

Lesson Plan

INSTRUCTOR: Byron Bonney & Brett Fay

LESSON: How is a Long-Term Implementation Plan prepared & how is a LTIP implemented?

COURSE: Managing Long Duration Wildfire

OBJECTIVES:

Upon completion of this lesson, participants will be able to:

1. To identify the components of a Long-Term Implementation Plan for a Long Duration Wildfire.
 2. To demonstrate an understanding of the Long-Term Implementation Plan (LTIP) process by assisting in the development of the Wildland Fire Relative Risk Rating, management action points, mitigation actions, costs of mitigation actions, and monitoring criteria in the LTIP.
 3. To understand the transition from the development of a LTIP to implementation through an Incident Action Plan.
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Handouts:

- 44x34 Group Work Map
- 44x34 FSPRO Map on Mylar
- LTIP with all info except completed Wildland Fire Relative Risk Rating Chart, management action point tables with identified mitigation actions, costs of mitigation actions/MAP's, and monitoring criteria.
- Blank MAP tables
- Resources Assigned and/or Available over the next four days
- Resource Cost guidelines
- Blank Division Assignment Sheets

Assignments:

- Completed Wildland Fire Relative Risk Rating Assessment
- Develop mitigation actions to protect values at risk and develop management action points on the large group work map. Record all necessary information on the management action point tables provided.
- Develop costs associated with all mitigation actions by management action point
- Develop monitoring section of the LTIP.

Initial Bridge Fire Information:

The Bridge Fire is located in Region One (Northern Rockies) on the Powell Ranger District of the Clearwater National Forest in north central Idaho.

Discovery

- Discovered 7/26 @ 1315 hours
- Initial recon – 1/2 acre in size

Initial Actions

- Due to extreme fire behavior managers decided to:
 - Aerial Attack with water drops & retardant where reasonable and effective to slow/delay fire spread toward the west to Road #360.
- After these actions were accomplished, aerial attack ceased.

Two hours later, the Bridge Fire was estimated at over 500 acres exhibiting independent crown fire spreading to the east, further into the Selway-Bitterroot Wilderness.

You are the Long Term Implementation Plan team charged with putting together a LTIP for the Bridge Fire to manage it as a long duration event. Attached to this lesson plan is the LTIP information that has been developed prior to your arrival by the Powell Ranger District and Clear/Nez Fire Zone personnel. Utilize this information to complete the assignments listed above for this exercise. A coach has been assigned to your group to answer any questions you might have regarding the information provided or about this exercise.

Resources Assigned and/or Available for next several operational periods if needed.

- Type III Helicopter with crew
- 15 person district fire crew
- 3 Type 6 FS engines with crews
- 1 Type 1 IHC
- 8 Smokejumpers
- 1 Forest LEO
- 4 District personnel

The following are the timeframes you will need to adhere to for the exercise:

First Day – 1400 to 1700 hours: Complete the Wildland Fire Relative Risk Rating Assessment, Management Action Point tables, costs, and monitoring.

Second Day – 0900 to 1000 hours: Complete division assignment sheet(s) for the next operational period.

Second Day – 1000 to 1115 hours: Two to three groups will present the WF Relative Risk Rating Assessment and some of the MAP with mitigation actions to all participants.

Second Day – 1130 to 1200 hours: Presentation of what actually happened on the Bridge Fire in 2007 including MAP's and mitigation actions that were developed.

Clearwater National Forest Powell Ranger District

Long Term Implementation Plan Information Package Bridge Fire



July 27, 2007

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Purpose

The purpose of this analysis is to provide the Clearwater NF-Powell RD, the existing Type III IMT that is currently responsible for the Bridge fire, the Clear-Nez Fire Zone, and the Northern Region with a long-term implementation plan in order to assist in the management of the Bridge fire over the life of the 2007 fire season. It addresses the actions and decisions that need to take place as the fire grows in size and complexity. The Bridge Fire is currently burning adjacent to and within the Selway-Bitterroot Wilderness on the Powell Ranger District, Clearwater National Forest.

WFSA Objectives

Safety:

- Plan and implement management actions that provide for personnel and public safety.

Economic:

- Provide the appropriate protection measures, commensurate with the values at risk.
- Manage incident operations in a cost effective and efficient manner.

Environmental:

Wilderness:

- Implement minimum impact management techniques (MIMT) to ensure protection of natural resource values.
- Work with the Wilderness Resource Advisor in the development of mitigation actions for potentially threatened sites.

Natural Resource:

- Work closely with Resource Advisors provided by the Ranger District to avoid or mitigate resource damage.
- Document locations of landing zones, handlines, and other sites that might require rehabilitation.

Social:

- Work with the District Archeologist, identify cultural resource sites and develop mitigation actions for potentially threatened sites.

Other:

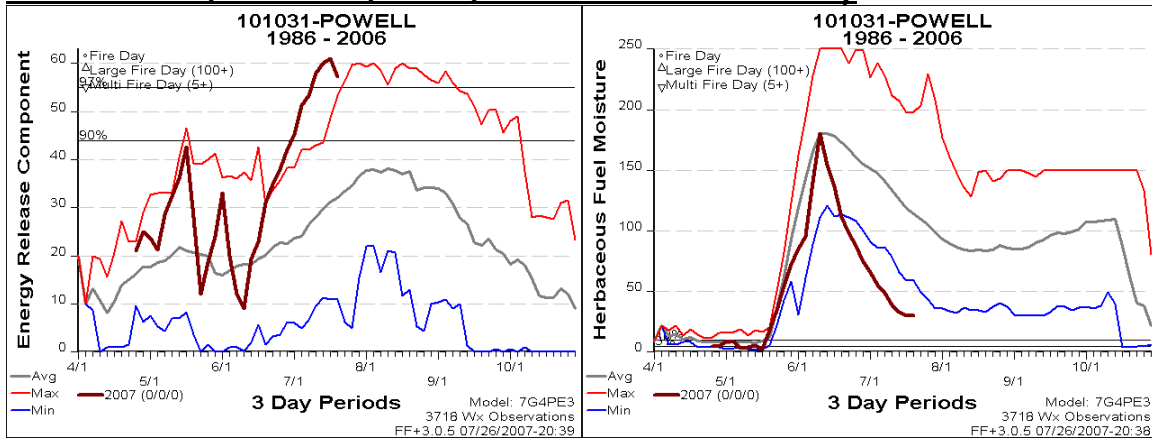
- Create a proactive public information/education program to include but not limited to the Forest, local communities, Forest visitors, media, and cooperators.
- Provide for effective coordination with the Nez Perce and Bitterroot National Forests, and IMT's and FUMT's managing wildland fires within the area.

