



# United States Department of the Interior

NATIONAL PARK SERVICE

Yosemite National Park  
P. O. Box 577  
Yosemite, California 95389

IN REPLY REFER TO:  
P3823(YOSE)

To our interested public:

We have been receiving questions lately regarding mechanized tree removal in Yosemite National Park. In response to public concerns, we have undertaken a management-level review of the process. The attached file contains the results of our findings to date. This is a working document and may be supplemented or modified as needed. If you have additional questions, please send them to Jen Nersesian of my staff at [jen\\_nersesian@nps.gov](mailto:jen_nersesian@nps.gov), or by mail to:

Superintendent, Yosemite National Park  
Attn: Mechanized Tree Removal  
P.O. Box 577  
Yosemite, California 95389

We appreciate your attention and input into the process of park management, and hope to maintain an open dialog around this and other issues of concern or interest.

Sincerely,

Michael J. Tollefson  
Superintendent

Attachment(1)

## ***Mechanical Tree Removal in Yosemite National Park: An Overview July, 2005***

The need for a much higher level of tree removal activity and increased level of public interest this past year has led the Park to focus a management level review of the entire mechanical tree removal operation in Yosemite National Park. This spring and summer, Park Management Team members (Superintendent, Deputy Superintendent, Chief Ranger, Chief of Facilities, and Chief of Resources Management and Science) made site visits and met with staff to review operational procedure for the Fuels Reduction and Tree Hazard Management programs. Below is an analysis of the Park's organizational structure for tree removal, related planning, compliance, and contracting processes, tree removal selection criteria, assessment of this year's operation, and the lessons learned during the review.

### **Organizational Structure**

There are two separate programs that deal with mechanical tree removal in Yosemite National Park. One is the Fuels Reduction program, which does mechanical thinning in the interest of fire protection; and the other is the Tree Hazard Management program, which removes trees that are a threat to the safety of people and property.

Mechanical thinning conducted as a part of the Fuels Reduction program is managed under the Division of Protection by Michael Beasley, Fire Use Manager.

The Tree Hazard Management program is managed under the Division of Facilities Management by Brian Mattos, Park Forester.

Most normal tree-maintenance functions take place under the supervision of one of two District Forestry Work Supervisors (Valley and Mather Districts) within the Division of Facilities Management. The various forestry positions within the park were originally moved to Facilities Management from the Resources Management and Science division as a result of several personnel management issues more than 15 years ago. This organizational structure has facilitated productive working communication and seamless sharing of equipment between the forestry staff and the Roads and Trails branch.

### **Planning and Compliance Process**

#### ***Fuels Reduction Program:***

Mechanical thinning under the Fuels Reduction program draws its authority and guidance from the Fire Management Plan of 2004, which included an Environmental Impact Statement (EIS) that went through a full public review process. Under the EIS, trees no larger than 20" dbh (diameter at breast height) may be thinned along roadsides or near communities to reduce the threat of wildland fire. These thinning operations are undertaken with consultation from other divisions -- particularly Resources Management and Science, whose ecologists and archeologists and other specialists serve as key members of the fire team.

#### ***Tree Hazard Management Program:***

The Tree Hazard Management program draws its authority and guidance from a tiered set of policies and plans. Primary guidance comes is the National Park Service (NPS) Western Regional Directive WRO-93, "Concerning the Management of Hazardous Trees," as well as a 1993 set of regional guidelines on the same topic. Park criteria and objectives for hazardous

tree management are outlined in the Yosemite National Park Vegetation Management Plan, an internal park document signed by the Superintendent in 1997.

Under these guidance, each year the Park Forester prepares an annual work plan that is presented at a monthly park project planning meeting. Consultation with other divisions occurs at this point.

After signed concurrence from all divisions is obtained, the Park issues a programmatic level Categorical Exclusion (CE) to authorize hazard tree removal activities described in the Forestry annual work plan. The CE is based on removal of “hazard trees” that are “...individual members of a non-threatened and endangered species... that pose an imminent danger to visitors or an immediate threat to park resources.” Environmental review consists of a complete environmental screening process and cultural resource preservation assessment process in conjunction with the preparation and approval of the programmatic CE.<sup>1</sup> Mitigation activities are viewed as integral to the plan and include safety measures, proper signage, cleanup requirements, etc.

