



2017 POLE CREEK ESCAPED PRESCRIBED FIRE FACILITATED LEARNING ANALYSIS

**Kemmerer Ranger District
Bridger-Teton
National Forest**



September 2017

Abstract: In June of 2017, the Kemmerer Ranger District initiated a prescribed burn in the Pole Creek area. The primary objective was to stimulate aspen growth. Despite conditions seeming favorable, the unit would not burn. A few weeks later, a nine-acre spot fire occurred adjacent to the unit; it was suppressed and remained quiet for three weeks. Then, on August 4, 2017, a wildfire originated from this same area.

EXECUTIVE SUMMARY	1
Synopsis of Events.....	1
Chronology of Events	3
FACILITATED LEARNING ANALYSIS	3
SETTING.....	3
Pole Creek Prescribed Burn Location	3
Weather and Burning Conditions	3
THE STORY	4
OVERVIEW	4
THE PLANNING PHASE	4
THE PRESCRIBED BURN	5
June 18, 2017	5
June 19-21, 2017	6
Ignition of Hams Fork Burn Units	6
Synopsis of Hams Fork Burn Operations	6
Discussion of Long-term Plans for Pole Creek.....	7
June 22- July 10, 2017.....	7
THE JULY SPOT FIRE.....	8
July 11- July 13, 2017.....	8
July 14, 2017	8
July 15, 2017	9
July 16, 2017	9
THE AUGUST WILDFIRE.....	10
Chronology of the Escaped Wildfire	10
August 2, 2017	11
August 3, 2017	11
August 4, 2017	11
LESSONS LEARNED ANALYSIS.....	12
Key Lessons	12
Additional Lessons/Considerations	12
Questions to Facilitate Future Dialogue & Continued Learning	14

FACILITATED LEARNING ANALYSIS TEAM	15
APPENDIX.....	16
FOREST SERVICE 2016 WILDLAND FIRE RISK MANAGEMENT PROTOCOLS (PAGES 5-8)	16

EXECUTIVE SUMMARY

Synopsis of Events

The Pole Creek Prescribed Fire (PCPF) planning area is located on the Kemmerer Ranger District (KRD), which is the southern-most district of the Bridger-Teton National Forest (BTNF) (Figure 1). The 2017 Pole Creek Prescribed Fire (PCPF) unit (hereinafter “the unit”) is 110 acres in size and located within the 6,550-acre PCPF planning area (Figure 2). The primary objective within this planning area is to burn conifers and other live and dead material (40-80% mortality of encroaching conifers desired) to stimulate aspen growth. The prescribed burn of the 110-acre unit was initiated on June 18, 2017. Despite the fuel moistures and other related conditions seeming favorable, the fire would not carry and efficiently burn through the unit. After a second day of attempting to burn, the decision was made to burn other units in a nearby prescribed burn project area.

In July, a nine-acre spot fire north of the unit was suppressed and contained (Figure 2). On August 4, 2017, the PCPF once again escaped outside of project boundaries and was declared a wildfire. (There were reports of lightning strikes in the area during the same time period but a fire investigation determined that the cause of the fire was the PCPF burning activities.)

Units within the PCPF planning area were also ignited three years prior, in 2014, and resulted in an escaped prescribed fire. (At that time, only a few acres burned outside the project analysis area boundary.) Some reference to the [2014 Pole Creek Prescribed Fire FLA](#) is made in this report, as it relates to this 2017 incident.



Pole Creek, ridgeline to northeast of the unit.

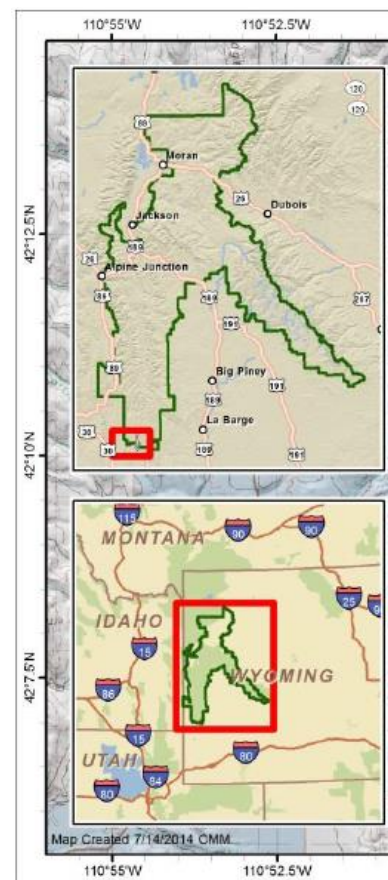


Figure 1. Vicinity map.