WFSA Selected Alternative

Alternative B - Point Protection (protect values at risk) was the selected alternative. Management Action Points (MAP's) will be developed for this fire and will be included in a Long Term Implementation Plan for this fire. Initially this fire is being managed with a Type III organization. The organization managing this fire will expand or contract, based on the current and expected fire behavior, complexity and threats. A cost associated with each MAP will be developed as part of the Long Term Implementation Plan. Values at risk are addressed later in this document.

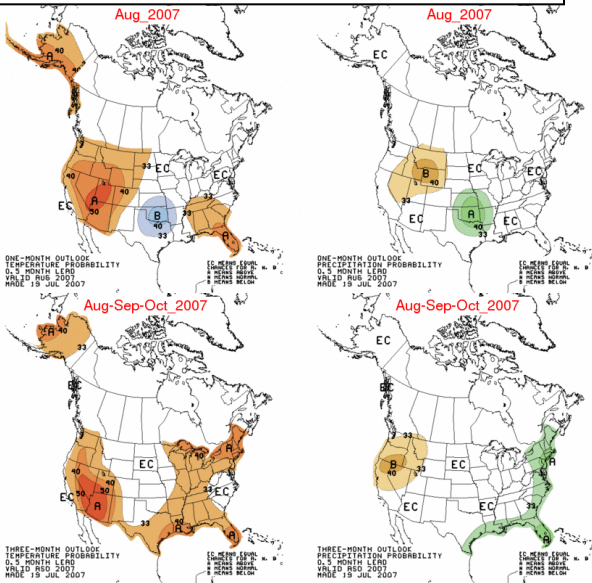
Risk Assessment Summary

Local Climate, Weather, Fuels, 2007 Seasonal Severity



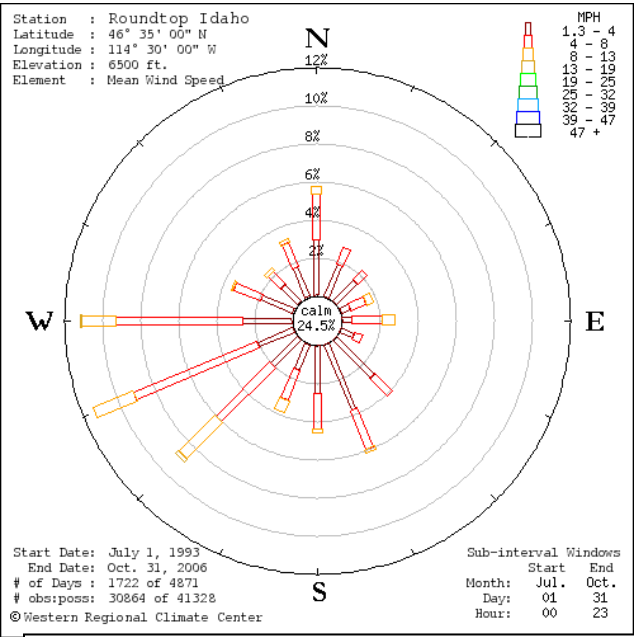
The Energy Release Component (ERC) is the National Fire Danger Rating System (NFDRS) index representing a composite of several live and dead fuel moistures (the higher the index, the drier the fuels, and the greater the fire intensity). The following table displays historic ERC's and compares them to the current ERC for the Powell RAWS station. Currently, the ERC is well above average for this time of year and above the 97th percentile. Since ERC values are trending downward, the potential fire severity is temporarily decreasing. ERC values will climb when drier weather arrives.

Herbaceous fuel moisture is a measure of live fuel moisture (i.e. leaves, needles, blades of grass). These are currently running below the 20-year minimum (driest) for this time of year. Hot and dry weather could further to decrease their moisture over the next several weeks. Lower values indicate greater severity.



The graph indicates that for the fire area there is a below normal precipitation (40%) through August 19. The graph indicates that for the fire area there is a slightly greater than 33% chance of below normal precipitation through October 19.

Temperatures have a 40% probability of being above normal through August 19. The fire area is right on the line on the 3 month temperature chart. There may be a 40% probability of being above normal through October 19 or equal chances of being normal, above, or below normal.

