

## **PREPAREDNESS**

### **1 Introduction**

This chapter provides direction for preparedness and preparedness related activities. Primary guidance for preparedness is found in the [Interagency Standards for Fire and Fire Aviation Operations](#).

Preparedness is the result of activities that are planned and implemented prior to wildland fire ignitions to ensure safe, efficient, and effective management action. Preparedness is a continuous process that includes developing and maintaining unit, state/regional, and national level firefighting infrastructure; predicting fire activity; preventing human-caused fires; hiring, training, equipping, and deploying firefighters; evaluating performance; correcting deficiencies; and improving overall operations. The preparedness process includes routine pre-season actions as well as incremental in-season actions conducted in response to increasing fire danger.

Preparedness actions are based on operational plans such as Preparedness Level Plans (national, geographic area, local, and/or regional), Fire Danger Operating Plans (FDOPs), Preparedness Plans, Step-up Plans (also called Staffing Plans), and/or Initial Response Plans.

### **2 Responsibilities**

#### **2.1 National Level**

The Branch of Wildland Fire is responsible for the policy, direction, and content of the wildland fire program. The Branch of Wildland Fire will:

- Provide technical assistance to regions.
- Provide technical assistance to parks in coordination with the regional offices.
- Secure and allocate funding to accomplish Servicewide priorities.
- Maintain interagency contacts, including but not limited to Multi-Agency Coordinating Groups (MAC) and Geographic Area Coordinating Groups, and provide for necessary interagency agreements.
- Provide assistance as requested to park fire preparedness and program reviews.
- Conduct fire program reviews of regional office fire management programs.
- Provide guidance and approval for severity requests.

## 2.2 Regional Levels

- Work with parks on regional funding allocation to meet regional preparedness needs.
- Maintain interagency contacts, including but not limited to Multi-Agency Coordinating Groups (MAC) and Geographic Area Coordinating Groups, and provide for necessary interagency agreements.
- Regional preparedness review teams may be used to conduct more in-depth, objective reviews on a scheduled basis (once every 3-5 years).
- Regional offices will ensure preparedness reviews of park fire management programs are completed.
- Monitor step-up activities.
- Assist parks with training and qualification prioritization and succession planning. Address park assessments of training needs in order to ensure that our workforce is equipped with the knowledge they need to safely conduct their duties and communicate these needs to the National Office.
- Review, validate and approve severity requests and ensure that the right resources are identified to provide adequate coverage during severity
- Address deficiencies and seek improvement in operations.
- Communicate weather updates, predicted weather events and seasonal outlooks to the parks.

## 2.2 Park Level

Each park with a fire program will:

- Develop and maintain a preparedness plan that is based on and consistent with the unit's Fire Management Plan.
- Conduct preparedness reviews on an annual basis using approved [NPS preparedness checklists](#).
- Ensure that a cache of supplies, materials, and equipment is maintained and available in the park or local area and is sufficient to meet normal fire year requirements. The inventory and location of these items should be identified in the preparedness plan.
- Ensure that fully qualified personnel are available in the park or local area, which may be done through local agreements.
- Ensure methods to, archive, retrieve, and interpret wildland fire data for preparedness planning and operations.
- Prepare a step-up plan based on staffing classes derived from the National Fire Danger Rating System (NFDRS). This plan must be included in the Fire Management Plan.
- Provide communications to the park staff on current and expected fire weather and selected fire danger indices and use these to plan accordingly for park operations such as burn bans, trail closures etc.

- Ensure dispatch and mobilization processes are in place for wildland fire response.
- Ensure detection and initial response capabilities are commensurate with current and expected fire danger conditions.
- Develop and maintain local interagency agreements.
- Ensure annual service and supply plans with appropriate emergency equipment rental agreements are current and available. An example service and supply plan can be found [here](#).
- Contracts for Wildland Fire Suppression and Prescribed Fire Resources are completed.
- Have a briefing packet ready for incoming incident management teams and/or resources that is reviewed annually. Packet should include, but not be limited to; local resources such as hotels, vehicle rental locations, port-a-potty and catering contractors, values to be protected, local weather, local hospital numbers, names of local fire chiefs and all relevant information for incoming teams to help transition fires quickly and safely. Much of this information could be found in a locally developed [Incident Business Operating Guidelines](#).
- Ensure that all arduous duty wildland firefighters, including collateral duty, have cleared the annual medical program requirements and completed RT-130 and a work capacity test. Ensure that all moderate and light duty wildland firefighters, including collateral duty, have completed the requirements with the Health Screening Questionnaire (HSQ) and cleared that process. Further guidance can be found in the Interagency Standards for Fire and Fire Operations and at the Department of the Interior Wildland Firefighter Medical Standards Program.

