days within this drought stage depending on other factors.

### Administrative Actions:

	<i>Task</i>	<i>Assignee (ICS Position*)</i>
<input type="checkbox"/>	Issue a Proclamation to be released to the local media, MPW customers, and to the South Carolina Department of Natural Resources Drought Information Center that Severe drought conditions are present.	General Manager
<input type="checkbox"/>	Provide written notification to the South Carolina Department of Natural Resources Drought Information Center.	General Manager
<input type="checkbox"/>	Communicate with the Southern Drought Management Area (DMA) DRC representative on MPW's drought conditions, impacts, and actions taken so DRC has this information when setting drought levels for the Southern DMA.	General Manager
<input type="checkbox"/>	Consider offering incentives to customers for finding and repairing leaks and/or for complying with voluntary restrictions.	General Manager
<input type="checkbox"/>	Communicate financial impacts of drought to Commissioners and customers.	General Manager
<input type="checkbox"/>	Provide written notification monthly to the South Carolina Department of Natural Resources Drought Information Center regarding the outcomes of the voluntary and mandatory restrictions.	General Manager
<input type="checkbox"/>	Encourage all residential water customers to voluntarily reduce overall monthly water usage to 60% of the customer's monthly average. If voluntary reduction of usage is not successful, the Mount Pleasant Waterworks may, at its option, implement the excessive use rate schedule for water, included at the bottom of this table. (Note: this rate modification is based on a reduction from actual average usage/REU vs. allocated capacity/REU.)	General Manager
<input type="checkbox"/>	Analyze AMI and other data to determine actual water usage reduction vs. goal. Determine customers not meeting 40% goal and generate customized notification to encourage.	Customer Services Manager

	<i>Task</i>	<i>Assignee (ICS Position*)</i>
<input type="checkbox"/>	Monitor and track daily/weekly call volume in Call Center. Consider invoking Emergency Call Takers to work in Contact Center to handle increased call volume.	Customer Services Manager
<input type="checkbox"/>	Suspend cut-offs.	Customer Services Manager
<input type="checkbox"/>	Activate new tier charges in CIS when decision to implement is made by General Manager. When modified rate structures are implemented, a comparison of actual usage vs. target of modified tier structure should be included in customer bills.	Customer Services Manager
<input type="checkbox"/>	Follow communication guidelines outlined in Mount Pleasant Waterworks Crisis Communication Plan to inform Mount Pleasant Waterworks' customers of the water system condition and voluntary and mandatory conservation measures that the customers are requested to follow during Severe drought conditions. See Appendix G for guidelines. Encourage self-policing by residents to alert the utility of system leaks.	PIO
<input type="checkbox"/>	Add bill inserts with conservation measures and updates on actual water usage reduction vs goal.	PIO
<input type="checkbox"/>	Collaborate and communicate with other water utilities and entities within the Southern Drought Management Area to ensure consistent messaging.	PIO
<input type="checkbox"/>	Work with CWS for consistent messaging to customers and public.	PIO
<input type="checkbox"/>	Develop and update ongoing list of Frequently Asked Questions (and answers) from Contact Center calls and Marketing/Communications.	PIO
<input type="checkbox"/>	Conduct regular (at least weekly) communications meetings between dispatch, customer service, and communications to review FAQ and develop consistent messaging.	PIO
<input type="checkbox"/>	Communicate to customers in advance when to expect higher water bills.	PIO
<input type="checkbox"/>	Publicize widely the penalties to be imposed for violations of mandatory restrictions and the procedures to be followed if a variance in the restrictions is requested.	PIO
<input type="checkbox"/>	Expand the use of education and public relations efforts and emphasize the penalties associated with violating the mandatory restrictions.	PIO
<input type="checkbox"/>	Conduct financial analysis of capacity buy-in vs. wholesale rates from CWS to determine the most cost-effective way to purchase additional water.	Finance Section Chief
<input type="checkbox"/>	Track and report billed revenues vs. collected revenues.	Finance Section Chief
<input type="checkbox"/>	Email and update all staff on current drought stage and conservation measures.	Planning Section Chief
<input type="checkbox"/>	Keep staff updated with current conditions on Canteen display board.	Planning Section Chief
<input type="checkbox"/>	Report drought-related conditions and impacts weekly to the National Drought Mitigation Center: <a href="http://bit.ly/droughtreport19">http://bit.ly/droughtreport19</a>	Planning Section Chief
<input type="checkbox"/>	Adjust regular meeting schedule (see schedule below).	Planning Section Chief
<input type="checkbox"/>	Attend DRC conference calls for updates.	Planning Section Chief

### Severe Drought Phase Excessive Use Rate Schedule

Tier I	0 – 3,000 gallons/REU	regular rate
Tier II	3,001 – 6,000 gallons/REU	2 times regular rate
Tier III	6,001 – 9,000 gallons/REU	3 times regular rate
Tier IV	Greater than 9,000 gallons/REU	4 times regular rate

#### Meeting Schedule (Severe Drought):

Day of Week	Time	Location	Attendees
Mondays	10:00 AM	MPW Conference Room	MPW ICS Team MPW Commissioners Town Staff (e.g., Public Services) CWS representatives
Thursdays, as determined by DRC	TBD	Conference Call	Drought Response Committee, MPW IC, Planning Section Chief & Operations Branch Director
Fridays	3:00 PM	Conference Call	MPW ICS Team MPW Commissioners Town Staff (e.g., Public Services) CWS representatives

