Southeast Arizona Zone

Prevention Plan

May 2023

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Prevention Plan

1. Introduction

A. Purpose

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 Southeast Arizona Zone are documented in the Fire Danger Operating Plan.

Note: This prevention plan template is intended to provide the user with the fundamental prevention plan components to help provide prevention/mitigation direction. This plan template can be modified to address those issues and needs that are specific to your planning area.

B. Terminology

1. Prevention/Mitigation Plan

The Prevention/Mitigation Plan outlines how the Adjective Fire Danger Ratings are communicated to the public, and applied, in terms of responsible personnel and assigned activities. Prevention activities are intended to reduce the occurrence of unwanted human-caused fires and include, but are not limited to:

- Education (signage, school programs, radio and news releases, recreation contacts, local business contacts, exhibits);
- Engineering (public utility company, government agency/cooperator coordination);
- Enforcement/industrial program monitoring (patrol, permitting, inspections including firewood cutting, logging, mining, power line maintenance, and area closures); and area closures); and
- Administration (patrol, communication, FDOP, sign and other plans and planning activities).

2. Adjective Fire Danger Rating

In 1974, the Forest Service, Bureau of Land Management and State Forestry organizations established a standard adjective description for five levels of fire danger for use in public information releases and fire prevention signing. For this purpose only, fire danger is expressed using the adjective levels and color codes described below:

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

C. Policy and Guidance

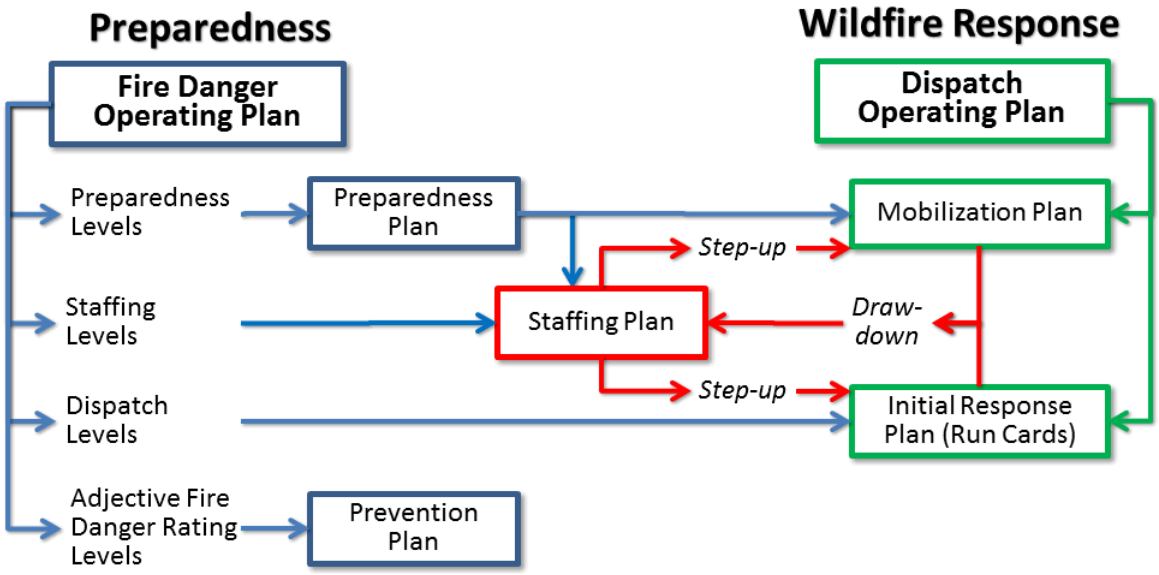
Policy and guidance regarding the development of Prevention/Mitigation Plans can be found in chapter 9 of the Interagency Standards for Fire & Aviation Operations (Red Book).

