



2016 Cliff Creek Wildfire – 2019 Review

Facilitated Learning Analysis

**Big Piney and Jackson Ranger District
Bridger-Teton National Forest**



Decision Space

The 2016 Cliff Creek Fire was a lightning caused fire on the Big Piney and Jackson Ranger Districts. It started in a drainage where structures and values were often threatened by fire. With two different plans on the table, how do local Line Officers and IMT overhead come to agreement on the best path forward? In 2019, fire managers realized that—in the spirit of continual learning—an FLA focused on such decisions and key take-away lessons from this incident would be beneficial to everyone. This FLA therefore aims to: create a dialogue around the importance and complexities of risk informed decision making, communication with internal and external partners, providing leader's intent, and how we can work to improve in these areas at all levels of the fire organization.

The Cliff Creek fire started on July 17, 2016. It was located on the Big Piney Ranger District in the Bridger Teton National Forest in Wyoming. The lightning caused fire rapidly grew even though initial attack (IA) resources had a visual of the fire within fifteen minutes. The fire quickly burned an outbuilding and outgrew local IA capacity. By the end of the first day, because of rapid growth of the fire a Type 2 Incident Management Team (IMT) was ordered. The Type 2 IMT took command of the fire at 0600 on July 19.

The overall strategy for this fire was to focus suppression resources on the flanks of the fire that threatened structures and private property in the Bondurant area and in the Granite Creek drainage on the north flank. The fire continued to burn and on July 22 conversations began to develop around needed actions on the north flank of the fire. The topography and prevailing winds were aligned for the fire to make a significant run towards the structures up the Granite Creek drainage. The fire burned for over eighty days and eventually progressed east of Granite Creek.

"It was inevitable that the fire was coming,"
RXB1

Two plans started to form—one generated by the IMT and one by the local unit. The IMT's Operations Section with support from hotshot crews had scouted the north flank of the fire and had identified a feasible plan to go direct to secure that line. They estimated that it would take six hotshot crews a week to complete with aviation support. *This strategy had a moderate to high probability of success to meet incident objectives and was a typical strategy that firefighting resources have historically been most comfortable with (one foot in the black).* While that was a good option to meet the incident objectives, the local unit had been discussing another option. The second option was to go with an indirect strategy that would involve a large burn operation and would utilize recent fuels treatments and natural barriers along the Granite Creek drainage to the north of the main fire. Over the previous decade the Forest, local partners and the residents had accomplished fuels treatments that fire managers could use to burn out from. *This option also had a moderate to high probability of success to meet incident objectives.* Both options involved risk to firefighters and values, a key part of this discussion was about the investment of risk and what would be achieved towards short and longer term objectives.

Note to the Reader - So What? Why do a review on this at all? The intent here is to create dialogue between you, local leaders and your local partners, both internally and externally – before there is smoke in the air. The circumstances of the Cliff Creek are almost certainly similar to fires on most national forests in the system. How prepared are you and your partners to have these types of discussions?

Present day – We have a unique opportunity to evaluate the decision that was made that day. Flash forward more than three years since this decision, using hindsight, we can re-visit the ground and evaluate the outcome and have a better understanding of how the decision impacted the area. In summary, some of the key take-away lessons learned here include:

- How relationships with partners grow stronger as we continue to practice engaging them early and often in the planning of future actions.
- How the burnout operation improved stand conditions and enhanced previous fuels treatments, further protecting the Granite Creek drainage assets longer into the future from catastrophic wildfire.
- Understanding the effect of engaging our internal partners (IHCs and others fire resources) early in the decision making process before plan execution.

Additional context around these lessons learned and others are included later in this report under the lessons learned section.

To burn or not to burn. That was the question – Do we burn an extra 5,000 plus acres and possibly limit future exposure to firefighters and the residences of Granite Creek? Or do we actively suppress the fire and push the fuels problem into the future?

