

GREEN SHEET

California Department of Forestry and Fire Protection (CAL FIRE)

Informational Summary Report of Serious CAL FIRE Injuries, Illnesses, Accidents, and Near Serious Accidents



Firefighter and Fire Crew Inmate Injuries

July 3, 2015

Salt

15-CA-TUU-000319

California Southern Region

A Board of Review has not approved this Informational Summary Report. It is intended as a safety and training tool, an aid to preventing future occurrences, and to inform interested parties. Because it is published on a short time frame, the information contained herein is subject to revision as further investigation is conducted and additional information is developed.

Lookout

Communications

Escape Routes

Safety Zones

SUMMARY

On Friday, July 3, 2015, at approximately 1835 hours, an 18.8 inch diameter oak tree limb fell onto a Tulare Unit firefighter I (FF1) and two Mountain Home fire crew inmates (IM1 and IM2). FF1, IM1 and IM2 were mopping up a wildland fire ignited by lightning. FF1 was pinned under the limb and suffered major injuries; IM1 and IM2 suffered minor to moderate injuries. FF1 was air lifted to Community Regional Medical Center (CRMC) trauma center in Fresno with major traumatic injuries. IM1 and IM2 were air lifted to a landing zone and transferred to ground ambulances and transported to a local hospital. They were treated and released back to CDCR.

CONDITIONS

The fire was located on top of a ridge, west of Case Mountain, on a south facing ridge line, at approximately 4700 feet in elevation. The fire was started by a lightning strike hitting a tree.

- Weather:
 - Shadequarter RAWS station located approximately 13 miles northwest of the fire's location. At 1755 hours, weather measured temperature of 93 degrees Fahrenheit with winds out of the west at 7 mph gusting to 12 mph with relative humidity of 26%.
 - Milo RAWS station located approximately 12.3 miles south southwest of the fire's location. At 1827 hours, weather measured temperature of 95 degrees Fahrenheit with winds out of the west northwest at 4 mph gusting at 13 mph with relative humidity of 26%.
- Fuel Type: TU3 – Moderate Timber-Grass-Shrub
- Topography: At the site: Top of knoll, southwest aspect, 18% slope. Overall fire: Mid slope, southwest aspect, 60% slope.
- Fire Behavior: Mop up stage

Tree 1 was a California black oak, approximately 46 feet tall, with a 34.2 inch DBH. Tree 1 had a fork approximately 3.9 feet from the ground and split into two limbs. Limb 1 had an 18.8 inch diameter just above the fork. Limb 1 broke at 11.5 feet above the ground. Limb 2 had a 21.2 inch diameter just above the fork. Limb 2 was the main leader and grew near vertical with several limbs branching off of it. Limb 1 had a slope of approximately 70° and leaned to the southwest. Tree 1 appeared to be overall a healthy tree. There was evidence of rot within the tree, which is common for oaks.

Limb 1 had a diameter of 17.5 inches at the break and was 38 feet long after the break. It was observed that Limb 1 had heart rot. Limb 1 had several loose knots or rotten knots along the limb. These types of knots are potential fuel beds for fire embers. On the back side, where the limb failed, there was evidence of a knot. The knot crevasse was observed to have heat and fire damage. Fire had burned the tension wood, releasing the weight of the limb similar to a chainsaw "back cut." When the tension wood was released, the tree was no longer able to support the weight of the limb and the limb failed and fell to the ground.

Due to the location of the failure point, it would have been difficult to notice and suspect the limb was in a condition to fail. There were green leaves on the branches as well as the tree as a whole. Observations of the tree showed signs of being a healthy and sound tree.

