East Slide Rock Ridge, Wildland Fire Use
August 8, 2008 to August 22, 2008

Wildland Fire Use Review
Jarbidge Ranger District
Humboldt Toiyabe National Forest
Intermountain Region, R4

Table of Contents

Special Thanks

The Review Team would like to extend a special thanks to the personnel on the Humboldt Toiyabe National Forest (HTNF), Elko Interagency Center, Elko District BLM, Nevada Department of Forestry (NDF), Elko County Commissioners, Elko County Sheriffs Department, community of Jarbidge, Nevada, permittees, and personnel from other Forest Service units dispatched to the HTNF to assist in the East Slide Rock Ridge Wildland Fire Use (WFU). Their invaluable aid afforded us an effective workplace, an open and honest work environment, support equipment, and personal attentiveness to our needs while reviewing the East Slide Rock Ridge Wildland Fire Use from October 6 through October 10, 2008.

The Team would also like to thank the many individuals who took time from their busy schedules to afford us the opportunity for interviews. The majority of our findings and recommendations were derived from these conversations and observations. The Agency Administrator and Local FMO were very available and helpful to the Team in our short tenure. Dispatch was also very helpful and great to work with. They assisted in the scheduling of a Review Team over flight of the WFU. Thanks to the local district for being gracious hosts as we made additional demands on their time and invaded their office space. The District personnel were extremely helpful with accommodating the team's needs to access the Internet for all aspects of incident support.

Commendations

- The East Slide Rock Ridge WFU had an excellent safety record.
- An excellent use of local trainees was utilized to increase planning and operational capacity.
- As an Agency Administrator, the District Ranger exemplifies what the agency should expect of our Line Officers in Fire Management and Leadership.
- The District, WFU teams and personnel prepared an outstanding file of folders and documentation is to be commended. This can be utilized in the future for WFU implementation.
- The local unit had been using iSuite to manage resources prior to the Fire Use Management Team's arrival. This was very helpful for the incoming team, and the zone Archeologist was a great help in assisting the team to set up their iSuite database.
- An excellent final report was completed by the Great Basin Fire Use Management Team highlighting delegations, objectives, expectations, commendations, and recommendations.
- The HTNF updated the Forest Fire Management Plan for the 2008 fire season and created a HTNF 2008 WFU Implementation Plan which guided the planning and operational strategies and tactics utilized on the East Slide Ridge Rock WFU.
- All the fire managers were willing to admit that things were getting out of their skill set, and willing to call in a higher level of management in a timely manner.

Introduction

On August 8, 2008, a lightning strike within the Jarbidge Wilderness, on the Jarbidge Ranger District, Humboldt Toiyabe National Forest ignited a fire that was subsequently designated as a Wildland Fire Use (WFU) on August 11, 2008. At the time of designating it as a WFU, the following was accomplished as part of the preparation and operational process: a Stage I assessment was completed, the fire was approved as the East Slide Rock Ridge WFU, 4 smoke jumpers were put on the fire, a ICS-209 listing the fire at 53 acres was completed, and recognition that resource benefits could be achieved and the fire could burn until season-ending event.

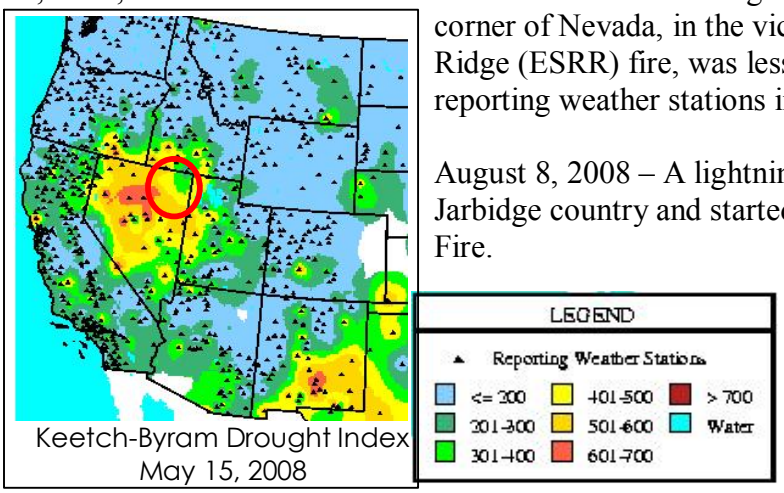
The East Slide Rock Ridge WFU continued to burn as a WFU from August 11, 2008 until August 21, 2008. On August 22, 2008 the WFU was declared a wildfire and converted to suppression at 1000 hours. On August 21, 2008, at the time of the ICS-209 was prepared, the WFU was reported at 9,901 acres with 300 acres outside the Jarbidge Wilderness (MMA boundary) within the Forest Service boundary, moving to the east. By the time the ICS-209 was prepared on August 22, 2008, the fire was reported at 11,252 acres. At that time the Complexity Analysis was completed, the Type 1 Incident Management Team (IMT) was ordered and the initial Wildland Fire Situation Analysis (WFSA) was developed. Ultimately, the fire was contained at approximately 54,500 acres. The fire left Forest Service lands to burn over 2,000 acres of BLM and 1,661 acres of private property, and the final cost of managing the fire exceeded seven million dollars.

On September 15, 2008, Regional Forester Harv Forsgren signed the Delegation of Authority providing direction to Forest Supervisor Rob MacWhorter (Review Team Leader) to conduct a review of the East Slide Rock Ridge WFU. The expectations of this review was to create a report that reflects a comprehensive review and analysis of the decision to manage the fire initially as a Wildland Fire Use, the management of this fire under fire use and the lessons that can be learned from these decisions and actions. The structure of this report is to maximize the learning opportunities and to develop recommend actions that will enhance the safety and the performance reliability of our organization. This report should enable the reader to understand what happened, why and when critical decisions were made and what can be learned from these firefighters and managers to help us manage future incidents.

On October 6, 2008 the review team convened in Elko, Nevada to begin the review and report process. Also during the period of October 7 through October 9, 2008, the Review Team conducted individual interviews with members of the Humboldt Toiyabe National Forest, members from other Forest Service units that assisted in the WFU, Elko County Commissioners, BLM, Nevada Department of Forestry, Elko County Sheriff's Department, community member of Jarbigde, Nevada, a Forest Service permittee and Elko Interagency Dispatch. In addition the Review Team reviewed all pertinent decision documents, letters, Fire Management Plans, WFU Implementation Plans and Policies, WFIP's, timelines, weather forecasts, NEPA documents, maps and photographs. In addition a portion of the Review Team conducted an over flight of the East Slide Rock Ridge WFU with the two District Rangers.

Background and Fire Chronology

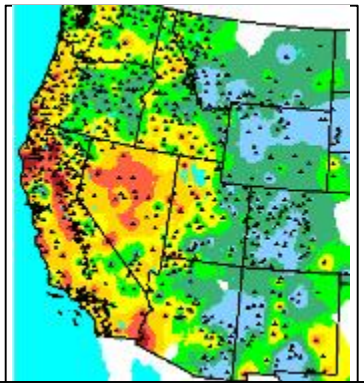
Fire weather started early in Nevada in 2008. The Keetch-Byram Drought Index on May 15, 2008, indicates the center of the state was in continuing drought, but that the northeast corner of Nevada, in the vicinity of the East Slide Rock Ridge (ESRR) fire, was less affected. Note the lack of reporting weather stations in the region.



Keetch-Byram Drought Index
May 15, 2008

August 8, 2008 – A lightning storm moved through Jarbidge country and started the East Slide Rock Ridge Fire.

On August 10, 2008 at 1202 the ESRR fire was reported by South Idaho Air Operations while on a routine air reconnaissance flight. The fire was reported at ½ to one acre. The Duty Officer notified dispatch that the Line Officer would be consulted on the possibility of a Fire Use.


Keetch-Byram Drought Index
August 10, 2008

Helicopter OCR was dispatched and sized up the fire at 1320. The Fire was reported at ½ acre; no structures threatened. The fire on the lower 1/3 of the slope, with moderate spread potential, was smoldering in a broken Spruce/fir fuel type with some sage. The fire was above a fork in the river with rocks above and did not appear to be a threat to the wilderness boundary. If a suppression action was to be implemented, suppression would have required the use of chainsaws, buckets, and maybe a Mark III pump, and crews. Initial ICS-209 listed the fire at 100 acres.

