

North Idaho Zone

Interagency Fire Danger Operating Plan



Ridge Creek Fire (2023) – South Mountain FDRA

March 2024

THIS PAGE INTENTIONALLY BLANK

North Idaho Dispatch Zone

Interagency Fire Danger Operating Plan

Approved By: Agency Administrators



Craig C.
Foss

Digitally signed by Craig C. Foss
DN: cn=Craig C. Foss, o=Idaho
Department of Lands,
email=cfoss@idl.idaho.gov, c=US
Date: 2024.04.10 07:44:00 -0700

Craig Foss – Idaho State Forester
Idaho Department of Lands



Timothy Gilloon – Forest Supervisor
Idaho Panhandle National Forest



Kurt Pindel – District Manager
Coeur d' Alene District, Bureau of Land Management



A handwritten signature in blue ink, reading "Robert Miramontez".

Robert Miramontez – Forest Manager
Coeur d' Alene Tribe

THIS PAGE INTENTIONALLY BLANK

North Idaho Dispatch Zone

Interagency Fire Danger Operating Plan

Recommended By: Fire Program Managers



Josh Harvey

Digitally signed by Josh Harvey

Date: 2024.04.10
07:33:18 -0700

Josh Harvey – Fire Bureau Chief
Idaho Department of Lands



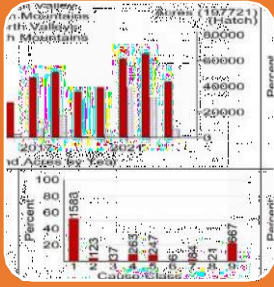
Mike Behrens – Fire Staff Officer
Idaho Panhandle National Forest &
Coeur d'Alene District, Bureau of Land Management



A handwritten signature in blue ink, appearing to read "Tom Pakootas".

Tom Pakootas – Fire Management Officer
Coeur d'Alene Tribe

*****KEY UPDATES TO 2024 FDOP VERSION*****



Fire Data Set Range updated

- Fire data set range was update from 2005-2019, to **2009-2023**.



SIGs...weather station special interest groups modified (p.10)

- North Mountains SIG **modified**
- North Valleys SIG **modified**.
- South Mountains SIG **modified**.
- South Valleys SIG, remained the same.

Variable and Fuel Model	Low	Moderate	High
ERC - Z	0-46	47-76	77
ERC - Y	0-26	27-40	41
ERC - Y	0-27	28-46	47
ERC - Y	0-30	31-50	51

ERC Table for Fire Danger Rating (p.20)

- Statistical numbers updated due to updated fire data and modified SIGS.
- Do not use old version of the table.

predicted for next day	
Light	Medium
0-53	54-77
0-26	27-35
0-28	29-40
0-28	29-37

FDRA Run Card Response Levels - Based on BI (Appendix A)

- Statistical numbers updated due to updated fire data and modified SIGS.
- Do not use old version of the table.

Table of Contents

I.	Introduction	1
A.	Purpose	1
B.	Policy and Guidance	3
C.	Operating Plan Objectives.....	4
II.	Fire Danger Planning Area Inventory and Analysis	5
A.	Administrative Units.....	5
B.	Fire Danger Rating Areas.....	6
C.	Weather Stations	8
III.	Fire Danger Workload Analysis.....	11
A.	Identification / Definition of the Fire Workload	11
B.	Fire Workload Analysis Table	12
IV.	Fire Danger Decision Analysis.....	15
A.	Climatological Analysis.....	15
B.	Fire Business Analysis.....	16
C.	Decision Summary Table	17
V.	Fire Danger Rating Levels.....	19
A.	Response (or Dispatch) Level.....	19
B.	Staffing Level	19
C.	Preparedness Level.....	19
D.	Fire Danger Adjective Rating Level	19
VI.	Fire Danger Operating Procedures.....	22
A.	Roles and Responsibilities	21
B.	Seasonal Schedule.....	23

I. INTRODUCTION

A. PURPOSE

The public, industry, and our own agency personnel expect the interagency wildland fire management agencies to implement appropriate and timely decisions which ultimately result in safe, efficient, and effective wildland fire management actions. This plan is intended to document a decision-making process for agency administrators, fire program managers, fire operations specialists, dispatchers, agency cooperators, and firefighters by establishing interagency planning and response levels using the best available scientific methods and historical weather/fire data.

An appropriate level of preparedness to meet wildland fire management objectives is based upon an assessment of vegetation, climate, and topography utilizing the National Fire Danger Rating System (NFDRS). This plan provides a science-based “tool” for interagency fire managers to incorporate a measure of risk associated with decisions which have the potential to significantly compromise safety and control of wildland fires.

1. Fire Danger Operating Plan

Interagency policy and guidance require numerous unit plans and guides in order to meet preparedness objectives. Some of these plans and guides are inter-related; some plans and guides provide the basis for other plans/guides as shown in this schematic.

This Fire Danger Operating Plan (FDOP) guides the application of information from decision support tools (such as NFDRS) at the local level. This FDOP is supplemental to the Fire Management Plan; it documents the establishment and management of a fire weather station network and describes how fire danger ratings will be applied to local unit fire management decisions. The actual implementation of the fire business thresholds is described in the following supplemental action plans.



Figure 1: Preparedness Plan Relationship

The decision points are identified and documented in the North Idaho Fire Danger Operating Plan.

a. Staffing Plan

The Staffing Plan describes escalating actions that are usually noted in the FMP. Mitigating actions are 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 response, prevention, or detection needs. The decision points are identified and documented in the North Idaho Fire Danger Operating Plan; the associated decisions and planned actions are in [Appendix B](#).

b. Preparedness Plan

Preparedness plans provide management direction given identified levels of burning conditions, fire activity, and resource commitment, and are required at national, state/regional, and local levels. Preparedness Levels (1-5) are determined by incremental measures of burning conditions, fire activity, and resource commitment. Fire danger rating is a critical measure of burning conditions. The Preparedness Levels are identified and documented in the North Idaho Fire Danger Operating Plan; the associated decisions and planned actions are in [Appendix C](#).

c. Prevention Plan

Prevention plans document the wildland fire problems identified by a prevention analysis. This analysis will not only examine human-caused fires, but also the risks, hazards, and values for the planning unit. Components of the plan include mitigation (activities designed to reduce impacts of wildland fire to communities), prevention (of unwanted human-caused fires), education (facilitating and promoting awareness and understanding of wildland fire), enforcement (actions necessary to establish and carry out regulations, restrictions, and closures), and administration of the prevention program. The analysis of fire problems and associated target groups in the North Idaho are documented in this Fire Danger Operating Plan; the associated decisions and planned actions are in [Appendix D](#).

d. Restriction Plan

A Restriction Plan is an interagency document that outlines interagency coordination efforts regarding fire restrictions and closures. An interagency approach for initiating restrictions or closures helps provide consistency among the land management partners, while defining the restriction boundaries so they are easily distinguishable to the public. Based on the fire

danger, managers may impose fire restrictions or emergency closures to public lands. Decision points when restrictions and/or closures should be considered are identified and documented in the North Idaho Fire Danger Operating Plan; the associated decisions and planned actions are in [Appendix E](#).

2. **Wildfire Response**

a. Initial Response Plan

Initial response plans, also referred to as run cards or pre-planned response plans, specify the fire management response (e.g. number and type of suppression assets to dispatch) within a defined geographic area to an unplanned ignition, based on fire weather, fuel conditions, and fire management objectives. Response levels are identified and documented in the North Idaho Fire Danger Operating Plan. The number and type of suppression resources dispatched to a reported fire is documented in the associated initial Dispatch / Response Plan ([Appendix A](#)).

b. Local Mobilization Plan

The North Idaho Mobilization Plan identifies standard procedures, which guide the operations of multi-agency logistical support activity throughout the coordination system. The Mobilization Plan is intended to facilitate interagency dispatch coordination, ensuring the timeliest and most cost-effective incident support services available are provided. Communication between Units, GACCs, State, Regional Offices and other cooperative agencies are addressed. The Mobilization Plan can be located on the Coeur d'Alene Interagency Dispatch Center web site. ([Coeur d'Alene Interagency Dispatch Center \(CDC\) \(nifc.gov\)](#))

B. POLICY AND GUIDANCE

Interagency policy and guidance regarding the development of Fire Danger Operating Plans can be found in the [Interagency Standards for Fire & Aviation Operations](#) (Red Book). Agency-specific direction can be found in:

- U.S. Forest Service – [Manual 5120 - Fire Management - Preparedness](#)
- Bureau of Land Management – [Manual 9211 - 1 - Fire Planning Handbook](#)
- Fish and Wildlife Service – [Fire Management Handbook, Chapter 10 - Preparedness](#)
- Bureau of Indian Affairs – [Wildland Fire and Aviation Program Management Operations Guide](#)
- Idaho Department of Lands – [Fire Mobilization Guide, Chapter 10 – Policy, Objectives, and Standards of Protection](#)

C. OPERATING PLAN OBJECTIVES

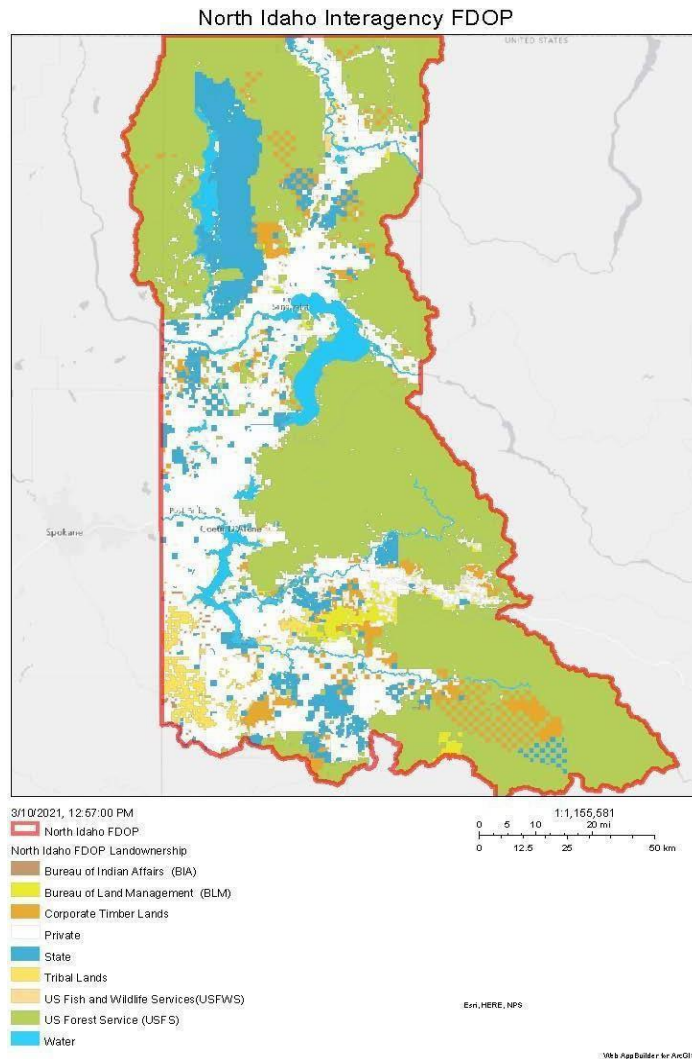
1. Provide a tool for agency administrators, fire managers, dispatchers, agency cooperators, and firefighters to correlate fire danger ratings with appropriate fire business decisions in fire danger planning area.
2. Delineate fire danger rating areas (FDRAs) in fire danger planning area with similar climate, vegetation, and topography.
3. Establish an interagency fire weather-monitoring network consisting of Remote Automated Weather Stations (RAWS) which comply with *NFDRS Weather Station Standards (PMS 426-3)*.
4. Determine climatological breakpoints and fire business thresholds using the Weather Information Management System (WIMS), National Fire Danger Rating System (NFDRS), FireFamily Plus software to analyze and summarize an integrated database of historical fire weather and fire occurrence data.
5. Define roles and responsibilities to make fire preparedness decisions, manage weather information, and brief fire suppression personnel regarding current and potential fire danger.
6. Determine the most effective communication methods for fire managers to communicate potential fire danger to cooperating agencies, industry, and the public.
7. Provide guidance to interagency personnel outlining specific daily actions and considerations at each preparedness level.
8. Identify seasonal risk analysis criteria and establish general fire severity thresholds.
9. Identify the development and distribution of fire danger pocket cards to all personnel involved with fire suppression within the fire danger planning area.
10. Identify program needs and suggest improvements for implementation of the Fire Danger Operating Plan.

II. FIRE DANGER PLANNING AREA INVENTORY AND ANALYSIS

A. ADMINISTRATIVE UNITS

This document serves as an *interagency* example of how consistent and effective application of fire danger decisions is applied across multiple jurisdictional boundaries. Wildland fire management and suppression responsibilities are shared among federal, state, and local cooperators.

1. Overview Map



Map 1: Fire Danger Planning Area Overview

2. **Ownership Table**

Agency	Acreage
Bureau of Indian Affairs	8,680
Bureau of Land Management	95,693
Corporate Timber Lands	306,781
Private	1,494,592
State	426,028
Tribal Lands	67,877
US Fish and Wildlife Service	2,793
US Forest Service	2,455,680
Water	166,381

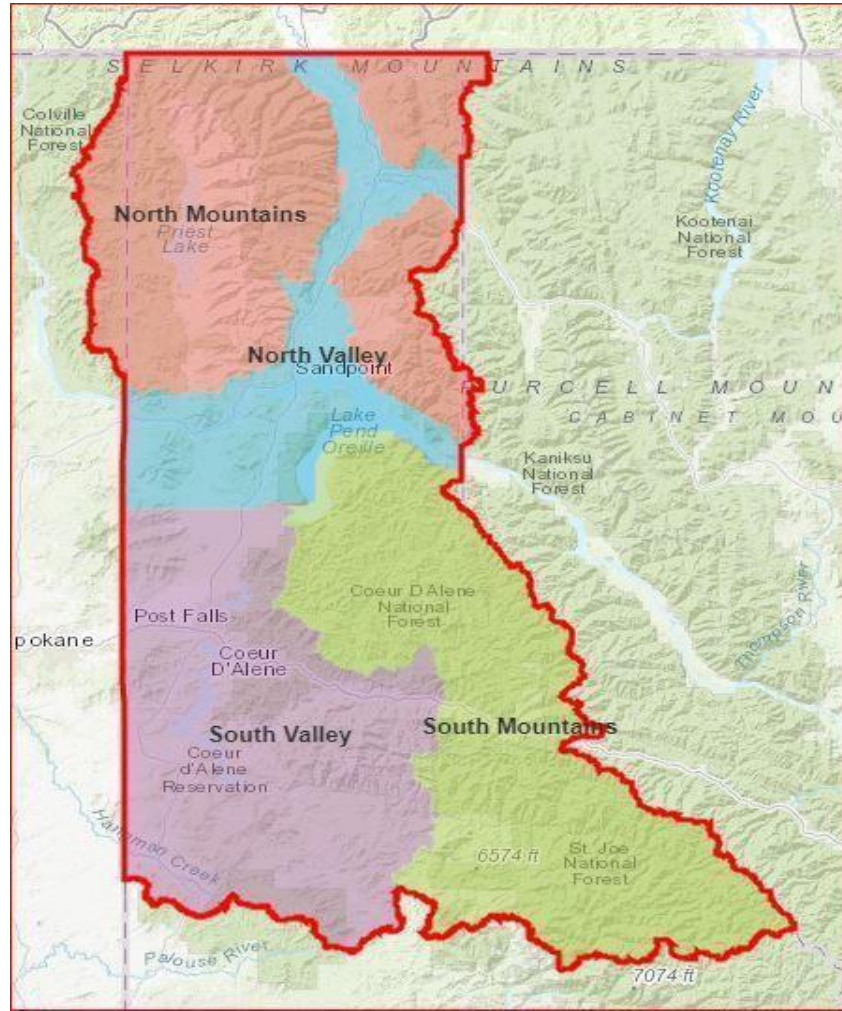
Table 1: Ownership Table I.P.N.F Spatial Fire Management.

