Bureau of Land Management

Wyoming High Desert District

FIRE DANGER OPERATING and PREPAREDNESS PLAN

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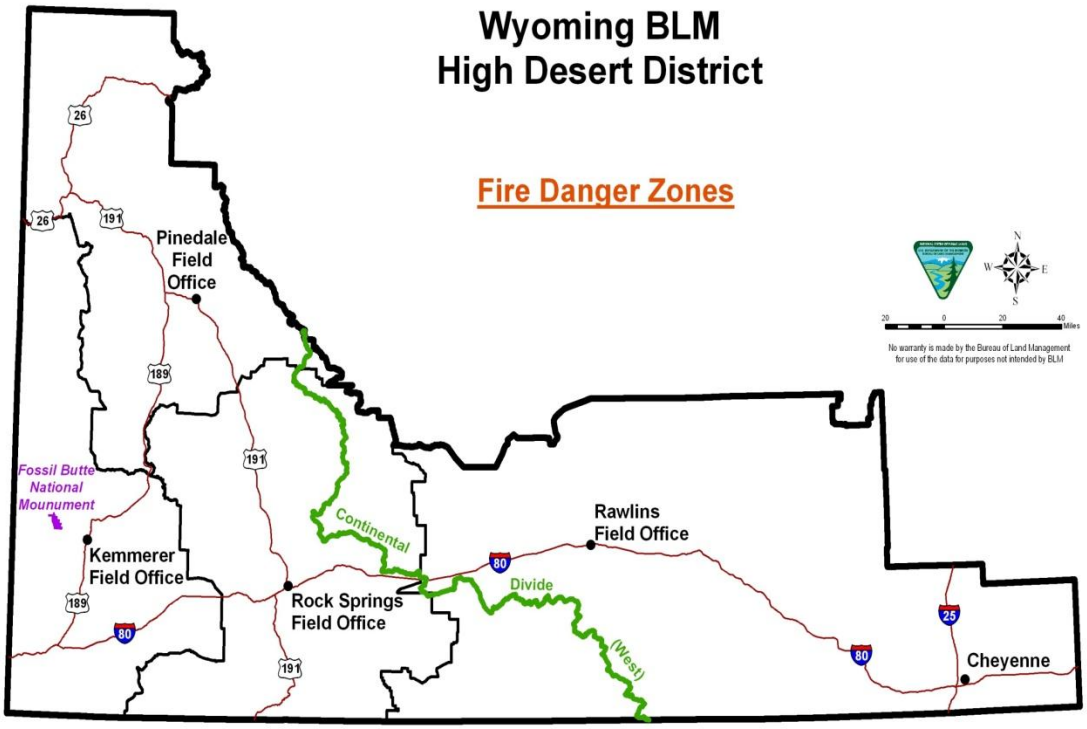

Recommended by: _____

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Introduction

This Fire Danger Operating Plan establishes the setup and implementation of the National Fire Danger Rating System (NFDRS) modeling program for the High Desert District, Wyoming Bureau of Land Management. Fire danger is one of several factors used to determine preparedness levels and resulting operational decisions.

The analysis framework used Fire Family Plus and the historic weather and fire occurrence data to find breakpoints for fire danger indices generated in WIMS (Weather Information Management System) from the RAWS (Remote Automated Weather Stations) within the study area boundary. These breakpoints are then used to determine the Staffing Levels and Fire Danger Adjectives.

This plan also outlines procedures for developing seasonal risk analysis and defines fire prevention action items by providing the direction necessary to convey fire danger awareness especially of escalating fire potential, to fire management personnel.

Guidance and policy for development of a Fire Danger Operating and Preparedness Plan can be found in the *Interagency Standards for Fire and Aviation Operations or Red Book (NFES 2724).*

Objectives

- Provide a tool for agency administrators, fire managers, dispatchers, agency cooperators and firefighters to correlate fire danger with appropriate fire business decisions in the High Desert District.
- Delineate Fire Danger Rating Areas (FDRA) within the High Desert District with similar climate, fuels and topography.
- Establish a fire weather monitoring network consisting of RAWS, which comply with *NFDRS Weather Station Standards* (PMS 426-3).
- Determine fire business thresholds using Weather Information Management System (WIMS), National Fire Danger Rating System (NFDRS), Fire Family Plus software and by analyzing historical weather and fire occurrence data.
- Ensure that agency administrators, fire managers, cooperating agencies, industry/commercial entities, and the public are notified of the potential fire danger.
- Provide guidance to interagency personnel outlining specific daily actions to take at each Preparedness Level.
- Identify seasonal risk analysis criteria and establish general fire severity thresholds.
- Develop and distribute fire danger pocket cards to all personnel involved with fire suppression activities within the High Desert District's Fire Danger Rating Area.
- Identify program needs and suggest improvements for the Fire Danger Operating and Preparedness Plan.
- Define roles and responsibilities in making fire preparedness decisions, managing weather information, and briefing suppression personnel regarding current and potential fire danger.

Fire Danger Rating Areas

Fire Danger Rating Areas are geographic areas relatively similar in climate, fuels, fire occurrence and topography within which the fire danger can be assumed to be relatively uniform. The High Desert District Fire Danger Planning Area has two FDRAs. They are identified as the East and West Zone FDRAs. The dividing line between the two FDRAs is the western Continental Divide the runs east of Table Rock on Interstate 80. The West Zone encompasses weather zones 304, 305, 306, 307, 303, 308, 309, and 310; East Zone encompasses fire weather zones 277, 278, 279, 289, 140, 411, 415, 414, and 416. See Map in Appendix F.

The planning area for this Fire Danger Rating Plan consists of over 20 million acres in Southern Wyoming. The area of responsibility is the High Desert District of the Wyoming BLM, which is in all or part of the following Wyoming counties: Albany, Carbon, Fremont, Laramie, Lincoln, Sublette, Sweetwater, Teton, and Uinta counties.

A more complete description of the Fire Management Units can be found in the HDD Fire Management Plan. See map in Appendix F.

West FDRA

The West Area FDRA includes the following Fire Management Units; Snake River, Star Valley, Horse/Cottonwood Creek, Wind River Front, Mesa South Desert, LaBarge Deer Hills, Raymond Mountain WSA, Smithsfork, Miller Mountain, Rock/Slate Creek, Big Sandy/Steamboat, North Cumberland, Bear River Divide/Carter, Moxa, Evanston/Bridger Valley, South Bridger and Little Mountain.

East FDRA

The East Area FDRA includes the following Fire Management Units; Sweetwater, Red Desert, Great Divide Basin, Ferris Mountain, Seminoe, Shirley Basin, Laramie Peak, Checkerboard/Scattered Lands and Baggs/Platte Valley

Fire and Weather Analysis

To get a better view of the interactions between weather and fire in the FDRAs; fire history, weather history and the relationship between historical fires and historical weather for each FDRA were analyzed using FireFamily Plus. Break points or thresholds that correspond to a change in historical fire activity were also analyzed using the Energy Release Component (ERC) to create a Preparedness Level Break Points, Dispatch Level Break Points, and Adjective Rating Level Break Points.

Weather Analysis

Weather is one of the three components that determines fire behavior, and the most variable component, thus it is integral to determining fire danger. For this Plan, weather was analyzed using the data received from six Remote Automated Weather Stations (RAWS) within the High

Desert District Area. The HDD (BLM) manages five active RAWS and the Medicine Bow National Forest (USFS) manages one station that was used in this analysis. All of these stations comply with NWCG NFDRS Weather Station Standards. A map of the RAWS Station is in Appendix F.

RAWS used in this plan:

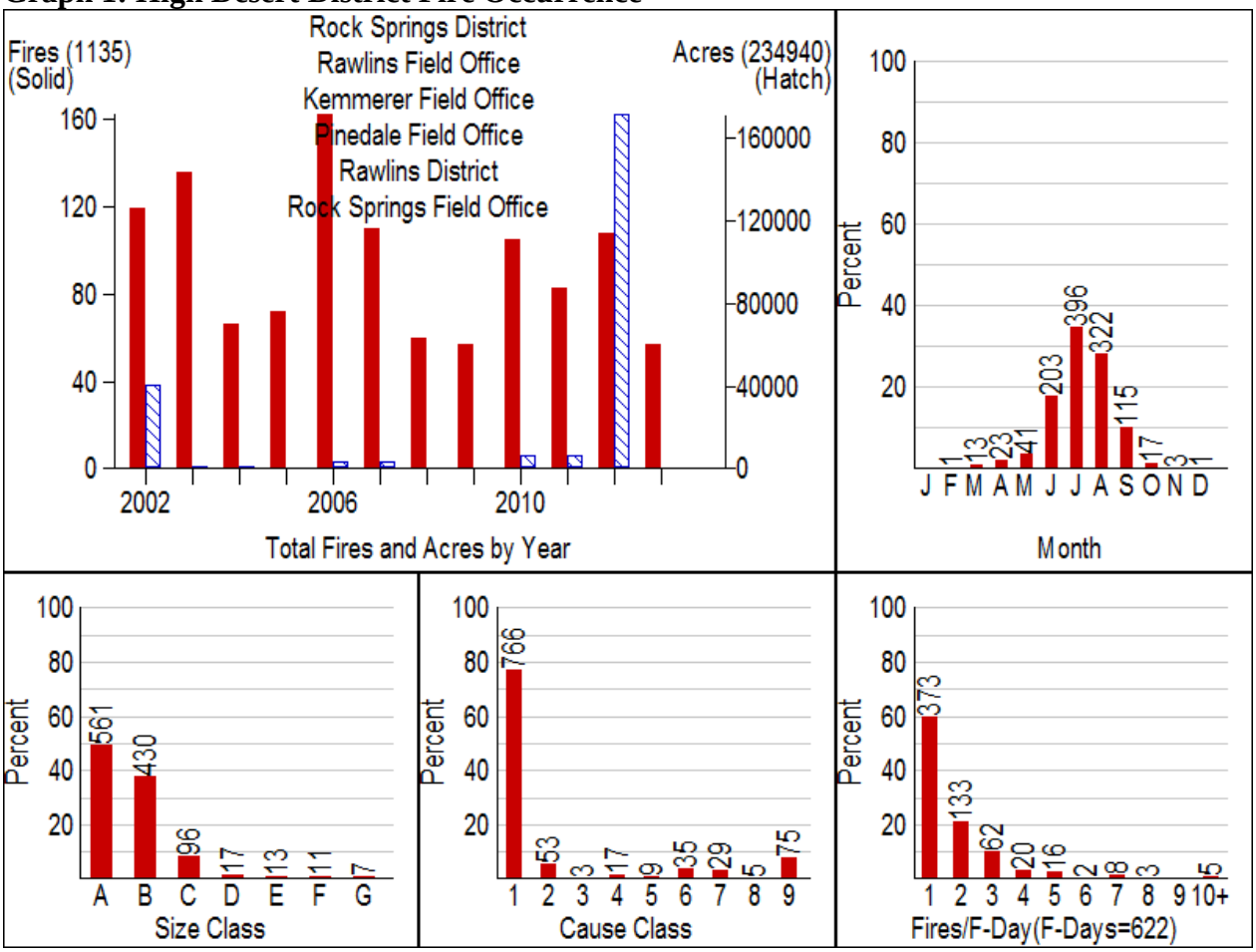
I. Muddy Creek – 481801
II. Anderson Ridge – 481903
III. Snow Springs – 481904
IV. Cow Creek – 482011
V. Dodge Creek – 482106
VI. Sawmill Park – 482105 (managed by the USFS)

Fire History

The most recent eleven years (2002-2013) of fire occurrence data was used for the statistical analysis. U.S. Department of Interior BLM fire occurrence data was obtained from the *Wildland Fire Management Information* System. FireFamily Plus software was utilized to produce statistics and graphs.

The graphs below illustrate the fire history for the High Desert District. Graphs include acres burned by year, month of fire, fire size, fire cause and multiple fire days (days when more than one fire occurred). These graphs are only for BLM fires and fires that BLM responded to and does not include state, county or other federal land management agency fires.

Graph 1: High Desert District Fire Occurrence



Size Classes:

- A: <= 0.25 acres
- B: 0.26 to 9.9 acres
- C: 10 to 99.9 acres
- D: 100 to 299 acres
- E: 300 to 999 acres
- F: 1000 to 4999 acres
- G: >= 5000 acres

Cause Classes

- 1 - Lightning
- 2 - Equipment Use
- 3 - Smoking
- 4 - Campfire
- 5 - Debris Burning
- 6 - Railroad
- 7 - Arson
- 8 - Children
- 9 - Miscellaneous

Fire Danger Decision Levels

NFDRS utilizes the WIMS processor to analyze weather data and forecasted data stored in the NIFMID database to produce fire danger ratings for corresponding weather stations (RAWS). NFDRS outputs from the WIMS processor can be used to determine various levels of fire danger rating. The system is designed to calculate worst-case scenario fire danger. NFDRS will be utilized in three ways for the purpose of this plan: 1) To determine the **Preparedness Level**, which will help agency personnel determine an appropriate state of readiness of suppression forces; 2) To determine the **Dispatch Level,** which is a decision tool for dispatchers to assign initial attack resources to reported fires; and 3) To compute the **Adjective Fire Danger Rating** for the purpose of communicating fire danger to public and industrial interests (e.g. fire danger signs). Although not used for making fire business decisions, Climatological Percentiles are discussed in this section.

In order to determine the Preparedness Level, Dispatch Level and Adjective Fire Danger Rating, "breakpoints" for each need to be calculated. Preparedness Level Breakpoints are thresholds that correspond to changes in historical fire activity based on a correlation of ERC and historical fires (termed "fire business"). Dispatch Level Breakpoints correspond to changes in historical fire activity based on ERC and historical fires (fire business), and Adjective Fire Danger Rating (AFDR) Breakpoints are based on staffing classes (divisions of fire danger using the ERC indices) and Ignition Component. Preparedness and Dispatch Level Breakpoints differ from AFDR Breakpoints in that they take fire history into account in addition to weather data.

The FireFamily Plus software package was used to establish the fire business breakpoints. A statistical analysis based on historical weather adjusted for fire activity determines the appropriate staffing index and associated breakpoints for each FDRA. Refer to Appendix D for information regarding the Firefamily Plus analysis.

Preparedness Level Breakpoints: Table 1 details the breakpoints and items analyzed for the two FDRAs. Stations from the East and West side FDRA's were combined into one SIG in order to determine the breakpoints that will be used for the District wide Preparedness level. The final Preparedness Level determination will also incorporate fire activity, live fuel moistures in the sagebrush and ERC's. Daily index/component values will be obtained from WIMS and used in Preparedness and Dispatch Level worksheets.

Table 1:

Preparedness Level: Fire Family Plus Analysis Factors and Determinations							
Rating Area	RAWS	Data Years Used	Weight Factor	Fuel Model	NFDRS Index	Fire Business Break Point Ranges	
HDD PL SIG	SIG:						
	Muddy Creek	2002 - 2013	1	G2P2	ERC	SL 1	0 - 35
	Anderson Ridge	2002 - 2013	1	G2P2	ERC	SL 2	36 - 56
	Snow Springs	2002 - 2013	1	G2P2	ERC	SL 3	57 - 73
	Cow Creek	2002 - 2013	1	G2P2	ERC	SL 4	74 - 87
	Sawmill Park	2002 - 2013	1	G2P2	ERC	SL 5	88 +
	Dodge Creek	2002 - 2013	1	G2P2	ERC		

Dispatch Level Breakpoints: Table 2 lists the Dispatch Level Breakpoints and the factors included in the analysis.

Table 2:

Dispatch Level: Fire Family Plus Analysis Factors and Determinations								
Rating Area	RAWS	Data Years Used	Weight Factor	Fuel Model	NFDRS Index	Fire Business Break Point Ranges		Dispatch Level
West Zone	SIG:					SL 1	0 - 29	Low
	Muddy Creek	2002 - 2013	1	G2P2	ERC	SL 2	30 - 52	
	Anderson Ridge	2002 - 2013	1	G2P2	ERC	SL 3	53 - 74	Moderate
	Snow Springs	2002 - 2013	1	G2P2	ERC	SL 4	75 - 89	High
						SL 5	90 +	
East Zone	SIG:					SL 1	0 - 29	Low
	Cow Creek	2002 - 2013	1	G2P2	ERC	SL 2	30 - 50	
	Sawmill Park	2002 - 2013	1	G2P2	ERC	SL 3	51 - 69	Moderate
	Dodge Creek	2002 - 2013	1	G2P2	ERC	SL 4	70 - 82	High
						SL 5	83 +	

Climatological Percentiles

Climatological breakpoints are points on the cumulative distribution of one fire weather/danger index computed from climatology without regard for associated fire occurrence/business. For example, the value of the 90th percentile ERC is the climatological breakpoint at which only 10 percent of the ERC values are greater in value. The percentiles for climatological breakpoints predetermined by agency directive are shown below.

BLM *- 80th and 95th percentiles*
FWS *- 90th and 97th percentiles*
NPS *- 90th and 97th percentiles*
FS *- 90th and 97th percentiles*

It is equally important to identify the period or range of data analysis used to determine the agency percentiles. The percentile values for 12 months of data will be different from the percentile values for the fire season. Year round data should be evaluated for percentiles involving severity-type decisions and percentiles based on fire season data for staffing levels and adjective fire danger rating.

Adjective Fire Danger Rating (AFDR)

The Adjective Fire Danger Rating will be used by agency personnel to inform the public of the current level of fire danger associated with a specific Fire Danger Rating Area. The amount of public interaction will depend on the magnitude of the adjective fire danger. NFDRS processors (such as WIMS) will automatically calculate the daily adjective class rating.

Five staffing class intervals (1-5) that correspond with five levels of adjective fire danger (low, moderate, high, very high and extreme) will be used for both FDRAs. The tables below illustrate the AFDR Breakpoints components for both FDRAs. The higher of the two AFDR's will be used as the District wide Adjective Rating.

Table 3: West Zone AFDR Breakpoints (2002-2013)

Input Information			Staffing Class and Percentile Break Points	
RAWS	**Fuel Model**	**Staffing Index**	**80th**	**95th**
Muddy Creek 481801	G	ERC	80	89
Anderson Ridge 481903	G	ERC	78	87
Snow Springs 481904	G	ERC	81	89

Table 4: East Zone AFDR Breakpoints (2002-2013)

Input Information			Staffing Class and Percentile Break Points	
RAWS	**Fuel Model**	**Staffing Index**	**80th**	**95th**
Cow Creek 482011	G	ERC	81	92
Dodge Creek 482106	G	ERC	69	80
Sawmill Park* 482105	G	ERC	48	58

* This Station is maintained by the USFS and uses the 90th and 97th percentile breakpoints.

Operations and Applications

Worksheets (flowcharts) will be used to determine the daily Preparedness and Dispatch Levels from the calculated break points. There will be one District wide Preparedness Level as determined by the worksheet using the HDD PL SIG. The Dispatch Levels will be determined by using the East and West side SIG's. While there will be only one Preparedness Level for the district each FDRA will have its own Dispatch Level.

The resultant District Preparedness and Dispatch Levels will be broadcast in conjunction with the morning information report and documented on the daily resource status report. The District Adjective Fire Danger Ratings will be broadcast and documented in the same manner.

Although fire danger ratings do not predict human-caused fires, a strong effort should be made to communicate the fire danger as it changes throughout the fire season. The social, political, and financial impacts of wildfires on agency, public, and industrial entities can be far-reaching. Loss of life, property, and financial resources can potentially be associated with any wildfire. As the

fire danger fluctuates, agency personnel need to have pre-planned and appropriate responses. These actions should not only focus on appropriate fire suppression, but also mitigation/education.

Preparedness Level

The Preparedness Level is a five-tier (1-5) fire danger rating system that will be based on Energy Release Component and indicators of fire business. The fire business indicators used to calculate the Preparedness Level include an indication of fire activity and live fuel moistures. A flow chart guides personnel through the process. Several procedures and guidelines are to be followed once the Preparedness Level has been determined. The breakpoints for the Preparedness Level are set using an historical analysis (Fire Family Plus) of fire business and its relationship to 1300 RAWS observations entered into the NIFMID database and processed by WIMS, which calculates the staffing index values (BI, IC, SC, ERC, etc).

Worksheet Instructions:

Staffing Index Value: Place a checkmark in row one indicating the forecasted staffing index (ERC value). These indices (forecasted by the Riverton and Cheyenne Weather Offices) are based on the 1300 RAWS observations that are input to the WIMS processor by Rawlins Dispatch personnel.

Live Fuel Moisture: Place a checkmark in row two indicating the appropriate Live Fuel Moisture for the associated FDRA. Fuels personnel will update the West and East Zone fuel moistures every Monday morning during fire season. Data can be obtained from the National Fuel Moisture Data (NFMD): (http://72.32.186.224/nfmd/public/index.php).

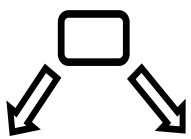
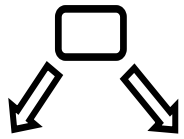
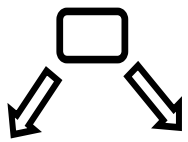
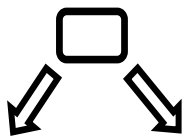
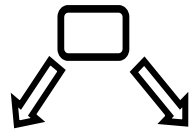
Sampling Site Locations by FDRA:
West Zone:
- Fuel moistures for the West Zone will be averaged from all sampling sites in the Rock Springs, Pinedale and Kemmerer Field Offices.

East Zone:
- Fuel moistures for the East Zone will be averaged from all sampling sites in the Rawlins Field Office.