#### Operations Actions:

	Task	Assignee (ICS Position*)
<input type="checkbox"/>	Utilize AMI and field inspections to identify water leaks and intensify maintenance efforts to correct water leaks in the distribution system.	Field Service Branch Director
<input type="checkbox"/>	Cease installation of new irrigation taps on the water system.	Field Service Branch Director
<input type="checkbox"/>	Contact all permitted hydrant users to cease using water until further notice. Notify all hydrant metered customers that meters will be pulled for the duration. Restoration of the meters will commence once conditions are favorable for normal use.	Field Service Branch Director
<input type="checkbox"/>	Communicate to all fire stations the reduction in pressures and procedure to follow to increase pressures during firefighting.	Field Service Branch Director
<input type="checkbox"/>	Adjust auto blowoffs to maintain minimum water quality goals.	Field Services Branch Director
<input type="checkbox"/>	Consider making provisions for emergency cooling/improved ventilation of critical machinery due to the stress increased demand and/or elevated environmental temperatures may place on the machinery.	Field Services Branch Director
<input type="checkbox"/>	Coordinate with Town, utilities and their associated contractors to enact/enforce restrictions on directional drilling to minimize damage risk to water lines during severe and/or extreme drought.	Field Services Branch Director

	Task	Assignee (ICS Position*)
<input type="checkbox"/>	Maintain regular (at least weekly) contact with CWS to receive updates on their assets and operational conditions. Provide updates to MPW staff during regular team meetings.	Operations Branch Director
<input type="checkbox"/>	Monitor usage, storage levels, and operation status of critical assets and report to regular management meetings.	Operations Branch Director
<input type="checkbox"/>	Consider increase in blending of raw water to increase production as needed.	Operations Branch Director
<input type="checkbox"/>	Reduce distribution pressures to ~40 psi. Per the AWWA M60 manual, lower water pressures typically result in an average of 6% reduction in water usage.	Operations Branch Director
<input type="checkbox"/>	Backfill storage tanks at night from CWS.	Operations Branch Director
<input type="checkbox"/>	Consider recycled water from wastewater treatment plants for commercial companies to collect and distribute to customers for irrigation.	Operations Branch Director
<input type="checkbox"/>	Consider increasing the frequency of monitoring and testing of water quality.	Operations Branch Director
<input type="checkbox"/>	Measure & report water levels in each of the deep wells weekly.	Water Supply Group Supervisor
<input type="checkbox"/>	Monitor fluoride levels for potential public notification.	Water Supply Group Supervisor

\* See Table 13.5 of the MPW Emergency Management Plan for the ICS Positions referenced above.

# SC Drought and Water Shortage Tabletop Exercise September 2017 and July 2019 –SC Emergency Operations Center



Attendees



Organizations



SCEMD

# OBJECTIVES

1

Identify and understand the strengths and breaking points in the

- SC Drought Response Act
- SC Drought Regulations
- SC Emergency Response Plan (Appendix 10: Drought)
- Local drought plans and procedures

2

Improve awareness of local, state, and federal players in South Carolina's drought response

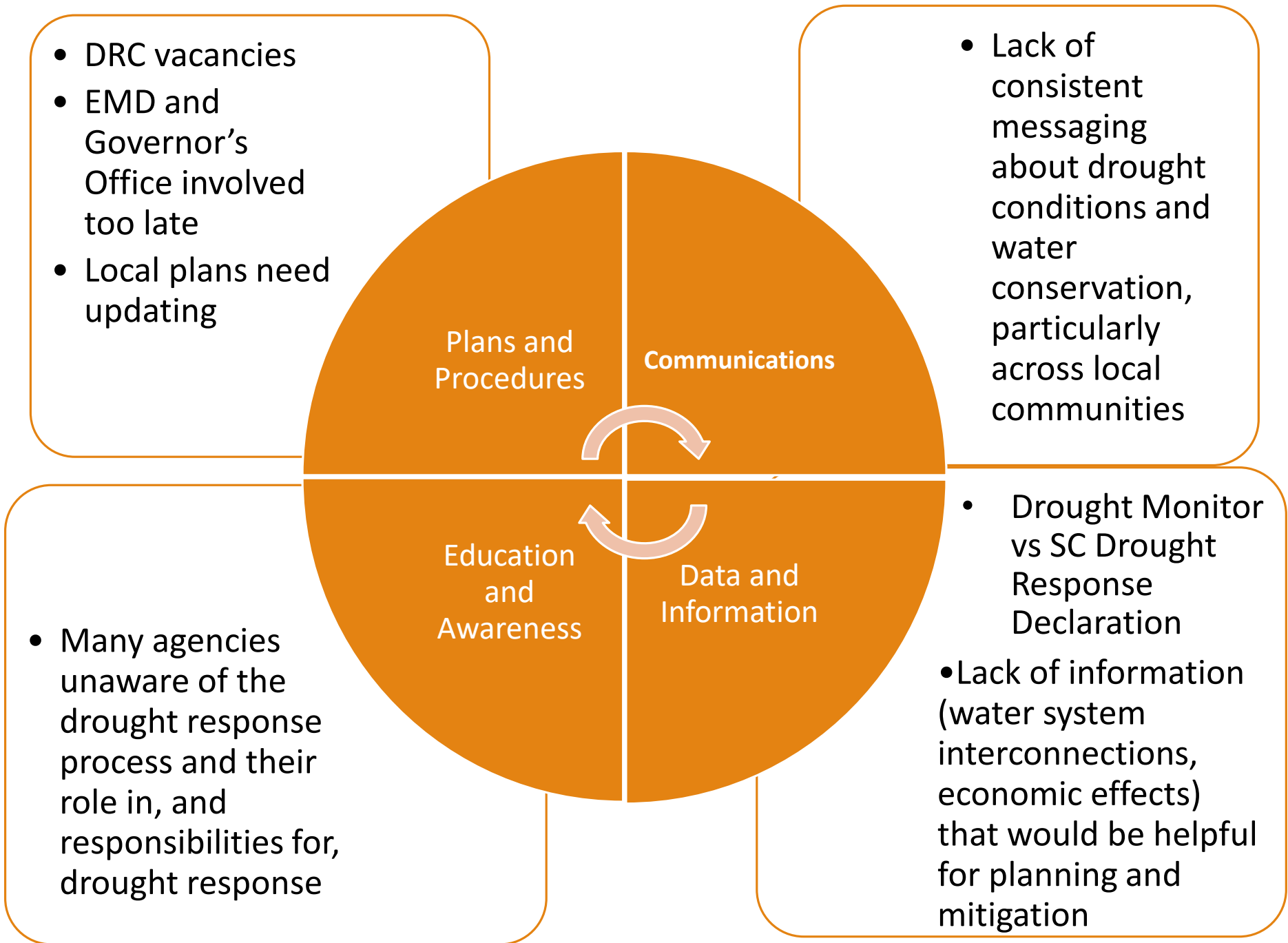
3

Identify key mission areas for each State Emergency Support Function (ESF)