The North Idaho Fire Danger Planning Area corresponds to the Coeur d’Alene Interagency Dispatch. It is often referred to as the Idaho Panhandle. The western and eastern edges generally follow the borders with Washington and Montana but include sections of the Idaho Panhandle National Forest in Pend Oreille County, Washington, and Sanders and Lincoln Counties, Montana. The northern edge is the Canadian border. The southern boundary follows the southernmost protection boundaries of the St. Joe Ranger District of the Idaho Panhandle National Forest, and the West St. Joe Forest Protective District.

B. FIRE DANGER RATING AREAS

A Fire Danger Rating Area (FDRA) is defined as a large geographic area relatively homogenous with respect to *climate, vegetation, and topography*. Because of these similarities, it can be assumed that the fire danger within a FDRA is relatively uniform. Fire Danger Rating Areas were delineated based upon an analysis of these three factors: climate (Appendix H:), vegetation (Appendix G:), and topography (Appendix F:). After these environmental factors were considered, the draft FDRAs were *edge-matched* to existing administrative boundaries using Response Areas (Appendix A:). It is important that existing Response Areas are not split by FDRAs; a Response Area must not have two FDRAs to avoid additional workload and confusion for operational personnel. A detailed description of each FDRA is in [Appendix K](#). The final FDRA delineation is depicted here:

1. **FDRA Map**



Map 2: Fire Danger Rating Areas (FDRAs)

2. **FDRA Table**

Fire Danger Rating Area	Acreage	% of Total
FDRA #1 North Mountains	1,361,746	27%
FDRA #2 North Valleys	664,922	13%
FDRA #3 South Mountains	1,563,432	31%
FDRA #4 South Valley	1,435,857	29%
Total	5,025,957	

Table 2: Fire Danger Rating Areas (FDRAs)

B. C. WEATHER STATIONS

The North Idaho Fire Danger Rating Area has 8 RAWS within its boundaries and utilizes the Potlatch RAWS located on the Nez Perce – Clearwater NF for fire management decisions and fire analysis. Also included is the Shock RAWS, on the Nez Perce – Clearwater NF. At this time Shock is not used in any analysis within the North Idaho Fire Danger Rating Area but has been utilized in the past.

All Remote Automated Weather Stations (RAWS) comply with the National Wildfire Coordinating Group (NWCG) weather station standards.

<http://www.nwcg.gov/pms/pubs/PMS426-3.pdf> .

Each RAWS receives, at a minimum, one annual on-site maintenance visit by personnel from the *BLM RAWS Depot*, to ensure sensors are within calibration standards and verify site and station conditions.

1. RAWS Map



Map 3: Remote Automated Weather Station (RAWS)

2. **RAWS Catalog Table (Active Stations Only)** (Note: Available data years represent hourly data availability rather than entire station data history. NFDRS 2016 utilizes hourly data for analysis. Hourly data generally is not available prior to 2002).

Table 3: RAWS Catalog

STATION NAME	WIMS ID	NESDIS ID	AGENCY / OWNER	AVAIL DATA YEARS	ELEV	LATITUDE	LONGITUDE	REPORTING TIME
Bonners	100101	3274058C	IPNF	2002-Present	2320	48.726333	116.291992	hh:08:04
Saddle Pass	100107	3249657C	IPNF	2002-Present	5120	48.938553	116.734511	hh:07:54
Priest Lake	100204	327416FA	IPNF	2002-Present	2600	48.574181	116.957869	hh:08:24
Hoodoo	100208	3273E44A	IPNF	2005-Present	2270	48.053333	116.793050	hh:08:44
Fish Hook	100421	3249868E	IPNF	2002-Present	4250	47.135178	115.876603	hh:08:34
Nuckols	100423	3273C2A6	IPNF	2003-Present	4000	47.504147	115.936858	hh:08:14
Lines Creek	100424	3273D1D0	IPNF	2002-Present	5140	47.110919	116.225175	hh:08:54
Magee Peak	100425	3273F73C	IPNF	2005-Present	4720	47.883617	116.298883	hh:09:14
Potlatch	100603	323764B8	NCF	2003-Present	2460	46.929722	116.908889	hh:11:04
Shock	100606	3237874A	NCF	2003-Present	3687	46.968133	116.618367	hh:10:35

3. **Special Interest Groups (SIGs)**

<i>Special Interest Group (SIG):</i> FDRA #1 North Mountains	
<i>Station / WIMS Number</i>	<i>Station Name</i>
100107	Saddle Pass
100204	Priest Lake
100208	Hoodoo

Table 4: North Mountains FDRA

<i>Special Interest Group (SIG):</i> FDRA #2 North Valleys	
<i>Station / WIMS Number</i>	<i>Station Name</i>
100101	Bonnors
100208	Hoodoo

Table 5: North Valleys FDRA

<i>Special Interest Group (SIG):</i> FDRA #3 South Mountains	
<i>Station / WIMS Number</i>	<i>Station Name</i>
100424	Lines Creek
100425	Magee Peak

Table 6: South Mountains FDRA

<i>Special Interest Group (SIG):</i> FDRA #4 South Valleys	
<i>Station / WIMS Number</i>	<i>Station Name</i>
100423	Nuckols
100603	Potlatch

Table 7: South Valleys FDRA

III. *FIRE DANGER WORKLOAD ANALYSIS*

To apply fire danger rating as a viable decision support tool, fire managers must be able to associate fire suppression workload with a specific target group. An understanding of the specific target group from which the suppression workload originates will help determine the appropriate communication methods and deterrence measures which may effectively change the behavior of the respective target group.

A. IDENTIFICATION / DEFINITION OF THE FIRE WORKLOAD

The ability to regulate, educate, or control a user group will be based upon the interface method and how quickly they can react to the action taken.

Consequently, the most appropriate decision tool would depend upon the sensitivity of the target group to the implementation of the action. In addition, each action will result in positive and/or negative impacts to a user group. In selecting a component and/or index, several factors must be considered:

1. **Affected Target Group:** The group of people commonly associated with the problem (Agency, Industry, or Public).
 - Agency: Employees of the federal, state, and local governments involved in the cooperative effort to suppress wildland fires. This includes federal, state, and county land management employees, along with local governments who share a similar protection mission to manage wildland fires.
 - Industry: Employees affiliated with organizations which utilize natural resources and/or obtain permits or leases to conduct commercial activities on federal, state, or private lands. These entities or activities could include ranchers, wilderness camps, railroads, mines, timber harvesting, filming, building construction, oil and gas, electric generation, guiding services, etc.
 - Public: Individuals who use public lands for non-commercial purposes such as off-highway vehicle (OHV) use, camping, hiking, hunting, fishing, skiing, firewood gathering, agriculture, mountain biking, general travel, and recreation. This group also includes those living within the wildland/urban interface (WUI).
2. **Workload Description:** This is the fire unit's suppression workload. Human-caused fires are usually described in terms of an ignition cause related to public and industrial target groups. Natural-caused (or lightning) fire workload is usually described as the Agency's workload. For example, lightning is not "the problem"; rather, the problem is the local unit's ability to respond to multiple ignitions, exceeding the staffing capabilities.

B. FIRE WORKLOAD ANALYSIS TABLE

The ability to regulate, educate, or control a user group will be based upon the interface method and how quickly they can react to the action taken. In addition, each action will result in positive and/or negative impacts to the user groups. Consequently, the decision tool which would be most appropriate would depend upon the sensitivity of the target group to the implementation of the action, and ultimately change their behavior. The following table illustrates the differences between target groups (Agency, Industry, and Public) and the associated fire cause.

The majority of wildfires in the Idaho Panhandle are started by lightning. In the pre-settlement era, these lightning fires, burning under varying weather conditions in the summer months, created a patchwork of fuel loadings and vegetation across the landscape. Today, most lightning fires in the planning area are less than one acre (78%), with 91% less than 10 acres, and most are suppressed during initial attack soon after detection. In the absence of fire, tree mortality has been accelerated by insects, disease, and changes in climate. Dead and down fuel loadings have increased throughout the area.

The 2015 Land Management Plan (LMP), or Forest Plan for the Idaho Panhandle National Forest discusses demographic changes in the area of the IPNF. 34 percent of the Idaho Panhandle National Forest is now classified as wildland urban interface. Almost all the private land under the protection of the Idaho Department of Lands and Coeur d'Alene Tribe is either in or near wildland urban interface. A growing number of homes and small communities are at risk from wildland fires as the population of the area grows and use changes from agriculture and forestry to recreation and vacation or retirement homes.

The specific wildland fire problem in the Coeur d'Alene Dispatch Area is not necessarily large fires or human caused fires, but rather lightning caused fires causing surges in the fire workload. The fire problem is compounded by population, wildland urban interface, recreation, and industrial use. North Idaho commonly goes into seasonal summer drought conditions beginning early July, and commonly thunderstorms can occur early to mid-July, persisting intermittently throughout the fire season. In the event of lightning storms, dozens of lightning caused fires can occur throughout an episode. Resource availability and allocation can be difficult during these surge times, with priorities given to areas with higher values. The management of incidents as described portray one of the wildland fire problems within the Coeur d'Alene Dispatch Area.

Table 8: Fire Workload Analysis Table

GENERAL AUDIENCE	SPECIFIC AUDIENCE	GENERAL IGNITION CAUSE	SPECIFIC IGNITION CAUSE	RELATIVE DEGREE OF CONTROL	COMMUNICATION METHODS	WORKLOAD DESCRIPTION
AGENCY	Fire Management Officers, Fire Wardens, Duty Officers, Agency Administrators	1-Lightning	Natural ignitions which are candidates to be managed for resource benefit. Multiple lightning-caused ignitions can quickly exceed the capability of the local unit's initial attack capacity.	Very High	Communicate lightning activity level (LAL) via Dispatch. Communicate information to agency personnel to increase awareness for potential lightning-caused ignitions.	<p>Consider increased/extended staffing levels for ground-based and aviation suppression resources. Consider extending staffing for dispatch and lookout tower personnel. Consider utilizing aerial reconnaissance following lightning occurrence.</p> <p>Fires approved to manage with a confine/contain strategy may require suppression resources for an extended time; making them unavailable for initial attack in places where they may be needed most.</p>
INDUSTRY	Agriculture, Logging, industrial operations.	2 - Equipment	Unplanned ignition from industrial operations including, chainsaw, yarding, masticating.	Moderate	<p>Increased communication and cooperation directly with industry management during elevated fire danger.</p> <p>PSA, adjective fire danger rating signs, voluntary hoot owl.</p> <p>Operators can be contacted and educated through Private Forestry Specialist with IDL.</p>	<p>Units within the Zone are experiencing unplanned ignitions resulting from agriculture or fuels/timber harvest activities.</p> <p>Contract enforcement during periods of restrictions/closures.</p> <p>Increased inspection of contract requirements for fire suppression for contractors working on public lands.</p>

GENERAL AUDIENCE	SPECIFIC AUDIENCE	GENERAL IGNITION CAUSE	SPECIFIC IGNITION CAUSE	RELATIVE DEGREE OF CONTROL	COMMUNICATION METHODS	WORKLOAD DESCRIPTION
PUBLIC	Hunters, recreation groups, ATV/UTV, tourists, motorists, aviators, general transportation	4-Campfire	Escaped campfires in either developed or undeveloped campsites are being left unattended	Moderate	PSA, adjective fire danger rating signs. Signage at trail heads, main throughfares into public lands, and high use recreation areas.	The unit is experiencing a significant number of escaped campfires at developed recreation sites. The campfires are abandoned by single-day or overnight campers when fuels are critically dry and high wind events.
PUBLIC	Private Landowners	5-Debris Burning	Debris and trash burning on private lands.	Low	PSA, adjective fire danger rating signs. Encourage counties to close burning. Use IDL Burn Permit System to regulate burning during closed fire season. IDL generally consults with local fire districts, counties, and neighboring districts to determine the proper burn permit levels.	There is an increase of debris burning escape fires. Additional workforce to make contacts with media outlets, designated PIO's, additional law enforcement and prevention patrol.
PUBLIC	General	9-Miscellaneous	Miscellaneous fires: i.e. powerlines, fireworks, welding, firearms use, blasting, structures, etc.	Low	PSA, adjective fire danger rating signs.	Units within the Zone are experiencing a significant number of starts from unknown ignition sources along agency and state/county travel routes, and from unknown persons or groups travelling across public lands. These ignitions sometimes occur when fuels are critically dry and the potential for high wind events are forecasted.

IV. *FIRE DANGER DECISION ANALYSIS*

Decision points can be based upon either:

- Climatological Breakpoints, or
- Fire Business Thresholds.

The following table provides a summary of the planning area’s fire danger problems and concerns. In addition, each problem is associated with a specific target group whose activities can be influenced through effective communication and implementation of specific control measures.

This Fire Danger Operating Plan will be used to support preparedness, staffing and response decisions which are made at specific decision points. A “decision point” is a point along the range of possible output values where a decision shifts from one choice to another. When the combination of events and conditions signal that it is time to do something different, a “decision point” has been identified for each Fire Danger Rating Level within each Fire Danger Rating Area.

A. CLIMATOLOGICAL ANALYSIS

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

The following are the ERC calculated climatological thresholds by FDRA:

Analysis period: May 10 – October 20, 2009-2023

North Mountains FDRA – Fuel Model Z

90th ERC = 87

97th ERC = 100

North Valleys FDRA – Fuel Model Y

90th ERC = 46

97th ERC = 53

South Mountains FDRA – Fuel Model Y

90th ERC = 56

97th ERC = 62

South Valleys FDRA – Fuel Model Y

90th ERC = 57

97th ERC = 63

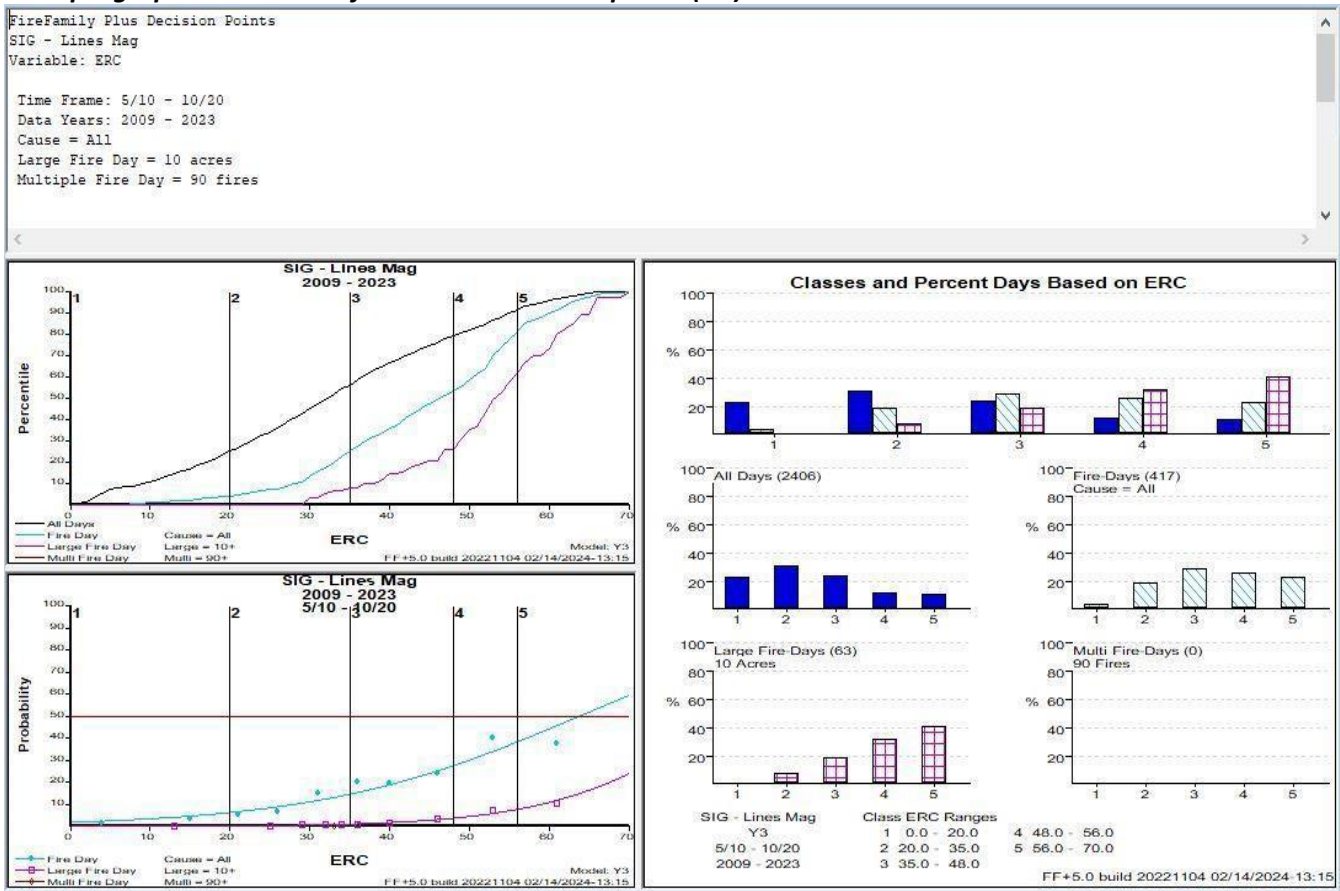
It is equally important to identify the period or range of data analysis used to determine the agency percentiles. The percentile values for the calendar year (Jan – Dec) will be different from the percentile values for the fire season (Jun – Sept). Each agency will have specific (and perhaps different) direction for use of climatological percentiles. For the North Idaho FDOP the dates used are May 10th – October 20th as this corresponds with the State of Idaho proclaimed fire season.