As a programmatic-level document, the Forestry annual work plan covers areas of focus and anticipated conditions for the coming year. Specific actions and work schedule analyses takes place on a monthly basis, through meetings between the Park Forester, the District Forestry Work Supervisors, and the Roads and Trails Supervisor. Work is prioritized so that the tree hazards deemed most likely to fail and cause injury or property damage are handled first, but generally trees are addressed in geographic progression. Work in seasonally closed areas generally occurs prior to spring opening. Work in year-round facilities generally occurs in a season of reduced use.

During the year, frequent consultation also takes place between the Park Forester and Fuels Management personnel to provide updates on work progress.

### **Contracting Process**

#### ***Fuels Reduction Program:***

The Fuels Reduction program is encouraged by the Fire Management Program Center in Boise, Idaho to contract out half of all fuels management activities. A NPS staff Contracting Office Representative (COR) is required to oversee any contracting. This NPS representative is expected to be on-site to observe work as frequently as needed. Sometimes the COR is present daily, other times less frequently, depending on the sensitivity of the project. Occasionally the Park Forester has served as COR for the Fuels Reduction program, due to the current individual's familiarity with forestry operations.

Many of the individual contracting projects are conducted under task order to existing contracts. The remaining projects are often done by minority-owned firms, which have legal preferential rights (i.e. the contract does not go out to bid). Contracts not falling into either of these two categories generally would be subject to a competitive bidding process.

#### ***Tree Hazard Management Program:***

Over the past ten years approximately a third of the Tree Hazard Management program has been performed by contractors. The Park Forester acts as the COR in this process. Smaller jobs are usually awarded from a list of pre-screened contractors; larger jobs go through a

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<sup>1</sup> The full citation of the CE used to authorize hazard tree removal activities is: DO-12.3.4.E(3) “Removal of individual members of a non-threatened/endangered species or populations of pests and exotic plants that pose an imminent danger to visitors or an immediate threat to park resources.”

competitive, sealed-bid process. These contract RFPs (Request for Proposals) are posted in post offices and other federal posting locations.

The Park Forester either personally marks trees to be removed (the vast majority of cases), or it is done by a designated arborist from PG&E (when a tree needs to be removed in utility rights-of-way) or Delaware North Corporation, with the Park Forester examining each tree they mark prior to removal. Trees are generally cut immediately after they are marked.

On-the-ground oversight of contractors is done by the Park Forester. When there is more than one crew working at a time in the park, there may be contractors working without on-site NPS monitoring. However, it is not possible for a contractor to remove an unmarked tree without the Park Forester seeing evidence of a cut stump. To this date, the Park Forester has not seen evidence of an unmarked tree having been cut by contractors.

NPS does not typically pay for mechanized tree removal out of the park<sup>2</sup>. Logs and downed trees<sup>3</sup> in their assigned work area are sold to the contractor through the General Services Administration, and the funds go to the US Treasury as miscellaneous receipts. No sale proceeds return to the NPS. This process was set up deliberately so that there would be no financial incentive for the park to cut more trees than necessary. Wood that is not sold is recycled in place in the form of wood chips, hauled to woodyards for disposal through the fuel wood permit system, or used for administrative purposes (shingles for historic preservation, firewood for interpretive programs or administrative facilities, posts and poles for Native American structures, etc.).

The Park has been investigating the potential of sending downed or chipped trees to cogeneration plants to promote the production of renewable energy. In 2004 chipping downed trees was first tried at selected roadside turnouts on the Big Oak Flat roadside and burned at a nearby cogeneration plant. This practice was determined to not be fiscally self supporting and has been discontinued along the Park's roadsides.