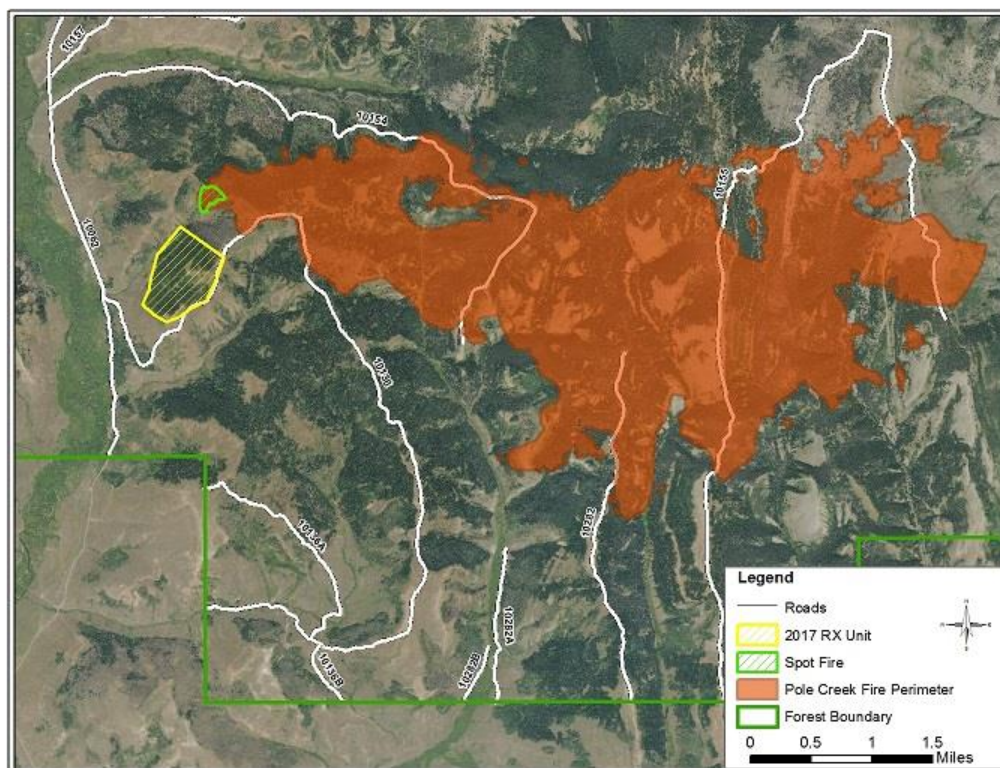
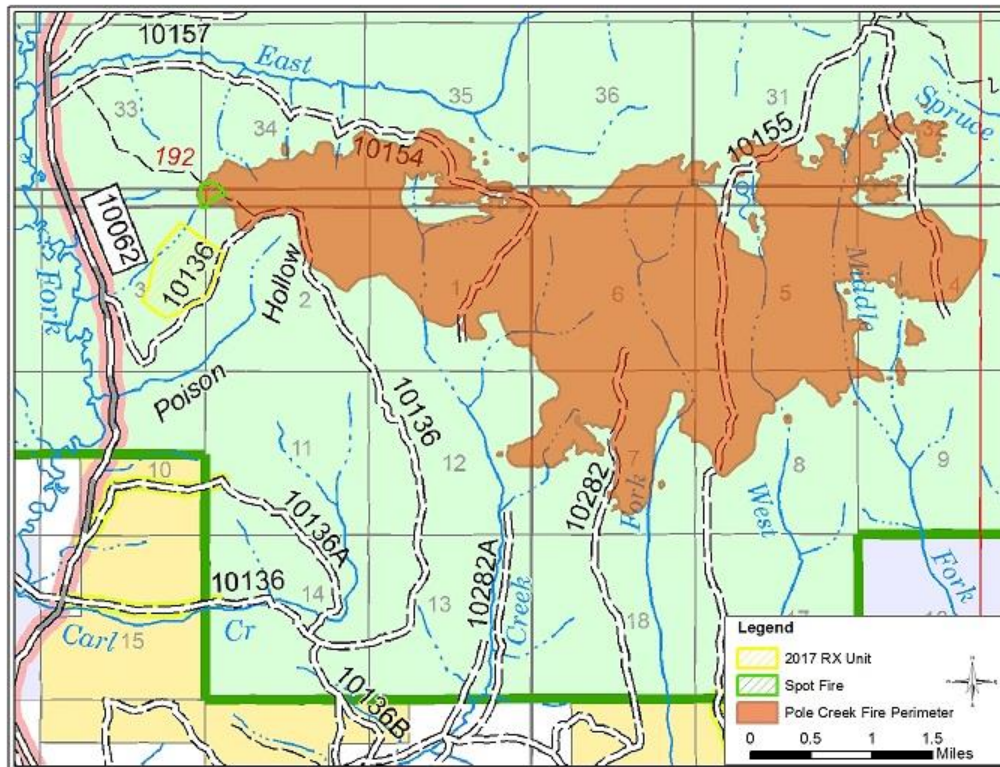


Figure 2. The Pole Creek unit, July spot fire, and August wildfire.

Chronology of Events

- 2010: Pole Creek Prescribed Fire Burn Plan completed.
- 2014 June: Pole Creek Prescribed Fire declared a wildfire.
- 2014 September: Facilitated Learning Analysis report released.

- 2017 June 18: Ignition began on the 110-acre Pole Creek unit.
- 2017 June 19: Decision is made to halt burning of Pole Creek unit.
- 2017 June 19-21: Three units ignited in nearby Hams Fork prescribed burn area.
- 2017 July 16: Nine-acre spot fire occurs adjacent to Pole Creek unit.
- 2017 August 4: Pole Creek Prescribed Fire escape declared a wildfire.
- 2017 September: Facilitated Learning Analysis initiated.

