JOHNSON RIDGE ESCAPED PRESCRIBED FIRE OCTOBER 2017

FACILITATED LEARNING ANALYSIS

Moab-Monticello
Ranger District
Manti-La Sal
National Forest

Report Date: April 2018

Abstract: In October of 2017, the Moab-Monticello Ranger District was completing a prescribed fire in the Johnson Creek–Nizhoni Prescribed Burn Project Area. Shortly after burning operations ceased, two spot fires were discovered on the adjacent slope, outside of the project area. Attempts to suppress the spot fires that night and the next day were ultimately unsuccessful. The Johnson Ridge Wildfire was declared on October 13, 2017.

From a point above Johnson Ridge Fire.

INTRODUCTION

"The spot fire is taking off!!" This was an unexpected and obviously unwelcome realization for personnel endeavoring to contain the slop-over fire that had crossed the prescribed burn boundary. The day prior, October 12, 2017, burn resources had completed a long day burning Unit 8 of the Johnson Creek-Nizhoni Prescribed Burn Project on the Moab-Monticello Ranger District of the Manti-La Sal National Forest (Figures 1 & 2). Shortly after the burning was completed, two spot fires were discovered on the slope opposite the project area. On the afternoon of the following day, the Johnson Ridge Wildfire was declared. This Facilitated Learning Analysis (FLA) conveys the story of this incident.

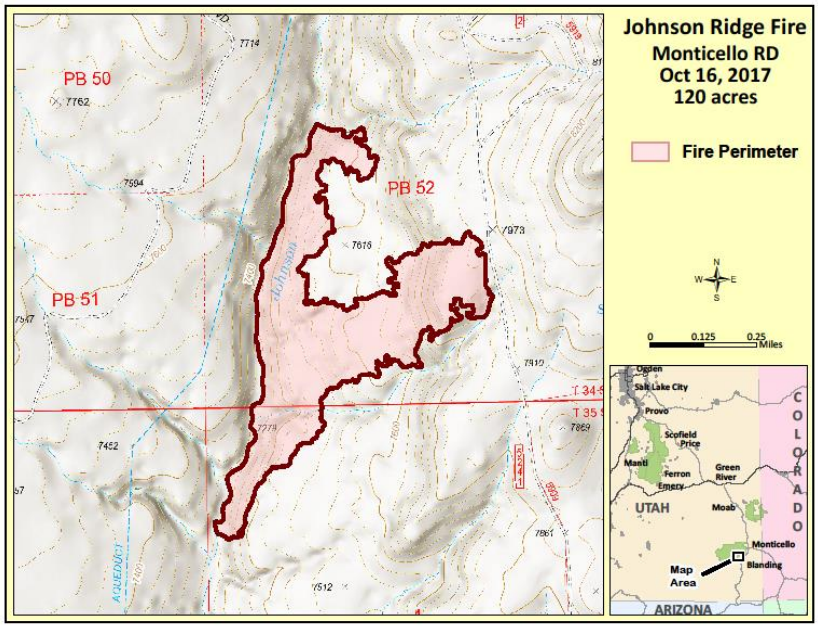

Figure 1. Johnson Ridge Fire and Vicinity Map.

SETTING

Location

The Johnson Ridge Fire area is located on the Moab-Monticello Ranger District, west of Monticello, UT (Figure 1). The wildfire occurred just above Johnson Creek, on a west-facing slope adjacent to the Johnson Creek-Nizhoni Prescribed Fire Project Area (Figure 2). Much of this project area is gently sloping but there is an abrupt drop into Johnson Creek, which forms a portion of the project area's eastern boundary and also the boundary of Unit 8. Approximately 185 acres of Unit 8, a 205-acre unit, were burned on October 12, 2017 (Figure 2). Unit 8 is a long "sliver" that encompasses much the steep section above the creek (Figure 2).