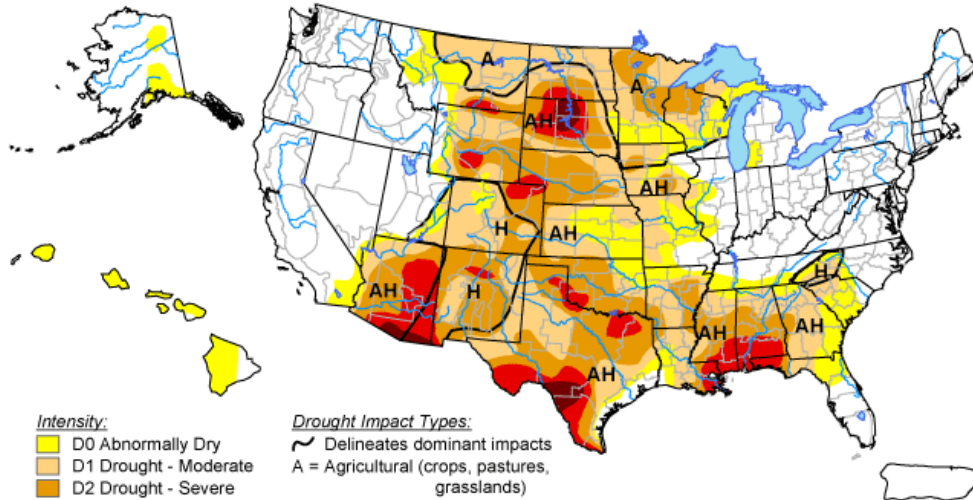


Outlook for Winds: The following wind rose graphic summarizes wind direction and speed for the period July 24th thru October 31st, since 1993 for the Roundtop RAWS. Observations were summarized for the Roundtop Mountain RAWS because this station better represents general winds across the area than the other available observation sites. Winds across the fire area at this time of year are most likely to have southwest and westerly component. They are usually below 19 mph and most often below 8 mph. However with frontal passages, Roundtop recorded winds up to 25 mph. Thunderstorms can have brief, yet powerful downdrafts in any direction.

The common daily spread of the Bridge fire would tend to occur with the wind and uphill where slopes are significant. However, conditions are currently dry enough for the fire to spread across and even down slope with very little wind. Of course erratic winds near thunderstorms could cause significant spread in any direction for short periods of time (hours rather than days).

U.S. Drought Monitor

July 18, 2006
Valid 8 a.m. EDT



Intensity:
 Yellow: D0 Abnormally Dry
 Orange: D1 Drought - Moderate
 Red-Orange: D2 Drought - Severe
 Red: D3 Drought - Extreme
 Dark Red: D4 Drought - Exceptional

Drought Impact Types:
 ~ Delineates dominant impacts
 A = Agricultural (crops, pastures, grasslands)
 H = Hydrological (water)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



Released Thursday, July 20, 2006

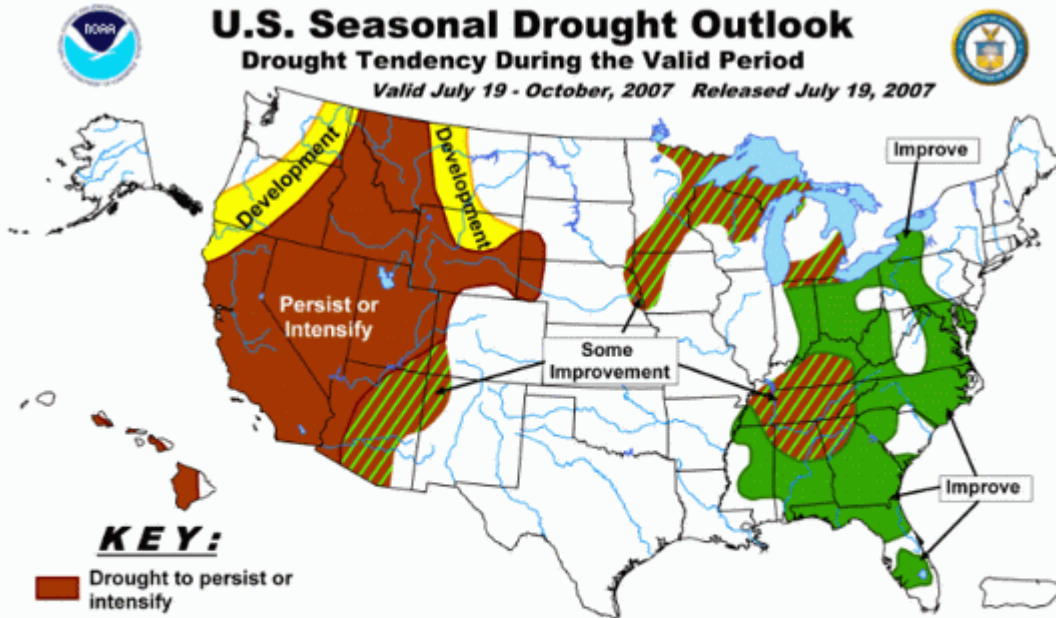
Author: Richard Heim/Liz Love-Brotak, NOAA/NESDIS/NCDC

<http://drought.unl.edu/dm>

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid July 19 - October, 2007 Released July 19, 2007



KEY:

- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

Depicts general, large-scale trends based on subjectively derived probabilities guided by numerous indicators, including short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance, so use caution if using this outlook for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4). For weekly drought updates, see the latest Drought Monitor map and text. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

Past Fire History Analysis

The Powell Ranger District has experienced numerous large fires (wildfires and WFU's) within the immediate area surrounding the Bridge Fire. Some of these fires will act as barriers to fire spread over the rest of the season. Fuels within these past fire areas are in various stages. Some are recently burned (within the past 2-4 years) and will retard fire spread effectively, some have burned within the past 5-12 years and will accept fire but flame lengths will be <4 feet. Surface fire will occur as well as spotting into these burns. It can be assumed that fire areas that are over 12 years old now have a heavy downed woody fuel complex as well as established fine fuels that will allow fire to move through these areas with higher flame lengths (>4 feet) and higher spread rates. Refer to the MAP map that shows the location of all past fire areas from 1981 through 2006.

The following table shows the past large fires, the date they started, the predominant fuel model, the current fuel model, and the main direction of spread. This analysis will show, given the history of these other fires, the anticipated spread distance that could be expected on the Bridge fire until the season-ending event. These fire areas are displayed on the MAP map as part of this plan.

