



## Golden Gate NRA Fire Management



Fire road before treatment in 2003



Fire road after treatment in 2003



Tam Fire accessed by fire road in 2004

### Tested by Fire--Eucalyptus Fuel Reduction in Tamalpais Valley

#### Importance of Treatment

Non-native eucalyptus introduced to California in the 1800's presents complex fire and resource management challenges. While some of these trees are historically important landscape features, others have expanded outward, displacing native vegetation, and generating dense accumulations of oily leaf litter and strips of bark. In many places, these trees have encroached into residential areas, increasing the potential for catastrophic fire. A dense, 70-acre grove, located north of San Francisco, on the edge of Golden Gate National Recreation Area, had expanded across a fire road near the community of Tamalpais Valley. Restoration of the fire road by removing trees and surface fuel during the 2003 field season played a direct role in community fire protection during a wildfire the following year. The Tam Fire, which began near the grove on May 9, 2004, demonstrated the effectiveness of fuel treatments in the wildland-urban interface.

#### Social and Ecological Values at Risk

Tamalpais Valley is an unincorporated community of 2,600 households located on the outskirts of the City of Mill Valley. Many of these high value homes have wood shingle roofs and siding, and are located along narrow roads ending in cul-de-sacs near the national park boundary. As the eucalyptus grove encroaches toward these homes, the fire hazard increases.

The native ecosystem is an oak woodland, which includes coast live oak, bay laurel, willow, wax myrtle, and many other species. The native ecosystem is more fire resistant and has significantly less tons of fuel per acre than the non-native eucalyptus groves. Native oak woodlands in the San Francisco Bay Area are declining due to Sudden Oak Death Syndrome, and other factors related to urbanization. Eucalyptus displaces the native oak woodland, and changes the soil chemistry, adding additional stress to this ecosystem.

#### 2003 Fuel Reduction Activities

A series of fuel reduction projects in Tamalpais Valley were conducted in 2003. These activities significantly improved the wildland fire safety of the area:

- Eucalyptus trees were removed along Shoreline Highway to limit grove expansion and improve road safety for emergency response and evacuation.
- Eucalyptus and Broom were also thinned near Erica Road to improve road safety for emergency response and evacuation.
- Eucalyptus trees were removed at the entrance to the Miwok Fire Road to improve emergency access; to create a strategic fuel break where fire would be easier to control; and to reduce fuel where the potential for human-caused fire is high.

- Eucalyptus trees were removed to restore a fire road connecting Shoreline Highway with Eastwood Road to improve emergency access and create an additional escape route for residents in Tamalpais Valley.

This work was accomplished by several contractors who used standard tree removal and brush cutting techniques. The contracts were managed by a partnership between Golden Gate National Recreation Area, Southern Marin Fire Protection District, Marin Conservation Corps, and FIRE Safe MARIN, the local fire safe council.

#### **2004 Fire Demonstrates Success**

The Tam Fire began near these eucalyptus fuel treatments on May 9, 2004. The details of how this human-caused fire started remain unknown; however, the incident demonstrated the effectiveness of fuel reduction in Tamalpais Valley. Firefighters were able to access the interior of the fire quickly and safely by using the recently cleared fire road. The treatments along paved roads allowed a major highway to remain open to public traffic during most of the incident. The space cleared at the entrance to the Miwok Fire Road provided a place for an emergency helicopter to land, and allowed firefighters safe access to another part of the fire. With a highly effective fire suppression effort, the Tam Fire was contained at 12 acres.

#### **Post-Fire Stabilization and Rehabilitation**

The flammable surface and ground vegetation among the eucalyptus trees had burned with high fire intensity. Many of the eucalyptus were deeply charred at the base, which killed them, and made them prone to sudden falling during wind events. To mitigate this hazard, park service fire crews, and assisting agencies, cut down 8 acres of damaged trees for stabilization. This cut vegetation was chipped and spread on site for erosion control. Native hardwood trees and shrubs, which had burned, were left and some resprouted, beginning the process of rehabilitation to a more natural, and more fire resistant ecosystem. Additional erosion control measures were taken to protect the fire road.

#### **Outcome**

The Tam Fire tested the effects of fuel reduction in Tamalpais Valley. The fuel treatments done before the Tam Fire contributed to the outcome that no structures were damaged, no injuries were reported, and no evacuations were necessary. Overall, as a result of removing eucalyptus before and after the fire, there is a much lower fuel load throughout the site, much less potential for a catastrophic fire, and significantly improved ecosystem health.

#### **For More Information:**

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