



Colorado Drought

High School Hazard Lesson

Setting the Stage



Soybeans show the effect of drought. Photo Credit: Bob Nichols, USDA

Driving Questions:

What environmental factors contribute to drought?

How do scientists expect drought frequency and severity to change in the future?

What You Will Be Doing:

- Analyze environmental data to classify patterns of drought severity in Colorado.
- Communicate information about the causes and effects of drought in your community.

Part 1: What do you know about drought?

KWL Chart	
What I Know	
What I Wonder	
What I Learned (Activity 3)	

What do you know about drought?

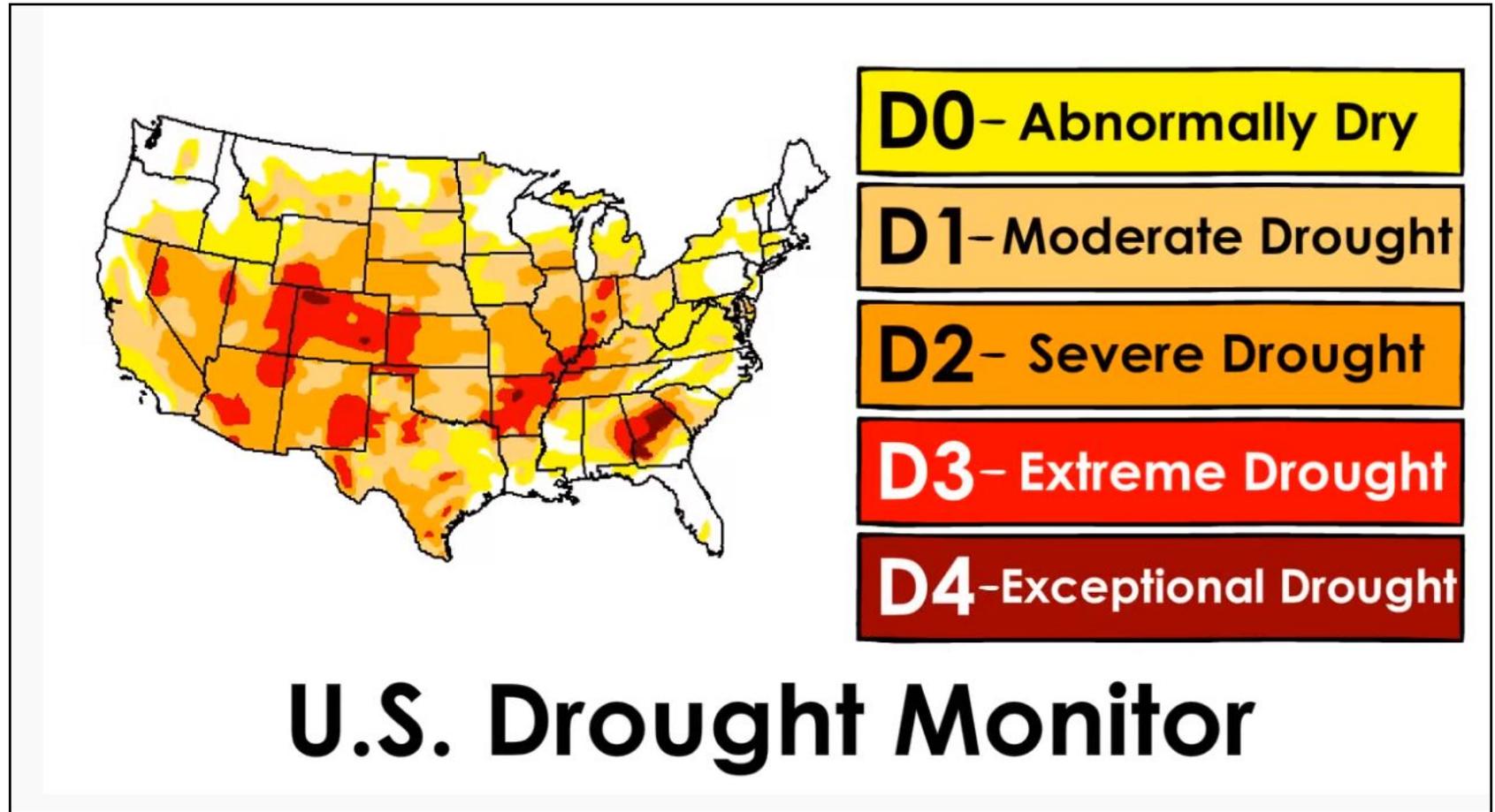


Watch: [Drought conditions similar to 2012-13](#)

What do you know about drought?