Year	Fire Name	Acres	Start Date	Predominant Fuel Model Prior to Fire	Fuel Model at this time	Main Spread Direction
1981	Tadpole Lake	1,368	8/25	10	8 & 10	E/NE
1981	Blodgett	1,946	8/15	8	8	West
1985	Big Flat Creek	1,460	7/17	8/10	8	South
1991	Two Mile PNF	1,092	8/17	10	8 & 10	East
1991	Frog Lake PNF	1,660	8/31	8	8	East
1994	Freezeout	8,212	8/2	10	8 & 10	All
1994	Fern Creek	3,078	8/13	10	8 & 10	Northeast
1994	Big Sand	1,699	8/13	10	8 & 10	East
1994	Hidden Creek	1,551	8/14	10	8 & 10	East
1994	East Beaver	736	8/28	8	8 & 10	East
1998	Gypsy WFU	3,115	8/20	10	8	East
1998	Hidden Lake WFU	569	8/21	10	8	East
1998	White Sand WFU	848	8/31	10	8	East
1998	ParachuteWFU	767	8/27	8/10	8	East
1999	Colt Killed Cr WFU	1,414	8/25	10	8	East/NE
2000	Crooked	4,892	7/28	10/12	8	Northeast
2000	Hidden WFU	1,724	7/30	10	8	E/NE
2001	Two Mile WFU	1,361	9/14	10/8	8	East
2003	McConnell N WFU	2,687	8/6	8/10	8	North
2003	Beaver Lakes	12,467	8/8	8/10	8 & 10	Northeast
2003	Fish WFU	3,868	8/9	10	8	E/NE
2005	Big Sand WFU	2,300	8/20	10	8	East
2006	Rabbit	2,200	8/16	10	8	West/East

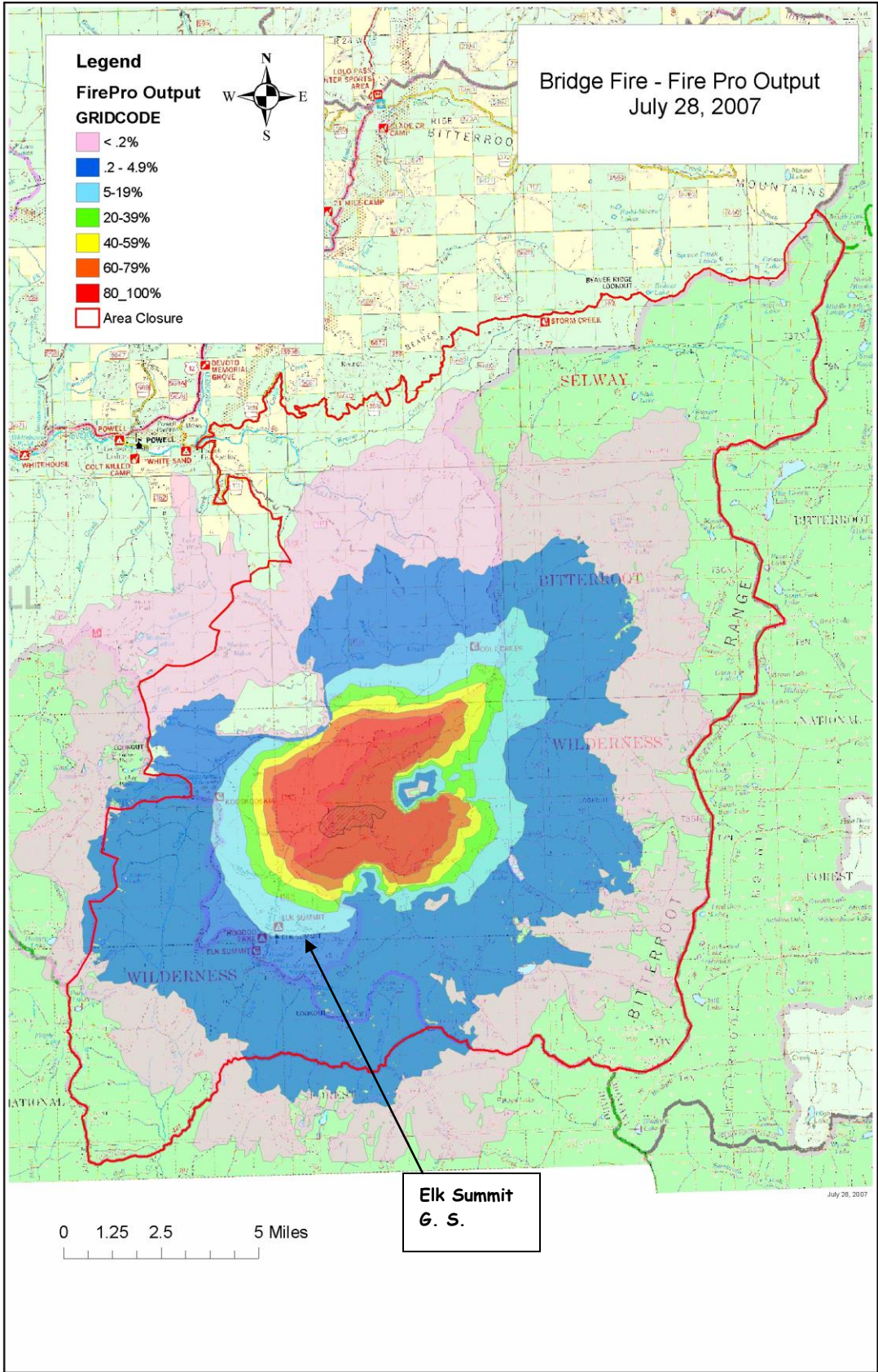
The analysis of past fire history in and around the Bridge Fire, inside and outside of the Selway-Bitterroot Wilderness, shows that the predominant spread direction is to the East and Northeast. There are a few exceptions, noting that the Freezeout Fire in 1994 spread in all directions due to several thunderstorm events entering the fire area with downdraft winds in all cardinal directions over the fire area with NE spread being the longest distance from the origin. The other example is the 2006 Rabbit Fire that spread east and west. This westerly spread was primarily due to upslope, diurnal winds.