FACILITATED LEARNING ANALYSIS

"The whole intent of an FLA is being curious and seeking to understand what led to the decisions being constructive."
– BTNF Forest Supervisor

The objective of an FLA review is to tell the story of what happened and describe the expectations and decision-making conditions from the participants' points of view. At the core of any FLA is the conviction that unintended outcomes happen despite well-intentioned and extremely capable employees.

SETTING

Pole Creek Prescribed Burn Location

The 110-acre unit is located in the northwest corner of the PCPF analysis area at an elevation of approximately 8,400 feet on a northwest facing aspect. The unit is comprised primarily of heavy live and dead mixed conifer/subalpine fir and bordered on the three sides by open sagebrush/grass habitats that serve as a natural fuel break early in the burn season. Adjacent and north of the PCPF unit is the fire scar from the 2014 prescribed burn and wildfire; this area is made up of dead standing trees and slash, and regenerating vegetation. Beyond this 2014 burn scar, to the north and east, there is more forested stands in similar condition to the 110-acre Pole Creek unit.

Weather and Burning Conditions

The weather on the day of the initial burn was sunny with little wind. Late season snowbanks were in and around the burn unit. The weather in mid-June in this area is characteristically cold and even below freezing at night. Because of the elevation and it being an unusually heavy snow year, snow banks were common in the area and the conditions were wetter than average years. (The spring burn season on the KRD is typically a few weeks later than the rest of the BTNF because of the elevation and winter conditions.)

"June is not late for our [KRD] burn window. Even into July, the moisture is in the vegetation."

THE STORY

OVERVIEW

In September of 2017, an FLA team was assembled to explore the unintended outcome of the 2017 Pole Creek Prescribed Fire becoming a wildfire. As previously described, an FLA report was done for a prescribed fire in the Pole Creek area in 2014. The situation described in this FLA has some similarities but is fundamentally very different because complex systems rarely deliver the same conditions again. This FLA describes the complexity and changed conditions that led to the unintended outcome of the 2017 prescribed fire in Pole Creek escaping and becoming a wildfire.

“Hindsight can make you blind to the things that are in front of you.” – District Ranger

In the following report the 2017 project is described and organized in four phases: planning, prescribed fire, July spot fire, and August wildfire.

THE PLANNING PHASE

The burn plan for the PCPF was completed in 2010. The objective of the plan was to improve wildlife habitat by stimulating aspen growth. The plan was amended to allow for late-winter/early-spring tree-welling and blacklining with a smaller organization. Technical reviews of Pole Creek and Hams Fork burn plans were done separately but both were signed in the same month. District personnel sat down in June and fully reviewed the burn plan and whether the conditions and available resources were sufficient. The Zone Fire Management Officer (ZFMO) signed as the technical reviewer. During this process, there were numerous conversations with the Burn Boss (BB) on timing of the project in regard to weather, fuel moistures, and staffing, relative to other priorities and the burning conditions.

The ZFMO wanted to make sure that this prescribed burn would be staffed at the appropriate level. There were multiple conversations and difficulties organizing resources for the ignition, primarily because of preseason fire training commitments. Several district fire personnel relayed that it was an extremely busy spring, with multiple duties drawing on their time, primarily mandatory fire training. It’s typical for the KRD to be the last district on the Forest to do spring burning due to late season snow melt. This creates conflicting priorities between the need for mandatory and necessary training in preparation for wildfire season and the ability to commit staff for prescribed burning. Some with prior burning experience on the KRD, expressed that there was a lack of proper communication up front in regard to logistics, duration, preparation needs and the overall big picture of the prescribed fire management.

Fire Staff at the Forest level provided coaching and oversight throughout the process. There were some at the Supervisor's Office who had concerns about burning in the spring and having to "babysit" it all summer. Some of the district resources had apprehension that they would be stuck

"We take deep pride in our program locally and on our Forest. We want to continue to use fire on the landscape; that is what makes the B-T what it is." – Forest Fire Staff

on this prescribed fire and miss a wildfire assignment should an opportunity arise. A letter was sent from the Forest AFMO informing fire personnel that they needed to support local projects first (before leaving on off-Forest wildfire assignments).

The plan was to burn up to four units (Pole Creek and three in the Hams Fork prescribed burn planning area), depending on the weather/fuel conditions, with Pole Creek being the priority. The BB went out and collected fuel samples. The environmental conditions were within prescription and they proceeded with preparing for ignitions on June 18th.

Since 2014, the appropriate conditions to burn in Pole Creek hadn't occurred. Because of the escaped fire situation in 2014, some were hesitant to try to burn in Pole Creek again. A few employees expressed a feeling of pressure to burn because of the perception of a loss of funding in future years. Most expressed that they felt no pressure to burn a certain number of acres to meet targets. They believed it was well understood and communicated from Forest leadership that burning should be done only as opportunities and conditions were favorable. However, once resources were in place, pressure to accomplish the task and utilize those resources was evident; district fire staff noted once resources were committed there was a sense of urgency to get the prescribed burn completed.

"I burn because it's the right thing to do at the right time. I don't feel any pressure [to meet targets]."
-District Fuels Officer

THE PRESCRIBED BURN

June 18, 2017

The district had made all the necessary preparations to ignite the 110-acre unit on June 18, 2017.