Unit-level Fire Prevention/Mitigation Plans[1] may be required and completed by conducting a wildland fire prevention/mitigation assessment. The purpose of the plan is to develop a strategy that will identify actions to reduce unwanted human-caused ignitions, thereby reducing wildland fire damages and losses, unnecessary risks to firefighters, and suppression costs. As fire danger moves from low to extreme, as

[1] **NPS** – Only units that experience more than an average of 26 human-caused fires per ten-year period are required to develop a fire prevention plan.
FWS – Prevention assessment determines requirement for prevention plan. Refer to Fire Management Handbook Chapter 10.
FS – Refer to FSM 5110.
BIA – Refer to 90IAM 1.4C (6) – H, BIA National Wildfire Prevention Handbook for guidance, available at https://www.bia.gov/bia/ots/dfwfm/bwfm/wildfire-prevention-and-education/prevention-resource-library.

defined in the FDOP, and/or human activity increases, prevention and mitigation activities must be increased to maintain effectiveness.

Administration (patrol, communication, FDOP, sign and other plans and planning activities). The Prevention/Mitigation Plan is an operational plan tiered from the Fire Danger Operating Plan as shown below:



II. Plan Components

A. Program Administration

Describe how the prevention/mitigation program for the local unit or zone is administered.

- Identify interagency partners
- Identify prevention/mitigation program leads
- Describe prevention/education efforts with public information officers (PIOs)
- How often are adjective fire danger signs updated; list locations of fire danger signs. Identify who determines when fire danger signs are updated.
- Describe how prevention/education signs are maintained/updated with current information
- List any additional program information specific to your program.
- List links to prevention/mitigation program plans (i.e. https://www.nifc.gov/prevEdu/prevEdu_main.html)

1. Prevention/Mitigation Workload Analysis

The ability to regulate, educate, or control a user group is 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 table in Appendix A illustrates the differences between target groups (Industry, Public) and the associated fire cause.

The table in Appendix B provides a summary of the planning area's fire danger problems and concerns. In addition, each problem is associated with a specific target group (public, industry) whose activities can be influenced through effective communication and implementation of specific control measures.

The Prevention Plan will be used to support 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.

2. Adjective Fire Danger Rating Determination

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 (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 based on statistical correlation of weather observations and fire occurrence. The Southeastern Arizona Zone FDOP implements Adjective Fire Danger Rating based upon fire business thresholds; not climatological percentiles.

Although NFDRS processors (WIMS) automatically calculate the adjective class rating, TDC will manually determine Adjective Fire Danger Rating based upon *fire business thresholds*. The Adjective Fire Danger Rating levels are determined for each FDRA utilizing the appropriate matrix for each FDRA (Tables 9.1 – 9.3). The statistical analyses to help determine the adjective fire danger rating levels was conducted using FireFamilyPlus (FFP) version 5. Probability analyses were conducted for each FDRA using Energy Release Component (ERC) as the analysis variable. The ERC variable correlated well with historical weather and fire occurrence data. The analysis period was defined as March 1st - August 31st beginning in 2013 through 2022. "All" fires were selected for the fire cause for all three FDRA's. Fire business threshold determinations for ERC_Y for each FDRA are displayed in Appendix C.

B. Mitigation

Describe actions initiated to reduce impacts of wildland fire to communities (i.e. Firewise programs, community wildfire protection program (CWPP) agreements, fuels reduction projects, etc.). Note: Incorporate associated planning documents by reference (i.e. CWPP, Firewise, etc.).

C. Prevention

Describe efforts to prevent unwanted human-caused fires. This involves efforts to:

- Complete fire risk assessments.
- Determine the severity of the situation.
- Facilitate community awareness and education in fire prevention including prescribed burning.
- Coordinate announcement of interagency restrictions and closures.
- Coordinate fire prevention efforts with the public, special target groups, state and local agencies, and elected officials.
- Promote public and personal responsibility regarding fire prevention in the wildland/urban interface.
- Assist Incident Management Teams in accomplishing their objectives in working with the public develop fire protection plans.

D. Education

Describe facilitating and promoting awareness and understanding of wildland fire. Education efforts may include:

- Equipment use
- Debris burning
- Campfire safety
- Vehicle maintenance (i.e. securing tow chains, no dragging vehicle parts, proper tire pressure, brake maintenance, etc.)

Note: Incorporate education plans by reference.

E. Enforcement

Describe actions necessary to establish and carry out regulations, restrictions, and closures.

During times of high fire danger, restrictions and/or closures may be imposed to mitigate the risk of wildland fires. Emergency closures have a substantial impact on the public and are only used under the most severe conditions. All Special Orders and Closures will be coordinated with local cooperators and regional agencies.

