

Wildland Fire Situation Analysis

WFSA Information

WFSA Number: 1	Jurisdiction(s): USFS
Fire Name: Fourmile Ridge	Geographic Area: Northern Rockies
Incident Number: MTLNF516	Unit: Lolo NF, Superior RD
Date/Time Prepared: 06/22/2007 12:43 PM	Accounting or Management Code: P1C63U

Fire Situation

Start Date/Time: 06/20/2007 11:00 PM **Current Fire Size:** 60 acres

Fuel Conditions

Observations for June 21 at the Pardee RAWs show Moderate fire danger, with the ERC at 43 and the Burning Index at 41.

Dead fuel moisture estimates at the RAWs are: 1 hour 5%, 10 hour 6%, 100 hour 9%, 1000 hour 16%. Live fuel moistures show at 121% for woody and 67% for herbaceous, but observations at the fire area show that green-up has occurred, so these values have increased at a rapid rate and should continue to stay high for the next week.

Topography

The topography consists of steep, rugged, forested mountains. Firefighter safety and fire suppression efforts will be affected by rolling material.

Jurisdiction and Land Ownership in the Fire Area

The fire area and the surrounding area is National Forest land. The fire is burning in an active timber sale area, the Blazing Saddles timber sale.

There is private land southwest of the fire approximately 2 miles down Sloway Gulch, and southeast of the fire about 1 mile across Sloway Gulch on the ridge between Sloway and Keystone Creek. Currently the fire is spreading to the northeast, away from this private property.

The BPA powerline passes about 1/2 mile southwest of the current fire perimeter.

Fire Behavior - Current and Forecast

Extreme fire behavior was observed on 6/21 as the fire burned rapidly uphill through the slash units, with spotting up to 1/4 mile to the northeast. When the fire burned out of the slash units, fire behavior moderated noticeably and direct attack tactics were successful.

Observations indicate that in general dead fuels will burn readily while live fuels will retard fire spread. Surface fire will be active where there are dead fuels, and torching and short crown runs will occur where surface fuels are sufficient to support them.

High winds could significantly affect fire behavior on exposed slopes and ridges.

Fire behavior should be greatly reduced at night due to higher humidity and cooler temperatures, especially lower on the slope near Sloway Gulch.

Forecast Weather (3 and 10 day) and Current Seasonal Conditions

Refer to the attached fire weather planning forecast for 6/22/07.

Other than a chance of light showers on Sunday 6/24, no significant precipitation is expected for the next week.

Temperatures are predicted to be above normal Friday 6/22, then cool due to a cold front passage for a few days, and then return to normal to above normal by Tuesday 6/26.

The forecast for July calls for above normal temperatures and below normal precipitation.

National and Regional Fire Preparedness, and Suppression Resource Availability

National Preparedness Level 2.

Regional Preparedness Level 1.

Resource availability is generally good at this time.

Decision Summary

Selected Alternative

B. Direct/Indirect

Selected Alternative Description

Use direct tactics to minimize fire spread to the south and west, protecting the BPA powerline.

Use a combination of direct and indirect tactics on the north and east flanks. Use natural features, roads, and opportunities created by changes in weather and fire behavior to check fire spread on these flanks.

Keep the fire north and west of Road #389 below, south and west of Blazing Saddles Unit 4, and south of road #389 and road # 7861 above (see map of alternatives).

Control the fire within the described perimeter, taking advantage of opportunities for effective and efficient control as they arise.

Rationale

This alternative is somewhat more costly than Alternative A. However it provides flexibility, based on good tactics and good decisions, that increases both firefighter safety and the probability of success. The probability of success is good, given current live fuel moisture conditions. The short time period needed to achieve control is important, since fire behavior and fire effects will only worsen if the predicted and expected weather and fuel conditions occur. The possibility existed that we may not receive significant moisture for up to three months, and if allowed to burn this fire could become quite large and would continually threaten private property, homes, and the BPA powerline.

WFSA revision thresholds**Critical fire management resources****Special considerations**

Analysis prepared by: _____

Agency Administrator Approval

Date/Time

Values at Risk

Threatened Item		Potential Loss
Private property	%	\$0
BPA powerline	%	\$0
Total Expected Value at Risk (rounded)		\$0

Suppression Objectives

Objective

Economic

Protect the BPA powerline and associated infrastructure.
The fire area is located in MA 16 - Timber Production. Minimize impacts to timber resources when it is cost effective to do so.