"I was confident that my staff knew what they were doing and had the right conditions to do the job."
-District Ranger

The initial briefing, which was led by the BB Trainee, was held on the lawn of the KRD. The Trainee noted being extremely pressed for time during preparations for the burn, due to mandatory spring firefighter training. The Trainee was also not designated as the BB Trainee until very close to the date of burn implementation.



Pole Creek unit, June 18, 2017.

During the briefing, crews were instructed to be prepared to camp for up to three days. Most personnel described the briefing as good or adequate. A few commented that they weren't

"A lot of absent information and assumptions..."

familiar with the area and wanted a more in-depth briefing. Most reported that the general weather report was given but some could not recall being given a "spot" weather forecast, especially after the first day of burning.

Many people commented that the burn maps provided were not adequate but they were able to find what they needed through other sources. A few expressed confusion over who was designated for certain key leadership roles. It was unclear in the Incident Action Plan (IAP); they were verbally told either at the initial or on-site briefing.

The resources committed to the burn that day included a BB and Trainee, 16-person hand crew, three engines, and a helicopter with an 8-person crew. The test fire began in the northeast corner of the unit and proceeded south along the ridge. Ignitions were determined to be a "Go" initially and burning of the unit began at approximately 1430. Some personnel assisting with the burn felt concern because the summer warming trend was beginning. However, a number of the people involved were of an opposite view point, wondering if it would be too damp to meet burn objectives. This supposition proved true, the fire would not carry through the unit. It was noted that an excessive amount of drip-torch fuel was being dispensed but to no avail; at the end of the day, only five acres had burned.

June 19-21, 2017

A second attempt was made to light the Pole Creek unit. Once again, only individual trees would torch despite the use of ample burn mix. One firefighter commented that getting the unit to burn was like "spitting in the wind." Because objectives were not being met, efforts were terminated by late morning.

Ignition of Hams Fork Burn Units

The decision was made by the BB to move the resources to three burn units in the Hams Fork Project Area. These units were 3-5 miles from the Pole Creek unit and totaled approximately 50 acres. The entire Pole Creek organization left for the Hams Fork units.

"What I was seeing in front of me, wasn't what leadership was seeing. My reality wasn't what others were seeing." (In reference to the amount of fire on the ground.)

Three Hams Fork units were ignited from June 19-21. (Resources were sent to scout an additional 240-acre unit in Hams Fork but it was recommended not to light it.) The three Hams Fork units burned hot and accomplished the objectives.

Two of these units had been mechanically treated so there was "red" slash on the ground, providing a consistent fuel bed.

Synopsis of Hams Fork Burn Operations

In regard to the Hams Fork units, multiple fire personnel commented that they were very uncomfortable with the amount of "fire on the ground" and feeling they were spread too thin. There was also frustration

"Having several units on fire gave me pause..."

among some of the resources that burning of these other units outside of Pole Creek was confusing to them. They found it hard to determine who was in charge and what exactly they were supposed to be doing.

It was reported that the Green Knoll radio repeater was down during part of the ignition phase of the burn. This caused some frustration and difficulties, particularly in regard to communication with the helicopter operations. A “human repeater” was utilized to establish communication. This caused aggravation and the potential for miscommunication. One person reported that they could hear the conversation between ground personnel and the helicopter but that these two entities could not hear each other at times

The burn plan indicates that a “Type 3 helicopter, with a 45-minute response time” is suggested as a contingency resource. Therefore, a Type 3 helicopter was prepositioned near the burn. At one point during burning operations, the helicopter left to assist with a search and rescue operation. Burning operations ceased for a short time until a second helicopter was identified as contingency.

No spotting or incidents occurred from burning the three Hams Fork units. The remaining events of this story pertain only to Pole Creek.

Discussion of Long-term Plans for Pole Creek

District personnel met to determine long-term plans for the Pole Creek unit. There were differing opinions on the course of action to take. The options they discussed were to monitor the unit,

“This fuel type is THE most challenging type there is: it’s like gasoline.”

finish ignition operations, or build some fireline. There were concerns about the fire becoming active later in the season.

Some were of the opinion that it would slowly burn itself out, while others didn’t think that was likely in this fuel type. There

was also concern for firefighter safety due to the snag component in the unit. At this point, the decision was to continue to monitor the burn unit.

June 22- July 10, 2017

During this phase, the Pole Creek unit was patrolled and monitored regularly. The unit is accessible from the main road via UTV (Utility Terrain Vehicle), or a 30-45 minute hike. The Type 4 engine assigned to monitor all four units did not usually have access to a UTV/ 4X4 and chose to drive to a vantage point to visually monitor the Pole Creek unit. Only occasional on-scene monitoring was done by UTV, but neither method was documented in the project record.

There was occasional smoke from within the unit that would then be spot checked. Minimal fire activity was observed, though it was slowly backing down the hill. During this time, some fire personnel thought that the burn should either be completely burned out, mopped up, or a “check-line” established. Others continued to assert that it was too dangerous to have personnel within the partially burned unit due to the snags. Some still believed that it would slowly burn itself out but there was also concern that the fire within the unit could get very active as summer temperatures and drying increased.

THE JULY SPOT FIRE

July 11- July 13, 2017

The Pole Creek unit had little fire activity until July 11 when areas of active fire behavior were noticed within the unit boundary. Discussions continued at all levels of the fire organization as to whether definitive action needed to be taken or to just continue monitoring of the burn unit:

“Discussed black lining and burning the whole thing on June 18 but it never came to fruition.”