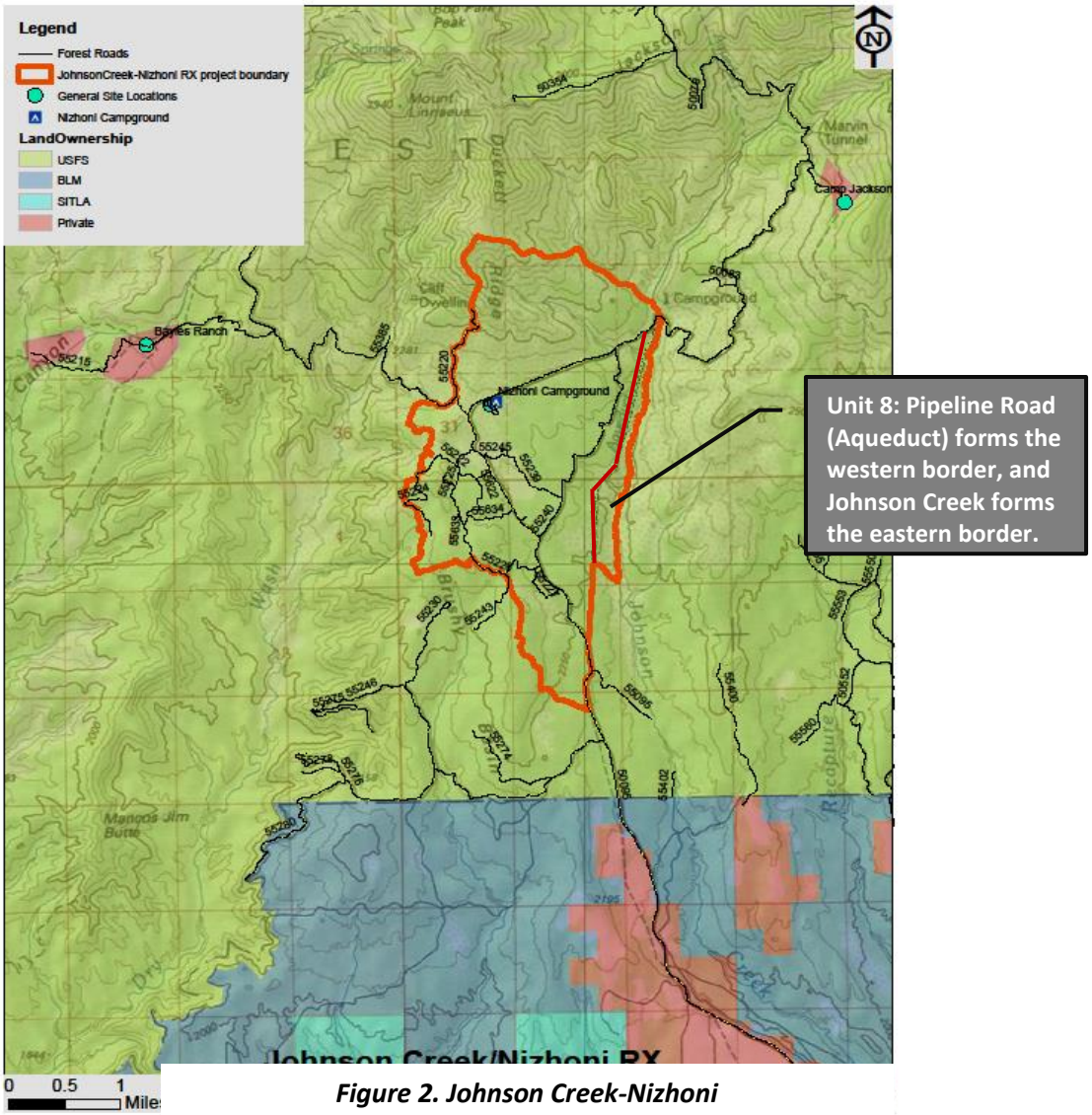

Figure 2. Johnson Creek-Nizhoni Prescribed Fire Project and Unit 8.

Unit 8, October 12, 2017, 1030 hours.

October 12, 2017, burning of Unit 8.

Vegetation/Fuels

The project area is primarily mixed ponderosa pine, juniper, and oak brush growing on east/southeast facing topography. Unit 8 contained a heavy component of mature Gambel oak brush, much of it well over 17 feet in height, especially down in the "ravine" along Johnson Creek. Cottonwood trees, with a large dead and down component, were also present in sections along the creek. The vegetation in Unit 8 had not had fire in it for decades. Much of the rest of the project area had been burned in 2017 and previous years.

A heavy late-season frost in the spring and the typical fall frosts had resulted in a large percentage of the leaves dying and remaining on the branches of the dormant Gambel oak. The effect was an increased amount of fine fuels in the oak canopy.

The hillside opposite the project area (the east side of Johnson Creek) also had a large component of Gambel oak and thick vegetation that also had not been burned in some time.

October 12, 2017, burn crew on Aqueduct/Pipeline Road forming western boundary of Unit 8.