At about 1932 the decision was to place the fire in fire use status and a Stage I WFIP was completed.

Four Smokejumpers and a Fire Use Module were ordered on August 11, 2008. The Smokejumpers were inserted at 1142 and the module was enroute at 1224 with an estimated nine hours of travel.

Radio communication problems were noted. Smokejumpers were unable to talk with dispatch although they could hear dispatch clearly. They were notified of the local repeaters which did not solve the communications problem. The smokejumpers did have some cell phone coverage, as well as a satellite phone.

The FUM2 took command of the fire at 1856 with the FUM2 (T) reporting at 1900. The 209 reported the fire at 53 acres.

August 12 – Jumpers estimated 5 acres of growth primarily by spotting and backing. Fire location was sheltered by topography. Individual tree torching was observed throughout the night.
August 13 – Fire activity increased significantly, 50 acres growth.

Fire Use Module arrives at approximately 2000 hrs August 13, 2008.

On August 13, 2008 at 1804 increased fire activity was noted in the area of God's Peak, which was in the area of MAP #1. Fire behavior was increasing in the evening hours and into the night. The module and smokejumpers continued to monitor the fire.

Fire crossed what was considered a natural barrier overnight and on August 14, 2008 winds seemed to be terrain driven with active fire continuing into the morning. Fire behavior increased throughout the day and at 1400 was reported as increasing significantly on the east side of Slide Rock Ridge. Crews on the fire continued to monitor activity. The fire was reported at 195 acres on August 14, 2008 ICS-209. The Stage II WFIP was completed and signed by the Line Officer.

Fire activity decreased overnight due to an inversion over the area. Fire activity remained low to moderate from August 15 through August 16, 2008. Radio Technicians worked on the repeaters and communications between ground crews and dispatch. Communications were confirmed at 1823 on August 15, 2008.

On August 17, 2008 fire activity and intensity increased significantly in the afternoon as it pushed to the north and jumped the canyon to the east side of the East Slide Rock drainage. Due to the increase in intensity and fire below the ground crews, they requested removal from the area. The request was not an emergency. Crews were removed from the area at 1422 and were moved north to the East Fork of the Jarbidge River and Trailhead intersection. It was noted that access on the South end of the fire would be difficult.

The August 17, 2008 ICS-209 indicated a fire size of 300 acres.

Fire behavior and smoke production increased significantly on August 18, 2008. Red Flag Warnings were read and confirmed by ground crews. The fire made large runs with ¼ mile spotting and short crown fire runs. Helicopter operations were suspended due to smoke impacts as the fire grew to 1,500 acres as reported on the ICS-209.

The FUM2 and Line Officer completed a periodic assessment and new complexity analysis. The new assessment and complexity analysis indicated the need for a Stage III WFIP and FUM1. An order for a Fire Use Management Team (FUMT) was placed.

August 19, 2008 fire burned actively overnight. Crews continued to monitor fire progression and stayed out of the way. The fire remained very active throughout the day and grew to 3,245 acres according to the ICS-209. Increased winds were predicted for August 20, 2008 and the fire was expected to move to the north and northwest. All designed MAP's were exceeded at his time. The FUMT took command of the incident at 1800.

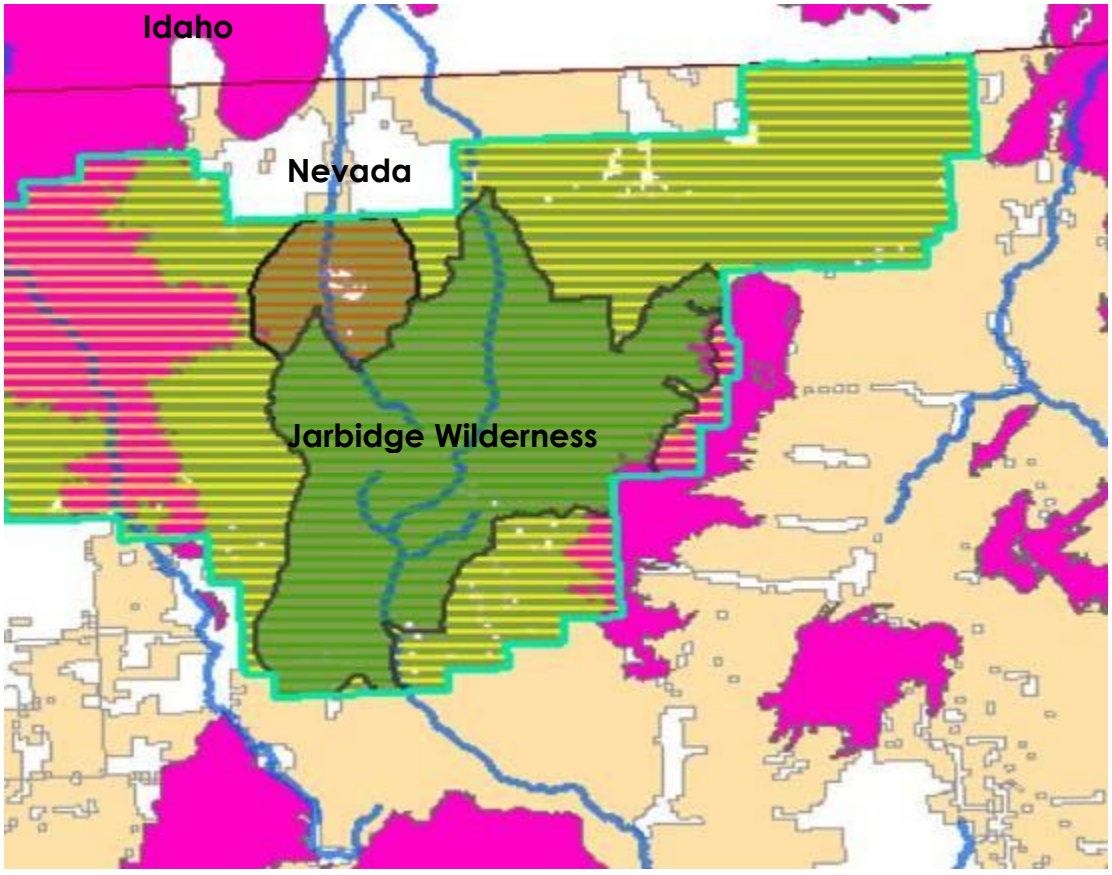
August 20, 2008, winds caused significant movement up Slide Creek to the east, northeast to within a mile of the Jarbidge Wilderness boundary (MMA boundary). The MMA was mapped at 113,300 acres. The fire was reported as moving with crown runs and medium range spotting in the sub-alpine fir. All resources were used to limit the fire from spreading to the east, northeast towards the MMA. Additional resources were ordered to meet the expected needs as the fire approached the MMA. The fire was reported at 5,000 acres on the ICS-209.