“Not a smart move to continue lighting in July...”

“...it is a spotty burn and snaggy. Don’t put people on the ground. Normally you get decent summer moisture. We had expectation that it would put itself out ...”

“My failure was not pushing stronger to go out and finish the unit and re-engage at that time... [after the July spot fire]”

“I wanted to throw more fire in there but kept getting told we’ll monitor.”

“We had mixed signals of whether we are fighting it or letting it do its thing.”

“We had wet weather in June and it just seemed it wouldn’t do what it did. But there was confidence that it was back in control.”

July 14, 2017

On July 14th, two district fire personnel monitoring the area on UTVs reported that the fire had made a 20-40-acre push within the Pole Creek unit. Six other spot fires under ¼ acre were discovered; two within the unit and four to the northeast in the 2014 burn scar.

These two individuals, along with a third person from the district fire organization who had come a bit later, were caught in a sudden hail/rain storm and took shelter in the truck. The storm lasted approximately 20-30 minutes and included several nearby lightning strikes. As soon as the storm was over, they discovered a spot fire burning to the northeast. This spot was approximately 400 feet outside the northern boundary of the Pole Creek burn unit (outside of the old burn scar) (Figure 2).

Initially, they believed this spot fire was still within the boundary of the PCPF analysis area but later determined that it was just outside of it.

The three employees put a line around the spot. There was a large, intensely burning snag within the spot that was unsafe to cut down at that time. They planned to return the next morning to continue fire suppression efforts. No personnel remained on-site for the night.

July 15, 2017

At approximately 0700-0800 the following morning, the same individuals went back and discovered more spot fires and that the fire they had lined the night before had grown to approximately 1-1.5 acres. More resources were ordered and by the end of the day, there were two helicopters and several district employees assisting with the suppression effort.

"We had a vested interest because we had been there for the ignition phase." –Fire Crew

July 16, 2017

They called in additional resources, which were relatively difficult to obtain because of wildfire suppression priorities. The local engine was off-Forest on assignment. A hand crew, three helicopters, and six-person fuels crew, and two engine crews were brought in. (On a side note, while conducting bucket work on the spot fire, the interagency helicopter "sat down" because its helitack's understanding that even when assigned to a prescribed fire, it must save flight hours in case a search and rescue call comes in.)

"Do we really want to call a nine-acre spot a wildfire?"

The spot fire was contained at nine acres. There was disagreement between fire leadership on the Forest whether to declare it a wildfire. Without declaring it a wildfire, funding for suppressing it would have to come from the Forest Fuels' budget. There is also a general reluctance to declare a prescribed burn a wildfire because of the stigma associated with a wildfire declaration and the strain it can create with the public and other agencies. This was especially true in this instance because of the similar incident in 2014.



July 19, 2017.

"We were going to line it, cut it, swamp it, bone-pile it and wash it off the hill!"

In the end, in accordance with guidance from Element 18 of the Pole Creek Burn Plan, this nine-acre fire was not declared a wildfire since it was mitigated within 24 hours. The uncertainty regarding whether it was within or outside of the project area boundary also factored into this decision to some degree.

Around this time, there was also a decision made to complete ignitions on the remaining 30-40 acres of the original 110-acre Pole Creek unit. Therefore, the objective for the next several shifts was to mop-up spot fires and complete ignitions on the Pole Creek unit. Resources remained on scene until they were released on July 22.

"We gridded a lot to find spots...A LOT!!"

In regard to weather forecasts during this phase of activities (and generally applying throughout the PCPF), several people indicated that general weather reports, those out of the Riverton Office, were provided, particularly in the beginning of each phase of the burning. The BB distributed general weather forecasts for the area but did not request spot weather forecasts because it was believed that the spot forecasts were not providing any measurable increase in accuracy. One firefighter relayed that "when comparing the weather to

"What does monitoring include?"

what was experienced, the reports were actually quite accurate." However, it was also conveyed by more than one firefighter, that some district fire personnel believe that the weather forecasts are often incorrect and therefore unreliable for this particular area. A general distrust and therefore indifference to the weather reports was evident for some fire personnel. A firefighter commented, "Even if you believe the weather is always wrong, it doesn't relieve you of the responsibility to check it."

From this time until the August 4th fire escape, the Pole Creek unit and the nine-acre spot fire were monitored using a webcam (put up on July 24th) and by regular visits to the area by district fire personnel.

THE AUGUST WILDFIRE

Chronology of the Escaped Wildfire

- **July 8-July 24: Local Engine, including Burn Boss Trainee, off-Forest on assignment.**
- **July 22: All resources released from PCPF.**
- **July 25: Burn Boss transitions Pole Creek oversight to Burn Boss Trainee.**
- **July 30: Burn Boss off Forest on assignment.**
- **August 2: Engine crew does full walk around burn unit and spots: no fire activity.**
- **August 3: Engine crew (including Burn Boss Trainee) departs for initial attack assist near Fairfield, WY and returns late evening. Pole Creek unit was not checked this day.**
- **August 4: Webcam is checked at 1312 and fire activity discovered; other reports received.**
- **August 4: Within minutes of discovery, Pole Creek Prescribed Fire escape declared a wildfire.**

August 2, 2017

The BB Trainee and crew went out to check the unit. They completed a full walk around the nine-acre spot fire and did a full perimeter walk around the Pole Creek unit. There was no active fire behavior. There were some small logs smoking inside the main unit.