Fire restrictions and closures require a high degree of coordination among all levels within each agency and tribes, between all agencies and tribes within the restriction area, between restriction areas, and the restriction area and Geographic Area Restriction Coordinator. This process must be continuous from the time restrictions are first proposed, through the period of implementation, and until the rescinding of all restrictions/closures. The Cooperators in the restriction area will continuously monitor weather, fuel conditions and other factors that will indicate when restrictions or closures are warranted. The decision criteria are a combination of all values, not just one or two (Appendix D).

The criteria listed in Appendix E were obtained after evaluating ERC values on all

days recorded for each FDRA at the 80th, 90th, 95th and 97th percentiles. Note that all three FDRAs utilized a fire business analysis period of March 1st through August 31st and fuel model Y. These values were determined through a thorough statistical analysis of historical weather correlated with fire occurrence data.

Appendix A

Prevention/Mitigation Workload Analysis Table

PLANNING AREA FIRE WORKLOAD ANALYSIS

TARGET GROUP		IGNITION CAUSE		RELATIVE DEGREE OF CONTROL	COMMUNICATION METHODS	WORKLOAD DESCRIPTION
GENERAL	***SPECIFIC***	***GENERAL***	***SPECIFIC***			
Public	Recreation groups, campers, hikers, tourists, motorists, aviators, general transportation	9 - Miscellaneous	Miscellaneous fires along various travel routes, or from activities within military aviation training routes, or from activities from unknown persons or groups on public lands resulting in unknown ignition sources (i.e. fireworks, cigarettes, sparks, catalytic converters on vehicles, etc.).	Low	Communicate via various media outlets, publications, and approved websites to publicize fire danger awareness to the public. Post appropriate fire danger signage.	Units within the Zone are experiencing a significant number of starts from unknown ignition sources along travel routes, within military aviation training routes, and/or from unknown persons or groups traveling across public lands. These igntions are occurring when fuels are critically dry and the potential for high wind events are forecasted. Workload may be impacted by a need for increased patrol activities and utilizing severity resources from outside the SEZ.
Public	Recreation groups, campers, hikers, tourists, hunters	4 - Campfire	Escaped campfires in either developed or undeveloped campsites are being left unattended.	Moderate	Communicate via various media outlets, publications, and approved websites to publicize fire danger awareness to the public.	Units within the Zone are experiencing a significant number of reports of escaped campfires. These ignitions are occurring when fuels are critically dry and the potential for high wind events are forecasted.

TARGET GROUP		IGNITION CAUSE		RELATIVE DEGREE OF CONTROL	COMMUNICATION METHODS	WORKLOAD DESCRIPTION
GENERAL	*SPECIFIC*	*GENERAL*	*SPECIFIC*			
					Post appropriate fire danger signage.	Consider implementing fire restrictions or closure orders commensurate with NFDRS outputs and restrictions/closure order guidelines. Workload may be impacted by a need for increased patrol activities and utilizing severity resources from outside the SEZ and coordination with law enforcement.
Industry	Roadway construction crews, ADOT crews, power companies, natural gas pipeline companies, mechanical fuels treatment contractors.	2 - Equipment	Fires along roadways or rights of way resulting from construction or maintenance activities. Fires resulting from fuels treatment activities.	Moderate	Contract pre-work meetings; Contract/Permit stipulations. IFPL implementation Announce adjective fire danger levels via media outlets and signs.	Units within the Zone are experiencing unplanned ignitions resulting from construction and/or infrastructure maintenance activities along travel routes and/or rights of way corridors, and/or fuels treatment activities. Contract enforcement during periods of restrictions/closures.
Public	Landowners	5 - Debris Burning	Escaped fires from landowners burning debris/slash piles on private lands.	Low	Communicate via various media outlets, publications, and approved websites to publicize fire danger awareness to the public.	Units within the Zone are experiencing an increase in escaped fires resulting from debris burning activities. These activities usually occur during periods of increased fire danger and in conjunction with wind events.

