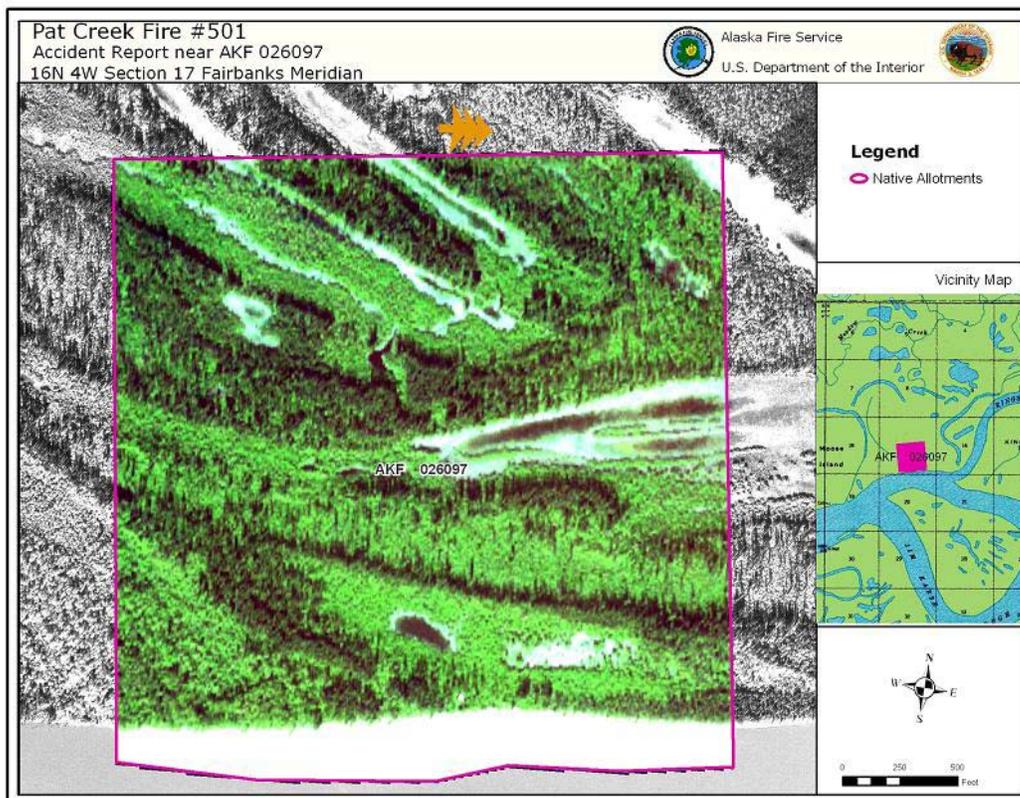


# Pat Creek Fire #501 – Tree Strike Injury on August 6<sup>th</sup>, 2010

## Non-Serious Accident Review

At approximately 1130 hours on August 6, 2010 a 22 year-old Emergency Firefighter (EFF) from Mountain Village was struck from behind on the head and back by a fire-weakened black spruce. The injured had been working in a short squad comprised of one sawyer and two swampers. The crew assignment that day was to clear a 100' wide fuel-free swath around the perimeter of Allotment #026097. Most of the saw operations were bucking only as hazard trees had been felled some days previous by another crew. Occasional felling of smaller trees <6" dbh [diameter breast height] and <20' in height did occur.

The weather was sunny and about 70°. Winds were light but nearby RAWs data indicated 10 mph gusts starting around noon on August 6<sup>th</sup>. Bucking and swamping was in progress when a gust of wind blew over a black spruce a couple tree lengths away, which then struck a second tree while on the way down, which struck a third tree causing it also to fall. Tree #3 which was approximately 8" dbh, struck the firefighter with its top section. The sawyer was bucking with the saw and the swampers busy moving fuel to the bone-pile, so the falling domino trees were seen only by the CRWB(t) observing the operation some distance away.



The firefighter was wearing a MSA Wildland "T" 4-point suspension hardhat. The black spruce struck the top rear portion of the hardhat. The hardhat was manufactured in January of 2003 but appeared to have little prior use because of the excellent condition of the inside decal labels and the bright exterior finish. Other than strike marks, the shell experienced only a small abrasion alongside the reinforcement ridge that runs the length of its top. The suspension liner however, sustained complete breakage of the right rear suspension tab.



The firefighter was struck to the ground and, conscious but dazed, tried to get back up. Crewmembers advised him to sit back down. The crew boss, who was near the scene, called for an EMT. The STCR(t), who was EMT qualified, arrived at the scene within 5 minutes. After a quick evaluation he called the STCR who initiated a medevac response with a helicopter from H35 which was also located at the allotment. The STCR, also an EMT, then hiked to the site of the accident. The STCR(t) had the injured lie down and stay immobilized until the helicopter arrived at a nearby clearing at 1200 hours with a SKED and two additional EMTs. The injured was packaged up on the SKED, with a C-collar and unopened MREs to stabilize the head, and carried 100 yards to the helicopter. The ship departed at 1235 hours to Stevens Village. At approximately 1400 hours, a Guardian Flight air ambulance departed with the injured to Fairbanks Memorial Hospital. After evaluation at the hospital the patient was transported once more to the Alaska Native Medical Center in Anchorage. The injured sustained four cracked vertebrae but with no complications, and was released six days later. Full recovery is expected.

**Key Causal Factor:** Trees in permafrost conditions develop shallow root systems. Fires burning deeply into the organic layer containing those root systems frequently result in consumed roots and unstable trees.

**Mitigations:** Hazard trees need to be evaluated and felled prior to mop-up activities. Mop-up crews cannot assume that prior snagging operations mitigated *all* hazard trees. Increasing winds in burned-over timber, as well as recently observed wind-throw, should act as watchout triggers to have one eye looking up, *or* designating a snag look-out for each working group. Good spacing between swampers or other crewmembers involved in mop-up is also key. The working area of this allotment was snagged again after this incident.

**What went right:** The initiation and implementation of medevac procedures, including: prompt EMT response by ground and air, helicopter dispatch and arrival at close medevac site, and transport to hand-off injured to Guardian Flight at Stevens Village; all went well. Recognition of spinal fracture potential and immobilization of the injured ensured no further harm ensued. The hardhat very likely saved this firefighter's life.

Don Bergstrand – Safety Manager – BLM – Alaska Fire Service - August 23, 2010