4

Collect ideas and strategies for future exercises





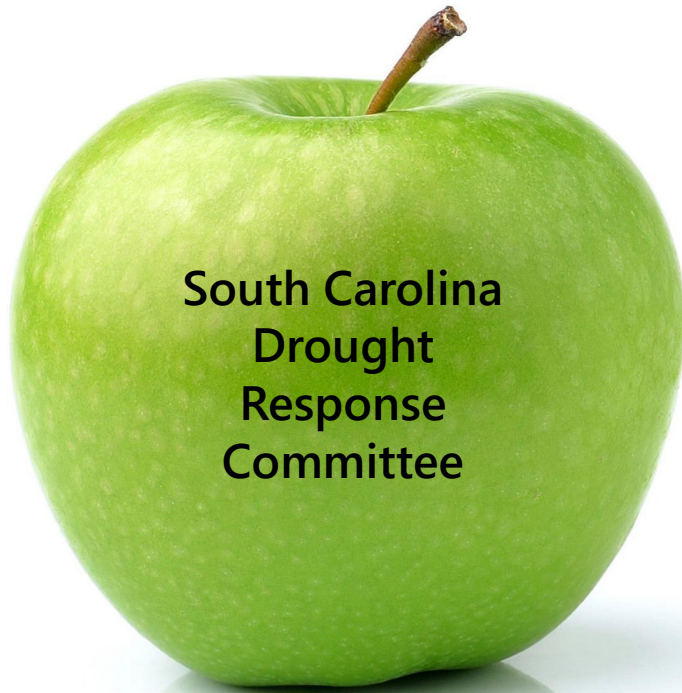


**South  
Carolina  
Drought  
Response  
Committee**



**United States  
Drought  
Monitor**

# APPLES TO APPLES COMPARISON



<http://www.scdrought.com/>

SC Department of Natural Resources, State Climatology Office and the SC Drought Response Committee (DRC)  
SC Drought Response Act (amended 2000); SC Drought Regulations (2001)

The SC DRC convenes when conditions warrant. Drought Management Area committees make county drought designations.

SC Regulations specify the indicators to be used to monitor conditions and the numeric values that correspond to each drought alert phase.

## Drought Alert Phases

- Incipient
- Moderate
- Severe
- Extreme

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

USDM authors work at NDMC, USDA, and NOAA. Authors take turns making the weekly map, which is based on drought indicators and input from contributions.

Contributors include:

- NOAA
- USDA
- Other federal agencies
- State agencies
- Universities

Authors use a “convergence of evidence” approach to review and synthesize a wide range of information. The website lists the various products that are used to develop the weekly map.

The Drought Classification table shows numeric values for selected indicators and how they relate to USDM drought categories.

Five classifications

- D0 = abnormally dry
- D1 = moderate
- D2 = severe
- D3 = extreme
- D4 = exceptional

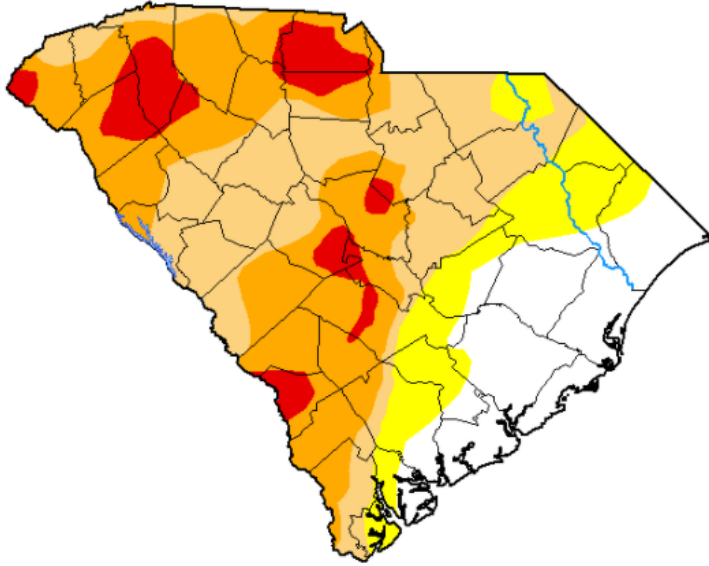
## APPLES TO APPLES COMPARISON



# U.S. Drought Monitor South Carolina

**October 15, 2019**  
(Released Thursday, Oct. 17, 2019)  
Valid 8 a.m. EDT

Drought Status: 10-17-2019



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	18.98	81.02	67.32	38.30	8.63	0.00
<b>Last Week</b> 10-08-2019	22.04	77.96	62.98	36.84	7.03	0.00
<b>3 Months Ago</b> 07-16-2019	56.62	43.38	3.47	0.00	0.00	0.00
<b>Start of Calendar Year</b> 01-01-2019	100.00	0.00	0.00	0.00	0.00	0.00
<b>Start of Water Year</b> 10-01-2019	22.06	77.94	48.67	20.47	1.77	0.00
<b>One Year Ago</b> 10-16-2018	81.29	18.71	2.05	0.00	0.00	0.00