The Bridge fire was discovered on 7/25. This is early compared to most fires displayed in the table above. The seasonal severity is higher this year (2007) than any of the years when large fires occurred in the table with the possible exception of 1985, which started out extremely active but ended around the first of August with a series of season-ending events (mucho rain). Given all of this, the Bridge Fire has the potential to be a much more significant fire than any of the fires displayed on the table due to the potential length of season left this year, amount of unburned area to the East and Northeast of this fire, and it's exhibited activity this early in the season.

FSPro Model Map & Interpretations

Information, limitations, and assumptions used in the interpretation of the FSPro Model:

- 1) FSPro calculates the probability of fire spread from a known perimeter or point; a combination of RERAP and FARSITE. It provides long-term and strategic decision support. The model works by simulating thousands of fires with different weather scenarios using a minimum travel time (MTT) fire spread method.
- 2) This model is not designed to be interpreted as a fire spread model.
- 3) Model has a tendency to over-predict fire.
- 4) FSPro does not pick up on atmospheric instability measured by the Haines index.
- 5) The landscape layers used in FSPro may or may not be totally reliable given individual forest information provided for modeling. Landfire landscape data is used at the course scale and has not been ground truthed.



RERAP Analysis

July 27, 2007 - Prepared by: Walker Thornton, Long Term Analyst (T), FBAN

Executive Summary:

Climate records indicate the fire areas are near record levels for the Energy Release Component (ERC). This would indicate that most dead fuel size classes, as well as herbaceous and small diameter live fuel will contribute to fire behavior. The ERC index has been trending down with increased relative humidity and lowering temperatures. Unfavorable conditions may return next week. The probability of unfavorable conditions was increased for this projection to account the character of this fire season. The area is currently shown as "Moderate to Severe" on the Drought Monitor web site.

100 Hour and 1,000 Hour Time-lag fuel are at the 97th percentile. The Energy Release Component index is above the 97th percentile, higher than it has been over the last 20 years for this time of year. It is early to confidently predict how long these conditions will last. Three month forecasts indicate that precipitation will be below normal and temperatures will be above normal. This may require a contingency plan for the Hidden and the Ridge fires to continue burning beyond the length of this assessment.

Surface spread should dominate fire behavior except with cold frontal passages until the season ending event. Passing thunderstorms that don't actually precipitate on the fires may also cause brief bursts of crowning fire behavior. If hot and dry conditions coincide with surface winds over 10 miles per hour there is likely to be crown fire spread downwind. Conditions are dry enough that fires reaching the base of forested slopes before evening will make crown runs to the top. Fuel types that are a barrier to fire spread in a more typical year, will support fire spread at this time.

There is a 82% probability of the Bridge fire reaching the Elk Summit Guard Station prior to September 27 and a 67% probability of the Bridge fire spreading east to the forest boundary prior to September 27. There is a low probability of the Bridge fire reaching the private property to the NW or Brushy Creek to the NE, however it is possible. This assessment should be redone after the fire has spread a mile in any direction or if there are significant crown runs.

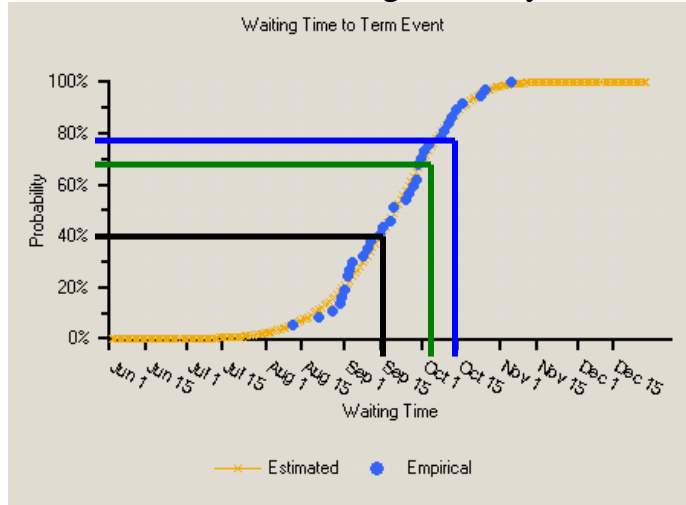
Introduction:

This analysis considers fuels, topography, and climatology in the fire area of the Bridge Fire through September 27, 2007. The fuels layer was retrieved from the LANDFIRE database. The regional fire history layer was used to consider changes to the extent of the LANDFIRE fuel models. The assessment increased the probability of high and extreme weather days used the drier of the fuel moistures from Powell and Roundtop RAWs, and the wind directions and speeds from Roundtop. It is important to reassess the assumptions going into and the output from this assessment should the fire make a major run or weather conditions occur that are dramatically different from those modeled.

Analysis of Seasonal Precipitation Patterns:

The fire area typically has a dry period from mid-July through mid-September. Archived weather data was used with the RERAP program to establish the probabilities of a season ending event by Mark Wilson (FMO Powell R.D.). A graph showing those probabilities is included below. Daily weather data was reviewed from the Powell RAWs fire weather station for years 1970 through 2006. The season ending event was defined as receiving nearly 1" of precipitation over a 5 day period at the Powell RAWs.