### **3 Preparedness Planning**

Preparedness planning must be conducted and coordinated at all organizational levels for optimum preparedness. Preparedness activities are funded by park operating and/or wildland fire funds.

#### **3.1 Fire Season Delineation**

Fire seasons in parks are based on fire occurrence records and climatological records, as determined using fire planning analysis tools. Each park will work with the regional office to establish the fire season start and end dates. Regional fire seasons are defined as the composite of their parks' fire seasons. This planning should be reviewed annually prior to the anticipated season to determine if conditions warrant planning for an extended season. Determination of the fire season should be reviewed when updating fire management plans to assess if conditions have changed and seasons are extending on a regular basis beyond the previously determined seasons.

## 3.2 Step-up Plans

Step-up plans, also called Staffing Plans, are described in a fire management plan and are intended to describe incremental preparedness actions that must be taken as fire danger increases or decreases. The Step-up plan should identify specific measures to be taken to provide adequate resources and personnel to meet elevated fire danger. Parks should consider a full range of preparedness actions within the step-up plan, including needs for wildfire prevention, detection, staffing, initial response, and related needs. The step-up plan must include provisions for wildfire detection in staffing classes 4 and 5. See Exhibit 1 as an example of a completed Step-up plan.

All units will participate in the development and maintenance of a Fire Danger Operating Plan, which forms the basis for developing the Step-up Plan.

See [Interagency Standards for Fire and Fire Aviation Operations](#) for additional guidance.

### 3.2.1 Staffing Levels

The Staffing Level is used to make daily internal fire preparedness and operational decisions. Staffing Level is defined as the daily staffing of initial response resources. Specific preparedness actions are defined at each staffing level. Staffing Level is a direct output of the NFDRS system in WIMS. Each step-up plan should address the five staffing levels and the responding actions that are intended to provide an effective initial response to wildfires. Several assessment tools are available to measure fire danger.

The increases in initial response capabilities taken at Staffing Class 4 or 5 are designed to enhance the park's fire management capability for short-term periods (e.g. 2 to 5 days; periods of increased visitation such as holiday weekends; or other pre-identified short-term events) when normal staffing cannot meet initial attack, prevention, or detection needs.

The difference between step-up and severity is that step-up actions are established in the park unit's Staffing Plan and implemented by the unit when those pre-identified conditions are experienced. The Step-Up/Staffing Plan addresses pre-approved escalating responses that are in the FDOP and FMP. Severity is a longer-duration condition that cannot be adequately dealt with under normal staffing. Emergency preparedness funding is discussed later in this chapter.

### 3.2.2 Fuel Models

Selection of fuel models is critical in developing an effective step-up plan. Factors that should be considered in selecting a fuel model include:

- Proportion of ignitions by fuel model.
- Values to be protected by fuel model.
- Fire behavior by fuel model.
- Proposed (in FMP) management strategies (i.e., the full spectrum of strategic options, ranging from monitoring to full suppression) by fuel model and location.

The integration of these factors may result in selection of the fuel models that represent the landscape and potential fire behavior. Multiple fuel models may be selected in evaluating the potential for fire risk and determining appropriate staffing. Staffing priorities should be directed at areas of greatest fire risk.

### 3.2.3 Staffing Class Break Points

Parks should choose one or more of the following to calculate their staffing class condition:

- NFDRS Preferred (Burning Index, Energy Release Component, Spread Component or other)
- Drought Index (Keetch-Byram, Palmer, or other)
- Live Fuel Moisture (calculated or sampled)
- Canadian Fire Danger Rating System
- Soil Moisture

Parks can use any recognized science-based system to measure fire danger and potential and are encouraged to apply the best fit for their needs.

