

# Science

## BRIEFING

February 24, 2014

## MONITORING THE EFFECTS OF THE HIGH PARK FIRE

### BACKGROUND

The High Park fire burned over 350 km<sup>2</sup> of wildland in the mountains west of Fort Collins, Colorado. It has since become the third-largest wildfire in Colorado's history, during a particularly devastating 2012 fire season. Fire is a powerful and enduring force that has had, and will continue to have, a profound influence on National Forest land.

### RESEARCH

**Research Activity:** A team of RMRS scientists took advantage of pre-burn data on rates of sediment transport (suspended load and bedload) in the Little South Fork Cache la Poudre near Rustic, Colorado. A multi-program effort went into the recent placement of a 48-foot sampling platform over the South Fork Cache la Poudre. The platform assists in the collection of bedload, suspended sediment, and discharge measurements as part of an effort to monitor the effects of the High Park burn on stream sedimentation and water quality.

**Management Implications:** Wildfire burns away vegetation that compacts soil, leading to increased surface runoff and soil erosion. Watershed erosion can dramatically increase after wildfire, but limited research has evaluated the corresponding influence on water quality and sediment transport.

Recent flooding in Colorado, which was long-lasting and occurred over a large area, destroyed the constructed sampling platform. Fortunately, the remains of the platform lie comfortably on the floodplain about 1/8 mile downstream and no instrumentation was lost. Some devices even continued to record during the flood—a nearby rain gage recorded almost 6 inches of rainfall (total) before losing contact with the datalogger! Return to normal flows has been slow, prohibiting repair to the site until next spring.

The floods in Colorado impacted the environment and researchers are now examining whether recent wildfires were a contributing factor that made the flooding heavier than normal. This will provide resource managers with an opportunity to better understand the complex fire-flood dynamic in Colorado, and elsewhere.



*Recent flooding in Colorado destroyed the sampling platform, the remains of which now lie 1/8 mile downstream.*



*A crew constructed a sampling platform spanning the Poudre to monitor the effects of the High Park burn on stream sedimentation and water quality.*

### MORE INFORMATION

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*The flooding that occurred in Sept. 2013 destroyed the constructed sampling platform.*