Intensity:



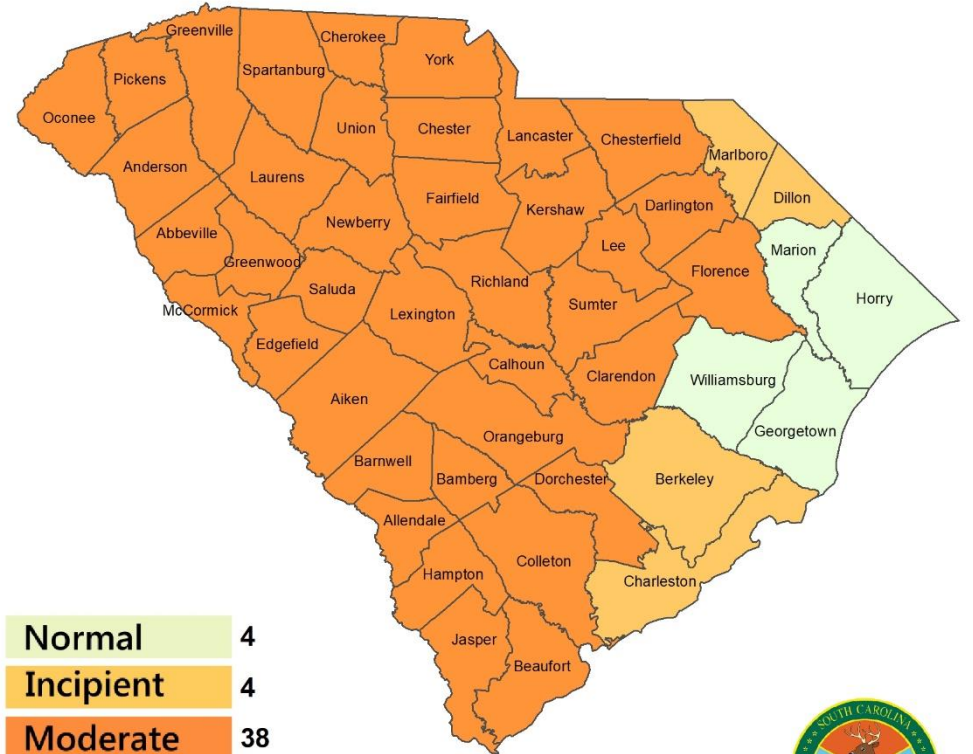
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Richard Heim  
NCEI/NOAA



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



Normal	4
Incipient	4
Moderate	38
Severe	0
Extreme	0

Number of counties in each category.



SC Department of Natural Resources  
State Climate Office

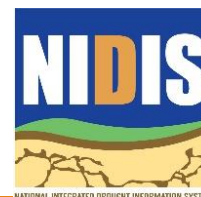
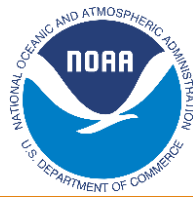
# U.S. Drought Monitor Workshop

## Forecasting, Monitoring and Responding to Drought in the SE

February 4 – 5, 2020 State Farmer's Market, Columbia, SC

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- Purpose of the workshop was to learn about and discuss:
  - The U.S. Drought Monitor
  - Drought Tools and Resources
  - USDA Programs and the Drought Monitor
  - Current conditions and seasonal forecasts
  - Ways to monitor and report precipitation data and drought impacts



# U.S. Drought Monitor SE Workshop



- Attended by 73 people, representing federal, state and local stakeholders across the region:

## FEDERAL AGENCIES

NASA, NDMC, NIDIS, NOAA, NWS, USDA, USDA, NRCS,  
USDA Forest Service, USDA FSA, USGS

## GEORGIA

GA EPD, GA DNR  
Georgia State Climate Office  
North Georgia Water Planning District  
University of Georgia  
Albany State University

## NORTH CAROLINA

North Carolina State Climate Office  
NC DWR, NC Forest Service , NCDEQ  
Wake Forest University  
North Carolina State University Extension

## SOUTH CAROLINA

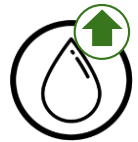
SCDA, SCDHEC, SCDNR, SCEMD  
Clemson Agriculture and Water Extension  
Mount Pleasant Water  
Laurens Cattlemen's Association  
SC Forestry Commission  
Duke Energy  
Orangeburg DPU  
Anderson Regional Water  
SC Farm Bureau  
CISA – University of South Carolina



# U.S. Drought Monitor Update for South Carolina

Assessment Period Ending September 22, 2020

This week's USDM authored by *Brad Rippey (USDA)*, with input from local, state, and federal partners based in South Carolina



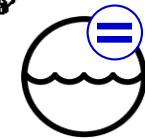
The entire state received at least 1" of rain, with much of the state receiving 3" or more.