Multiple Large Fire Activity: Multiple large fire activity will be defined when two or more Incident Status Summaries (ICS-209s) (for fires that are 10 acres or greater in size for timber and 100 acres or greater in size for grass/brush) have been (or will be) submitted within the next 12 hour period for incidents managed within the High Desert District Area (regardless of FDRA).

NAME:
DATE:

Preparedness Level Worksheet

Staffing Level	ERC - Model G (HDD PL SIG)	0 - 35		36 - 56		57 - 73		74 - 87		88 +	
1	★ ⇨										
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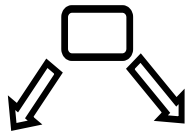
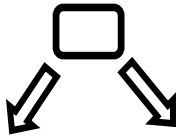
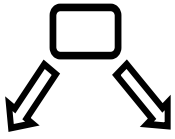
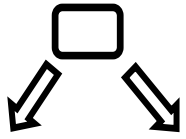
2	★ ⇨										
	Multiple Large Fire Activity (2 or More ICS 209's)	Yes or No	No	Yes	NO	Yes	No	Yes	No	Yes	Yes or No
3	★										
	Preparedness Level	I		II		III		IV		V	

Dispatch Level

Agency personnel use the Dispatch Level (response level) to assign initial attack resources based on pre-planned interagency "Run Cards." Combined with predefined Fire Management Units which are identified in the High Desert District Fire Management Plan, the Dispatch Level is used to assign an appropriate mix of suppression resources to a reported wildland fire based upon fire danger potential. The Dispatch Levels are set based on the ERC breakpoints that were determined using FireFamily Plus. In all FDRAs, Energy Release Component (ERC) in NFDRS Fuel Model G has been determined to be the best NFDRS index that statistically correlates to fire occurrence. Dispatch Level will be computed and implemented for initial attack response levels until a qualified Incident Commander arrives on scene to validate the need for the dispatched resources.

FDRA	Energy Release Component		
West Zone - Model G	0 - 52	53 - 74	75 +
East Zone - Model G	0 - 50	51 - 69	70 +
	⇩	⇩	⇩
Dispatch Level	LOW	MODERATE	HIGH

Adjective Fire Danger Rating

In 1974, the USFS, BLM and State Forestry organizations established a standard adjective description for five levels of fire danger for use in public information releases and fire prevention signage. For this purpose only, fire danger is expressed using the adjective levels and color codes described below.

Fire Danger Class and Color Code	Description
Low (L) (Green)	Fuels do not ignite readily from small firebrands, although a more intense heat source such as lightning may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but timber fires spread slowly by creeping or smoldering, and burn in irregular fingers. There is little danger of spotting.
Moderate (M) (Blue)	Fires can start from most accidental causes, but with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
High (H) (Yellow)	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High-intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are hit hard and fast while small.
Very High (VH) (Orange)	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high intensity characteristics such as long-distance spotting and fire whirlwinds when they burn in heavier fuels.
Extreme (E) (Red)	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions the only effective and safe control action is on the flanks until the weather changes or the fuel supply lessens.

Agency personnel will use the resultant adjective fire danger information to maintain the awareness of public and industrial entities. The amount of interaction between agency and public/industry entities will depend on the magnitude of the adjective fire danger.

Adjective Fire Danger Rating Determination

NFDRS processors automatically calculate the adjective class rating. The adjective rating calculations use the staffing index (such as ERC or BI) of the first priority fuel model listed in the station record in the processor.

The actual determination of the daily adjective rating is based on the current or predicted value for a user-selected staffing index and ignition component using the table below. The staffing index used in this plan is ERC.

Staffing Levels	Adjective Fire Danger Rating				
1-, 1, 1+	L	L	L	M	M
2-, 2, 2+	L	M	M	M	H
3-, 3, 3+	M	M	H	H	VH
4-, 4, 4+	M	H	VH	VH	E
5	H	VH	VH	E	E
Ignition Component	0-20	21-45	46-65	66-80	81-100

Given the same weather inputs, the NFDRS processor will calculate the adjective fire danger for selected fuel models.

Seasonal Risk Analysis

Seasonal risk analysis is a comparison of the historic weather/fuels records with current and forecasted weather/fuels information. Seasonal risk analysis is an on-going responsibility for fire program managers. The most reliable indicators of seasonal fire severity have been measurements of fine fuel loading, live fuel moisture, 1000-hour (dead) fuel moisture, and ERC. These levels will be graphically compared to historical maximum values and the average. The graphs will be routinely updated and distributed to fire suppression personnel and dispatch. Seasonal risk analysis information will be used as a basis for pre-positioning critical resources, dispatching resources, and requests for fire severity funding. The following are specific indicators that are useful in accurately predicting fire season severity and duration in the West Zone and East Zone Fire Danger Rating Areas.

Fire Activity: The presence (or absence) of fire activity can be tracked and compared to historical occurrences in order to anticipate severity conditions. The Fire Summary module of FireFamily Plus provides an efficient means to compare monthly fire activity.

Live Fuel Moisture: Live fuel moisture plots have been established in each FDRA. Vegetation sampled at each site varies depending on the representative vegetation in the area. While

sampling has not been consistent in the past so correlation can be seen between fire intensity and live moisture levels. Consequently, fire severity is determined by comparing current trends to historical averages. Comparison of fuel moisture to historical conditions at various locations within Wyoming and surrounding areas can be located on the National Live Fuels Moisture web site: http://72.32.186.224/nfmd/public/states_map.php?state=WY

NFDRS Indicators: ERC and 1000-hr (3" – 8" diameter dead) fuel are used as the primary indicators to track seasonal trends of fire danger potential. NFDRS fuel model G has been chosen due to its good "fit" with the ERC and 1000-hour models. Other fuel models that might seem to be more appropriate due to their classification (grass/brush) do not correlate very well statistically with the NFDRS models. Consequently, fuel model G was chosen due to its ability to predict fire occurrence, specifically a day when a large fire is likely to occur.

Weather Trends: Seasonal weather assessments rely upon long-range (30-90 day) forecasts. This information is available on the Rocky Mountain Area Predictive Services Web Site. The site also contains daily and weekly fire danger assessments.

Normalized Difference Vegetation Index (NDVI): NDVI data is satellite imagery, which displays vegetative growth and curing rates of live fuels. The Wildland Fire Assessment System provides several different ways to analyze current and historical greenness imagery, which can be a significant contributor to seasonal risk assessments.

Thresholds (EXTREME FIRE DANGER)

Seasonal risk escalation in fuel complexes of the High Desert District area relies upon a combination of factors that will ultimately trigger an extreme state of fuel volatility and a high potential for large fire growth or multiple ignition scenarios. These factors are:

Fire Activity: The occurrence of large/multiple fires is the best indicator of severity conditions and the potential for seasonal risk. Any one incident reaching type one or two complexity would be an indicator of severity. Two or more type three incidents within a two to four week period would also be a strong indicator. Three or more initial attack fires in the same day indicate a point where resources are scarce. A progressive approach to assessing seasonal risk will prepare the local unit for these occurrences and the necessary tools will already be in place.

Live Fuel Moisture (Sagebrush): The average herbaceous fuel moisture of sagebrush in all HDD FDRAs fluctuates between 250% (June) and 80% (August). Readings below 100% indicate increased risk relating to large fire growth and severity conditions. Below average readings may indicate an early or extended fire season.

NFDRS Thresholds: The ERC threshold for extreme fire potential is 90 (or higher) for the West Zone FDRA, and 83 (or higher) for the East Zone FDRA. It has been statistically proven that large fire events will occur proportionally more often when these thresholds are exceeded. Early and late-season readings that trend above average may indicate an extension of the normal fire season.

Normalized Difference Vegetation Index (NDVI): An analysis of this imagery will assist in the assessment of current fuel moisture conditions and provide historical as well as average greenness comparisons.

Fire Danger Pocket Cards

The Fire Danger Pocket Card is a tool which can help fire suppression personnel to interpret NFDRS outputs and understand fire danger thresholds for a local area. Pocket cards can relate current NFDRS outputs with the historical average and worst-case values in a specific geographic location. Visiting resources can use the pocket card to familiarize themselves with local fire danger conditions.
ERC is a measure of fire controllability (Deeming et al. 1978). NFDRS fuel model G was selected for all FDRAs as it provides the best statistical correlation with fire occurrence and responds to changing weather and fuel conditions (See Appendix D for Fire Analysis). Refer to Appendix E for pocket card examples.

Roles and Responsibilities

Fire Danger Operating and Preparedness Plan

The High Desert District FMO will ensure that necessary amendments or updates to this plan are completed. Updates to this plan will be made at least every two years and approved by the line officers (or delegates) from each agency.

Suppression Resources

During periods when local preparedness levels are High to Extreme, the Fire Management Officer will strive to achieve the most efficient and effective organization to meet the Fire Management Plan objectives. This may require the pre-positioning of suppression resources. The FMO/AFMO will also determine the need to request/release off unit resources or support personnel throughout the fire season.

Duty Officer

For the purposes of this plan, a BLM Duty Officer will be identified to the Rawlins Interagency Dispatch Center. The Duty Officer is a designated fire operations specialist, who provides input and guidance regarding preparedness and dispatch levels. It is the Duty Officer's role to interpret and modify the daily preparedness and dispatch levels as required by factors not addressed by this plan. Modifications of the preparedness and/or dispatch levels must be coordinated through the Dispatch Center Manager. The Duty Officer will keep their respective agency's fire and management staff updated (as needed).

Fire Weather Forecasting

Daily fire weather forecasts will be developed by the National Weather Service, Riverton and Cheyenne Weather Forecast Offices, and posted on the Internet and in WIMS for the Rawlins Interagency Dispatch Center to retrieve.

NFDRS Outputs and Indices

The Center Manager will ensure that the daily fire weather forecast (including NFDRS indices) is retrieved and that the daily preparedness, dispatch, and adjective levels are calculated and distributed.

Risk Analysis Information

The FMO will ensure that seasonal risk assessments are conducted during the fire season. The risk analysis will include information such as live fuel moisture, 1000-hour fuel moisture, fuel loading, NFDRS (BI/IC/ERC) trends, NDVI imagery, and other pertinent data. This information will be distributed to agency staff and the Rawlins Interagency Dispatch Center Manager. The Center Manager and AFMO's will ensure information is posted at fire suppression duty stations.

Weather Station Maintenance

The BLM RAWS Depot located at the National Interagency Fire Center (NIFC) maintains and calibrates the BLM RAWS stations on an annual basis. Local BLM Fire personnel are currently qualified as first responders to RAWS malfunctions.

WIMS Access, Daily Observations, and Station Catalog Editing

The BLM Center Manager is listed as the station owner for the BLM, with the BLM AFMO Fuels as backup. The owner maintains the WIMS Access Control List (ACL). The station owner will ensure appropriate editing of the RAWS catalogs. The Rawlins Interagency Dispatch Center Manager will ensure the timely editing of daily 1300 weather observations of all stations.

Preparedness, Dispatch, and Adjective Level Guidelines

The High Desert District fire management staff along with the Center Manager will be responsible for establishing and reviewing the preparedness, dispatch, and adjective level guidelines on a bi-annual basis (as a minimum).

Public and Industrial Awareness

Education and mitigation programs will be implemented by the agency Public Information Officers, Law Enforcement Officers, FMO, AFMOs, Fire Wardens, and Prevention Specialists based on Preparedness Level Guidelines and direction provided by the agency FMO and Duty Officer.

NFDRS and Adjective Fire Danger Break Points

The HDD FMO will review weather and fire data at least every two years (when the FDOP is re-analyzed). The HDD FMO will ensure that the break points reflect the most accurate information with the concurrence of the FMO's.

Fire Danger Pocket Cards

The FMO will ensure that pocket cards are prepared at least every two years and are in compliance with NWCG standards. The cards will be distributed to all interagency, local and incoming firefighters and Incident Management Teams (IMTs). The pocket cards will be posted on Rawlins Dispatch and National Wildfire Coordinating Group (NWCG) pocket card web site (http://fam.nwcg.gov/fam-web/pocketcards/default.htm). Fire suppression supervisors will utilize pockets cards to train and brief suppression personnel.

Program Improvements

Training

- Provide FDOP training to cooperators including county fire Wardens, cooperating dispatch centers, and fire departments.
- Work with local cooperators and other Federal agency fire managers to develop an interagency FDOP.
- Train more personnel as first responders to RAWS malfunctions.
- Emphasize NFDRS training (S-491) at the geographic area level for mid-level fire management personnel.
- Inform agency fire suppression supervisors of FDOP applications by integrating the training in unit orientation meetings. At a minimum, this should include FMOs, Fire Operations Supervisors, Area Managers, and Fire Wardens.

RAWS

- Maintain portable RAWS when needed.
- Find and input missing weather data into KCFAST.
- Report errors of weather data to KCFAST.

Technology & Information Management

- Integrate preparedness and dispatch level flow charts into a web based package.
- Improve the Rawlins Interagency Dispatch Center Internet Site where pertinent seasonal risk assessment information can be reviewed.

Appendix A - Glossary

10-Hr Timelag Fuels	Dead fuels consisting of roundwood in the size range of 1/4 to 1 inch in diameter and, very roughly, the layer of litter extending from just below the surface to roughly 3/4 of an inch below the surface.*
100-Hr Timelag Fuels	Dead fuels consisting of roundwood in the size range of 1 to 3 inches in diameter and, very roughly, the forest floor from 3/4 of an inch to 4 inches below the surface.*
1000-Hr Timelag Fuels	Dead fuels consisting of roundwood 3 to 8 inches in diameter or the layer of the forest floor more than about 4 inches below the surface or both.*
Adjective Rating	A public information description of the relative severity of the current fire danger situation.
Annual Plant	A plant that lives for one growing season, starting from a seed each year.
Burning Index (BI)	BI is a number related to the contribution of fire behavior to the effort of containing a fire. The BI (difficulty of control) is derived from a combination of Spread Component (how fast it will spread) and Energy Release Component (how much energy will be produced). In this way, it is related to flame length, which, in the Fire Behavior Prediction System, is based on rate of spread and heat per unit area. However, because of differences in the calculations for BI and flame length, they are not the same. The BI is an index that rates fire danger related to potential flame length over a fire danger rating area. The fire behavior prediction system produces flame length predictions for a specific location (Andrews, 1986). The BI is expressed as a numeric value related to potential flame length in feet multiplied by 10. The scale is open-ended which allows the range of numbers to adequately define fire problems, even during low to moderate fire danger.
Climatological Breakpoints	Points on the cumulative distribution of one fire weather/fire danger index without regard to associated fire occurrence/business. They are sometimes referred to as exceedence thresholds.
Duff	The partially decomposed organic material of the forest floor that lies beneath the freshly fallen twigs, needles and leaves. (The F and H layers of the forest soil profile.)
Energy Release Component (ERC)	ERC is a number related to the available energy (BTU) per unit area (square foot) within the flaming front at the head of a fire. Since this number represents the potential "heat release" per unit area in the flaming zone, it can provide guidance to several important fire activities. It may also be considered a composite fuel moisture value as it reflects the contribution that all live and dead fuels have to potential fire intensity. The ERC is a cumulative or "build- up" type of index. As live fuels cure and dead fuels dry, the ERC values get higher thus providing a good reflection of drought conditions. The scale is open-ended or unlimited and, as with other NFDRS components, is relative. Conditions producing an ERC value of 24 represent a potential heat release twice that of conditions resulting in an ERC value of 12.
Equilibrium Moisture Content	The moisture content that a fuel particle will attain if exposed for an infinite period in an environment of specified constant temperature and humidity. When a fuel particle has reached its equilibrium moisture content, the net exchange of moisture between it and its environment is zero.

Fire Business Thresholds	Values of one or more fire weather/fire danger indexes that have been statistically related to occurrence of fires (fire business). Generally, the threshold is a value or range of values where historical fire activity has significantly increased or decreased.
Fire Danger	The resultant descriptor of the combination of both constant and variable factors that affect the ignition, spread, and control difficulty of control of wildfires on an area.
Fire Danger Continuum	The range of possible values for a fire danger index or component, given a set of NFDRS parameters and weather input.
Fire Danger Rating	A system that integrates the effects of existing and expected states of selected fire danger factors into one or more qualitative or numeric indices that reflect an areas protection needs.
Fire Danger Rating Area	A geographic area relatively homogeneous in climate, fuels and topography, tens of thousands of acres in size, within which the fire danger can be assumed to be uniform. Its size and shape is primarily based on influences of fire danger, not political boundaries. It is the basic, on the ground unit for which unique fire danger decisions are made based on fire danger ratings. Weather is represented by one or more NFDRS weather (RAWS) stations.
Fire Weather Forecast Zone	A grouping of fire weather forecast stations that experience the same weather change or trend. Zones are developed by the National Weather Service to assist NWS production of fire weather forecasts or trends for similar stations. Fire weather forecast zones are best thought of as a list of similar weather stations, rather than an area on a map.
Forb	A non- grass-like herbaceous plant.
Fuel Class	A group of fuels possessing common characteristics. In the NFDRS, dead fuels are grouped according to their timelag (1, 10, 100, and 1000 hr) and live fuels are grouped by whether they are herbaceous (annual or perennial) or woody.
Fuel Model	A simulated fuel complex for which all fuel descriptions required by the mathematical fire spread model have been supplied.
Fuel Moisture Content	The water content of a fuel particle expressed as a percent of the oven-dry weight of the particle. Can be expressed for either live or dead fuels.
Fuels	Non-decomposed material, living or dead, derived from herbaceous plants.
Green-up	Green-up within the NFDRS model is defined as the beginning of a new cycle of plant growth. Green- up occurs once a year, except in desert areas where rainy periods can produce a flush of new growth more than once a year. Green- up may be signaled at different dates for different fuel models. Green-up should not be started when the first flush of green occurs in the area. Instead, the vegetation that will be the fire problem (represented by the NFDRS fuel model associated with the weather station) when it matures and cures should be identified. Green-up should start when the majority of this vegetation starts to grow.
Herb	A plant that does not develop woody, persistent tissue but is relatively soft or succulent and sprouts from the base (perennials) or develops from seed (annuals) each year. Included are grasses, forbs, and ferns.
Herbaceous Vegetation Moisture Content	The water content of a live herbaceous plant expressed as a percent of the oven-dry weight of the plant.

Ignition Component (IC)	IC is a rating of the probability that a firebrand will cause a fire requiring suppression action. Since it is expressed as a probability, it ranges on a scale of 0 to 100. An IC of 100 means that every firebrand will cause a fire requiring action if it contacts a receptive fuel.
Keetch-Byram Drought Index (KBDI)	KBDI is a stand-alone index that can be used to measure the effects of seasonal drought on fire potential. The actual numeric value of the index is an estimate of the amount of precipitation (in 100ths of inches) needed to bring the soil back to saturation (a value of 0 is complete saturation of the soil). Since the index only deals with the top 8 inches of the soil profile, the maximum KBDI value is 800 or 8.00 inches of precipitation would be needed to bring the soil back to saturation. The Keetch-Byram Drought Index's relationship to fire danger is that as the index value increases, the vegetation is subjected to increased stress due to moisture deficiency. At higher values, desiccation occurs and live plant material is added to the dead fuel loading on the site. Also, an increasing portion of the duff/litter layer becomes available fuel at higher index values.
Litter	The top layer of the forest floor, typically composed of loose debris such as branches, twigs, and recently fallen leaves or needles; little altered in structure by decomposition. (The layer of the forest soil profile.)
Live Fuels	Naturally occurring fuels whose moisture content is controlled by the physiological processes within the plant. The National Fire Danger Rating System considers only herbaceous plants and woody material small enough (leaves, needles and twigs) to be consumed in the flaming front of a fire.
Moisture of Extinction	The theoretical dead fuel moisture content above which a fire will not spread.
Perennial Plant	A plant that lives for more than two growing seasons. For fire danger rating purposes, biennial plants are classed with perennials.
Preparedness Level	Are determined by incremental measures of burning conditions, fire activity and resource commitment.
Roundwood	Boles, stems, or limbs of woody material; that portion of the dead wildland fuel which is roughly cylindrical in shape.
Shrub	A woody perennial plant differing from a perennial herb by its persistent and woody stem; and from a tree by its low stature and habit of branching from the base.
Slash	Branches, bark, tops, cull logs, uprooted stumps, and broken or uprooted trees left on the ground after logging; also debris resulting from thinning or wind storms.
Slope	The rise or fall in terrain measured in feet per 100 feet of horizontal distance measurement, expressed as a percentage.
Spread Component (SC)	SC is a rating of the forward rate of spread of a head fire. Deeming, et al. (1977), states that "the spread component is numerically equal to the theoretical ideal rate of spread expressed in feet-per-minute." This carefully worded statement indicates both guidelines (it's theoretical) and cautions (its ideal) that must be used when applying the Spread Component. Wind speed, slope and fine fuel moisture are key inputs in the calculation of the spread component, thus accounting for a high variability from day-to-day. The Spread Component is expressed on an open-ended scale; thus it has no upper limit.
Staffing Level	The basis for decision support for daily staffing of initial attack resources

	and other activities; a level of readiness and an indicator of daily preparedness.
Surface-Area-to-Volume Ratio	The ratio of the surface area of a fuel particle (in square- ft) to its volume (in cubic-ft). The "finer" the fuel particle, the higher the ratio; for example, for grass this ratio ranges above 2,000; while for a ½ inch diameter stick it is 109.
Timelag	The time necessary for a fuel particle to lose approximately 63% of the difference between its initial moisture content and its equilibrium moisture content.
Timelag Fuel Moisture Content	The dead fuel moisture content corresponding to the various timelag fuel classes.
X-1000 Hr Fuel Moisture	X-1000 is the live fuel moisture recovery value derived from the 1000-hr fuel moisture value. It is an independent variable used in the calculation of the herbaceous fuel moisture. The X-1000 is a function of the daily change in the 1000-hour timelag fuel moisture, and the average temperature. Its purpose is to better relate the response of the live herbaceous fuel moisture model to the 1000-hour timelag fuel moisture value. The X-1000 value is designed to decrease at the same rate as the 1000-hour timelag fuel moisture, but to have a slower rate of increase than the 1000-hour timelag fuel moisture during periods of precipitation, hence limiting excessive herbaceous fuel moisture recovery.