The decision thresholds identified in this Fire Danger Operating Plan are based upon the statistical correlation of historical fire occurrence and weather data.

B. FIRE BUSINESS ANALYSIS

FireFamily Plus decision analysis was examined to determine decision points (DP) as seen in the example below. However, the DPs were too low for actual decisions made in the NIZ, likely due in part to large fires being discovered at lower indices but not showing significant growth until days or weeks later. Therefore, this process was not utilized.

Example graph to determine fire business decision points (DP).



C. DECISION SUMMARY TABLE

Table 9: Decision Summary Table

Target Group	Fire Danger Rating Area(s)	Statistical Cause	Workload Definition	Climatological Breakpoints or Fire Business Thresholds	Number of Decision Points	Index / Comp.	Fuel Model	Preparedness Plan(s) to Modify Target Group Behavior
Agency	All	1 - Lightning	Increased staffing levels	Fire Business Thresholds	5	ERC	Y	Staffing Plan Response Plan Dispatch Plan
Public	All	4 - Campfire	An increase of escaped campfires at developed and dispersed recreation sites. The campfires are abandoned by recreationists when fuels are critically dry along with high wind events. Additional workforce to make contacts with media outlets, designated PIO's, and posting signs.	Fire Business Thresholds	5	ERC	Y	Preparedness Plan Prevention Plan Restrictions Plan

Target Group	Fire Danger Rating Area(s)	Statistical Cause	Workload Definition	Climatological Breakpoints or Fire Business Thresholds	Number of Decision Points	Index / Comp.	Fuel Model	Preparedness Plan(s) to Modify Target Group Behavior
Industry	All	2 - Equipment	An increase of equipment caused fires. Additional workforce to make contacts with industry, designated PIO's, and posting signs.	Fire Business Thresholds	5	ERC	Y	Prevention Plan Restrictions Plan
Public	All	2 - Equipment	An increase of equipment caused fires. Additional workforce to make contacts with industry, designated PIO's, and posting signs.	Fire Business Thresholds	5	ERC	Y	Prevention Plan
Public	All	5 - Debris Burning	An increase of debris burning escaped fires. Additional workforce to make contacts with industry, designated PIO's, and posting signs.	Fire Business Thresholds	5	ERC	Y	Prevention Plan

V. **FIRE DANGER RATING LEVELS**

The NFDRS utilizes the WIMS processor to manipulate weather data and forecasted data stored in the National Interagency Fire Management Integrated Database (NIFMID) to produce fire danger ratings for corresponding weather stations. NFDRS outputs from the WIMS processor can be used to determine various levels of fire danger rating to address the fire problems identified previously in the *Fire Problem Analysis Chart*. The system is designed to model worst-case fire danger scenario. NFDRS (along with other decision support tools) will be utilized to produce levels (thresholds) of fire business to address local fire problems by targeting public, industrial, or agency groups.

A. **RESPONSE (OR DISPATCH) LEVEL**

Response (or Dispatch) Levels are pre-planned actions which identify the number and type of resources (engines, crews, aircraft, etc.) initially dispatched to a reported wildland fire based upon fire danger criteria.

B. **STAFFING LEVEL**

Staffing Levels can be used to make daily internal fire preparedness and operational decision. Although Staffing Level can be a direct output in WIMS, the WIMS output is only based upon weather observations and climatological percentiles. The use of climatological percentiles for daily staffing decisions is optional. The preferred method to delineate Staffing Level thresholds is based on statistical correlation of weather AND fire occurrence.

C. **PREPAREDNESS LEVEL**

The Preparedness Level is a five-tier (1-5) fire danger rating decision tool that is based on NFDRS output(s) and other indicators of fire business (such as projected levels of resource commitment). Preparedness Levels will assist fire managers with more long-term (seasonal) decisions with respect to fire danger.

D. **FIRE DANGER ADJECTIVE RATING LEVEL**

In 1974, the Forest Service, Bureau of Land Management, and State Forestry organizations established five standard Adjective Fire Danger Rating Level descriptions for public information and signing.

As with Staffing Level, the Adjective Fire Danger Rating Level can be obtained as a direct output in WIMS, however, the Adjective Fire Danger Rating from WIMS is strictly based on weather and climatological percentiles (90th / 97th), with no regard to historical fire occurrence. The use of agency-specific climatological percentiles is not mandatory. The preferred method to determine Adjective Fire Danger Rating thresholds is based on statistical correlation of weather observations AND fire occurrence.

Table 10 Adjective Fire Danger Rating for each FDRA based on ERC

FDRA	Stations	Variable and Fuel Model	Low	Moderate	High	Very High	Extreme
North Mountains	SIG ¹	ERC – Z	0-46	47-76	77-86	87-99	100+
North Valleys	SIG ¹	ERC – Y	0-26	27-40	41-45	46-52	53+
South Mountains	SIG ¹	ERC – Y	0-27	28-48	49-55	56-61	62+
South Valleys	SIG ¹	ERC – Y	0-30	31-50	51-56	57-62	63+

¹See appendix J for details on each SIG

As with the 2021 update, the 2024 FDOP Adjective Fire Danger Ratings are based upon climatological thresholds. Fire business decision points (DP) were looked at as potential breakpoints, however the DPs do not work well for determining Adjective Fire Danger Rating for the NIZ FDRAs. It should be noted that for each FDRA, the DP 5 equates with approximately the 90th percentile. This leads to some confidence with the need of fire business increasing around the 90th percentile, which generally equates to an increase in observed resistance to control of fires in the NIZ.

However, the lower-level decision points do not equate well with other actions generally taken in the NIZ for staffing, preparedness, or adjective ratings. This is contributed to by many factors, driven mainly by the NIZ fuels and weather patterns as well as the fact that many of the “large” fires in the NIZ exhibit significant growth days and sometimes weeks after the discovery date. These large fires are tied to a discovery date where the ERC values are significantly lower at this date than the date of significant fire growth. This is one of the reasons the fire business analysis thresholds in Fire Family Plus do not accurately represent actual NIZ decision points.

Therefore, in using climatological thresholds, analysis comparisons, and local fire statistics it continues to show the values to determine the breakpoints in the Adjective Fire Danger Rating (L-M-H-VH-EX) for each of the FDRAs are most represented at the 40th, 80th, 90th, and 97th percentiles.

VI. FIRE DANGER OPERATING PROCEDURES

A. ROLES AND RESPONSIBILITIES

1. Agency Administrators

Timothy Gilloon – Idaho Panhandle National Forest (IPF)

Craig Foss – Idaho Department of Lands (IDL)

Kurt Pindel --Bureau of Land Management BLM)

Robert Miramontez– Coeur d’Alene Tribe (CDT)

Review and approve FDOP

2. Fire Program Managers

Mike Behrens – IPNF and CDA BLM FMO

Josh Harvey – Idaho Department of Lands Bureau Chief

Tom Pakootas – Coeur d’Alene Tribe FMO

The FMOs are responsible for implementing this plan and ensuring the information is disseminated to other Fire Management personnel and Line Officers.

3. Fire Danger Technical Group

Chris Smith –Forest Fire Planner

Matt Butler – Zone FMO, IPNF (retired)

Dan Muir –Fire Planning, IPNF

Nate Rogers –Northern Zone Fire Manager, IDL

Dave Thorton –Fire Warden, IDL

Sarah Jerome – Forest Fuels Planner, IPNF

Jason Cirkseña --Forest Fire Prevention Officer, IPNF

Ian Morgan --Asst Fire Management Officer, BLM

The technical group is responsible for conducting analysis and providing oversight of the NFDRS process. They also assist with annual monitoring of effectiveness and making recommendation on modifications to the FDOP.

4. Fire Weather Station Owners/Managers

Dan Muir IPNF – All Stations except Potlatch and Shock

Nez Perce Clearwater NF – Potlatch 100603 and Shock 100606

BLM RAWS Depot, along with the local RAWS technician, will be responsible for annual maintenance of stations. Maintenance will be completed by the established due date in WFMI.

Technicians will be available during the field season to troubleshoot any RAWS problems.

Technicians will be trained and available as appropriate to set-up portable RAWS.

5. Dispatch/Communication Center(s)

Coeur d'Alene Dispatch Center – CDC

Ensure timely recording of daily weather observations and monitor actual indices. Determines and disseminates daily response level during the designated period of automated (run card) dispatching.

Broadcasts daily fire weather issued by the National Weather Service, Spokane, WA. Dissemination includes daily radio broadcast at 1030 and 1530 hours during the established fire season with additional forecast warning when necessary.

Broadcast daily NFDRS indices (actual and forecasted) and posts on Dispatch websites.

6. Duty Officers

*Coordinate with appropriate staff and District/Zone Duty Officers. Evaluate daily fire danger, ensure staffing levels are appropriate and adjust accordingly
District/Zone DO's*

Provide input regarding preparedness and planning levels. Manage staffing appropriately based on established Staffing Plan

Assure that all local fire resources and other unit staff are aware of fire danger and staffing levels.

7. GIS Specialists

Assist with spatial data needs

8. National Weather Service

Spokane NWS

Fire weather forecaster is available upon request to participate in our weekly coordination calls.

9. Geographic Area Predictive Service / Meteorologist

Dan Borsun

Provide input to this plan in the form of technical expertise as requested

10. Education / Prevention Specialists

Agency prevention personnel will coordinate with fire managers on the need for signage, increased patrols, restrictions, or other prevention action items. Provide input on updates and revisions to prevention and restrictions plans.

Changes in adjective rating will be communicated to the agency PIO's for press releases and communicated with the public through appropriate channels, including but not limited to; websites, media outlets, signs, contacts, etc.

District personnel will be responsible for assuring that signs are changed.

B. SEASONAL SCHEDULE

Summer/Fall/Winter – Continually review FDOP fire business thresholds and assess the need to update and change.

Winter – Update fire history dataset in Fire Family Plus and error check. Assess feedback on fire business thresholds and redo analysis as needed.

Spring – Finalize any updates/changes to FDOP and disseminate to fire personnel.

C. DAILY SCHEDULE

Daily Timeline

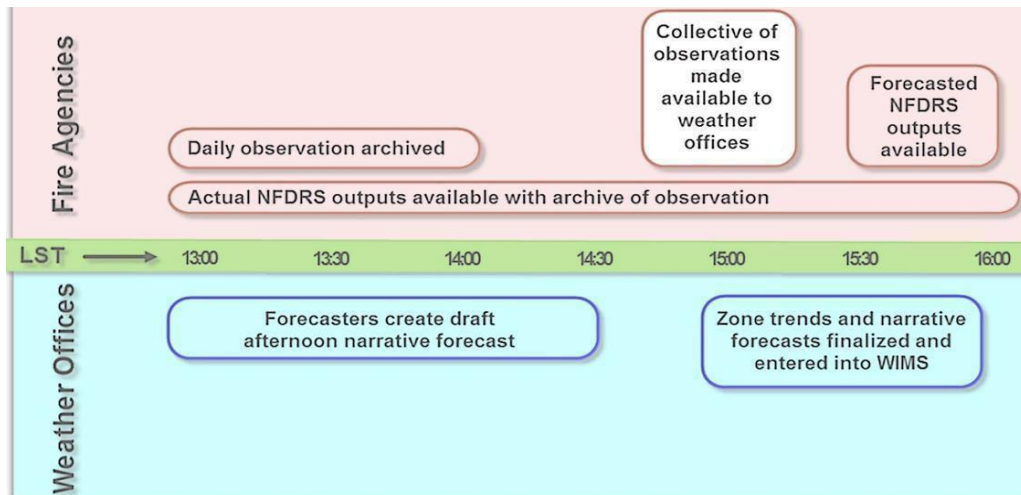


Figure 2: Daily Fire Weather Operations Schedule

D. WEATHER STATION MONITORING AND MAINTENANCE

Each agency is responsible for the annual maintenance and calibration of their RAWS. The weather stations belonging to the Idaho Panhandle NF are under contract with *BLM RAWS Depot* for the annual maintenance. <https://weather.nifc.gov/>

VII. *FIRE DANGER PROGRAM NEEDS*

A. WEATHER STATIONS

- Utilize the NFDRS weather station handbook to ensure weather station annual maintenance and general upkeep is properly completed. RAWs technicians will be responsible.
- Ensure data from weather stations is accurate prior to posting.

B. COMPUTER / EQUIPMENT

- Dispatch will download daily indices and post daily to the CDC webpage, as well as weekly posting of ERC and 1000-hr fuel moisture charts.

C. TRAINING

- Identify and train new RAWs technicians. Attempts will be made to identify potential RAWs technicians per zone, as well as build depth and provide for training.
- Support development of employees and provide opportunities to attend S-491, Advanced NFDRS and WIMS training.
- Train fire dispatchers on WIMS and the importance of quality control of the data.
- Develop SOPs on posting data for dispatchers that may be responsible for pulling WIMS data.
- Provide refreshers on WIMS and NFDRS as necessary to keep up with changes in technology and respective programs.
- Raise awareness of the updated 2024 FDOP. This will be done by Dispatch Zone wide rollout meetings and explanations.

D. SEASONAL FIRE DANGER RISK ASSESSMENTS

- Continue pre-season and monthly outlooks
- Evaluate conditions for prescribed burning

E. OTHER PROGRAM NEEDS

- Update Dispatch SOPs to incorporate changes in the revised FDOP and subordinate plans.
- Assess fire data and create a working database for large fire growth days for managed fires
- Revise/integrate an interagency fuel moisture sampling protocol
- Ensure all fuel moisture monitoring data is entered into Fire Environment Mapping System (FEMS) fuel moisture module.
- Evaluate FDOP and adjust as needed.

APPENDICES

APPENDIX A – RESPONSE / DISPATCH PLAN

***See Coeur d’Alene Dispatch Zone Pre-Planned Run Cards for full plan.

FDRA Run Card Response Levels

Based on Burning Index (BI) predicted for next day

	Light	Medium	Heavy
North Mountains	0-53	54-77	78+
North Valleys	0-26	27-35	36+
South Mountains	0-28	29-40	41+
South Valleys	0-28	29-37	38+

Note:

- Run Cards are based on the Burning Index (BI)
- North Mountains and South Mountains use the 40th and 90th percentiles as breakpoints.
- North Valley and South Valley use the 40th and 85th percentile as breakpoints due to the amount of WUI within these FDRA’s.
- Percentiles and values were determined by looking at the Run Card Season of June 15th – September 30th

APPENDIX B - STAFFING PLAN / DRAW-DOWN LEVELS

Drawdown Levels – See each agency’s individual draw down guideline/plan

Potential staffing considerations at the District level based on Preparedness Levels and Response Levels.