*"What was missed or where did it start again? That is the question in my mind."
-Firefighter*

August 3, 2017

The engine crew had plans to go back up and monitor the fire again. However, a fire started southwest of Afton in Fairview. Both engines from the zone were called out to assist the county. No one checked the unit or the webcam on the August third. The crew got back late that evening.

August 4, 2017

The BB Trainee spent the morning in the office "off-boarding" two seasonals and planned to go out to patrol Pole Creek in the afternoon. (The Burn Boss was gone on a fire assignment.) While sitting at his desk with the window open, the trainee noticed that the wind started picking up and blowing papers on his desk. Upon looking outside, he noticed the wind was gusting and asked

"Unless somebody is there, when a spot fire comes back to life, you ain't gonna catch it."

the Duty Officer (DO) to check the webcam. At 1312 the webcam footage showed a smoke column and the fire was taking off. The DO told the trainee he needed to "get up there!" Close to the same time that the district staff became aware of the fire, the district campground host at Hams Fork

called it in. Also, a Bureau of Lands Management (BLM) employee was on a ridge about 17 miles away from Pole Creek and also reported the fire.

The Zone Duty Officer (ZDO), in conversations with the Acting AA and Forest DO, decided to declare it a wildfire by 1330. The ZDO called in the local engine, the Afton engine, a load of jumpers, and the Teton helicopter.

After a delay in obtaining a UTV and also getting stuck in road construction traffic, the BB Trainee and crew were finally able to get to the fire. By the time the Afton engine arrived on scene, the Pole Creek fire was on the move and they saw the jumpers going in. They gathered at the original ignition spot and started setting up as a Type 3 organization.

"If that day hadn't happened, we wouldn't be having this conversation... This thing went from no smoke to wildfire...wind, sun—everything lined up..."

The ZDO gave the Acting AA a quick briefing and then headed out to the fire. The ZDO was able to take a helicopter flight at 1730 and estimated the fire to be at 150-200 acres.

It was also noted that a camper told the campground host that they saw lightning in the area. A Fire Origin and Cause Incident Report concluded that the escaped fire originated from an "escaped fire from a controlled burn due to high wind events..." By the end of the day, the wildfire was estimated to be almost 2,500 acres in size and a Type 3 incident management team

was ordered to assume management of the fire. It was managed as a wildfire after that point and grew to approximately 3,600 acres.

LESSONS LEARNED ANALYSIS

Key Lessons

- Maintaining a prescribed fire in “monitoring status” when objectives of the burn have not been met, allows the potential for unburned material to ignite later in the season when fuel moistures and weather conditions are more conducive to an escaped fire.
- Organizational responsibilities should be established well in advance of prescribed burn operations. This should include who will assume responsibility for the post-burn activities and the duration of those duties. The prescribed fire guide allows for differing organizations or transfer of command when necessary.
- If a prescribed fire is in “monitoring status,” the following should be established: who will do the monitoring/patrolling and by what means; how often monitoring will occur, how it will be documented. An endpoint also needs to be identified.
- When the objectives of a prescribed burn have not been met (i.e. “no-go”), and direct suppression efforts are not going to be taken, develop an action plan or strategy for long-term fire management (i.e. M.A.P.S, Trigger Points).
- The use of remote technology (i.e. webcam) can be beneficial in terms of managing risk. However, when used over a long duration, a webcam can give a misleading sense of consistent and sufficient detailed observation.

Additional Lessons/Considerations

PRESCRIBED FIRE

- To meet objectives when burning in spruce-fir fuel types, high-intensity, stand-replacing fire behavior is required. A larger planning area would allow for unpredictability and long-range spotting.
- Scheduled mandatory training and spring prescribed burning occur during the same time period, resulting in conflicting priorities.
- Include detailed information and maps during the initial in-briefing for those with less familiarity with the project. Daily briefings need to be consistent throughout the project and include Medical Plans. The objectives of the fire and burn unit control lines need to be clearly communicated. Also, fire personnel need to take the initiative to speak-up when they have a need for more information.

“The Chief’s intent for prescribed fire is that it be managed with the same rigor, oversight, and risk-informed decision-making we undertake in our wildfire response.”
Prescribed Fire Risk Management Protocol (2016)

- Burning multiple units, long distances between units, and multiple burn plans increase complexity because of travel times, limited resources, and spreading firefighters thin. This in turn increases risk and the probability of an unintended outcome.
- To improve onsite weather observations, foster a good working relationship with local weather service offices. Provide feedback on the accuracy of spot weather forecasts.

BURN PLAN

- The official copy of the burn plan must include all elements and appendices as required in the Prescribed Fire Guide.
- Rewrite burn plans rather than amending multiple times to decrease confusion and the potential for unintended outcomes.
- Post burn documentation must be kept up to date as is described in the Interagency Prescribed Fire Planning and Implementation Procedures Guide, July 2017.
- Although IAP's are not required for prescribed burns it can be useful in communicating objectives to the burn organization.