Moving forward, on the morning of July 23 a strategy meeting was held with Forest leadership along with State, County, local fire chiefs and the Type 2 IMT to discuss the north side of the fire. There were numerous values along the Granite Creek drainage including structures, a developed hot spring, a campground, a powerline, and several other private inholdings. The group had a risk based conversation where they discussed the pros and cons of both options. Cost was discussed with both options seeming to have roughly the same financial obligation. The discussion went well with open, respectful, and healthy dialogue which led to agreement on the final decision.

"This fire was a prime example for the Cohesive Strategy," Cooperator

The decision: Go indirect and conduct the burnout operation.

Implementation – Prior to the IMT executing the plan, the Forest Supervisor and District Ranger traveled out to the spike camp where they had been developing the plan to go direct. They briefed the resources in spike camp on the indirect strategy they had selected. They had a good open discussion with the IHCs on why that plan was selected, how it would be implemented and engaged these local crew leaders in great back and forth discussions on execution. This discussion created buy-in that helped build momentum around this strategy.

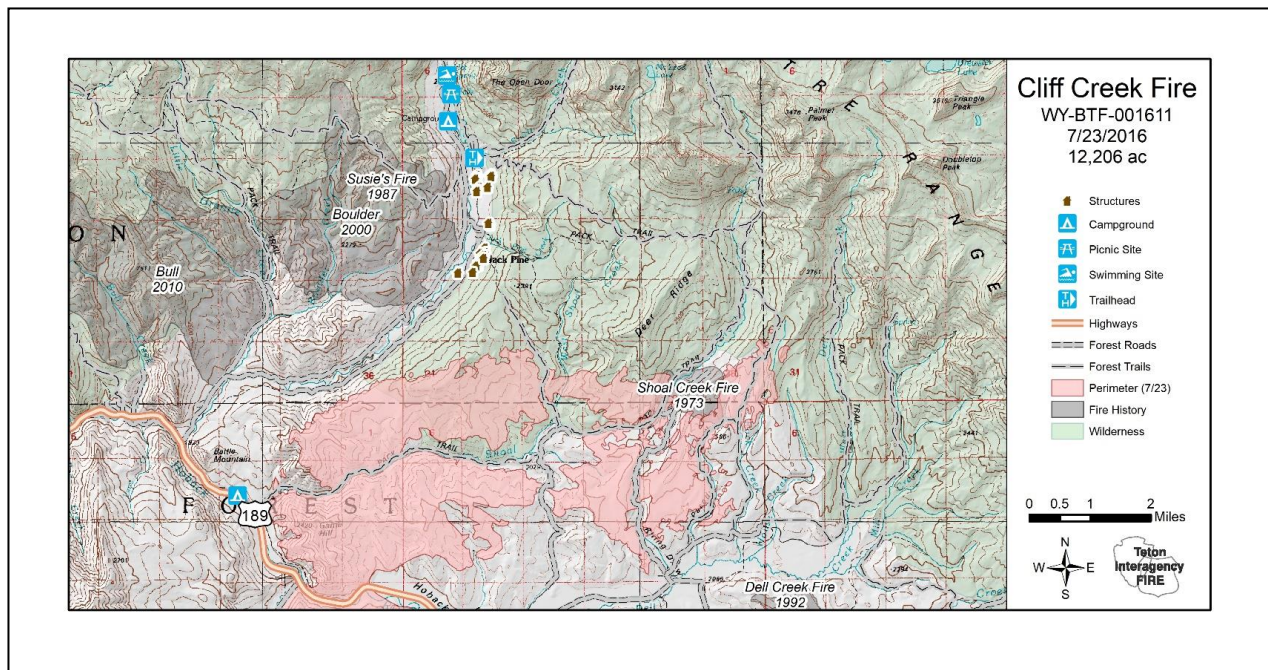


Figure 1: Map of Cliff Creek Fire area.

Later that day crews began prepping the burn and the 5000 plus acre burnout operation was conducted over the next several days. The burnout did exactly what was planned and held the fire south of Granite Creek and all values at risk were protected.

Key point – As the fire progressed, the agency administrators adjusted their desired end state for the team. The end state expanded from protecting the values at risk during current operations, to include also reducing risk in the long term.

