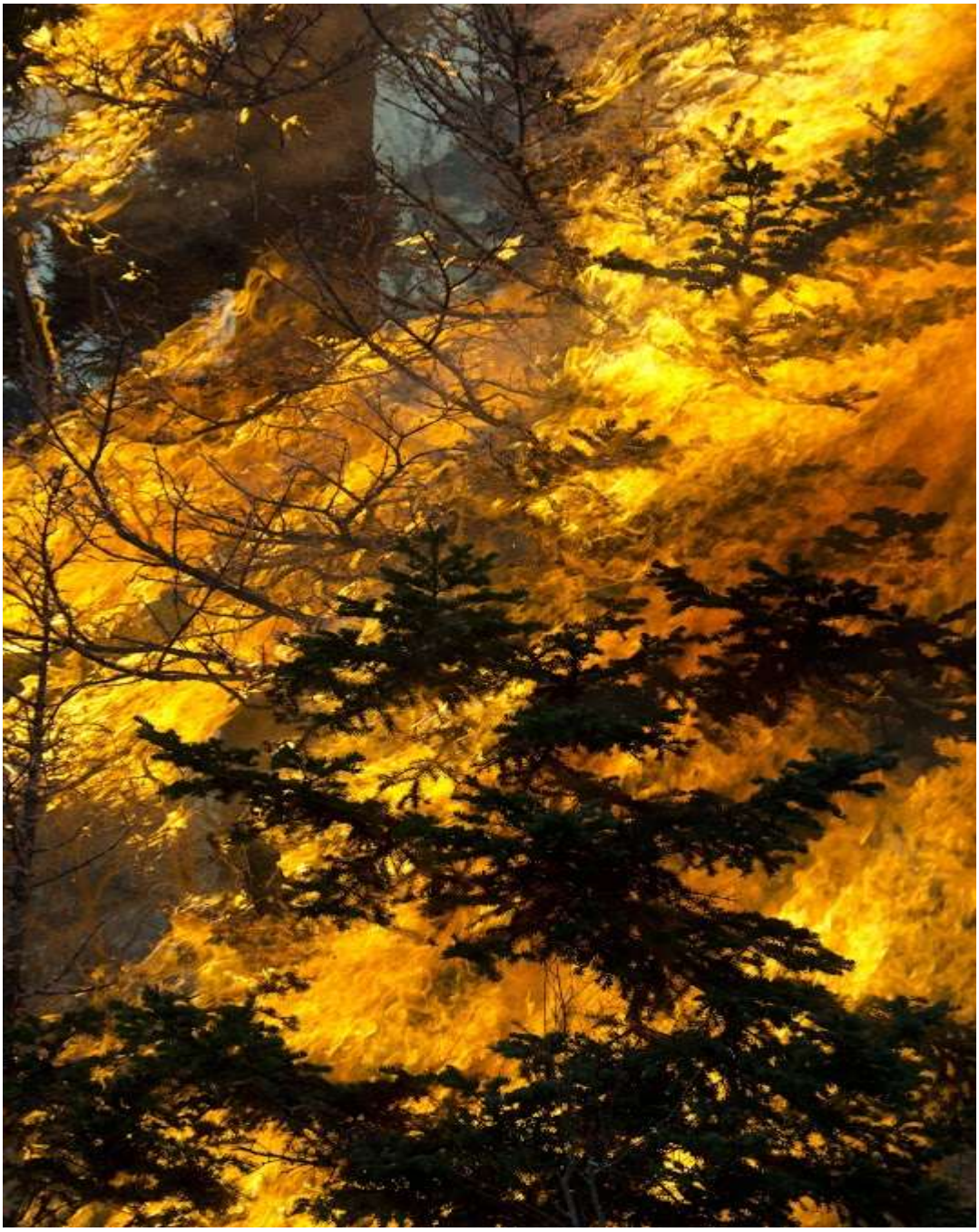
Teton

Interagency Fire Danger Operating Plan



June 2017

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Teton

Interagency Fire Danger Operating Plan

Approved By: ***Fire Program Managers***

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6/2/17

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6-2-2017

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I. INTRODUCTION

A. PURPOSE

The Teton Interagency Fire Danger Operating Plan (FDOP) is intended to document a decision-making process for agency administrators, fire managers, dispatchers, and firefighters by establishing interagency planning and response levels. The public, industry, and our own agency personnel expect the wildland fire management agencies to implement appropriate and timely decisions which result in safe, efficient, and effective wildland fire management actions. An appropriate level of preparedness to meet wildland fire management objectives is based 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 management of wildland fires.

B. OPERATING PLAN OBJECTIVES

1. Provide a tool for agency administrators, fire managers, dispatchers, agency co-operators, and firefighters to correlate fire danger ratings with appropriate fire business decisions in a fire danger planning area.
2. Delineate fire danger rating areas (FDRAs) within the fire danger planning area with similar climate, vegetation, and topography.
3. Document the interagency fire weather-monitoring network consisting of Remote Automated Weather Stations (RAWS) which comply with the NWCG Interagency Wildland Fire Weather Station Standards & Guidelines (PMS 426-3).
4. Determine climatological breakpoints and fire business thresholds using the Weather Information Management System (WIMS), National Fire Danger Rating System (NFDRS), and FireFamilyPlus software to analyze and summarize an integrated database of relevant historical fire weather and fire occurrence data.
5. Define roles and responsibilities to make fire preparedness decisions, manage weather information, and brief fire personnel regarding current and potential fire danger.
6. Determine the most effective communication methods for fire managers to communicate the current and expected 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. Develop and distribute fire danger pocket cards to all personnel involved with fire management within the fire danger planning area.

10. Identify program needs and suggest improvements for implementation of the Fire Danger Operating Plan.

C. FIRE DANGER OPERATING PLAN

Interagency policy and guidance requires 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.

Figure 1: Preparedness Plan Relationship

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 Grand Teton National Park's Fire Management Plan and Bridger-Teton National Forest's Fire Management Reference System; 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.

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

a. Staffing Plan

The Staffing Plan describes escalating responses 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 attack, prevention, or detection needs. The decision points are identified and documented in the Teton Fire Danger Operating Plan; the associated decisions and planned actions are located 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 Teton Fire Danger Operating Plan; the associated decisions and planned actions are located in *Appendix A*.

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 (actions initiated 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 Teton are documented in this Fire Danger Operating Plan; the associated decisions and planned actions are located in *Appendix C*.

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 Teton Fire Danger Operating Plan; the associated decisions and planned actions are located in *Appendix D.*

Wildfire Response

e. 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, fire management objectives, and resource availability. To reduce confusion, our plan will only use the term initial response plans. Response levels are identified and documented in the Teton Fire Danger Operating Plan. The number and type of resources dispatched to a reported fire (Initial Response Plan) is incorporated into the Staffing Plan (*Appendix B*).

The Initial Response Plan will outline actions to be taken for each staffing level. Those actions are to be considered guidelines as we want to encourage interaction with associated duty officers to inform initial response actions based on risk assessments and other pertinent information.

f. Local Mobilization Plan

The Teton Interagency Dispatch Center 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 Dispatch Center website (http://gacc.nifc.gov/gbcc/dispatch/wy-tdc/).