THE STORY

Background

October 12 began as a normal burn day, registering average fall temperatures and clear skies. The high temperature for the day was projected to be 62-67° Fahrenheit. Earlier in the week, October 9, moist weather, including some light snow, appeared to signal that the fall burning season had come to end. However, in the following days, warmer, dry weather returned and the South Zone Fuels Specialist determined that there was a window to complete more burning. He wanted to burn Unit 8–a long, mostly steep and brushy sliver, on the eastern boundary and the last to be accomplished in the project area. Taking advantage of the limited opportunities to do prescribed burning is commonplace in the Forest Service. There is a varying amount of pressure on employees at all levels to accomplish targets and to capitalize on these burn windows. The pressure comes from multiple sources, including individual and collective drive to do excellent work. One local fuels resource relayed that, "We're in the culture where we want to finish it and get everything done."

"I was thinking, 'Why are we burning this?' but did not verbalize this because of the success our district prescribed burning program has had in recent years and the level of trust and comfort I have with my district fire personnel." –District Ranger

Burning of the units in the project area had been ongoing since 2016. Several units had been burned in the spring of 2017 and 500 acres had been burned in the project area that fall. Nothing beyond status quo was expected that day. Most of the Forest and District personnel were very familiar with the general area and fuel types; they were not necessarily as familiar with the condition of the Gambel oak with the increased fine fuels in its canopy. One of the local fire personnel commented that, "It was an unusual fuel situation for us."

"It was an unusual fuel situation for us."

A few days prior to the burning of Unit 8, 23 acres on the western side of the project area had been burned; this had gone well, though it had to be burned slowly to keep it from getting out of control. Because the district had been doing prescribed fires in this project area for some time, most of the burn implementation personnel were very familiar with the fuels and expected fire behavior. There was a high level of comfort in burning within the project area.

It had been a long, busy fire season, and because of recent precipitation events and the time of year, the perception among many had been that fall burning season was over. It was a bit of a mental adjustment for some of the employees to gear-up for yet another burn. In fact, many were not even available due to the time of year, other priorities, or vacation time.

The Plan

NEPA Analysis/Burn Plan

National Environmental Policy Act (NEPA) documentation was completed in 2011 for the Nizhoni Forest Restoration Project (Appendix B). The Johnson Creek-Nizhoni Prescribed Burn

Plan was completed and approved by the Line Officer on March 8, 2016. The objectives for the prescribed burning activities are detailed in Appendix B. In summary, the NEPA objectives included restoring ponderosa pine, creating near-historic disturbance conditions, and diversifying the age structure and continuity of Gambel oak stands. The primary objectives identified in the burn plan were lowering wildland fire hazard by reducing slash and increasing the number and shape of mosaics within the shrub vegetation. The NEPA document and burn plan also described several more specific objectives and associated percentages of desired burned vegetation/fuel types (Appendix B).

"We talk about mosaics all the time, but when we look at it, it's like… 'How much is black?'…"

Related to the NEPA documentation and the burn plan, District and Forest fire personnel expressed that there is confusion as to how the burn accomplishments should be counted; should the percentages of burned versus unburned be calculated across the project area or unit by unit? This is believed to be an issue that is common to units across the Forest Service. An element of frustration was also conveyed when discussing how the objectives of the NEPA process and burn plan translate to wise and attainable objectives on the ground. The District Fuels Technician commented that there is always a lot of discussion about prescribed fires resulting in a "mosaic" of both burned and unburned vegetation but in reality, it seems everyone is actually looking for how much of the unit is black. The Firing Boss (FB) commented that, "We should be able to skip areas that don't make sense to burn without it looking bad, as an uncompleted project."

"Are we making smart objectives?"

Burn Day Plan

In July, the District Fuels Technician had done reconnaissance in the area and noted that there were mostly pockets of oak brush and that it didn't appear it would do much if burned. He had remarked that, "Putting fire in oak is hard to model. In the summer, you couldn't get it to burn if you wanted to." Fuel data had been taken near the northeastern boundary of the project area. It was later noted that this data was not collected in a place that was representative of the fuels in Unit 8.

"Lots of oak on this district and sometimes it's a danger and sometimes it isn't." –Zone AFMO

Johnson Creek was to provide a "wet line" for containment along the eastern boundary and no hose lays or other preparation was completed. The FB had walked a portion of Unit 8 prior to the burn operations. He had relayed that Johnson Creek was flowing well. The Holding Boss (HB) remarked that the creek had been flowing "like crazy" all year long. On the day before the burning of Unit 8, the HB had returned from a fire assignment. He had looked at a few of the units in the spring but was otherwise unfamiliar with the project area.

"We are working on the edge of the unit, relying on an unimproved creek as the line. 'So what happens if it gets across the creek?' is the question that we should've asked well in advance." –Firing Boss

A good briefing was completed on the morning of October 12. The plan for the day was to ignite the unit using a couple of Igniters with drip torches in the narrow portion of the unit and to keep

people out of the steep areas. The plan for the steep sections was to ignite them using hand tossed or shot devices. Spot weather forecasts were being relayed by the FB.