TARGET GROUP		IGNITION CAUSE		RELATIVE DEGREE OF CONTROL	COMMUNICATION METHODS	WORKLOAD DESCRIPTION
GENERAL	*SPECIFIC*	*GENERAL*	*SPECIFIC*			
					Post appropriate fire danger signage.	
Agency	Federal and AZ State fire suppression resources and personnel	1 - Lightning	Multiple lightning-caused ignitions which can quickly exceed the capability of the local unit's initial attack capabilities.	High	Communicate lightning activity level (LAL) via Dispatch. Communicate information to agency personnel to increase awareness for potential lightning-caused ignitions.	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.
Public	Unknown persons	7 - Arson	Unplanned ignitions in remote areas, along travel corridors, or near recreation sites.	Low	Communicate via various media outlets, publications, and approved websites to publicize fire danger awareness to the public. Post appropriate fire danger signage.	Units within the Zone are experiencing an increase in arson fires. Consider increasing LEO patrols and increased/extended staffing levels for agency suppression resources.

Appendix B

Prevention/Mitigation Decision Summary Table

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
Public	Sonoran	9 - Miscellaneous	Increased fire starts from unknown ignition sources. Consider increasing LEO patrols and increased/extended staffing levels for agency suppression resources.	Fire Business Thresholds	5	ERC, BI, Adjective Fire Danger Rating	Y	Prevention Plan
Public	Sonoran Desert Grasslands Forest/Woodland	4 - Campfire	Increased reports of escaped campfires. Consider increasing LEO patrols and increased/extended staffing levels for agency suppression resources.	Fire Business Thresholds	5	ERC, BI, Adjective Fire Danger Rating	Y	Prevention Plan
Industry	Sonoran, Desert Grasslands	2 - Equipment	Fires along roadways or rights of way resulting from construction or maintenance activities; mechanical fuels treatment activities.	Fire Business Thresholds	5	ERC, IFPL, Project BMPs, PL, Adjective Fire Danger Rating	Y	Restriction / Closure Plan

Public	Sonoran Desert Grasslands	5 - Debris Burning	Increase in escaped fires resulting from debris burning activities. Usually during periods of increased fire danger and in conjunction with wind events.	Fire Business Thresholds	5	ERC, BI, Adjective Fire Danger Rating	Y	Restriction / Closure Plan
Agency	Desert Grasslands Forest/Woodland	1 - Lightning	Multiple lightning-caused ignitions which can quickly exceed the capability of the local unit's initial attack capabilities.	Fire Business Thresholds	5	ERC, BI, LAL	Y	Staffing / Draw-down Plan
Public	Sonoran, Desert Grasslands Forest/Woodland	7 - Arson	Units within the Zone are experiencing an increase in arson fires. Consider increasing LEO patrols and increased/extended staffing levels for agency suppression resources.	Fire Business Thresholds	5	ERC, BI, Adjective Fire Danger Rating	Y	Prevention Plan

Decision Summary Table

Appendix C

Adjective Fire Danger Rating Tables

Sonoran FDRA

ERC_Y	Adjective Fire Danger Rating
0 - 28	L
29 – 42	M
43 – 67	H
68 – 81	VH
82+	E

Table 1.a. Sonoran FDRA Adjective Fire Danger Ratings Matrix

Desert Grassland FDRA

ERC_Y	Adjective Fire Danger Rating
0 - 29	L
30 – 42	M
43 – 57	H
58 – 72	VH
73+	E

Table 1.b. Desert Grassland FDRA Adjective Fire Danger Ratings Matrix

Forest/Woodland FDRA

ERC_Y	Adjective Fire Danger Rating
0 - 17	L
18 – 30	M
31 – 47	H
48 – 60	VH
61+	E

Table 1.c. Forest/Woodland FDRA Adjective Fire Danger Ratings Matrix

Appendix D

Restrictions/Closure Plan Checklist (Example)

1. **What is the predicted fire potential for the next several weeks?**

   - Is the [*enter Geographic Area name*] 7-Day Significant Fire Potential Outlook showing consistently 'Very Dry' fuels (brown color) or more than one 'High Risk' day (orange or red color) per week?
     ☐ YES ☐ NO

   - Is the [*enter Geographic Area name*] Monthly Outlook showing 'Above Normal' Significant Fire Potential (red color) over or near the unit(s) under consideration?
     ☐ YES ☐ NO

   [*enter Geographic Area Predictive Services monthly outlook web link*]

2. **Are restrictions/closures being considered for the whole Zone or specific Fire Danger Rating Areas (FDRA)?**
   ☐ Sonoran FDRA _____
   ☐ Desert Grassland FDRA _____
   ☐ Forest Woodland FDRA _____

   - What are the current and expected [*enter NFDRS index*] values as compared to the historical values?