D. POLICY AND GUIDANCE

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

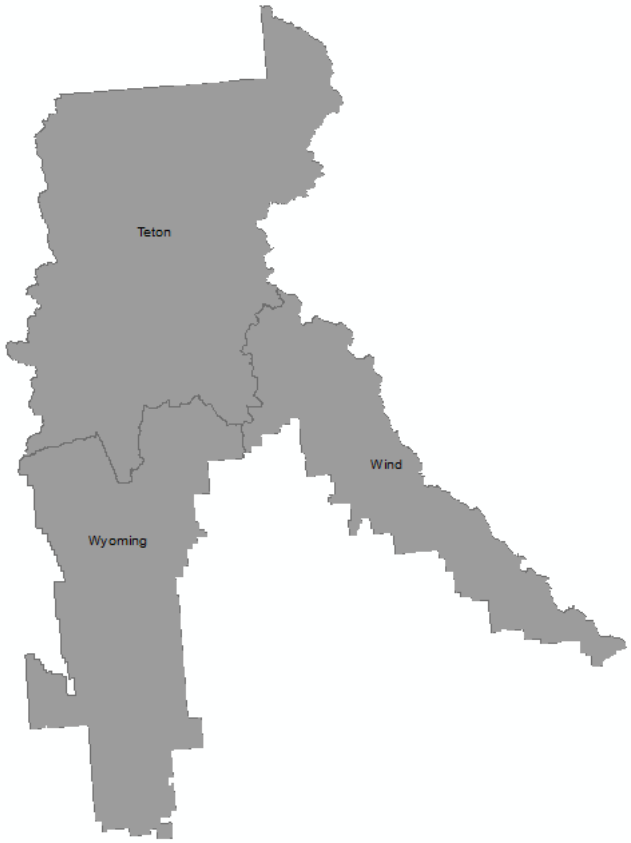
- U.S. Forest Service – Manual 5120 - Fire Management - Preparedness
- National Park Service – Reference Manual 18, Chapter 5 – Preparedness

II. FIRE DANGER PLANNING AREA INVENTORY AND ANALYSIS

A. 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, vegetation, and topography. After these environmental factors were considered, the draft FDRAs were *edge-matched* to existing administrative boundaries using Response Areas. 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. The final FDRA delineation is depicted here:

1. FDRA Map



Map 1: Fire Danger Rating Areas (FDRAs)

2. **FDRA Table**

Fire Danger Rating Area	Acreage	% of Total
Teton	1,914,078.751	49
Wind	808,841.5777	21
Wyoming	1,186,133.06	30

3. **FDRA Descriptions**

Climate (Common to all)

The climate in the Teton Interagency Area is characterized by a typical continental climate, with large daily and seasonal temperature changes. Summers are short with moderate daytime temperatures and cool nights. Winters are long and cold. High temperatures in the summer range from the low 70's at the higher elevations and mid 80's at the low elevations. Average low temperatures during winter months reach near zero. Freezing temperatures can occur at all elevations yearlong.

Summertime prevailing winds are generally from the southwest, except where modified by local topography. Strong wind events are normally associated with thunderstorms and cold front passages. Cold front passages are an important concern during late summer and early fall when fuels are at their driest, and can have a dramatic effect on fire behaviour. These winds were one of the significant factors in the growth of the large and widespread 1988 greater Yellowstone area fires. Cold front passages can produce extreme fire behavior even during mid-October, as evidenced by the October 15, 1991 Dry Cottonwood Fire. This escaped prescribed fire grew to 7,000 acres in less than two days.

Specific Attributes

a. **Teton**

- General Location:

The Teton FDRA is approximately 1.9 million acres in size and includes Grand Teton NP, Blackrock RD, Jackson RD, small portion in the northeast corner Big Piney RD, and small portion in the northwest corner of the Pinedale RD. It covers parts of Sublette, Lincoln, Teton, Park, and Fremont Counties.

The North Zone, BTNF and Grand Teton National Park are bordered on the north by Yellowstone National Park, on the west by the Caribou-Targhee NF,

the Shoshone NF on the east, and the East and West Zones of the BTNF to the south.

- Vegetation:

Predominant vegetation types are sagebrush and mixed conifer with brush understory. Riparian areas are frequent within each vegetation type. Lower elevation fuels also include a large component of annual and perennial grasses. Higher elevations are often above the “tree line”, where slopes of continuous stands of mixed conifer give way to high elevation meadows and isolated stands of whitebark pine.

Vegetation in these areas is made up of perennial grasses, forbs and low brush. Typical of many areas in the Intermountain West, increasing evidence of insect infestations are showing up in mixed conifer forests. Particularly evident are pine beetle outbreaks affecting lodgepole and whitebark pine stands.

- Topography:

The topography in the Teton FDRA typifies that of the northern Rocky Mountains, and contains a mix of moderate, rolling country and dramatic steep peaks and drainages. Elevations range from 5,620 feet at Palisades Reservoir to 13,775 feet at the summit of the Tetons.

The northern end of the Forest – parts of the Teton Wilderness, and the area from the Mount Leidy Highlands to Union Pass – contain large areas of rolling topography with significant stands of continuous timber. Scattered meadows and bare ridges interrupt fuel continuity, but large fires like the 2012 North Buffalo and 2006 Purdy fires are possible.

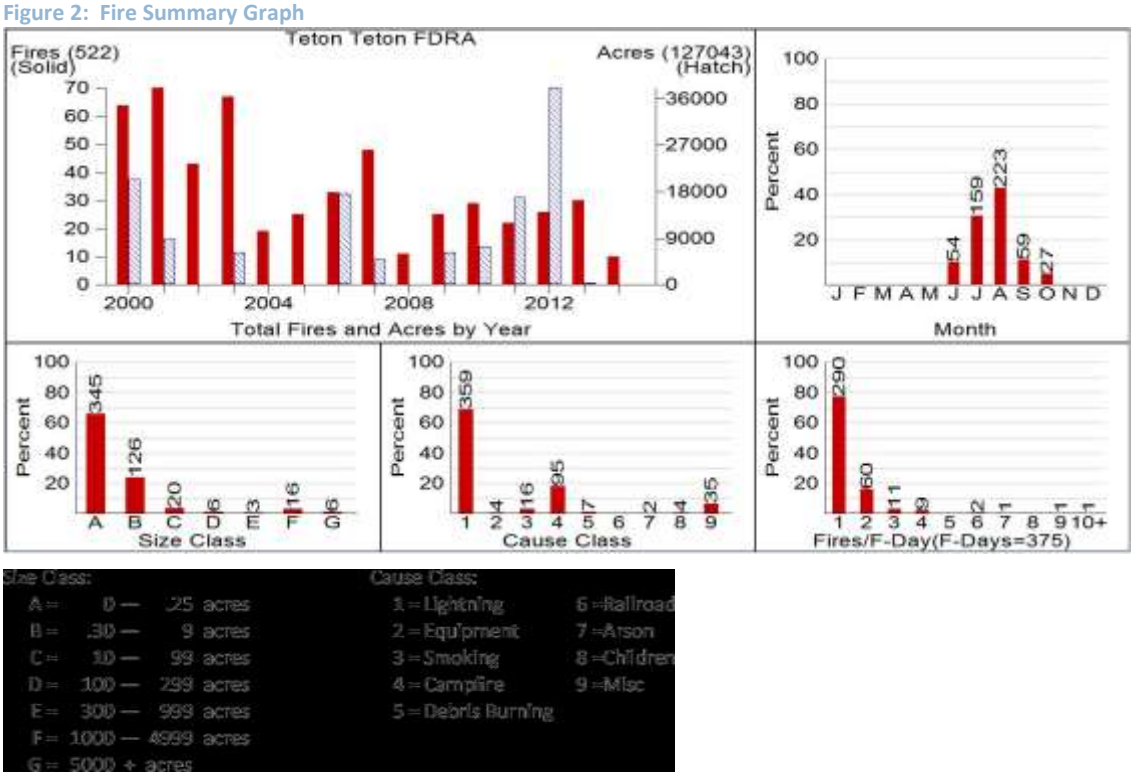
The major geographic features that run through the FDRA include the Hoback Mountains, Gros Ventre Mountains, Jackson Hole Basin and the Teton Range.