KWL Chart	
What I K now	
What I W onder	
What I L earned (Activity 3)	

Part 2: How is drought measured?



Watch: [Assessing Drought in the United States](#)

How is drought measured?

United States Drought Monitor | Login

Current Map Maps Data Summary About Conditions & Outlooks En Español NADM

Drought Classification

About > About The Data > Drought Classification

Category	Description	Possible Impacts	Ranges				Objective Drought Indicator Blends (Percentiles)
			Palmer Drought Severity Index (PDSI)	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	
D0	Abnormally Dry	Going into drought: <ul style="list-style-type: none"> short-term dryness slowing planting, growth of crops or pastures Coming out of drought: <ul style="list-style-type: none"> some lingering water deficits pastures or crops not fully recovered 	-1.0 to -1.9	21 to 30	21 to 30	-0.5 to -0.7	21 to 30
D1	Moderate Drought	<ul style="list-style-type: none"> Some damage to crops, pastures Streams, reservoirs, or wells low, some water shortages developing or imminent Voluntary water-use restrictions requested 	-2.0 to -2.9	11 to 20	11 to 20	-0.8 to -1.2	11 to 20
D2	Severe Drought	<ul style="list-style-type: none"> Crop or pasture losses likely Water shortages common Water restrictions imposed 	-3.0 to -3.9	6 to 10	6 to 10	-1.3 to -1.5	6 to 10
D3	Extreme Drought	<ul style="list-style-type: none"> Major crop/pasture losses Widespread water shortages or restrictions 	-4.0 to -4.9	3 to 5	3 to 5	-1.6 to -1.9	3 to 5
D4	Exceptional Drought	<ul style="list-style-type: none"> Exceptional and widespread crop/pasture losses Shortages of water in reservoirs, streams, and wells creating water emergencies 	-5.0 or less	0 to 2	0 to 2	-2.0 or less	0 to 2

Explore the [US Drought Monitor Drought Classification table](https://cires.colorado.edu/outreach/)

Part 3: Based on the evidence, which drought severity classification should Colorado receive in April 2013?