Test fires were completed at approximately 1000 hours on the north end of Unit 8. These turned out favorable, so ignition of Unit 8 began shortly after.

Resources for burning of Unit 8 included 17 personnel: Burn Boss (BB), Firing Boss (FB), Holding Boss (HB) and an ignition and holding crew. The contingency resources called for by the burn plan consisted of a three-person T6 engine module. That resource was on scene and engaged during the burn.

"The day of ignition is the culmination of all the work and planning that led up to that moment."
–Fuels Specialist (Detailer)

The HB was stationed on the road at the top of the burn unit. The FB was keeping an eye on the eastern boundary by traversing up and down along Johnson Creek, watching for spots and potential slop over.

What Happened

Ignitions

As the ignitions began during the late morning of October 12, it was initially hard to get the prescribe fire to take. There was a time when it seemed the prescribed fire wasn't going to accomplish the objectives and be worth the effort.

As the lighting continued and the day warmed, the prescribed fire began to be more effective, with the Gambel oak burning hotter and more completely. Toward later afternoon, the Igniters began to cut back to compensate for the increasing burn response of the vegetation. Once the Igniters got into the steepest section just above Johnson Creek on the south end of Unit 8 (Figure 2), where the oak brush was too thick to negotiate, and the terrain too steep, they pulled out. The BB paused to negotiate the cross drainages in the unit. He got everyone back over and started burning again, now using hand tossed or shot devices to get into the thick Gambel oak. As the burning moved south, Johnson Creek became drier and was flowing below ground in places.

The FB/Igniter down in the creek area, who was moving up and down the drainage by foot to track the burning and watch for spots, continued to report back his observations. He had a UTV but the portion of the unit just above Johnson Creek is too steep for anything but foot travel.

October 12, 2017, 1242 hours.

Spot Fires

Just as the burning was winding down for the day, the wind shifted and blew in a westerly direction across the burn unit and toward the slope on the eastern side of Johnson Creek. All day the wind had been blowing up-slope, rather than across it. At approximately 1605 hours, ignition was complete. A little over an hour later, the FB who had been monitoring for spots along the Johnson Creek ravine, reported a spot fire in some cottonwoods on the steep, west-facing slope on the opposite side of Johnson Creek! Fire personnel were shifted to help contain this spot and soon after, the FB reported another spot fire. The "slop-over" fires were primarily igniting the cottonwoods, juniper, and oak brush which contained large amounts of dead, dry, hanging

leaves. The burning in the upper branches of the Gambel oak was bringing the fire up higher into the trees.

The spot fires were believed to have been spread by the wind from torching pinyon junipers and ponderosa pines in Unit 8.

Looking east across the project area to the hillside where the 120-acre Johnson Ridge Fire occurred.

Spot fires, evening of October 12.

As previously described, Unit 8 was on the eastern boundary of the project area and unburned vegetation was directly adjacent on the opposite side of Johnson Creek. The creek was flowing, but toward the southern end of Unit 8, the creek was dry in some places where it apparently flows underground.

October 12, 2017, 1805 hours.

The FB established an anchor point on the south end of the main "slop." At 1812 hours, the spot fires were reported to dispatch.

The firefighters continued to attempt to contain the spots until approximately 1900 hours. It was getting dark, and due to the cliffs and steep conditions, it was decided that it would be safest to send the majority of the burn personnel home for the night. By this time, everyone was fatigued from the activity of the day and beyond that, many had already been through a long season of fighting wildfires. The BB and FB stayed with the fire for the night. The upper spot was reported by the BB to be approximately 4-5 acres and the lower spot was roughly ¼ acre.

"Pulling the plug before dark on our suppression efforts the first day really surprised me, but it was the right call, and showed that safety was the priority." –Firing Boss

"We had a radio burned up. The brush ripped the radio out of a fire fighters pack. The stuff grabs everything…"

The Next Day

In the morning, it was clear that the fire had "crept around" in the leaf litter more than was expected and that it had burned actively overnight. The spot fires together now totaled approximately 70 acres.

A few more of the limited number of available local fire fighters were brought in and eventually the spots stopped backing down the hillside. The suppression was going well. However, the day

"What would we do? What would we REALLY do if things go gunny-sack, even if we don't think that will occur?" –Zone AFMO

warmed, and the fire burned into areas that had little access due to the lack of roads, steep topography, and thick Gambel oak. This slope was also west-facing and therefore drier and warmer than the east-facing Unit 8.