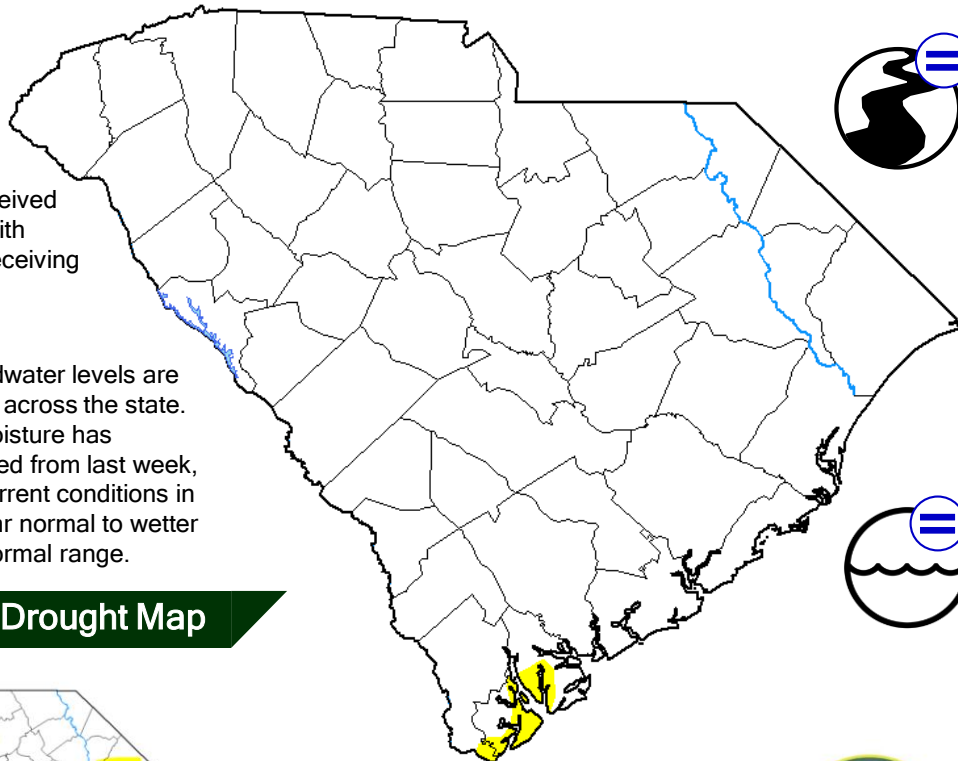
Groundwater levels are normal across the state. Soil moisture has improved from last week, with current conditions in the near normal to wetter than normal range.



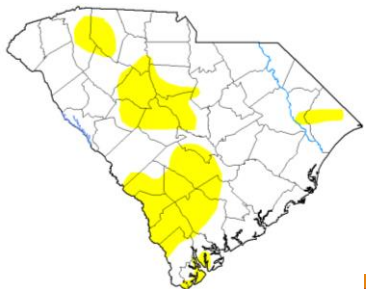
Stream levels in the state are in "no drought" conditions with all streams at normal or above normal flows for the last 7- and 14-day averages.



Reservoir levels across the state are all in good standing, with storage ranging from over to just under target water levels.



## Last Week's Drought Map



For questions, please contact Elliot Wickham ([wickhame@dnr.sc.gov](mailto:wickhame@dnr.sc.gov)), SC Water Resources Climatologist for the SC DNR



## Statewide Condition Summary

**What's Changed?** Reduction of most of the abnormally dry (D0) conditions in South Carolina this week, with much of the state returning to normal or wetter than normal conditions.

**What's New?** The remnants of Hurricane Sally pushed through South Carolina late last week, providing the whole state with at least 1" of rain, with localized amounts over 8". In conjunction with the rain, maximum temperatures across the state were 6 to 10 degrees below normal over the last week, helping to alleviate most of the dry conditions from last week.

**What's Next?** Up to two inches of rain is forecast across the state by Tuesday morning, with higher amounts outside of coastal Lowcountry areas. Maximum temperatures are projected to stay below normal. If the forecast holds, a further reduction of D0 areas in the Lowcountry is possible for next week's map.

## Statewide Coverage By Category

Category	Coverage This Week	Change Since Last Week
D0: Abnormally Dry	0.74%	- 23.93%
D1: Moderate Drought	0.00%	0.00%
D2: Severe Drought	0.00%	0.00%
D3: Extreme Drought	0.00%	0.00%
D4: Exceptional Drought	0.00%	0.00%

\* Minus sign on "Change Since Last Week" indicates reduction of D0 area.



# Infographic Information

## Condition Type:



Precipitation



Agriculture



Reservoirs



Natural vegetation, forests



Rivers and Streams



Fire Danger/Activity



Groundwater or Soil Moisture

## Condition Change:



Improvement



No change



A mixture of improving and worsening conditions



Worsening conditions

## Disclaimers:

1. The U.S. Drought Monitor (USDM) is just one indicator that the State of South Carolina uses to assess drought conditions within the state. The USDM focuses on broad-scale conditions, local conditions may vary.
2. The USDM weekly product is released on Thursday mornings, but the data cutoff for each map's assessment period is 8am on the prior Tuesday.
3. The South Carolina Drought Response Committee (DRC) has not at this time declared any portion of the State of South Carolina in any drought category (incipient, moderate, severe, or extreme). For more information please visit: [scdrought.com](http://scdrought.com)
4. Local, state, and federal partners communicate and collaborate to provide input to the USDM each week for the conditions for the State of South Carolina. These partners include, but are not limited to:
  - [Clemson Agriculture and Water Extension](http://ClemsonAgricultureandWaterExtension.com)
  - [South Carolina Department of Agricultural](http://SouthCarolinaDepartmentofAgricultural.com)
  - [South Carolina Climatology Office](http://SouthCarolinaClimatologyOffice.com)
  - [NOAA National Weather Service](http://NOAANationalWeatherService.com)

# SCDROUGHT.COM





# Home Page

- 5 Main Tabs:
  - Conditions
  - Resources
  - Impacts
  - Conditions
  - Planning

## Drought Resources

Learn about drought, drought types, ways to measure drought in a climatological context and how South Carolina monitors and assesses drought.



Pinnacle Mountain Fire in fall of 2016 resulted in a loss of 10,623 acres. Image Credit: U.S. Army National Guard Staff Sgt. Roberto Di Giovine via Flickr CC BY 2.0

## Drought Impacts

Drought impacts spread to all water-sensitive sectors. Learn more about how droughts can affect communities and ecosystems and what can be done to reduce these impacts.



Low lake levels impact energy production, recreation, and wildlife. Image Credit: Mike Burton via Flickr CC BY-ND 2.0

## Drought Response Committee

The SC Drought Response Committee issues drought status updates and may recommend water use restrictions when conditions escalate to severe or extreme drought.



