Rapid Lesson Sharing

Event Type: Hazard Tree Felling/Line Gear Stowing

Date: November 18, 2023

Location: Horseshoe-Wild Bill Rx
Near Lava River Cave Recreation Site
Coconino National Forest, Arizona

Crewmembers removed their line gear and set them near the cleanup work on the felled hazard trees. Staying aware of felling operations resulted in firefighters not paying attention to their line gear

The Story and Lessons from this Burned Line Gear Incident

by
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Image 1 – Stump of the fire-weakened ponderosa that was felled beside Forest Road 245.

The Assignment

Block 2 of the Horseshoe-Wild Bill Prescribed Fire (Rx) was approximately 1,300 acres implemented by hand ignition (drip torch black line) and aerial plastic sphere dispenser (PSD). Our five-person Lolo Module with UTV worked to prepare the area for firing operations.

We were assigned to the popular Lava River Cave recreation area. We began the day working through the entrance and parking area, scratching fireline around signage, mitigating hazard trees, bucking and removing "heavies" against live trees, and consolidating scattered fuels into piles to consume fully during ignitions.

After ignition was completed and the fire behavior moderated, we moved back into the area to assess pit toilet structures and encourage consumption of additional fuel loading through bone-piling 10, 100 and 1,000 hour fuels.

Day 2

We arrived back to Horseshoe-Wild Bill Rx early to patrol the perimeter of Block 1 (implemented two days before) and Block 2. All control lines held. We attended briefing for the day at Drop Point 24. We were assigned to assess snags that would be a threat to Forest Road 245 and public safety in the Lava River Cave recreation area. Our crew and Clevland E348 assessed and felled a fire-weakened ponderosa pine next to Forest Road 245 *(see Image 1)*. Next, our Lolo Module moved to the Lava River Cave site.

Image 2 – Active burning in this ponderosa tree's bottom 30-feet inside an old decaying lightning strike scar.

The Work

There were multiple complex snags and fire-weakened trees located around the Lava River Cave trail and cave site. Once reopened, the public would be roaming through this open understory ponderosa pine stand.

One situation involved two 10 to 12-inch DBH trees hung up that required multiple cuts to walk the trees around the hang up point to fall clear. Another situation was a live 18-inch DBH ponderosa with fire in the bottom 30 feet inside an old decaying lightning strike scar *(see Image 2)*.

The third situation was a 20-inch DBH snag with a burned-out base surrounded by other trees of the same size. This snag's base area was bone piled to burn out the snag and the tree. Then, when being taken down, the snag hung up *(Image 3)*.

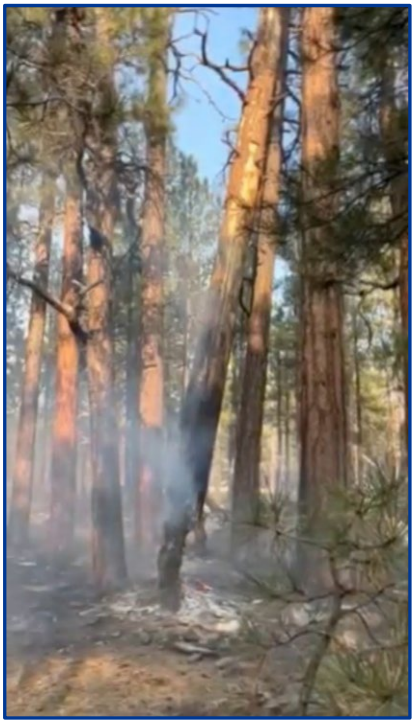

Image 3 – The burned out and hung-up tree.

Pine needles continued to smolder and crept around through available fuel, influenced by the light wind. Trees with fire in their boles flared up when on the ground, even when dropped into areas of "cold black."

Removing and Stowing Line Gear

The complexity of the trees indicated the necessity for removing line gear for firefighter safety—to quickly move along escape routes. Crewmembers removed their line gear and set them near the cleanup work on the felled hazard trees. Staying aware of felling operations resulted in firefighters not paying attention to their line gear.

The Equipment

In our UTV we carried: two drip torches, two bladder bags, chainsaw, fuel/oil Dolmar, hand tools, and line gear.

We discovered that one of our drip torches had an incorrect collar that leaked because it could not properly seal. (This issue has been documented in previous events: Clear Creek Rx, Brundage Rx) We believe this drip torch fuel absorbed onto the crewmembers' line gear. As shown in *Images 4 and 5,* the burned line gear had been placed at the edge of burned and unburned pine needles.

Aided by wind, the fire crept through the pine needle cast under the line gear. The fuel that had been absorbed into the material caused the line gear packs to be more flammable. The line gear was discovered to be on fire when fusee firing devices ignited in the pack's side pouches. Crewmembers applied their drinking water to the packs to extinguish the flames.

Notable equipment damaged included: the fireline pack, fire shelter, bleed kit (CAT-T and hemorrhage control bandage), Headlamp, DPH battery clamshell, MRE and some personal effects.

Images 4 and 5 – The burned line gear.

Lessons

Mitigations to prevent future accidents/equipment damage:

- Cold trail and/or scrape away fine fuel from gear set on the ground in active fire areas.
- Inspect drip torches for leaks before being placed with other equipment. Specifically check for mismatched components. Replace equipment not functioning properly.
- Avoid placing line gear and other personal PPE with fuel. Develop separate carry racks and mounts on vehicles.

This RLS was submitted by:

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