



Megafires: Changes in Colorado Wildfire

Driving Questions:

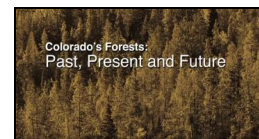
- What are the main causes and impacts of wildfires?
- When and where are wildfires most likely to occur in Colorado?
- What actions should people take before, during, and after a wildfire?

Word Bank	
Natural Hazards	naturally occurring phenomena such as flood, wildfire, extreme heat, or drought, which may disrupt or damage a community
Wildfire	a widespread and destructive fire in a wilderness or rural area
Fuel load	the total amount of combustible (burnable) material in a defined space
Ignition	the starting of a fire
Anthropogenic	the influence of human beings on nature
WUI	an acronym for the Wildland-Urban Interface, the area where forests and human development overlap
Emissions	products such as gases, that are released into the atmosphere (e.g., smoke from a fire)

Activity 1 : Why are wildfires a risk in Colorado?

1. In one minute, jot down as much information as you know about wildfires in the “What I Know” section of the KWL Chart on page 2.

Watch [Colorado’s Forests: Past, Present and Future](#), a documentary about wildfire in the state, to get a feel for the impacts of wildfire on people and the environment.



2. Write down your observations and questions about wildfire as a natural hazard in the “What I Wonder” section of the KWL Chart.





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





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Activity 2: Wildfire Data Analysis Stations

Station 1: Colorado Wildfire Fast Facts

Read highlights from the [Colorado Planning for Hazards—Wildfire](#) webpage (first three sections only).



3. What are the main causes of wildfires?

4. What are the greatest risks that wildfires pose in Colorado?

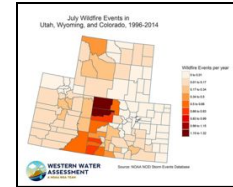




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Station 2: Location and Frequency of Wildfires in Colorado

Explore the Monthly Maps of Significant Weather Events "[Wildfire](#)" series to assess the frequency and location of wildfires in the state.



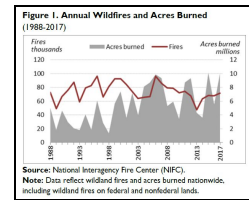
5. In Colorado, when does wildfire mainly occur (months/seasons)?
6. Do wildfires occur year-round in Colorado? Describe the seasonal pattern of wildfires in the state.
7. During times of high wildfire activity, where do wildfires mainly occur (geographic area/counties) in Colorado?





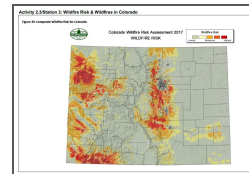
Station 3: Wildfire Trends

Identify patterns and trends in [Figure 1: Annual Wildfires and Acres Burned](#) graph and the [Wildfire Risk map](#) and [Wildfires in Colorado map](#).



8. What data does the graph illustrate?
9. What is the independent variable and its units? What are the dependent variables and their units?
10. Describe the trend for acres burned in relation to the number of fires over time?

11. Look at the Map of Wildfire Risk in Colorado. Describe the pattern of areas that have higher and lower wildfire risk throughout Colorado.



12. Focus on south Denver Metro and Colorado Springs areas, which have high populations and are located in the [Wildland-Urban Interface](#) (WUI). What do you observe about the number, location, and severity of wildfires in these areas?



Station 4: Causes of Wildfires

Compare and contrast the [Lightning-caused Fires](#) and [Human-caused Fires](#) infographics.

13. Compare and contrast lightning-caused fires vs. human-caused fires. Describe the patterns in the data.



14. How does the Rocky Mountain region compare for lightning- and human-caused wildfires?





Station 5: Wildfire History & Behavior

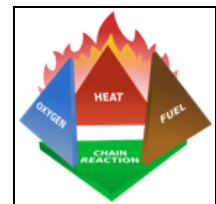
Review the [Wildfire Infographic](#) and the [Fire Triangle & Fire Tetrahedron](#) images.

15. Describe what the infographic illustrates about wildfires.



16. Summarize the main factors that contribute to wildfires.

17. Describe the relationship between the different factors in the “fire triangle” and the “fire tetrahedron.”

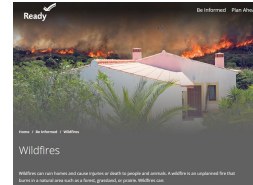




Station 6: Wildfire Safety

Read the [Wildfires Ready.gov](https://www.ready.gov/wildfires) webpage and the National Weather Service [Wildfire Safety](https://www.weather.gov/wildfiresafety) plan. Make sure to click on all tabs in the Wildfire Safety plan website.