Drought Classification Table Page 1

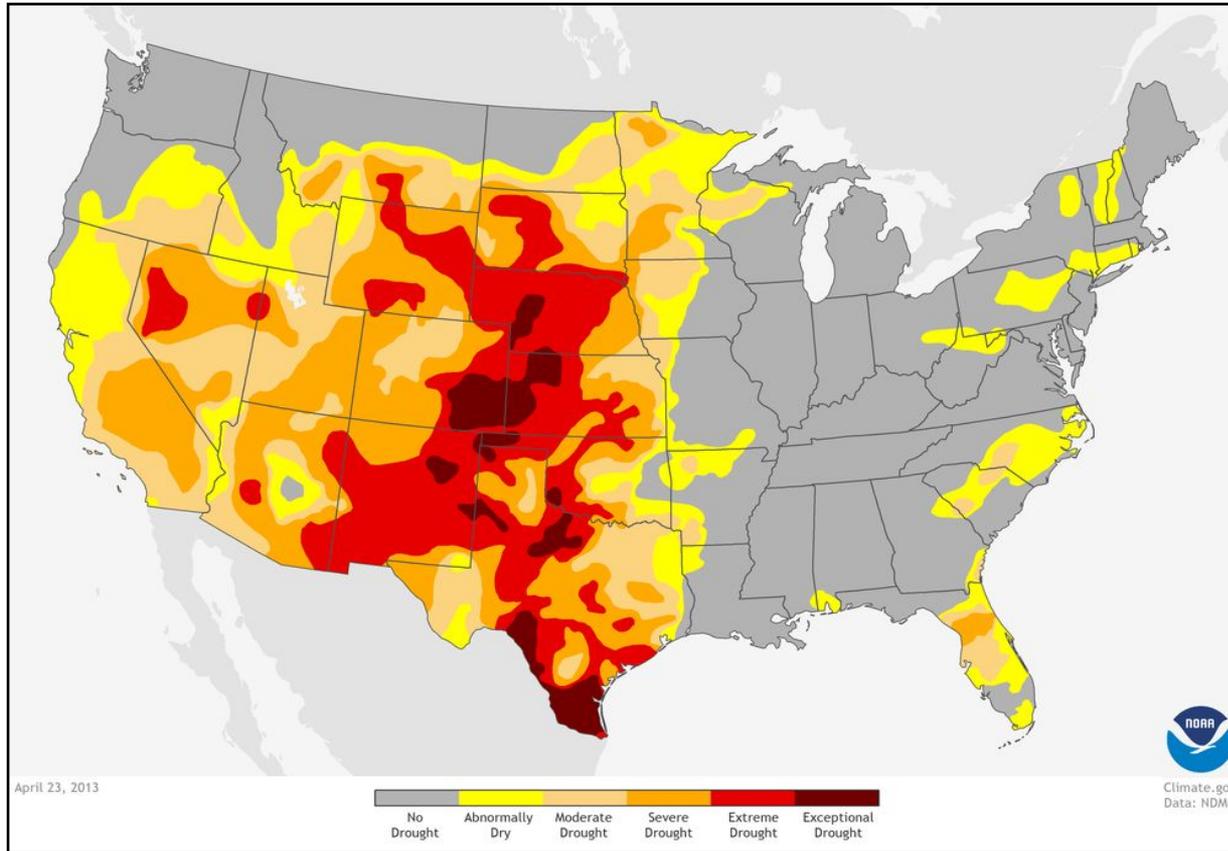
Category	Description (Drought Severity)	Possible Impacts	Ranges			
			Group 1: Palmer Drought Severity Index (PDSI)	Group 1: Standardized Precipitation Index (SPI)	Group 2: USDA Soil Moisture (8 in.)	Group 2: USDA Soil Moisture (20 in.)
D0	Abnormally Dry	Going into drought: <ul style="list-style-type: none"> Short-term dryness slowing planting, growth of crops or pastures Coming out of drought: <ul style="list-style-type: none"> Some lingering water deficits Pastures or crops not fully recovered 	-1.0 to -1.9	-0.5 to -0.7	21 to 30	21 to 30
D1	Moderate Drought	<ul style="list-style-type: none"> Some damage to crops, pastures Streams, reservoirs, or wells low, some water shortages developing or imminent. Voluntary water-use restrictions requested 	-2.0 to -2.9	-0.8 to -1.2	11 to 20	11 to 20
D2	Severe Drought	<ul style="list-style-type: none"> Crop or pasture losses likely Water shortages common Water restrictions imposed 	-3.0 to -3.9	-1.3 to -1.5	6 to 10	6 to 10
D3	Extreme Drought	<ul style="list-style-type: none"> Major crop/pasture losses Widespread water shortages or restrictions 	-4.0 to -4.9	-1.6 to -1.9	3 to 5	3 to 5
D4	Exceptional Drought	<ul style="list-style-type: none"> Exceptional and widespread crop/pasture losses Shortages of water in reservoirs, streams, and wells creating water emergencies. 	-5.0 or less	-2.0 or less	0 to 2	0 to 2

Based on the evidence, which drought severity classification should Colorado receive in April 2013?