Staffing Class Break Points are calculated as described below:

- First, identify the 90<sup>th</sup> and 97<sup>th</sup> percentiles, as calculated using FireFamily Plus run.
- The 97<sup>th</sup> percentile, by definition, is the bottom of Staffing Class 5 (i.e., the break point).
- The 90<sup>th</sup> percentile, by definition, is the bottom of Staffing Class 4 (the break point).
- Subsequent lower break points for SC-2 and SC-3 are calculated by dividing the next-higher Staffing Class Break Point by 2. That is, for SC-3, divide the lower SC-4 break point (90<sup>th</sup> percentile) by 2; for SC-2, divide the lower SC-3 break point by 2.
- SC-1 ranges from 0 to one point less than the lower SC-2 break point.

Once the five staffing class numerical ranges have been calculated, a best fit comparison should be made between historical fire occurrence and these ranges. Adjustments to staffing classes 1, 2, and 3 break points should then be made as appropriate; staffing classes 4 and 5 should not be adjusted.

Variations from these thresholds require regional fire management officer approval and should be documented in the units Fire Danger Operating Plan and Fire Management Plan.

### **3.2.3 Sample Step-up Plans**

Exhibit 1 provides an example of a completed step-up plan.

### **3.2.4 Funding**

ONPS and wildland fire funds provide support for routine preparedness actions conducted in staffing levels 1 through 3. Emergency funds are available to accomplish approved step-up activities when the park is in staffing level 4 or 5. Funding of supplemental activities in staffing levels 4 and 5 is discussed below in the section on emergency preparedness funding.

## **3.3 Monthly and Seasonal Outlooks**

The National Monthly and Seasonal Outlook is prepared and issued by the Predictive Services staff based at the National Interagency Fire Center. The geographic area monthly and seasonal outlook is prepared and issued by the Geographic Area Coordination Center's Predictive Services staff. These products and other analyses consider detailed information for each of the Predictive Services Areas within the geographic area, and as such provide accurate and area specific data. This information should be used to formulate preparedness and operational activities. For further information refer to the [Interagency Standards for Fire and Fire Aviation Operations](#).

Risk analysis information can also be used to evaluate and modify preparedness activities, adjust initial response plans, and brief NPS leadership at the national, regional, and/or park level.

Periodic review of predictive services outlooks is an ongoing process and should be incorporated into preparedness activities.

## **3.4 Weather Information Management System (WIMS) and the National Fire Danger Rating System (NFDRS)**

While NFDRS and WIMS are the primary tools used to assess fire danger other assessments may be more applicable in some parks, e.g. water level or the

Canadian Forest Fire Danger Rating System (CFFDRS). Fire danger rating is used for (but not limited to) determining staffing needs, prepositioning resources, determining resource placement and placing restrictions on activities within public lands.

Parks with wildland fire management responsibilities should maintain a system to access and/or view outputs from WIMS. Additionally, those parks that maintain fire weather stations and are responsible for managing the station catalogue and daily inputs should ensure that their actions are meeting National Weather Service and interagency standards for accuracy and timeliness.

Requirements for all NFDRS compliant weather stations managed in WIMS can be found in the [Interagency Standards for Fire and Fire Aviation Operations](#) in Chapter 10 (NFES 2724).

### **3.5 Preparedness Plans**

The preparedness plan is a comprehensive set of action plans that provide management direction given certain levels of burning conditions, fire activity, and resource commitment. Preparedness plans should include information on park infrastructure and critical resources. Criteria and procedures for evacuations and closures will also be addressed. Exhibit 2 contains a sample closure/evacuation plan. Copies of the preparedness plan must be made available in the park's fire management and dispatch offices.

The preparedness plan is a required Appendix to the Fire Management Plan (see the Fire Management Plans Chapter of *RM 18*). The plan should be reviewed annually prior to fire season and revised as necessary. See [Interagency Standards for Fire and Fire Aviation Operations](#) for additional guidance.

## **4 Emergency Preparedness Funding**

### **4.1 Step-up Funding**

It is neither reasonable nor prudent to program funds annually for the worst possible fire season. Emergency preparedness activities identified in the preparedness plan and step-up plan therefore need to be formulated to deal with years with extended fire seasons or periods of prolonged and elevated (>90<sup>th</sup> percentile) fire danger within "normal" fire seasons.