Preparedness Level	Response Level	Possible Staffing Considerations - District				
2	Light					
	Medium	All Engines Staffed				
	Heavy	All Engines Staffed	ICT3 Available			
3	Light					
	Medium	All Engines Staffed				
	Heavy	All Engines Staffed	ICT3 Available	Militia crews assembled/available	Booster/Agreement I/A resources	
4	Light				Booster/Agreement I/A resources	
	Medium	All Engines Staffed	ICT3 Available	Militia crews assembled/available	Booster/Agreement I/A resources	I/A Resources Staged / At Station / Discontinue Project Work
	Heavy	All Engines Staffed	ICT3 Available	Militia crews assembled/available	Booster/Agreement I/A resources	I/A Resources Staged / At Station / Discontinue Project Work
5	Light	All Engines Staffed			Booster/Agreement I/A resources	I/A Resources Staged / At Station / Discontinue Project Work
	Medium	All Engines Staffed	ICT3 Available	Militia crews assembled/available	Booster/Agreement I/A resources	I/A Resources Staged / At Station / Discontinue Project Work
	Heavy	All Engines Staffed	ICT3 Available	Militia crews assembled/available	Booster/Agreement I/A resources	I/A Resources Staged / At Station / Discontinue Project Work

Potential staffing considerations at the Forest/Bureau level based on Preparedness Levels and Response Levels.

Preparedness Level	Response Level	Possible Staffing Considerations – Forest/Bureau				
2	Light					
	Medium					
	Heavy	Boost Helicopter Staffing				
3	Light					
	Medium	Boost Helicopter Staffing				
	Heavy	Boost Helicopter Staffing			All Dispatch Consoles Staffed	Consider Deputy/Extra Duty Officer
4	Light		IMT3 Preposition	Additional CWN Aircraft	All Dispatch Consoles Staffed	
	Medium	Boost Helicopter Staffing	IMT3 Preposition	Additional CWN Aircraft	All Dispatch Consoles Staffed	Consider Deputy/Extra Duty Officer
	Heavy	Boost Helicopter Staffing	IMT3 Preposition	Additional CWN Aircraft	All Dispatch Consoles Staffed	Consider Deputy/Extra Duty Officer
5	Light	Boost Helicopter Staffing	IMT3 Preposition	Additional CWN Aircraft	All Dispatch Consoles Staffed	Consider Deputy/Extra Duty Officer
	Medium	Boost Helicopter Staffing	IMT3 Preposition	Additional CWN Aircraft	All Dispatch Consoles Staffed	Consider Deputy/Extra Duty Officer
	Heavy	Boost Helicopter Staffing	IMT3 Preposition	Additional CWN Aircraft	All Dispatch Consoles Staffed	Consider Deputy/Extra Duty Officer

APPENDIX C - Preparedness Plan

I. PURPOSE

Preparedness plans provide management direction given identified levels of burning conditions, fire activity, and resource commitment and are required at national, state/regional, and local levels.

Preparedness Levels (PL) range from 1 to 5.

Preparedness Levels differ from Staffing Levels. Staffing Levels only consider fire danger, while Preparedness Levels incorporate several items. Transition from one level to another is based on a combination of things previously mentioned, as well as forecasted weather, drought conditions, national activity/needs, local influences, etc. The following descriptions and representative conditions are not all inclusive or exclusive to transition between levels.

II. ZONE PREPAREDNESS LEVELS

Preparedness Level 1
Description: Conditions are not conducive for large fire growth within the area. Initial response activity is either minimal and/or fires present little threat to control. Snow cover, rain, or green fuel conditions are predominate. Normal Fire resource staffing is adequate.
Typical representative conditions experienced under PL1 include:
<input type="checkbox"/> All FDRA SIGs are showing LOW to MODERATE fire danger based on their respective Fuel Model.
<input type="checkbox"/> Number and size of fires are within the normal range for the time of year. Potential for escaped fires is low.
<input type="checkbox"/> There is little or no requirement for use of outside resources. Neighboring Dispatch Centers are in a similar condition.

Preparedness Level 2

Description: Resources within dispatch zone are adequate. Initial responses have increased, but potential for escape is low to moderate. Potential for fire growth in activity fuels is likely. Some potential exists for mobilization of additional resources from other dispatch zones, especially aircraft. Some support to other units may also be occurring.

Typical representative conditions experienced under PL2 include:

- One or more FDRA SIGs are showing MODERATE to HIGH fire danger based on their respective Fuel Model.
- Wildland fire activity is increasing, and some potential exists for initial response fires to escape and become large fires.
- Resources within the dispatch zone appear adequate to manage the situation, and managers may feel comfortable lending resources to other Geographic Areas.
- Previous Preparedness Level actions remain in place.

Preparedness Level 3

Description: All resources in the dispatch zone are in utilization, or available for Initial Attack. Initial response is frequent and expected, and potential for escape is moderate to high. Large fires may be occurring and potential for IMT mobilization is present. Fire behavior is escalating and of concern to multiple agencies and fire managers.

Typical representative conditions experienced under PL3 include:

- Two or more FDRA SIGs are showing HIGH or greater fire danger based on their respective Fuel Model.
- Wildland and prescribed fire activities require the occasional commitment of resources from out of the area.
- One or more units experiencing multi-day fires, or fires requiring IMT support.
- Seasonal build-up of fire danger is expected to continue.
- Managers are lending a few resources to other Geographical Areas.
- Previous Preparedness Level actions remain in place.

Preparedness Level 4

Description: Resources are fully and frequently being mobilized. Initial response is occurring and potential for escape is high. Aviation resources are critical to success. Adjacent dispatch zones are fully committed to fire suppression and IMT fires are occurring regularly within the Geographical Area. Fire behavior is aggressive, threats to life and property are high, as is agency and fire manager concern.

Typical representative conditions experienced under PL4 include:

- All FDRA SIGs are showing HIGH or greater fire danger based on their respective Fuel Model.
- Large fire activity is present on the Dispatch Zone.
- Most Northern Rockies crews and IMTs are committed.
- No relief in predicted weather conditions is expected.
- Previous Preparedness Level actions remain in place.

Preparedness Level 5

Description: Fire resources throughout the dispatch zone are almost fully committed. Initial response is frequently unsuccessful. Use of aviation resources is essential for initial response and large fire support. Adjacent dispatch zones are at full operational level. Most or all Northern Rockies IMTs are in use. Fire behavior is high or extreme; threats to life and property are multiple and complex. Agency and fire manager concern is high.

Typical representative conditions experienced under PL5 include:

- Most resources throughout the Northern Rockies are fully committed.
- There is a high level of unsuccessful initial response or unstaffed/minimally staffed incidents across the zone.
- More than one IMT committed in the zone.
- Significant competition for resources is occurring.
- Long term forecast is for continued existing or worsening conditions.
- Previous Preparedness Level actions remain in place.

III. RECOMMENDED ACTIONS GUIDE

Preparedness Level (PL) Actions are guides for agency personnel to **consider** when preparedness level thresholds are reached. If an agency doesn't have a specific position that is listed within the PL table, that agency will utilize discretion as to what position will assume those roles (see examples below). Refer to the Northern Rockies GACC and CDC Mobilization Guides for more information on Preparedness Level Plans.

A. AGENCY ADMINISTRATORS

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
Agency Administrator	Agency fire qualified personnel are ready for fire assignments (trained, WCT tested, red carded)	X	X				Agency
	Identify availability of non-fire personnel for potential fire assignments.			X	X	X	Agency
	Ensure Resource Advisors (READ) are designated and available for fire assignments.				X	X	Agency
	Evaluate work/rest needs of fire staff.				X	X	Agency
	Provide appropriate support to fire staffs regarding the implementation of preparedness level actions (i.e. severity requests, restrictions, and closure planning).				X	X	Agency
	Issue guidance to staff indicating severity of the season and increased need and availability for fire support personnel (i.e. availability for large fire support).				X	X	Agency

B. FIRE MANAGEMENT OFFICERS

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity	
Fire Staff	Evaluate season severity data (NFDRS indices for the season, fuel loading, fuel moisture, drought indices, long-term forecasts).		X	X	X	X	Agency	
	Brief agency administrator on prescribed fire conditions, fire potential, and wildfire activity.	X	X	X	X	X	Agency	
	Review geographical and national preparedness levels and evaluate need to suspend local Rx fire activities.			X	X	X	Agency	
	Consider consulting with or ordering an FBAN or WFDSS Support.			X	X	X	Agency	
	Ensure Prevention Officer has initiated media and public education contacts.			X	X	X	Agency	
	Consider daily zone coordination calls when competition for resources exist within the zone.			X	X	X	Agency	
	Ensure agency staff personnel are briefed on increasing fire activity.				X	X	Public Industry	
	Consider fire severity request and pre-positioning of resources including; suppression resources, aerial support, aerial supervision, command positions, dispatch, logistical support, and prevention.					X	X	Agency
	If preparedness level is decreasing, consult with Duty Officer/Dispatch Center Manager and consider release of pre-positioned or detailed personnel.				X	X	X	Agency Public Industry
	Evaluate crew and staff work/rest requirements.					X	X	Agency
	Coordinate with interagency partners the need for fire restrictions or closures.					X	X	Agency
	Communicate with Dispatch Center Manager on geographical conditions and resources availability.					X	X	Public Industry
Request the agency administrator to issue guidance to agency staff					X	X	Agency	

C. DISPATCH CENTER

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
Dispatch Center	Dispatch Intel and Logistics functions operate as warranted.	X					Agency
	If preparedness level is decreasing, consider release of pre-positioned or detailed dispatchers and logistical support personnel.		X	X	X		Agency
	Dispatch moves to 7-day coverage and night staffing as the fire situation warrants.			X	X	X	Agency
	Consider pre-positioning or detail of off-unit IA dispatchers and logistical support personnel.			X	X	X	Agency
	Evaluate need for Expanded Dispatch			X	X	X	Agency
	Begin weekly conference calls with Zone FMOs and Operations staff.			X	X	X	Agency
	Evaluate work/rest needs of center staff.				X	X	Agency

D. DUTY OFFICERS

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
Duty Officer	If preparedness level is decreasing, consider releasing pre-positioned and detailed resources.		X	X	X		Agency
	Ensure incoming pre-position or detailed personnel are briefed on local conditions.	X	X	X	X	X	Agency
	Evaluate work/rest needs of IA crews, dispatchers, and aviation bases.			X	X	X	Agency
	Consider patrols and pre-positioning of local IA resources in high-risk areas.				X	X	Agency
	Consider pre-positioning and/or detailing of additional IA resources from off-unit.				X	X	Agency
	Consider bringing in local resources from scheduled days off.				X	X	Agency

E. PREVENTION/MITIGATION & PUBLIC INFORMATION

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
Fire Prevention/ Mitigation and Public Information	Maintain contact with and information flow to public on prescribed fire and seasonal outlooks.	X	X	X			Agency Public
	Target specific prevention problems or areas, ignition causes or activities (fireworks, exploding targets, campgrounds, dispersed areas, etc.			X	X	X	Agency Public
	Track potential and implement severity request needs as conditions warrant.			X	X	X	Agency
	Contact local media to inform of the start of fire season and the potential for local fire danger to increase.			X	X	X	Agency Public
	Provide public and industry with access to fire danger information, closures, restrictions, and warnings.				X	X	Agency Public Industry
	Post signs and warnings in camping and recreation areas.			X	X	X	Public
	Consider need for increased fire prevention patrols.				X	X	Agency
	Notify local media of High/Very High/Extreme fire danger and the need for increased public caution.				X	X	Public
	Contact local fire chiefs and inform of increased fire danger.				X	X	Agency
	Consult with FMO regarding need for fire restrictions or closures.				X	X	Agency
	Consider out of area Prevention Team(s).				X	X	Agency
Consider Joint Information Center.					X	Agency	

APPENDIX D – PREVENTION PLAN

See each individual agency's Prevention Plan

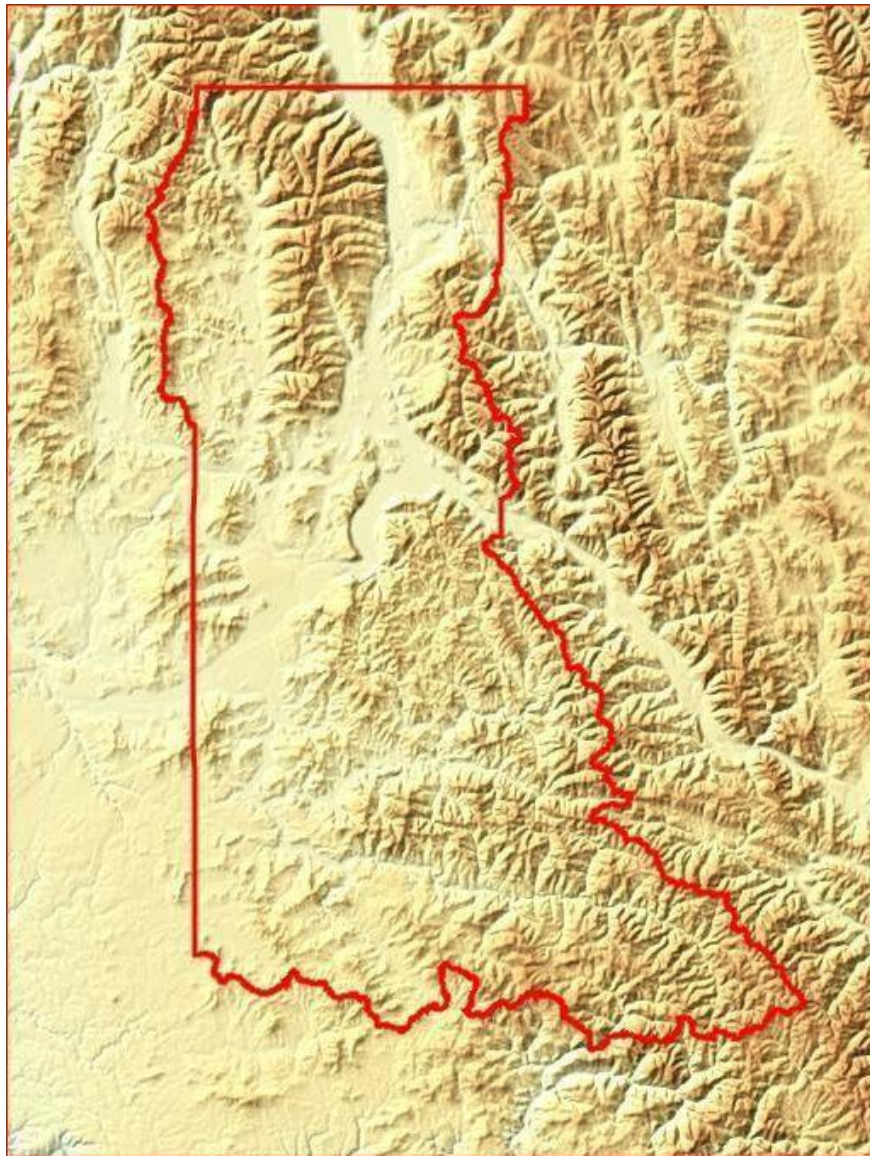
APPENDIX E – RESTRICTION / CLOSURE PLAN

See State of Idaho Fire Restriction Plan

APPENDIX F - TOPOGRAPHY

The Idaho panhandle is characterized by several mountain ranges interspersed with large lakes and extensive river valleys. The Selkirk Mountains, Cabinet Mountains, Purcell Mountains, Coeur d'Alene Range, and Bitterroot Range are all part of the rugged terrain of the panhandle. Lakes Coeur d'Alene and Pend Oreille, and the upper and lower Priest Lakes are dominant water features in the area. Major river valleys consist of the St. Joe, Coeur d'Alene, Priest, Pend Oreille, Clark Fork, and Kootenai.

Elevation ranges from about 2,000 feet along the Spokane and Pend Oreille Rivers to over 7,000 feet on mountain peaks. Landforms include flat grassland, rolling foothills, and steep mountains. The FDOP area stretches nearly 150 miles from north to south and nearly 100 miles east to west at its widest point.