- FDRA Parameter Summary Table:

FDRA	Slope Class	Climate Class	Herb Type
Teton	03	03	Perennial

- Teton – Fire Summary Graph

Figure 2: Fire Summary Graph



The Teton FDRA historically has the largest number of fires on average each year. The peak of the fire season runs from about mid-July thru early September. Lightning and campfire causes account for the majority of the fire starts.

b. **Wind**

- General Location

The Wind FDRA includes most of the Pinedale Ranger District, with the exception of a part of the District that is in contained in the Teton FDRA. Lower elevation BLM lands intermixed with private lands abut much of the west side of the FDRA.

- Vegetation:

Large areas of sagebrush and grass occur along the “Pinedale Front” that borders the west side of the Wind Rivers. These large areas of the continuous grass/shrub fuels provide a receptive fuel bed for large and fast moving rangeland fires.

Moving further towards the Winds and higher elevation, there are more areas of Aspen and conifer. These mid elevation areas also include large meadows and deep canyons that may act as barriers to fire spread.

The higher elevation have only scattered trees as the vegetation approached treeline.

- Topography:

Topography in the Wind FDRA is dominated by the Wind River Mountains which run northwest to southwest. The continental divide defines the eastern boundary of the Pinedale District and the Wind FDRA. The headwaters of the Green River begin on the northwest end of the Wind Rivers, and define the upper Green River Valley which separates the Wind River Range and the Gros Ventre Range north of the Green.

Elevations range from 5,600 feet on the valley floors to 13,800 feet on the Wind River crest.

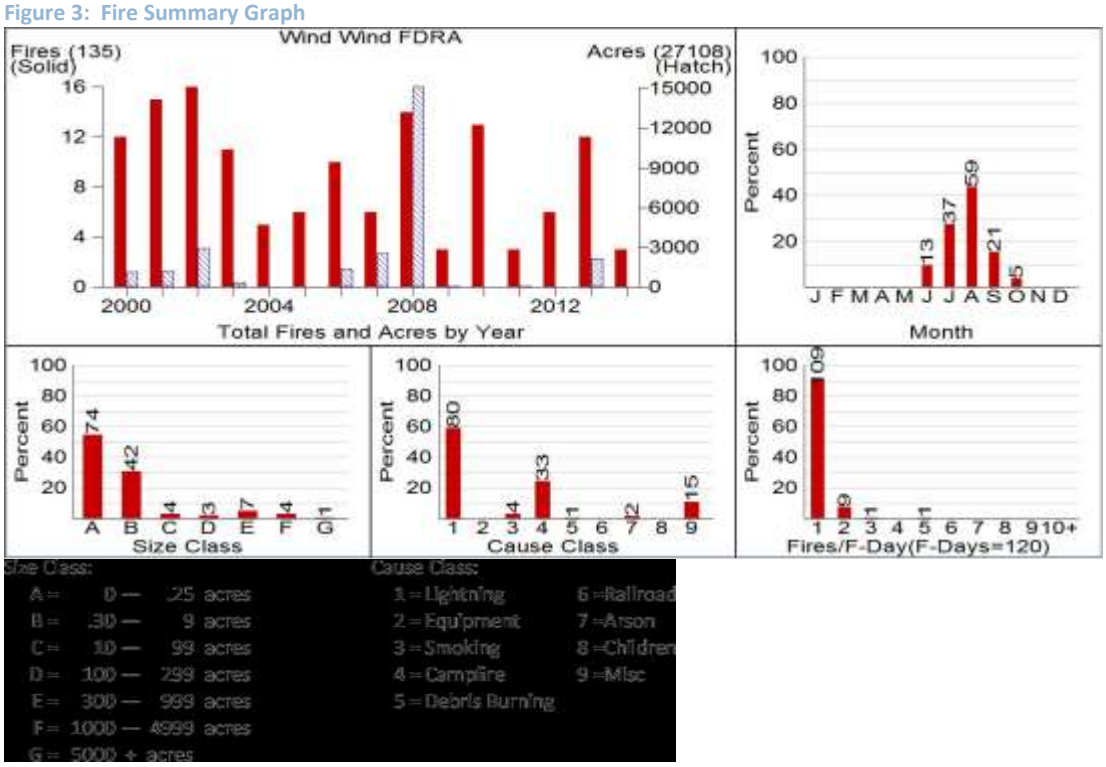
Because of the topography, most fires burn east/northeast up and into the Wind River Range. The Wind River Range provides substantial fuel breaks at the upper elevations, but the low- and mid-elevations have steep slopes and canyons that can encourage significant fire runs.

- FDRA Parameter Summary Table:

FDRA	Slope Class	Climate Class	Herb Type
Wind	03	03	P

- Wind – Fire Summary Graph

Figure 3: Fire Summary Graph



The Wind FDRA has the fewest fires annually historically compared to the other FDRA's. There have been very few multiple fire days in this FDRA. However, this FDRA has a larger percent of fires that grow into the large size classes respectively. The peak of the fire season is a bit shorter than the other FDRA's with August being the most active. Similar to the other FDRA's lightning and campfires account for the majority of the fire starts but there are a number of other causes in this FDRA.

c. **Wyoming**

- General Location:

The Big Piney, Kemmerer, and Greys River Districts constitute this FDRA.

- Vegetation:

Vegetation is similar to the rest of the Teton area. There are more areas of open sagebrush/ grass on the southern end, especially in the Hams Fork and La Barge areas. These areas also include large riparian and aspen/shrub communities. Mixed conifer, including lodgepole pine, subalpine fir, Engelmann Spruce and some Douglas-fir grow in substantial stands. Extensive past timber harvest units are evident at the mid to lower elevations.

- Topography:

The FDRA is characterized by several north to south mountain ranges including the Wyoming and Salt Ranges on the northern half, and Porcupine, Absaroka, Commissary, and Deadline Ridges on the south end. The Upper Greys river runs north between the Wyoming and Salt Ranges towards the town of Alpine where it flows into the Snake River.

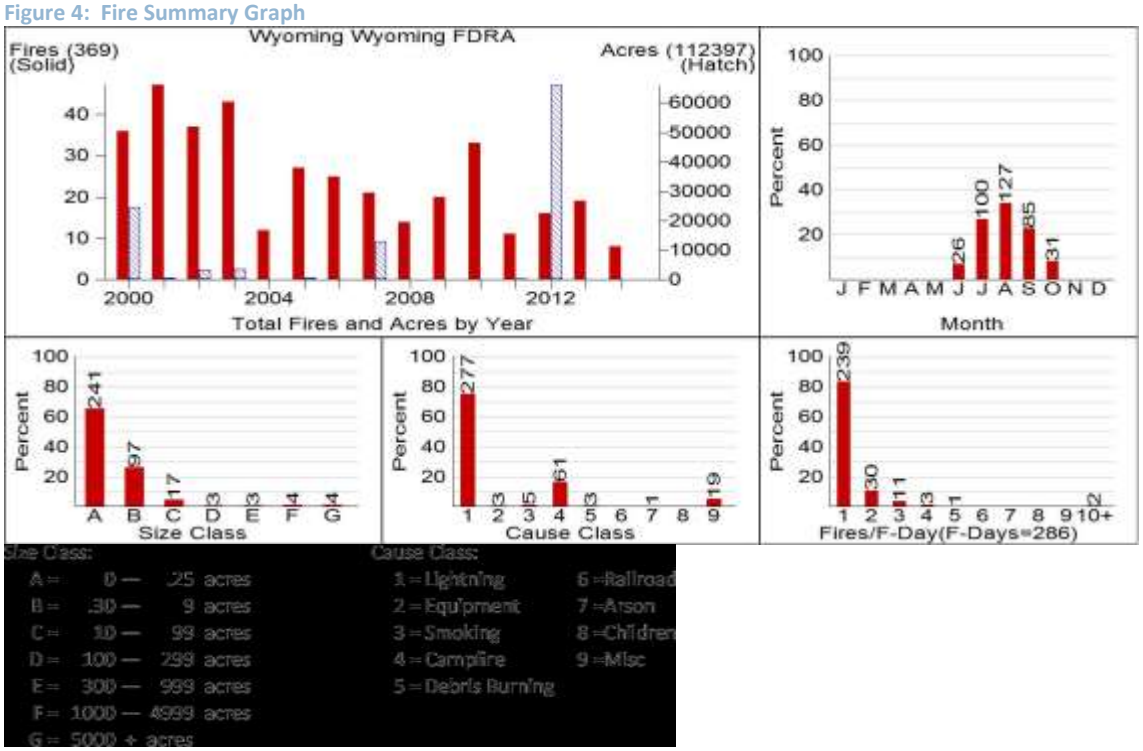
The Salt River Range and the Wyoming Range provide substantial fuel breaks at the upper elevations, but the low- and mid-elevations have steep slopes and canyons that can encourage significant fire runs.