Emergency step-up to preparedness level 4 or 5 is a short-term event that allows a park to use emergency funding for additional resources and is based on the elements of the NFDRS as defined in the Fire Danger Operating Plan. Access to step-up funding to implement supplemental activities in staffing levels 4 and 5 is

intended for short-term periods (1 to 7 days). In situations where fire danger has been increasing with little or no relief in the forecast, parks should make preparations to acquire severity funding as soon as they move above staffing class 3.

Additionally events such as high visitation during a time of high fire danger, a weather event due to move through an area, or an anticipated series of lightning strikes may be used to adjust the staffing levels.

Emergency step-up plan preparedness activities specified in a park's fire management plan can be approved by the Superintendent. As specified in the park's plan, the event must cause the park to step-up to preparedness level 4 or 5. Each park is responsible for documenting the current status and the events that caused the step-up to occur. A separate FireCode should be established for each unique step-up event. Refer to the current [NPS Wildland Fire & Aviation Budget Rules](#).

## **4.2 Severity Funding**

Fire severity funding is not intended to raise preparedness funding levels to cover differences that may exist between funds actually appropriated (including rescissions) and those identified in the fire planning process. The purpose of fire severity funding is to mitigate losses by improving suppression response by supplementing response capacity and provide for increased wildfire prevention activities.

Parks should request severity funding to augment initial attack, detection and prevention capacity when any combination of factors leads to a long-term event (more than 7 days) of above normal risk and fire potential for a particular area at a given time of year. A severity funding request should be submitted when park(s) are expecting prolonged and elevated fire danger due to drought or other situations which may not adequately be met with routine daily staffing. Additionally, when a park encounters extreme conditions for extended periods outside of the "normal fire season," severity funding should be requested that including a description of emergency preparedness actions to be taken. Severity requests should identify key positions such as a duty officer or administrative assistance as well as response oriented resources. Severity requests may extend hours of park staff and will usually include orders for resources from outside the local unit.

Severity requests totaling less than \$100,000 must be submitted to the regional office for review and approval. Requests over this amount, including multiple requests/extensions for the same park that combined total over \$100,000, must be submitted to the National Office for review and approval. The regional and/or national office will evaluate the requested resources with regard to all



contributing factors, including drought and burning indices, live and dead fuel moistures, ignition potential, and staffing levels at the park unit and cooperators. The supporting information in the severity request must be identified as critical points in the park Fire Danger Operating Plan. If approved, severity requests will be approved for a period of 30 days. All severity requests must be uploaded to the shared drive once approved.

Severity expenditures will be subject to audit to ensure that severity resources remained available to augment local resources, and that the type and duration of resources generally matched the authorized severity plan and severity conditions.

Refer to current-year [NPS Wildland Fire & Aviation Budget Rules](#) and the [Interagency Standards for Fire and Fire Aviation Operations](#) for further direction.

Exhibit 1

**SAMPLE STEP-UP PLAN**

Staffing Class (SC)	Burning Index	Step-up Action
SC-1	0-13	Specify normal tours of duty and numbers of initial response/monitoring personnel.
		Fire danger rating signs at visitor concentration areas activated at start of fire season.
SC-2	14-27	Specify normal tours of duty and numbers of initial response/monitoring personnel.
SC-3	28-55	Specify normal tours of duty and numbers of initial response/monitoring personnel.
		If predicted or observed lightning activity level (LAL) is 4, 5, or 6, automatically move up to SC-4.
		If a high visitation period is determined to pose exceptional human-caused risk of wildland fire, move to SC-4 (e.g. three-day holiday weekend, opening days of hunting seasons on adjacent lands).
		If live and/or dead fuel moistures are sufficiently low (e.g. live fuel moisture in sagebrush of 90%, 100 HR TL FM 7%, TH HR TL FM 9%) to allow rapid fire spread or high fire intensity in the presence of wind, step-up may be moved to SC-4. This section is included because wind velocities often increase in late afternoon after WIMS indices have been obtained for the day.
SC-4	56-71	If the LAL is between 3 and 6, fixed wing detection over flight may be requested from an adjacent cooperator. If cooperating aircraft are not available, a fixed wing aircraft may be hired for a detection flight. Cooperators and the regional FMO will be advised of these situations daily.
		The normal tour of duty for fire lookouts will ordinarily be staggered, with one lookout staffed from 0800 to 1630 and the other staffed from 0930 to 1800. Tours of duty will be extended through the burning period and/or during distinct evening and nighttime periods when the observed LAL is 3 or greater or when observations suggest the likelihood of LAL between 3 and 6. If these LAL levels occur during the night, the lookouts should begin detection efforts by 0800 the next morning.
		Intensified road and campground patrols for prevention and detection purposes may be initiated. Interagency detection and fire response efforts will be coordinated by the FMO.

