



**Fourmile Canyon
Fire Findings
July 2012**

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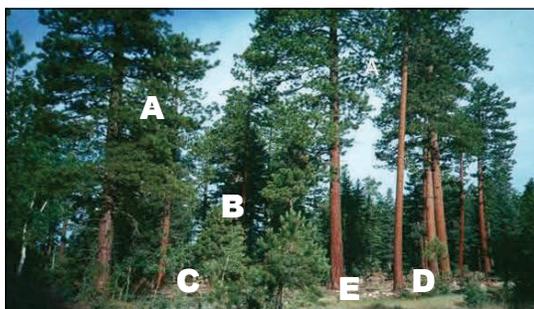
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Questions and Answers

- Q What was learned from this study about wildfires on the Front Range?**
- A Wildfires are a common occurrence on the Front Range Mountains of Colorado. The average fire return interval in low elevation ponderosa pine (*Pinus ponderosa*) forests in the northern Colorado Front Range varies from 8 to 18 years. Based on research over the past 40 years, a wildfire burns structures somewhere in the Colorado Front Range on an average of every two years.
- Q Is there anything in the final findings that wasn't addressed in the preliminary findings?**
- A The findings did not change but we have addressed comments on the preliminary findings from land managers from the U.S. Forest Service, Rocky Mountain Region, Colorado State Forest Service and the Bureau of Land Management. A response to all comments and a summarized list of individuals contacted by the Assessment Team during the course of the scientific study are provided in appendices in the final findings.
- Q How did the overall conditions affect fire suppression efforts on the Fourmile Canyon Fire during the first 24 hours?**
- A The Fourmile Canyon Fire was reported at 10 a.m. on Sept. 6, 2010 and spread rapidly in multiple directions due to high winds and very low humidity. The winds carried firebrands over a distance up to a half mile ahead of the flame front, creating new spot fires.
- Under these conditions, suppression efforts focused on firefighter and public safety, evacuations, and protection of homes when and where safely feasible.
- High wind speeds exceeded safe flying conditions and made retardant use ineffective so all aircraft were grounded until 5 p.m. Helicopters could not be used until the following day.
- Q What other factors contributed to the overall fire behavior of this fire?**
- A Surface fuels such as grasses, shrubs, pine needles and small branches were contributing factors in the fire behavior of the Fourmile Canyon Fire. Observers noted rapid fire spread through surface fuels in the open ponderosa pine forest with many trees torching and spot fires starting in advance of the fire front.



The most effective strategy for reducing crown fire occurrence and burn severity is to 1) reduce surface fuels D, E, F; 2) remove ladder fuels B, C; increase canopy base heights A; and lastly reduce canopy continuity and density A. Photos Russ Graham



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Q Although fuel treatments had previously been applied to several areas within the fire perimeter, the study concluded these treatments had minimal impact in affecting how the fire burned or the damage it caused. Why?

A Fuel treatments were often focused on improving the health of the forest, developing safe travel corridors, and to create wildfire defendable zones using a shaded fuel break near homes and communities. Surface debris from the treatments had not been removed either physically or by prescribed fire. Thus, the efficacy of the fuel treatments was very limited.

What we learned from this study is consistent with the knowledge that surface fuel removal plays an important role in changing fire behavior.

High wind speeds and low air humidity are common weather conditions associated with large wildfires along the Front Range. Recognizing these high wind speeds and low relative humidity conditions is critical when developing fuel treatment prescriptions. We need to appropriately design fuel treatments — treating surface fuels, ladder fuels, and canopy fuels in this order of importance — in and among landscapes in conjunction with treating fuels in the *home ignition zones* (HIZ) across the Front Range to improve the effectiveness of fuel treatments.

Q What is the best defense for home survivability?

A Creating and regularly maintaining an HIZ is a homeowner's first and best line of defense. Survival or destruction of homes exposed to wildfire flames and firebrands is not determined by the overall fire behavior or distance of firebrand lofting but rather, the condition of the HIZ — the design, material and maintenance of the home in relation to its immediate surroundings within 100 feet. For more information regarding HIZs go to <http://csfs.colostate.edu/pages/wf-protection.html> or www.firewise.org.



Fourmile Canyon Fire photo © Joe Amon, AP

Example of an HIZ and how it reduces ignition potential within 100 feet of a home under extreme conditions.