

# Case Study: Santa Barbara



Mark Ralston/AP/Getty Images

*Wildfire ravages through the neighborhoods of the hills above Santa Barbara, Mission Canyon area. Approximately 5,900 properties were under mandatory evacuation orders that affected an estimated 14,735 people in the area.*



Luis Sinco/LA Times



*Several teams work diligently on the ground to mix the hydromulch with water and a binding agent to load onto the air crafts. They strategically drop the mulch mixture to create effective erosion control and to allow the natural vegetation to establish.*



In May 2009, an almost two week long fire storm in Santa Barbara, California, known as the Jesusita fire, burned over 8,700 acres and consumed 80 homes and caused 30 firefighter injuries. The fire also burned several important watersheds and wildlife areas. Once burned, the behavior of a watershed is very different as opposed to an unburned watershed. These behaviors include increased amounts of debris, soil and water runoff during winter rains.

Santa Barbara County officials took quick erosion control measures by implementing an Emergency Watershed Response Plan. This included an aerial hydromulch application coverage of nearly 1,230 acres with over 3.5 million gallons of hydromulch dropped by six planes and one helicopter over the course of 13 days. The application did not include seed as the goal was to keep the hills intact during the wet winter months creating an environment for the natural vegetation to replenish and restabilize the soil.

This effort in conjunction with the placement of debris racks and stream clearing was critical to avoid another possible disaster and inevitably reduce the threat of downstream flooding that is detrimental to homes, commercial properties, local watersheds, and ecosystems.

Santa Barbara has an annual rainfall average of over sixteen inches, and typically four months out of the year yield very little to no precipitation, an average of two inches per winter month. During the month following the fire, June 5, 2009 would be put into the record books as the second highest rainfall in a single day since 1867. The hydromulch project was vital in combating the high rainfalls and helped to eliminate the concerns of flooding, extreme erosion, and landslides for this area.

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901 Russet Street • Twin Falls, ID 83301 USA



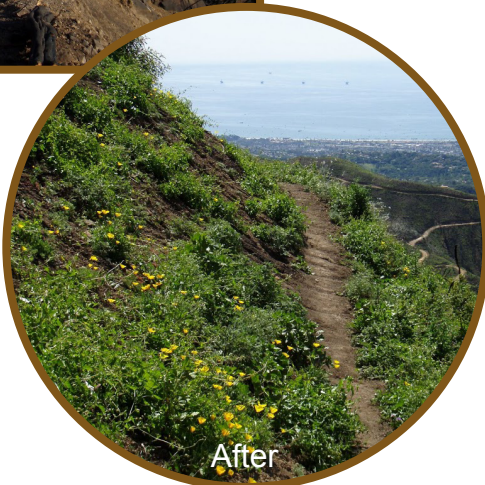
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David Everett

Before

Nearly all of the vegetation in the hills of Santa Barbara was devastated by the Jesusita fire. With the immediate erosion control that was put into place, natural vegetation was able to grow and restabilize the soil within a years time.



David Everett

After



David Everett

Before

A quick decision to move forward with a proposed Emergency Watershed Response Plan boosted the regrowth of the natural vegetation and restabilized the soil and watersheds.



David Everett

After

After the completion of the hydromulch project, Tom Fayram the deputy director of Public Works of Santa Barbara commented, "We'd like to succinctly point to the success of the Jesusita hydro mulch project, the high profile nature of the project in terms of public awareness and in terms of potential threat posed to the community by the burned watershed and the success of the use of the Hamilton Manufacturing Inc. paper mulch that was free of contaminants."

*"The U.S. Geological Survey (USGS) installed instruments to monitor floods and debris flows in a small 0.2 km2 sub-basin of Mission Canyon in September 2009. These instruments collected data on rainfall, flow stage, bed pore pressure, and soil moisture. During the first winter after the fire, the site recorded several small flood events and one debris flow. Monitoring was discontinued in May 2010, because rapid spring growth of vegetation had substantially reduced the threat of flash floods and debris flows."*

—usgs.gov

*"The county's hydromulching and placement of debris racks have helped avoid runoff in burn areas, especially the hillsides involved in the Jesusita Fire."*

—Noozhawk.com

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