Appendix B – Preparedness Level Actions

The following Preparedness Level actions are guidelines for agency personnel. They are discretionary in nature and usually will require a consensus between agency personnel prior to implementation.

1. Agency Administrator

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
Agency Administrator	Ensure the office staff is notifying RWC of their fire availability.	√	√	√	√	√	Agency
	Ensure resource advisors are designated and available for fire assignments.	√	√	√	√	√	Agency
	Evaluate work/rest needs of fire staff and crews.	√	√	√	√	√	Agency
	Consider need for fire restriction or closures. See Fire Restriction Plan for guidance.				√	√	Public Industry
	Provide appropriate political support to fire staffs regarding the implementation of preparedness level actions.			√	√	√	Agency Public Industry
	Review and transmit severity requests submitted by the FMO to the appropriate level.				√	√	Agency
	Issue guidance to staff indicating severity of the season and increased need and availability for fire support personnel.				√	√	Agency

2. Fire Management Officer

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
FMO	If preparedness level is decreasing, consult with FCO/Duty Officer/ Center Manager and consider release of pre-positioned or detailed personnel.	√	√	√	√	√	Agency
	Evaluate season severity data (BI and ERC trends for season, fuel loadings, live FM, drought indices, and long term forecasts).	√	√	√	√	√	Agency
	Evaluate crew and staff work/rest requirements.	√	√	√	√	√	Agency
	Brief agency administrator on burning conditions and fire activity.			√	√	√	Agency
	Review geographical and national preparedness levels and evaluate need to suspend local prescribe fire activities.			√	√	√	Agency
	Ensure Prevention Officer/MES has initiated media contacts and public education contacts.			√	√	√	Public Industry
	Ensure agency staff is briefed on increasing fire activity.			√	√	√	Agency
	Brief State/Regional FMO on increasing fire activity.				√	√	Agency
	Consider fire severity request and pre-positioning of resources including: suppression resources, aerial support, aerial supervision, command positions, dispatch, logistical support, and prevention.			√	√	√	Agency Public Industry
	Evaluate need for fire restrictions or closures with interagency partners.			√	√	√	Public Industry
	Evaluate season Severity data (BI and ERC trends for season, fuel loadings, live FM, Drought indices and long term forecasts	√	√	√	√	√	Agency
	Request the Agency Administrator to issue guidance to office staff regarding the need for increased fire availability in support positions.				√	√	Agency
	Consult with the State FMO and agency administrator regarding potential need to pre-position a Type 3 or Type 2 Team.				√	√	Agency

3. Duty Officer

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
Duty Officer	Confirm (or Adjust) the Preparedness and Dispatch Levels with the RWC Manager.	√	√	√	√	√	Agency
	If preparedness level is decreasing, consider releasing pre-positioned and detailed resources.			√	√	√	Agency
	Ensure incoming pre-position or detailed personnel are briefed on local conditions.	√	√	√	√	√	Agency
	Evaluate work/rest needs of IA crews.		√	√	√	√	Agency
	Consider aerial detection flight.		√	√	√	√	Agency
	Evaluate need to change or shift duty hours of IA resources.		√	√	√	√	Agency
	Consider suspending prescribed fire operations.				√	√	Agency
	Consider extending staffing beyond normal shift length.			√	√	√	Agency
	Brief FMO on severity of conditions and consider severity requests.				√	√	Agency
	Consider pre-positioning and/or detailing of additional IA resources from off-unit.				√	√	Agency
	Consider pre-positioning and automatic dispatch of ATGS aircraft.				√	√	Agency
	Consider bringing in local IA resources from scheduled days off.			√	√	√	Agency
	Consider patrols and pre-positioning of local IA resources in high risk areas.		√	√	√	√	Agency
	Consider patrols in camping and recreation areas.				√	√	Public
	Consider suspension of project work away from station or where response time will be delayed				√	√	Agency
	Consider automatic dispatch of, helicopter, SEAT and/or heavy air tankers for IA.					√	Agency
	Conduct daily morning briefing	√	√	√	√	√	Agency

4. Resource Advisor

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
	Coordinate efforts with the Duty Officer and Incident Commanders.			√	√	√	Agency

5. Engine/Crew Leaders

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
Engine Module Leaders/ Crew Leaders	Ensure IA crews are briefed on local preparedness level, burning conditions, and availability of IA resources and air support.	√	√	√	√	√	Agency
	Evaluate work/rest needs of crew. Ensure days off are taken and request relief if needed.	√	√	√	√	√	Agency
	Ensure that an adequate daily briefing is provided.	√	√	√	√	√	Agency
	Ensure equipment and crew preparedness.	√	√	√	√	√	Agency
	Provide Duty Officer/ZFMO/FMO feedback regarding crew fatigue.	√	√	√	√	√	Agency
	Participate in prevention activities as required.	√	√	√	√	√	Public Industry
	Perform required check-ins - including checking-in when moving locations during the day.	√	√	√	√	√	Agency
	Provide duty officer with feedback regarding unique/unexpected fire behavior, severity conditions, and the need to increase IA capabilities.	√	√	√	√	√	Agency

6. FOS's

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
FOS	Ensure that roadside fire danger signs reflect the current adjective fire danger rating.	√	√	√	√	√	Public
	Ensure IA crews are briefed on local preparedness level, burning conditions, and availability of IA resources and air support.	√	√	√	√	√	Agency
	Ensure incoming pre-position or detailed personnel are briefed on local conditions.	√	√	√	√	√	Agency
	Evaluate work/rest needs of crews.			√	√	√	Agency
	Increase patrols in camping and recreation areas.				√	√	Public
	Consider suspension of project work away from station.					√	Agency
	Provide duty officer with feedback regarding unique/unexpected fire behavior and severity conditions and the need to increase IA capabilities.			√	√	√	Agency
	Consider suspension of project work away from station. (PL5)Assign project work within 5 minute response time to engine/vehicle. (PL4)Assign project work within 15 minute response time to engine/vehicle. (PL3/PL2)		√	√	√	√	Agency

7. Center Manger

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
Center Manager	Determine and broadcast the morning and afternoon preparedness, dispatch, and adjective fire danger levels to interagency fire personnel.	√	√	√	√	√	Agency
	Evaluate work/rest needs of center staff.			√	√	√	Agency
	If preparedness level is decreasing, consider release of pre-positioned or detailed dispatchers and logistical support personnel.		√	√	√	√	Agency
	Consult with Duty Officer concerning potential for extended staffing beyond normal shift length.			√	√	√	Agency
	Consider pre-positioning or detail of off-unit IA dispatchers and logistical support personnel.			√	√	√	Agency
	Consider discussing activation of local area MAC Group.				√	√	Agency
	Consult with duty officer and FMO regarding potential need for severity request.			√	√	√	Agency

	Consider bringing additional dispatch personnel in from scheduled days off.			√	√	√	Agency
	Begin tracking weekly availability of overhead personnel.		√	√	√	√	Agency
	Establish weekly conference calls with FMOs and Operations staff.		√	√	√	√	Agency
	Input weather observations into WIMS.	√	√	√	√	√	Agency

8. Fire Prevention Officer

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
Fire Prevention Officer	Ensure that roadside fire danger signs reflect the current adjective fire danger rating.	√	√	√	√	√	Public
	Contact local media to make the public aware of the start of fire season and the potential for local fire danger to increase.	√	√	√	√	√	Public Industry
	Provide public and industrial entities with access to fire danger information, closures, restrictions, and warnings.	√	√	√	√	√	Public
	Ensure the public and industrial entities are aware of the policy of fire investigation and potential consequences related with the cost recovery process.	√	√	√	√	√	Public Industry
	Consider need for increased prevention patrols.				√	√	Agency
	Contact local industrial entities to make them aware of fire hazard and risk.				√	√	Industry
	Contact local fire chiefs to make them aware of fire danger.	√	√	√	√	√	Agency
	Consider door-to-door contacts in rural communities or ranch areas.				√	√	Public Industry
	Post signs and warnings in camp and recreation areas.				√	√	Public
	Notify local media of high/extreme fire danger and of the need for increased public caution.				√	√	Public Industry

	Consult with AFMO's and FMO's regarding severity requests and the potential need for additional prevention personnel or fire prevention team.				√	√	Agency
	Consult with FMO regarding need for fire restrictions or closures.			√	√	√	Agency Public Industry

9. Law Enforcement Rangers

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
Law Rangers	Check-in and notify dispatch of daily availability for fire assignments and location for day.	√	√	√	√	√	Agency
	Consider increased patrol in high fire danger areas, such as campgrounds, OHV areas, shooting areas.				√	√	Public
	Consider pre-positioning of or detailing in fire investigation personnel.				√	√	Agency
	Consult with Fire Prevention Officer and FMO regarding need for fire restrictions or closures.					√	Public Industry

Preparedness Level 1

Staffing:

- Dispatch at minimal level staffing, but available for support to fire activity as needed. (RWC will try to maintain staffing during normal work hours, 8 a.m. to 5 p.m. There may be periods of time, due to training, meetings, and annual leave, when substitute dispatchers are needed to cover for dispatch.)
- Staffing as needed for support to units. Notice needed ahead of time for planned activities by units (ex., prescribed fires, special use flights, etc.) to ensure adequate staffing for activity.
- Off unit assignments encouraged.

Dispatch Activity:

- Answer telephones and radio
- Internal project work
- Administrative tracking for Rawlins Field Office personnel
- Gather unit resource availability and maintain status in ROSS.
- Detail out to other Centers, GACC's

Pre-fire season activities:

- Review and update plans.
- Review and update dispatching procedures.
- Update HDD militia fire qualifications in IQCS
- Pre-green routine performed on RAWS.
- Start daily RAWS inputs.
- Begin SIT reports, per RMACC Mob Guide
- Begin training seasonal dispatchers
- Archive Fire Files
- Order Supplies Needed
- Print Qual Cards for HDD militia

Preparedness Level 2

Staffing:

- Regular staffing, a dispatcher will be at the radio console and available to answer the telephone at all times during normal working hours (Monday-Friday staffing, switching to 7-day staffing in response to agency fire suppression personnel staffing)
- Staffing as needed for support to units. Notice needed ahead of time for planned activities by units outside of regular working hours (earlier, later, weekends) to ensure adequate staffing for activity.
- Off unit assignments allowed, provided adequate staffing available to meet dispatch center obligations.

Dispatch Activity:

- Continue activities from Preparedness Level 1.
- Collect daily staffing information from units.
- Monitor National and Geographic Area fire situations.
- Monitor resource availability and fire activity of neighbors.
- Identify and evaluate local personnel to assist in dispatch, either as IA dispatchers/radio operators or in Expanded Dispatch.
- Weekly conference calls with unit FMOs

- Calls to Appropriate FMO(s), DO(s), Fire Warden(s) and IC(s) if Red Flag forecast. With discussion on the following:
  Are additional resources needed?
  Move or pre-position resources?
  Move Preparedness Level up to 3?

Preparedness Level 3

Staffing:

- Dispatch staffing hours extended to support personnel in the field.
- Call dispatch militia for extra dispatchers to come in, as needed to support increased activities and/or because of extended hours to support personnel in the field.
- Create orders to send to neighbors in ROSS for dispatchers, if local militia unable to fill needs for extra dispatchers.
- Order in Expanded Dispatchers as needed (check availability of militia before order in from other dispatch centers)
- Consider staffing Aircraft Dispatcher position if multiple aircraft in use.
- Only limited off unit assignments, except possibly short term to assist a neighboring dispatch center.

Dispatch Activity:

- Continue activities from Preparedness Level 2 & 1.
- Daily consultations with FMOs and/or DOs of units having activity.
- Keep Rocky Mountain Coordination Center informed (Daily calls to RM Coordinator by Center Manager)
- Consider increasing frequency of zone conference calls
- Monitor work/rest and days off for dispatchers
- Calls to Appropriate FMO(s), DO(s), Fire Warden(s) and IC(s) if Red Flag forecast. With discussion on the following:
  Are additional resources needed?
  Move or pre-position resources?

Preparedness Level 4

Staffing:

- Dispatch staffing hours extended to support personnel in the field.
- Call dispatch militia for extra dispatchers to come in, as needed to support increased activities and/or because of extended hours to support personnel in the field.
- Create orders to send to neighbors in ROSS for dispatchers or to RMACC if neighbors are also in level 4, if local militia unable to fill needs for extra dispatchers.
- Consider 24 hour staffing to stabilize work schedules.
- Expanded Dispatch activated and staffed.
- Staff Aircraft Dispatcher position.
- Staff Intelligence Position
- No off unit assignments.

Dispatch Activity:

- Continue activities from Preparedness Level 3, 2 & 1.
- Daily zone conference calls.
  Discuss Multi-Agency Coordination (MAC) activation
- Request unit with large fire initiate Incident Support Organization.
- Attend Team incoming and close-out meetings
- Site visits to Incident camp.

- Monitor Expanded Dispatch and assist with local resource order fills, or order EDSP/CORD.
- Monitor assignment lengths for dispatchers – create replacement orders as needed
- Calls to Appropriate FMO(s), DO(s), Fire Warden(s) and IC(s) if Red Flag forecast. With discussion on the following:
  - Are additional resources needed?
  - Move or pre-position resources?
  - Move Preparedness Level up to 5?
  - Stop details to other centers.

Preparedness Level 5

Staffing:

- Consider 24 hour IA staffing to stabilize work schedules.
- Expanded Dispatch activated and staffed.
- Staff Aircraft Dispatcher position.
- Staff Intel Dispatcher Position.
- Staff EDSD Dispatcher Position.
- Order CORD position or 2 EDSP's if multiple Incident Management Teams deployed.
- No off unit assignments.

Dispatch Activity:

- Continue activities from Preparedness Level 4, 3, 2, & 1 as needed.
- Maintain daily contact with Incident Management Teams.

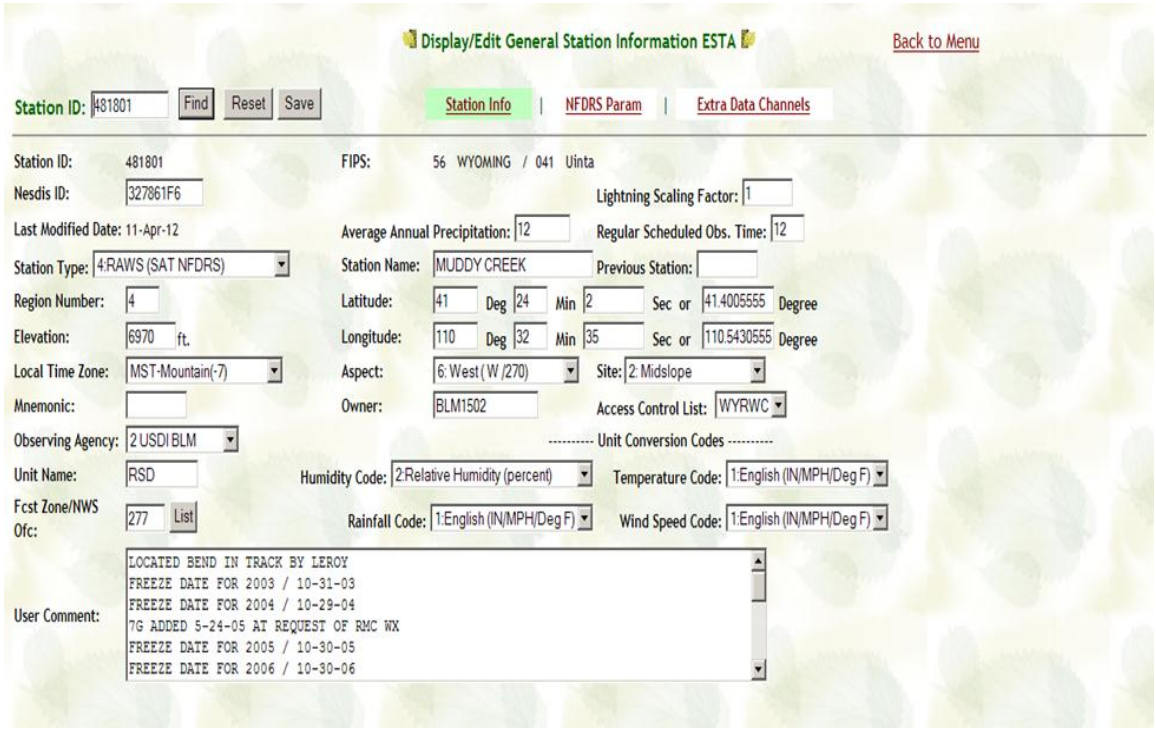
Drawdown Levels

At the various Preparedness Levels, the following resources will be held within the High Desert District Area:

Staffing LEVEL 1	
Initial Attack Operations	Duty Officer available 24-7 Minimum Drawdown: ☑ Duty Officer ☑ 1 engine (Can be coordinated with Inter-agency partners and county cooperators.) Normal Staffing Hours
Staffing LEVEL 2	
Initial Attack Operations	Duty Officer available 24-7 Minimum Drawdown: ☑ Duty Officer ☑ 1 HDD engine Normal Staffing Hours
Staffing LEVEL 3	
Initial Attack Operations	Duty Officer available 24-7 Minimum Drawdown: ☑ Duty Officer ☑ 2 HDD engines ☑ Ensure readiness of engines for local dispatch Normal Staffing Hours unless extended by HDD ODO
Staffing LEVEL 4	
Initial Attack Operations	HDD ODO available 24-7 Minimum Drawdown: ☑ Duty Officer ☑ 1 ICT3 (Can be coordinated with Inter-agency partners.) ☑ 3 HDD engines ☑ Make arrangements to staff engines for local dispatch Preposition resources in areas of concern based on lightning, as determined by HDD ODO. Additional resources will be ordered to back fill for committed resources.
Staffing LEVEL 5	
Initial Attack Operations	Duty Officer available 24-7 Minimum Drawdown: ☑ Duty Officer ☑ 2 ICT4 ☑ 1 ICT3 (Can be coordinated with Inter-agency partners.) ☑ 4 Engines 7 day coverage On Duty during Holidays Normal staffing hours unless need to extend as determined by HDD ODO or FMO/AFMO Preposition resources in areas of concern based on lightning activity. Additional resources will be ordered to back fill for committed resources by Rawlins Interagency Dispatch Center. Order severity resources as determined by HDD ODO or FMO/AFMO. Consider severity request for Fire Recon: additional aviation needs (Helicopter, SEAT, etc), Hand Crews, patrols, additional engines, extended hours. Check with Inter-agency partners on availability of the Type 3 Teams.

