



# Los Padres National Forest Gap Fire BAER

## The Burned Area Emergency Response (BAER) Process

Burned Area Emergency Response, or BAER, is a Forest Service program with the objective to minimize threats to life or property and to stabilize and prevent unacceptable degradation to natural and cultural resources from post-fire events. A BAER Team was convened to assess the Gap Fire area and develop emergency treatment recommendations. Members included specialists in hydrology, soil science, geology, biology, botany, archaeology and engineering. The team met with representatives of Santa Barbara County, City of Goleta, Santa Barbara Airport, and other local, state and federal agencies to discuss assessment findings, and share information about values at risk and treatment options.

## BAER Team Findings

The BAER Team determined that 76% of the burned area sustained moderate or high “burn severity,” and 24% was unburned or sustained low burn severity. Burn severity depends on the degree of post-fire changes in vegetative cover and soil properties that could reduce the ability of the soil to absorb precipitation rather than run off the land. Fire usually creates a mosaic pattern of low, moderate and high soil burn severity across the landscape. Resource specialists consider this burn mosaic when predicting where potential hazards, such as debris flows and excessive runoff, will likely occur after the fire.

Because the Gap Fire removed nearly all of the vegetative cover over the majority of the burned area, especially on the steep slopes, there is high to very high potential for increased water runoff leading to flooding and debris flows. Runoff and sediment yield is expected to increase substantially during the first three years after the fire. Native vegetation will resprout, but it will take about 5 years for an effective vegetative cover to be reestablished.

Values at risk within or below the Gap Fire burned area include homes and businesses, powerlines, water pipelines, a water treatment plant, reservoirs, roads, bridges, orchards, the Santa Barbara Airport, railroad tracks, Highway 101, the recently restored Goleta Slough and other values. Given the predicted effects of the fire, all of these values are at great risk for serious consequences from flooding, landslides, debris flows and other events should significant rainfall occur on the burned area within the next three years.

## Emergency Treatment of National Forest Lands

The Gap Fire burned approximately 9,544 acres, of which 4,573 acres (48%) is National Forest land and the rest is private or non-federal public land. The Forest Service has authority only to treat National Forest land. The BAER Team evaluated many different treatments for the National Forest lands, but terrain (very steep slopes) and access (no roads) greatly limited the treatment options. The Forest Service identified aerial hydromulching to replace lost vegetative cover as the most effective treatment for National Forest lands. While treatments on National Forest lands will help to reduce the impacts of the fire, these measures will not completely mitigate the effects of the fire, and will be most effective in concert with additional treatments on private lands downstream.

Forest Service treatments include the following:

- Hydromulch will be applied to approximately 1500 acres in high severity burn areas in high risk watersheds to help protect the soil from erosion. Hydromulch is an all-organic mix of paper/wood fiber, water and a binding substance (guar gum). It helps hold the soil in place, trap moisture and create an environment in which native seeds and roots can sprout. (See “More on Hydromulching.”)
- Forest Service scientists and engineers will determine if opportunities exist for installation of debris racks or other structures on National Forest land.
- The Forest Service will coordinate with local agencies in the preparation and dissemination of emergency mitigation information to the affected community.
- Signs and barriers will be installed at key access points to prevent trespass by off-highway vehicles and promote vegetation recovery.
- National Forest lands will be surveyed for invasion by noxious weeds. Noxious weeds compete with native vegetation impacting the health and functioning of the watershed.

## More on Hydromulching

### What is hydromulch?

Hydromulch consists of wood mulch, recycled paper, water and a substance (guar gum) that binds the ingredients together. It is usually applied by low flying aircraft, either fixed wing or helicopter. A green dye in the hydromulch helps the pilots monitor application, but the hydromulch will fade to a brownish-gray after a few days on the ground.

### Is hydromulch safe for humans and animals?

Yes. The Forest Service selected this mixture because it is all organic and extremely safe for people, animals and the environment. Guar gum is a plant substance commonly used as a thickener in ice cream and other foods. Hydromulch is applied wet; it doesn't drift with the wind.

The contractor will not fly when winds are too strong to allow pilots to deposit the hydromulch accurately.

### **How does hydromulching help the burned area recover?**

Hydromulch helps to protect the soil from erosion until native vegetation can become reestablished. Hydromulch is applied wet but hardens after a few days and binds to the soil on the hillside. The mulch traps moisture and creates an environment in which native seeds and plants can sprout. Eventually, the new vegetation takes over its natural role in stabilizing the soil.

### **Does the hydromulch contain seeds and fertilizer?**

The hydromulch does not contain seeds or fertilizer. Research has shown that reseeding chaparral areas is usually counter-productive because the native vegetation will resprout faster and more effectively---and hold the soil in place better-- if it doesn't have to compete with introduced seeds. We are not using fertilizer because it could contribute to an excess of nutrients in the water.

### **How is hydromulch applied?**

The hydromulch will be applied by low-flying aircraft and/or helicopters.