SEQUENCE OF EVENTS

On Thursday, July 2, 2015, a lightning storm caused approximately 170 down strikes throughout Tulare County. On Friday, July 3, 2015, two fires were reported. The Case Fire was reported at approximately 1344 hours, on Friday, July 3, 2015. Resources were dispatched to the Case incident and started to arrive at approximately 1456 hours. Two battalion chiefs (BC1 and BC2) arrived at the same time prior to any other resources. BC2 took IC and stayed at the base of the hill. BC1 was assigned Operations and hiked up to the fire. BC1 reported to BC2 the fire needed heavy mop up. The fire engines assigned were directed to construct a hose lay up the hill to the fire at the top of the ridge and mop up. BC1 reported to BC2 the fire size was approximately 2.6 acres. BC1 gave a safety briefing prior to work being performed on the fire including look up, down and all around and to conserve water during mop up. The inmate fire crew cut a fire line around the fire and helped to buck up large items in the fire's interior. At approximately 1640 hours, BC1 discussed turning operations over to FC1. This discussion occurred south of Tree 2 (Diagram 2) and the conversation included the need to take down Limb 1 from Tree 1 (Diagram 2). According to BC1, the limb "showed a puff of smoke." FC1 and BC1 believed the limb posed no hazard as it was a healthy looking oak tree. The tree had an approximately 18-19 inch limb with no fire damage present on the base of the tree. FC1 and BC1 turned in separate directions and walked away. BC1 walked approximately 200 feet then heard a large cracking sound and turned to see the limb on Tree 1 falling. The limb fell onto FF1, IM1 and IM2. Simultaneously FC1 had walked approximately 150 feet then heard a large cracking sound and turned to see the limb from Tree 1 falling.

BC1 immediately radioed BC2 with emergency traffic. BC1 said a widow maker had fallen. BC1 said they needed medical gear brought up the hill, and ambulances as well as a helicopter for short haul rescue. BC2 radioed on the command channel to request the emergency response. All personnel on the incident immediately responded to the aid of the FF1, IM1 and IM2. FF1 was found pinned below the largest portion of the limb, with a portion of the limb on FF1's right leg. FF1 was conscious and communicating to the rescuers. FF1 complained of having difficulty breathing. A firefighter took control of FF's c-spine while a fire apparatus engineer (FAE1) and another firefighter (FF3) lifted the limb off FF1. FAE1 instructed FF1 to move from under the limb; FF1 was unable to self-extricate from under the limb. FAE1 and FF3 kept the log off FF1 while other firefighters assisted in extricating FF1 from under the limb. After lowering the limb, FAE1 and FF3 requested a portion of Tree 4 (Diagram 2), a burned down tree, be removed to gain access and create more room for patient care. Medical gear was brought up from the engines. FF1 was assessed and information was relayed to FC1 for documentation. FF1 was packaged and air lifted to a landing zone (LZ), transferred to air ambulance and transported to CRMC. FF1 was the first patient to be transported off of the hill.

Simultaneously, IM1 was found southeast of FF1's location in the medium to smaller limbs. IM1 was observed having a loss of consciousness and was disoriented. IM1 was

assessed, and it was observed IM1's helmet had been broken, and suffered abrasions to the neck, back and arms. Continuous monitoring of IM1 resulted in improvement, and IM1's condition, findings and vital signs were reported to FC1.

Simultaneously IM2 was found southwest of FF1's position and had self-extricated from the medium to smaller portions of the limbs. IM2 had a laceration to the head and abrasions to the neck, back and arms. IM2's condition, findings, and vital signs were reported to FC1 for documentation.

IM1 and IM2 were packaged for transport, and were air lifted together off of the mountain to a LZ. From the LZ, IM1 and IM2 were transported by ground ambulance to the local hospital. IM2 was released back to CDCR after treatment at the local hospital.

INJURIES/DAMAGES

FF1 suffered major traumatic injuries. FF1 remains in the ICU at CRMC. IM1 suffered a concussion and abrasions. IM1 was released back to CDCR after treatment at the local hospital. IM2 suffered abrasions and a laceration to the head. IM2 was released back to CDCR after treatment at the local hospital.

SAFETY ISSUES FOR REVIEW

1. Always wear full safety gear while actively engaging in firefighting and mop up operations at fire.
2. Beware of drought stressed trees, because they can be more receptive to embers and ignition.
3. Beware of hidden fire in trees and tree branches, watch for signs of smoke.
4. Be aware of where you are walking, standing and what you're working under; look up, look down and look all around.

PHOTOS/SITE DIAGRAMS/MAPS



Looking north at Tree 1 California Black Oak, approximately 46 foot tall. Notice the broken Limb 1 near the middle of the photo.