Appendix C – Weather Station Catalogs

481801 Muddy Creek



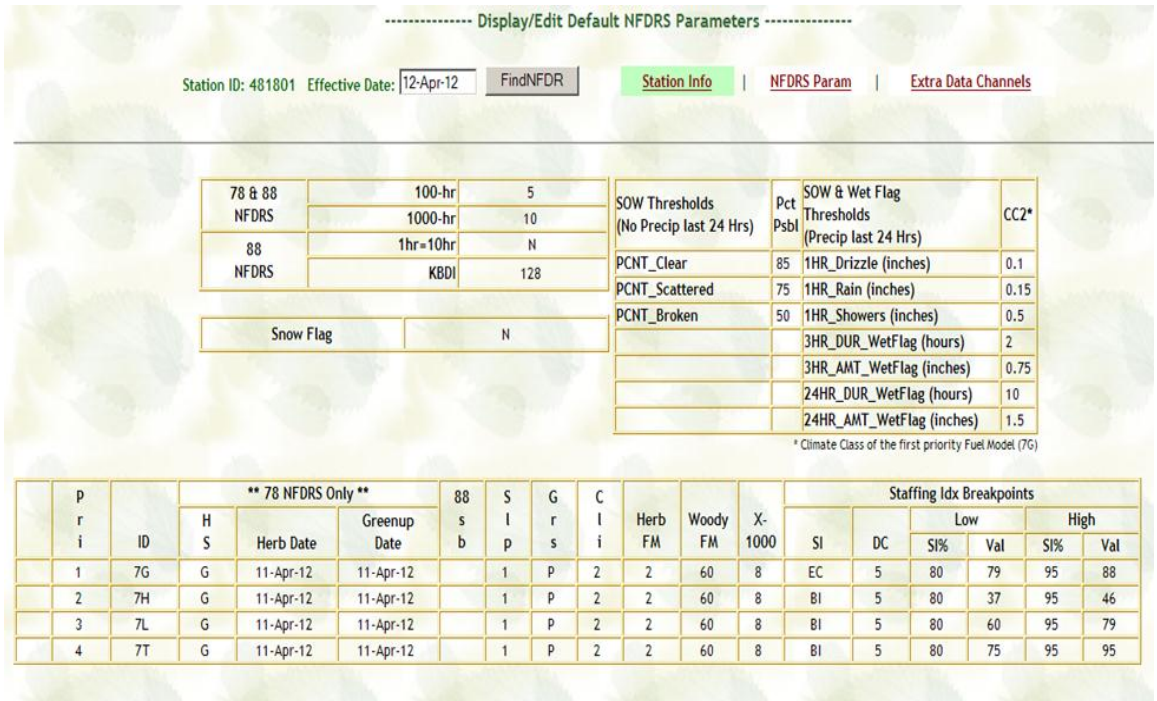
Display/Edit General Station Information ESTA — Back to Menu

Station ID: 481801 | Find | Reset | Save | Station Info | NFDRS Param | Extra Data Channels

Station ID:	481801	FIPS:	56 WYOMING / 041 Uinta
Nesdis ID:	327861F6	Lightning Scaling Factor:	1
Last Modified Date:	11-Apr-12	Average Annual Precipitation:	12
Regular Scheduled Obs. Time:	12		
Station Type:	4:RAWS (SAT NFDRS)	Station Name:	MUDDY CREEK
Previous Station:			
Region Number:	4	Latitude:	41 Deg 24 Min 2 Sec or 41.4005555 Degree
Elevation:	6970 ft.	Longitude:	110 Deg 32 Min 35 Sec or 110.5430555 Degree
Local Time Zone:	MST-Mountain(-7)	Aspect:	6: West (W /270)
Site:	2: Midslope		
Mnemonic:		Owner:	BLM1502
Access Control List:	WYRWC		
Observing Agency:	2 USDI BLM	--------- Unit Conversion Codes ---------	
Unit Name:	RSD	Humidity Code:	2:Relative Humidity (percent)
Temperature Code:	1:English (IN/MPH/Deg F)		
Fcst Zone/NWS Ofc:	277 List	Rainfall Code:	1:English (IN/MPH/Deg F)
Wind Speed Code:	1:English (IN/MPH/Deg F)		

User Comment:

```
LOCATED BEND IN TRACK BY LEROY
FREEZE DATE FOR 2003 / 10-31-03
FREEZE DATE FOR 2004 / 10-29-04
7G ADDED 5-24-05 AT REQUEST OF RMC WX
FREEZE DATE FOR 2005 / 10-30-05
FREEZE DATE FOR 2006 / 10-30-06
```



---------- Display/Edit Default NFDRS Parameters ----------

Station ID: 481801 Effective Date: 12-Apr-12 | FindNFDR | Station Info | NFDRS Param | Extra Data Channels

78 & 88 NFDRS	100-hr	5
	1000-hr	10
88 NFDRS	1hr=10hr	N
	KBDI	128

Snow Flag	N

SOW Thresholds (No Precip last 24 Hrs)	Pct Psbl	SOW & Wet Flag Thresholds (Precip last 24 Hrs)	CC2*
PCNT_Clear	85	1HR_Drizzle (inches)	0.1
PCNT_Scattered	75	1HR_Rain (inches)	0.15
PCNT_Broken	50	1HR_Showers (inches)	0.5
		3HR_DUR_WetFlag (hours)	2
		3HR_AMT_WetFlag (inches)	0.75
		24HR_DUR_WetFlag (hours)	10
		24HR_AMT_WetFlag (inches)	1.5

* Climate Class of the first priority Fuel Model (7G)

	Pri	ID	** 78 NFDRS Only ** HS	Herb Date	Greenup Date	88 sb	Slp	Grs	Cli	Herb FM	Woody FM	X-1000	Staffing Idx Breakpoints SI	DC	Low SI%	Low Val	High SI%	High Val
	1	7G	G	11-Apr-12	11-Apr-12		1	P	2	2	60	8	EC	5	80	79	95	88
	2	7H	G	11-Apr-12	11-Apr-12		1	P	2	2	60	8	BI	5	80	37	95	46
	3	7L	G	11-Apr-12	11-Apr-12		1	P	2	2	60	8	BI	5	80	60	95	79
	4	7T	G	11-Apr-12	11-Apr-12		1	P	2	2	60	8	BI	5	80	75	95	95

481903 Anderson Ridge

Display/Edit General Station Information ESTA

Back to Menu

Station ID: 481903 Find Reset Save | Station Info | NFDRS Param | Extra Data Channels

Station ID:	481903	FIPS:	56 WYOMING / 037 Sweetwater		
Nesdis ID:	32787280			Lightning Scaling Factor:	1
Last Modified Date:	14-Mar-12	Average Annual Precipitation:	12	Regular Scheduled Obs. Time:	12
Station Type:	4:RAWS (SAT NFDRS)	Station Name:	ANDERSON RIDGE	Previous Station:	
Region Number:	4	Latitude:	42 Deg 42 Min 14 Sec or 42.7038888 Degree		
Elevation:	8120 ft.	Longitude:	108 Deg 56 Min 27 Sec or 108.9408333 Degree		
Local Time Zone:	MST-Mountain(-7)	Aspect:	6: West (W /270)	Site:	3: Ridge or peak top
Mnemonic:		Owner:	BLM1502	Access Control List:	WYRWC
Observing Agency:	2 USDI BLM	---------- Unit Conversion Codes ----------			
Unit Name:	RSD	Humidity Code:	2:Relative Humidity (percent)	Temperature Code:	1:English (IN/MPH/Deg F)
Fcst Zone/NWS Ofc:	278 List	Rainfall Code:	1:English (IN/MPH/Deg F)	Wind Speed Code:	1:English (IN/MPH/Deg F)

User Comment:

```
LOCATED JUST ABOVE GOLD CREEK
FREEZE DATE FOR 2003 / 10-31-03
FREEZE DATE FOR 2004 / 10-29-04
FREEZE DATE FOR 2005 / 10-15-05
FREEZE DATE FOR 2006 / 10-30-06
UNFREEZE DATE FOR 2007 / 3-20-2007
```

---------- Display/Edit Default NFDRS Parameters ----------

Station ID: 481903 Effective Date: 12-Apr-12 FindNFDR | Station Info | NFDRS Param | Extra Data Channels

78 & 88 NFDRS	100-hr	6
	1000-hr	11
88 NFDRS	1hr=10hr	N
	KBDI	110

Snow Flag	N

SOW Thresholds (No Precip last 24 Hrs)	Pct Psbl	SOW & Wet Flag Thresholds (Precip last 24 Hrs)	CC3*
PCNT_Clear	85	1HR_Drizzle (inches)	0.05
PCNT_Scattered	75	1HR_Rain (inches)	0.1
PCNT_Broken	50	1HR_Showers (inches)	0.25
		3HR_DUR_WetFlag (hours)	3
		3HR_AMT_WetFlag (inches)	0.5
		24HR_DUR_WetFlag (hours)	12
		24HR_AMT_WetFlag (inches)	1.0

* Climate Class of the first priority Fuel Model (7G)

	Pri	ID	** 78 NFDRS Only ** HS	Herb Date	Greenup Date	88 sb	Slp	Grs	Cli	Herb FM	Woody FM	X-1000	Staffing Idx Breakpoints SI	DC	Low SI%	Low Val	High SI%	High Val
	1	7G	P	14-Mar-12	22-May-11		1	P	3	2	70	11	EC	5	80	76	95	86
	2	7H	P	14-Mar-12	22-May-11		1	P	3	2	70	11	EC	5	80	43	95	50
	3	7L	P	14-Mar-12	22-May-11		1	P	3	2	70	11	BI	5	80	63	95	82
	4	7T	P	14-Mar-12	22-May-11		1	P	3	2	70	11	BI	5	80	86	95	112

481904 Snow Springs

Display/Edit General Station Information ESTA — Back to Menu

Station ID: 481904 | Find | Reset | Save | Station Info | NFDRS Param | Extra Data Channels

Station ID:	481904	FIPS:	56 WYOMING / 037 Sweetwater
Nesdis ID:	32789172	Lightning Scaling Factor:	1
Last Modified Date:	11-Apr-12	Average Annual Precipitation: 10	Regular Scheduled Obs. Time: 12
Station Type:	4:RAWS (SAT NFDRS)	Station Name: SNOW SPRING CREEK	Previous Station:
Region Number:	4	Latitude: 41 Deg 25 Min 3 Sec or 41.4175000 Degree	
Elevation:	7750 ft.	Longitude: 109 Deg 2 Min 10 Sec or 109.0361111 Degree	
Local Time Zone:	MST-Mountain(-7)	Aspect: 4: South (S /180)	Site: 3: Ridge or peak top
Mnemonic:		Owner: BLM1502	Access Control List: WYRWC
Observing Agency:	2 USDI BLM	--------- Unit Conversion Codes ---------	
Unit Name:	RSD	Humidity Code: 2:Relative Humidity (percent)	Temperature Code: 1:English (IN/MPH/Deg F)
Fcst Zone/NWS Ofc:	279 List	Rainfall Code: 1:English (IN/MPH/Deg F)	Wind Speed Code: 1:English (IN/MPH/Deg F)

User Comment:

```
LOCATED BACK SIDE OF ASPEN MOUNTAIN
FREEZE DATE FOR 2003 / 10-31-03
FREEZE DATE FOR 2004 / 10-29-04
FREEZE DATE FOR 2005 / 10-30-05
FUEL MODEL F CHANGED TO FUEL MODEL G ON 5-17-2006
FREEZE DATE FOR 2006 / 10-30-06
```

---------- Display/Edit Default NFDRS Parameters ----------

Station ID: 481904 Effective Date: 12-Apr-12 | FindNFDR | Station Info | NFDRS Param | Extra Data Channels

78 & 88 NFDRS	100-hr	4
	1000-hr	9
88 NFDRS	1hr=10hr	N
	KBDI	119

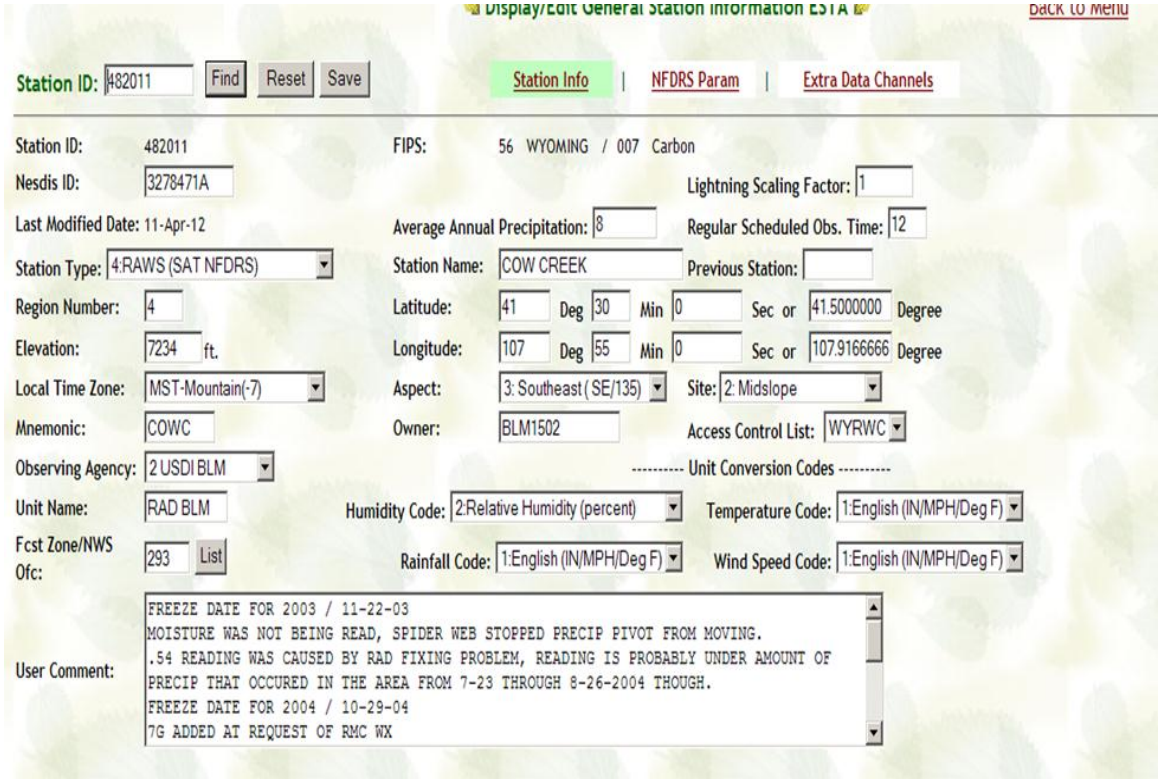
Snow Flag	N

SOW Thresholds (No Precip last 24 Hrs)	Pct Psbl	SOW & Wet Flag Thresholds (Precip last 24 Hrs)	CC2*
PCNT_Clear	85	1HR_Drizzle (inches)	0.1
PCNT_Scattered	75	1HR_Rain (inches)	0.15
PCNT_Broken	50	1HR_Showers (inches)	0.5
		3HR_DUR_WetFlag (hours)	2
		3HR_AMT_WetFlag (inches)	0.75
		24HR_DUR_WetFlag (hours)	10
		24HR_AMT_WetFlag (inches)	1.5

* Climate Class of the first priority Fuel Model (7G)

	Pri	ID	** 78 NFDRS Only ** HS	Herb Date	Greenup Date	88sb	Slp	Grs	Cli	Herb FM	Woody FM	X-1000	Staffing Idx Breakpoints SI	DC	Low SI%	Low Val	High SI%	High Val
	1	7G	G	10-Apr-12	10-Apr-12		1	P	2	3	60	7	EC	5	80	81	95	90
	2	7H	G	10-Apr-12	10-Apr-12		1	P	2	3	60	7	BI	5	80	41	95	52
	3	7L	G	10-Apr-12	10-Apr-12		1	P	2	3	60	7	BI	5	80	61	95	79
	4	7T	G	10-Apr-12	10-Apr-12		1	P	2	3	60	7	BI	5	80	83	95	110

482011 Cow Creek



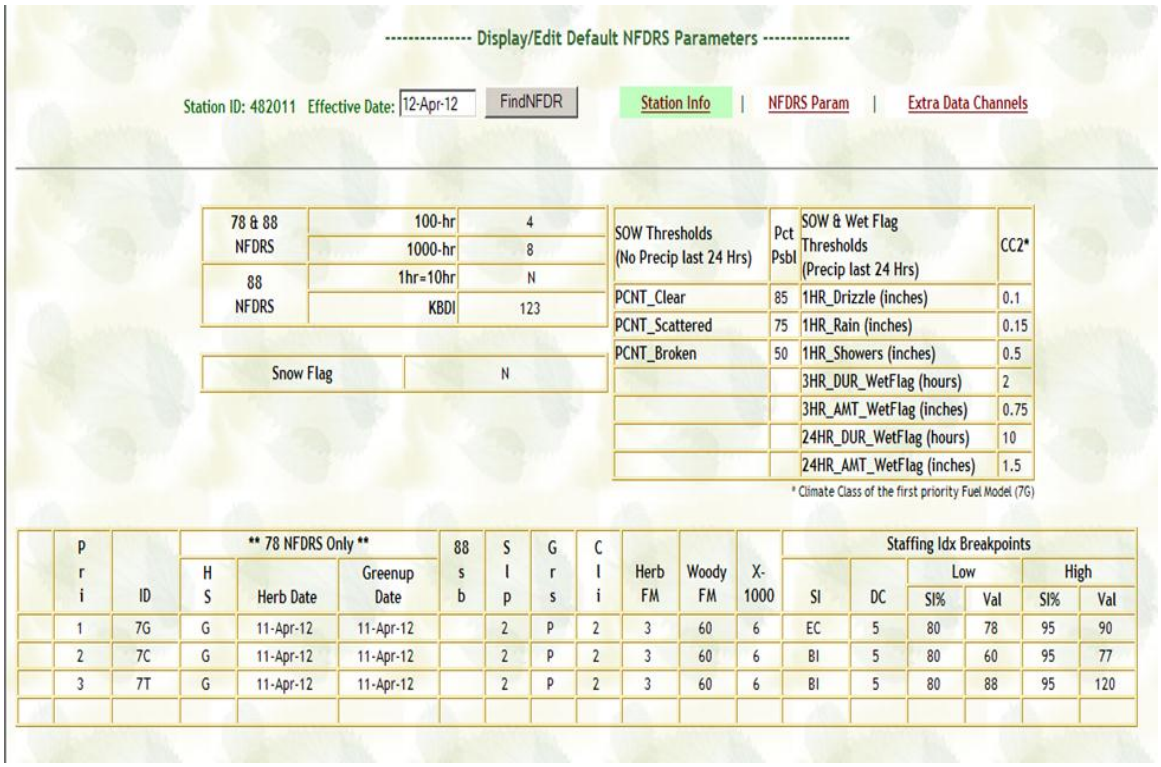
Display/Edit General Station Information ESTA — Back to Menu

Station ID: 482011 [Find] [Reset] [Save] | Station Info | NFDRS Param | Extra Data Channels

Station ID:	482011	FIPS:	56 WYOMING / 007 Carbon
Nesdis ID:	3278471A	Lightning Scaling Factor:	1
Last Modified Date:	11-Apr-12	Average Annual Precipitation:	8
		Regular Scheduled Obs. Time:	12
Station Type:	4:RAWS (SAT NFDRS)	Station Name:	COW CREEK
		Previous Station:	
Region Number:	4	Latitude:	41 Deg 30 Min 0 Sec or 41.5000000 Degree
Elevation:	7234 ft.	Longitude:	107 Deg 55 Min 0 Sec or 107.9166666 Degree
Local Time Zone:	MST-Mountain(-7)	Aspect:	3: Southeast (SE/135)
		Site:	2: Midslope
Mnemonic:	COWC	Owner:	BLM1502
		Access Control List:	WYRWC
Observing Agency:	2 USDI BLM	---------- Unit Conversion Codes ----------	
Unit Name:	RAD BLM	Humidity Code:	2:Relative Humidity (percent)
		Temperature Code:	1:English (IN/MPH/Deg F)
Fcst Zone/NWS Ofc:	293 [List]	Rainfall Code:	1:English (IN/MPH/Deg F)
		Wind Speed Code:	1:English (IN/MPH/Deg F)

User Comment:

```
FREEZE DATE FOR 2003 / 11-22-03
MOISTURE WAS NOT BEING READ, SPIDER WEB STOPPED PRECIP PIVOT FROM MOVING.
.54 READING WAS CAUSED BY RAD FIXING PROBLEM, READING IS PROBABLY UNDER AMOUNT OF
PRECIP THAT OCCURED IN THE AREA FROM 7-23 THROUGH 8-26-2004 THOUGH.
FREEZE DATE FOR 2004 / 10-29-04
7G ADDED AT REQUEST OF RMC WX
```



---------- Display/Edit Default NFDRS Parameters ----------

Station ID: 482011 Effective Date: 12-Apr-12 [FindNFDR] | Station Info | NFDRS Param | Extra Data Channels

78 & 88 NFDRS	100-hr	4
	1000-hr	8
88 NFDRS	1hr=10hr	N
	KBDI	123

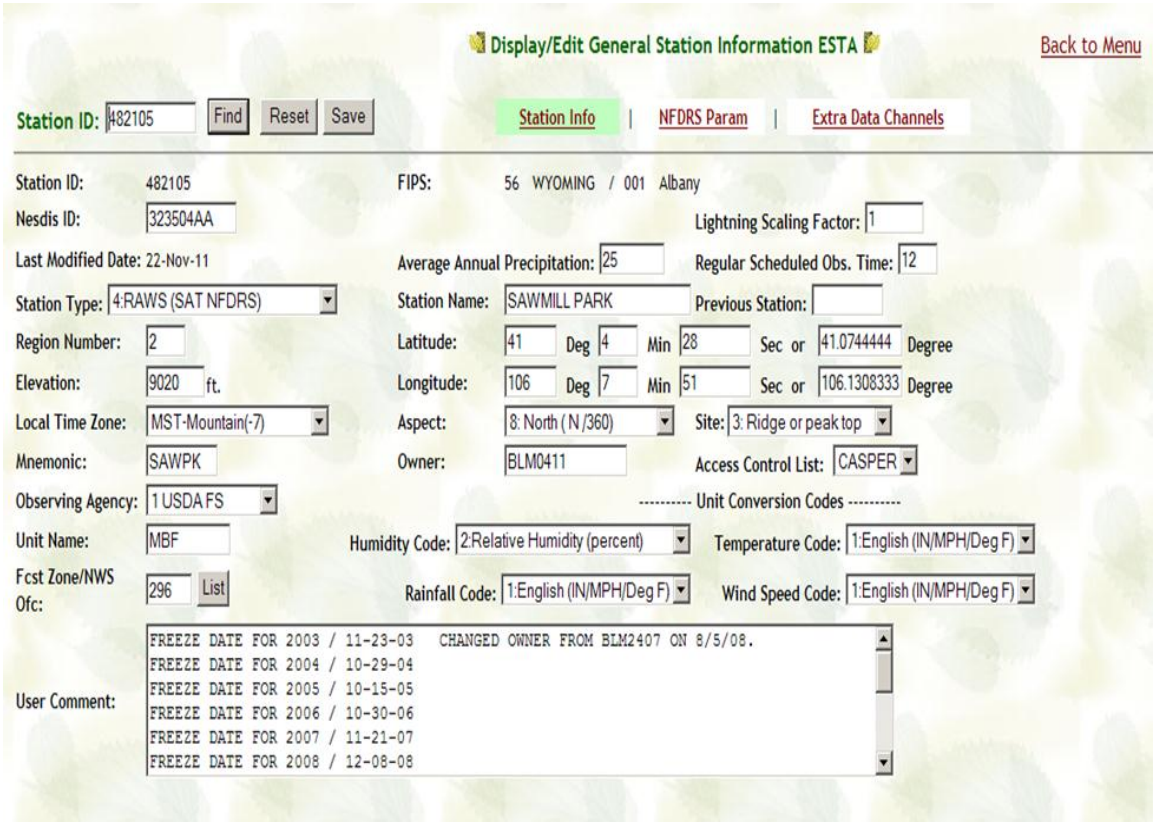
Snow Flag	N

SOW Thresholds (No Precip last 24 Hrs)	Pct Psbl	SOW & Wet Flag Thresholds (Precip last 24 Hrs)	CC2*
PCNT_Clear	85	1HR_Drizzle (inches)	0.1
PCNT_Scattered	75	1HR_Rain (inches)	0.15
PCNT_Broken	50	1HR_Showers (inches)	0.5
		3HR_DUR_WetFlag (hours)	2
		3HR_AMT_WetFlag (inches)	0.75
		24HR_DUR_WetFlag (hours)	10
		24HR_AMT_WetFlag (inches)	1.5