At approximately 1400 hours the fire made about a 20-acre run in under 10 minutes; there was no significant wind but the brush was taking off. Up to this point, it had appeared that the local group was going to be able to suppress the slop over. The BB had been continually updating the Duty Officer (DO) and the AA. (There was some confusion for a short time as to who the DO for the day was.)

Wildfire Declaration

It became clear that the limited number of personnel already working the spots couldn't be stretched any further to attempt to "catch" the now quickly advancing fire. The HB related that, "It would have been two more burn periods just to get around the new spot and if the same thing happened the next day, it would be twice that again." Based on the limited personnel, the thick oak brush, steep topography, and overall fatigued condition of the local resources fighting the fire, the AA decided at 1509 hours to declare it a wildfire. The decision to declare was made efficiently and in a timely manner. Making the call was a "no-brainer," and driven primarily by the requirements of the burn plan and the need to supplement local suppression resources. The AA reported that he felt supported in his decision by those up the command chain. The FB commented that, "nobody got 'spun up' as it grew and defied our first efforts at containment, which really speaks to the professionalism of those involved; they weren't taking it personally, which can lead to some iffy decisions."

"It would have been two more burn periods just to get around the new spot and if the same thing happened the next day, it would be twice that again…" –Holdina Boss

Ironically, the wildfire was torching through an area that fire had been absent from for so long that it really needed to burn. Local folks were actually giving firefighters the "thumbs up." One of the local burn personnel commented, "It's frustrating, because burning over here [within the project area] is good, but over there, [outside the project area] where there are also unburned fuels, is bad."

Resources were ordered to suppress the Johnson Ridge Fire. The transition from prescribed burn to wildfire suppression demonstrated active risk management. People were immediately put into positions they were qualified for. Additionally, trainees were assigned appropriately to take advantage of the circumstances to build the collective fire organization's skills. In the end, the Johnson Ridge Fire was held to 120 acres. It burned up to the road on the ridge above it and was held there.

"Once the fire was declared, everything went really smooth. They got it under control pretty quickly. The team here did such a good job." -District Ranger

"Optimism is good, but just hoping something bad doesn't happen is not nearly as good as planning for it to happen and being pleasantly surprised when it doesn't." –Firing Boss

Burned area along Johnson Creek, October 14, 2017.

October 14, 2017, burned area.

October 15, 2017, snag burning in Johnson Ridge Fire.

Agency Administrator Lessons Learned

The Agency Administrator (AA) involved with the Johnson Ridge Fire expressed a strong desire for this FLA to have some utility for those in the AA role, especially if they are new to that role and/or have limited experience with managing a prescribed fire program. This Lessons Learned section is intended to provide insights from this incident and to stimulate questions that an AA may consider when planning and executing a prescribed fire.

- Ask hard questions of those planning and implementing the burn. It isn't micro-managing; it's how an AA gains an understanding of the benefits and risks.
- Build a network of knowledgeable and experienced people of whom you can ask questions of when you are feeling that you are outside of your comfort zone. Make sure you know what questions you really need to be asking.
- Be aware that when you have a high level of trust in your people and are familiar with a project area, you might not ask the questions that allow you to truly understand the work that they are doing. Stay engaged and keep asking the tough questions even when you are comfortable.
- Agency Administrators can benefit from meeting with the implementation personnel before each ignition in order to understand the work being done and the potential risks.
- There is a varying amount of pressure on people at all levels to accomplish targets and to take advantage of burn windows. This pressure comes from multiple sources and is often generated by our own desires to do excellent work. The pressure can affect decisions on when and where to burn.
- Pay attention to the condition of your people, especially toward the end of the season. They may be tired and might have become focused on things other than their jobs, such as the end of the season, personal plans etc.
- All prescribed fires have some risk. Consider if the risk is worth the gain. Ask yourself if the burn is necessary to meet objectives in the project area or if it's being burned to achieve targets.
- Broadly defined objectives in the NEPA document may lead to overly broad prescriptions in the burn plan. It may be helpful to describe in the NEPA where burning will take place inside a given analysis area. Consider having implementation personnel involved in the NEPA process to help define project boundaries. (see appendix B)
- Don't hesitate to make the wildfire declaration on an escaped prescribed fire once the conditions for that declaration have been met. As an AA, you will be supported in that decision by those up the chain-of-command.

