

Rapid Lesson Sharing

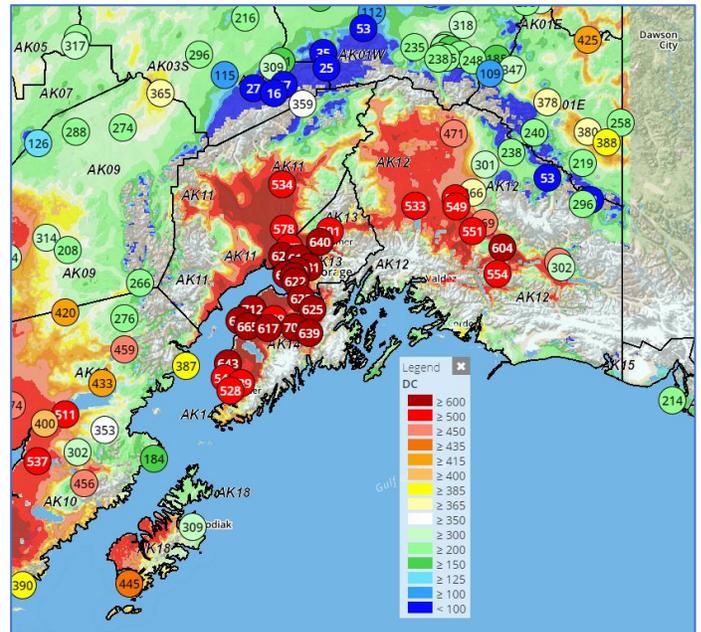
Event Type: Ash Pit Burn Injuries

Date: Mid-Late August 2019 Fire Season

Location: Southcentral Alaska

“The normal season-ending rains that have arrived over Alaska’s Interior have yet to materialize over Southcentral Alaska and the Kenai Peninsula. The weather forecast for the next several days shows that, aside from some isolated rain showers, no widespread steady rains are expected.”

**Eric Stevens, Fire Meteorologist
Alaska Interagency Coordination Center**



Drought Code indices for Southcentral Alaska on August 23, 2019.

Introduction

The 2019 fire season in Southcentral Alaska has been unusually dry and the area is experiencing extreme to severe drought. Drought indices are at or above historic highs which has allowed fuels to dry to a substantial depth.

Fires in the area are burning deep into organic layers in the ground, creating hazardous ash pits that have caused burn injuries to several firefighters.

Historically, Southcentral Alaska has experienced similar ash pit issues in 1996 (Millers Reach Fire) and 2015 (Sockeye Fire).

The combination of deep duff and organic soils with drought conditions creates an environment for fires to burn deep into the ground and create ash pits that may be more hazardous than those encountered in other areas of the state. Other contributing factors include ground material being disturbed from home site improvement, agriculture and wind rows.

The depth and heat trapped within some ash pits has taken firefighters by surprise. Firefighters may not recognize the hazard associated with these areas. The Swan Lake and McKinley fires have reported multiple ash pit-related burn injuries.

Swan Lake Fire

Located on the Kenai Peninsula Northeast of Sterling, Alaska

A two-person saw team from an IHC crew was performing hazard tree mitigation on this fire when the swamper stepped into an 18-inch-deep ash pit while trying to move a bucked log. The swamper immediately recognized this was hot ash and was attempting to get out when the sawyer noticed the swamper's distress and extended a hand to assist, unfortunately stepping into the ash pit as well. Both firefighters were initially diagnosed with second degree burns on their lower legs above the boot line, covering approximately three percent of their bodies.



An ash pit on the Swan Lake Fire.

McKinley Fire

Located on the Parks Highway just north of Willow, Alaska

There have also been three hot ash burn incidents on this fire:

- ❖ A firefighter lost their balance while leaning on a log. Their hand slipped off the log into a hot ash pit, sustaining a partial-thickness burn to the palm of the hand.
- ❖ A firefighter was unknowingly standing in a hot ash pit and sustained a partial-thickness burn to their pinky toe.
- ❖ A firefighter stepped into a hot ash pit and sustained a partial-thickness burn on their leg above the top of their boot. The burn was approximately one inch in circumference.

Lessons

- ❖ The amount of heat in an ash pit may not be readily apparent. Its smoke can be faint and dissipate quickly. The top layer of ash can be much higher than the bottom of the pit—concealing how deep the ash pit really is.
- ❖ Ash pits that are deeper than the height of a firefighter's boots can quickly lead to burns to the leg above the boot line.
- ❖ An ash pit that is deeper than expected can also cause a loss of balance to the firefighter stepping into the pit, making it more difficult to get out and leading to more severe burns.
- ❖ These rather extreme and unusual conditions for mid-August where firefighters are being injured, are

Hazards on the Line

McKinley Fire
AK.M055-901738

Ash pits pose a significant risk to firefighter safety!



Ash Pit Hazards

- Base actions on risk informed decision making using experienced fire fighters. Ask questions to clarify hazards and be well informed.
- When setting work priorities, ask yourself if you really need to be there -- is it worth the risk?
- Be aware that the risks with ash pits are often not visible and may extend well beyond the immediate area.
- Scout areas and use probes to test for extent and depth of ash beds.
- Identify and flag ash pits, snags, and hazard trees.
- Maintain a high level of situational awareness at all times.
- Refer to the Incident Response Pocket Guide for additional information.

Ash Pit Related Injuries



Firefighter showing the depth of an ash pit that was found on the line.



Pulaski with an arrow that delineates how deep the ash pit is.



Stump and roots fully consumed by fire with settling of land surface. Risk of deep hot ash. Difficult to identify hazard, which likely extends beyond the immediate area along underground root lines. Risk of slips, trips, and falls.



High level of snags, significant risk of falling debris, and potential ash pits. Risk of slips, trips, and falls.



Burns sustained from stepping in ash pit.



Burn sustained from tripping into an ash pit.

Use Risk Informed Decision Making. Understand the Value to be Protected. Ask – Is It Worth the Risk? Maintain Situational Awareness! Look Up, Down, All Around!

To download the full size of this ash pit burn injury poster that was circulated on the McKinley Fire, click [here](#).

occurring in typically uneventful mop-up situations. Crews working initial attack or mop-up must be aware that these deep pits may be present while on assignment in Southcentral Alaska.

This RLS was submitted by: Doug Mackey and Tristan Fluharty

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