- FDRA Parameter Summary Table:

FDRA	Slope Class	Climate Class	Herb Type
Wyoming	03	03	Perennial

- Wyoming – Fire Summary Graph

Figure 4: Fire Summary Graph

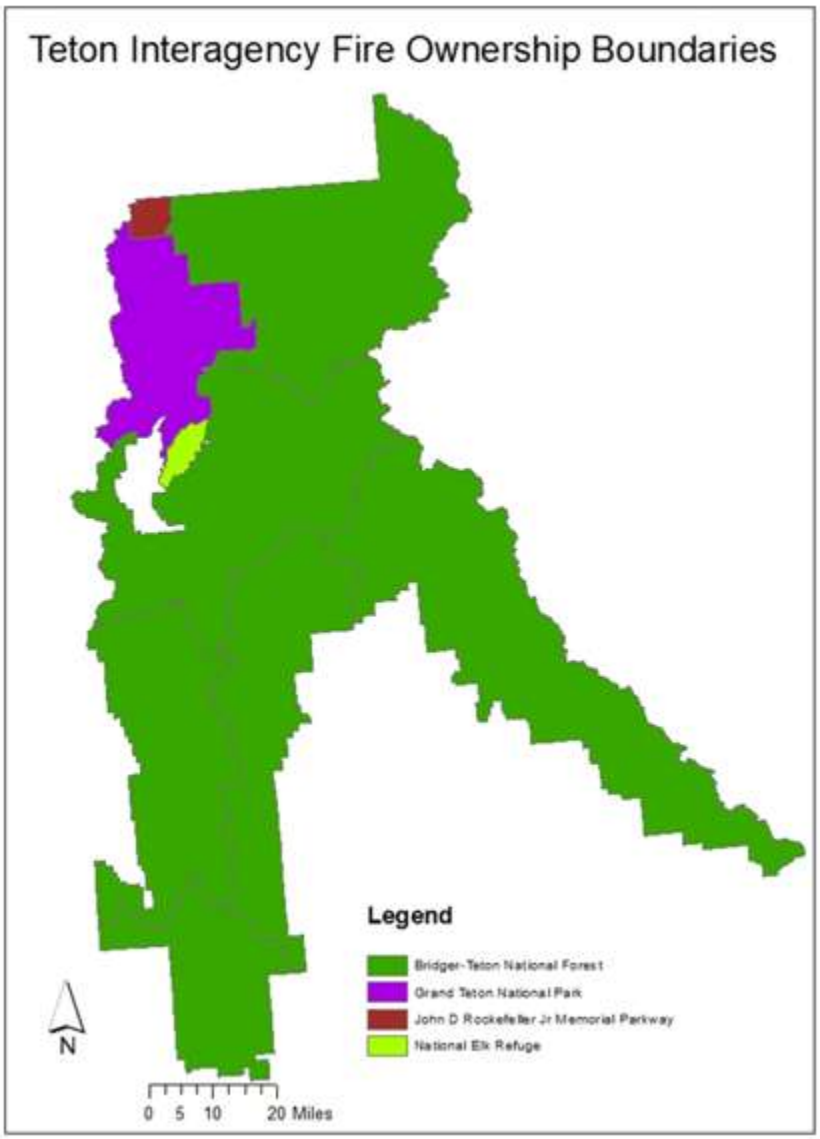


The Wyoming FDRA falls in between the Teton FDRA and Wind FDRA for number of fire starts and the numbers of multiple fire start days. The peak of the fire season is a bit later than the other FDRA's with more fires in September and October. Again, lightning and campfires account for the vast majority of the fire starts.

B. ADMINISTRATIVE UNITS

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

1. Ownership Map



Map 2: Ownership Map

2. **Ownership Table**

Agency	Acreage
Grand Teton National Park	**333,772**
John D. Rockefeller Jr Memorial Parkway	**24,000**
Bridger-Teton National Forest	**3,465,101**
FWS National Elk Refuge	**24,700**

Table 1: Ownership Table

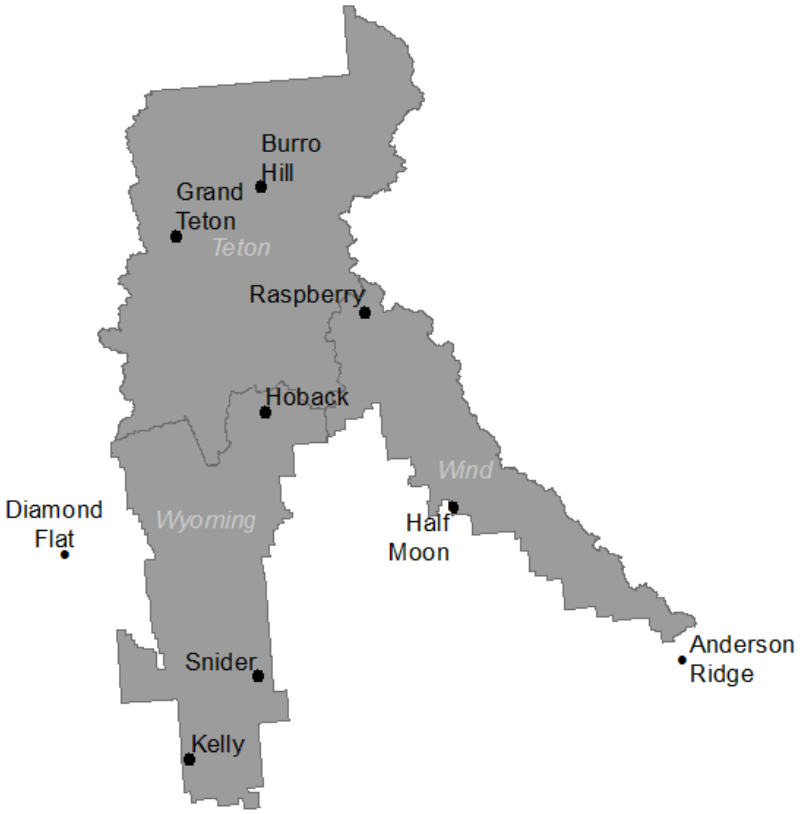
C. WEATHER STATIONS

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 .

There are seven permanent operational RAWS located in the Teton Interagency area. Each of the RAWS locations was selected to be representative of the primary fuel model used for inputs into NFDRS and representative of the general weather conditions. Figure #1 displays the stations location and Table 1 summarizes the station information.

The BT and Grand Teton also maintain four portable RAWS stations with satellite transmission capability. The stations are located at the Interagency Fire Cache in Jackson.