Other Lessons Learned

- Leaving a margin between a burn unit and the project area boundary provides a factor of safety to deal with slop-overs outside of the unit.
- Monitoring fuel conditions adjacent to the burn unit adds understanding of the potential fire behavior and risk in the event of an escape.
- It's advantageous to select control lines that are safe for holding resources to manage slop-overs.
- When oak brush has an increased amount of fine fuels in the canopy, it can result in unexpected fire behavior.
- The fuel model used for Gambel oak BEHAVE runs can underestimate actual fire behavior if portions of a burn project area have a heavier component of oak brush than other areas.
- The timing of the test fire may affect perception of expected fire behavior throughout the burn period.
- The burn plan may require different staffing and contingency resource levels based on topography and access.
- Periodically reviewing burn plans that have been in place for a while may give opportunity to apply learning that has occurred since the last time it was reviewed.
- The availability of additional contingency resources beyond what the burn plan calls for may be a consideration in the overall risk decision.
- We are often more comfortable with taking on risk when there are fewer values adjacent to the burn unit.
- It is beneficial for burn overhead to walk the unit boundaries so that holding lines are understood by all, ignition patterns can be adjusted, and other safety considerations can be reviewed.

FACILITATED LEARNING ANALYSIS TEAM

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APPENDIX A: DECLARED WILDFIRE REVIEW

The FLA Team was delegated to include a declared wildfire review based on page 39 of the **Interagency Prescribed Fire Planning and Implementation Procedures Guide, July 2017**, which requires the following:

> *"In addition to the common outcome review elements, the declared wildfire review must include the following analysis and may be addressed in a separate review:*
>
> - *An analysis of the seasonal severity, weather events, and on-site conditions leading up to the wildfire declaration.*
> - *An analysis of the prescribed fire plan for consistency with agency policy and guidance related to prescribed fire planning and implementation.*
> - *An analysis of prescribed fire implementation for consistency with the prescription, actions, and procedures in the prescribed fire plan.*
> - *The approving agency administrator's qualifications, experience, and involvement.*
> - *The qualifications and experience of key personnel involved."*

Parameter 1: Seasonal severity, weather events, and on-site conditions.

The weather leading up to the Johnson Ridge escaped prescribed burn was normal for the year, according to the Great Basin predictive services monthly and seasonal Fire Potential Briefing: Oct-Jan 2017/18.

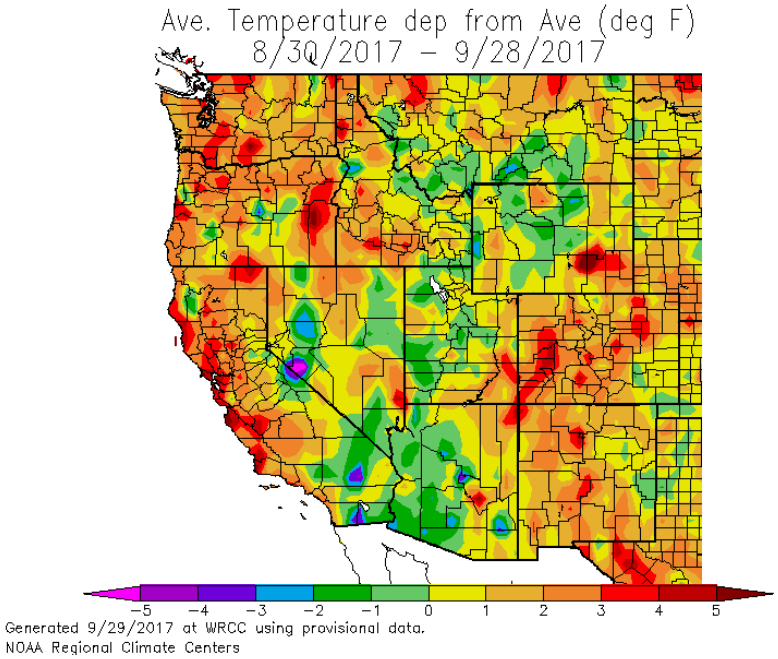

Figure 1.