Probabilities of Season Ending Event by Calendar Date



Season ending event curve derived from Powell RAWS fire weather station for the period 1970 through 2006 (RERAP term module).

This analysis shows that between 1970 and 2006 the season ending event occurred by or before October 1st 65% of the time, by mid-October 80% of the time, and by the end of October 98% of the time. The result of this analysis indicates that from July 27, 2007 the Bridge fire has a 82% probability of reaching the Elk Summit Guard Station prior to September 27.. The Bridge fire has a 67% probability of spreading east to the national forest boundary, a 2% chance of spreading northwest to the private property, and a 1% of spreading northeast to the Brushy Creek drainage, 2 miles south of the Beaver Ridge Lookout prior to September 27.

Long Term Risk Assessment:

A Rare Event Risk Assessment Process (RERAP) analysis was performed to determine the probability that the Bridge fire would reach points of concern prior to September 27. RERAP allows a fire manager to quantify risk of rare, as well as, common spread events and the uncertainty associated with the length of a fire season. Estimates were developed for the period of July 27th through September 27th, 2007.

Probabilities that these fires will reach an area of concern before a September 27 (see attached Risk Reports) were calculated for four points.

Assessment Line	Distance	Winds	Total Risk
From Bridge fire NNW 8 miles to private property	616 ch 7.7 mi	East Southeast South	2%
From Bridge fire NE 12 miles To Brushy Creek	989 ch 12.4 mi	South Southwest West	1%
From Bridge fire E 8 miles To forest boundary	625 ch 7.8 mi	Southwest West Northwest	67%
From Bridge fire SW 4 miles To Elk Summit Guard Station	288 ch 3.6 mi	North Northeast East	82%

It should be remembered that the assessment was a cautious one increasing the probability of high and extreme weather days, using the drier fuel moistures between Powell and Roundtop, and using the winds directions and speeds from Roundtop.

The low probability of the Bridge fire reaching the private property to the NW by September 27 is a result of the fire having to spread 8 miles across prevailing winds. While fire spread toward Brushy Creek to the NE is favored with prevailing winds, the low probability of it doing so by September 27 is the result of the fire having to repeatedly descend north-facing slopes over a 12-mile distance. This assessment should be redone after the fire has spread a mile in any direction, or if there are significant crown runs.

Conclusion:

The area around the fires may receive light precipitation from thunderstorms over the next 10 days and from passing fronts over the next 2 months. If this occurs it will slow fires, not stop the fire's spread. While the increased wind speed of passing fronts is modeled well here, the shift to crowning rates of spread is not. The probability is high of the area remaining dry enough for the fires to spread up to season's end in late October.

Inventory of Values At Risk

Values At Risk					
Arch #	MAP #	Identification	Condition	Protection Measures	Completed Protection
	1	Diablo Lookout	Good	Protect if possible	
	2	Elk Summit Trailhead	Good	Protect if possible	
	3	Hoodoo Lake Campground	Good	Protect if possible	
854	4	Elk Summit Guard Station (2 Buildings)	Good	Protect if possible	
	5	Elk Summit Campground	Good	Protect if possible	
	6	Mule Shoe Bridge	Good	Protect if possible	
853	7	Hidden Peak Lookout	Poor	No Protection	
	8	Swamp Creek Bridge	Good	Protect if possible	
	9	Upper Colt Creek Bridge	Good	Protect if possible	
	10	Savage Creek Bridge	New	Protect if possible	
867	11	Lower Colt Killed Bridge	Good	Protect if possible	
	12	Sneakfoot Mdws RNA	Natural	Protect from fire & ground disturbance	
	13	Savage Pass Snotel Site	Good	Protect if possible	
859	14	Savage Ridge Lookout	Burned previous	No Protection needs	
	15	Beaver Ridge Lookout	Good	Protect	
621	16	Roundtop RAWS	Good	Protect if possible	
665	17	Storm Creek Trailhead	Fair	Protect if possible	

Values At Risk - FS Pro Probabilities from the Bridge Fire for the next 14 days:

Map #	Values At Risk	FS Pro Probability
1	Diablo Lookout	.2-4.9%
2	Elk Summit Trailhead	.2-4.9%
3	Hoodoo Lake Campground	.2-4.9%
4	Elk Summit Guard Station (2 Buildings)	5-19%
5	Elk Summit Campground	5-19%
6	Mule Shoe Bridge	40-59%
7	Hidden Peak Lookout	.2-4.9%
8	Swamp Creek Bridge	.2-4.9%
9	Upper Colt Creek Bridge	.2-4.9%
10	Savage Creek Bridge	.2-4.9%
11	Lower Colt Killed Bridge	5-19%
12	Sneakfoot Mdws RNA	<.2%
13	Savage Pass Snotel Site	<.2%
14	Savage Ridge Lookout	.2-4.9%
15	Beaver Ridge Lookout	0%
16	Roundtop RAWs	0%
17	Storm Creek Trailhead	0%

Values at risk are not numbered or identified on the Management Action Point map that are outside the WFSa boundary. They may need to be considered and included at a later date if necessary as the fire changes in size and complexity during the reassessment process.

Validation of Selected WFSa Alternative Boundary

Long-Term Implementation Plan Area

We used the WFSa area boundary to describe a reasonable boundary with high potential for successful defense, taking advantage of lighter fuels or natural barriers where possible. The WFSa area boundary is similar to the MMA used in Wildland Fire Use, which, by definition states, "delineate the geographic limits of the fire area as defined by the capability of management actions to meet resource objectives and mitigate risk" (Wildland Fire Use Guide, May, 2005). Even though these fires are not being managed to meet resource objectives, the concept is useful to mitigate risk.