1. **RAWS Map**



2. **RAWS Catalogue Table (Active Stations Only)**

STATION NAME	WIMS ID	AGENCY / OWNER	AVAIL DATA YEARS	ELEV	LATITUDE	LONGITUDE	REPORTING TIME
Hoback	481302	FS	1964-2014	6726	43.2203	-110.4231	XX:51
Snyder	481306	FS	1982-2014	8242	42.4908	-110.5267	XX:09
Burro	480707	FS	1989-2014	7166	43.897	-110.3708	XX:52
Raspberry	481307	FS	1982-2014	8800	43.4722	-110.0183	XX:10
Half Moon	481309	FS	1997-2014	8530	42.9136	-109.7461	XX:26
Grand Teton	480708	NPS	1989-2014	6710	43.7236	-110.7103	XX:58
Kelly	481208	FS	2005-2014*	8180	42.2761	-110.8061	XX:00
Anderson Ridge	481903	BLM	1983-2014	8120	42.4372	-108.9456	XX:50
Diamond Flat	103904	FS/CT	2000-2014	7582	42.8667	-111.2167	XX:08

* With gridded historic data incorporation 2000-2004

**XX:51 = 51 minutes past the hour of observations.

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

Special Interest Group (SIG):	**Teton**
Station / WIMS Number	***Station Name***
480708	Grand Teton
481307	Raspberry
481302	Hoback

Special Interest Group (SIG):	**Wind**
Station / WIMS Number	***Station Name***
481309	Half Moon
481307	Raspberry

Special Interest Group (SIG):	**Wyoming**
Station / WIMS Number	***Station Name***
481208	Kelly
481306	Snyder
103904	Diamond Flat
481302	Hoback

III. FIRE DANGER PROBLEM ANALYSIS

In order to apply a fire danger system to assist managers with fire management decisions, ignition problems need to be identified, quantified, framed, and associated with a specific target group to determine the most appropriate fire danger-based decision "tool" to mitigate the given issue.

This section identifies those situations that lead to problem fires for the Teton Interagency Fire Planning Unit. Not all fires are considered a problem though. In fact, every natural caused fire is evaluated for opportunities to meet land management objectives on both the Grand Teton National Park and the Bridger-Teton National Forest. This distinction is important to note so that fire managers, fire responders, public and other entities recognize that there is a difference between good fires that meet associated management objectives and problem fires (also noted as unwanted or bad fires). Associated plans reflect this management emphasis.

A. IDENTIFICATION / DEFINITION OF THE FIRE PROBLEM(S)

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 manage wildland fires. This includes Federal, State, and County land management employees, along with volunteer fire departments who share a similar 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, lodges, campgrounds, 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. **Problem Definition:** This is the problem specific to the area of concern and includes ignition causes. The problem is "framed" to focus on the wildland fire management issue associated with a specific target group.

B. FIRE PROBLEM ANALYSIS

Fire occurrence data was analysed for each FDRA and the following fire causes were identified. Based on these fire causes, the underlying problems were identified as well as the target group to communicate with to identify potential solutions.

The following statistical data was considered for the 15 year time period from 2000 thru 2014.

Table 2: Planning Area Fire Causes

FDRA	Total # of fires	Lightning Cause	Campfire Cause	Other Cause Classes
Teton	522	345 (65%)	126 (24%)	51 (10%)
Wind	135	74 (55%)	42 (31%)	19 (14%)
Wyoming	369	241 (65%)	97 (26%)	31 (9%)
Totals	1,026	660 (64%)	265 (26%)	101 (10%)

Lightning and campfire causes combine for the majority of fires for each planning area. The remaining causes are spread randomly across the other classifications and include equipment, smoking, debris burning, arson, children and miscellaneous causes.

Lightning caused fires require that Agencies prepare themselves for predicted storms. Agency personnel become the target group where fire preparedness and proper staffing are essential. Lightning has the potential to start multiple fires in challenging terrain. The majority of our multiple fire days are a result of lightning.

Campfire caused fires requires interactions with the public and recreation personnel as well as other entities. The public and agency personnel are the target groups. Campfires are less predictable especially in this area where recreational activity is very busy from Memorial Day weekend through hunting season in October.

Even though the other fire cause classes do not create a large workload, these areas are not ignored and will be addressed through prevention activities as well as through other means.

IV. FIRE DANGER DECISION ANALYSIS

Decision points can be based upon either:

- Climatological Breakpoints, or
- Fire Business Thresholds.

The Fire Decision Summary, Sec. E, provides a summary of the planning area's fire danger problems and how each problem is addressed. 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 calculated climatological thresholds by FDRA:

Analysis period = June 1 – Oct 31, 2005-2014
Teton FDRA

90th ERC = 61.7
97th ERC = 67.7

Wind FDRA
90th ERC = 65.0
97th ERC = 71.5

Wyoming
90th ERC = 65.0
97th ERC = 72.5

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 – Oct).

The decision thresholds identified in this Fire Danger Operating Plan are based upon the statistical correlation of historical fire occurrence and weather data and, therefore, do not utilize climatological (percentiles) for decision points.

B. FIRE BUSINESS ANALYSIS

The primary target groups are agency and public. The main fire issues are lightning caused fires and abandoned/unattended campfires.

The decision tools require a slower responding fire danger indicator to inform the agency for preparedness and prevention purposes and the public for information purposes. The agency also requires more rapidly responding indicators to inform day to day staffing and initial dispatch response to new fire starts/smoke reports.

Large fire day and multiple fire day thresholds were determined based on a fire business analysis using ERC and BI with a NFDRS G fuel model. The G fuel model was determined to be most representative of the fire danger response in this area and ERC and BI were determined to meet the needs and time frames of the target groups. A large fire day was determined to 10 acres for each FDRA. A 10 acre timber fire is approximately the break point where a fire would go beyond initial attack and potentially require additional resources from off unit. A multiple fire day was set at 2 for the analysis. This worked best for the analysis as the unit does not experience multiple fire days often.

C. PARAMETERS USED TO CALCULATE FIRE DANGER

TETON FDRA

Large Fire Size (acres)	10
Multiple Fire Day (fires/day)	2

Weather Station Number →	RAWS #1	RAWS #2	RAWS #3
Weather Station Name	Raspberry	Hoback	Grand Teton
NFDRS Fuel Model	G	G	G
Data Years Used in Analysis	2000-2014	2000-2014	2000-2014
Slope Class	03	03	03
Climate Class	03	03	03
Herbaceous Type	perennial	perennial	perennial
Green-up Date (estimate)	June 1	June 1	June 1
Freeze Date (estimate)	Sept. 15	Sept 15	Sept 15

WIND FDRA

Large Fire Size (acres)	10
Multiple Fire Day (fires/day)	2

Weather Station Number →	RAWS #1	RAWS #2
Weather Station Name	Raspberry	Half Moon
NFDRS Fuel Model	G	G

Data Years Used in Analysis	2000-2014	2000-2014
Slope Class	03	03
Climate Class	03	03
Herbaceous Type	perennial	perennial
Green-up Date (estimate)	June 1	June 1
Freeze Date (estimate)	Sept 15	Sept 15

WYOMING FDRA

Large Fire Size (acres)	10
Multiple Fire Day (fires/day)	2

Weather Station Number →	RAWS #1	RAWS #2	RAWS #3	RAWS #4
Weather Station Name	Kelly	Snyder	Hoback	Diamond Flat
NFDRS Fuel Model	G	G	G	G
Data Years Used in Analysis	2000-2014	2000-2014	2000-2014	2000-2014
Slope Class	03	03	03	03
Climate Class	03	03	03	03
Herbaceous Type	perennial	perennial	perennial	perennial
Green-up Date (estimate)	May 25	May 25	May 25	May 25
Freeze Date (estimate)	Sept 15	Sept 15	Sept 15	Sept 15

D. CORRELATION WITH FIRE OCCURRENCE

The analysis using the above parameters provided an adequate correlation with fire occurrence. Fire business decisions can be made with confidence utilizing the identified breakpoints for associated plans.