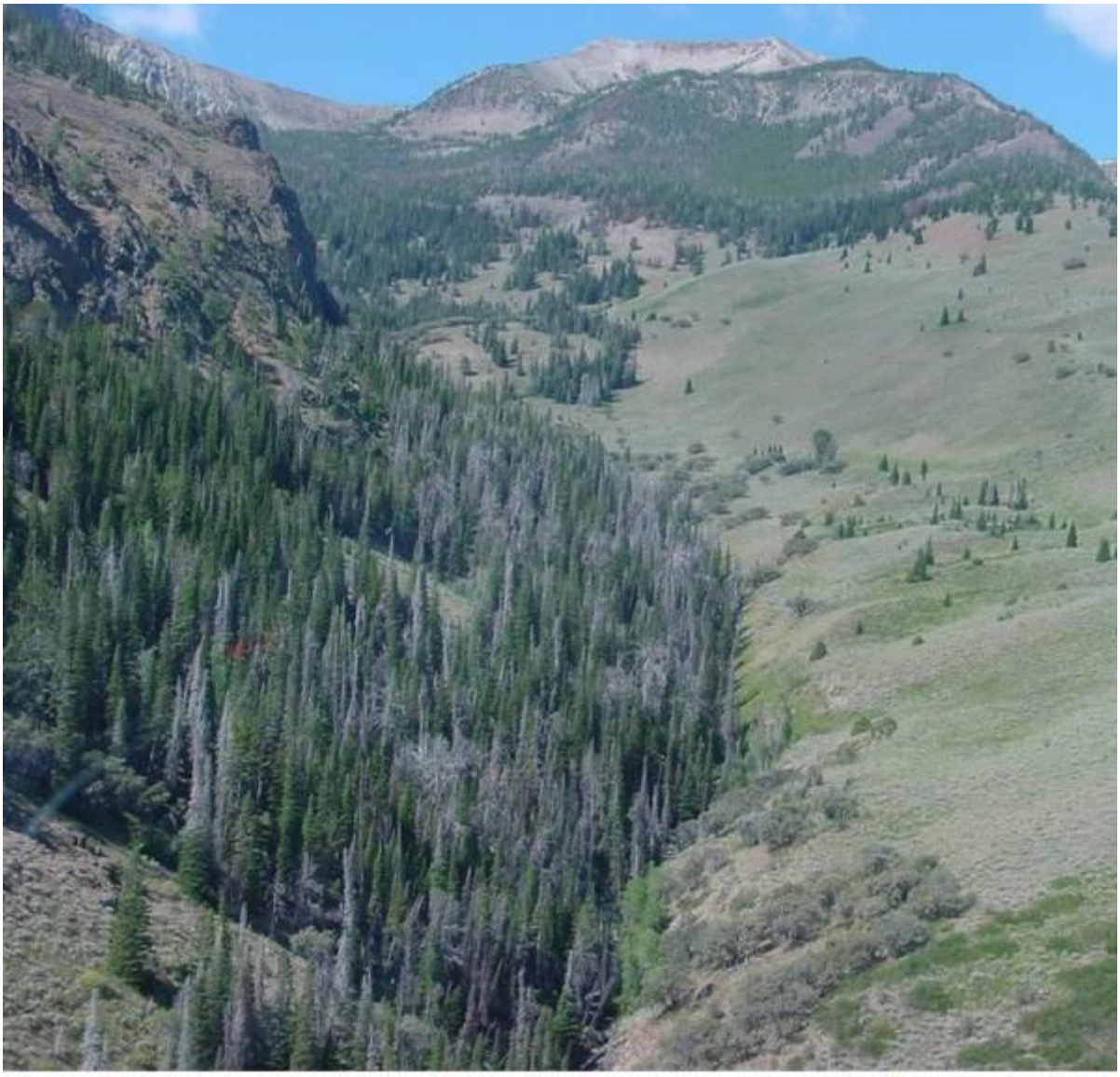
August 21, 2008, due to wind and slope alignment, the fire moved toward the MMA with short crown runs and spotting within the Slide creek drainage. Resources continued to try limiting fire spread toward the MMA. Critical resources began to report as the fire moved outside the MMA. Road systems outside the wilderness were used as containment lines. The fire was reported on the ICS-209 as 9,901 acres, this acreage included 300 acres outside the MMA. A periodic assessment and complexity analysis was started.

Flanking fire behavior on 8/21.

On August 22, 2008, due to a new complexity analysis and uncontained fire outside the MMA, the ESRR fire was converted to a suppression strategy and a Type I Incident Management Team was ordered.

Recent fire history in the vicinity of the Jarbidge Wilderness has been characterized by large fires primarily in the grass and sage fuels. Large fires had not been observed in the forest types within the wilderness area.





Fuels in the vicinity of the East Slide Rock Ridge fire: high-elevation sub alpine fir and limber pine with a large component of dead standing trees. This landscape is typical of a cold dry site with vegetation adapted to long fire-return-interval fire frequency that has reached the upper limit of its historic fire absence.

Lessons Learned Evaluation by Fire Managers, Line Officers and the East Slide Rock Ridge Review Team.

On October 6, 2008 the review team convened in Elko, Nevada to begin the review and report process. On the morning of October 7, 2008, the Review Team conducted an in-briefing with members of the Humboldt-Toiyabe National Forest, members from other Forest Service units that assisted in the WFU, Elko County Commissioners, BLM, and Elko Interagency Dispatch. During the period of October 7 through October 9, 2008, the Review Team also conducted individual interviews with members of the Humboldt-Toiyabe National Forest, members from other Forest Service units that assisted in the WFU, Elko County Commissioners, BLM, Nevada Department of Forestry, Elko County Sheriff's Department, community member of Jarbidge, Nevada, a Forest Service permittee and Elko Interagency Dispatch. Those involved were encouraged to be honest and frank in the discussions of decision making, planning, operations, communications and mobilization of resources. Participants were assured that the intent of this review and report is to facilitate organizational learning from the event. In addition the Review Team reviewed all pertinent documentation, including Delegation Letters, Humboldt Forest Plan, Humboldt-Toiyabe Fire Management Plans, WFU Implementation Plans and Policies, WFIP's, timelines, decision documents, weather forecasts, NEPA documents, maps and photographs. In addition to these briefings, meetings and document reviews, a portion of the Review Team conducted an over-flight of the East Slide Rock Ridge WFU with the two District Rangers.

This report is organized to display the four **key themes** that were revealed during the review, including opportunities for improvement, and also includes a listing of other findings.

Key Themes

1. Relationships and Communication

Communication and relationships are often an area for improvement. There is a great opportunity to enhance understanding and working relationships with the partners and community members in and around Jarbidge and Elko. Here are some of the impressions reported by cooperators and members of the public interviewed by the team:

Partners expressed frustration over infrequent opportunities for discussion. Scheduled briefings were one-way, delivering prepared messages and discouraging open dialog. Community leaders remarked that they would have preferred to be at the table during the go/no go analysis rather than being briefed after the WFU decision was made.

Discussion: Communication between incident managers and partners did occur, but because the Forest Service was introducing a new concept - wildland fire use - there may not have been enough emphasis pre-season and during the incident for

partners accustomed to only wildfire suppression to discuss concerns and ask questions.

Recommendations:

- Revise operating plans with interagency cooperators to coordinate for all wildfire activity, especially when policy changes are introduced.
- Pre-season meetings should be held to discuss any changes for the up coming fire season.
- Post-season meetings and after action reviews are an excellent way to improve understanding.

The public and partners believed the information they received was not current.

Discussion: Community members stated that the information they received was sometimes up to a full day late based what they could see.

Recommendations:

- Establish and update community contact lists prior to fire season.
- Favor visual aides like maps and photos to assist in communication with the public.
- Make a point to be visible in the communities near the fire.
- Review and revise operating plans to include fire use at the local level with interagency partners, i.e. local multi-agency coordinating group, rancher liaison etc. to coordinate all wildfire activity and gain an understanding of local issues, access, critical wildlife habitat, and other resources within the area.

Public and cooperator confidence suffered over a poorly-worded section in the WFIP document that referred to the amount of high-intensity burning that might be expected within a specific drainage.

Discussion: A document presented at the initial briefing in Jarbidge, Nevada, left partners and members of the public with a common misunderstanding that the fire will be allowed to burn with a maximum target of 2,000 to 2,500 acres before a change in tactics would occur.

Dispatchers were unaware of opportunities to secure timely assistance from local partners because state resources are not statused in ROSS.

Recommendation: Establish a means to remain informed on NDF employee availability during the off-season, and communicate on a regular basis to confirm during fire season.

2. Preparation and Decision Support

The 2008 season was the first year for wildland fire use on the Humboldt-Toiyabe National Forest (HTNF), and the forest embraced the tool and learned some lessons about how pre-season effort can streamline decisions during fire season. The team found several areas for improvement that will help the forest in 2009.

Direction and expectations for the implementation of WFU in 2008 was optimistic based on the shortage of district rangers with WFU experience available to provide oversight.

There was a letter of direction titled "Leadership Letter: Application of Wildland Fire Policies" dated August 1, 2007 that had not been updated in 2008 to address the annual update of the HTNF Fire Management Plan and the 2008 Implementation Plan for Wildland Fire Use.

Discussion:
The direction letter did not address the level of experience or skills needed to be successful managing wildland fire use, which was a new tool on the HTNF in 2008. The HTNF had six WFU fires in their first year, scattered all over the state, which was a big first step.

The letter emphasized changes in process and "book keeping" but provided little guidance in the planning and operational realm.