The SC Drought Response Committee's role is to ensure safety and well-being of South Carolinians during drought conditions. Image Credit: Janet Tarbox via

## Legislation and Plans

South Carolina's drought response encompasses multiple documents, legislation, and plans. Learn more about the State's drought response program and procedures to manage drought.



South Carolina Drought and Water Shortage Tabletop Exercise at the South Carolina Emergency Center on September 27, 2017, in West Columbia, SC.

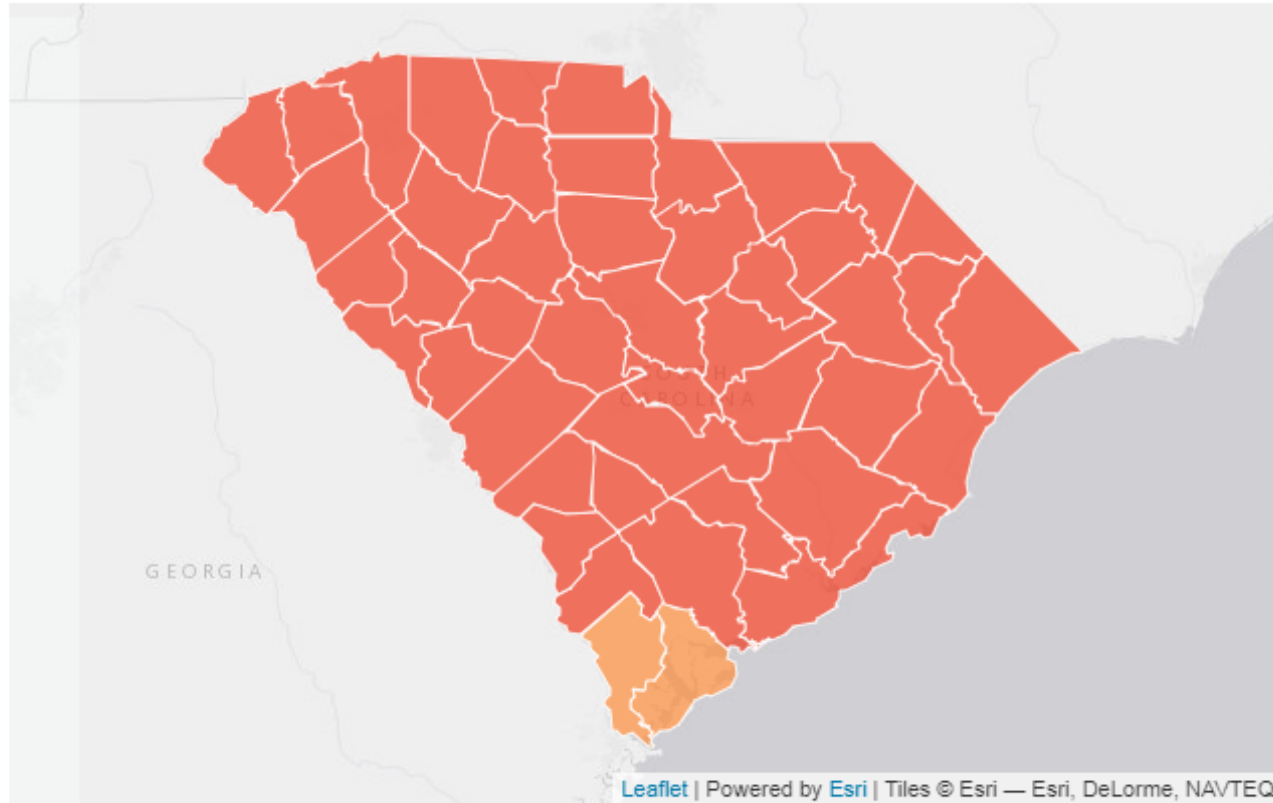


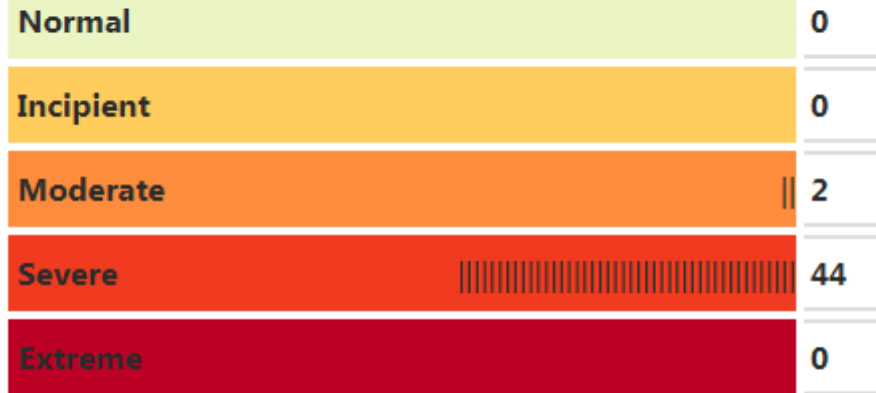
Table View

Save Map as Image

[Drought Status Report](#)

## Archived Status: 09-05-2007

Last Drought Response Meeting: 05-29-2018



Number of Counties in Each Category

## Archived Drought Status



09-05-2007





# SC Drought Resources

- Learn about drought
- Water Conservation Tips and infographics
- Drought Photos from the 2007, 2008, and 2011 droughts
- Publications from both the SC SCO and Carolinas Integrated Sciences and Assessments (CISA)
- Other resources from CISA, National Drought Monitoring Center (NDMC), National Integrated Drought Information System (NIDIS), and National Centers for Environmental Information (NCEI)

## Learn about drought!

What is drought? How do we know when South Carolina is in drought? How does South Carolina Drought Response and Management work? Find the answers to these questions and many more with the resources below.