Elevation tinted hill shade

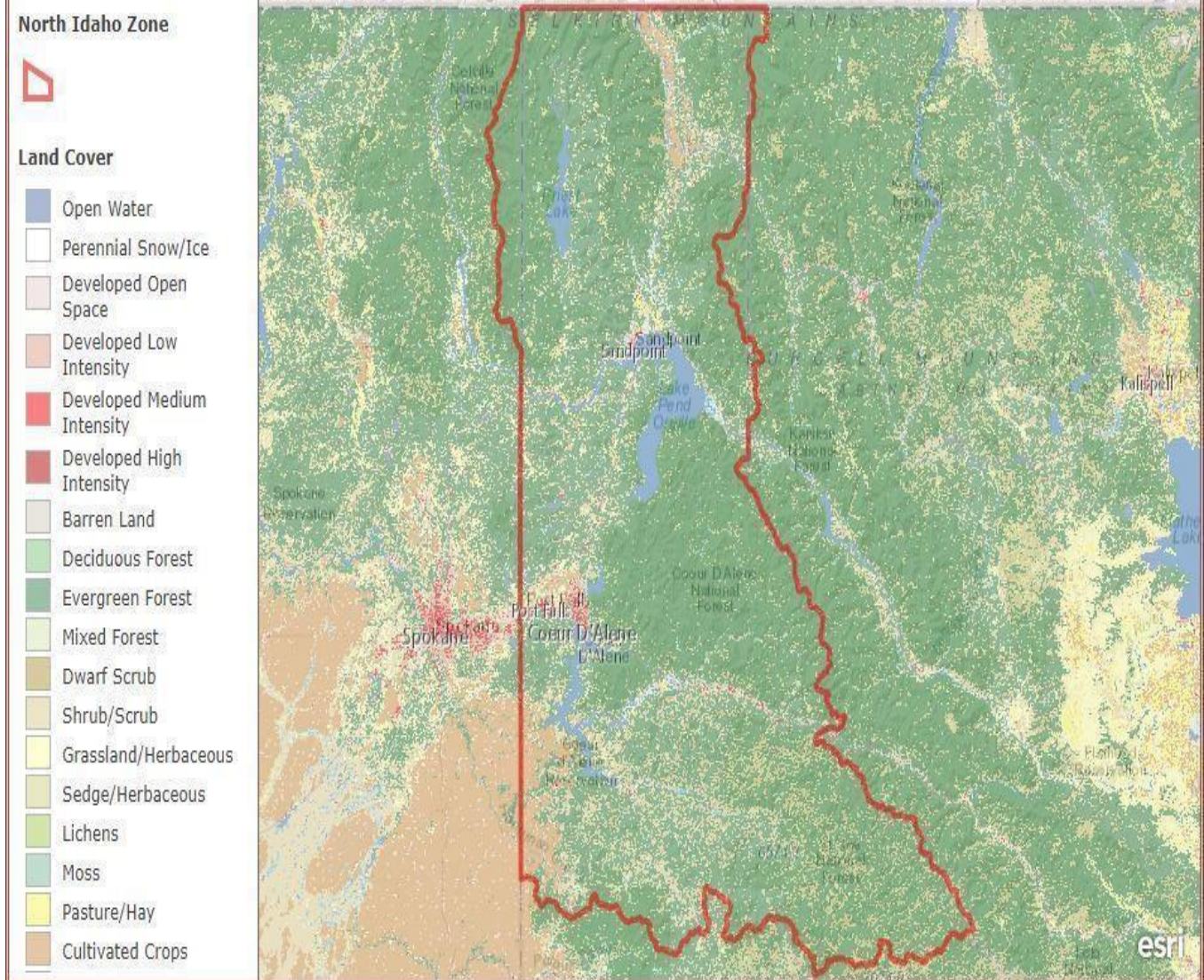
APPENDIX G - VEGETATION

The mountain Fire Danger Rating Areas (South Mountains and North Mountains) on the Idaho panhandle primarily consist of forested vegetation. There are fourteen native conifer species as well as five broadleaved species. The conifer species typically dominate the forests with the broadleaved species being much less prevalent. Forest stands are usually composed of different combinations of tree species with various abundance levels. Often, a mixture of three to five conifer species will occur within an individual forest stand. However, it is not uncommon to find stands that contain six to eight different conifer species as well as one or two broadleaved species. "Pure" stands that contain only one tree species are relatively rare, and it is even somewhat uncommon to find a stand that contains only two tree species.

The most abundant species mixes on forested areas are grand fir/cedar/western hemlock, Douglas-fir, and subalpine fir. Forest stands dominated by lodgepole pine are relatively common, especially in the upper St. Joe River drainage. Less common are the ponderosa pine, western larch, and western white pine dominated stands.

The valley FDRAs (North Valley and South Valley) commonly have grassland and cultivated areas intermixed with riparian areas and forestland. Ponderosa pine is more common in the Valley FDRAs, though most other species also exist in this FDRA depending on elevation and aspect.

Fire Danger Operating Plan Alpha Map- Vegetation



APPENDIX H - CLIMATE

The climate within the Interior Columbia River Basin, which includes the Idaho panhandle, is particularly dynamic because it has a transition-type climate, which is influenced by three competing air masses:

1. Moist, marine air from the west that moderates seasonal temperatures.
2. Continental air from the east and south, which is dry and cold in the winter and hot with convective precipitation and lightning in summer; and
3. Dry, arctic air from the north that brings cold air in winter and helps cool the area in summer.

The relative strengths of these air masses can vary greatly over time, change rapidly, and are controlled by large-scale weather patterns, including the position of the jet stream and continental-scale patterns of high- and low-pressure systems. Northeastern Washington and northern Idaho is an area where the variability caused by the interaction of these three air masses is great.

Because of the strong influence of inland marine airflow, precipitation in northern Idaho and is generally heavy compared to the rest of the Rocky Mountains. Precipitation varies across the panhandle from about 22 inches annually in Bonners Ferry to more than 80 inches annually in the Cabinet Mountains east of Sandpoint.

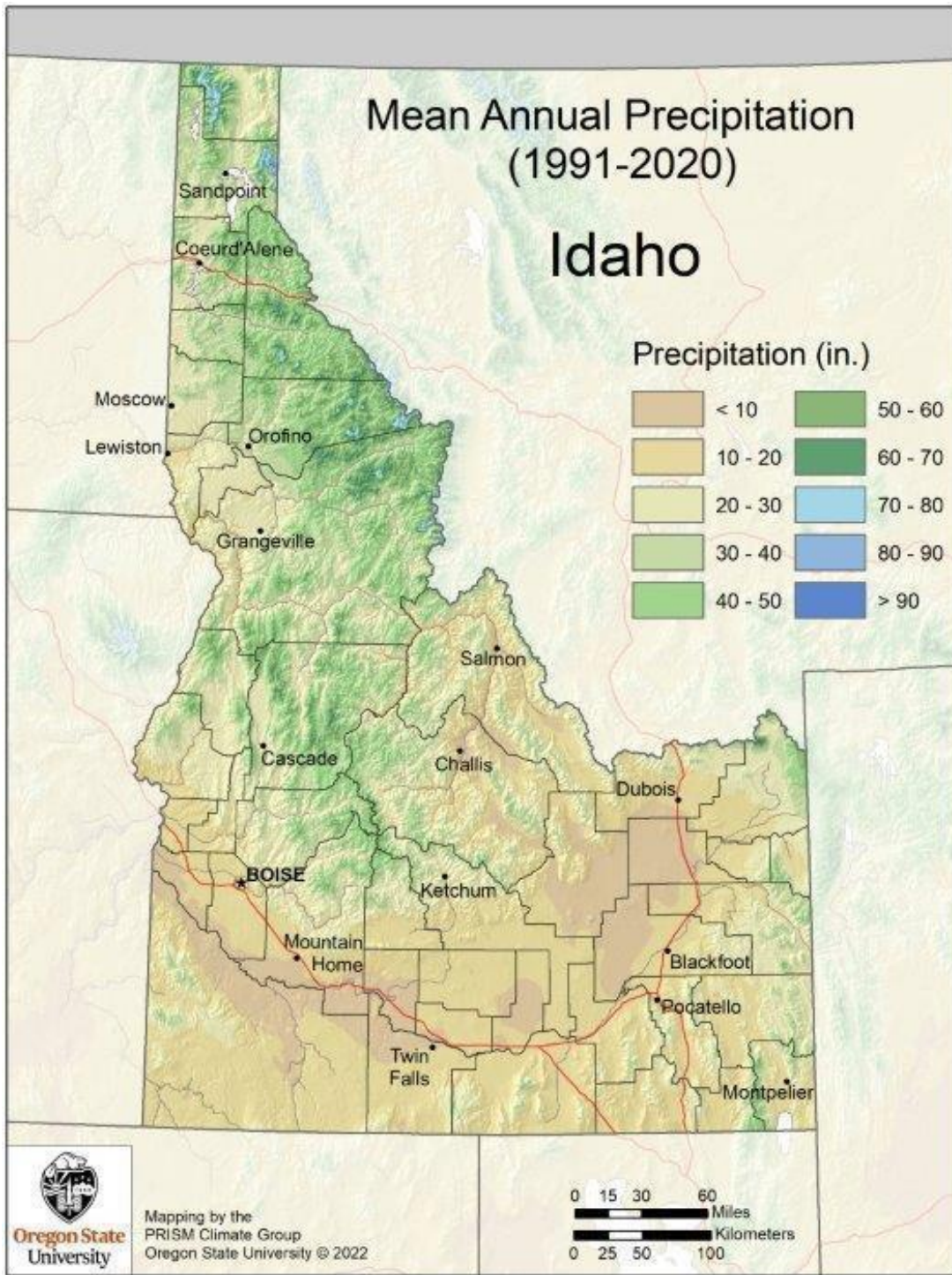


Figure 4. 30-year normal annual precipitation. PRISM Conus 1991-2020 800m

APPENDIX I – FIRE OCCURRENCE

During the analysis period of 2009-2023, there were 3,031 fires across the NIZ area, burning approximately 197,721 acres. This equates to an average of 13,181 acres burned annually with the majority of burned acres in the North Mountains and South Mountains FDRA. This is due to more remote areas in these two FDRAs that allow for managed fires as well as lower priority for resource allocation due to lack of high values as compared to the North Valleys and South Valleys FDRAs.

1,583 fires were caused by lightning (52%), with most of the human starts associated with the North Valley and South Valley FDRA’s due to their high populations and associated human activity. The majority of fire starts occurring in August, with July being the next busiest month.

All fire analysis was from 2009-2023 with the dates of May 10th – October 20th which corresponds with the proclaimed State of Idaho fire season.

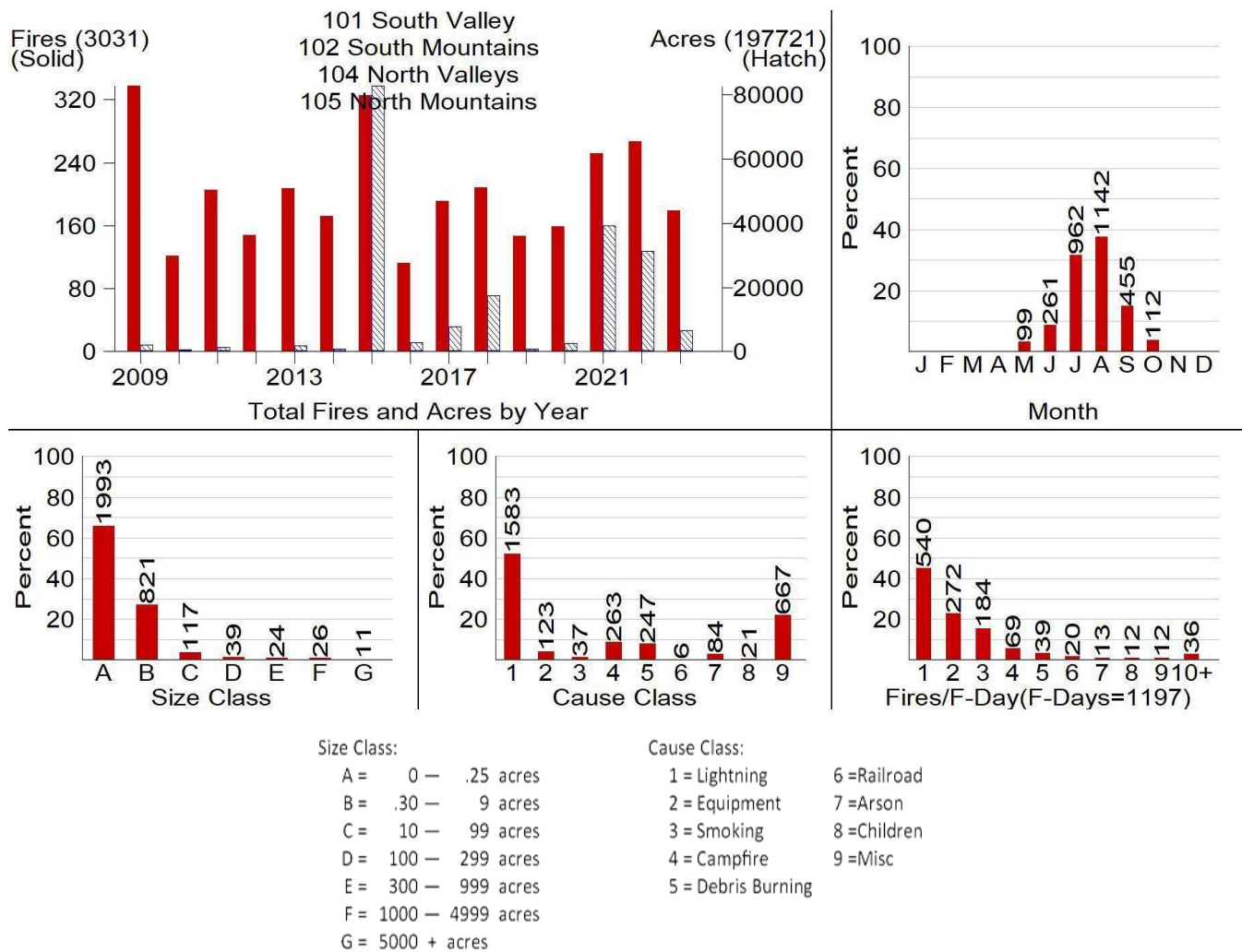


Table 1, Total and Average number of fires between 2009 and 2023.

	Total Fires	Average Fires per Year
North Mountains	851	57
North Valley	476	32
South Mountain	792	53
South Valley	912	61
<i>Totals (CDC Area)</i>	<i>3031</i>	<i>202</i>

Table 2, Total and Average number of acres burned between 2009 and 2023.

	Total Acres Burned	Average Acres Burned per Year
North Mountains	86,373	5,758
North Valley	3,147	210
South Mountain	102,023	6,802
South Valley	6,177	412
<i>Totals (CDC Area)</i>	<i>197,721</i>	<i>13,181</i>

Table 3, Fire Cause Classes and % of Fire Cause between 2009 and 2023.

Fire Cause Classes Table		
Cause		% of Starts
1	Lightning	52 %
2	Equipment	4 %
3	Smoking	4 %
4	Campfire	9 %
5	Debris Burning	9 %
6	Railroad	< 1 %
7	Arson	3 %
8	Children	< 1 %
9	Miscellaneous	22 %

North Mountains FDRA 2009-2023 Occurrence

During the analysis period of 2009-2023, 851 fires burned a total of 86,373 acres. Significant fire years for acres burned include 2015, 2017, 2018, 2021 and 2022. The majority of fires occur in July (35.5%) followed by August (34.7%).