* Climate Class of the first priority Fuel Model (7G)

	Pri	ID	** 78 NFDRS Only ** HS	Herb Date	Greenup Date	88sb	Slp	Grs	Cli	Herb FM	Woody FM	X-1000	Staffing Idx Breakpoints SI	DC	Low SI%	Low Val	High SI%	High Val
	1	7G	G	11-Apr-12	11-Apr-12		2	P	2	3	60	6	EC	5	80	78	95	90
	2	7C	G	11-Apr-12	11-Apr-12		2	P	2	3	60	6	BI	5	80	60	95	77
	3	7T	G	11-Apr-12	11-Apr-12		2	P	2	3	60	6	BI	5	80	88	95	120

482105 Sawmill Park



Display/Edit General Station Information ESTA

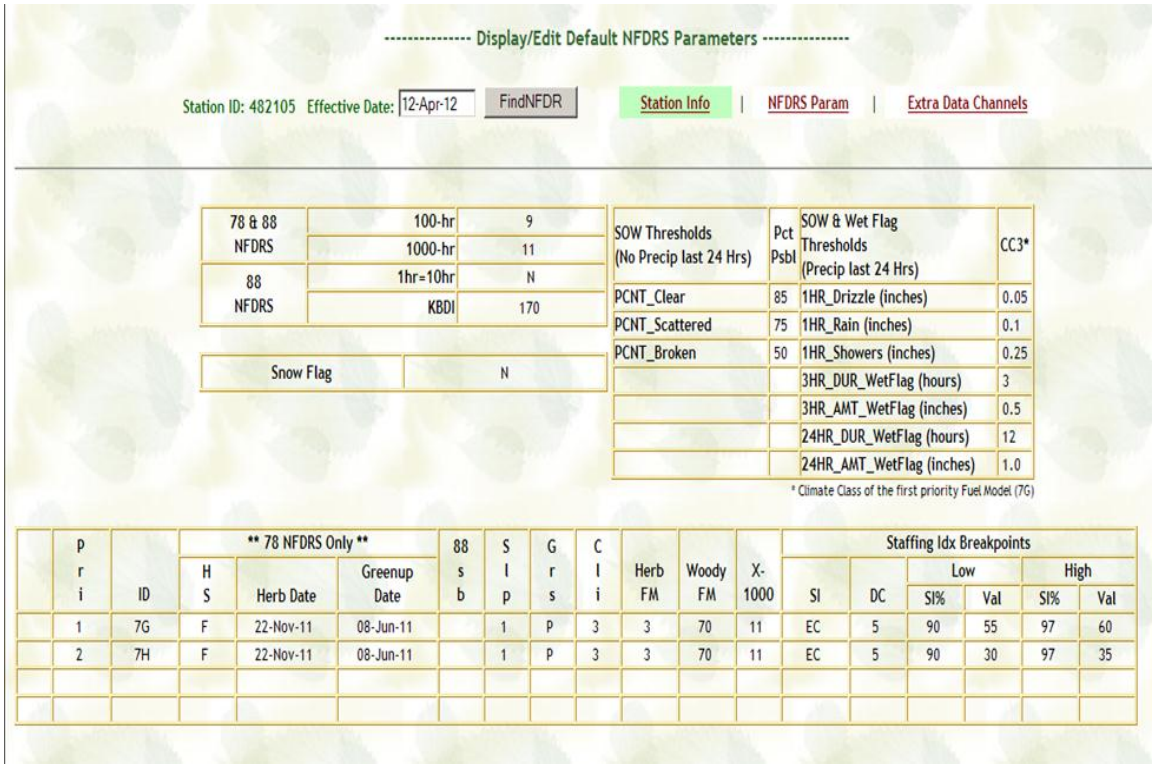
Back to Menu

Station ID: 482105 Find Reset Save | Station Info | NFDRS Param | Extra Data Channels

Station ID:	482105	FIPS:	56 WYOMING / 001 Albany
Nesdis ID:	323504AA	Lightning Scaling Factor:	1
Last Modified Date:	22-Nov-11	Average Annual Precipitation:	25
Regular Scheduled Obs. Time:	12		
Station Type:	4:RAWS (SAT NFDRS)	Station Name:	SAWMILL PARK
Previous Station:			
Region Number:	2	Latitude:	41 Deg 4 Min 28 Sec or 41.0744444 Degree
Elevation:	9020 ft.	Longitude:	106 Deg 7 Min 51 Sec or 106.1308333 Degree
Local Time Zone:	MST-Mountain(-7)	Aspect:	8: North (N /360)
Site:	3: Ridge or peak top		
Mnemonic:	SAWPK	Owner:	BLM0411
Access Control List:	CASPER		
Observing Agency:	1 USDA FS	---------- Unit Conversion Codes ----------	
Unit Name:	MBF	Humidity Code:	2:Relative Humidity (percent)
Temperature Code:	1:English (IN/MPH/Deg F)		
Fcst Zone/NWS Ofc:	296 List	Rainfall Code:	1:English (IN/MPH/Deg F)
Wind Speed Code:	1:English (IN/MPH/Deg F)		

User Comment:

```
FREEZE DATE FOR 2003 / 11-23-03   CHANGED OWNER FROM BLM2407 ON 8/5/08.
FREEZE DATE FOR 2004 / 10-29-04
FREEZE DATE FOR 2005 / 10-15-05
FREEZE DATE FOR 2006 / 10-30-06
FREEZE DATE FOR 2007 / 11-21-07
FREEZE DATE FOR 2008 / 12-08-08
```



---------- Display/Edit Default NFDRS Parameters ----------

Station ID: 482105 Effective Date: 12-Apr-12 FindNFDR | Station Info | NFDRS Param | Extra Data Channels

78 & 88 NFDRS	100-hr	9
	1000-hr	11
88 NFDRS	1hr=10hr	N
	KBDI	170

Snow Flag	N

SOW Thresholds (No Precip last 24 Hrs)	Pct Psbl	SOW & Wet Flag Thresholds (Precip last 24 Hrs)	CC3*
PCNT_Clear	85	1HR_Drizzle (inches)	0.05
PCNT_Scattered	75	1HR_Rain (inches)	0.1
PCNT_Broken	50	1HR_Showers (inches)	0.25
		3HR_DUR_WetFlag (hours)	3
		3HR_AMT_WetFlag (inches)	0.5
		24HR_DUR_WetFlag (hours)	12
		24HR_AMT_WetFlag (inches)	1.0

* Climate Class of the first priority Fuel Model (7G)

	Pri	ID	** 78 NFDRS Only ** HS	Herb Date	Greenup Date	88sb	Slp	Grs	Cli	Herb FM	Woody FM	X-1000	Staffing Idx Breakpoints SI	DC	Low SI%	Low Val	High SI%	High Val
	1	7G	F	22-Nov-11	08-Jun-11		1	P	3	3	70	11	EC	5	90	55	97	60
	2	7H	F	22-Nov-11	08-Jun-11		1	P	3	3	70	11	EC	5	90	30	97	35

482106 Dodge Creek

Display/Edit General Station Information ESTA

Back to Menu

Station ID: 482106 Find Reset Save | Station Info | NFDRS Param | Extra Data Channels

Station ID:	482106	FIPS:	56 WYOMING / 001 Albany
Nesdis ID:	3276E38A	Lightning Scaling Factor:	1
Last Modified Date:	11-Apr-12	Average Annual Precipitation:	14
Regular Scheduled Obs. Time:	12		
Station Type:	4:RAWS (SAT NFDRS)	Station Name:	DODGE CREEK
Previous Station:			
Region Number:	4	Latitude:	41 Deg 57 Min 58 Sec or 41.9661111 Degree
Elevation:	7100 ft.	Longitude:	105 Deg 30 Min 57 Sec or 105.5158333 Degree
Local Time Zone:	MST-Mountain(-7)	Aspect:	0: Flat/None (FL/0)
Site:	1: Valley bottom or flat		
Mnemonic:	DODGE	Owner:	BLM1502
Access Control List:	WYRWC		
Observing Agency:	2 USDI BLM	---------- Unit Conversion Codes ----------	
Unit Name:	RAD BLM	Humidity Code:	2:Relative Humidity (percent)
Temperature Code:	1:English (IN/MPH/Deg F)		
Fcst Zone/NWS Ofc:	295 List	Rainfall Code:	1:English (IN/MPH/Deg F)
Wind Speed Code:	1:English (IN/MPH/Deg F)		

User Comment:

```
NEW STATION ID NUMBERS
FREEZE DATE FOR 2003 / 11-22-03
FREEZE DATE FOR 2004 / 10-29-04
7G ADDED AT REQUEST OF RMC WX
FREEZE DATE FOR 2005 / 10-15-05
FREEZE DATE FOR 2006 / 10-30-06
```

---------- Display/Edit Default NFDRS Parameters ----------

Station ID: 482106 Effective Date: 12-Apr-12 FindNFDR | Station Info | NFDRS Param | Extra Data Channels

78 & 88 NFDRS	100-hr	9
	1000-hr	9
88 NFDRS	1hr=10hr	N
	KBDI	134
Snow Flag		N

SOW Thresholds (No Precip last 24 Hrs)	Pct Psbl	SOW & Wet Flag Thresholds (Precip last 24 Hrs)	CC3*
PCNT_Clear	85	1HR_Drizzle (inches)	0.05
PCNT_Scattered	75	1HR_Rain (inches)	0.1
PCNT_Broken	50	1HR_Showers (inches)	0.25
		3HR_DUR_WetFlag (hours)	3
		3HR_AMT_WetFlag (inches)	0.5
		24HR_DUR_WetFlag (hours)	12
		24HR_AMT_WetFlag (inches)	1.0

* Climate Class of the first priority Fuel Model (7G)

	Pri	ID	** 78 NFDRS Only ** HS	Herb Date	Greenup Date	88 sb	Slp	Grs	CIi	Herb FM	Woody FM	X-1000	Staffing Idx Breakpoints SI	DC	Low SI%	Low Val	High SI%	High Val
	1	7G	G	10-Apr-12	10-Apr-12		1	P	3	8	70	6	EC	5	80	66	95	76
	2	7L	G	10-Apr-12	10-Apr-12		1	P	3	8	70	6	BI	5	80	55	95	74
	3	7T	G	10-Apr-12	10-Apr-12		1	P	3	8	70	6	BI	5	80	70	95	96
	4	7C	G	10-Apr-12	10-Apr-12		1	P	3	8	70	6	EC	5	80	19	95	23

Appendix D – Fire Family Plus Decision Points

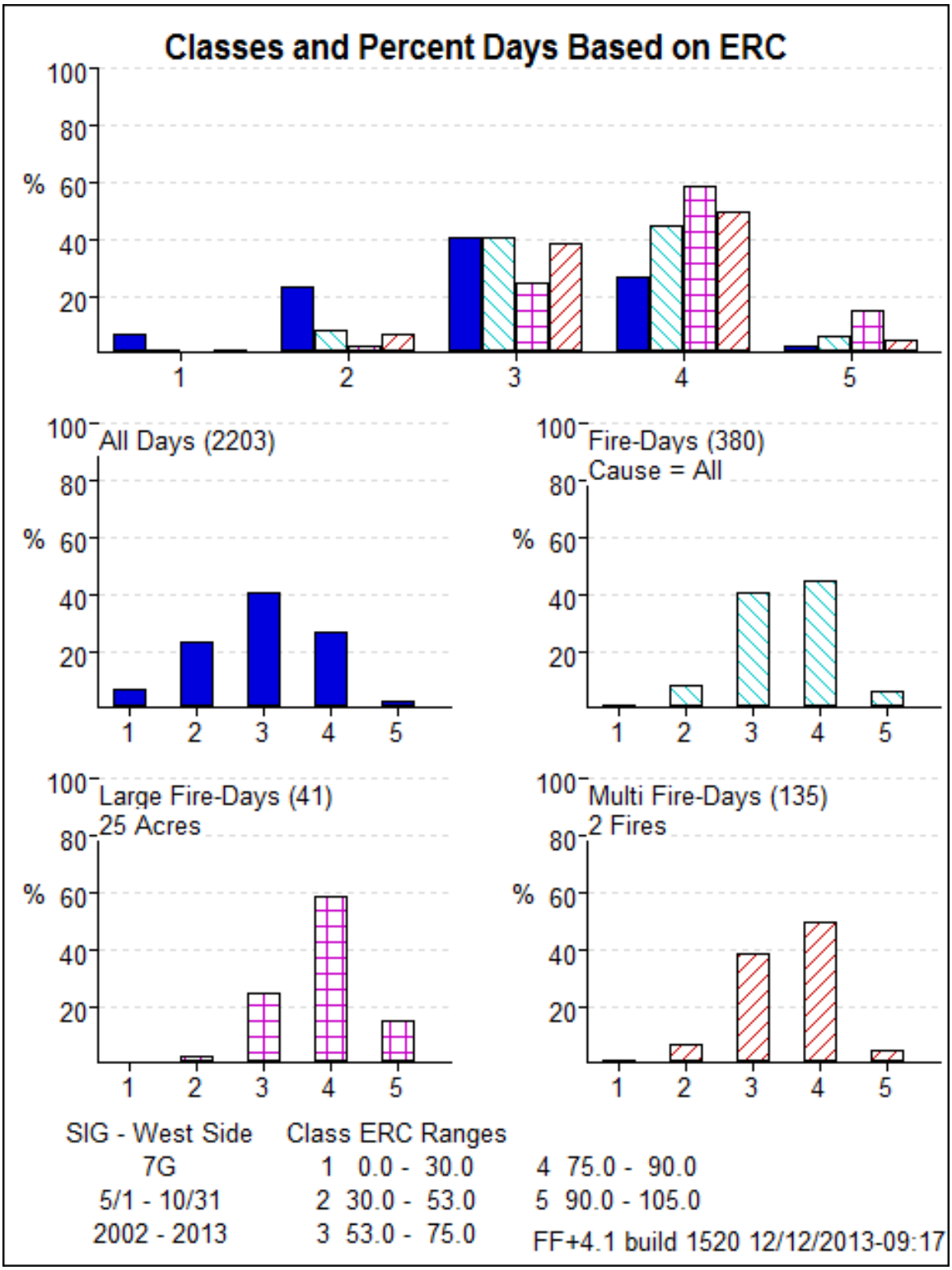
FireFamily Plus Decision Points
SIG - West Side
Variable: ERC

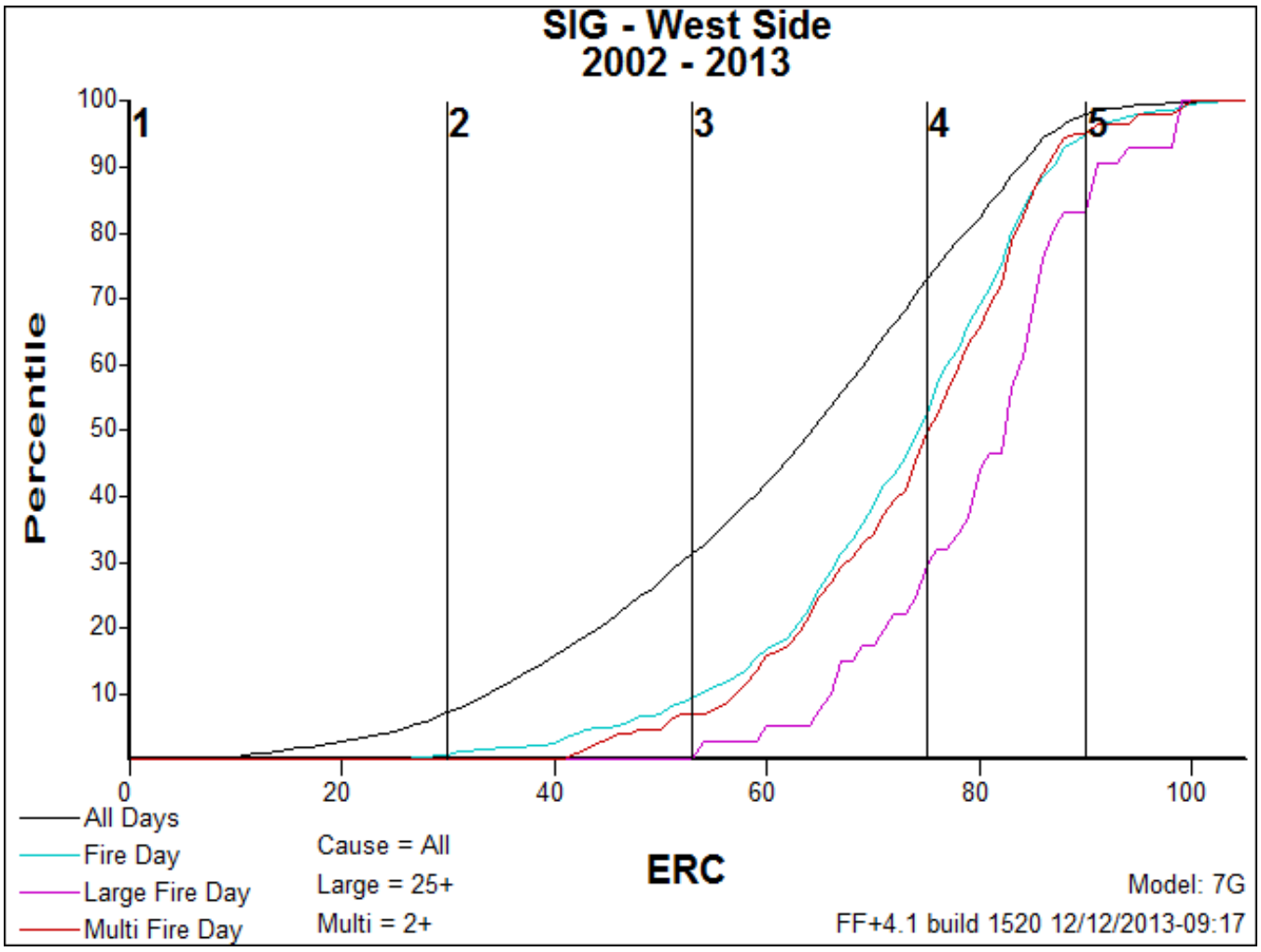
Time Frame: 5/1 - 10/31
Data Years: 2002 - 2013
Cause = All
Large Fire Day = 25 acres
Multiple Fire Day = 2 fires

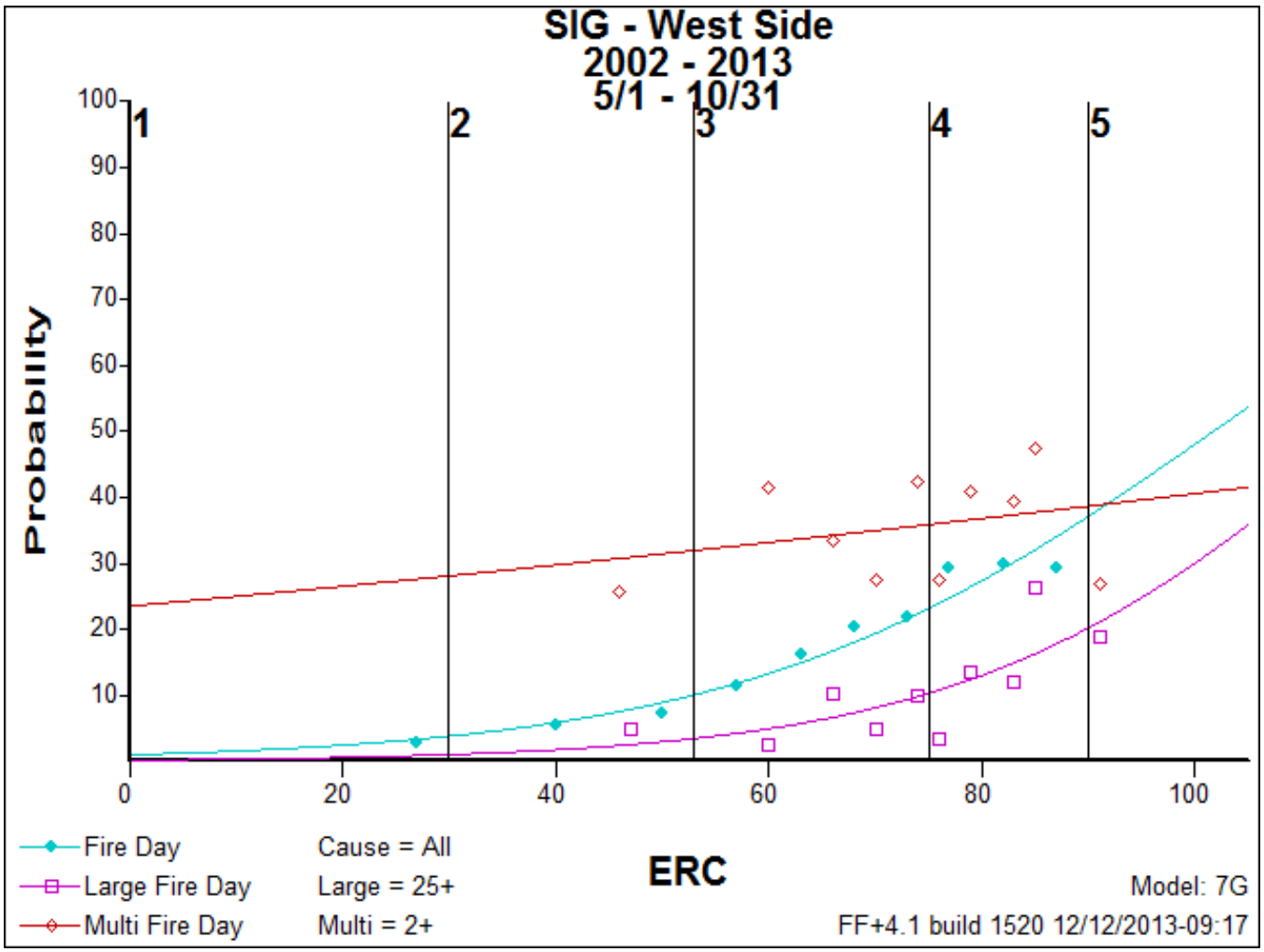
Stations in SIG - West Side:
481801 - MUDDY CREEK Model: 7G1PE2 Weight: 1.00
481903 - ANDERSON RIDGE Model: 7G1PE3 Weight: 1.00
481904 - SNOW SPRING CREEK Model: 7G1PE2 Weight: 1.00

Percentages Based On Current Class Definitions													Model Probabilities (%)		
Cls #	Index Range	All-Days #	All-Days %	Fire-Days #	Fire-Days %FD	Fire-Days %AD	Large Fire-Days #	Large Fire-Days %LFD	Large Fire-Days %FD	Large Fire-Days %AD	Multi-Fire-Days #	Multi-Fire-Days %MFD	Multi-Fire-Days %FD	Multi-Fire-Days %AD	Fire Day	Large F-Day	Multi F-Day
1	0- 29	141	6	3	1	2	0	0	0	0	1	1	33	1	1- 4	0- 1	24- 28
2	30- 52	517	23	30	8	6	1	2	3	0	9	7	30	2	4- 10	1- 3	28- 32
3	53- 74	891	40	154	41	17	10	24	6	1	52	39	34	6	10- 22	4- 10	32- 36
4	75- 89	594	27	170	45	29	24	59	14	4	67	50	39	11	23- 36	10- 20	36- 39
5	90-104	60	3	23	6	38	6	15	26	10	6	4	26	10	37- 53	20- 35	39- 41
		2203		380			41				135						

Values in columns denoted by an * are displayed in the bar charts.