### **Where are the treatment areas?**

The treatment areas were carefully selected by a team of specialists based on terrain (hydromulch is not effective on slopes steeper than 60%), and burn severity (moderate to high) in these highest risk watersheds: Upper Los Carneros, Upper Glen Annie, Upper San Pedro Creek and Upper San Jose Creek.

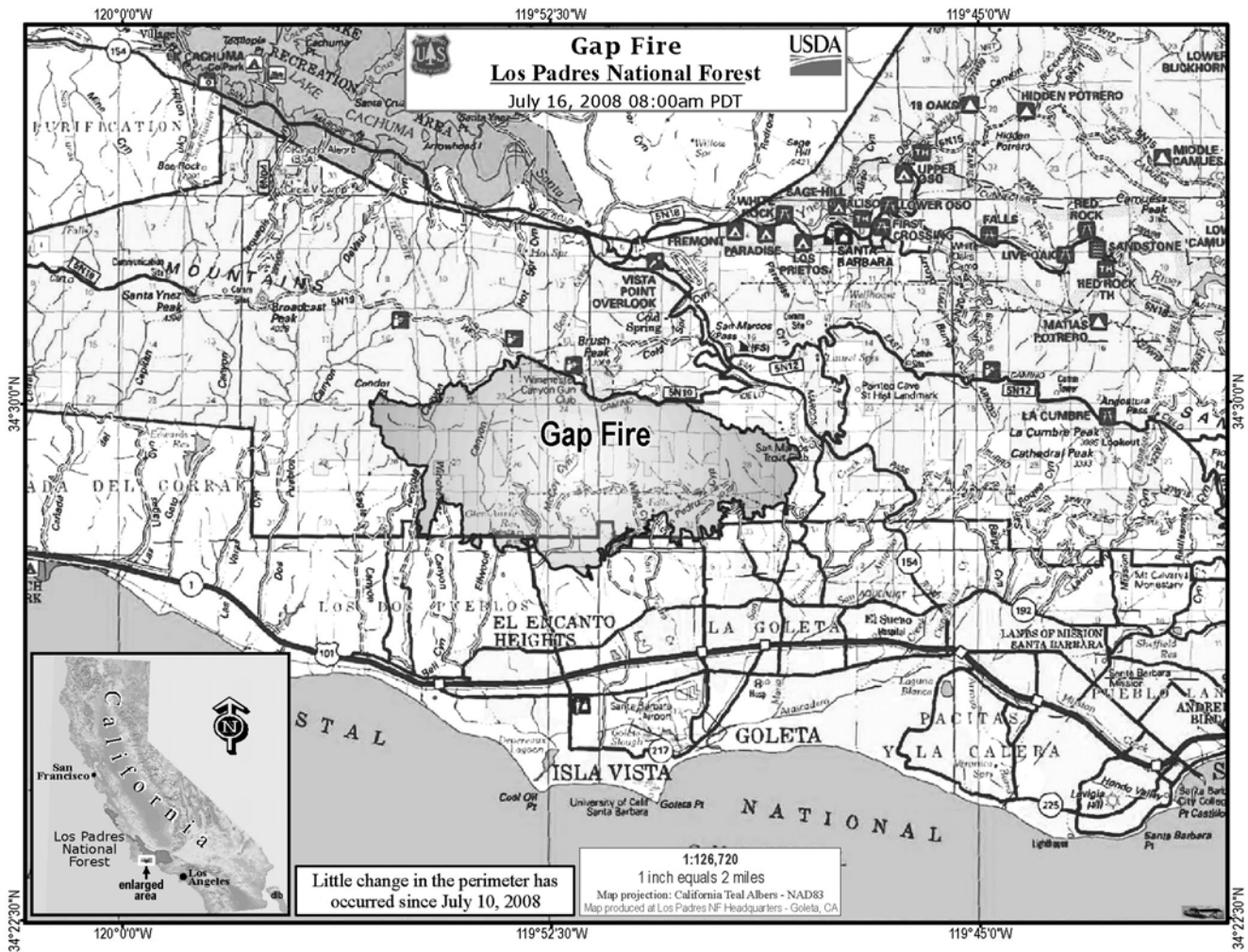
### **When will the hydromulch treatments take place?**

Depending on the outcome of the contracting process, the treatments are expected to begin in mid to late September and will take about 6 to 8 weeks to complete.

## **Hydromulch Treatment Area Closed To Public Entry**

The aerial hydromulching operation is expected to begin in mid to late September and will take approximately six to eight weeks to complete. Low-flying aircraft will distribute the hydromulch over specific treatment areas. Out of concern for public and BAER worker safety, the entire Gap Fire area will be closed to public entry during the hydromulch operation.

The actual treated areas will remain closed to public entry for at least one year to prevent disruption of the mulch cover. Walking, biking, driving or horseback riding on the mulch will compromise the protective mat and reduce its effectiveness leading to additional erosion. The closure will be strictly enforced and violators will be prosecuted. **Thank you for your cooperation!**



**How can I obtain additional information about the Gap Fire BAER?**

Please visit the Los Padres National Forest website at <http://www.fs.fed.us/r5/lospadres/conditions> or contact the Forest Service Public Affairs Office at (805) 968-6640.