To provide a stronger correlation in the future, Teton Interagency Fire has identified the need to examine fires that have been managed for resource benefits to identify large fire growth days. Teton Interagency Fire manages many fires like this which can skew our data slightly as these fires might take several days to gain any appreciable acreage.

E. DECISION SUMMARY NARRATIVE

In summary, the FDOP will utilize ERC and Fuel Model G with five breakpoints to determine preparedness levels and adjective ratings. The Staffing plan also utilizes ERC and Fuel Model G but uses six breakpoints to determine staffing levels. Additionally other factors such as 7 day outlook, fire activity, etc. will inform preparedness and staffing levels. A combination of climatological breakpoints and fire business thresholds were taken into account when determining breakpoints. The preparedness and staffing plans will be utilized to ensure agency personnel are properly prepared and staffed for lightning fires as well as human caused fires. To address human caused fires, the prevention plan will incorporate communication methods

for reaching out to the public, industry and other entities to ensure awareness of fire danger and to provide educational tools to help deter future human caused fires for this highly active recreational area.

A key distinction for the Teton Interagency Fire program is that not all fires are problems. Human caused fires are problems and are considered unwanted fires. Lightning caused fires occur naturally and with that are considered on a case by case basis to meet land management objectives. Lightning caused fire can be considered a problem if threatening highly valued resources. Dispatch run cards address these considerations as defined by response zones.

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 discussion*. 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. INITIAL RESPONSE PLAN

Responses are planned actions which identify the number and type of resources (engines, crews, aircraft, etc.) initially dispatched to a reported wildland fire based upon staffing level and location.

The Initial Response Plan will outline actions to be taken for each staffing level. Those actions are to be considered guidelines as we want to encourage interaction with associated duty officers to inform initial response actions based on risk assessments and other pertinent information.

B. STAFFING LEVEL

Staffing Levels will be used to make daily internal fire preparedness and operational decisions. At the local level, the staffing level forms a basis for decisions regarding the "degree of readiness" for initial attack and support resources. Specific actions are defined at each staffing level. Although Staffing Level can be a direct output in WIMS, the WIMS output is only based upon weather observations and climatological percentiles. Local staffing levels for the Teton Interagency Zone (1-5) are initially determined from climatological breakpoints, then adjusted based on local experience tied to an analysis of fire business.

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.

C. 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 Levels 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 Rating from WIMS is strictly based on weather

and climatological percentiles (80th / 95th) with no regard to historical fire occurrence. The use of agency-specific climatological percentiles is not mandatory. This FDOP will implement Adjective Fire Danger Rating based upon fire business thresholds; not climatological percentiles.

Summary of Fire Danger Inputs to the Decision Tools

Decision Tool	Indices	Fuel Model	# of Classes	Class Bins by FDRA	Additional Factors
Preparedness Level/ Adjective Rating	ERC	G	5	Teton – 0-14, 15-35, 35-56, 56-67, 68+ Wyoming- 0-17, 18-36, 37-59, 60-71, 72+ Wind- 0-15, 16-35, 36-58, 59-71, 72+	-7 Day Outlook -Fire Activity
Staffing/Dispatch Level	ERC	G	6	Teton – 0-14, 15-31, 32-45, 46-60, 61-67, 68+ Wyoming- 0-17, 18-31, 32-49, 50-62, 63-69, 70+ Wind- 0-15, 16-33, 34-47, 48-61, 62-69, 70+	-Lighting Forecasted -Human Activity -Red Flag

Refer to the Preparedness Plan in Appendix A
Refer to the Staffing Plan in Appendix B

VI. FIRE DANGER OPERATING PROCEDURES

A. ROLES AND RESPONSIBILITIES

1. BTNF and GTP Fire Management Officers

The FMOs are responsible for implementing and updating this plan and ensuring the information is disseminated to other Fire Management personnel. Zone FMO's and the Park AFMO are responsible for entering all fire reports within 10 days of fire being called out.

2. Agency Duty Officers

Coordinate with appropriate staff and Zone Duty Officers. Evaluate daily fire danger, ensure staffing levels are appropriate and adjust accordingly.

3. Zone Duty Officers

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

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

4. Local RAWS technicians

RAWS technicians will be responsible for yearly maintenance of stations. Yearly maintenance will be completed by the established due date in WFMI.

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

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

5. Teton Interagency Dispatch Center

Ensures timely editing of daily weather observations and monitors actual indices.

Recommends changes to daily staffing levels to the Forest and Park Duty Officers.

Broadcasts daily fire weather forecasts issued by the National Weather Service, Riverton, WY. Dissemination includes daily radio broadcasts at 1100 and 1600 hours during the established fire season with additional forecast "warnings" when necessary.

Broadcasts daily NFDRS indices (actual and forecasted) and posts the indices on the Teton Interagency Fire website.

6. **Forest Assistant Fire Management Officer and Park Assistant Fire Management Officer (or designee)**

   Assemble seasonal risk information such as live fuel moisture, 1,000-hour fuel moisture, and NFDRS trends. This information will be distributed to TIDC and local fire personnel and posted on the Teton Interagency Fire website

   Coordinate the overall weather station management and supervise maintenance of network RAWS. The following zones will assign a primary technician to each station for maintenance.

Hoback	East Zone
Half Moon	East Zone
Raspberry	East Zone
Snyder	East Zone
Burro	North Zone
Kelly	West Zone
Grand Teton	Grand Teton NP
Portables 1-4	North Zone

   Ensure that pocket cards are prepared on a bi-annual basis and updated per NFDRS standards. The cards will be distributed to all local and incoming firefighters as well as overhead.

7. **National Weather Service**

   Our dispatch area falls within the Riverton NWS coverage. A fire weather forecaster is available upon request to participate in our weekly coordination calls.

8. **Geographic Area Predictive Service / Meteorologist**

   Great Basin Predictive Services will provide input to this plan through the 7 day outlook and as requested to provide other technical expertise.

9. **Education / Mitigation / Prevention Specialists**

   Changes in adjective rating will be communicated to agency PIO's for press releases and communicated with the public through appropriate channels; website, signs, contacts, etc.

   Zone prevention personnel will be responsible for assuring that signs are changed out.

   Zone prevention personnel will be involved with updates/revisions to the prevention and restriction plans.

10. **Fire Planner**

    Fire data steward. The fire planner will support FMO's to ensure agency fire occurrence data is submitted annually to appropriate personnel and will help provide technical

rep/subject matter expertise for the following systems; WFDSS, FireStat, WFMI and WildCAD. Date will be made available for use and analysis.

Assists fire managers in preparation of severity requests, providing data and analysis of current situation in support of request.

11. **All Wildland Fire Resources**

It is the responsibility of all wildland fire resources to be aware of the preparedness/staffing level, daily fire indices and their responsibilities or actions to be taken at each level.

Each module's first line supervisor is responsible to provide and brief their personnel on the information contained in the TIDC pocket cards.