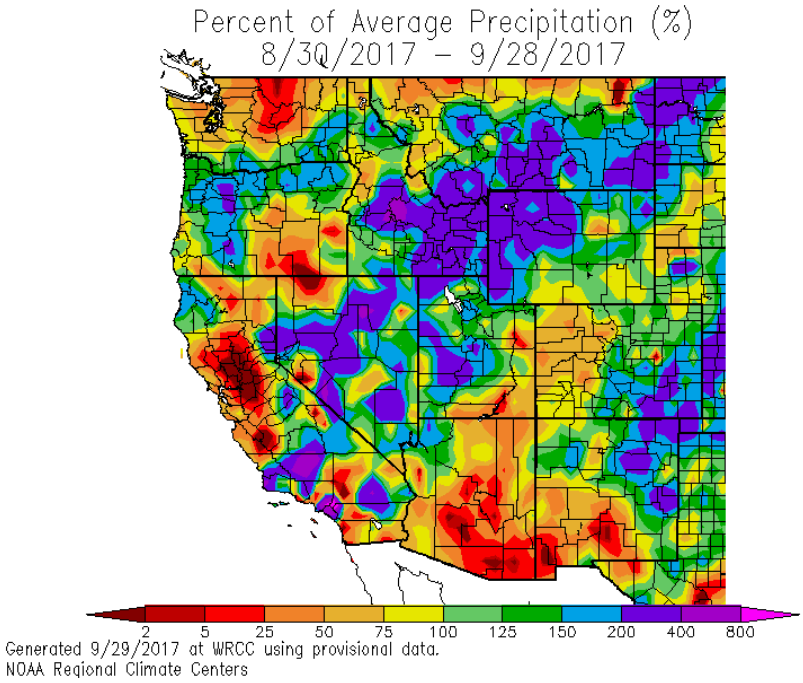

Figure 2.

- 30-day temperature was near to or just above normal (Figure 1).
- 30-day precipitation was drier than normal (Figure 2).
- 1-year precipitation was near normal.
- 10-hour fuels were increasing in moisture.
- Project site had a little snow a few days prior to ignition (from interviews).
- Winds were reported to be light and variable.
- A portable Remote Automated Weather Station (RAWS) was set up near the burn unit prior to ignition. On-site fuel moistures were sampled but not included in the burn plan project file for reference.

Parameter 2: An analysis of the prescribed fire plan for consistency with agency policy and guidance related to prescribed fire planning and implementation.

A review of the Johnson Creek-Nizhoni Prescribed Fire Burn Plan was conducted. It was found that all elements were consistent with agency policy and guidance outlined in the Interagency Prescribed Fire Planning and Implementation Procedures (April 2014) as in effect when signed. However, the burn plan did not follow the R4 Supplement (FSM 5140 R4 Supplement) in regard to the off-unit review.

- The burn plan was signed by the preparer on January 23, 2016; the technical reviewer on January 25, 2016; and the Agency Administrator (AA) on March 8, 2016. The burn plan was not signed as reviewed off-unit. This was required by FSM 5140 R4 Supplement until November 2, 2016.
- The template used for the preparation of the Johnson Creek-Nizhoni Burn Plan is the current national template. The burn plan also had the current Element 2A, Agency

Administrator Pre-ignition Approval Checklist and Agency Administrator Ignition Authorization completed appropriately.

- Element 2B, the Go/No-Go Checklist was completed and signed.
- There were no amendments to the burn plan and Element 3, the complexity analysis, was well thought out and commensurate with the burn at moderate complexity.

Parameter 3: An analysis of prescribed fire implementation for consistency with the prescription, actions, and procedures in the prescribed fire plan.

Overall, the fire was implemented consistently with the burn plan.

- In Element 7, prescription data show they were burning at the desired fire intensity in the prescription. Everything was in prescription when the test fire was lit and throughout much of the burn period. The spot weather predicted 30-mph gusts in the afternoon.
- The preparation work on the Johnson Creek-Nizhoni burn Unit 8 was consistent with what the burn plan had outlined in Element 9. On-site considerations includes the statement, "Control Lines need to be completed and checked." There is no indication, written or mapped which indicate where they may be needed. In this instance, the unit had control lines built on three sides but no control line was constructed along the Johnson Creek drainage bottom. This drainage was the east perimeter of the unit and the project. The perception was that the stream bottom with higher humidity, after two inches of snow within the last week, would act as a control line. It was agreed that this line was NOT checked either the day before or on the ignition day.
- Under Element 11, Organization and Equipment, the Burn Plan met and exceeded the staffing requirement. The Burn Plan, using the Moderate prescription, called for a minimum of 15 personnel and two engines to be on site the day of ignition. There were 17 personnel and two engines. Equipment on site met burn plan requirements. The contingency resources were identified and on site if needed.

Parameter 4: The approving agency administrator's qualifications, experience, and involvement.

- The Agency Administrator (AA) was qualified at the advanced level and has delegated authority to authorize Low, Moderate, and High complexity burns.
- He has experience supporting and managing fire suppression and prescribed fire programs for more than 25 years.
- The AA was involved from the review and approval of the Burn Plan, signing the Administrator Pre-Ignition Approval Checklist and Ignition Authorization through the moment the fire was declared a wildfire.

Parameter 5: The qualifications and experience of key personnel involved.