Classes and Percent Days Based on ERC
100
80
%
60
40
20
1
2
3
4
5
All Days (2203)
Fire-Days (380)
Cause = All
Large Fire-Days (41)
25 Acres
Multi Fire-Days (135)
2 Fires
SIG - West Side
7G
5/1 - 10/31
2002 - 2013
Class ERC Ranges
1 0.0 - 30.0
2 30.0 - 53.0
3 53.0 - 75.0
4 75.0 - 90.0
5 90.0 - 105.0
FF+4.1 build 1520 12/12/2013-09:17


SIG - West Side
2002 - 2013
Percentile
ERC
1
2
3
4
5
All Days
Fire Day
Large Fire Day
Multi Fire Day
Cause = All
Large = 25+
Multi = 2+
Model: 7G
FF+4.1 build 1520 12/12/2013-09:17


SIG - West Side
2002 - 2013
5/1 - 10/31
1
2
3
4
5
Probability
100
90
80
70
60
50
40
30
20
10
0
20
40
60
80
100
ERC
Fire Day
Large Fire Day
Multi Fire Day
Cause = All
Large = 25+
Multi = 2+
Model: 7G
FF+4.1 build 1520 12/12/2013-09:17

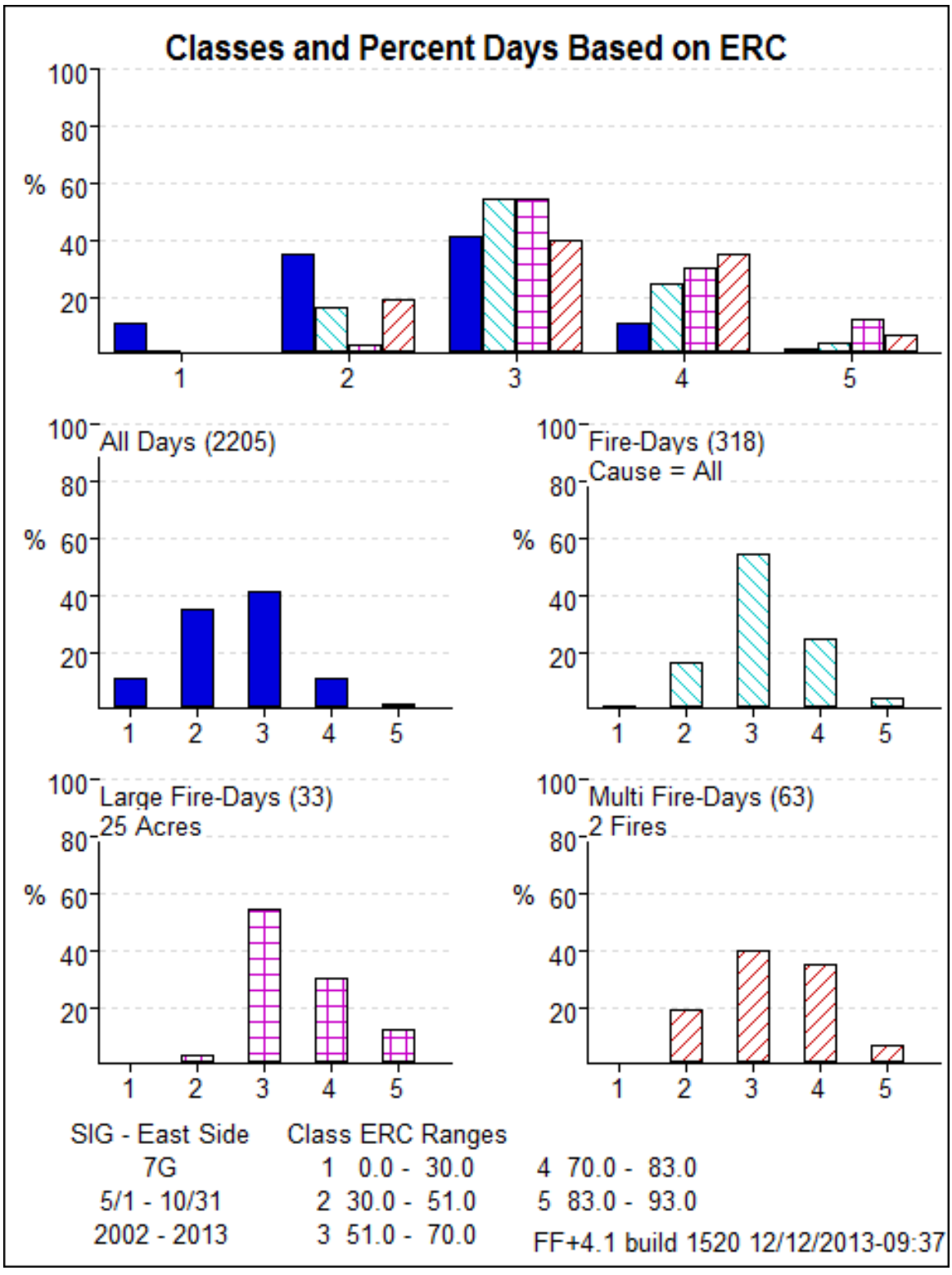
FireFamily Plus Decision Points
SIG - East Side
Variable: ERC

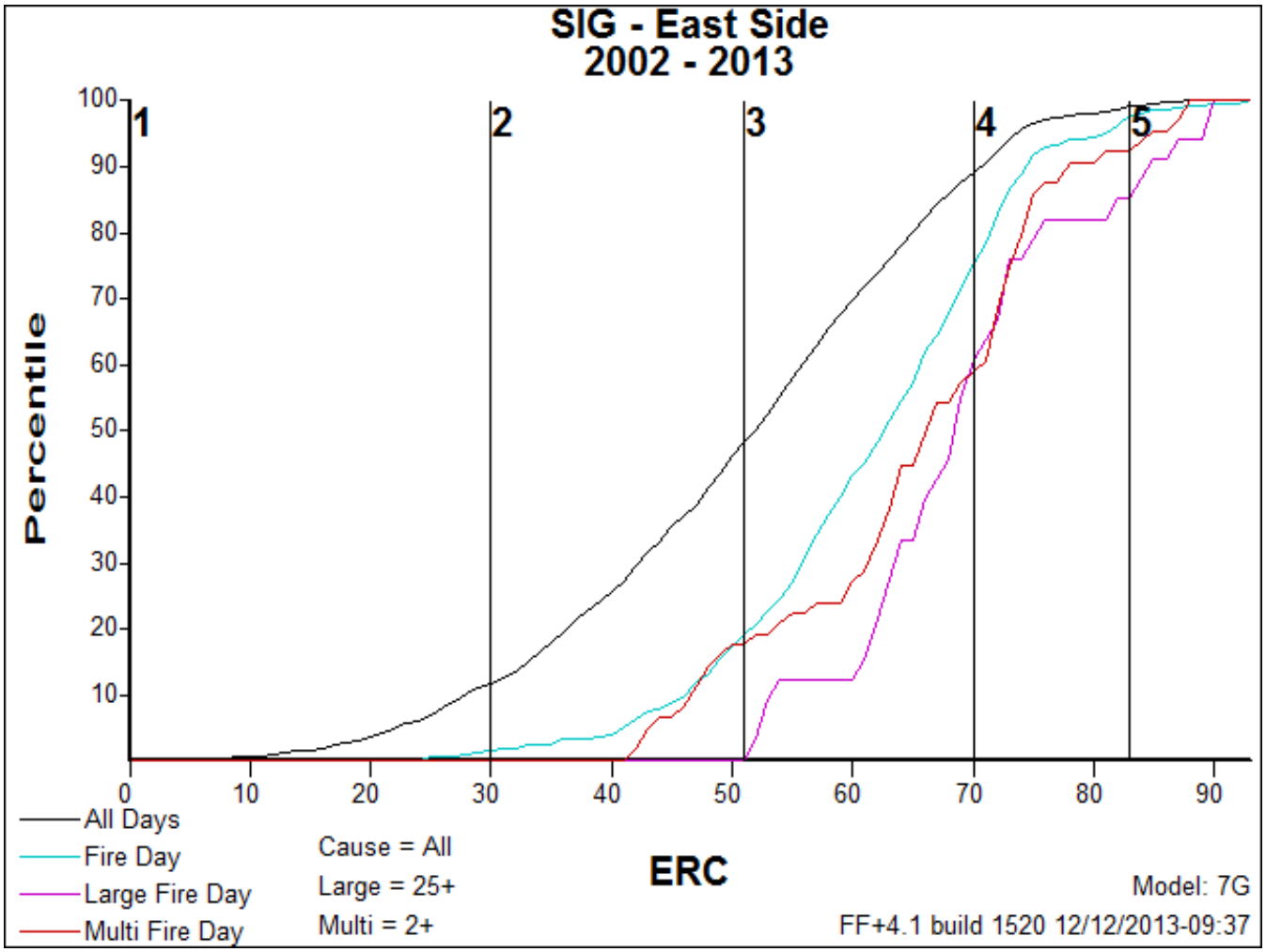
Time Frame: 5/1 - 10/31
Data Years: 2002 - 2013
Cause = All
Large Fire Day = 25 acres
Multiple Fire Day = 2 fires

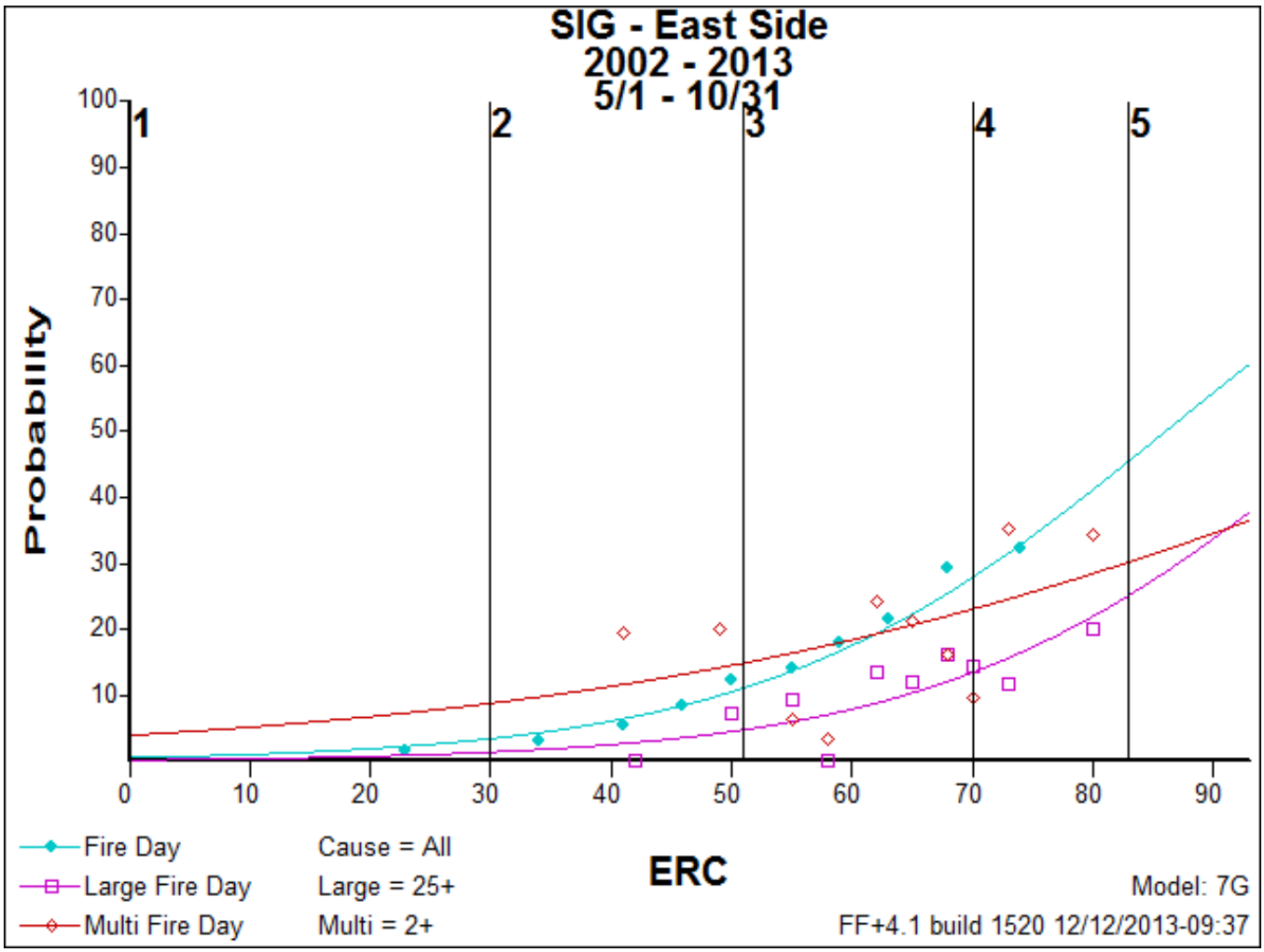
Stations in SIG - East Side:
482011 - COW CREEK Model: 7G2PE2 Weight: 1.00
482105 - SAWMILL PARK Model: 7G1PE3 Weight: 1.00
482106 - DODGE CREEK Model: 7G1PE3 Weight: 1.00

	Percentages Based On Current Class Definitions												Model Probabilities (%)		
Cls #	Index Range	All-Days #	All-Days %	Fire-Days #	Fire-Days %FD	Fire-Days %AD	Large Fire-Days #	Large Fire-Days %LFD	Large Fire-Days %FD	Large Fire-Days %AD	Multi-Fire-Days #	Multi-Fire-Days %MFD	Multi-Fire-Days %FD	Multi-Fire-Days %AD	Fire Day	Large F-Day	Multi F-Day
1	0- 29	238	11	4	1	2	0	0	0	0	0	0	0	0	1- 3	0- 1	4- 9
2	30- 50	778	35	51	16	7	1	3	2	0	12	19	24	2	3- 11	1- 5	9- 15
3	51- 69	912	41	173	54	19	18	55	10	2	25	40	14	3	11- 27	5- 13	15- 23
4	70- 82	244	11	78	25	32	10	30	13	4	22	35	28	9	28- 44	14- 24	23- 30
5	83- 92	33	1	12	4	36	4	12	33	12	4	6	33	12	46- 59	25- 37	30- 36
		2205		318			33				63						

Values in columns denoted by an * are displayed in the bar charts.


Classes and Percent Days Based on ERC
100
80
%
60
40
20
1
2
3
4
5
All Days (2205)
Fire-Days (318)
Cause = All
Large Fire-Days (33)
25 Acres
Multi Fire-Days (63)
2 Fires
SIG - East Side
7G
5/1 - 10/31
2002 - 2013
Class ERC Ranges
1 0.0 - 30.0
2 30.0 - 51.0
3 51.0 - 70.0
4 70.0 - 83.0
5 83.0 - 93.0
FF+4.1 build 1520 12/12/2013-09:37


SIG - East Side
2002 - 2013
Percentile
ERC
1
2
3
4
5
All Days
Fire Day
Large Fire Day
Multi Fire Day
Cause = All
Large = 25+
Multi = 2+
Model: 7G
FF+4.1 build 1520 12/12/2013-09:37


SIG - East Side
2002 - 2013
5/1 - 10/31
1
2
3
4
5
Probability
100
90
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60
70
80
90
ERC
Fire Day
Large Fire Day
Multi Fire Day
Cause = All
Large = 25+
Multi = 2+
Model: 7G
FF+4.1 build 1520 12/12/2013-09:37

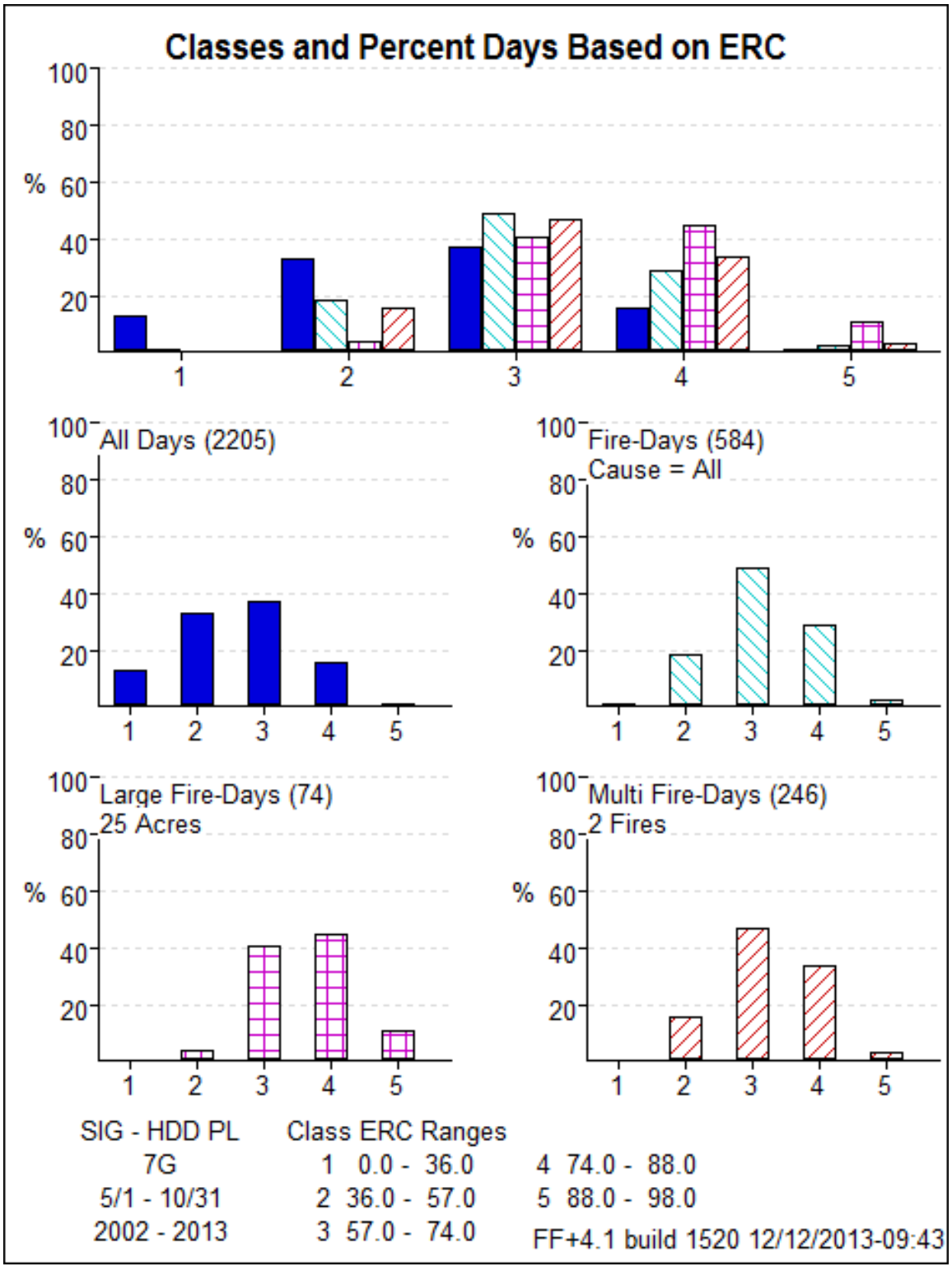
FireFamily Plus Decision Points
SIG - HDD PL
Variable: ERC

