In Brief

Lake Tahoe Basin Management Unit USDA Forest Service

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Vegetation and Fuels Management Treatment Methods on the LTBMU

Considering the objectives of reducing surface and ladder fuels and thinning forest stands to improve vigor involves integrating with other resource values, including wildlife habitat, scenic quality, and soil and water quality. The initial treatments employed are the first step towards restoring forest health in areas that are located in the wildland urban interface (WUI), an area greatly affected by Comstock era logging (1880-1920) and fire exclusion that coincided with the post-logging era. Stands of forest now 80 to 120 years of age have be impacted by two bark beetle outbreaks as a result of high tree densities and years of drought (1980s & 1990s). The combination of high tree density (300 to 600 BA/A) and heavy surface fuel loads (20 to 120 tons/acre) require tremendous investment to restore health and resiliency to the forest stand.

Although there are numerous small understory trees that form the fuel ladder, there are larger canopy trees that also need to be thinned. Likewise, there are large dead and down logs along with deep duff layer that has not been regulated by repeated underburns. The WUI area burned frequently from lightning strikes with a return interval of between 7 and 15 years. This means that from 1900 to 2008, there should have been at least 7 times when the WUI would have burned with some areas more prone to lightning that would have burned upwards of 15 times. However, very little of this area has been burned by lightning and human-caused ignition sources combined.

In order to treat the surface and standing fuels and thinning the forest, the LTBMU has been contracting two basic operational methods:

HAND THINNING This method involves hand crews using chainsaws to buck and pile surface fuels, cut and pile small diameter fuel ladders, and thin canopy trees up to 14 inches in diameter and pile the material or where feasible pile into row along roadsides for firewood cutters. Piles generated in this method are burned by USFS crews usually two years later when the piles are cured to a point that permits for quick and complete combustion which generates the least amount of smoke. Hand thinning is a cost effective initial treatment option and is employed on steep slopes that are generally above 30 percent or in sensitive areas where ground-based mechanized equipment is prohibited.

MECHANICAL THINNING This method involves ground-based mechanized equipment that thins and removes standing trees and removes surface fuels. Two systems of mechanized equipment have been employed on the LTBMU in the past 10 years of treatments:

> Cut-to-Length (CTL): A CTL harvester simultaneously thins stands, processing logs and bunching biomass for removal. A forwarder self-loads logs for transport to a landing as well as biomass that will be removed from the project area usually in the form of chip. A chipper at the landing usually processes removals into clean chip for manufacturing into oriented stand boards, biomass energy utilization, or as hog fuel. Following the removals generally involves the use of a masticator to grind small trees and shrubs not processed by the CTL. In early CTL treated areas, more than three years ago, a mobile chipper was employed to chip and spread materials not removed by the forwarder. Although NEPA decisions include underburns to follow this treatment, none have been implemented thus far. Generally there are few piles to burn subsequent to this treatment either in the landing or in the understory.

Whole Tree (WT): Whole tree harvesting thins stands, by felling and bunching cut trees and larger surface fuels and then skidding bunches to a landing. When processed at the landing, the limbs and tops are either chipped for removal or piled to be burned later. Following the removals generally involves the use of a masticator to grind small trees and shrubs.