3. **Is there an increase in number of fire starts? (Human vs. Natural) (Human – Cause Category)**

   - # of Human Starts:_____ Major Cause Category (2-9): _____

   - # of Natural Starts:_____

4. **What is the daily fire occurrence situation?**
   - Are there multiple starts?

     ☐ YES ☐ NO
   - Are fire occurrences and associated control problems increasing or decreasing?

     ☐ INCREASING ☐ DECREASING

5. **Are adequate fire resources available by Agency/Zone?**
   ☐ YES ☐ NO
   - What are the current and expected Preparedness Levels for:
     ☐ Sonoran FDRA _____
     ☐ Desert Grassland FDRA _____
     ☐ Forest Woodland FDRA _____

What are the current and expected Adjective Fire Danger Rating Levels for:

☐ Sonoran FDRA _____
☐ Desert Grassland FDRA _____
☐ Forest Woodland FDRA _____

6. **Are severity resources or funds requested/approved for local/zone agencies?**

☐ YES ☐ NO

- What are the current and expected Staffing Levels for:

☐ Sonoran FDRA _____
☐ Desert Grassland FDRA _____
☐ Forest Woodland FDRA _____

7. **Is an increase/decrease in recreational visitor days, (i.e., holidays and special events, expected)?**

☐ YES ☐ NO

If yes, example: _____

8. **Are social, political or economic impacts expected?**

☐ YES ☐ NO

If yes, explain: _____

9. **Are there preparations for the next phase, whether that would be a higher level of restrictions, closures, or rescissions of an order?**

☐ YES ☐ NO

If yes, explain: _____

10. **Have you contacted the following individuals concerning area fire restrictions?**

☐ Fire Prevention Officers:_____
☐ Public Affairs/Public Information Officers:_____
☐ Law Enforcement/Special Agents:_____
☐ Agency Administrators: _____
☐ Adjoining Zone(s) Board Chairs:_____

11. **The following decision is based on the above criteria and Interagency discussions:**

☐ **ZONE PARTNERS HAVE DECIDED NOT TO GO INTO RESTRICTIONS AT THIS TIME.**

Additional notes:_____

_____

_____

_____

☐ **ZONE PARTNERS WILL GO INTO** (CHECK/MARK THE APPROPRIATE Restrictions or Partial/Full Closures)

☐ Restrictions ☐ Partial Closure ☐ Full Closure

On:_____.
Date

List Participating Units:

Each agency PAO will forward a copy of their restriction notice to the appropriate website for posting for [*enter zone/planning area name*] restrictions. A consolidated Interagency Zone news release will be prepared by (designate lead PAO) _____ and forwarded to agencies involved for approval on:

_____**, to be released to the media on** (date – preferably mid-week):
(Date)

_____
(Date)

Additional notes: _____

_____

_____

Zone Board Members' Initials:

_____FMO, [*enter agency name*] _____FMO, [*enter agency name*]

_____FMO, [*enter agency name*] _____FMO, [*enter agency name*]

_____FMO, [*enter agency name*] _____FMO, [*enter agency name*]

Appendix E

Values for Evaluating Restrictions and/or Closures

80th, 90th, 95th and 97th Percentile ERC_Y Threshold Values – Fire Business Analysis Period (*March 1st – August 31st*)				
FDRA	**80th Percentile (BLM)**	**95th Percentile (BLM)**	**90th Percentile**	**97TH Percentile**
Sonoran	80	91	86	92
Desert Grassland	70	81	77	83
Forest Woodland	60	69	65	72

Table 1a. ERC_Y values for use in evaluating restrictions and/or closures. Fire Business Analysis Period: March 1st – August 31st for the Sonora, Desert Grassland, and Forest Woodland FDRAs. Annual date ranges are 2013-2022.