The agency administrator's documentation of the WFU decision, including the checklist and risk assessment, did not include an objective analysis of current and predicted fire weather, fire behavior, and/or fuels indices. Because of the lack of critical information, it is not clear from reviewing the documents if the East Slide Rock Ridge Fire met guidelines for WFU.

Discussion: The assessment was not augmented by prescription criteria, pre-stated fire and resource management objectives. There was no guidance established in either the fire management plan or the Forest Wildland Fire Use Implementation Guide.

Recommendations:

- Augment the Decision Criteria Checklist with fuels conditions and numbers of wildland fires burning in the geographic area to provide the context for the full consideration of the "go/no go" decision in the evaluation of a wildland fire for WFU.
- The Wildland Fire Relative Risk Assessment charts should be refined with data and indices generated from the local area, to make them a more useful tool in the decision process for agency administrators.

Weather and fire potential predictions were not considered in the decision process leading to the WFU determination or management of the ESRR WFU.

Discussion: Information provided by the forest and FUMT indicated that the weather appeared to be favorable for the implementation of WFU on the East Slide Rock Ridge Fire, and no adverse weather was known to be predicted for the seven to 14 day period following the fire start. This conflicted with the seven-Day Fire Potential Outlook provided by fire weather meteorologists in both the Eastern and Western Great Basin Coordination Centers which predicted "very dry" conditions from the ignition of the East Slide Rock Ridge Fire, to "dry with windy" conditions on August 19, 20 (predicted on August 16) and August 26 (predicted on August 19).

Recommendation:

- Consider adding a RAWS station in that underserved section of northeast Nevada.

Pre-planned WFU implementation protocols were not used.

Discussion: Fire Management Plans as well as WFU implementation procedures exist. Managing an unplanned ignition as a WFU was a major departure from the normal operation for the area, and implementation protocols ready in place may have assured more clear and concise communication with all partners and stakeholders.

Recommendation:

- Develop WFU implementation protocols to assure open stakeholder discussion prior to the final "go/no-go" decision-making.

There were critical information gaps in the new HTNF guidance document. There was a lack of fuels information, weather monitoring or fire history analysis to support time-dependent decisions.

Discussion: The 2005 Wildland Fire Use, Implementation Procedures Reference Guide") provides standardized procedures and a template to include analysis of values, hazards, and probabilities. These components enable fire managers to conduct a timely risk assessment for the initial decision and during periodic assessments of fire status.

Recommendations:

- Take advantage of the work completed by Long-Term Fire Analysts on East Slide Rock Ridge fire. The district now has a locally relevant data set describing fuels conditions and weather, including seasonal conditions and probabilities in the Jarbidge area.
- In assessing seasonality, probabilities for season-ending events were developed. These definitions can now be applied to the template (*e.g.*

early season is from *x* date to *x* date, middle is from *y* to *y*) to help refine future assessments and provide consistency between ever-changing management organizations.

- The local vegetation layer, provided by quality GIS support, proved to be a superior product to LANDFIRE data to derive fuel models and canopy characteristics for modeling purposes.
- The HTNF external hard drives are an excellent medium to keep current data, readily available with the full context of the models history and development. Consider maintaining a duplicate drive to use as part of a team briefing package.
- The East Slide Rock Ridge fuels and weather analyses can now be used to augment new understanding of social values, natural and cultural resource objectives in the Jarbidge Fire Management Unit (FMU).
- Incorporating the fuels and weather analyses into the next iteration of the HTNF Fire Use Guidebook, future managers may more consistently communicate relative risk for new Jarbidge WFU candidates.
- The HTNF Fire Use Guidebook provides an excellent format to quickly assess FMU issues. The East Slide Rock Ridge fire has filled important gaps that will expedite and strengthen future assessments.

The HTNF Wildland Fire Use Implementation Guide contains a section on the periodic fire assessment review process that should be updated.

Discussion: The Forest Wildland Fire Use Implementation Guide states that the Forest Supervisor/Deputy Forest Supervisor must validate the periodic assessment under three specific conditions, even if the District Ranger has been delegated the authority to manage the fire.

Recommendation:

- The Forest Wildland Fire Use Implementation Guide should be amended to reflect the full delegation of authority for a certified and experienced District Ranger to manage WFU on a district.

Fire managers were uninformed about heritage sites in proximity to the ESRR WFU.

Discussion: Interviews indicated a general lack of knowledge as to locations and the amount of cultural resources that needed protection in the vicinity of ESRR. Some local residents stated they knew what was in the wilderness but thought the Forest Service would want to burn the cultural sites down if the public would have indicated the locations.

Recommendation:

- Develop local knowledge in the fire community to help determine the location of fire sensitive resources.
- Devise strategies and tactics for protecting these sites in the pre-season.

3. Workforce Experience and Capacity

Wildland fire use was a new tool for the HTNF in 2008, and there has not been adequate time to develop the necessary capacity in line and fire management to support a robust WFU program, although there have been great strides in that direction.

There is only one District Ranger on Forest with training and experience to fulfill the duties of agency administrator and the delegated authority for approval of Wildland Fire Implementation Plans (WFIP). At the time of the East Slide Rock Ridge WFU there were three additional WFU incidents, hundreds of miles and several hours apart delegated to the District Ranger.

- There is a 2008 letter granting the District Ranger full authority to approve WFIPs, yet his "*Delegation for WFIP approval may be limited based on the complexity of the WFIP stage".*

The following fires were being managed by the District Ranger at one time:

Fire Name	Responsible Office Location	Driving Distance
East Creek	Ely, Nevada	2 hours
East Slide Rock Ridge	Wells, Nevada	1 hour
Whiskey	Carson, Nevada	6 hours
Arnot	Las Vegas, Nevada	8 hours

Recommendations:

- Provide clear direction and expectations within all Line Officer letters of delegations and program direction that are timely and current with the Fire Management Plan, Wildland Fire Use Implementation Plan, organizational capacity, and clearly articulated to partners, media, local officials and forest employees prior to the commencement of the fire season.
- Build organizational capacity for the Service First within the Elko Interagency Multi-Agency Coordination/Operations (MAC/OPS) organization by providing and completing training, as well as, providing shadow training opportunities.
- Provide training opportunities for all Line Officers on the forest. There is an opportunity called "Managing Resources during Unplanned Ignitions Workshop" being held January 13-15, 2009 that would be a benefit to other rangers on the HTNF.

- Describe and maintain a manageable span of control for adequate oversight of WFU. Consider each new start in regards to capability and

capacity to manage at the Agency Administrator level to increase quality of oversight.

There is a lack of operations/line officer experience and/or capacity within Interagency MAC/OPS. (This organization includes Forest Service, Bureau of Land Management (BLM) and Nevada Department of Forestry (NDF)). There is a lack of knowledge/experience/planning process to manage a complex WFU or a series of WFU's at one time.

Discussion: The Forest was given direction to start implementing the WFU strategy at the end of the 2007 season. Wildland Fire Use was a new and possibly complex program which requires specialized skills to implement successfully. The lack of experience with the entire process was felt by many as they were being assigned to help or oversee multiple incidents. Interviewee's stated that they were more focused on the paper process and training and less on the ground implementation. The lack of experience may have lead to the managers' mindset that this fire was not going to get bigger than about 2,000 acres.

At the time of the decision to manage ESRR as a WFU there were some critical shortages and vacancies on the forest:

- The experienced Interagency Fire Management Officer in Elko had no experience in WFU
- The Forest Service's Service First representative in Elko was vacant.
- There were two Fire Use Manager Trainees (FUMA-T) on the HTNF
- There were qualified FUMAs in the Ely, Nevada BLM office.
- The HTNF had only one District Ranger on Forest of 10 ranger districts with training and experience with delegated authority for approval of WFIPs.
- The Forest FMO position was vacant with an acting Forest FMO in the first pay period of the assignment

Recommendation:

- Consider limiting the number of fires that are placed in WFU status across the Forest until the experience level meets the need.
- Managers can look outside the Forest or Region at programs that are currently implementing WFU, and seek training opportunities for Forest employees to develop the knowledge and skills.
- Seek out and develop individuals, who have an interest in Fire Behavior and Long Term Analysis as these are invaluable tools not only for WFU but for the implementation of prescribed fire.
- Continue to encourage the use of WFU by taking smaller steps and learning from others as well as yourself. Look big! Consider just how large a fire could get and act accordingly.