Drought Classification Table Page 2

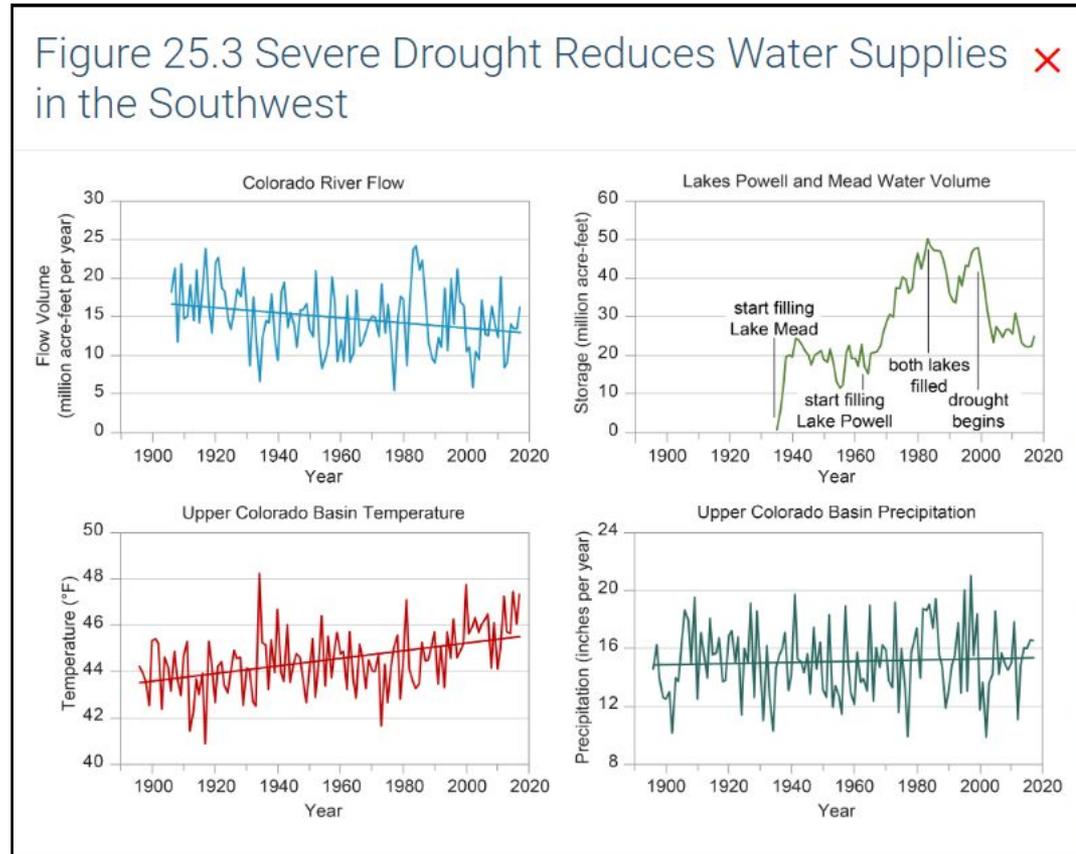
Drought Classification Table Page 2			Ranges			
Category	Description (Drought Severity)	Group 4: Reported Impacts	Group 3: USGS Hydrologic Unit Runoff	Group 3: NRCS Peak Snow Water Equivalent (SWE)	Group 3: NRCS Reservoir Storage	Group 4: Vegetation Drought Response Index (VegDRI)
D0	Abnormally Dry		25 - 75	50 - 62.5	>100%	Pre-Drought Stress
D1	Moderate Drought		10 - 24	37.5 - 50	75 - 100%	Moderate Drought
D2	Severe Drought		10 - 24	25 - 37.5	50 - 75%	Severe Drought
D3	Extreme Drought		<10	12 - 25	25 - 50%	Extreme Drought
D4	Exceptional Drought		Lowest	0 - 12.5	<25%	Extreme Drought

Based on the evidence, which drought severity classification should Colorado receive in April 2013?



April 23, 2013 Source: [NOAA US Drought Monitor Data Snapshots](https://climate.gov/drought)

Part 4: How do scientists expect the frequency and severity of Colorado's droughts to change in the future?



[Figure 25.3: Severe Drought Reduces Water Supplies in the Southwest](#)

How do scientists expect the frequency and severity of Colorado's droughts to change in the future?

