



# INDUSTRY

# SAFETY ALERT

## Wildland Fire Manual Tree Falling Injuries and Fatalities

**Location:** Incidents occurring during wildfire operations in various U.S. States

**Study Release Date:** October 2019

**Findings:** The Wildfire Lessons Learned Centre (LLC) conducted a study\* on injuries and fatalities suffered during manual tree felling operations conducted during wildfire response in the US. The study reviewed data from 53 incidents, including 8 fatalities, over a 15 year period. The study analyzed the various incidents report to come up with consistent themes and recommendations. Some of the themes and recommendations identified are included below:

- In over half of the incidents the tree fell in the intended direction, with only about one third of the incidents occurring where the tree fell in an unexpected direction. The remainder of the incidents occurred before the tree fell. This means that recommendations for improving directional control for fallers would not reduce a substantial number of the incidents. However, 5 fatalities occurred while the worker was in an established escape route (primarily situations where the tree did *not* fall in the intended direction).
- In 28% of the incidents, the tree impacted another tree on the way down, including 2 of the 8 fatalities. This led to incidents of the top breaking off and coming back and the tree getting hung up.
- 5 of the 8 fatalities, and 42% of all incidents, occurred with workers not running the saw (faller during size-up, trainee/trainer, swamper). Some of the reports included recommendations to improve risk assessment and hazard awareness. There was an emphasis on reducing the number of workers in the area by promoting the two tree length rule and supporting faller's 'control' of the work area.
- In many of the reports, improved training was recommended, specifically risk assessment, tree conditions (like rot) and species-specific traits. Other recommendations for improved training were size-up, falling difficulties (hung-up trees), and faller's work area control.
- Half of all recorded incidents over the 15 year period involved a direct helmet strike. Many of the reports recommended improved research into wildland fire helmets.

\*Study and its findings conducted by the U.S. Wildland Fire Lessons Learned Centre (LLC); Commissioned by the U.S. Forest Service and U.S. National Park Service. Download the document here: [Wildland Fire Tree Felling Accident Analysis USA](#)



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