### **Selection Criteria for Tree Removal**

#### ***Fuels Reduction Program:***

Only green trees less than 20" dbh are allowed to be removed along roadsides under the mechanical thinning portion of the fuels reduction program. The fire management plan states that for non-wildland/urban interface (WUI) non-wilderness areas; "Beyond the 1½ mile radius around the six WUI areas...passive thinning of small trees less than 20" dbh would occur within 200 feet of the centerline of roads and under utility lines where canopies are closely packed."<sup>4</sup> Neither skidder (large tractors that haul logs)<sup>5</sup> nor cable yarding (attaching a cable to a tree that

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<sup>2</sup>The only instance of NPS paying for tree removal from the park occurred during 2004 for the Big Oak Flat "miles of piles" operation.

<sup>3</sup> The standard procedure for downed trees (trees that fell naturally or were cut in previous years) used to be that all wood that *could* be removed during hazard tree work *would* be removed, in order to aid in fire management (fuels reduction). This year, in response to concerns raised by park resource managers, more wood is being left in place -- with the idea that there might be more damage from the large vehicles used to remove the wood than from the increased fire potential created by leaving it there. Both fuels reduction and hazardous tree removal are adaptive management processes that are continually being refined and improved. In this case, we are striving to strike a balance between more fuel left on the forest floor, which could fuel a catastrophic fire, and the ecological effects of soil disturbance.

<sup>4</sup> Fire Management Plan EIS, pg. II-39

<sup>5</sup> The exception to this occurred early this year on the Wawona Road project when some trees less than 20" were removed by a skidder, when the skidder was already off the road dealing with a hazard tree. This practice was later discontinued.

is retracted by a machine away from the site, thus pulling the tree to a landing) practices are used in the Fuels Removal roadside program.

The majority of trees removed under this program are less than 6" dbh. During 2004 crews thinned trees on portions of Route 120/Big Oak Flat Road between 6" and 20" under a specific work plan laid out in conformance with the Fire Management Plan.

It is important to point out that prescribed burning sometimes leads to tree mortality. In turn, these dead trees become hazard trees along the roadway, subject to the Park's criteria for determining threats posed to visitors and motorists.

The Fire Management Plan EIS states with regard to thinning near WUI communities that "commercial sale of timber would only be considered as a last resort if the woody material could not be burned, chipped, sold as firewood, or used for park administrative purposes, and if it poses a wildland fire risk if left on site." Cutting down a hazard tree into a prescribed fire unit and burning it later may be done in lieu of removing the tree, if it does not create a fire hazard to the road or community.

One question often asked about the "miles of piles" that can be seen on the roads to Wawona and Hodgdon Meadows is why the Park keeps creating more "piles" instead of first burning the ones already in existence. The park will not be creating any more piles this summer. There are approximately 15 miles of piles; experience has shown that seven miles can be done in the fall after fire season. More can be done, but deteriorating weather will shorten the burning period.

Another question has been asked about the potential wildfire risk of these piles. The piles are made up of small trees and the lower limbs of larger trees. These fuels carry wildfire vertically up through the forest canopy. The removal of these fuels reduces wildfire intensity and gives firefighters a better chance of controlling it. The ignition of a pile, such as through arson, might still ignite trees near it, but the reduction in fuels in the area will help with fire suppression efforts. The risk of wildfire occurrence in areas with standing piles is less than in areas that are untreated.

***Tree Hazard Management Program:***

In general terms, a tree is not considered hazardous unless it has:

- an outwardly visible defect, and has
- a designated target (human or property).

The tree must be located within a development zone (as delineated in the park's General Management Plan, 1980), or along a roadway (as per the NPS Western Region guidelines). Hazard trees of all sizes are cut. Where tree hazards with potentially high habitat, scenic, or historical value are noted, consideration is given to closing or modifying the target. In cases where just the top of the tree presents a hazard, only the top may be removed to leave a standing stem.

Sometimes, very tall trees in wilderness (which begins 200' from the centerline of the major highways) that are upslope of a developed area (road, paved overlook, etc.) may present a hazard. In this case, a line attached to a mechanical yarder located outside of wilderness may be pulled by hand into wilderness, but the mechanical yarder itself (tower, tractor, over-the-snow buggy, etc.) does not enter wilderness.