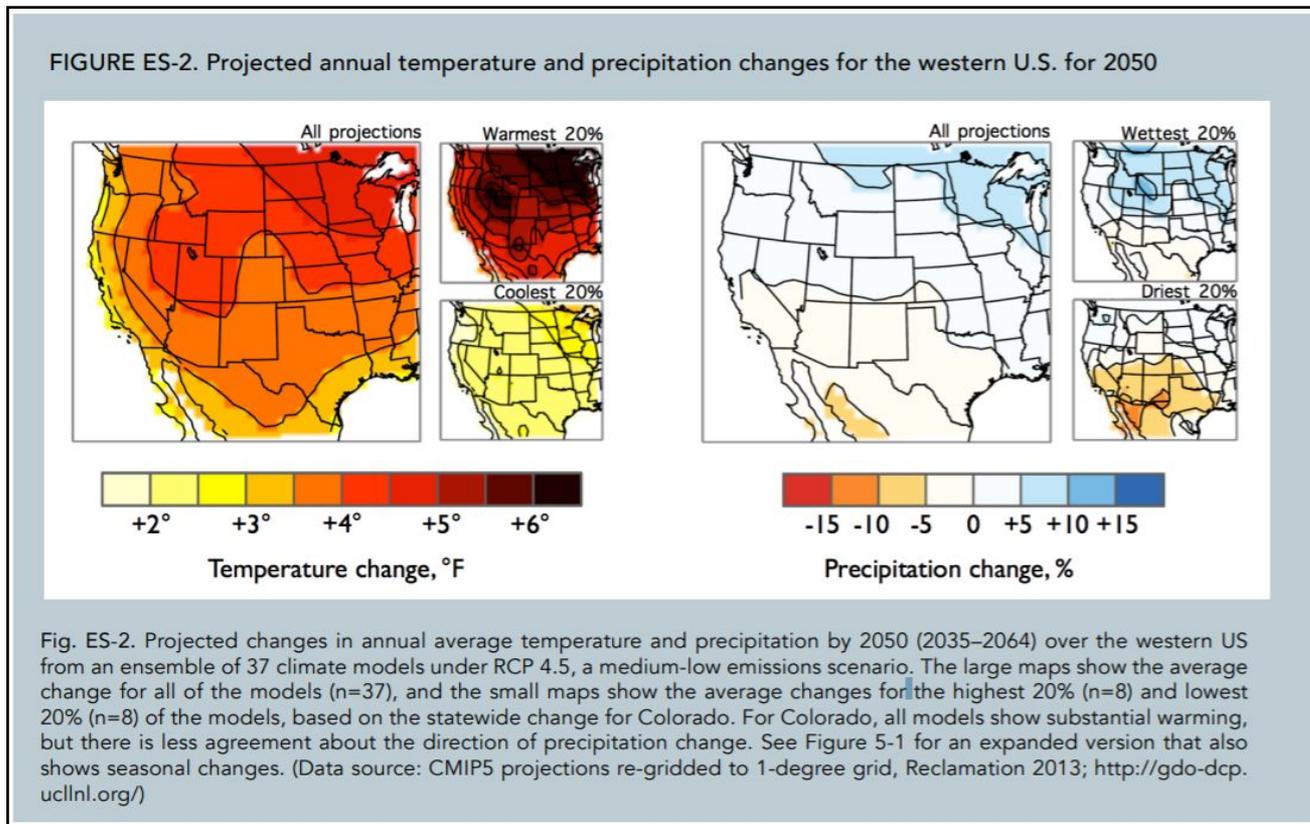


Figure ES-2 (page 3) from the [Climate Change in Colorado Executive Summary](#) report

Based on current data, what kind of drought conditions do we expect in the near future?

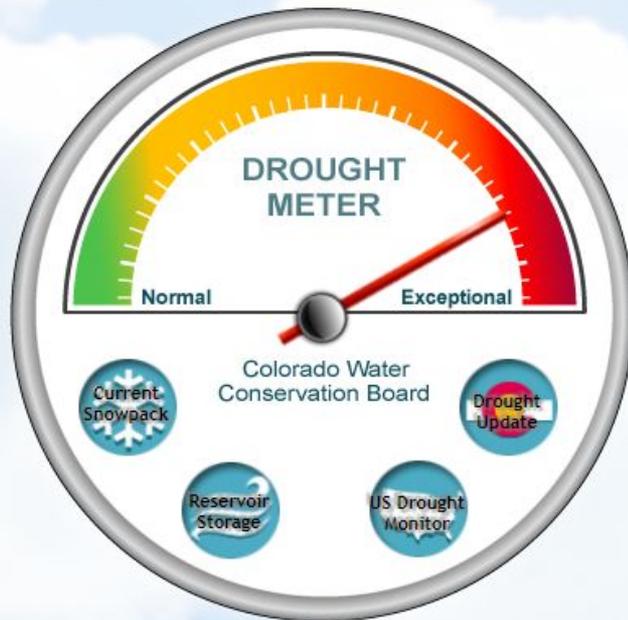
Based on current data, what kind of drought conditions do we expect in the near future? Write a letter to the editor that explains current drought conditions in your community. To find current drought conditions, use the data sources from Activity 2.2 and [Colorado's Drought Response tool](#).

Your letter should include:

- Address the letter “Dear Editor,”
- The first sentence should introduce the topic, and explain why readers should be concerned about drought
- What conditions lead to drought
- An explanation of the current drought conditions (include data on current snowpack levels, reservoir storage, and drought intensity)

Based on current data, what kind of drought conditions do we expect in the near future?

Colorado's Drought Response



On June 22, 2020, Governor Jared Polis activated Colorado's Drought Task Force and Phase 2 of the State Drought Mitigation and Response Plan to respond to deepening drought conditions across the state. 'Phase 2' indicates officially directing the Drought Task Force to assess initial damages and impacts of drought in areas experiencing severe or extreme drought and to recommend mitigation measures. This Phase also activates the Agricultural Impact Task Force, which will conduct an initial assessment on physical and economic impacts and recommend opportunities for incident mitigation.

To stay informed on Colorado drought issues, [sign up](#) for the State's Drought Updates or visit the Colorado Water

[Read More](#)

Tweets by @CO_H2O

Colorado Drought Retweeted

Colorado Department of Agriculture

[Colorado's Drought Response Tool](#)