18. What are the main impacts of wildfire?



19. What is a “Fire Weather Watch” and what should you do in response to it? What is a “Red Flag Warning” and what should you do in response to it?



20. If you live in an area at risk of wildfires, what should you and your family do to prepare? In the event of a wildfire warning, what should you do to protect yourself and others with you?



Activity 3: How can communities know about and manage their wildfire risk in Colorado?

Activity 3.1 Wildfire Expert Interview

First, watch the short film with Dr. Megan Cattau, wildfire expert with Earth Lab at the University of Colorado Boulder. Megan talks about many of the concepts that you learned in the previous activities and that you will present in this activity:



[Wildfire Expert video](#)

Activity 3.2 Wildfire Virtual Diary

Next, watch the virtual diary on how people and communities prepared for, responded to, and rebounded from the devastating Waldo Canyon Fire. Feel free to use video or press coverage from a local wildfire in place of Waldo Canyon Fire information if available.

- [Evacuating the Waldo Canyon Fire](#) (3:42)
- [The Waldo Canyon fire: Remembering it five years later](#) (1:51)
- [The Waldo Canyon fire, five years later: Colorado Springs rebuilds](#) (1:14)
- [The Waldo Canyon fire, five years later: Restoring the fire ravaged land](#) (2:16)



The 2012 Waldo Canyon Fire heading towards Colorado Springs. It is the most expensive wildfire in Colorado's history to date; 346 homes burned and two lives were lost. (Photo: <https://commons.wikimedia.org/wiki/File:Waldocanyon.jpg>)



The 2013 Black Canyon Fire surpassed the Waldo Canyon Fire, with two deaths and at least 509 homes destroyed, making it the most destructive wildfire so far in Colorado. (Photo: U.S. Army)



Activity 3.3 Local Wildfire News Story (35 min)

Prompt: Create a local news story in a format of your choice (see options below), that summarizes important information about for people in your community to be “firewise” before, during, and after a wildfire.

The format choices for the local wildfire news story include:

- Newspaper article with one picture and one graph or map (one page)
- Radio story (2-3 minutes in length)
- Video newscast (2-3 minutes in length)

Follow the steps in the table below to create your news story. Be creative, but accurate.

In addition to using your student handout, check out some of these additional resources:

- The National Fire Protection Association (NFPA) leads the [Firewise USA program](#). Their motto is “residents reducing wildfire risk.” Check out their [wildfire preparedness tips](#) and [preparing homes for wildfire](#) for more information as you develop your news story.
- In Colorado, the Colorado State Forest Service (CSFS) and NFPA implement the Colorado Firewise USA program, which teaches people how to adapt to living with wildfire in Colorado and encourages neighbors to work together and take action now to prevent losses. Check out the CSFS’s [Are You FireWise?](#) guide for more information as you develop your news story.





Local Wildfire News Story Instructions	
<p>1) KWL Chart “What I Learned” (see page 2)</p> <p><input type="checkbox"/> Check when completed</p>	<p>As a group, reflect on what was learned in Activities 1, 2, and 3. Then independently complete the “What I Learned” section of your KWL Chart (see page 2 of the student handout) to summarize your learning. Use these prompts to reflect on what you learned:</p> <ul style="list-style-type: none"> • What important things do you now know about wildfires that you didn’t know before? • What should people do to be “firewise” before, during, and after a wildfire?
<p>2) Choose a Format</p> <p><input type="checkbox"/> Check when completed</p>	<p>As a team, choose one of the following formats for your group’s news story:</p> <ul style="list-style-type: none"> • Newspaper article with one picture and one graph or map (one page) • Radio story (2-3 minutes in length) • Video newscast (2-3 minutes in length)
<p>3) Create a Draft</p> <p><input type="checkbox"/> Check when completed</p>	<p>Referring to notes and responses in your student handout, make a quick draft of your group’s product ideas. Your team’s product should summarize and share information about:</p> <ul style="list-style-type: none"> ● Causes and impacts of wildfires in Colorado ● Locations and times of higher wildfire risk in Colorado ● How to prepare for a wildfire ● How to respond and stay safe during a wildfire ● Describe how people and communities rebound from wildfire
<p>4) Create the Final Product</p> <p><input type="checkbox"/> Check when completed</p>	<p>Create your team’s Local Wildfire News Story. Remember to keep your product brief and summarize these key elements for your community audience:</p> <ul style="list-style-type: none"> • What are the causes and impacts of wildfires in Colorado? • Which regions and times of the year have higher wildfire risk in Colorado? • How can people prepare for a wildfire? • How should people respond to stay safe during a wildfire? • What are some ways that people and communities have rebounded after a wildfire?
<p>Lesson Rubric</p>	<p>Refer to the rubric to understand expectations for your final product.</p>