Decision talking points:

The following “Weighing the Options” are key elements of the two options brought forward from Cliff Creek for you to consider when facilitating dialogue locally with your leaders and partners. These are real elements, discussion points, and the thought process that went into the July 23 strategy meeting which included cooperators and stakeholders. Use them as needed to facilitate discussion.

Reader: What option would you pick and what criteria sways your choice?

Weighing the options:

Option one: Direct - Utilize six Hotshot crews with aviation support to go direct to contain fire.

- Six miles of line would need to be constructed into the backcountry through a mostly timbered fuel type and a mix of aspen and sagebrush. They estimated a week to complete.
- This was a viable alternative but involved more exposure to hazards such as snags and steep terrain for fire personnel.
- This is a solid firefighter strategy (one foot in the black).
- Crews were somewhat vested to this option as they had started scouting the option and found it to be feasible.
- Acknowledged that the Hotshot crews could stop the fire by going direct.

Option two: Indirect - Conduct a burn to remove fuel between the fire and the houses (Granite Creek).

- Approximately nine miles of burning would be necessary using a combination of roads, fuel breaks and Granite Creek.
- Four large fires had previously threatened the same structures in Granite Creek over the last 15 years each resulting in the mobilization of IMTs and aggressive suppression actions.
- The Forest had invested in viable fuel treatments in the Granite Creek drainage to help protect those structures from wildfire.
- There was experienced personnel available locally that were familiar with burning in this fuel type.
- This option would add several thousand acres, but offered more favorable fuels and terrain.
- Implementing this option would reduce the threat to those homes for the next several decades.
- In the event of an injury the indirect option provided for better medical transport egress with road access and large meadows to utilize aviation.
- This option would limit exposure to firefighters from falling trees or snags.
- Burning on a day of our choosing under our terms.
- This option would use a combination of aerial and ground ignition techniques.

Common to both options:

- Both options required similar air and ground resource commitments.
- Both options were estimated to take a week to complete.



Figures 2 & 3: Burnout operation July 2016.

Other considerations:

- Even good decisions can have bad outcomes.
- Line Officers felt they had the IMT, the resources, and technical ability to implement this strategy.
- Looking long term not short term - this could reset the clock for burnable fuels.
- Over the previous 15 years, millions of dollars had been spent on wildfires protecting the same structures the Cliff Creek fire threatened.
- Decisions were based on managing risk both short and long term.
- Resources were available locally and nationally.

Additional talking points - Have you had a fire like this? How did you proceed? Have you built capacity with cooperators and partners to have a discussion like this if you are faced with similar options? If not, what steps can we take to get there? Have you had opportunities to burn off existing treatments? What are your thoughts on short term risk vs long term gain? How do you measure risk? Who should be involved in making such a decision? Who needs to be informed of the decision? How will you monitor whether this was a success or not? Is it common to have differing strategy perspectives between the local unit and IMTs? How can we help bridge those gaps? How do pre-season meetings around a shared stewardship or cohesive strategy fit in this discussion?

"Let's reduce the risk for the future," County Fire Chief

By burning a particular piece of ground now, how do you measure how effective that tactic was?

How does this conversation start?

Fuel Treatment Effectiveness:

The long term risk of additional fuels accumulating combined with the inevitability of future fires was a key factor in deciding upon the indirect strategy. Having already implemented fuels treatments in this area supported this decision. In 2002 fuel treatments were implemented adjacent to all of the developments in the Granite Creek drainage. Those treatments were utilized to conduct the burnout which proved to be effective as documented in a 2016 Fuels Treatment Effectiveness report.

Now fast forward to present day. It's clear that this decision has had a positive fuels management effect for this area. Not only did the burn maintain those previous fuels treatments but also, fuels staff interviewed believe this fire will serve as a beneficial fuel break that will sufficiently reduce fire intensity and provide a place for firefighters to safely engage future fires. Local fire and fuels effects monitoring inventory data show that a burn/wildfire of this nature will serve as an effective fuel break for at least 20 years in this fuel type. If the original direct attack option had been chosen, the 2018 Roosevelt fire may have impacted or threatened developments in the Granite Creek drainage, however, given the outcome of the indirect option that was chosen for the Cliff Creek fire in 2013, that concern was minimal.