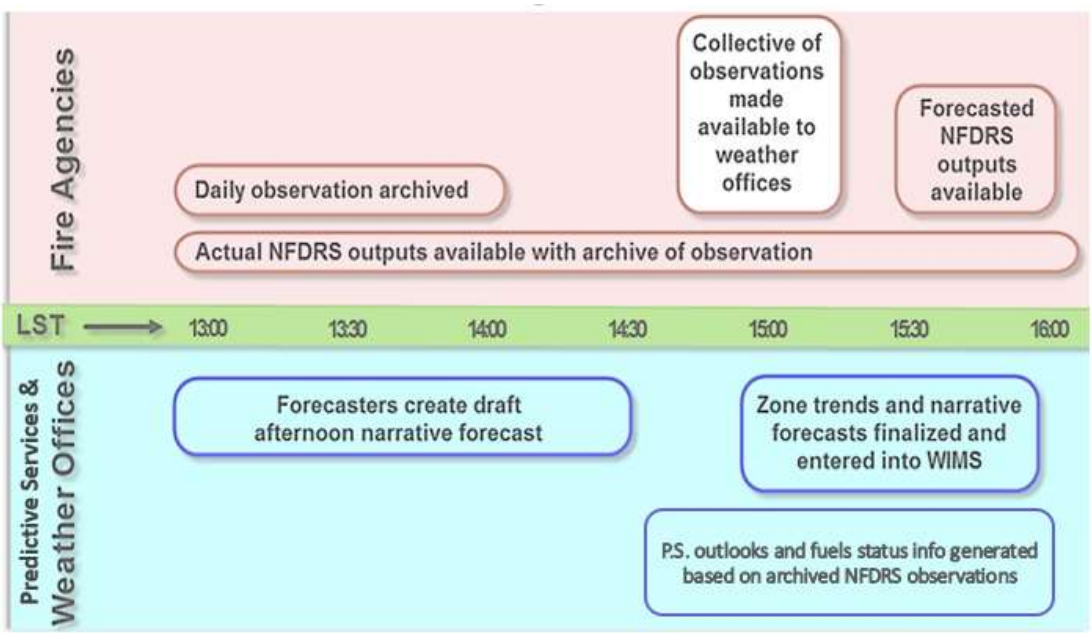
12. **Fire Danger Technical Group**
Review the plan annually and advise of necessary updates. The group should be comprised of unit FMO's, Interagency Fire Planner, Dispatch, Interagency Fire Ecologist, Fuels Specialists, and Prevention personnel.

B. SEASONAL SCHEDULE

April 1 (If snow is still present, snow flag stays on until snow melts)	Begin entering daily weather observations for area RAWS Determine if 1,000 fuel default start-up of 25 is appropriate
Approximately May 20 to June 10	Green-up of individual stations as indicated by local conditions
After September 1, when 3 days of consecutive <28 degree minimum temperatures	Freeze-up individual stations as indicated by local conditions

C. DAILY SCHEDULE

Daily Timeline



D. WEATHER STATION MONITORING AND MAINTENANCE

Each agency is responsible for the annual maintenance and calibration of their RAWS.

VII. FIRE DANGER PROGRAM NEEDS

A. WEATHER STATIONS

- Utilize the NFDRS weather station handbook to ensure weather station annual maintenance and general up keep is properly completed. Zone RAWS Technicians will be responsible.
- Create a one page list of best management practices for portable RAWS.
- Ensure data from weather stations is accurate prior to posting.

B. COMPUTER / EQUIPMENT

Continue to work with Chuck Maxwell and Matt Jolly to set up automatic updates to ERC charts on Tetonfires website and pilot a few of the new tools they are developing.

C. TRAINING

- Identify and train new RAWS technicians. Each Zone will have an identified RAWS technician to cover their respective stations. Alternates can be identified to build depth and to provide for training.
- Support development of employees and provide opportunities to attend S-491 and Advanced NFDRS and WIMS.
- Train fire dispatchers on WIMS and the importance of quality control of the data.
- Come up with simple SOP's 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 new Fire Danger Operating Plan and three pocket cards.

D. SEASONAL FIRE DANGER RISK ASSESSMENTS

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

E. OTHER PROGRAM NEEDS

- Update Dispatch SOP's to incorporate changes in the revised FDOP and subordinate plans.
- Assess fire data and create working database for large fire growth days for our managed fires.
- Revise/integrate an interagency fuel moisture sampling protocol.
- Evaluate/re-establish fuel moisture monitoring sites on the Forest.
- Update Prevention Plan to include explanation of new criteria used to determine fire danger rating adjectives.
- Establish Interagency Restriction/Closure Plan.
- Evaluate new FDOP and make adjustments as necessary.

APPENDICES

Appendix A: ***PREPAREDNESS PLAN***

Preparedness Levels and Recommended Actions Guide – These Preparedness Level Actions are guidelines, and as such are discretionary in nature, for agency personnel to refer to 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.

Agency Administrators

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
Agency Administrator (Forest Supervisor, Park Superintendent, FS District Rangers)	Ensure Resource Advisors (READ) are designated and available for fire assignments.			X	X	X	Agency
	Ensure Public Affairs staff are identified and available as needed for coordination of fire program and incident information needs.			X	X	X	Agency
	Ensure fire program retains capacity to implement full range of potential			X	X	X	Agency
	Evaluate work/rest needs of fire staff and crews.				X	X	Agency
	Consider need for fire restrictions or area closures.				X	X	Public Industry
	Provide appropriate support to fire staffs regarding the implementation of preparedness level actions.				X	X	Agency
	Issue guidance to staff indicating severity of the season and increased need and availability for fire support personnel.				X	X	Agency
	Ensure administrative staff in stepped up equivalent with fire activity needs to include fire business support.			X	X	X	Agency

Prevention/Mitigation

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
Fire Prevention/ Education	Contact Public Information Officer, local media to inform of the start of fire season and the potential for local fire danger to increase.	X	X	X	X	X	Agency Public
	Provide public and industry with access to fire danger information, closures, restrictions and warnings.	X	X	X	X	X	Agency Public Industry
	Contact local industrial entities to inform of hazard and risk.	X	X	X	X	X	Public Industry
	Post signs and warnings in camping and recreation areas.	X	X	X	X	X	Public
	Consider need for increased fire prevention patrols.				X	X	Agency
	Notify local media if High/Extreme fire danger and the need for increased public caution.				X	X	Public

	Consult with FMO regarding need for fire restrictions or closures.				X	X	Agency
	Consider ordering a fire prevention team				X	X	Agency