All key fire personnel were qualified in the positions for which they were assigned according to current IQCS records. All other assigned personnel also appeared to have been qualified in their respective positions.

- Johnson Creek Prescribed Burn – Key burn staff qualifications, assigned position qualified Yes/No:
    - Agency Administrator (AADM) Yes/Current
    - RXB2 Yes/Current
    - FIRB Yes/Current
- DIVS (Holding Boss) Yes/Current

APPENDIX B: NEPA AND BURN PLAN OBJECTIVES

NEPA OBJECTIVES

The National Environmental Policy Act (NEPA) documentation completed in 2011 for the Nizhoni Forest Restoration Project, included the following objectives:

Within the project area… 1) Restore ponderosa pine in areas deforested by the 2002 Nizhoni Fire by implementing mechanical site preparation or prescribed burn treatments preparatory to planting of ponderosa pine seedlings or natural seeding; 2) Implement prescribed burning to create a near-historic disturbance event in the remaining ponderosa pine of the area; and 3) Implement prescribed burning to diversify the age structure and continuity of Gambel oak stands. These treatments will move the project area and landscape vegetation towards Forest Plan desired conditions and reduce the risk of stand replacing fire in this portion of the Blanding Municipal Watershed.

The proposed project would improve stocking in non-stocked and poorly stocked ponderosa pine stands and reduce the continuity of vegetative fuels and associated fire hazard in this area. Treatments would utilize a combination of mechanized….treatments, and prescribed fire to create a mosaic of openings in Gambel oak. These openings will provide areas for artificial tree planting and natural regeneration of ponderosa pine as well as provide a break in vegetation structure and age classes to mimic natural conditions in Gambel oak and mixed oak/ponderosa pine to reduce risk of stand-replacing wildland fire.

The following actions would occur:

*….Implementation of prescribed fire (under-burning) or mechanized mastication treatment to create a natural appearing disturbance event in ponderosa pine stands to reduce live and dead fuels to maintain tree and stand health. Prior planting areas or areas adequately restocked by natural regeneration (seeding) of ponderosa pine will be avoided during these treatments. Hand treatment or mechanical fireline construction may be implemented to avoid damage to these areas.

*In Gambel oak areas not historically dominated by ponderosa pine prescribed fire or mechanized treatments will be used to create a mosaic of early seral conditions. The long-term goal is for development of uneven-aged stands of Gambel oak in even-aged groups. This treatment will create a mosaic of openings (up to about 50 acres in size) in 10-40% of the Gambel oak vegetative community in the project area.

*Gambel oak treatments will emphasize retention of remaining mature Gambel oak clones with emphasis on retention of clones 6 inches Diameter Root Collar or larger and ponderosa pine of all age classes. Mechanized equipment or chainsaw may be utilized to provide fuel breaks to

protect these trees or vegetative conditions. This will create variable canopy spacing and maintain older age class structures in the project area.

*...One maintenance treatment utilizing prescribed fire will be allowed under this decision in 5-10 years to mimic the natural fire return interval and maintain the mosaic of openings desired for this project. Some mechanized retreatment may be utilized to provide fuel breaks and site-specific protection for specific vegetative conditions or resource values.

BURN PLAN OBJECTIVES

The Johnson Creek-Nizhoni Prescribed Burn Plan's objectives included the following:

Burn Plan, Element 5 – Objectives, Resource Objectives:

*Reduce the risk of stand-replacing fire within a defensible zone around the Nizhoni Campground.

*Reduce the risk of wildfire to life and property.

*Create vegetation density and structures closer to historic conditions.

*Reduce Condition Class from high (3) and moderate (2) to low (1) in this Fire Regime I area.

*Protect municipal watershed health.

*Reduce Gambel oak competition and ladder fuels.

*Provide for the long-term restoration of Abert's squirrel habitat through maintenance of remaining ponderosa pine trees.

Prescribed Fire Objectives -General Burn Project Objectives:

*Use fire to create a low intensity/severity surface fire across up to 80% of the area.

*Reduce 0-3" fuels by a minimum of 30%.

*Create mosaic mortality pattern in shrub communities.

*Limit mortality of overstory Ponderosa pine to 10% or less.

Prescribed Fire Objectives - Specifics for the eastern (Nizhoni) portion of the project:

*Introduce prescribe fire to a minimum of 30-60% of the project area.

*Create a 30% reduction in fine fuels and a 30% reduction of fuels >3" in diameter throughout the ponderosa stand.

*Create a 30-60% reduction in the Gambel oak and other shrub type that are <3" in diameter and to create a mosaic of openings (up to a maximum of about 50 acres in size) in the Gambel oak vegetative community.