The following recommendations address specific organizational, training, and capacity needs within the Elko Interagency MAC/OPS and on the HTNF:

- Development of an organizational structure on the forest and within the Elko Interagency MAC/OPS that addresses the capacity needs for Wildland Fire Use
- Provide and complete training, as well as, provide shadow training opportunities for line officers on the forest.
- Provide and complete training, as well as, provide shadow training opportunities for FUMA (T) on the forest.
- Provide and complete training, as well as, provide shadow training opportunities for interagency employees within the Elko Interagency MAC/OPS organization. One such training is "Managing Resources during Unplanned Ignitions Workshop: January 13-15, 2009."

4. Design Issues

A common problem in wildland fire use incidents with unanticipated outcomes is unrealistic, indefensible maximum manageable areas (MMAs). The East Slide Rock Ridge WFU strategy had an indefensible MMA boundary to the north, based on a land allocation imaginary line (the wilderness boundary) rather than a defensible topographic feature or fuel break.

The East Slide Rock Ridge WFU MMA was not defensible as defined at the Jarbidge Wilderness boundary.

Discussion: Interviews revealed that the new direction was to implement WFU within the Jarbidge Wilderness. Lands outside the wilderness were not covered under the current Land and Resource Management Plan (LRMP) for WFU, so the wilderness boundary was used as the MMA for the East Slide Rock Ridge WFU. Administrative boundaries for wilderness have no value for fire suppression unless they happen to coincide with a ridgeline, a river, a road, or some other defensible fuel or topography break.

Recommendation:

- When setting an MMA consider what it will take to defend it under expected or extreme fire behavior.
- Consider amending the LRMP to include an area of General Forest outside the wilderness, for example along roads that are close to the boundary.
- The MMA could also be moved back to a defensible location within the wilderness.
- Consider conducting fuel treatment activities adjacent to areas approved for WFU that would assist in creating a defensible boundary.

Management Actions Points (MAP) were not specific enough to be tactically implementable.

Discussion: Information contained in the Stage II WFIP had MAPs with instructions to notify FMO and Line Officer, or general statements about assessing and protecting valuable sites, or the expanding of the closure area, without sufficient details and directions.

Recommendation:

- Provide specific direction on what will be done when the fire reaches an identified MAP.

Plans lacked aggressive contingencies within the ESRR WFU.

Discussion: The only contingency described for the ESRR WFU was based on fire exceeding the MMA. The fire use manager would then determine whether the situation could be mitigated within 48 hours, and if not, the fire would then be converted to a wildland fire.

Recommendation:

- Implementation protocols should identify worst-case scenarios and the establishment of contingencies with the involvement of all stakeholders.

The HTNF Forest Wildland Fire Use Implementation Guide contains inappropriate direction regarding management of spot fires outside of the established MMA.

Discussion: The WFU Implementation guide states, *"In the case of spotting, any spot from the WFU itself (not resulting from actions associated with managing the WFU), occurring outside the MMA, is considered a separate natural ignition and is available for management as a new WFU. The appropriate management response for this new ignition will be determined separately from the original fire, based on criteria specific to this fire".*

Recommendation:

- This section should amended with guidance to manage spot fires outside of the established MMA as fire exceeding the MMA to be contained within 48 hours of the end of that burning period. If uncontained, the fire must be converted to a wildland fire with a Wildland Fire Situation Analysis (WFSA) completed, as per Forest Service policy.

Other Findings

Emphasis seemed to be on the process of developing the WFIP and training rather than the operations and fire activity.

Fire Use Managers seemed reluctant to use predictive tools such as FSPro. They lacked confidence in the quality of weather and fuel model data and considered time spent running complex models was a waste. As a result, long-term models were run as an exercise with little confidence in their ability to support decisions.

There has been little experience with fire and ecology in the fuel type within that wilderness, which led to fire behavior predictions that underrepresented reality and a lack of adequate contingency plans. The HTNF spans a broad spectrum of elevations and their associated fuel types. Most of the forests' recorded fire history exists in the lower elevation sage and grass fuel types. Sub-alpine fir is infamous for its ability to transition from inactive to active fire behavior quickly.

While the transition to active crown fire in Sub-alpine fir can occur quickly, it rarely does so without warning. When the brush was starting to burn it indicated that live fuel moistures had dried enough to switch from heat sink to heat source, shortly before the forecast carried news of wind.

Fire managers participating in the ESRR are to be commended for their excellent documentation and safe operations.

Radio system problems were identified by the teams, as well as by others prior to the East Slide Rock Ridge WFU. The FUM's deployment was delayed due to the lack of adequate radio communications. A portable repeater would be useful when projects are being implemented in remote areas where coverage is a problem.

The WFU Team had difficulty filling some critical resource orders. NDF and BLM, who had resources not statused in ROSS, were not present at the initial planning meeting for the East Slide Rock Ridge WFU and were unaware of some of the resource needs of the incoming WFU Team.

Review Team Members

Bob Ashworth (NDF) - Nevada Department of Forestry Representative, Deputy State Forester, State Office, Reno, Nevada.

Ed Singleton (BLM) – Bureau of Land Management Representative, District Manager, Albuquerque, New Mexico.

Joe Reinarz (FS) – Fire Operations Specialist, Zone FMO, Region 3, Williams/Tusayan RD, Kaibab NF.

Erin Law (FS) – Fire Use/LTAN/Fire Behavior, Smoke Management Program, Region 1, Regional Office.

Rita Vollmer (FS) – Communications/Information Management, Public Affairs Specialist, Region 4, Regional Office.

Rob MacWhorter (FS) - Review Team Leader, Forest Supervisor, Dixie NF, Region 4.

APPENDIX

A. East Slide Rock Ridge WFU Timeline
B. East Slide Rock Ridge WFU Final Fire Narrative, Great Basin Fire Use Management Team, Larry Svalberg, Incident Commander, August 19 – August 24, 2008
C. East Slide Rock Ridge WFU Progression Map

Appendix A.
East Slide Rock Ridge WFU Timeline

August 27, 2008

Topic: East Slide Rock Ridge Fire – Jarbidge Ranger District, Humboldt-Toiyabe National Forest.

Timeline August 8 – 26, 2008

Date	Event
August 8	• Likely start of fire.
August 10	• East Slide Rock Ridge Fire reported. • Helitack Creek dispatched to fire, after reconnaissance crew diverted to higher priority fire • Initial Incident Status Summary (209) estimate of 100 acres.
August 11	• Stage I assessment completed. • Approved for Wildland Fire Use. • 4 smoke jumpers put on fire • 209 listed fire as 53 acres. • Recognition that resource benefits could be achieved and fire could burn until season-ending event.
August 13	A 5 person fire use module packed into fire and began assessment and monitoring of fire.
August 14	• Reported (209) at 195 acres. • Single and group torching, short crown runs in timber stringers. • Stage II assessment complete. • Type 2 Fire Use Manager ordered
August 17	• Reported (209) at 300 acres. • Ground personnel relocated for monitoring due to spotting. • Farsite and FSPro Models indicated a low probability of fire moving outside of wilderness boundary, less than 2% probability
August 18	• Reported (209) at 1,500 acres. • Fire Use IMT ordered. Stage III needed and drafted. • ¼ mile spotting, running crown fire observed.
August 19	• Reported (209) at 3,245 acres. • Winds projected for next day, fire expected to move North and Northeast. • FUMT took command @ 1800.
August 20	• Reported (209) at 5,000 acres. • Fire projected to threaten wilderness boundary within 48 hours. • Maximum Manageable Area (MMA) mapped at 113,300 acres.

August 21	• Reported (209) at 9,901 acres. • 300 acres outside wilderness (MMA boundary) within the Forest Service boundary, moving to the east.
August 22	• Reported (209) at 11,252 acres. • Complexity Analysis Completed • Converted to suppression at 1000. Type 1 Incident Management Team (IMT) ordered. • Initial Wildland Fire Situation Analysis (WFSA) developed.
August 23	• Reported (209) at 13,150 acres. • Containment actions occurring outside wilderness. Scout for burnout operations.
August 24	• Reported (209) at 14,489 acres. • Transition with Type 1 IMT. • Preparing for expected wind event on 8/25/08. • Line and Aerial resources pulled late in day due to safety concerns and lack of effectiveness. Burnout operations implemented in evening along northeast corner of fire. • Limited fire movement onto BLM lands.
August 25	• Reported (209) at 28,000 acres. • Wind event pushed fire to North and Northeast. • Ground and aerial resources ineffective during rapid fire growth. Safety of firefighters led to withdrawal from area near Pole Creek. • Multiple jurisdictions affected.
August 26	• Reported (209) at 38,595 acres. Most of the growth a result of underestimate of fire size on August 25. • Actively worked on NW, N, and E flanks of fire utilizing full range of suppression options (aircraft, crews, engines, etc.). • 485 acres burned on BLM, 380 private acres.