- [Drought 101](#)

Drought response and management in the South Carolina is directed by State law.

- [South Carolina Drought Response Act](#)
- [South Carolina Drought Regulations](#)
- [South Carolina Model Drought Management Plan and Ordinance](#)

## Water Conservation

Good water conservation habits are essential for drought preparation and response. Find out what you can do at home to conserve water. These PDF flyers can be printed and shared... spread the word!

- [Water Conservations Tips](#)
- [How much water can you save?](#)

## Drought Photo Gallery

Photos from past droughts are important for remembering the impact that drought conditions can have in South Carolina. They help us to compare droughts events over the years.

- [Drought Photos](#)

## Publications

Find research, publications, and reports related to drought in South Carolina.

- [Research, Publications, and Storm Reports from the South Carolina State Climate Office \(SCO\)](#)
- [Carolinas Integrated Sciences and Assessments \(CISA\) Library](#)

## Other Resources

Carolinas Integrated Sciences and Assessments (CISA)

- [Drought Planning and Preparedness](#)
- [CISA Outreach Videos and Interviews](#)
- [Atlas of Hydroclimate Extremes](#)

National Drought Resources

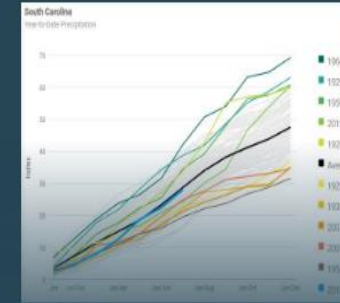
- [National Drought Monitoring Center](#)
- [National Integrated Drought Information System \(NIDIS\)](#)
- [National Centers for Environmental Information \(NCEI\)](#)

# Historical Drought Impacts Timeline

- Highlights some of the major droughts and impacts that South Carolina has experienced in the past 100 years.
- Links to CISA’s detailed hydroclimate webpage, “Carolinas Precipitation Patterns and Probabilities: An Atlas of Hydroclimate Extremes”

## 1930-1935 *Agriculture*

This prolonged drought diminished soil moisture for several ongoing years. The lack of soil moisture led to decreased crop germination and increased agricultural losses. 1931 and 1933 were record drought years, with the recurrence interval for a returning drought of the same intensity at more than 25 years.



[Read More](#)

## 1925-1927 *Agriculture, Water Systems, Business & Industry*

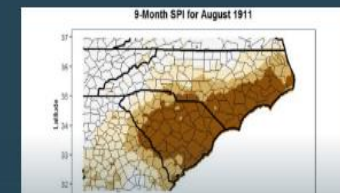
1925 was the most intense drought year on record at the time, with a rainfall deficiency of 18.23 inches. The average annual rainfall for the year 1925 was 36.73 inches, 3.3 inches lower than the previous record from 1911. Every sector from the state was impacted — agriculture struggled, hydroelectric power was limited, and these limits impacted the textile mills and other industry.



[Read More](#)

## 1910-1911 *Water Systems*

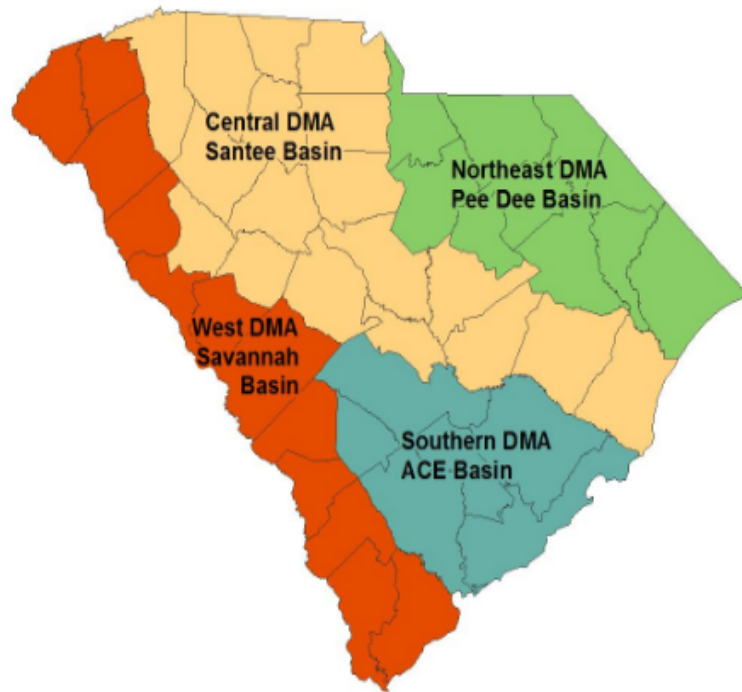
Drought conditions prevailed in South Carolina from November 1910 – August 1911. May 1911 presented the most intense drought month during this period. Five stations in the extreme southeastern portion of the state had no appreciable rainfall and, at the time, it was the





# South Carolina Drought Response Committee

The SC Drought Response Committee consists of state and local members and governs drought related issues and response in South Carolina. Local members are organized according to Drought Management Areas. The DRC is chaired and supported by the South Carolina Department of Natural Resources and the SC State Climatology Office. The DRC monitors climatic conditions, evaluates drought indicators, and consults with stakeholders to issue drought status updates. During severe or extreme drought, the DRC determines nonessential water use and issues declaration for water curtailment.