COMMUNICATION

- Identify radio communications in preplanning and have a plan in place on whether operations can proceed if those communications break down. Document these major decisions made during prescribed fires.
- Ensure that all parties agree upon helispots prior to ignitions, taking into account the location relative to the project and ability to reach radio communication.
- Clarify whether helicopter is assigned to prescribed burns or wildfires. An assigned helicopter is committed to the operations.
- Complete an AAR (After Action Review) routinely at the end of the shift and project. This provides a forum to determine the origins of successes, identify improvements, and to develop strategies for mitigation in the event of an unintended outcome.
- Leadership needs to be clear when communicating expectations to people that they do not work with frequently. Assumptions should not be made that everyone has the same understanding of processes or familiarity with the project.
- Building and maintaining strong relationships with other districts, partnering agencies, and the public is key to having a successful prescribed fire program. This responsibility lies with all levels of the organization.

Questions to Facilitate Future Dialogue & Continued Learning

Discussions with participants during this FLA process raised several worthy topics for further discussion. While these discussion topics are of value to those who experienced this unintended outcome; these topics are likely of value within the broader community of fire professionals.

- Prescribed burns with an objective of aspen regeneration mean burning in heavy fuels, often in spring/early summer. Can we accomplish these types of burns with the more extreme weather conditions brought about by our changing climate?
- Continuing to implement these types/timing (spring) of prescribed burns means operating in an environment of increased risk: both in increased chance of escape (spotting, weather conditions) and exposure to firefighters during ignition, extended mop-up, and patrols. Do fire managers and agency administrators understand and accept this increased risk? How can this risk be mitigated?
- Burning in these heavy fuels (SAF/Spruce/Snags) for aspen regeneration in the late spring/summer time period can mean having to patrol over a long period of time to find pockets of heat that remain in the unit. How can fire managers and agency administrators evaluate this increased exposure from extended mop-up and patrol vs. an increased risk of escape later in the fire season (if mop-up is less than 100%) while also maintaining daily fire staffing requirements?
- Prescribed burns with an objective of aspen regeneration commonly occur in heavy fuel types during very limited burn windows and require a significant commitment of resources. Should we consider an increased complexity (RXB1) or other higher level organizational oversight?
- Risk management discussions that commonly occur among agency administrators and fire leadership for wildfire incidents, should be equally robust for prescribed fire projects, as envisioned in the Forest Service 2016 Wildland Fire Risk Management Protocols (pages 5-8, see Appendix) Some specific questions to consider:
 - ✦ Are we managing wildland fire incidents with an equal commitment of necessary resources and fire leadership during the active fire season (June to October)?
 - ✦ Restrictions on prescribed burning during planning levels 4 and 5 are becoming more common during late summer/early fall burn windows. Are these restrictions pushing toward more spring burning to accomplish restoration goals? Is this an acceptable transfer of risk?

FACILITATED LEARNING ANALYSIS TEAM

- **Team Leader:** Jennefer Parker, District Ranger, Logan Ranger District,
Uinta-Wasatch-Cache National Forest
- **Lead Facilitator:** Skeet Houston, District Safety Officer,
Bureau of Land Management, Cedar City, UT
- **Union Representative:** Rob Alexander, Assistant Intermountain Region Fleet Manager,
Intermountain Regional Office
- **Writer/Editor:** Michelle McCammon, Wildlife Biologist, Intermountain Region
Duty Station, Cascade Ranger District
- **Writer/Editor Shadow:** Daniel McBride, Partnership Coordinator,
Intermountain Regional Office
- **Subject Matter Expert:** Jeff Sanocki, North Zone Fuels AFMO,
Uinta-Wasatch-Cache National Forest
- **Bridger-Teton Forest Liaison:** Travis Wetzler, Safety Officer,
Bridger-Teton National Forest
- **Remote Coach:** Terry Swinscoe, Risk Management,
Intermountain Regional Office

APPENDIX

FOREST SERVICE 2016 WILDLAND FIRE RISK MANAGEMENT PROTOCOLS (PAGES 5-8)

The following excerpt is from the Forest Service 2016 Wildland Fire Risk Management Protocols:

Prescribed Fire Risk Management Protocol

The application of prescribed fire presents one of the best opportunities for addressing risk long term while achieving our land management objectives on a meaningful scale. Prescribed fire presents an inherent level of risk. The Chief's intent for prescribed fire is that it be managed with the same rigor, oversight, and risk-informed decision-making we undertake in our wildfire response. In addition to the principles described in the Chief's Letter of Intent, we also embrace the following protocol and associated principles specific to prescribed fire risk:

Phase I – Pre-Season, NFMA/NEPA Planning

1. Risk Analysis Blending Science with Experience – Engage in meaningful risk analysis to identify threats to values, potential benefits from various management interventions, the risks involved with initiating action as well as risks related to not taking action (no action does not equal no risk). Use the best available information and appropriate analytical tools along with the intuitive knowledge that exists among our experienced workforce, cooperators, and partners.
2. The Reward Justifies the Risk - When considering the use of prescribed fire, make reasoned and informed risk management decisions. We will only proceed when we have determined that prescribed fire is the most practical method of those available, for achieving the desired results and that the expected benefits warrant the perceived risks.
4. No Surprises – Over-inform, don't under-inform; engage stakeholders, don't wait for them to come to you.
 - Build stakeholder and community support by seeking buy-in at every opportunity from risk analysis through project development; don't wait until it is time to implement.
 - Coordinate prescribed burns with appropriate partners.
 - Communicate with appropriate adjacent land management agencies, communities, elected officials, etc., about intention to conduct prescribed burns within the local areas, especially those located near communities.
 - Where possible, distribute interagency notifications (press releases) within communities to inform the public of the intention to conduct prescribed burns.