Appendix B.

East Slide Rock Ridge Wildland Fire Use

(NV-HTF-040186)

Final Fire Narrative

Great Basin Fire Use Management Team
Larry Svalberg, Incident Commander
August 19 – August 24, 2008

Prepared by: _____

Date

Planning Section Chief

Approved by: _____

Date

Incident Commander
Great Basin Fire Use Management Team

Delegation of Authority

In accordance with the Delegation of Authority issued by the Humboldt-Toiyabe National Forest to the Incident Commander of the Great Basin Fire Use Management Team on August 19, 2008, the team managed the East Slide Rock Ridge Wildland Fire Use from August 19 to August 24, 2008.

The objectives derived from this Delegation of Authority were:

1. All incident activities must provide for firefighter and public safety.
2. Monitor and take action to allow fire to play a natural role keeping it within the boundaries of the Jarbidge Wilderness.
3. Assess and protect as appropriate heritage resources identified by the zone archaeologist.
4. Minimize impacts to protect natural resources and improvements that occur in the fire area. Show respect for private property and citizens in the fire area. Follow the suppression guidelines for application of retardant near all waterways.
5. Follow the Humboldt National Forest Management Plan and utilize Minimum Impact Suppression Tactics (MIST) whenever practicable in all wilderness areas without compromising firefighter or public safety.
6. Hold fire within Maximum Manageable Area. Refine and implement Management Action Points as necessary to protect private lands, resources and facilities.
7. Communicate any concerns regarding safety, control problems, and significant costs to the Agency Administrator or his representative.
8. Implement appropriate components of the Accountable Cost Management (ACM).

After the incident was converted to a wildfire on August 22, the second (#2) objective was eliminated, and the sixth (#6) was revised to:

> Hold fire within the wilderness boundary. Refine and implement Management Action Points as necessary to protect private lands, resources and facilities.

The Agency Administrator gave verbal concurrence with these revisions at the August 22 Plans Strategy Meeting.

The following additional expectations were set forth in the Delegation of Authority:

1. During Action Reviews (AA and IC) will be held during planning meetings at the request of the AA or IC.
2. The IC is responsible for documenting significant cost decisions in the Key Decision Log (KDL).
3. A reference budget will be assigned to the fire by August 20, 2008.
4. Utilize local trainees and qualified line personnel. Coordinate with the AA if you need to bring any out-of-area trainees to the incident (non-Northeastern Nevada Dispatch area).
5. Complete and finalize Stage III Assessment in the Wildland Fire Implementation Plan.
6. Ecosystem and fiscal safety are also priorities.
    a. Ecosystem safety means the long-term health and sustainability of the ecosystem. Efforts should focus equally on the management of fire intensity and sustaining the values described in the Management Action Point document. Work closely with the lead resource advisor to identify most appropriate fire intensity where and when we have options to safely influence them.
    b. Fiscal safety means the mindful attention to cost effectiveness and documentation of decisions. Protect the agency budget with vigor and resolve. Expect to manage this event so as to keep final fire cost under the amount specified in the reference budget. Complete the Daily Key Decision Log, and at the first indication that it is unlikely to remain within the budget, initiate a conversation with the Agency Administrator.
7. Maintain situational awareness and practice risk management to minimize the exposure and effects of the inherent hazards in fire management while maximizing the opportunities to manage this incident.
8. Keep the Agency Administrator informed of public meetings and media contacts. Maintain contact with the local Public Affairs Officers from the Humboldt-Toiyabe NF to ensure you build on our existing relationships, contacts and key messages.
9. Authorization to use helicopters and/or fixed wing aircraft is approved to meet the strategies identified in the WFIP. The use of chainsaws and pumps is only approved to suppress those fires identified as wildland fires needing full suppression. If you feel

the need to use chainsaws or pumps or any other motorized or mechanized equipment to manage the wildland fire use fires, please request authorization through the Agency Representative. Remember firefighter safety is a higher priority than wilderness values, and motorized transport and mechanical equipment is authorized for firefighter and public safety.

The team was also instructed to include the following Daily Discussion Points in the daily Plans Strategy Meeting:

1. Cost per day
2. Review and revise "Key Decision Log"
3. Operational effectiveness and efficiency based upon assigned resources
4. Benchmarks based upon team capabilities, span-of-control, and daily progress.
5. Complexity
6. Ramp-up versus ramp-down
7. Need for Mechanical Intrusion

The Great Basin Fire Use Management Team took the following actions to address these objectives and expectations during the course of their tenure on this incident:

Objective 1: All incident activities must provide for firefighter and public safety.

The East Slide Rock Ridge Incident had an excellent safety record overall. The Great Basin IMT demonstrated the importance of firefighter safety in the following ways:

- The Great Basin IMT was in full compliance with the 10 Standard Firefighting Orders and the 18 Watch Out Situations.

- Fatigue Management - No one on this Incident exceeded the work rest guidelines.

- An updated Area Closure was in effect on 8/22/08 at 1200. Access points have been staffed daily with local Forest Service personnel to ensure the public does not enter.

- All fire personnel have received a full briefing prior to being deployed on the Incident.

- No accidents, no injuries and no MVA's took place to date on this Incident.

- One SAFECOM was filed on 8/24/08. An Aero Commander (1176Z) that was performing as the Air Attack Platform the morning of 8/24/08 experienced a problem with landing gear. The call came into Operations at 10:52. The aircraft landed safely at Elko airport at 11:11 without incident.

- All fire personnel were fully qualified for their positions. Redcards were checked during the check-in process.

- OSHA relations – The IMT was in full compliance with the Thirtymile Fire-related fire policies.

- No night operations were used on this Incident to date.

- Management Action Points were developed based on current and expected fire behavior in order to protect firefighter and public safety.

- Spot Weather Forecasts were obtained daily. Fire Behavior Forecasts were prepared daily, and updates were provided as conditions changed. All Fire Behavior Forecasts included fire behavior/weather-related safety messages.

- All fireline personnel and aviation resources were pulled from the line on the afternoon of August 24 due to fire behavior and concerns for LCES mitigation.

Objective 2: Monitor and take action to allow fire to play a natural role keeping it within the boundaries of the Jarbidge Wilderness.

- Fire behavior specialists (LTAN, FBAN, LTAN trainee) monitored fire spread and intensity twice daily. Fire Use Modules monitored fire behavior and burning conditions hourly during shifts. Fixed-wing infrared images were used to assess fire spread.

Objective 3: Assess and protect as appropriate heritage resources identified by the zone archaeologist.

- On 8/21, fire behavior specialist (FBAN/LTAN) established MAPs to remove personnel from cultural resource locations in Fall Creek. In addition, on 8/21, fire behavior specialists made recommendation that no one go into the head of Cougar Creek due to fire behavior and lack of safety zones in the area of heritage resources (cabins).

- The local Zone Archeologist supplied information and maps on cultural sites within the wilderness boundary and outside that boundary were the possibility of fire spread. They also provided information on significant sites.

- Fire activity threatening the MMA/wilderness boundary received the most focus for management actions and diverted attention from protection of heritage sites. Fire behavior and location also prohibited protection action in these areas.

Objective 4: Minimize impacts to protect natural resources and improvements that occur in the fire area. Show respect for private property and citizens in the fire area. Follow the suppression guidelines for application of retardant near all waterways.

- Limited fire suppression actions on areas inside wilderness boundary.

- Used aviation, ground resources (handcrews/engines), and natural barriers outside wilderness.

- No retardant was used near waterways or within 300' of waterways.

- Limited dozer line to roadways and only where needed in timber after consultation with district archeologist. There was unconfirmed information that approximately 200 yards of dozer line was constructed prior to the arrival of the archaeologist.