Determination of hazardous trees and the prioritization of the removal of hazardous trees is based on their degree of threat and imminence. Some areas where hazard tree removal is done are post-treated to remove signs of human intervention, such as cut stumps. This work is performed by park forestry staff. All areas where there is heavy foot traffic, such as campgrounds or paved trails, receive this higher level of treatment. Areas around roadsides do not because this type of work is very costly. Such work is prioritized based on its impact to the visitor experience.

### **How has this Year Differed from Others?**

This year has seen a much greater number of hazardous trees than usual. In general, the recent drought period and overstocked stand, resulting from a lack of fire, has brought about a lot of insect-caused tree mortality, and very heavy winter damage left a larger amount of broken trees along roadways. In a typical year, about 3,000 hazard trees are removed in the park. This year, it was estimated that the Park had approximately 50% above the normal rate.

The difference this year was particularly evident in Wawona, where winter storms caused excessive damage. In fact, there were three parties struck by tree “failures” in Wawona earlier this year, which has contributed to the park’s diligence in eliminating other potential hazards in that district. Unfortunately there also was a contracting delay of four months to clean up the hazardous tree removal operation associated with the scheduled thinning process. Originally cleanup was anticipated to occur immediately after the hazardous tree removal operation. The delay resulted in all logs and debris from an unusually heavy year’s work being left scattered on the ground from March until July.

This confluence of circumstances (harsh winter effects, high insect-caused mortality, longstanding high fire return interval departure, and the long delay in cleanup) created a situation in Wawona. Many saw the area with the perception that NPS were excessively “logging” in a manner inconsistent with the agency’s own protocol or mission.

This past year has also seen a great deal of tree removal activity along Tioga Road. In 2002 a prescribed burn was conducted in a four-mile stretch known as the PW-3 area. It was the first burn along the road in almost 20 years; thus there was a subsequent high rate of tree mortality, with a result of an increase in potentially hazardous trees. The hazardous trees created by this burn were removed this past year. As specified in the NPS Western Region guidelines, hazard trees were removed only if half or more of their circumference had been killed (not just charred bark, but dead cambium as demonstrated by insect frass, pouch fungus, or loose bark) or obviously decayed, even if the other half (usually, the crown) still appeared to be green.

### **What Did We Learn from this Year’s Experience?**

The management level review of mechanical tree removal operations in Yosemite National Park found that operations followed all documented processes and met compliance requirements. There were also some process improvements made as a result of the review. Some of these changes were made midway through this year’s tree removal program, including:

- Only NPS staff can approve determination of hazard trees, and
- There will be greater Resources Management and Science alignment and support for all Forestry activities.

Continuous process improvement has led to further adaptive management this summer and additional recommendations will be instituted, including:

- A more aggressive public information and outreach program,
- Procedures to ensure more responsive contracting processes,
- Methods such as cable yarding, over-the-snow skidding, and self-loading log trucks, have demonstrated reduced soil impacts and will be encouraged in future contracts where cut or broken logs are removed to meet park objectives,
- There is now a requirement of park staff to be on site during any tree removal,
- The park will work aggressively to eliminate existing miles of piles and will only create as many new piles yearly as estimated can be burned in a given year (current estimated capability is 7 miles per year),
- All hazard trees will be marked on the bole and near the base (stump area) by a NPS forestry professional, and
- Based on experience gained over the last two years with the relative costs of thinning trees in the 6"-20" range, future roadside thinning operations will be limited to 6" dbh trees. This will allow more funds to be spent thinning trees near the park's interface communities, increasing the level of fire protection for these areas.

The Management Team and staff will continue to review and refine Yosemite's mechanical tree removal program and consider additional recommendations such as the disposition of hazard trees created by a prescribed fire. One approach may be to cut the tree and leave it in the burn unit, with the concurrence of the Fire Use Manager that this will not create a significant fire hazard. Allowing downed trees to remain on site provides an additional source of soil nutrients and eliminates soil damage caused by the removal of the tree.