Objective

Environmental

Follow Lolo NF Weed BMP's and EMS guidelines.

Objective

Social

Keep interested public informed of the fire situation.

Safety Issues

Issue

Safety Issues

Firefighter Safety

Base all strategic and tactical decisions on the 10 Standard Fire Orders, 18 Watch Out Situations, and Region 1 Firefighting Doctrine.

Use LCES checklist to mitigate identified hazards.

The country is steep and rocky, with few safety zones other than the black. The terrain requires awareness of slip, trips and falls and the high potential for rolling material. There are many snags in the area. Snag awareness practices are essential.

Aviation Safety

Maintain strict adherence to all aviation safety guidelines.

Limit helicopter use as much as possible while maintaining operational effectiveness.

Public Safety

Provide for public safety by signing roads in the fire area and restricting access as needed.

Roads 389 and 18519 will be posted as closed.

Alternatives

A. Direct

Use direct tactics to minimize fire spread, limit firefighter exposure over time and keep suppression costs low.

Keep fire off of the south slopes to the northeast (see map of alternatives).

Target Outcome

Control the fire within the described perimeter (refer to map or alternatives), limiting firefighter exposure over time and minimizing suppression costs.

Fallback Outcome

Extreme Case Outcome

Fire would continue to spread laterally east and west (especially of the east) along the southerly slopes below Keystone Ridge, eventually reaching Mill Creek to the west and the headwaters of Flat Creek and Ninemile Creek to the east.

Fire would continue to back towards the BPA powerline and containment actions would be continually needed to protect both the powerline and the private property to the south and east.

Probability: 70%
 Final Fire Size: 0 acres
 Time to Contain: 3 days
 Time to Control: 5 days
 Probability Rationale:

Probability: 30%
 Final Fire Size: 0 acres
 Time to Contain: 120 days
 Time to Control: 120 days

B. Direct/Indirect

Use direct tactics to minimize fire spread to the south and west, protecting the BPA powerline.

Use a combination of direct and indirect tactics on the north and east flanks. Use natural features, roads, and opportunities created by changes in weather and fire behavior to check fire spread on these flanks.

Keep the fire north and west of Road #389 below, south and west of Blazing Saddles Unit 4, and south of road #389 and road # 7861 above (see map of alternatives).

Target Outcome

Control the fire within the described perimeter, taking advantage of opportunities for effective and efficient control as they arise.

Fallback Outcome

Extreme Case Outcome

Fire would continue to spread laterally east and west (especially of the east) along the southerly slopes below Keystone Ridge, eventually reaching Mill Creek to the west and the headwaters of Flat Creek and Ninemile Creek to the east.

Fire would continue to back towards the BPA powerline and containment actions would be continually needed to protect both the powerline and the private property to the south and east.

Probability: 80%
 Final Fire Size: 0 acres
 Time to Contain: 4 days

Probability: 20%
 Final Fire Size: 0 acres
 Time to Contain: 120 days

Time to Control: 6 days

Time to Control: 120 days

C. Confine/Point Control

Use direct tactics to minimize fire spread to the south and west, protecting the BPA powerline.

Use natural features (particularly northerly exposures) and limited resources to confine the fire as it spreads to the north and east.

Keep the fire north of the main Sloway Gulch drainage, south of Keystone Ridge, and try to pinch the fire off in Section 21 on Keystone Ridge where these two features come together (see map of alternatives).

Target Outcome

800 Confine fire to the described area (refer to map of alternatives) until it rains, or until it can be secured.

Fallback Outcome

Extreme Case Outcome

Fire would continue to spread laterally east and west (especially of the east) along the southerly slopes below Keystone Ridge, eventually reaching Mill Creek to the west and the headwaters of Flat Creek and Ninemile Creek to the east.

Fire would continue to back towards the BPA powerline and containment actions would be continually needed to protect both the powerline and the private property to the south and east.