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View of Tree1 from ground showing Limb 1's break. Notice the charring at the back side.



View of the broken portion of Limb 1. Notice the char on what would have been the back side of the branch. To the right is the downed burned tree that FF1 was mopping up at the time of the incident.



View of where FF1 was working between the fallen Limb 1 and the downed burned tree. FF1 was pinned under fallen Limb 1, showing at the middle of this photo.

Case Inc.
CA-TUU-00316
7-3-2015

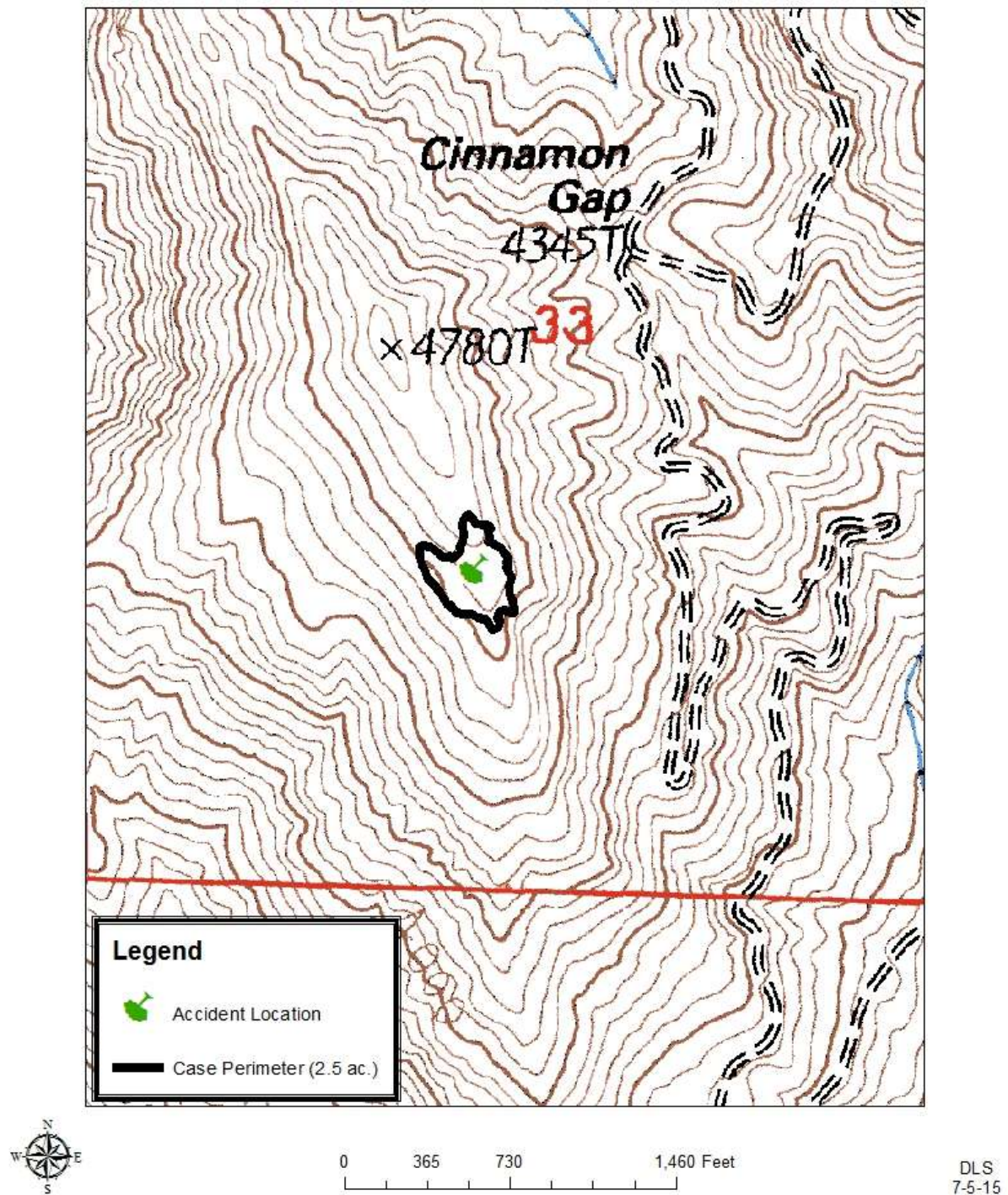


Diagram 1

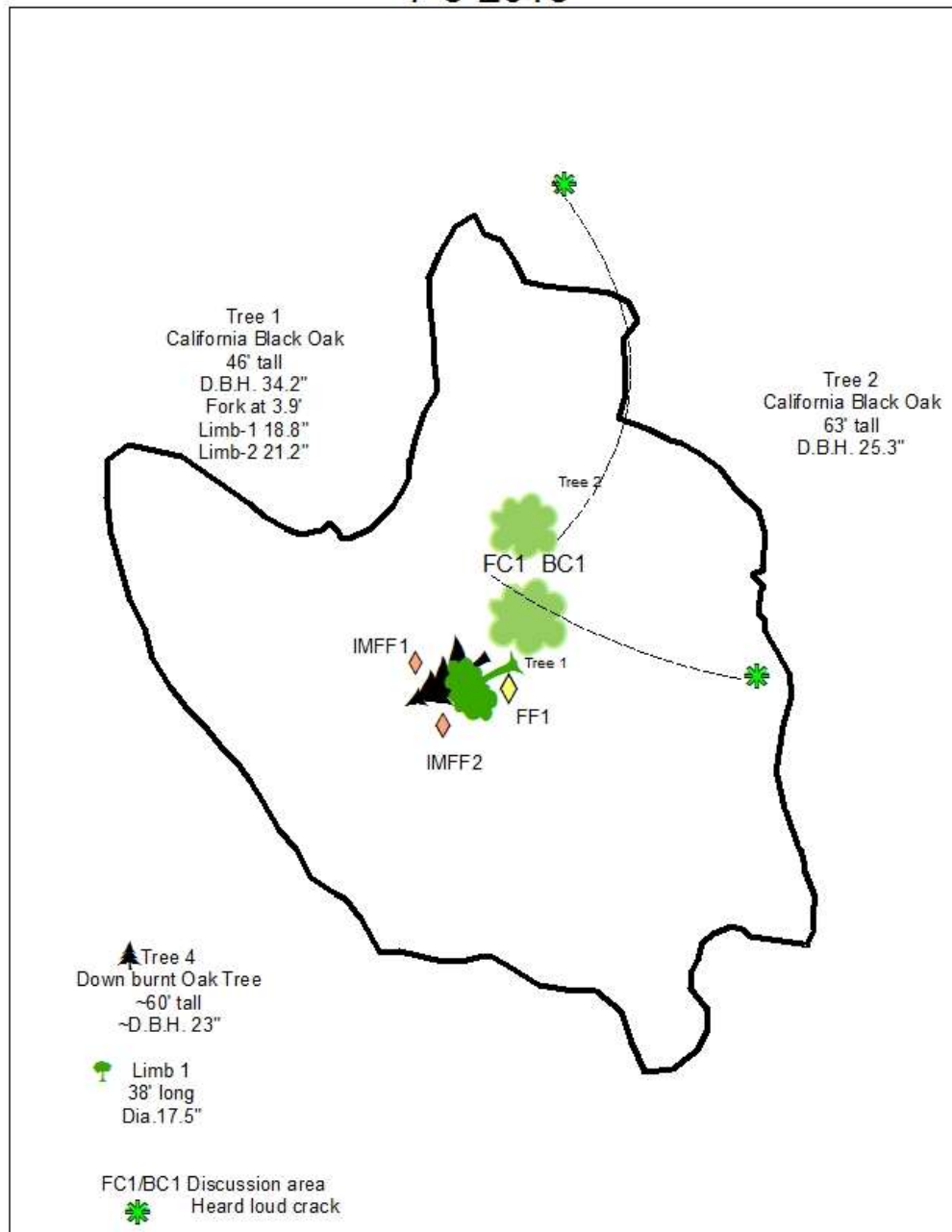
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Not to scale

DLS
7-9-15

Diagram 2

Lookout

Communications

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