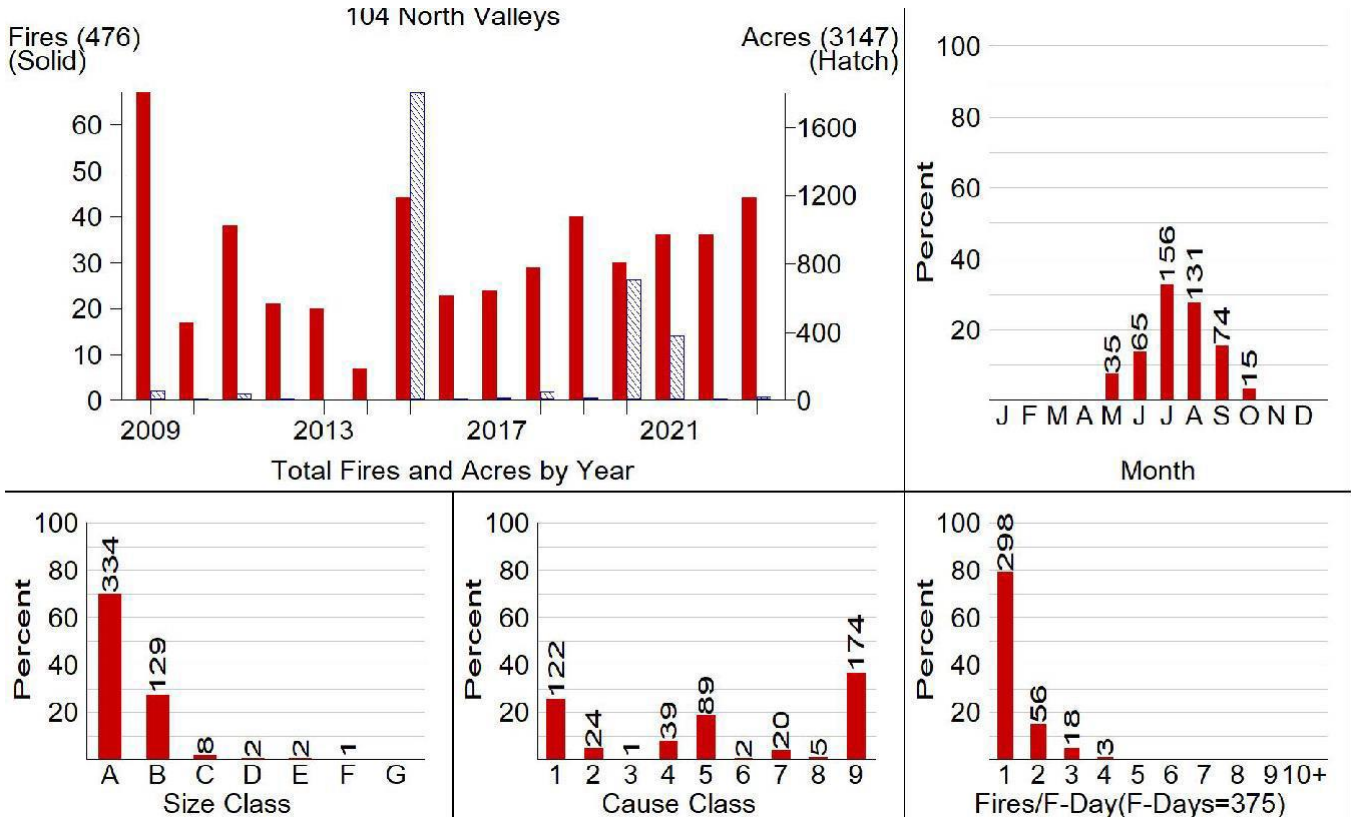
532 fires (63%) were caused by lightning, with miscellaneous fires the next predominate, followed by campfires and debris burning.



North Valleys FDRA 2009-2023 Fire Occurrence

During the analysis period of 2009-2023, 476 fires burned a total of 3,147 acres. Significant fire years for acres burned include 2015, 2020, and 2021. The majority of fires occur in July (33%) followed by August (28%).

174 fires were attributed to miscellaneous causes (37%), with 122 lightning fires (26%) being the next predominate, followed by debris burning (19%). In total, 74% of the fires in the North Valley FDRA are caused by human activity.



Size Class:

- A = 0 – .25 acres
- B = .30 – 9 acres
- C = 10 – 99 acres
- D = 100 – 299 acres
- E = 300 – 999 acres
- F = 1000 – 4999 acres
- G = 5000 + acres

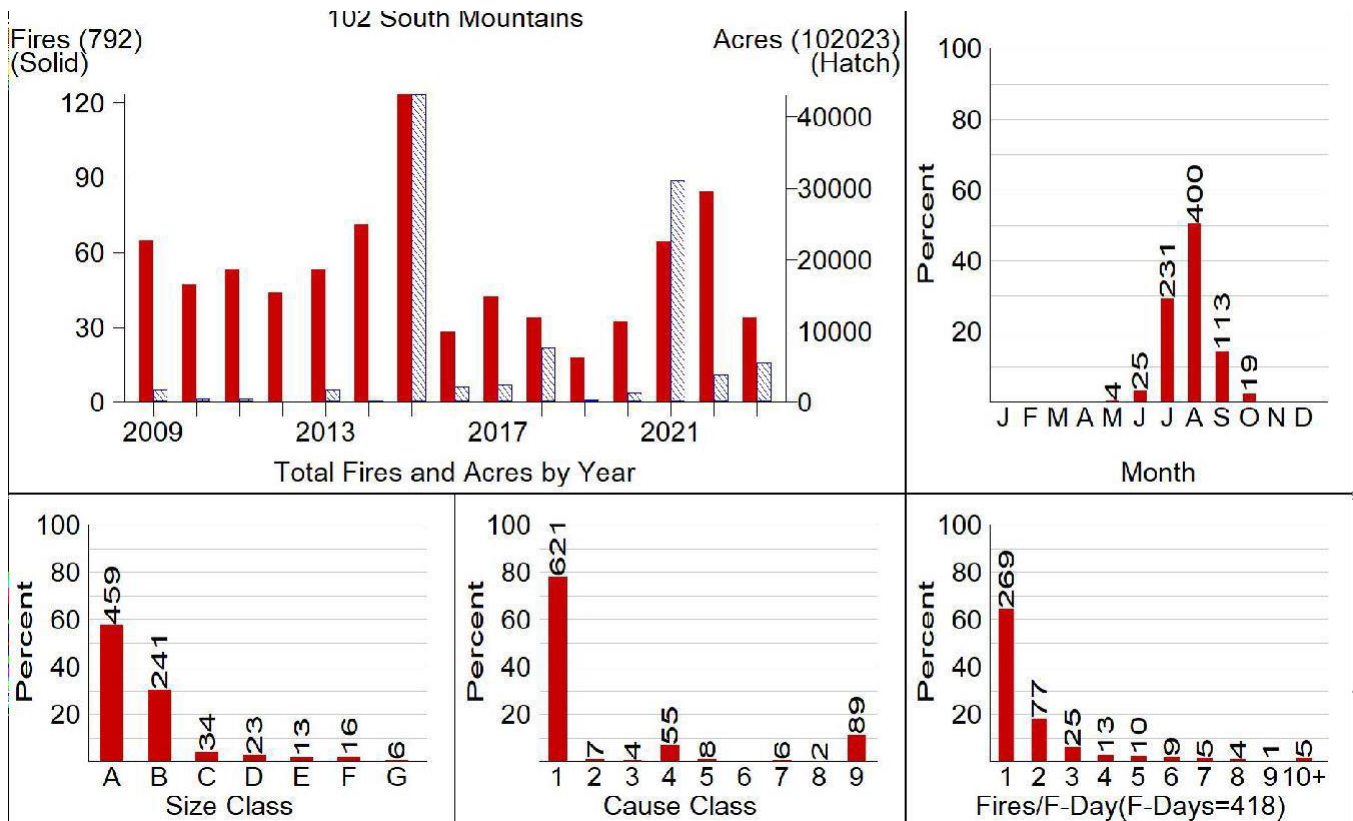
Cause Class:

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

South Mountains FDRA 2009-2023 Occurrence

During the analysis period of 2009-2023, 792 fires burned a total of 102,023 acres. Significant fire years for acres burned include 2015, 2018, and 2021. The majority of fires burn in August (51%) followed by July (29%).

621 fires (78%) were caused by lightning, with miscellaneous fires the next predominate, followed by campfires.



Size Class:

- A = 0 – .25 acres
- B = .30 – 9 acres
- C = 10 – 99 acres
- D = 100 – 299 acres
- E = 300 – 999 acres
- F = 1000 – 4999 acres
- G = 5000 + acres

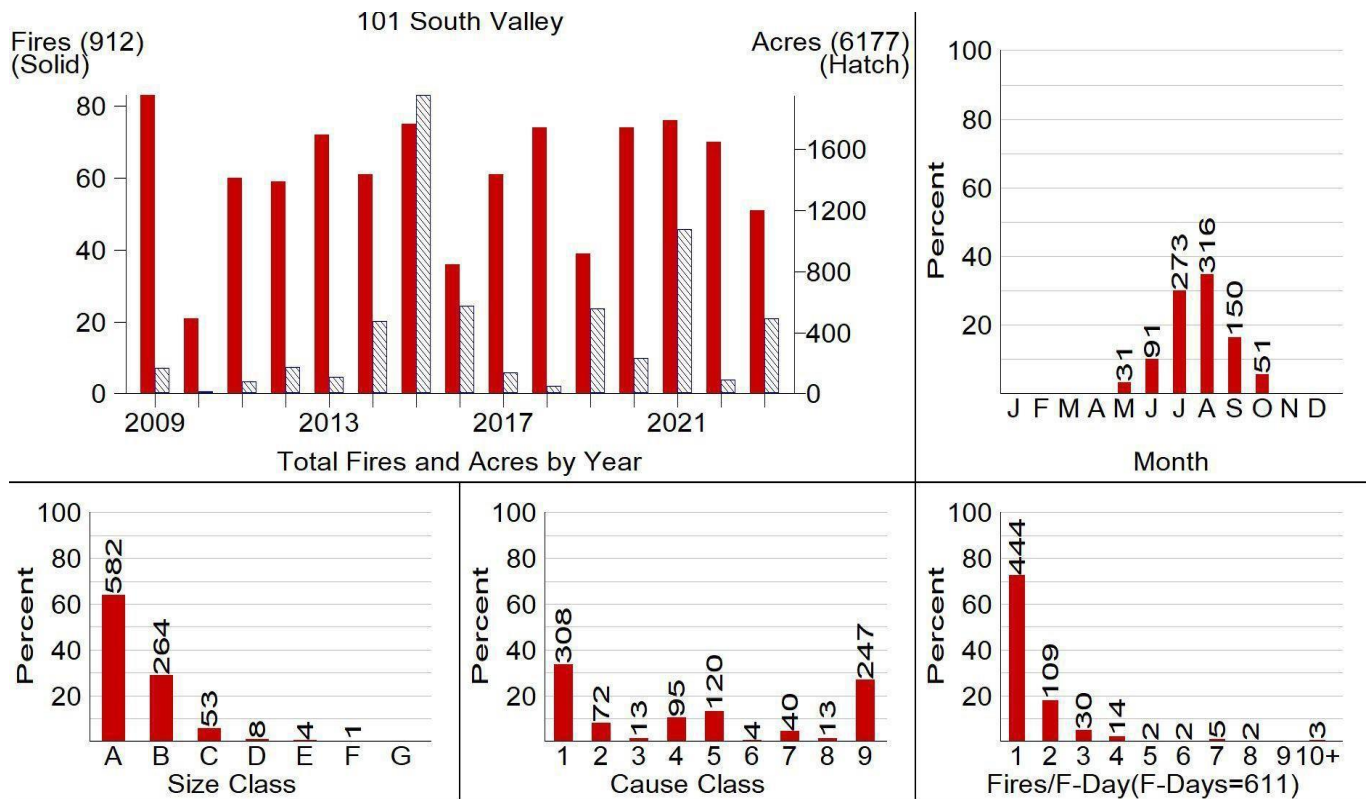
Cause Class:

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

South Valley FDRA 2009-2023 Occurrence

During the analysis period of 2009-2023, 912 fires burned a total of 6,177 acres. Significant fire years for acres burned include 2015 and 2021. The majority of fires burn in August (35%) followed by July (30%).

308 fires (34%) were caused by lightning, with miscellaneous (27%) the next predominate, followed by debris burning (13%) and campfires (10%). In total, 66% of the fires in the South Valley FDRA are caused by human activity.



Size Class:

- A = 0 – .25 acres
- B = .30 – 9 acres
- C = 10 – 99 acres
- D = 100 – 299 acres
- E = 300 – 999 acres
- F = 1000 – 4999 acres
- G = 5000 + acres

Cause Class:

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

APPENDIX J – FIRE FAMILY PLUS ANALYTICS

Fire Family Plus Analysis Parameters

The Fire Family Plus Analysis was conducted by first determining the appropriate weather station(s) that best represent and predict fire business from a statistical standpoint. Special Interest Groups (SIGs) were developed for all the 4 FDRA's, with some modifications from the 2021 version.

North Mountains added Saddle RAWs to previous SIG (was Priest Lake-Hoodoo), North Valleys added Hoo Doo RAWs to what previously was Bonners RAWs alone, and South Mountains dropped Nuckols RAWs from the previous SIG (Lines Creek-Magee-Nuckols). South Valleys SIG remained the same with Potlatch-Nuckols.

NFDRS Fuel Models were also looked at and Fuel Model Y was used for 3 of the 4 FDRA's with Fuel Model Z utilized for the North Mountains.

Common years and season were utilized with the period 2009-2023 (15 years) analyzed and the season set at May 10 – October 20 which corresponds to the proclaimed state of Idaho fire season for all 4 FDRA's. One note is that for the Response Plan (Run Cards) the season of use was June 15- September 30th utilizing BI since this is when the run cards are “turned on” for the Coeur d’Alene Dispatch area. The run cards use a breakpoint for Light, Medium, and Heavy responses based on BI percentiles. The North Mountains and South Mountains use the 40th percentile and 90th percentile as the breakpoints. The North Valleys and South Valley use the 40th percentile and 85th percentile as the breakpoints based on having a heavy WUI component and historical responses. These are reflected in the Percentile Tables for each FDRA under the heading of “BI Run Card”.

The basic statistics for each FDRA's weather station combination correlated with the FDRA's fire history is also included. This shows the R², P-Value, Chi² analysis, and Probability Data Range of the data. Analysis was conducted for a Fire Day as well as a Large Fire Day. A Large Fire Day was defined as being 10 acres or larger. Both the ERC and BI were looked at for the analysis.

Multiple Fire Days was not analyzed as the multiple fire detection day has little correlation to long term trends measured by ERC and moisture. Multiple Fire Days in the Coeur d’Alene Dispatch area tend to correlate to lightning storms and windstorms that occur independently of the fire danger continuum.

North Mountains		Version	2016 NFDRS	2/20/2024
Date Range	2009-2023	Large FD:	10 acres	
		Date Filter:	May 10 - Oct 20	
Representative WX	SIG: Hoo Doo - Priest Lake - Saddle Pass		Fuel Model Z	
		R²	Chi²	P-Value
		Prob Range		
ERC	Fire Day	0.89	20.33	0.0091
	Large Fire Day	0.8	6.2	0.6251
BI	Fire Day	0.92	0.0832	13.94
	Large Fire Day	0.71	8.23	0.4116

Note: North Mountains FDRA utilizes fuel model Z vs fuel model Y (like the other three FDRAs). Analysis was reevaluated at FM Y to ensure rationale from last version still stood accurate. FM Y Decision Points had to be lowered where DP5 was at the 70th percentile. Ran the Fuel model Z and DP 5 ended up being at the 90th percentile, which is in line with the other 3 FDRAs for DP5 and 90th. Analysis confirmed to continue with FM Z for North Mountains.

Decision Point Breakpoints	Decision Points		
	ERC	BI	IC
1	0	0	0
2	29	20	5
3	50	45	14
4	68	59	23
5	85	72	33

FF+ decision analysis was examined to determine DPs. The DPs were too low for actual decisions made in the NIZ, likely due in part to large fires being discovered at lower indices but not showing significant growth until days or weeks later. Therefore, this process was not utilized.