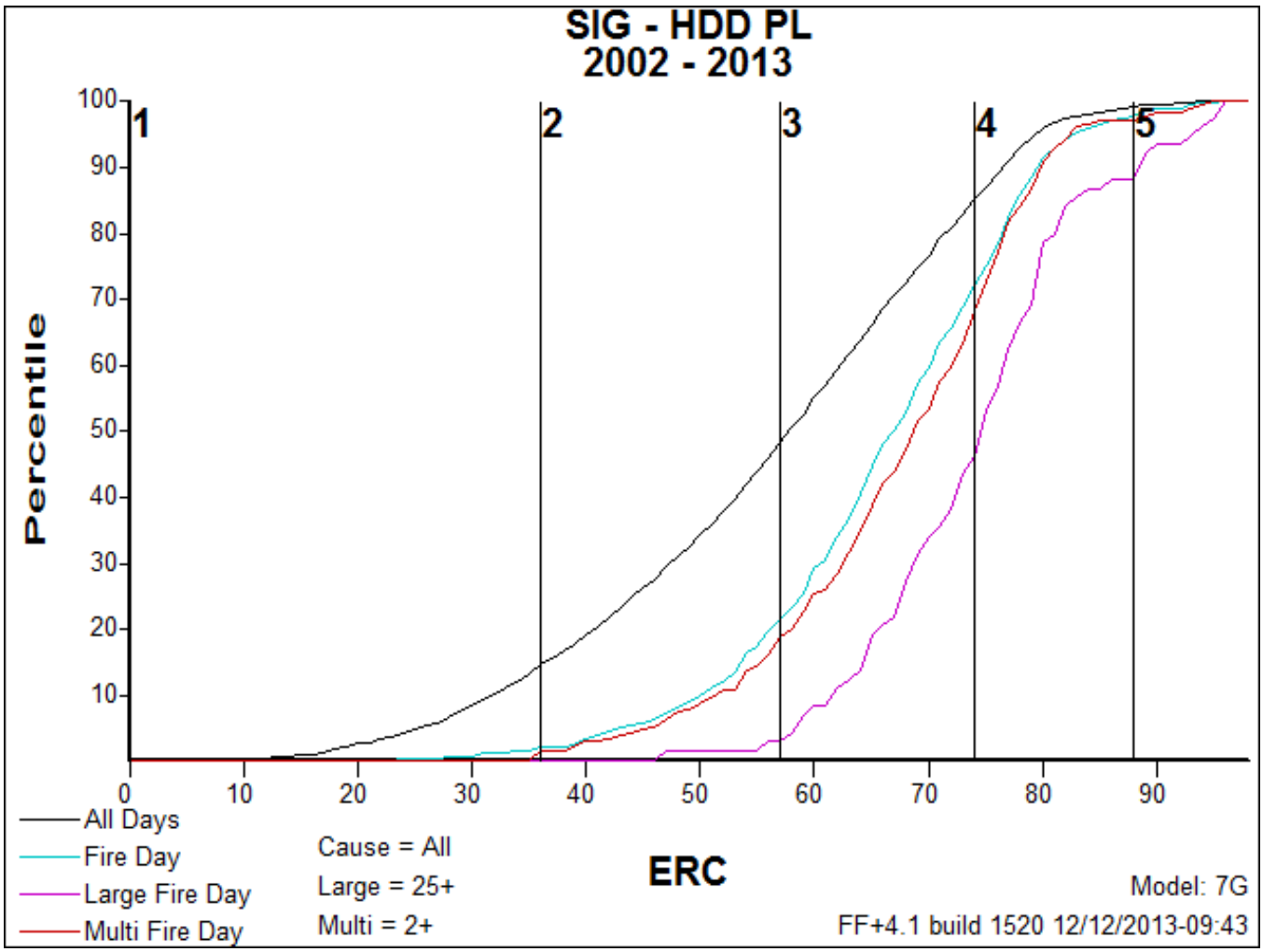
Time Frame: 5/1 - 10/31
Data Years: 2002 - 2013
Cause = All
Large Fire Day = 25 acres
Multiple Fire Day = 2 fires

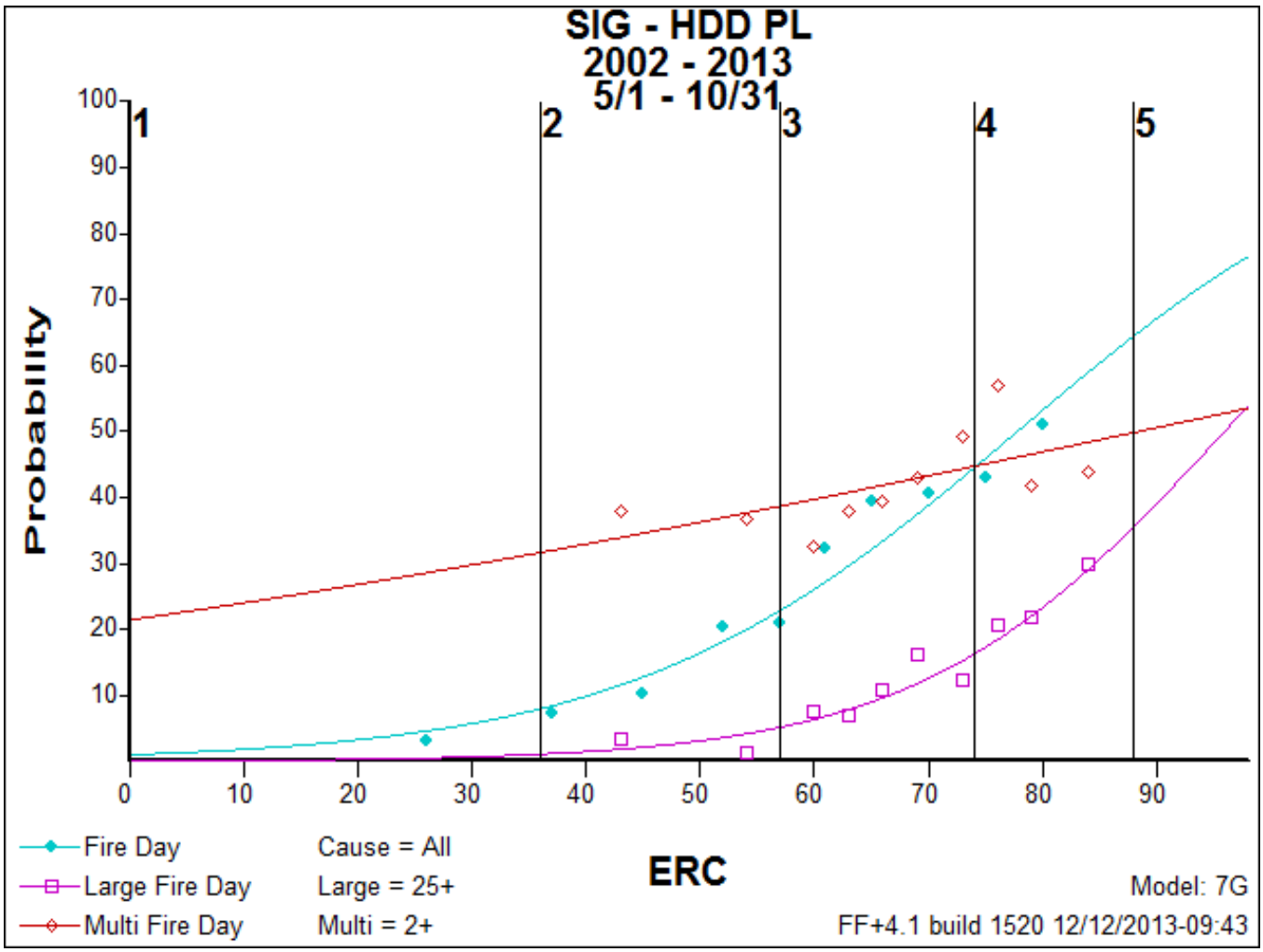
Stations in SIG - HDD PL:
481801 - MUDDY CREEK Model: 7G1PE2 Weight: 1.00
481903 - ANDERSON RIDGE Model: 7G1PE3 Weight: 1.00
481904 - SNOW SPRING CREEK Model: 7G1PE2 Weight: 1.00
482011 - COW CREEK Model: 7G2PE2 Weight: 1.00
482105 - SAWMILL PARK Model: 7G1PE3 Weight: 1.00
482106 - DODGE CREEK Model: 7G1PE3 Weight: 1.00

Percentages Based On Current Class Definitions														Model Probabilities (%)		
Cls	Index	All-Days		Fire-Days			Large Fire-Days				Multi-Fire-Days				Fire	Large	Multi
#	Range	#	%	#	%FD	%AD	#	%LFD	%FD	%AD	#	%MFD	%FD	%AD	Day	F-Day	F-Day
1	0- 35	286	13	8	1	3	0	0	0	0	1	0	13	0	1- 8	0- 1	21- 31
2	36- 56	722	33	106	18	15	3	4	3	0	39	16	37	5	8- 22	1- 5	32- 38
3	57- 73	817	37	287	49	35	30	41	10	4	116	47	40	14	23- 43	5- 15	39- 44
4	74- 87	352	16	167	29	47	33	45	20	9	83	34	50	24	45- 63	16- 34	45- 50
5	88- 97	28	1	16	3	57	8	11	50	29	7	3	44	25	65- 76	36- 52	50- 53
		2205		584			74				246						

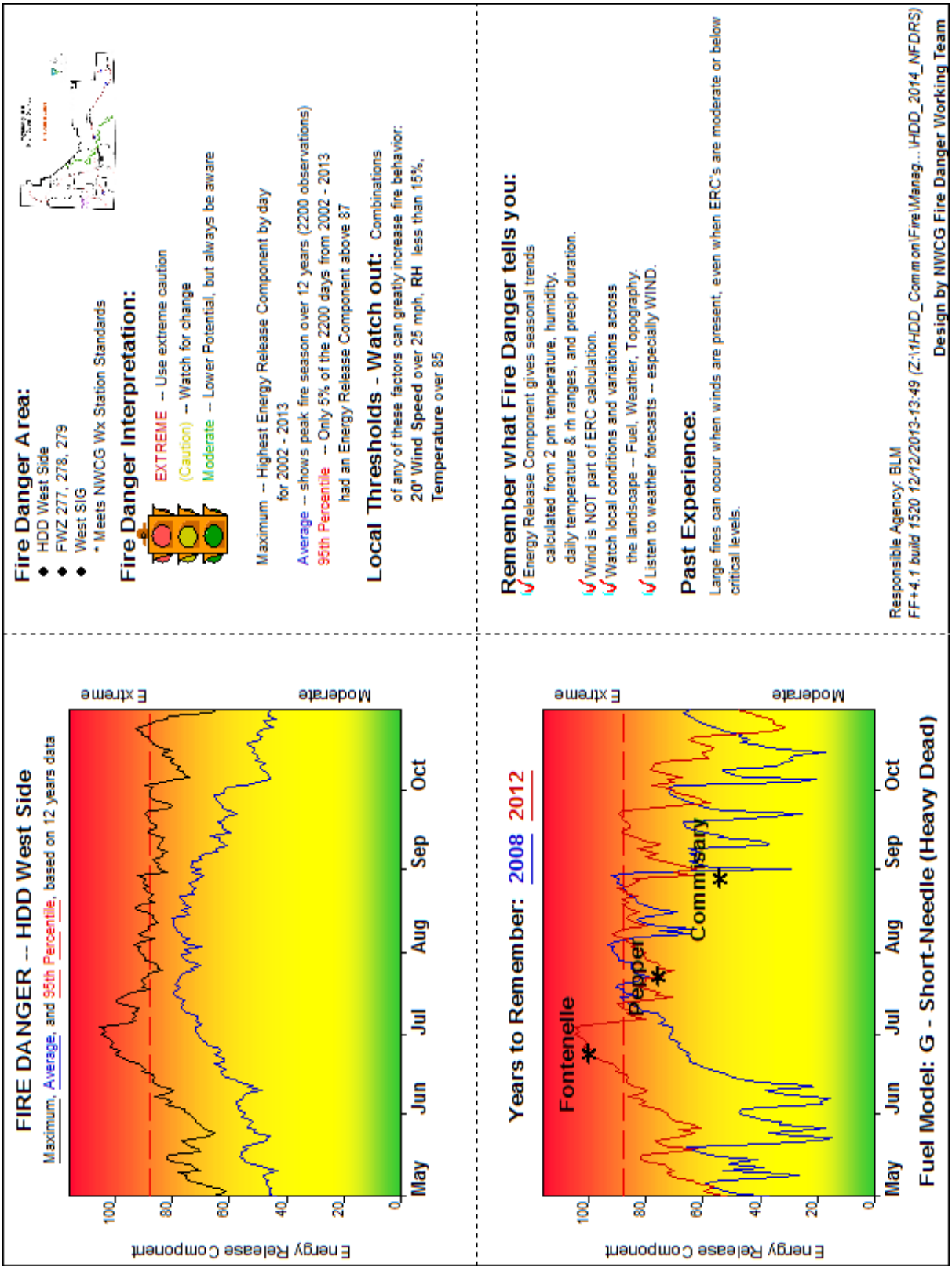
Values in columns denoted by an * are displayed in the bar charts.


Classes and Percent Days Based on ERC
100
80
%
60
40
20
1
2
3
4
5
All Days (2205)
Fire-Days (584)
Cause = All
Large Fire-Days (74)
25 Acres
Multi Fire-Days (246)
2 Fires
SIG - HDD PL
7G
5/1 - 10/31
2002 - 2013
Class ERC Ranges
1 0.0 - 36.0
2 36.0 - 57.0
3 57.0 - 74.0
4 74.0 - 88.0
5 88.0 - 98.0
FF+4.1 build 1520 12/12/2013-09:43


SIG - HDD PL
2002 - 2013
Percentile
ERC
1
2
3
4
5
All Days
Fire Day
Large Fire Day
Multi Fire Day
Cause = All
Large = 25+
Multi = 2+
Model: 7G
FF+4.1 build 1520 12/12/2013-09:43

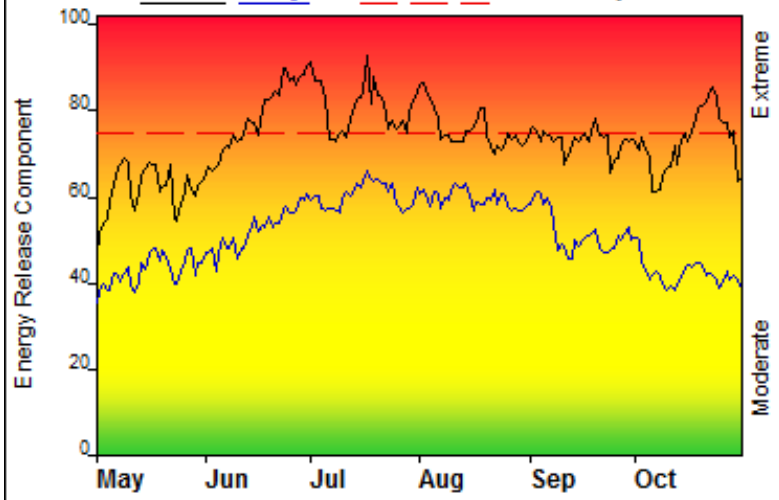

SIG - HDD PL
2002 - 2013
5/1 - 10/31
1
2
3
4
5
Probability
100
90
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60
70
80
90
ERC
Fire Day
Large Fire Day
Multi Fire Day
Cause = All
Large = 25+
Multi = 2+
Model: 7G
FF+4.1 build 1520 12/12/2013-09:43

Appendix E – Pocket Cards



FIRE DANGER -- HDD East Side

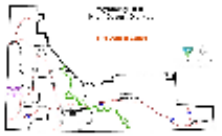
Maximum, Average, and 95th Percentile, based on 12 years data



Fire Danger Area:

- HDD East Side
- FWZ 303 - 310
- East SIG

* Meets NWCG Wx Station Standards



Fire Danger Interpretation:

EXTREME -- Use extreme caution

(Caution) -- Watch for change

Moderate -- Lower Potential, but always be aware

Maximum -- Highest Energy Release Component by day for 2002 - 2013

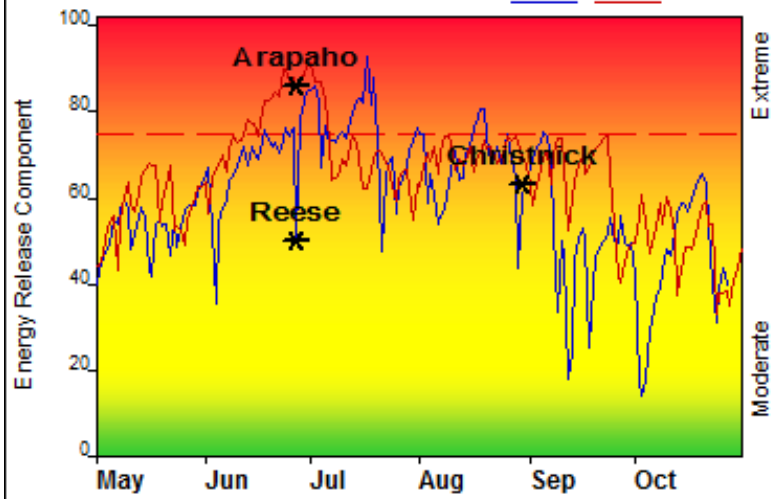
Average -- shows peak fire season over 12 years (2202 observations)

95th Percentile -- Only 5% of the 2202 days from 2002 - 2013 had an Energy Release Component above 74

Local Thresholds - Watch out:

Combinations of any of these factors can greatly increase fire behavior:
20' Wind Speed over 25 mph, **RH** less than 15%, **Temperature** over 85

Years to Remember: 2002 2012



Fuel Model: G - Short-Needle (Heavy Dead)

Remember what Fire Danger tells you:

- Energy Release Component gives seasonal trends calculated from 2 pm temperature, humidity, daily temperature & rh ranges, and precip duration.
- Wind is NOT part of ERC calculation.
- Watch local conditions and variations across the landscape -- Fuel, Weather, Topography.
- Listen to weather forecasts -- especially WIND.