We rated each segment as to Natural Defensibility, Potential to Cross WFSa area boundary, and Potential Consequence of Crossing the WFSa area boundary. These parameters are rated as Low, Moderate or High as described below. FSPro was used to determine probabilities of the fire crossing the WFSa area boundary within 14 days (by 9/7/07). The simulations include no suppression action on hot areas picked up by IR flights but do assume suppression barriers where previous actions were taken and were successful. Because the fire season is forecasted to persist given the 30 and 90 day outlooks and the FSPro model run is for the next 14 day period, the probabilities for any of these fires reaching the WFSa area boundary will likely be higher than displayed.

Rating Definitions:

Natural Defensibility:

Low - There's a good chance that any fire approaching the WFSA area boundary will breach the line as there are no natural breaks present and/or prevailing winds tend to blow hard across the line.

Moderate - The WFSA area boundary has some natural or man-made features that may prevent fire spread across the line. Winds may push the fire over the line either by rapid ground fire or spotting.

High - The chance of a fire crossing the WFSA area boundary are small due to natural or man-made fire barriers and wind directions not pushing directly at the line.

Potential to Cross WFSA area boundary in 14 days as per the FSPro run:

Low - Major fire spread is not likely to occur in the direction of the WFSA area boundary due to reduced fire behavior and defensibility.

Moderate - WFSA area boundary is located such that it would not get the strongest push from a rapidly moving fire, but would still be affected by minor wind changes from flanking fires. Spotting could also cause fire to cross the boundary.

High - There is a high probability that the fire would cross the WFSA area boundary as it is located directly in front of a fast moving fire, fuels are heavy adjacent to the line, and torching and spotting across the line is likely.

Potential Consequence of Crossing the WFSA area boundary:

Low - Resource values outside the WFSA area boundary are low and/or potential fire behavior outside the WFSA area boundary would be such that spread would either be slow or would threaten anything further downwind if moving rapidly. Land management plans allow fire use in the area.

Moderate - Resource values may include a few scattered residences or other resource values outside would be negatively impacted by any fire. Land management plans may allow fire use in the area.

High - Resource values include numerous residences immediately across the WFSA area boundary or within $\frac{1}{2}$ mile of the boundary. Fire spread across the boundary is not desired.

Segment I

Length of Segment: Approximately 17 miles

Natural Defensibility: Moderate (areas of logging units), Low in timbered areas

Potential to Cross WFSA area boundary in 14 days: Shows 0% probability

Potential Consequences of Crossing WFSA area boundary: High - private land, private land structures, high value timber lands, reforestation investments.

General Description: From the junction of Beaver Creek and Colt Killed Creek east up the Beaver Creek road #368 to Beaver Ridge Lookout then east on the main ridge $\frac{1}{2}$ mile to the wilderness boundary.

Segment II

Length of Segment: Approximately 18 miles

Natural Defensibility: High (light fuels - grass and 1994/2003 fire areas)

Potential to Cross WFSA area boundary in 14 days: Shows 0% probability

Potential Consequences of Crossing WFSA area boundary: Moderate - private land, timber allocated land on National Forest

General Description: From the wilderness boundary $\frac{1}{2}$ mile east of Beaver Ridge Lookout following along the ridge to the east then northeast crossing the South Fork of Spruce Creek along the wilderness boundary to the ridge at the head of the South Fork Lolo Creek then along the state line ridge to the south to Packbox Pass.

Segment III

Length of Segment: Approximately 14 miles

Natural Defensibility: High

Potential to Cross WFSA area boundary in 14 days: Shows 0% probability

Potential Consequences of Crossing WFSA area boundary: Low (Bitterroot NF - wilderness)

General Description: Segment starts at Packbox Pass and follows the state line/forest boundary ridge south to Blodgett Mountain at the head of Big Sand Creek.

Segment IV

Length of Segment: Approximately 16 miles

Natural Defensibility: High

Potential to Cross WFSA area boundary in 14 days: .2-4.9% probability in the area of Diablo Mountain

Potential Consequences of Crossing WFSA area boundary: Low (Nez Perce NF - wilderness)

General Description: This segment starts at Blodgett Mountain at the head of Big Sand Creek and goes west along the forest boundary to Maple Lakes Ridge.

Segment V

Length of Segment: Approximately 11 miles

Natural Defensibility: Low (High barren ridges and lot's of past fire areas), Moderate (Friday Pass)

Potential to Cross WFSA area boundary in 14 days: .2-4.9% probability along Maple Lakes Ridge and Friday Pass

Potential Consequences of Crossing WFSA area boundary: Low (wilderness)

General Description: This segment starts at the forest boundary at the southern end of Maple Lakes Ridge and travels north along the main ridge connecting Maple Lakes Ridge and Grave Peak. It ends where the ridge between Walton Creek and Colt Creek intersects the wilderness boundary.

Segment VI

Length of Segment: Approximately 10 miles

Natural Defensibility: Low (timbered all along this segment)

Potential to Cross WFSA area boundary in 14 days: <.2% probability

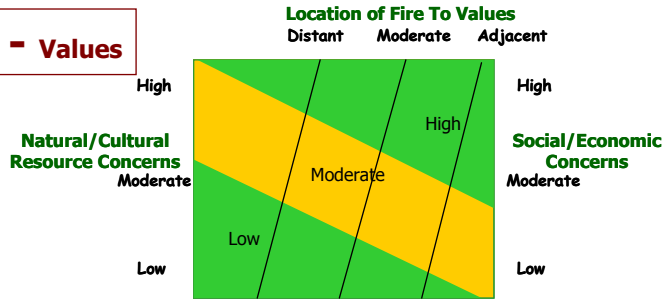
Potential Consequences of Crossing WFSA area boundary: High (proximity to private and timber allocated lands on National Forest)

General Description: This segment starts at the ridge between Walton Creek and Colt Creek on the wilderness boundary then travels northeast to Savage Pass then down the Elk Summit road #360 to it's junction with the Beaver Creek road #368.