Percentiles	Decision Points			
	ERC	BI	BI Run Card	IC
40	47	46	54	12
80	77	68	72	28
85	81	71	74	31
90	87	75	78	33
97	100	84	87	41

BI Run Card is run from 6/15 - 9/30 to match Run Card season of usage. N Mtn uses 40th and 90th percentile as run card breakpoints

North Valleys		Version	2016 NFDRS	2/20/2024
Date Range	2009-2023	Large FD:	10 acres	
		Date Filter:	May 10 - Oct 20	

Representative WX	SIG: Bonners - Hoo Doo				Fuel Model Y
		R²	Chi²	P-Value	Prob Range
ERC	Fire Day	0.87	17.68	0.0238	0.03 - 0.49
	Large Fire Day	0.5	8.08	0.3254	0.00 - 0.04
BI	Fire Day	0.84	22.04	0.0048	0.02 - 0.47
	Large Fire Day	0.64	4.91	0.6705	0.00 - 0.06

Note: Revised SIG for North Valleys from previous version to utilize more than one weather station. By adding Hoo Doo RAWs to Bonners RAWs, the data was slightly more accurate with larger data sets. NV has very few large fires, lowering the statistical data compared to the other FDRAs.

Decision Point Breakpoints			
	ERC	BI	IC
1	0	0	0
2	20	20	7
3	27	26	14
4	33	30	24
5	45	38	36

FF+ decision analysis was examined to determine DPs. The DPs were too low for actual decisions made in the NIZ, likely due in part to large fires being discovered at lower indices but not showing significant growth until days or weeks later. Therefore, this process was not utilized.

Percentiles				
	ERC	BI	BI Run Card	IC
40	27	25	27	17
80	41	33	35	35
85	42	35	36	38
90	46	36	38	41
97	53	40	42	49

BI Run Card is run from 6/15 - 9/30 to match Run Card season of usage. N Valley uses 40th and 85th percentile as run card breakpoints

South Mountains		Version	2016 NFDRS	2/20/2024
Date Range	2009-2023	Large FD:	10 acres	
		Date Filter:	May 10 - Oct 20	
Representative WX	Lines - Magee			Fuel Model Y
		R²	Chi²	P-Value
		Prob Range		
ERC	Fire Day	0.93	21.05	0.007
	Large Fire Day	0.96	3.54	0.896
BI	Fire Day	0.94	13.38	0.0994
	Large Fire Day	0.95	3.94	0.8625

Note: Revised SIG for South Mountains from previous version. Previous version utilized Nuckols-Lines-Magee, however with updated data set, Lines-Magee SIG was statistically better.

Decision Point Breakpoints			
	ERC	BI	IC
1	0	0	0
2	20	18	4
3	35	30	18
4	48	36	30
5	56	41	40

FF+ decision analysis was examined to determine DPs. The DPs were too low for actual decisions made in the NIZ, likely due in part to large fires being discovered at lower indices but not showing significant growth until days or weeks later. Therefore, this process was not utilized.

Percentiles				
	ERC	BI	BI Run Card	IC
40	28	25	29	12
80	49	36	39	33
85	52	38	40	36
90	56	40	41	42
97	62	44	45	50

BI Run Card is run from 6/15 - 9/30 to match Run Card season of usage. S Mtn uses 40th and 90th percentile as run card breakpoints

South Valleys		Version	2016 NFDRS	2/20/2024
----------------------	--	----------------	------------	------------------

Date Range	2009-2023	Large FD:	10 acres
		Date Filter:	May 10 - Oct 20

Representative WX **Potlatch - Nuckols** **Fuel Model Y**

		R ²	Chi ²	P-Value	Prob Range
ERC	Fire Day	0.94	16.72	0.0331	0.04 - 0.63
	Large Fire Day	0.89	5.37	0.7169	0.00 - 0.14
BI	Fire Day	0.87	29.93	0.0002	0.04 - 0.65
	Large Fire Day	0.87	7.95	0.4387	0.00 - 0.24

Note: No change to South Valley SIG for this update. Using Potlatch-Nuckols continues to do better statistically to represent large fire days.

Decision Point Breakpoints			
	ERC	BI	IC
1	0	0	0
2	22	18	4
3	32	30	18
4	42	36	30
5	57	41	40

FF+ decision analysis was examined to determine DPs. The DPs were too low for actual decisions made in the NIZ, likely due in part to large fires being discovered at lower indices but not showing significant growth until days or weeks later. Therefore, this process was not utilized.

Percentiles				
	ERC	BI	BI Run Card	IC
40	31	25	29	18
80	51	35	37	39
85	54	37	38	42
90	57	38	40	46
97	63	41	42	55

BI Run Card is run from 6/15 - 9/30 to match Run Card season of usage. S Valley uses 40th and 85th percentile as run card breakpoints

Candidate Lists

Weather Station Candidate List-North Mtns																
SIG/Station	Years	Annual_Filter	Variable	Model	Greenup	Freeze	FD_Type	FD_R^2	FD_Chi^2	FD_P-Val	FD_P-Range	LFD_Acres	LFD_R^2	LFD_Chi^2	LFD_P-Val	LFD_P-Range
SIG - PL Hoo	2009 - 2023	5/10 - 10/20	BI	Z3	21-May	31-Dec	All	0.88	20.12	0.0099	0.04 - 0.64	10	0.69	7.55	0.4785	0.00 - 0.14
SIG - PL Hoo	2009 - 2023	5/10 - 10/20	BI	Y3	21-May	31-Dec	All	0.85	28.24	0.0004	0.03 - 0.62	10	0.71	7.42	0.4924	0.00 - 0.13
SIG - PL Hoo Saddle	2009 - 2023	5/10 - 10/20	BI	Z3	7-Jun	31-Dec	All	0.92	13.94	0.0832	0.05 - 0.62	10	0.71	8.23	0.4116	0.00 - 0.13
SIG - PL Hoo Saddle	2009 - 2023	5/10 - 10/20	BI	Y3	7-Jun	31-Dec	All	0.86	30.85	0.0001	0.04 - 0.60	10	0.57	17.01	0.03	0.00 - 0.12
SIG - PL Hoo	2009 - 2023	5/10 - 10/20	ERC	Z3	21-May	31-Dec	All	0.84	30.71	0.0002	0.05 - 0.58	10	0.78	5.91	0.6576	0.00 - 0.11
SIG - PL Hoo	2009 - 2023	5/10 - 10/20	ERC	Y3	21-May	31-Dec	All	0.81	42.98	0	0.04 - 0.63	10	0.72	7.83	0.4501	0.00 - 0.11
SIG - NZ	2009 - 2023	5/10 - 10/20	ERC	Y3	19-May	31-Dec	All	0.85	34.95	0	0.03 - 0.64	10	0.81	4.72	0.7875	0.00 - 0.10
SIG - NZ	2009 - 2023	5/10 - 10/20	ERC	Z3	19-May	31-Dec	All	0.88	24.13	0.0022	0.04 - 0.60	10	0.8	4.56	0.8031	0.00 - 0.10
SIG - PL Hoo Saddle	2009 - 2023	5/10 - 10/20	ERC	Y3	7-Jun	31-Dec	All	0.84	31.1	0.0001	0.05 - 0.59	10	0.79	5.99	0.6486	0.00 - 0.11
SIG - PL Hoo Saddle	2009 - 2023	5/10 - 10/20	ERC	Z3	7-Jun	31-Dec	All	0.89	20.33	0.0091	0.05 - 0.59	10	0.8	6.2	0.6251	0.00 - 0.11

Weather Station Candidate List-North Valleys																
SIG/Station	Years	Annual_Filter	Variable	Model	Greenup	Freeze	FD_Type	FD_R^2	FD_Chi^2	FD_P-Val	FD_P-Range	LFD_Acres	LFD_R^2	LFD_Chi^2	LFD_P-Val	LFD_P-Range
100101	2009 - 2023	5/10 - 10/20	BI	Y3P3	19-May	31-Dec	All	0.78	29.24	0.0003	0.03 - 0.47	10	0.6	4.34	0.7397	0.00 - 0.06
SIG - BF Hoo	2009 - 2023	5/10 - 10/20	BI	Y3	19-May	31-Dec	All	0.84	22.04	0.0048	0.02 - 0.47	10	0.64	4.91	0.6705	0.00 - 0.06
SIG - BF Troy	2009 - 2023	5/10 - 10/20	BI	Y3	19-May	31-Dec	All	0.92	10.26	0.2475	0.02 - 0.48	10	0.76	2.79	0.9035	0.00 - 0.06
SIG - BF Hoo Troy	2009 - 2023	5/10 - 10/20	BI	Y3	19-May	31-Dec	All	0.91	11.48	0.1762	0.02 - 0.47	10	0.62	4.96	0.6649	0.00 - 0.06
SIG - NZ	2009 - 2023	5/10 - 10/20	BI	Y3	19-May	31-Dec	All	0.84	21.01	0.0071	0.02 - 0.48	10	0.6	6.8	0.4499	0.00 - 0.08
100101	2009 - 2023	5/10 - 10/20	ERC	Y3P3	19-May	31-Dec	All	0.87	18.21	0.0197	0.03 - 0.48	10	0.67	2.83	0.9	0.00 - 0.03
SIG - BF Hoo	2009 - 2023	5/10 - 10/20	ERC	Y3	19-May	31-Dec	All	0.87	17.68	0.0238	0.03 - 0.49	10	0.5	8.08	0.3254	0.00 - 0.04
SIG - BF Troy	2009 - 2023	5/10 - 10/20	ERC	Y3	19-May	31-Dec	All	0.87	19.2	0.0138	0.03 - 0.48	10	0.63	4.45	0.727	0.00 - 0.04
SIG - BF Hoo Troy	2009 - 2023	5/10 - 10/20	ERC	Y3	19-May	31-Dec	All	0.86	21.58	0.0058	0.03 - 0.48	10	0.65	4.17	0.7602	0.00 - 0.04
SIG - NZ	2009 - 2023	5/10 - 10/20	ERC	Y3	19-May	31-Dec	All	0.88	16.16	0.0401	0.03 - 0.50	10	0.54	6.48	0.4846	0.00 - 0.05

Weather Station Candidate List-South Mtns																
SIG/Station	Years	Annual_Filter	Variable	Model	Greenup	Freeze	FD_Type	FD_R^2	FD_Chi^2	FD_P-Val	FD_P-Range	LFD_Acres	LFD_R^2	LFD_Chi^2	LFD_P-Val	LFD_P-Range
100425	2009 - 2023	5/10 - 10/20	BI	Y3P3	7-Jun	31-Dec	All	0.89	23.67	0.0026	0.03 - 0.62	10	0.92	6.64	0.5754	0.00 - 0.50
SIG - Nuck Mag Lines	2009 - 2023	5/10 - 10/20	BI	Y3	24-May	31-Dec	All	0.96	11	0.2017	0.02 - 0.60	10	0.93	6.41	0.6009	0.00 - 0.38
SIG - Lines Mag	2009 - 2023	5/10 - 10/20	BI	Y3	7-Jun	31-Dec	All	0.94	13.38	0.0994	0.02 - 0.62	10	0.95	3.94	0.8625	0.00 - 0.45
SIG - Nuck Mag	2009 - 2023	5/10 - 10/20	BI	Y3	24-May	31-Dec	All	0.93	16.44	0.0365	0.02 - 0.62	10	0.94	5.47	0.7063	0.00 - 0.42
100423	2009 - 2023	5/10 - 10/20	BI	Y3P3	24-May	31-Dec	All	0.85	39.96	0	0.02 - 0.54	10	0.91	8.54	0.3822	0.00 - 0.28
SIG - Nuck Mag Lines	2009 - 2023	5/10 - 10/20	ERC	Y3	24-May	31-Dec	All	0.92	25.8	0.0011	0.02 - 0.60	10	0.93	5.6	0.6923	0.00 - 0.24
100425	2009 - 2023	5/10 - 10/20	ERC	Y3P3	7-Jun	31-Dec	All	0.94	16.63	0.0342	0.02 - 0.56	10	0.9	8.94	0.3476	0.00 - 0.22
SIG - Lines Mag	2009 - 2023	5/10 - 10/20	ERC	Y3	7-Jun	31-Dec	All	0.93	21.05	0.007	0.02 - 0.60	10	0.96	3.54	0.896	0.00 - 0.24
SIG - Nuck Mag	2009 - 2023	5/10 - 10/20	ERC	Y3	24-May	31-Dec	All	0.94	18.52	0.0176	0.02 - 0.60	10	0.93	5.91	0.6568	0.00 - 0.24
100423	2009 - 2023	5/10 - 10/20	ERC	Y3P3	24-May	31-Dec	All	0.95	15.34	0.0529	0.02 - 0.60	10	0.92	7.31	0.5038	0.00 - 0.24

Weather Station Candidate List-South Valleys																
SIG/Station	Years	Annual_Filter	Variable	Model	Greenup	Freeze	FD_Type	FD_R^2	FD_Chi^2	FD_P-Val	FD_P-Range	LFD_Acres	LFD_R^2	LFD_Chi^2	LFD_P-Val	LFD_P-Range
100421	2009 - 2023	5/10 - 10/20	BI	Y3P3	45450	45657	All	0.88	24.92	0.0016	0.07 - 0.53	10	0.88	6.61	0.5789	0.00 - 0.13
100603	2009 - 2023	5/10 - 10/20	BI	Y2P3	30-Apr	31-Dec	All	0.91	22.13	0.0047	0.02 - 0.70	10	0.9	4.83	0.776	0.00 - 0.32
SIG - Pot Hoo	2009 - 2023	5/10 - 10/20	BI	Y3	21-May	31-Dec	All	0.82	49.59	0	0.02 - 0.67	10	0.88	7.59	0.4749	0.00 - 0.29
SIG - Pot Nuck	2009 - 2023	5/10 - 10/20	BI	Y3	24-May	31-Dec	All	0.87	29.93	0.0002	0.04 - 0.65	10	0.87	7.95	0.4387	0.00 - 0.24
100421	2009 - 2023	5/10 - 10/20	ERC	Y3P3	7-Jun	31-Dec	All	0.94	13.25	0.1036	0.07 - 0.62	10	0.88	5	0.7578	0.00 - 0.13
100603	2009 - 2023	5/10 - 10/20	ERC	Y2P3	30-Apr	31-Dec	All	0.9	24.49	0.0019	0.04 - 0.69	10	0.82	8.4	0.3952	0.00 - 0.20
SIG - Pot Hoo	2009 - 2023	5/10 - 10/20	ERC	Y3	21-May	31-Dec	All	0.91	23.05	0.0033	0.03 - 0.66	10	0.83	8.72	0.3663	0.00 - 0.17
SIG - Pot Nuck	2009 - 2023	5/10 - 10/20	ERC	Y3	24-May	31-Dec	All	0.94	16.72	0.0331	0.04 - 0.63	10	0.89	5.37	0.7169	0.00 - 0.14

APPENDIX K – FIRE DANGER RATING DETAILS

1. FDRA #1 North Mountains

- General Location:

Higher elevation mountain locations generally above 3,000 feet in elevation within Boundary and Bonner counties. Includes the Selkirk, Cabinet and Purcell Mountain ranges.

- Vegetation:

Predominately mixed conifer forest transitioning to cold, open subalpine forests and rocky terrain at the higher elevations.

- Climate:

The climate is warm and moist with precipitation ranging from 35-80"+ with much of the precipitation falling as rain, except in winter. The North Mountain FDRA climate transitions to a cold, moist climate as elevation increases and at the highest elevations there is a cold and dry climate with a short growing season.

- Topography:

The terrain is generally mountainous with steep slopes. This FDRA contains the highest peaks on the panhandle in the Selkirk Mountains with many over 7,000 feet in elevation. Parker Peak is the highest at 7,670 feet.

2. FDRA #2 North Valleys

- General Location:

Lower elevation valley locations generally below 3000 feet in elevation within Boundary and Bonner counties.

- Vegetation:

The vegetation in the North Valleys is highly variable and ranges from agricultural land to dry ponderosa pine and mixed conifer forests.

- Climate:

The climate is relatively warm and dry with significant lake effect influences near Lake Pend Oreille. Precipitation ranges from 22 to about 40 inches per year, depending on location. Most precipitation falls as rain except for winter months when some precipitation is snow.

- Topography:

Topography is primarily gently sloping valleys intermixed with rolling hills which transition to the base of mountain ranges.

3. **FDRA #3 South Mountains**

- General Location:

The Coeur d'Alene and St. Joe Mountains primarily within Shoshone County, but also including parts of Kootenai and Bonner counties.