## Drought Management Areas

- [West Drought Management Area](#)
- [Central Drought Management Area](#)
- [Northeast Drought Management Area](#)
- [Southern Drought Management Area](#)

## Statewide Members

[State Agency Members](#)

To learn more about how the committee visit the [South Carolina Drought 101 pag](#)

## State Agency Members

Committee Member	Agency
Mr. Ken Rentiers	SCDNR, LWC Division
<b>Megan Wood</b>	SC Emergency Management Division
Mr. Rob Devlin	SCDHEC
Mr. Darryl Jones	SC Forestry Commission
<b>Ginny Gohagan</b>	SC Department of Agriculture

## Northeast Drought Management Area

Counties: Kershaw, Lancaster, Lee, Chesterfield, Darlington, Dillon, Marlboro, Florence, Marion, Horry

Group	Committee Member	County
Agriculture	Caleb Miller	Dillon
Commission of Public Works	Vacant	
Counties	Vacant	
Domestic User	Patricia E. "Trish" DeHond - Appointment Pending	Darlington
Industry	Athena Strickland - Appointment Pending	Marlboro
Regional Council of Gov.	Vacant	
Municipalities	Clint Elliot - Appointment Pending	Horry
Power Generation Facilities	Vacant	
Private Water Supplier	Robert L. Brock	Marlboro
Public Service District	Elbert Warren	Darlington
Soil & Water Conservation Dist.	Vacant	
Special Purpose District	Michael E. Hancock	Kershaw

## Central Drought Management Area

Counties: Greenville, Spartanburg, Cherokee, York, Laurens, Union, Chester, Greenwood, Saluda, New Clarendon, Williamsburg, Georgetown

Group	Committee Member	County
Agriculture	Vacant	
Commission of Public Works	John W. Westcott *Approved by Senate 5/06	Spartanburg
Counties	Vacant	
Domestic User	Vacant	
Industry	Vacant	
Municipalities	James G. Bagley *Appointed 8/16/10	York
Power Generation Facilities	Alan Stuart - Appointment Pending	York
Private Water Supplier	Brad C. Powers *Approved by Senate 5/2007	Spartanburg
Public Service District	Vacant	
Regional Council of Gov.	Gregory Sprouse - Appointment Pending	Richland
Soil and Water Conservation District	John T. Rivers *Approved by Senate 3/08	Sumter
Special Purpose District	Mike Caston *Approved by Senate 5/06	Saluda



## West Drought Management Area

Counties: Oconee, Pickens, Anderson, Abbeville, McCormick, Edgefield, Aiken, Barnwell, Allendale, Hamp

Group	Committee Member	County
Agriculture	Reg Williams *Approved by Senate 6/6/02	Edgefield
Commission of Public Works	Vacant	
Counties	Vacant	
Domestic User	Pickens Williams - Appointment Pending	Barnwell
Industry	David Evans - Appointment Pending	Pickens
Municipalities	Vacant	
Power Generation Facilities	Preston Pierce - Appointment Pending	Oconee
Private Water Supplier	J. Scott Willett	Anderson
Public Service District	Chris Rasco - Appointment Pending	Anderson
Regional Council of Governments	Vacant	
Soil & Water Conservation Dist.	Yvonne Kling - Appointment Pending	Aiken
Special Purpose District	Ed Saxon - Appointment Pending	Beaufort

## Southern Drought Management Area

Counties: Orangeburg, Bamberg, Colleton, Dorchester, Berkeley, Charleston

Group	Committee Member	County
Agriculture	James Traywick	Orangeburg
Commission of Public Works	Andrew Fair	Charleston
Counties	Vacant	
Domestic User	Chris Bickley - Appointment Pending	Colleton
Industry	Vacant	
Municipalities	Eric Odom	Orangeburg
Power Generation Facilities	Vacant	
Private Water Supplier	Vacant	
Public Service District	Vacant	
Regional Council of Gov.	Ronald E. Mitchum	Charleston
Soil & Water Conservation Dist.	Marion L. Rizer	Colleton
Special Purpose District	Vacant	

# South Carolina Drought Planning

The South Carolina Drought Response Program consists of legislation, regulations, and procedures that establish recommended and required response at moderate, severe, and extreme drought alert phases. The [South Carolina Drought Response Act](#) and the [supporting regulations](#) formally establish and describe the responsibilities of the [South Carolina Drought Response Committee \(DRC\)](#), the major drought decision-making entity in the State. The DRC is composed of statewide and local members, and state agency members include:

- Emergency Management Division
- Department of Health and Environmental Control
- Department of Agriculture
- The Forestry Commission
- Department of Natural Resources

■ [Watch an interview](#) with South Carolina State Climatologist Hope Mizzell. Dr. Mizzell discusses the State Climate Office's role in administration of the South Carolina Drought Response Act.

The Drought Response Act requires all public water suppliers to develop and implement local drought plans and ordinances. *The Drought Regulations recognize that local governments have primary responsibility for alleviating drought impacts and encourage cooperation among neighboring water systems.* DNR created a [sample drought plan](#) and ordinance for local governments and water systems to use in developing their own documents.

You can search for and view approved water system drought plans and ordinances through the [Drought Management Plan and Response Ordinance Inventory](#).

The [South Carolina Drought Response Plan](#) is located in Appendix 10 of the State's Emergency Operations Plan (EOP). The Drought Response Plan describes actions when drought conditions have reached a level of severity beyond the scope of the DRC and local communities. The South Carolina Emergency Management Division (EMD) maintains the EOP and leads multi-agency response to hazard events. Upon an activation of the EOP, EMD and the State Emergency Response Team (SERT) assemble in the South Carolina Emergency Operations Center to coordinate the State's response.



SC State Climatologist, Dr. Hope Mizzell, and SC Emergency Management Division Dam Safety Coordinator, Marshall Sykes, walk attendees through a series of intensifying drought scenarios at South Carolina's first Drought and Water Shortage Tabletop Exercise in September 2017. Photo courtesy of CISA



Lake Jocassee (photograph courtesy of Mr. Doug Young)



MEMORIAL BRIDGE (Photo courtesy of Mr. Doug Young)



dry Pond in Dorchester County, 11-07



Eutaw Springs - Feb. 2008



Lake Hartwell (photograph courtesy of Mr. Doug Young)



Deep Hole Swamp, Florence County, August 2008