

# Santiago Fire Aerial Hydromulching Restoration Project

## Questions and Answers

### What is hydromulch?

**Hydromulch** is a wet mixture of, 40% shredded wood, and 60% paper with a guar gum based tackifier, a sticky substance that helps the mulch material cling to hillsides and steep slopes (*Guar gum is used in ice cream as a thickener*).

The green-dyed biodegradable hydromulch helps to stabilize the soil and provides a nutrient media for new plant growth on fire-damaged lands. After drying it will harden and turn gray. It will intercept some of the rain's impact energy and minimize erosion.

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

The hydromulch helps to protect the soil from erosion and it traps moisture and creates an environment in which native seeds and roots can sprout. Eventually, the new vegetation takes over its natural role in stabilizing the soil.

### Where are the hydromulch treatment areas?

The Forest Service has conducted post fire assessments in a process called the Burned Area Emergency Response or BAER. From that report a team of resource specialists have recommended and funding has been obtained to treat **1,241 acres** of Forest Service lands with aerially-applied hydromulch. These lands are where the fire intensity was rated as high and the slopes are less than 50%. The Santiago Fire burned a total of 28,476 acres, but most of the high-intensity burned acres were on the 6,701 acres of Forest Service lands located at the east end of the fire in the higher elevations. These intensely burned areas are also near the canyon communities at risk from potential mud slides and debris flows due to the vegetative cover being burned (removed) during the fire. The communities of Silverado, Williams and Modjeska Canyons contain over 1,000 residential structures and over 5,000 people could be directly affected by land slides or debris flows for the next 5 years.

The airport in Corona, CA will be used for the six AT-802F Air Tractors to refill, refuel, and maintain their fixed-wing, single-engine aircraft. A heli-base near Irvine Lake (Santiago Reservoir), at the north end of Santiago Canyon Road, will be used to support the Sikorsky S-64E (Air Crane) helicopter.

### When will they implement hydromulch operations?

Aerial applications of hydromulch are expected to begin on December 17, 2007. Flight hours are from 08:00 a.m. to 4:00 p.m. seven days/week. A holiday break is planned for December 23 until December 27 and operations should continue on December 28. If the weather cooperates, and there are no delays, operations should be completed during the first part of January.

### **Is the hydromulch safe for humans, animals and the environment?**

Yes, the Forest Service has selected this mixture because it is all organic and extremely safe, for people, animals and the environment. Guar gum may sound exotic, but it's actually a plant substance commonly used as thickener in ice cream and in other foods. The hydromulch is a wet product that will not drift, and the contractor will not fly when winds are too high to allow pilots to deposit the hydromulch with accuracy.

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

While hydromulch often contains seeds and fertilizer, the Forest Service has made the decision not to add these to our mix. There are native, viable seeds already present in the soil that we have already seen sprouting. We are not using fertilizer because it could contribute to an excess of nutrients in the lake, potentially harming water quality.

### **Why is the restoration area closed to public?**

The Cleveland National Forest has chosen to close the area affected by the Santiago Fire to protect the public from falling and rolling debris and to prevent further resource damage on lands without a vegetative cover. During times when hydromulch is being applied by fixed-wing aircraft and a large helicopter, the area will be especially dangerous for anyone near the application areas. Also, after the hydromulch has been applied, walking, biking, driving, or horseback riding on the hydromulch will reduce its effectiveness and will lead to additional erosion and damage to soil and water resources. Once the hydromulch is disturbed, water can get underneath and undermine the protective mat and winds can further compromise the objectives for soil protection. Forest protection officers will patrol the area and issue citations if necessary.



**AT-802F Air Tractor (800 gallon capacity tank)**

**For more information, please contact Tom Lavagnino, Public Information Officer at (541) 429-3069.  
Or E-mail: [tomlava@gmail.com](mailto:tomlava@gmail.com)**





**Erickson Air-Crane  
Sikorsky S-64E**

# Aerial Hydromulching of Forest Service Lands Burned During the Santiago Fire Begins December 17

*Silverado, CA.* –Single engine airplanes and a large helicopter working over the Santiago Fire area beginning on December 17 will signal the start of the USDA Forest Service’s aerial hydromulch operations designed to minimize soil erosion and reduce run-off in the canyon areas of Silverado and Modjeska Canyons. The Forest Service has conducted post fire assessments in a process called the Burned Area Emergency Response or BAER. From that report a team of resource specialists have recommended and funding has been obtained to treat **1,241 acres** of Forest Service lands with aurally-applied hydromulch. These lands are where the fire intensity was rated as high and the slopes are less than 50%. The Santiago Fire burned a total of 28,476 acres, but most of the high-intensity burned acres were on the 6,701 acres of Forest Service lands located at the east end of the fire in the higher elevations.

Pilots will apply a layer of hydromulch, which is a wet mixture of, 40% shredded wood, and 60% paper with a guar gum based tackifier, a sticky substance that helps the mulch material cling to hillsides and steep slopes (*Guar gum is used in ice cream as a thickener*). The green-dyed biodegradable hydromulch stabilizes the soil and provides a nutrient media for new plant growth on fire-damaged lands. After drying it will harden and turn gray. It will intercept some of the rain’s impact energy and minimize erosion. No seed or fertilizers are included in the hydromulch mixture.

Aerially applied hydromulch is a major component of a rehabilitation plan that will cover areas that are mostly inaccessible by other ground-based methods or cannot be treated in a timely manner. Hydromulch is an organic mixture that poses no threat to humans, wildlife, or the environment.

Aerial applications of hydromulch are expected to begin on December 17, 2007. Flight hours are from 08:00 a.m. to 4:00 p.m. seven days/week. A holiday break is planned for December 23 until December 27 and operations should continue on December 28. If the weather cooperates, and there are no delays, operations should be completed during the first part of January.

National Forest System lands within the Santiago Fire area remain closed to all public entry. The Cleveland National Forest has chosen to close the area affected by the Santiago Fire to protect the public from falling and rolling debris and to prevent further resource damage on lands without a vegetative cover. During times when hydromulch is being applied by fixed-wing aircraft and a large helicopter, the area will be especially dangerous for anyone near the application areas. Also, after the hydromulch has been applied, walking, biking, driving, or horseback riding on the hydromulch will reduce its effectiveness. Once the hydromulch is disturbed, water can get underneath and undermine the protective mat and winds can further compromise the objectives for soil protection. Forest protection officers will patrol the area and issue citations if necessary.

For additional information on hydromulching, forest closures, maps of treatment areas or other projects from the BAER report, please visit: <http://www.fs.fed.us/r5/cleveland/conditions/firestorm.shtml>.

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