- Vegetation:

The vegetation consists almost entirely of mixed conifer forests.

- Climate:

Climate is warm and moist with precipitation ranging from approximately 40-60 inches annually. Most of the precipitation falls as rain, except in the winter when it falls as snow.

- Topography:

The topography is steep mountainous terrain with narrow canyons and incised streams. Elevations range from 3000 feet to nearly 7,000 feet at the highest peaks.

4. **FDRA #4 South Valley**

- General Location:

This FDRA consists of valley locations less than about 3000 feet elevation in Shoshone, Kootenai, Benewah, and Latah counties.

- Vegetation:

The vegetation in the South Valley is highly variable and ranges from agricultural land to dry ponderosa pine and mixed conifer forests.

- Climate:

The climate is relatively warm and dry. Precipitation ranges from 25 to about 40 inches per year, depending on location. Most precipitation falls as rain except for winter months where some precipitation is snow.

- Topography:

Topography is primarily gently sloping valleys intermixed with rolling hills which transition to the base of mountain ranges.

APPENDIX L – Fire Managers Quick Guide

Guide for how to use Dispatch’s daily posting of the indices and tie it to your FDRA of concern.

Using the daily indices from Dispatch (usually posted by mid-afternoon) the fire manager can see what the response level for their run card will be tomorrow (BI) as well as track seasonal fire danger with the ERC.

- Daily indices are posted on the CDC web page under Fuels and Fire Danger.
 - Then at the bottom click on Daily and Forecasted Observations

The screenshot shows the Coeur d'Alene Dispatch website. At the top left is a circular logo with a mountain scene and the text 'Coeur d'Alene Dispatch'. At the top right, it lists: Idaho Panhandle National Forests, Idaho Department of Lands, Coeur d'Alene Tribe, Bureau of Land Management, Benewah, Bonner, Boundary, Kootenai, & Shoshone Counties. Below the logo is a navigation bar with links: ID-CDC Home Page | Northern Rockies Coordination Center | National Interagency Coordination Center | Contact Us. The main content area is divided into three columns. The left column has three sections: 'INCIDENT INFORMATION' with links for Fire Information and Area Alerts, Closures, & Restrictions; 'PREDICTIVE SERVICES' with links for Intelligence, Weather & Smoke, and Fuels & Fire Danger; and 'DISPATCH & LOGISTICS' with links for Resource Status, WildWeb, Zone Information, Dispatch Operations, Aviation, Crews, Equipment, & Supplies, and Overhead & Teams. The middle column is titled 'FUELS & FIRE DANGER' and contains several sub-sections: 'Fire Danger Outlooks' with links to National and Northern Rockies Fuels & Fire Danger Pages; 'North Idaho Fire Danger Operation Plan'; 'Local Indices' with 'ERC Charts - Individual Stations' listing various locations like Bonners, Fishhook, Hoodoo, Lines Creek, Magee Peak, Nuckols, Potlatch, Priest Lake, Saddle Pass, and Shock; 'ERC Charts - Special Interest Groups (SIGs)' listing North Mountains, North Valleys, South Mountains, and South Valleys; '1000-Hour Fuel Moisture Charts'; and 'Weather Information Management System (WIMS)' with a link to 'Daily and Forecasted Observations' which is circled in red. The right column contains 'National Fire Danger Rating System (NFDRS)' with links for Gaining an Understanding and NFDRS Subcommittee; 'Wildland Fire Assessment System (WFAS)'; and 'PocketCards' with links for PocketCard Briefing, National PocketCard website, Regional PocketCard Data, and 'Local Pocket Cards' listing North Mountains, North Valleys, South Mountains, and South Valleys.

This will open a document that looks like this. These are the daily and forecasted indices observed from the individual weather RAWs stations as well as the observed and predicted indices for each of the 4 FDRAs.

There are 4 sections in the Daily and Forecasted Observations table:

Station_ID	Station_Name	Obs_Date	Obs_Tm	Obs_Type	W	Dry_Ymg	RH	M_L	HC_Rsk	Wind_Dir	Wind_SP	IO_Hr	Temp_Max	Temp_Min	RH%_Max	RH%_Min	Dur	Amt	Y_L	FHC_Rsk	Snow	Flag
100101	BONNERS	30-Jul-23	13R		2	88	23	0	0	213	10	94	61	59	17	0	0	0	0	0	0	N
100107	SADDLE PASS	30-Jul-23	13R		2	74	32	0	0	67	3	83	57	57	22	0	0	0	0	0	0	N
100204	PRIEST LAKE	30-Jul-23	13R		3	84	22	0	0	161	5	92	48	80	16	0	0	0	0	0	0	N
100208	HOODOO	30-Jul-23	13R		2	90	21	0	0	265	6	96	50	95	16	0	0	0	0	0	0	N
100421	FISHHOOK	30-Jul-23	13R		2	81	36	0	0	315	3	90	55	66	21	0	0	0	0	0	0	N
100423	NUCKOLS	30-Jul-23	13R		2	82	24	0	0	273	8	92	64	46	18	0	0	0	0	0	0	N
100424	LINES CREEK	30-Jul-23	13R		1	78	35	0	0	269	5	85	59	55	23	0	0	0	0	0	0	N
100425	MAGEE PEAK	30-Jul-23	13R		2	78	29	0	0	184	6	83	65	42	22	0	0	0	0	0	0	N
100603	POTLATCH	30-Jul-23	13R		2	85	20	0	0	205	3	93	52	98	17	2	0.04	0	0	0	0	N
100606	SHOCK	30-Jul-23	13O		2	85	21	0	0	324	6	92	59	51	18	0	0	0	0	0	0	N

Station_ID	Station_Name	Obs_Date	Obs_Tm	Obs_Type	MSGC	WS	WDY	HRB	1H	10	HU	TH	IC	SC	ERC	BI	FL	SL	R	KBDI
100101	BONNERS	30-Jul-23	13N	16Y3P	10	129	141.5	6.26	8.83	9	10	46	6	58	44.5	32	5	V	361	
100107	SADDLE PASS	30-Jul-23	13N	16Y3P	3	168	201.6	7.16	10.14	12	14	34.8	4.4	48.6	35.6	25	4	H	673	
100204	PRIEST LAKE	30-Jul-23	13N	16Z3P	5	149	168.5	7.01	11.33	11	13	31.8	12.1	95	77	55	4	H	411	
100204	PRIEST LAKE	30-Jul-23	13N	16Y3P	5	149	168.5	7.01	11.33	11	13	37.6	4.5	46.8	35.2	25	5	V	411	
100208	HOODOO	30-Jul-23	13N	16Z3P	6	139	154.2	6.71	12.84	11	12	37.1	14	96.7	82.9	59	4	H	452	
100208	HOODOO	30-Jul-23	13N	16Y3P	6	139	154.2	6.71	12.84	11	12	42.6	4.9	49.4	37.4	27	4	H	452	
100421	FISHHOOK	30-Jul-23	13N	16Y3P	3	161	189.2	8.73	11.13	11	12	24.9	3.7	47.6	32.3	23	4	H	374	
100421	FISHHOOK	30-Jul-23	13N	16Z3P	3	161	189.2	8.73	11.13	11	12	19.8	8.8	91.7	65.3	46	3+	M	374	
100421	FISHHOOK	30-Jul-23	13N	16Z3P	3	161	189.2	8.73	11.13	11	12	19.8	8.8	91.7	65.3	46	3+	M	374	
100423	NUCKOLS	30-Jul-23	13N	16Y3P	8	92	80.9	7.21	8.28	8	9	38.2	5.4	66.6	44.9	32	4	H	507	
100424	LINES CREEK	30-Jul-23	13N	16Y3P	5	140	155.7	8.54	9.81	10	10	26.8	4.1	55.3	36.5	26	3+	M	405	
100425	MAGEE PEAK	30-Jul-23	13N	16Y3P	6	125	133.3	7.65	8.31	9	9	32.1	4.3	57.5	37.8	27	4	H	228	
100603	POTLATCH	30-Jul-23	13N	16Y2P	3	60	30	7.46	16.3	13	13	26.6	2.6	42.8	26.1	19	5	V	444	
100603	POTLATCH	30-Jul-23	13N	16Y2P	3	60	30	7.46	16.3	13	13	26.6	2.6	42.8	26.1	19	3	M	444	
100606	SHOCK	30-Jul-23	13N	16Y4P	6	60	30	6.98	9.1	9	9	40.3	7.9	64.2	52.8	37	4	H	484	
100606	SHOCK	30-Jul-23	13N	16Y4P	6	60	30	6.98	9.1	9	9	40.3	7.9	64.2	52.8	37	4	H	484	
100606	SHOCK	30-Jul-23	13N	16V4P	6	60	30	6.98	9.1	9	9	32.3	69.5	5.2	45.2	32	5	V	484	
100606	SHOCK	30-Jul-23	13N	16Y4P	6	60	30	6.98	9.1	9	9	40.3	7.9	64.2	52.8	37	4	H	484	
100606	SHOCK	30-Jul-23	13N	16W4P	6	60	30	6.98	9.1	9	9	34.4	45.2	9	47.8	34	5	V	484	

SIG	FRDA Name	MSGC	Obs_Date	Obs_Type	Wind_SP	WDY	F_HRB	FM	1H	10	HU	TH	IC	SC	ERC	BI	FL	SL	R	KBDI
NM101	North Mtns	16Z3P	30-JUL-23	N	6	144.0	161.4	6.86	12.09	11.00	12.50	34.5	13.1	95.8	79.9	57	4+	H	432	
NV101	North Valleys	16Y3P	30-JUL-23	N	10	129.0	141.5	6.26	8.83	9.00	10.00	46.0	6.0	58.0	44.5	32	5	V	361	
SM101	South Mtns	16Y3P	30-JUL-23	N	8	118.7	122.9	7.79	8.99	8.33	9.33	32.4	4.5	59.9	39.8	28	4+	H	381	
SV101	South Valleys	16Y3P	30-JUL-23	N	6	76.0	55.5	7.34	12.29	10.50	11.00	32.4	4.0	54.7	35.5	26	4+	H	476	

SIG	FRDA Name	MSGC	Obs_Date	Obs_Type	Wind_SP	WDY	F_HRB	FM	1H	10	HU	TH	IC	SC	ERC	BI	FL	SL	R	KBDI
NM101	North Mtns	16Z3P	30-JUL-23	F	4	143.5	162.2	9.05	12.82	11.50	12.50	20.9	10.3	87.3	68.8	48	4+	H	424	
NV101	North Valleys	16Y3P	30-JUL-23	F	7	131.0	141.9	8.34	11.08	10.00	10.00	30.3	4.5	54.0	37.6	27	4+	H	353	
SM101	South Mtns	16Y3P	30-JUL-23	F	7	119.1	123.2	7.66	9.76	8.99	9.66	33.7	4.8	58.7	40.1	28	4+	H	374	
SV101	South Valleys	16Y3P	30-JUL-23	F	8	76.0	55.5	7.78	10.35	9.50	10.50	32.0	4.3	56.5	37.6	27	4+	H	468	

- **Section 1:** This shows the observed weather for each of the individual RAWs stations taken at 1300 on July 30, 2023.
- **Section 2:** This shows the observed indices for each individual RAWs station for July 30, 2023 at 1300.
 - Note that a few stations have more than one entry. This is based on the fuel model used. If you look at the MSGC column in Section 2 you'll see a code with 5 characters (i.e. 16Y3P). 16 stands for the NFDRS 16 system, the Y or Z stand for the fuel model used to create the indices and the remaining to characters refer to the slope and climate class. All you need to look at is the middle character with either a Y or Z.
 - The individual stations should generally only use Fuel Model Y....so just look at that Y fuel model for your station of interest.
- **Section 3:** This shows the **Observed indices** for each of the 4 FDRAs as of 1300 on July 30, 2023
 - Note that the ERC column is highlighted.
 - This shows the ERC of today (i.e. July 30, 2023)
- **Section 4:** This shows the **Forecasted indices** for each of the 4 FDRAs tomorrow July 31, 2023
 - Note that the BI column is highlighted.
 - You can tell it's the forecast for tomorrow by looking at the *Obs_Type* column and noticing the "F" which stands for forecasted.

How to use the numbers from the Daily and Forecasted Observations table to determine your **Run Card Response** for tomorrow.

- Let's suppose you are a fire manager with responsibilities within the North Mountains FDRA.
- In order to determine tomorrow's Response Level, you'll need the BI values forecasted for tomorrow in Section 4 (...it's the yellow highlighted column in Section 4).
 - *Tomorrows forecasted BI for the North Mountains is showing 68.8 (or about 69).*
- Now you'll need the FDRA Run Card Response Levels chart from Appendix A (also available as a one-page chart to print, at the end of this appendix).
- Using the North Mountains, you'll see that a forecasted BI of 69 falls in the Medium-Response category. This means that tomorrow the North Mountains will be under a Medium-Response.

FDRA Run Card Response Levels

Based on Burning Index (BI) predicted for next day

	Light	Medium	Heavy
North Mountains	0-53	54-77	78+
North Valleys	0-26	27-35	36+
South Mountains	0-28	29-40	41+
South Valleys	0-28	29-37	38+

- You can also look at today's BI in Section 3 for the North Mountains and see that it was 79.9, or about 80. That means that today the Response Level would have been Heavy since 80 falls in the Heavy category for the North Mountains.
 - Interpreting this means that today was a Heavy Run Card Response and tomorrow conditions are forecast to moderate a bit resulting in a Medium Run Card Response.

How to use the numbers from the Daily and Forecasted Observations table to determine your **Fire Danger** for tomorrow.

- Let’s suppose you are a fire manager with responsibilities within the South Mountains FDRA and you are looking at fire danger thresholds.
- If you look in Section 3 under the ERC column (it’s the yellow highlighted column) you’ll see the observed ERC values for today (July 30, 2023).
 - ***The observed values in the South Mountains FDRA for ERC is 59.9....or about 60.***
- Now you’ll need the ERC Tables for each FDRA located on page 20 (also available as a one-page chart to print, at the end of this appendix).
- Using the South Mountains you’ll see that an ERC of 60 falls in the Very High category.
 - Note that 60 is at the upper end of the Very High category and if it stays warm and dry, the South Mountains could go to Extreme in a few days.
 - You can also look at tomorrow’s Forecasted ERC in Section 4 and see that it is predicted to be 58.7, or about 59. This shows tomorrow is forecast to be in the Very High category, but the indices are forecast to be lower than observed today.

ERC Tables for each FDRA based on ERC

Table 10 Adjective Fire Danger Rating for each FDRA based on ERC

FDRA	Stations	Variable and Fuel Model	Low	Moderate	High	Very High	Extreme
North Mountains	SIG ¹	ERC – Z	0-46	47-76	77-86	87-99	100+
North Valleys	SIG ¹	ERC – Y	0-26	27-40	41-45	46-52	53+
South Mountains	SIG ¹	ERC – Y	0-27	28-48	49-55	56-61	62+
South Valleys	SIG ¹	ERC – Y	0-30	31-50	51-56	57-62	63+

¹See appendix J for details on each SIG

FDRA Run Card Response Levels

Based on Burning Index (BI) predicted for next day

	Light	Medium	Heavy
North Mountains	0-53	54-77	78+
North Valleys	0-26	27-35	36+
South Mountains	0-28	29-40	41+
South Valleys	0-28	29-37	38+

ERC Tables for each FDRA based on ERC

Table 10 Adjective Fire Danger Rating for each FDRA based on ERC

FDRA	Stations	Variable and Fuel Model	Low	Moderate	High	Very High	Extreme
North Mountains	SIG ¹	ERC – Z	0-46	47-76	77-86	87-99	100+
North Valleys	SIG ¹	ERC – Y	0-26	27-40	41-45	46-52	53+
South Mountains	SIG ¹	ERC – Y	0-27	28-48	49-55	56-61	62+
South Valleys	SIG ¹	ERC – Y	0-30	31-50	51-56	57-62	63+

¹See appendix J for details on each SIG

Note:

- L/M breakpoint is the 40th percentile
- M/H breakpoint is the 80th percentile
- H/VH breakpoint is the 90th percentile
- VH/Ex breakpoint is the 97th percentile