Probability: 60%
Final Fire Size: 0 acres
Time to Contain: 20 days
Time to Control: 30 days

Probability: 40%
Final Fire Size: 0 acres
Time to Contain: 120 days
Time to Control: 120 days

Estimated Suppression Costs

Alternative A. Direct

Target Outcome	Fallback Outcome	Extreme Case Outcome
Estimated suppression cost: \$252,000	Estimated suppression cost: \$0	Estimated suppression cost: \$0
Basis for cost estimate:	Basis for cost estimate:	Basis for cost estimate:
Estimated suppression resources needed	Historic average cost per acre	Estimated suppression resources needed

Alternative B. Direct/Indirect

Target Outcome	Fallback Outcome	Extreme Case Outcome
Estimated suppression cost: \$0	Estimated suppression cost: \$0	Estimated suppression cost: \$0
Basis for cost estimate:	Basis for cost estimate:	Basis for cost estimate:
Estimated suppression resources needed	Historic average cost per acre	Estimated suppression resources needed

Alternative C. Confine/Point Control

Target Outcome	Fallback Outcome	Extreme Case Outcome
Estimated suppression cost: \$0	Estimated suppression cost: \$0	Estimated suppression cost: \$0
Basis for cost estimate:	Basis for cost estimate:	Basis for cost estimate:
Estimated suppression resources needed	Historic average cost per acre	Estimated suppression resources needed

Values Threatened

Note: Outcome values, including totals, are rounded to 3 significant digits counting from the left.
 Expected Impact is rounded to 2 significant digits.

Alternative A . Direct				
Item	Target Outcome	Fallback Outcome	Extreme Case Outcome	Expected Impact
Private property	\$0		\$0	
BPA powerline	\$0		\$0	
Total (rounded)	\$0		\$0	\$0

Alternative B . Direct/Indirect				
Item	Target Outcome	Fallback Outcome	Extreme Case Outcome	Expected Impact
Private property	\$0		\$0	
BPA powerline	\$0		\$0	
Total (rounded)	\$0		\$0	\$0

Alternative C . Confine/Point Control				
Item	Target Outcome	Fallback Outcome	Extreme Case Outcome	Expected Impact
Private property	\$0		\$0	
BPA powerline	\$0		\$0	
Total (rounded)	\$0		\$0	\$0

Safety Assessment

Alternative A . Direct

Target Outcome

Fallback Outcome

Extreme Case Outcome

Alternative B . Direct/Indirect

Target Outcome

Fallback Outcome

Extreme Case Outcome

Alternative C . Confine/Point Control

Target Outcome

Fallback Outcome

Extreme Case Outcome

Decision Tree

Alternative A

Direct

Expected Objectives Score: **2.4**
 Expected Safety Score: **5.6**
 Expected Cost: **-\$176,400**
 Expected Loss: **\$0**

Target Outcome

0.00 acres, **5** days to control
 Objectives score: **2.8**
 Safety score: **6.7**
 Estimated Cost: **-\$252,000**
 Estimated Loss: **\$0**

70%

Extreme Case Outcome

0.00 acres, **120** days to control
 Objectives score: **1.6**
 Safety score: **3.0**
 Estimated Cost: **\$0**
 Estimated Loss: **\$0**

30%

Alternative B

Direct/Indirect

Expected Objectives Score: **2.4**
 Expected Safety Score: **6.2**
 Expected Cost: **\$0**
 Expected Loss: **\$0**

Target Outcome

0.00 acres, **6** days to control
 Objectives score: **2.6**
 Safety score: **7.0**
 Estimated Cost: **\$0**
 Estimated Loss: **\$0**

80%

Extreme Case Outcome

0.00 acres, **120** days to control
 Objectives score: **1.6**
 Safety score: **3.0**
 Estimated Cost: **\$0**
 Estimated Loss: **\$0**

20%

Alternative C

Confine/Point Control

Expected Objectives Score: **2.3**
 Expected Safety Score: **4.6**
 Expected Cost: **\$0**
 Expected Loss: **\$0**

Target Outcome

0.00 acres, **30** days to control
 Objectives score: **2.8**
 Safety score: **5.7**
 Estimated Cost: **\$0**
 Estimated Loss: **\$0**

60%

Extreme Case Outcome

0.00 acres, **120** days to control
 Objectives score: **1.6**
 Safety score: **3.0**
 Estimated Cost: **\$0**
 Estimated Loss: **\$0**

40%