Figure 4: Cliff Creek Fire area in 2019.

Conclusion:

Implementation and the resulting fire effects monitoring data shows that the burn met fuels and resource objectives for the local unit. The burn maintained the previous fuel treatments and built a substantial buffer for the values in Granite Creek which will pay dividends for years to come. Additionally, the burn created a nice mosaic that did not negatively impact the viewshed or any other resources.

While this strategy turned out to be a success in this case, it might not always work out this way depending on all those environmental and social-political factors that we may or may not have any control over but need to be considered when identifying the appropriate strategy. In the spirit of continual learning, this FLA aims to create a dialogue around the importance and complexities of risk informed decision making, communication with internal and external partners, providing leader's intent and how we can work to improve in these areas at all levels of the fire organization.

"Overall, my observations are that the fuel reduction project played a significant role in the Jack Pine subdivision ultimately being a defendable space."
Jackson Hole Fire/EMS Captain

Lessons Learned:

Keep the discussion risk based: At the onset, some of the cooperators and public saw the indirect strategy as a way for the Forest Service to gain additional treatment acres for resource benefits. That was not the case. Focusing the discussion on firefighter safety, risk versus rewards, and long-term risk reduction for each option was key to gaining external and IMT support for the indirect strategy. In this case, discussing resource benefits after the outcome was achieved rather than as an incident objective prevented unnecessary distractions, kept the discussion focused on solid risk management considerations, and reduced socio-political concerns with the chosen strategy.

Briefing spike camps in person: Briefing spike camps and crews on the overall plan, objectives, strategies, and the "big why" for the burnout made a significant difference. Doing this in person allowed for comments to be heard and questions to be asked. This built buy-in from crews as to why Line Officers wanted to utilize this strategy. This reinforced the importance of having a well experienced Line Officer. These engaged Line Officers gave clear leader's intent.

Intentional Objectives – The Line Officer had intentionally chosen objectives that allowed for the decision space for multiple tactics that led to a successful burnout operation. (The increased acreage met all the incident objectives). Division supervisors also worked to build comfort with their assigned

resources that fallback options such as point protection or no action were acceptable should the planned strategy fail.

Long term Risk – The forest management and cooperators were thinking about long term risk of not conducting the burnout and pushing the fuels buildup further into the future.

15 min lag from balls being dropped to ignition – Although not the focus of this FLA, an important lesson learned was about this particular aerial ignition tool. The plastic spheres that were used for ignition can take a few minutes to build heat. It is very easy to drop too many balls waiting for the desired intensity.

Pre-season Meetings – This fire reinforced the need and importance of pre-season meetings with your partners and cooperators prior to any incident. Strong relationships were built by having annual exercises and meetings with all their partners and cooperators. These venues provide great opportunity for building relationships and practicing joint decision making before we actually have an incident.

Include all affected jurisdictional agencies in strategy related meetings – Include all the cooperators and partners in strategy related meetings. They checked their attitudes and egos at the door and had a conversation where all the key players were given the opportunity to speak and everyone listened well. It was critical to the overall success of the burnout having all agencies speaking up during negotiations and meetings. Attitudes and egos tend to get in the way of open communication but in this case everyone listened to the thoughts and tradeoffs offered from each other. As history has shown us, good communication is the most critical link to successfully and safely performing our work.

Were all in this together – Whether you manage fire for the State, Private or federal agencies, these large fires can impact us all.

Thoughts from the FLA team:

People inherently gravitate to their area of comfort which challenges our ability to find new ways to address new challenges. Relevant to this fire, these ground resources immediately defaulted to a direct suppression strategy which is appropriate as that is how firefighters are trained. Resources from different regions can come with different experience and comfort levels with utilizing a strategy other than full suppression or direct line construction. With our land management agencies embattled with an ever growing wildland fire environment it's important to encourage out of the box thinking to help keep up with this evolution.

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