Objective 5: Follow the Humboldt National Forest Management Plan and utilize Minimum Impact Suppression Tactics (MIST) whenever practicable in all wilderness areas without compromising firefighter or public safety.

- Used Minimum Impact Suppression Tactics in the wilderness.

- Limited suppression action in wilderness

- Used checking action with aviation resources to slow fire spread

Objective 6: Hold fire within Maximum Manageable Area. Refine and implement Management Action Points as necessary to protect private lands, resources and facilities.

- By 8/19 all but one MAP in the Stage II had been breached.

- On 8/20, westerly winds at 20-25 mph, gusting to 30 mph, pushed the fire east across God's Pocket and Slide Creeks across the Wilderness boundary (MMA boundary) near TH-3 near the head of Canyon Creek.

- On 8/21, westerly winds at 20-25 mph, gusting to 36 mph, spread fire further outside the Wilderness/MMA on the south side of the head of Canyon Creek. The fire moved north in a timbered draw and a timber stringer, across the Wilderness Boundary/MMA and north toward Pole Creek Guard Station.

- On 8/22 and 8/23 there was limited northerly fire spread outside the MMA in timber stringers on Biroth Ridge, southwest of the Pole Creek Guard Station.

Objective 7: Communicate any concerns regarding safety, control problems, and significant costs to the Agency Administrator or his representative.

- Discussed tactics and strategies with the Mountain City District Ranger relative to safety many times. Specifically discussed timing of inserting resources into historic structures. Also discussions focused on the hazards associated with any direct checking actions with personnel within much of the wilderness area.

- Talked with AA about the reference budget being too low. As fire quickly transitioned to very active fire growth and moved outside of wilderness we entered into discussion about complexity and cost.

    - As fire moved out of the wilderness/MMA on the NE side and had opportunity to leave the wilderness/MMA on the NW side, discussions centered around not only complexity but risk and

consequence of this happening. Decision was made to order a Type I team and convert to a Suppression event.

Objective 8: Implement appropriate components of the Accountable Cost Management (ACM).

- A key decision log was kept on a daily basis using the web-based system.
- Filled out Initial Contact and Transition survey for the event.
- Delegation of Authority with leaders intent was clearly articulated and used by the Team to incorporate into daily planning and implementation activities.
- A Stage III (or long term plan) was being developed when the decision was made for a Type I team due to increased complexity. Several components were under development and have been passed along to the Type I team.
- The Reference Budget ($400,000) was delegated to the IMT. Discussions with the AA concluded that the incident would outstrip this budget in the first several days due to increased activity and actions needed to attempt to keep the fire within the Jarbidge Wilderness/MMA.

Expectation 1: During Action Reviews (AA and IC) will be held during planning meetings at the request of the AA or IC.

- During Action Reviews (AA and IC) were held throughout the day as well as part of the Planning Meeting. The Agency Administrator is very engaged in the oversight of the incident and has contributed significantly to the management of the event as it increased in complexity.

Expectation 2: The IC is responsible for documenting significant cost decisions in the Key Decision Log (KDL).

- The IC completed the significant cost decision documentation in the web based KDL.

Expectation 3: A reference budget will be assigned to the fire by August 20, 2008.

- A reference budget was assigned to the team. However, the reference budget was developed prior to large fire growth and the need for very active management actions. It was discussed with the AA and agreed that it would need to be revised. Revision was part of the WFSA process.

Expectation 4: Utilize local trainees and qualified line personnel. Coordinate with the AA if you need to bring any out-of-area trainees to the incident.

- The team incorporated a Central Zone Fuels Specialist from the local Forest as a FUM2(T). She took the lead in coordinating the Stage III WFIP and was able to get several tasks signed off on this assignment.

- The team's GISS lead facilitated the initiation of a GISS taskbook for a trainee from the local Forest. She was able to get several tasks signed off.

- The team brought 2 trainees with them as rostered team members with the permission of the Agency Administrator—a developmental Plans Section Chief working on his SCKN qualification, and a GISS trainee.

- The fire behavior group utilized a LTAN trainee from outside the local area after coordinating with the Agency Administrator. She served as the fire behavior working group lead, completing several items in her task book and gaining valuable experience in supervising the organization to ensure timely completion of outputs. She will also be staying on with the Type I team to assist them with long term fire behavior analysis.

Trainees on this assignment

	Command	Operations	Plans	Logistics	Finance	Totals
USFS	1		3			4
NPS	1	1	1			3
BLM		1	1			2
STATE						0
FWS		1				1
TOTALS	2	3	5	0	0	10

Expectation 5: Complete and finalize Stage III Assessment in the Wildland Fire Implementation Plan.

- Working together, the local unit and the team completed a 3-5 day action plan. This plan contained Management Action Points and a table with information and a plan of action to use until completion of the Stage III. Due to fire activity and ordering of a Type 1 team the Stage III was not completed.

Expectation 6: Ecosystem and fiscal safety are also priorities.

Fiscal safety:

- Attention to cost effectiveness drove the configuration and decisions of the IMT. KDL and frequent AA discussions focused on cost effectiveness on a daily basis.

Ecosystem Safety:

- Fire behavior specialists observed fire intensity during helicopter flights to provide estimates of fire severity. Fire activity was low to moderate prior to our arrival, resulting in only a few pockets of high intensity fire, therefore fire-induced mortality was limited.

- Upslope runs on both sides of the east fork of the Jarbidge River on 8/19 demonstrated one means of the fire covering large acreages. The fire spread by short, 1/2-1 mile crown runs in timber stands on steep slopes, accompanied by spotting of about ¼ mile. When embers from torching trees landed in receptive fuel in timber, the process repeated downwind and/or upslope. Where embers landed in sage or mountain mahogany, fire spread was limited, or did not occur. This burning pattern resulted in a mosaic where a portion of the isolated timber stands were ignited and burned at high intensity while other stands were not ignited.

- During the wind event of 8/20, fire intensity increased. The increase was in part due to prolific spotting when a fairly continuous line of fire, approximately two miles in length crossed God's Pocket Creek and ran up the wind aligned west facing slope during a short period during the day. The prolific spotting

resulted in ignitions in the majority of conifer stands within ½ mile downwind, leaving few stringers unburned.

- On 8/20 and 8/21, in spite of high winds, mortality patterns returned to more of a mosaic pattern. This was the result of having points of fire torching trees in various places on the fire edge versus the nearly continuous line of fire running uphill the previous day. Additionally, the fire had reached the top of the ridge along the east Wilderness Boundary, placing the active fire edge out of alignment with the slope.

- Cougar and Fall Creeks have maintained a mosaic burn pattern with limited high intensity fire.

Expectation 7: Maintain situational awareness and practice risk management to minimize the exposure and effects of the inherent hazards in fire management.

This expectation was met in the following ways:

- Intelligence from line personnel.

- Fire behavior and weather updates.

- Daily completion of the 215A.

- Following the Risk Management Process in the IRPG.

- Aerial recon flight intelligence.

- No task was assigned unless the hazards associated with it could be mitigated.

- Utilized local knowledge of the fuels and burning conditions.

- Thunderstorm development was monitored via satellite imagery on the Internet.

- Fire behavior specialists provided daily operational period briefings to incoming resources. The FBAN provided a fire weather and fire behavior forecast for inclusion in the daily IAP, and briefed the forecast daily. The LTAN provided daily fire spread projections and other fire behavior input as needed as scenarios developed.

Expectation 8: Keep the Agency Administrator informed of public meetings and media contacts. Maintain contact with the local Public Affairs Officers from the Humboldt-Toiyabe NF.

- Incident PIOs consulted with the Humboldt-Toiyabe NF Public Affairs Officer (PAO) in Sparks, Nevada, on a daily basis to ensure understanding of the messages and information to get across to the appropriate media, agencies and partners, key community contacts and the public.

- PIOs consulted with Acting District Ranger and Agency Administrator to understand local relationships among the agencies, local politics and other information needed to understand the local situation.

- Agency Administrators briefed PIOs on potential community concerns and provided key information contacts and suggestions for communication strategies.

- News releases were cleared through the Forest PAO and the IC, and sent daily to the mailing list provided by the PAO, along with contact lists gathered from the BLM in Elko and Twin Falls (including pertinent media in Twin Falls and Boise).