Fire Management Officers

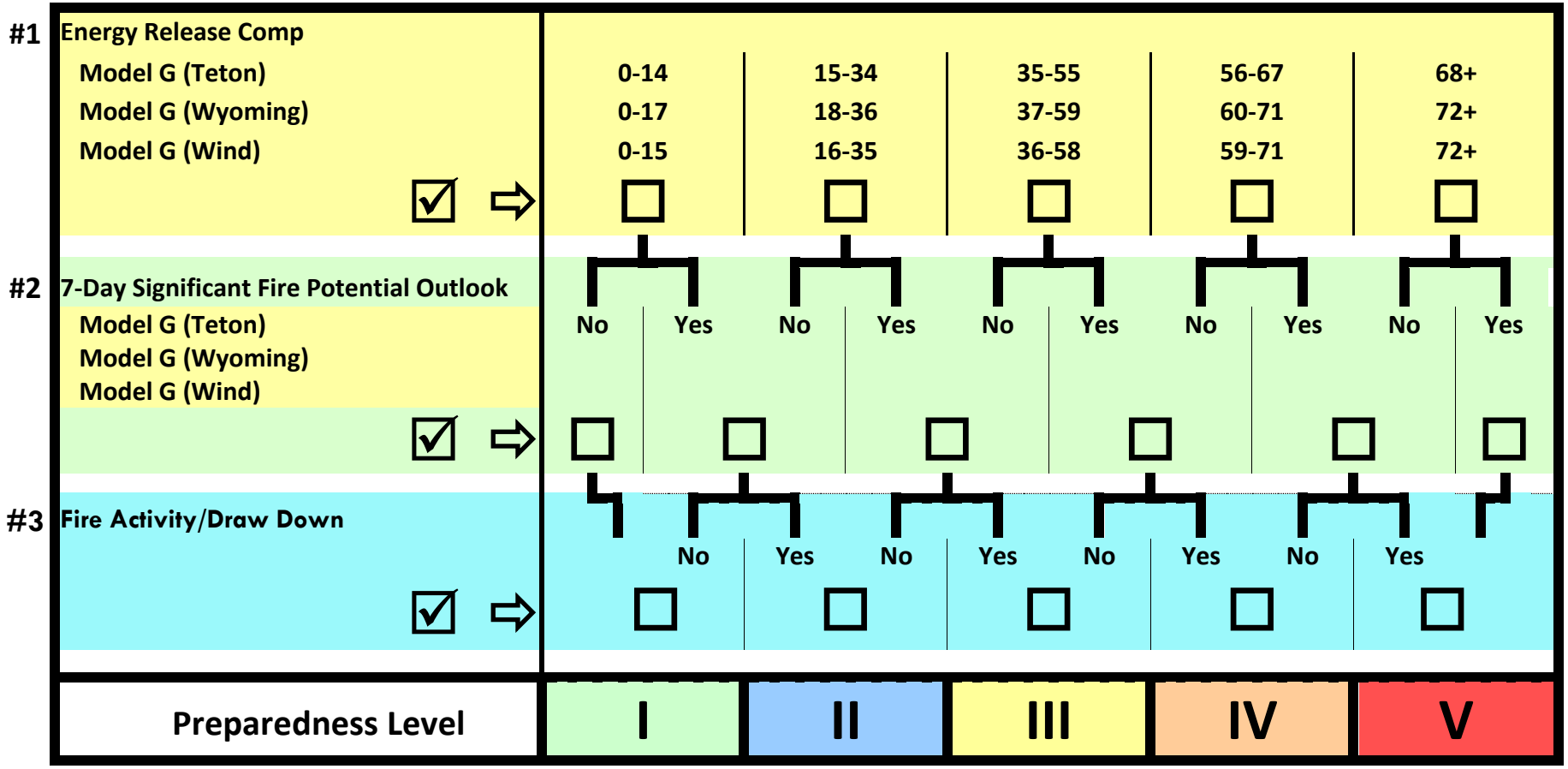
Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
FMO's (BTF Fire Staff, GTP FMO, FS Zone FMOs or delegated Acting)	Evaluate season severity data (NFDRS indices for the season, fuel moisture, drought indices, long-term forecasts).	X	X	X	X	X	Agency
	Brief agency administrator on burning conditions and fire activity.			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 for ongoing fire			X	X	X	Agency
	Consider ordering SOPL or LTAN personnel to ensure local capacity to support management strategy decisions regarding long-term fires.			X	X	X	Agency
	Ensure Prevention Technicians have initiated media contacts and public education contacts.			X	X	X	Public Industry
	Communicate with TIDC Manager and GBCC Manager on geographical conditions and resource availability.			X	X	X	Agency
	Consider fire severity request and pre-positioning of resources including: operational resources, aerial support, aerial supervision, command positions, dispatch, logistical support, and prevention.			X	X	X	Agency Public Industry
	Work AA's to ensure associated AA actions are being addressed.			X	X	X	Agency
	Dedicated Interagency Aviation Officer should be in place.				X	X	Agency
	If preparedness level is decreasing, consult with Duty Officers/TIDC Manager and consider release of pre-positioned or detailed personnel.				X	X	Agency
	Evaluate crew and staff work/rest requirements.				X	X	Agency
	Evaluate need for fire restrictions or area closures.				X	X	Public Industry
	Request the agency administrator to issue guidance to office staff regarding the need for increased availability from militia for operational and support positions.				X	X	Agency
	Contact local fire chiefs and inform of increased fire danger.				X	X	Agency
	Consider dedicated expanded dispatch and buying team.			X	X		Agency
	Ensure there is a dedicated expanded dispatch and buying team in place.					X	Agency

TIDC & Duty Officers

Responsible Party	Suggested Action	PL 1	PL 2	PL 3	PL 4	PL 5	Affected Entity
TIDC	Begin weekly conference calls with TIDC FMOs and Operations staff.	X	X	X	X	X	Agency
	Consider pre-positioning or detail of off-unit IA dispatchers and logistical support personnel.			X	X	X	Agency
	If preparedness level is decreasing, consider release of pre-positioned or detailed dispatchers and logistical support personnel.			X	X	X	Agency
	Evaluate work/rest needs of center staff.				X	X	Agency
	Dedicated Floor Manager should be in place.				X	X	Agency

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	Agency
	Evaluate work/rest needs of IA crews.			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
	Consider suspending Rx fire operations.				X	X	Agency

Appendix A-1: LOCAL PREPAREDNESS LEVEL WORKSHEET



#2 7-Day –Number of days in the forecast at a higher level - four or more days at moderate or high risk.
ANY major change in any of the preparedness criteria will result in re-evaluation of preparedness chart.

#3 Fire Activity/Draw Down – will be yes if approximately 50% of the suppression resources within the Teton Interagency Dispatch Area (regardless of FDRA) are committed or responding to a fire. This may be revised if there is significant change in fire activity between the time of the initial calculation is made. Have one or more fires escaped IA? Fire activity increasing or decreasing?

Appendix B: ***STAFFING PLAN***

The Staffing Plan is located on the Teton Interagency Fire website at;
http://gacc.nifc.gov/gbcc/dispatch/wy-tdc/dispatch.php

Appendix C: ***PREVENTION PLAN***

The Bridger-Teton NF Fire Prevention Plan is located at; http://gacc.nifc.gov/gbcc/dispatch/wy-tdc/dispatch.php

Appendix D: ***RESTRICTION / CLOSURE PLAN***

The Restriction/Closure Plan is currently under revision. Elements of the plan are located on the Teton Interagency Fire website at; http://gacc.nifc.gov/gbcc/dispatch/wy-tdc/restrictions.php

Appendix E: ***FUELS MONITORING SITES***

Fuel Monitoring Site	Lat dms	Long dms	Elevation	Aspect	Fuel Model
Grand Teton NP					
Flagg Ranch	44° 6' 35.8668"	110° 41' 8.0946"	6850	Flat	G
Lost Creek	43° 44' 54.9204"	110° 37' 26.4324"	6770	Flat	T
Moran	43° 50' 18.7836"	110° 30' 8.1498"	6800	SW	G
RKO Road	43° 49' 14.4114"	110° 35' 28.4964"	6960	Flat	T
Signal Mountain	43° 51' 4.8204"	110° 33' 53.46"	7600	N	G
Timbered Island	43° 42' 25.6386"	110° 43' 11.1318"	6570	Flat	G/T
Whitegrass Ranch	43° 38' 22.6566"	110° 46' 0.516"	6500	Flat	G
Bridger-Teton NF					
West Zone					
Hams #1	42° 12' 53"	110° 43' 48"	7,910	SW	G
Hams #2	42° 15' 22"	110° 44' 37"	8,346	N	G
East Zone					
Half Moon	42° 54' 47"	109° 44' 44"	8,419	Flat	G/T
Snyder Basin	42° 29' 26"	110° 31' 36"	8,200	Flat	G
Hoback	43° 13' 13"	110° 25' 23"	6,726	East	G
North Zone					
Burro	43° 50' 39"	110° 21' 20"	7,004	N	G
Cache	43° 27' 53"	110° 43’ 58"	6,475	NE	G

Appendix F: ***ANALYSIS DATA***

Analysis data used to develop the Fire Danger Operating Plan is compiled on the Forest Service SharePoint site at; https://ems-team.usda.gov/sites/fs-r04-btnffmts/_layouts/15/start.aspx#/Fire%20Management%20Reference%20System/Forms/AllItems.aspx?InitialTabId=Ribbon%2ERead&VisibilityContext=WSSTabPersistence