Past Experience:

Large fires can occur when high winds are present, even when ERC's are Moderate or Low

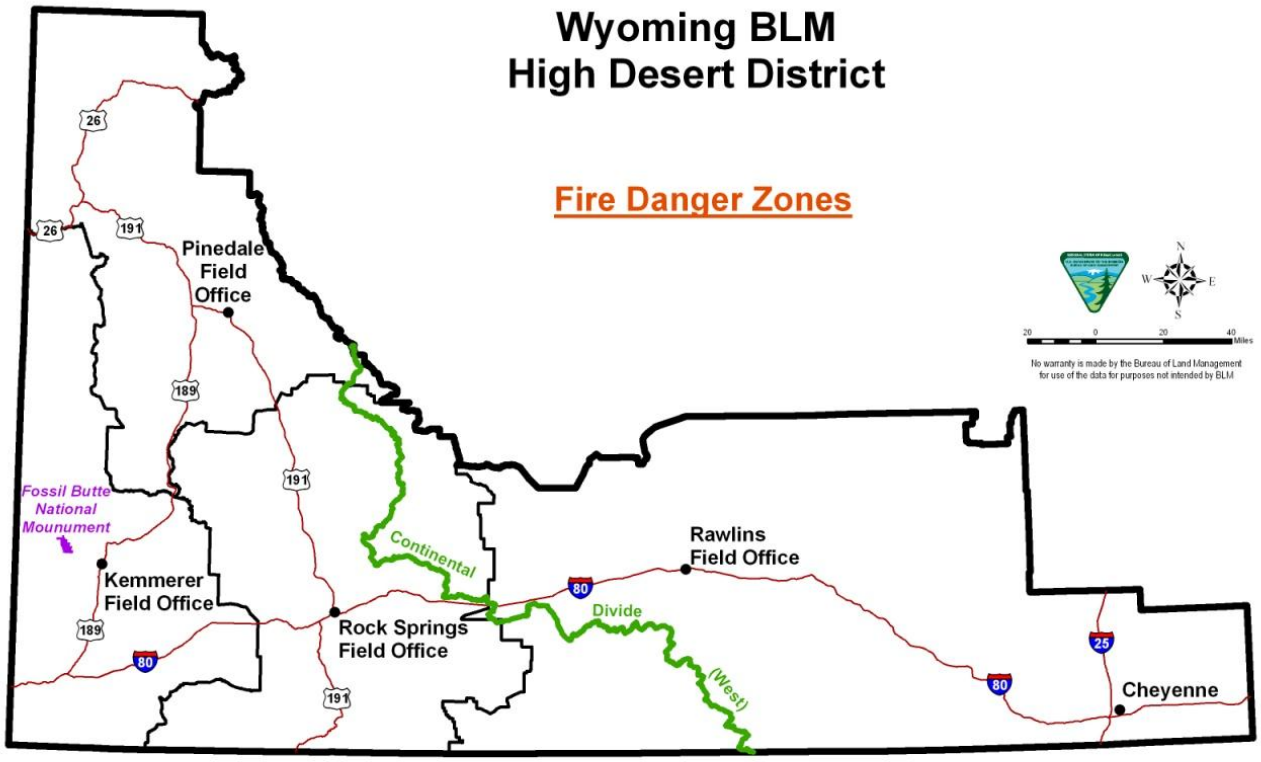
Responsible Agency: BLM

FF+4.1 build 1520 12/12/2013-13:50 (Z:\1HDD_Common\Fire\Manag...\HDD_2014_NFDRS)

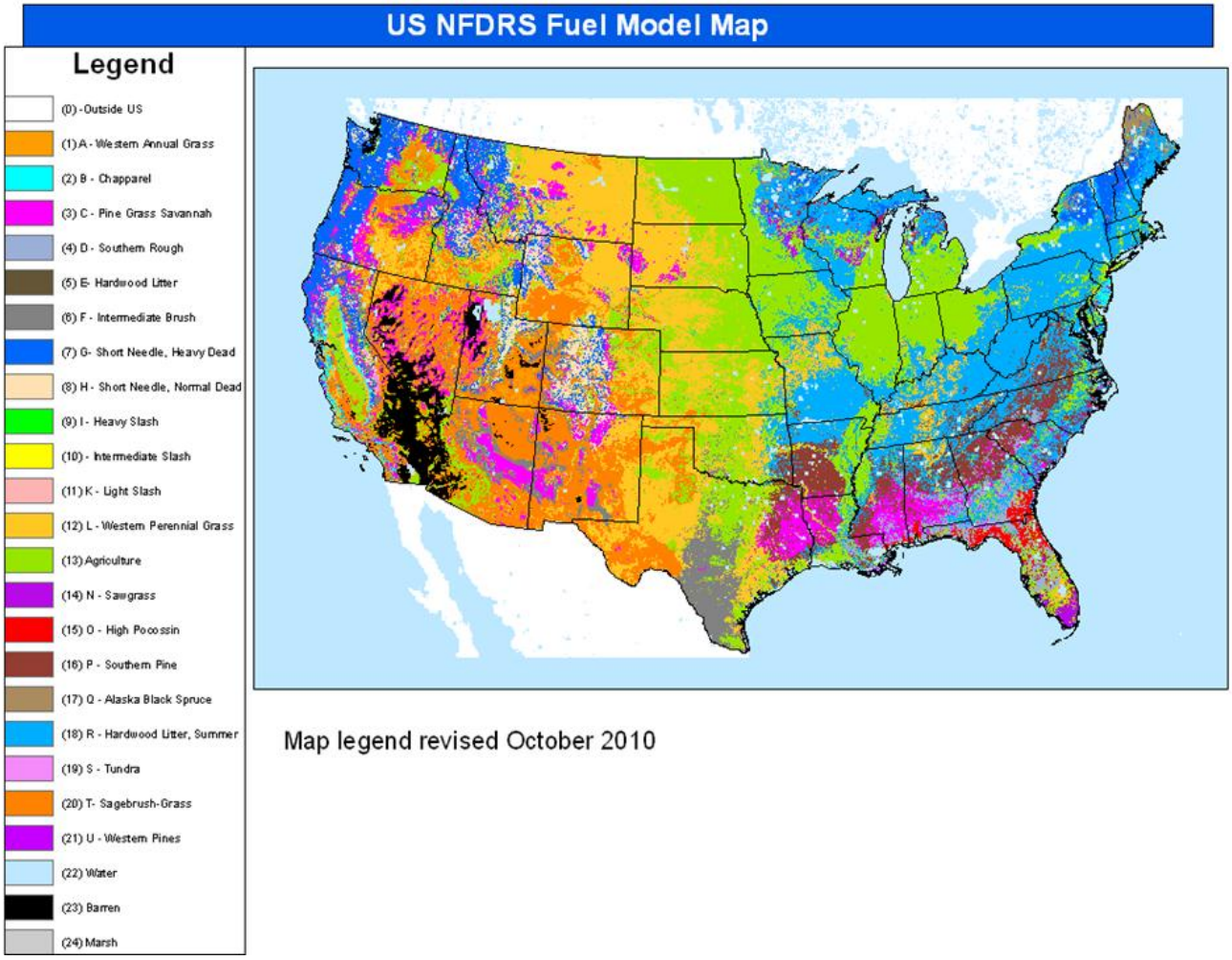
Design by NWCG Fire Danger Working Team

Appendix F – Maps

Fire Danger Rating Areas



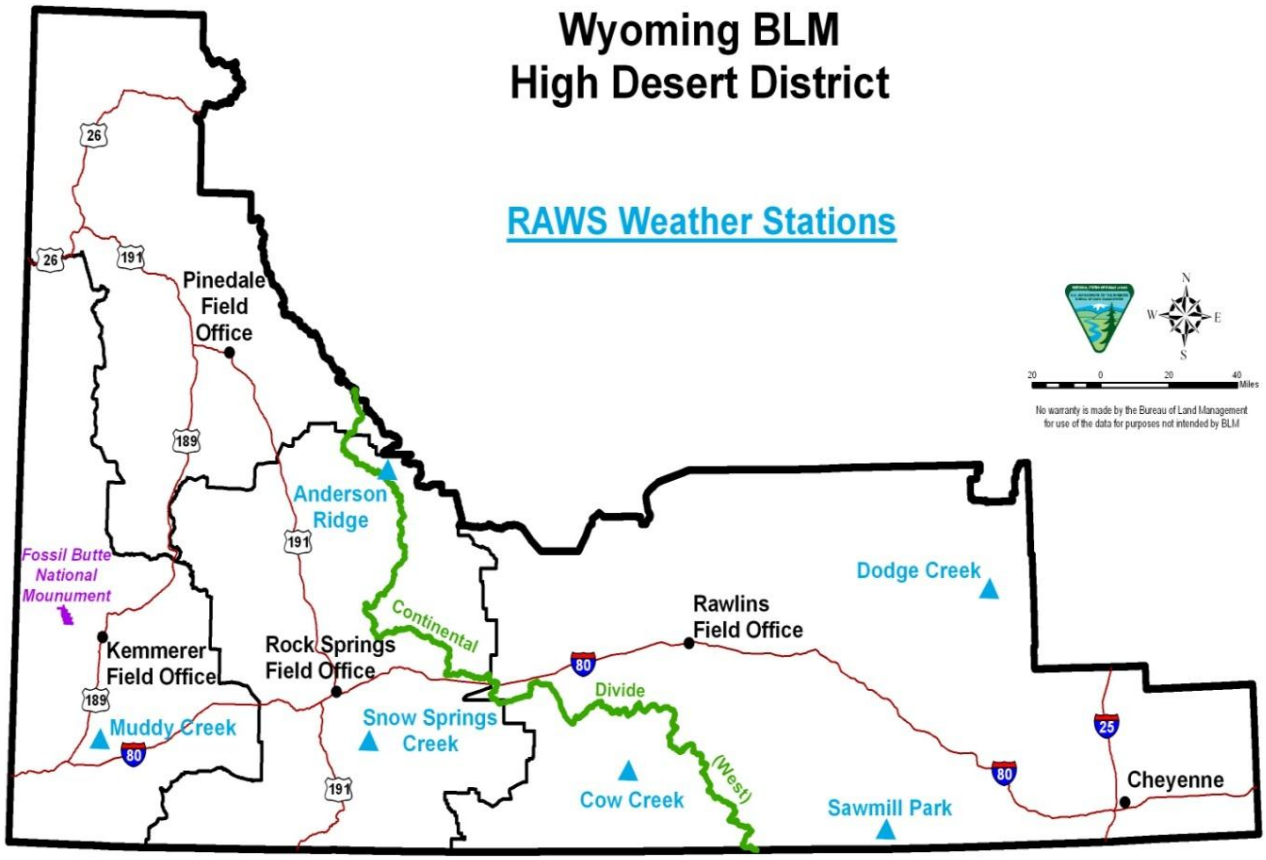
National Fire Danger Rating Fuel Model Map



Map legend revised October 2010

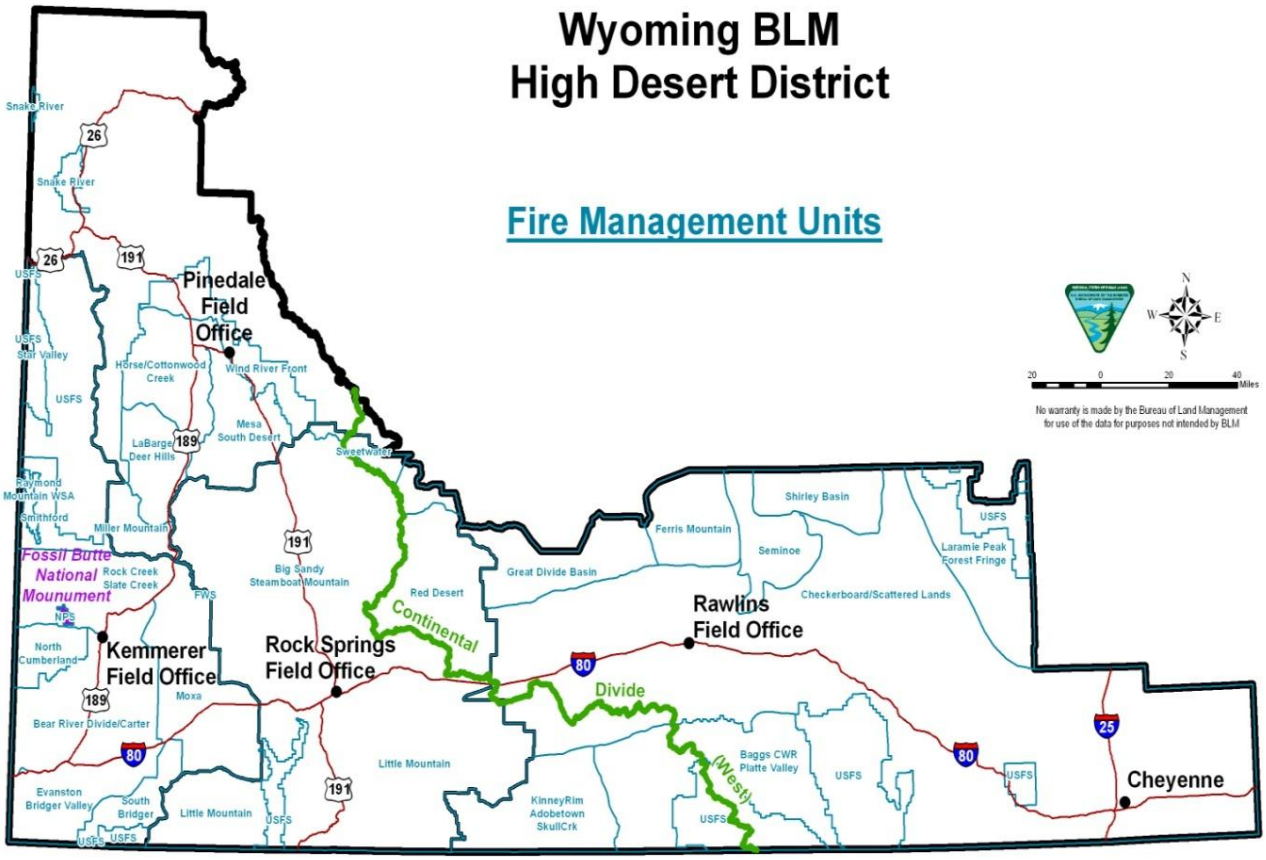
Wyoming High Desert District

RAWS Locations

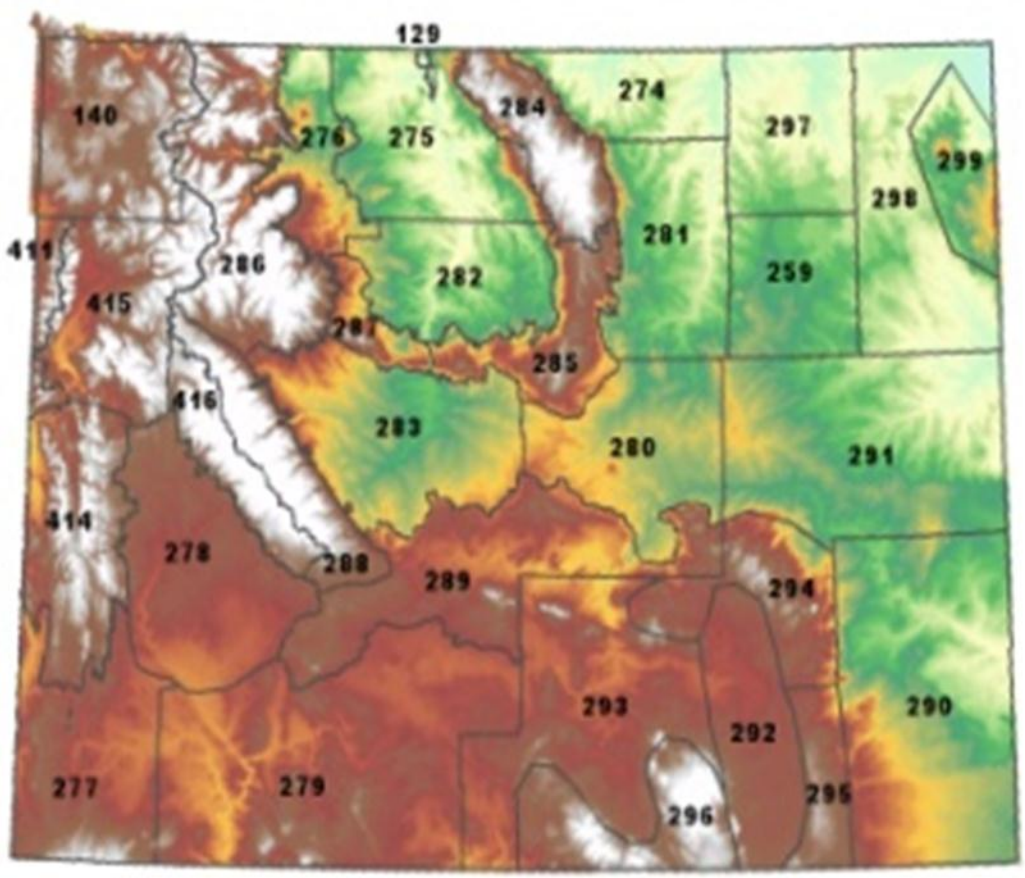


Wyoming High Desert District

Fire Management Units



Fire Weather Forecast Zones



Appendix G – Preparedness Step-Up Plan

High Desert District Fire

Emergency Preparedness Step-Up Plan

Overview

Step-up plans provide management direct with incremental preparedness actions in response to increased fire danger. Actions are delineated by 'Staffing Levels'. The High Desert District Fire Preparedness Step-Up Plan addresses the different Staffing Level for our unit and the corresponding planned actions that are intended to address those fire danger conditions. The High Desert Step-Up Plan is designed to enhance the unit's fire management capability during short periods (one burning period, Fourth of July or other pre-identified events) where normal staffing cannot meet initial attack, prevention, or detection needs.

Preparedness Levels (1-5) are determined by incremental measures of burning conditions, fire activity, and resource commitment. Preparedness Levels are different than Staffing Levels, which only takes fire danger into consideration. Determining Preparedness Levels for High Desert District is described in the main body of the HDD Fire Danger Operating and Preparedness Plan. Suggested actions for agency personnel based on the unit's Preparedness Level are included in Appendix B of the Fire Danger Operating and Preparedness Plan. See Interagency Standards for Fire and Fire Aviation Operations, Chapter 10 for more information regarding preparedness planning.

Plan

As part of the Step-Up Plan included in the table below, there are certain conditions where supplemental preparedness can be implemented. Conditions that apply to Preparedness Levels 2 thru 5 are as listed below:

A. FMO or acting or operations duty officer may activate extended staffing for mitigating actions designed to enhance the fire management capabilities during busy holiday weekends or other pre-identified events within the identified fire season where normal staffing cannot meet initial attack, prevention, or detection needs. Extended staffing for more effect fire suppression capabilities, necessary dispatch staff, 2 IA resources per affected zone, No aviation resources authorized for this condition.

B. Predicted or Actual LAL 6 for current burn period will cause DO to increase Staffing Level to next highest level for the current burn period for the district.

C. Predicted or observed LAL of 3 to 5 in Staffing Levels 3 through 4 will allow DO to increase Staffing Level within district to next highest level for that current burn period.

D. Drought – The standard measure for drought will be the U.S. Drought Monitor (http://droughtmonitor.unl.edu/)

- If drought monitor shows Unit to be primarily rated as DO – Abnormally Dry or D1 – Moderate Drought then no change in Staffing Level upwards will occur.
- If drought monitor shows Unit to be primarily rated as D2 – Severe, then Unit DO may bump up one Staffing level. If D2 continues for 30 days then consider national severity request.
- If drought monitor shows Unit to be primarily rated as D3/D4 – Extreme/Exceptional Drought, then Unit DO may bump up two Staffing Levels. Request national severity funding request if within designated fire season.

- Conditions listed above are not additive – in other words if you are in Staffing Level (PL) 3 when LAL 6 is predicted on July 4th Holiday, you can only bump up 1 Staffing Level not 2. You would be in Staffing Level 4 not Staffing Level 5.

- Consider using State Director Severity (Short-term Severity) to extend staffing and /or mobilize locally assigned resources if conditions meet those outlined in National and State Office Severity Instructional Memorandums.

Note: A rare event may occur outside of predetermined conditions/responses within High Desert District which may require using State Director Severity, for example, high winds within WUI areas, sage grouse habitat which can carry fire outside of historical NFDRS fire season.

Staffing Level	ERC Range	Preparedness Actions That May Be Authorized	Potential Supplemental Preparedness Fund Source
1	0 – 35	• **No emergency preparedness actions should be needed. Normal staffing during identified fire season.** • **No AD's authorized.**	**State Director Severity ONLY in Rare events (See note above)**
2	36 – 56	• **Apply all applicable conditions listed above (A through D)** • **Extended staffing may be approved for Unit DO of area affected; DO and FMO will determine what resources are needed. (Engines) at each station and or IA squads (fuels Crew) Resources from unaffected zone may be extended or be moved to assist in the affected zone.** • **Normal staffing during identified fire season.** • **Necessary extended staffing may be funded from Unit preparedness account.** • **No AD's authorized.**	**State Director Severity**
3	57 – 73	• **Apply all applicable conditions listed above (A through D) as appropriate.** • **Extended staffing may be approved for FOS's and DO of area affected; Dispatch Center Manager or acting; 2 IA dispatchers; DO and FMO will determine what resources are needed; (Engine/IA Squad) at each station within affected Zone. Resources from within the affected zone or other unaffected zones may be extended to "move up and cover" stations where pre-positioning is occurring away from primary stations. Also consider extended staffing for Helitack/up to 12 total smokejumpers.** • **Extended staffing may be approved for Air Tanker Base Manager or Acting; 1 ramp person when aircraft are extended only. Aircraft should only be extended when DO assumes a strong likelihood of fire activity is occurring.** • **Detection flights may be used with approval from FMO or DO.** • **Extended staffing may be approved for SEAT personnel, aircraft and aviation dispatcher.** • **Vehicle mileage approved for extended staffing pre-positioning only.** • **No AD's authorized, unless critical shortages in a needed positions deemed necessary from the FMO or DO.**	**State Directors Account**

4	74 – 87	• **Apply all applicable conditions listed above (A through D) as appropriate.** • **Extended staffing may be approved for Unit FMO; DO; FOS's; Dispatch Center Manager or acting; 3 IA dispatchers; DO or FMO will determine what resources are needed (Engine/ Helicopters or IA (fuels crew) squad within district. Resources from within the affected zone or other unaffected zones may be extended to "move up and cover" stations where pre-positioning is occurring away from primary stations. Also consider extended staffing for Helitack/up to12 total smokejumpers or a 20 person crew.** • **Extended staffing may be approved for Unit Aviation Officer; Air Tanker Base Manager and staff needed to operate the base. DO or FMO may extend aircraft deemed necessary** • **Extended staffing may be approved for SEAT personnel, aircraft and aviation dispatcher.** • **Vehicle mileage may be approved for extended staffing pre-positioning only.** • **AD's are authorized use.**	**State Directors Account** **OR** **National Severity Account (at preparedness level 4 or 5).**
5	>88	• **Apply all applicable conditions (A through D) listed above as appropriate** • **Extended staffing may be approved for Unit FMO; Unit DO; Dispatch Center Manager or acting; 4-5 IA dispatchers; DO or FMO will determine what resources are needed. Also consider extended staffing for Helitack/up to 20 total smokejumpers.** • **Extended staffing may be approved for Unit Aviation Officer; Air Tanker Base Manager or Acting; Assistant ATBM; Fixed Wing Parking attendant may be authorized by Unit DO.** • **Extended staffing may be approved for SEAT personnel, aircraft and aviation dispatcher.** • **Unit DO may extend aircraft deemed necessary but Unit/Zone DO assumes a strong likelihood of fire activity occurring during current burn period.** • **Vehicle mileage may be approved for extended staffing pre-positioning only.** • **AD's are authorized for use.** • **Request F&WS and NPS severity approval for additional off-Unit IA resources.**	**State Directors Account** **OR** **National Severity Account (at Preparedness level 4 or 5).**