Responsible Fire Protection Agencies

The responsible fire protection agency for the entire area within the WFSA area boundary, including the private land outside the boundary on the Powell Ranger District is the U.S. Forest Service, Clearwater National Forest. Protection of the private land is through agreement with the State of Idaho Department of Lands.

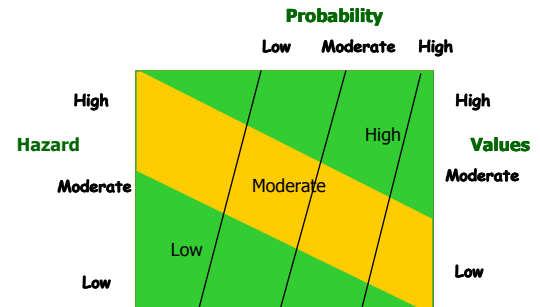
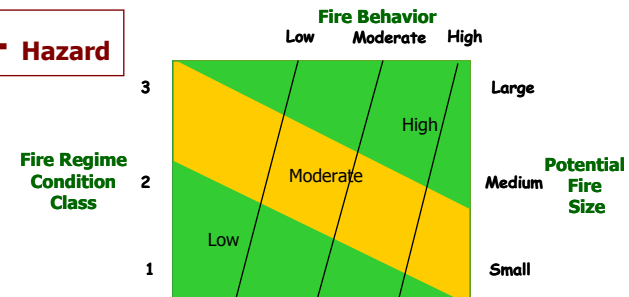
1 - Values



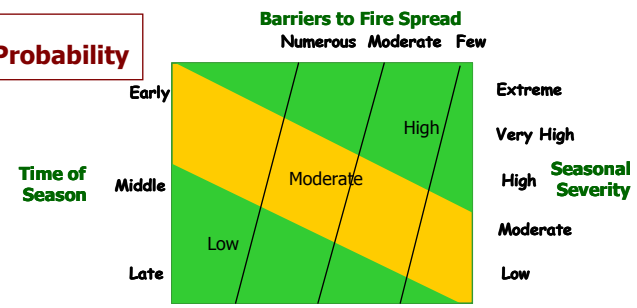
Wildland Fire Relative Risk Assessment

4 - Relative Risk

2 - Hazard



3- Probability



Complete Steps 1 -3: Connect the left and right variables with a line. At the top of the chart, select the appropriate value; follow the line beneath this value down to its intersection with the line connecting the left and right variables. Take results as inputs to Step 4.
Complete Step 4: Read the relative risk from the background area where the intersection occurs.

Narrative for each rating:

Values:

Hazard:

Probability:

Relative Risk Rating:

Management Action Points (MAP's)

Implementation of stated actions developed in the table below should not occur without consideration of current and predicted weather conditions, fire behavior, and any other factors that may influence these decisions. These factors will determine the need for implementation of the stated actions as well as drive the location, urgency, and intensity of the actions. Resources needed may be in addition to resources available on the fire at the time action is taken for a given Management Action Point. **All actions will be based on current and expected fire behavior as well as the time of year.** As the fire grows in size and complexity throughout the remainder of the season or new fires are added within the area, reassess the need to address contingency plans as well as the possible interaction of one fire to another, additional management action points and actions.

The key factor in all of these possible management or mitigation actions is anticipation, identifying and performing the action(s) ahead of time. In a year like 2007, there are NO guarantees that actions will be successful. Fuels are at critically low moisture levels, fire danger ratings are currently higher this year than 1988, 1996 and 2000 levels.

Workshop participants:

Develop as many management action points as you feel necessary to meet the objectives in the WFSA. Use extra blank management action point tables if needed. Ask your coach for additional blank tables.

MAP #	Location & Fuel Model	Mgmt Intent	Action	Resources Needed	Days Needed	Probability Of Success	Responsibility	Date Initiated
MAP #	Location: Fuel Model:							
<i>Consequence of not implementing (i.e., lack of resources):</i>								

MAP #	Location & Fuel Model	Mgmt Intent	Action	Resources Needed	Days Needed	Probability Of Success	Responsibility	Date Initiated
MAP #	Location: Fuel Model:							
<i>Consequence of not implementing (i.e., lack of resources):</i>								

MAP #	Location & Fuel Model	Mgmt Intent	Action	Resources Needed	Days Needed	Probability Of Success	Responsibility	Date Initiated
MAP #	Location: Fuel Model:							
<i>Consequence of not implementing (i.e., lack of resources):</i>								

Estimated Costs of Managing the Bridge Fire

MAP 1 Costs Resource	Unit Cost	Number of Units	Duration	Total
TOTAL				
MAP 2 Costs				
TOTAL				
MAP 3 Costs				
TOTAL				
MAP 4 Costs				
TOTAL				
MAP 5 Costs				
TOTAL				
MAP 6 Costs				
TOTAL				

Total for All MAP Actions

Realize that this cost assessment assumes active management of this fire for the next 60 days (Through Oct 1st - 70% chance of season ending event). This also takes into consideration that some of the same resources under one MAP will be in-place and utilized under another MAP. It also assumes that each MAP would need to be implemented to the fullest extent, which may or may not be the case. Costs for implementing each management action point are not necessarily added together to give a total cost for the management of this fire over the long-term.

Refer to cost guidelines provided as part of this exercise in developing costs for mitigation actions and Mgmt Action Points.

Bridge Fire
Long Term Implementation Plan
Approval Page

Prepared By: _____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

Reviewed By: _____ Date: _____

_____ Date: _____

Approved By: _____ Date: _____

Monitoring

(Develop this monitoring section as part of the Managing Long Duration Wildfire exercise.)

Appendix

Not included in this exercise.