5. Engage in Risk Sharing Dialogue - The focal point for managing risk in the prescribed fire program lies in fostering the partnership between agency administrators at all levels and their supporting fire management staffs.

Forest Supervisors will communicate with their Regional Forester and/or designated staff about their planned prescribed fire program prior to each anticipated burning season.

This dialog not only meets the policy requirement for the Regional Forester to provide program oversight, but also serves as the basis for the Regional Office's understanding and support of your program. Line officers and fire managers at all levels will maintain this dialog on a continual basis. The goal is for all of us to better understand the nature of the prescribed fire program's aims, its risks, and the role that each of us plays in supporting each other as we deliver this vitally important program. As part of the dialog with the Region, Forest Supervisors should be prepared to communicate the following:

- Anticipated summary of planned prescribed fire projects along with any operational concerns that they should be aware of. (Number of projects, complexity levels, objectives to be achieved, relative unit sizes, duration, WUI, etc.)
- Describe any controversial issues associated with implementing the prescribed fires.
- Describe the unit's intent for engaging all line officers, interagency cooperators and fire staffs as the prescribed fire projects are implemented.
- What impact do extenuating circumstances such as extended drought conditions, insect infestation, neighboring development, etc. have on the planned projects?
- How have you engaged with the public, our cooperators and other partners and made them aware of your upcoming burns(s)? Will cooperators be involved in implementation?
- What will be the trigger for wildfire declaration and what is the plan's reliance on and availability of contingency resources?
- Are there other aspects of your program they should know about?

In turn, the Regional Forester and Forest Supervisor will be prepared to discuss with their subordinate line officers and staff:

- Who at the Forest/District is delegated authority to approve prescribed fire plans and authorize their ignition at the Low, Moderate, and High complexity levels? (must meet training, certification, and documentation requirements per FSM 5140, FSH 5109.17, and Forest Service Fire and Aviation Qualifications Guide)
- The Regional Forester or Forest Supervisor may be required (at National PL 4/5) or elect to exercise additional oversight of the prescribed fire program (national/regional conditions including resource availability, weather, changed fuel conditions, or social/political sensitivities). Regional Foresters and Forest Supervisors should be prepared to describe the conditions that will trigger additional dialog, concurrence, or approval by the next higher authority and the particulars of how that process will take place.

Phase II – Prescribed Fire Implementation

Prescribed Fire as Part of the Overall Fire Management Workload – Prescribed fire is not separate from but must be integrated with the overall fire management workload which includes

wildfire response, prevention, etc. Prescribed fire is a central function of a comprehensive fire management program and we plan, train, and execute it accordingly.

We continue to strive to develop procedures and standards for prescribed fire implementation and wildfire response that are as similar as practical to improve performance and reliability in all FAM operations through the use of common ideals, terminology and practices.

The “Five Rights” is also an effective communication and planning tool for the management of prescribed fire:

- the **Right Plan** (is defined by the Complexity Analysis and Prescribed Fire Burn Plan);
- in the **Right Place** (where we have identified priority areas for treatment and have a reasonable probability of success in applying prescribed fire);
- at the **Right Time** (when we are within our identified window of conditions for burning that are favorable for efficient and effective operations and desired outcomes);
- with the **Right Assets** (those assets needed to safely implement the burn(s) in support of objectives including firefighter & public safety and protection of values potentially at risk – reference Holding Plans, Contingency Plans, Staffing & Action Plans, etc.); and
- for the **Right Duration** (there is sufficient time to implement and secure the burn(s) in order to avoid critical fire weather events, smoke incursions, or similar concerns).

Phase III – Learning and Continual Improvement

As a learning organization implementing a prescribed fire program, we must improve our overall program delivery by seeking to capture and transfer lessons learned on a continual basis.

Consider implementing the following actions which support that process:

- On prescribed fire projects as in wildfire suppression, every operational period should strive to conclude with a short After Action Review (AAR) to continually hone firefighter awareness and information sharing.
- Periodically, complete Seasonal Reviews for prescribed fire program, preferably soon after the end of a prescribed fire season.
 - Include fire management, resource staff, and line officers with focus not only on operational concerns, but also administrative, natural resource, and risk management concerns.
 - Look outside the organization; engage key stakeholders and cooperators to find out what did and did not work for them and solicit suggestions for improvement.
- Conduct peer-to-peer review of after action findings.
 - Engage other prescribed fire program leaders and share experiences, find commonalities, and devise strategies for improvements.
- Share what you have learned.
 - Through Forest-Wide, Regional, and National meetings and trainings.
 - Through Prescribed Fire Consortia and other communities of practice.
 - Through the Wildland Fire Lessons Learned Center.
- Prepare and implement plans for improvement.
 - Monitor and report fire effects against project objectives.
 - Engage leaders at the Forest, Regional, and National Level to share your lessons, identify strategies for improvement, and identify tasks required to pursue those strategies, and determine who will be responsible for pursuing each task.