- Additionally, PIOs responded to requests from the Forest PAO for Briefing Papers.

- PIOs provided interviews for local radio and TV stations and participated in community meetings.

Expectation 9: The use of chainsaws and pumps.

- No chainsaws or pumps were used in the wilderness.

- Aviation resources were used to slow fire spread in wilderness.

- Helicopters were used to extract personnel out of the wilderness.

Daily Discussion Points

- The Daily Discussion Points were included in the agenda of the 1600 Plans Strategy Meeting each day. At this meeting the Agency Administrator was provided with incident cost information and a review of team effectiveness and efficiencies.

Recommendations

- Recognize complexities of WFU and AMR in small wilderness areas such as the Jarbidge with few naturally defensible barriers. Those decisions are much higher risk than areas with many more natural barriers or larger land base.

- Consider fuels reduction projects within and adjacent to the wilderness to create more effective barriers to fire spread. The Lewis and Clark NF (Sun River Burn) is one example of this.

- If heritage sites are really important, consider an investment assessing them prior to having active fire in the Jarbidge Wilderness. Sites should be evaluated for eligibility and should at the same time have a site specific protection plans developed and kept on file. Plans should include a list of actions, personnel and supplies needed to implement them. Sites should also be prioritized for protection based on importance. While this is an investment of dollars, it will allow for more effective cost management in terms of delegated responsibilities of protection during a fire event. Consider some fuels manipulation around these sites prior to a fire.

- Work with resource specialists, fire managers and fire behavior personnel prior to fire season to make sure everyone is on the same page relative to the potential fire effects.

- Install high elevation RAWS in locations that would gather representative weather data for the mountain areas

    - Analysis of available historic weather data indicates there are no RAWS that adequately portray the high elevation mountain weather. We suggest RAWS installation in high elevation settings, particularly where fire use for resource benefit or suppression responses other than the full containment option are going to be considered.

    - Having RAWS that reflect weather and seasonality in these high elevations would support fire management in several ways. First and foremost, firefighter safety can be enhanced by producing a pocket card specific to high elevation mountain settings. The pocket cards currently available in northern Nevada are generated for lower elevations, which do not represent high elevation burning

conditions or environmental trigger points which may lead to extreme fire behavior in the conifers at high elevation.

- The second benefit in installing high elevation RAWS is their use for gathering data that supports decision making concerning how to manage a particular fire start. Utilizing the Fire Family Plus data analysis tools, a fire manager can see fairly quickly how the current season compares to past seasons, average seasons, and extreme seasons. The curve created by the average ERC graph also shows the ramping up, the peak burning, and the tapering of the fire season, providing a manager with information regarding how much fire season might be remaining.

- Additionally, a fire manager can utilize the data to develop a "season ending event" curve showing the probability of a season ending event (rain, snow, dropping ERC below some value, etc.) occurring by any given date. The season ending event curve is useful for making decisions as to when to manage a fire in a particular way.

- A RAWS that provides representative weather data for the higher elevations would support informed decision making for the difficult choices that fire managers and agency administrators need to make.

- If the District plans to continue hosting small teams (e.g., FUMT, BAER), it may be cost effective to have a DSL Internet line installed and negotiate a suspended rate for times when it is not in use. This would allow for rapid Internet access for interagency teams.

Commendations

- The Agency Administrator and Local FMO have been very available and helpful to the Team in our short tenure here. I would like to thank them.

- As an Agency Administrator, exemplifies what the agency should expect of our Line Officers in Fire Management.

- Dispatch has also been very helpful and great to work with.

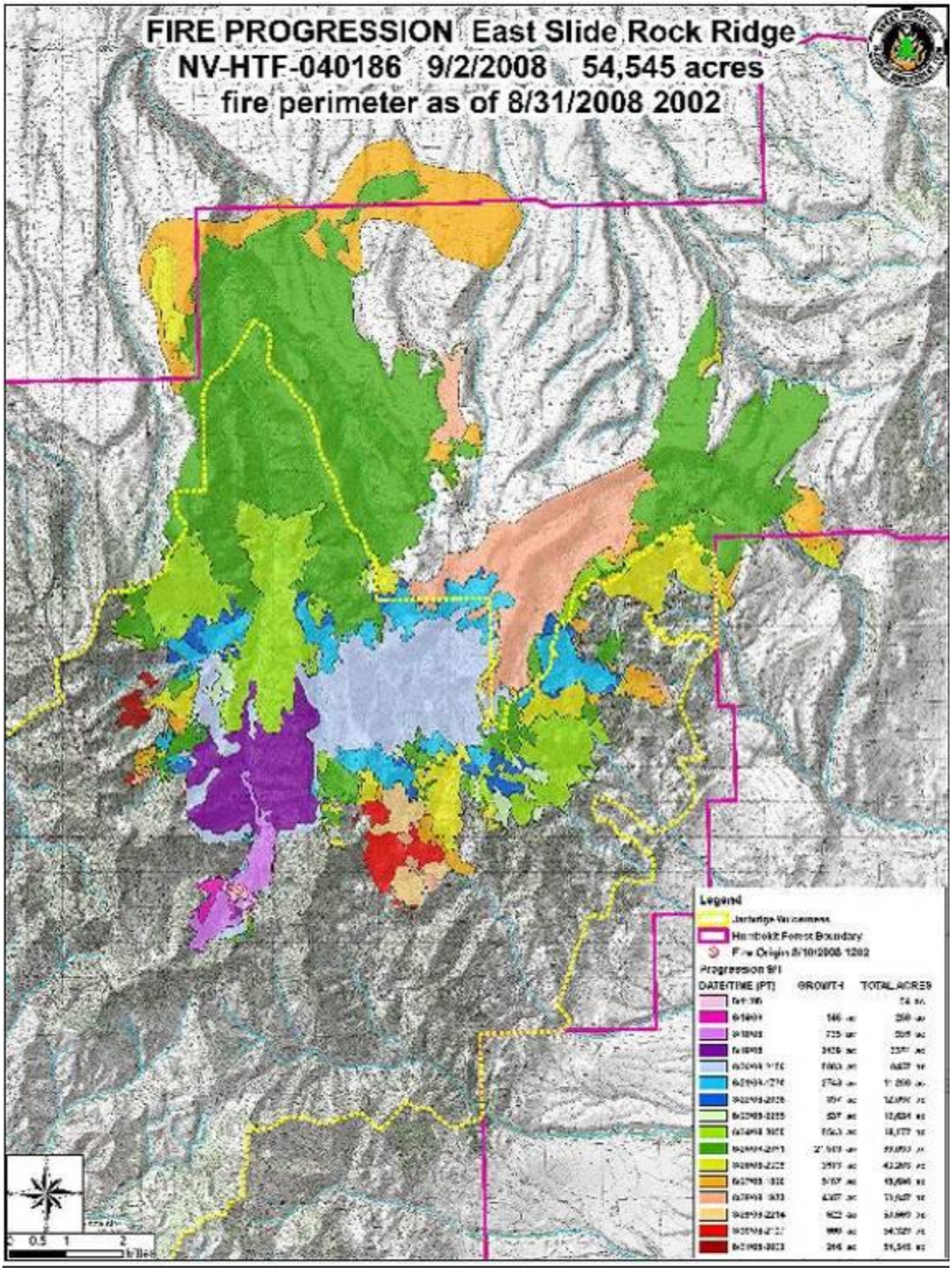
- Thanks to the local district for being gracious hosts as we made additional demands on their time and invaded their office space. We understand the impact.

- Commendations to those for providing timely and high-quality GIS support to our team.

- Commendations to those assisting with and obtaining spot weather forecasts.

- The District personnel were extremely helpful with accommodating the team's needs to access the Internet for all aspects of incident support.

- The local unit had been using iSuite to manage resources prior to the Fire Use Management Team's arrival. This was very helpful for the incoming team, and the Zone Archeologist was a great help in assisting the team to set up their iSuite database.


FIRE PROGRESSION East Slide Rock Ridge
NV-HTF-040186 9/2/2008 54,545 acres
fire perimeter as of 8/31/2008 2002
Legend
Humboldt Forest Boundary
Progression 9/1
DATE/TIME (PT)
GROWTH
TOTAL ACRES
0 0.5 1 2
Miles