Exhibit 1

Staffing Class (SC)	Burning Index	Step-up Action
		Workweeks and/or daily tours of duty for regular initial response/monitoring personnel may be expanded, particularly when the observed LAL is between 3 and 6, the predicted LAL is from 4 to 6, and/or the human-caused risk (MCR) is exceptionally high (MCR=80).
		In these situations, the initial response/monitoring crew will consist of a minimum of two people, one of whom should be qualified as either a fire monitor or a Type V incident commander, and will be held on duty through the burning period. The standby team in any SC-4 incident should be stationed in the district or area where risk is considered highest. Other initial response/monitoring teams may be held on standby in other districts or areas if conditions warrant.
		Key seasonal personnel will be identified by name and position and evaluated for fire experience after the area's full complement of initial response/monitoring personnel has been hired.
		When lightning risk is high, emphasis will be placed on extending workweeks/tours of duty of initial response/monitoring personnel with experience/competence in fire management and fire monitoring. When human-risk is high, emphasis will be placed on those initial response personnel duty-stationed at or near visitor concentration areas. (Some of these staffing needs may be met by adjusting work schedules and without expenditure of emergency funds.)
		Backcountry permits may be amended to prohibit open fires.
SC-5	72+	All SC-4 actions with further constraints noted below.
		Tours of duty for fire lookouts will be extended through the burning period and/or during distinct evening and nighttime periods when the observed or predicted LAL is 3 or greater.
		Workweeks and/or daily tours of duty for regular initial response/monitoring personnel and key permanent personnel may be expanded, particularly when predicted or observed LAL is between 3 and 6 and/or human-caused risk (MCR) is exceptionally high (MCR=80).
		In these situations, the initial response/monitoring team will, if possible, consist of a minimum of three people, one of which should be qualified as a Type IV incident commander, and will be held on duty through the burning period.

Exhibit 1

<b>Staffing Class (SC)</b>	<b>Burning Index</b>	<b>Step-up Action</b>
		The main standby initial response/monitoring team in any SC-5 incident should be in the district or area where risk is considered highest. Initial response/monitoring teams may be held on standby in other districts or areas if conditions warrant.
		Temporary closures may be imposed on areas in the park or for certain activities (e.g. open fires) in conjunction with similar impositions by adjacent land managing agencies.

Exhibit 2

**GUIDELINE FOR DETERMINING NEED FOR PARK CLOSURE/EVACUATIONS**

The following questions are presented as a guideline to assist park fire managers in determining the present or predicted necessity for evacuation of all or part of the park. The superintendent will make the final decision for closure/evacuation. Because of the critical time elements involved in closure and evacuation, this checklist should be completed at any time two or more elements in primary factor A are positive and should be kept as part of the park's fire records. This analysis should be based on predictions to allow adequate time for implementing the appropriate action.

For purpose of this guideline, key terms are defined as follows:

1. Partial closure: Park closure to visitors in specified areas.
2. Full closure: Park closure to visitors at entrances.
3. Evacuation: Removal of employees' families and/or visitors from the park.

The following steps are to be taken to make determinations:

1. Analyze each element and check the response "yes" or "no."
2. If positive responses equal or exceed negative responses within primary factors A through D; the primary factor should be considered a positive response.
3. Primary factor E is considered as a separate determinant.
4. Employ the following criteria to determine action:
  - a. If factor E is "no" and one other primary factor is "yes," consider full or partial closure.
  - b. If factor E is "no" and two or more primary factors are "yes," consider partial or full closure and evacuation of visitors.
  - c. If factor E is "no" and three or more primary factors are "yes," consider evacuation of visitors and employees' families.
  - d. If factor E is "yes," evacuate visitors and employees' families regardless of responses to other primary factors.

**A. FIRE BEHAVIOR** (observed or predicted)

1. Burning Index, Fuel Model B, 72 or above.
2. Crowning or spotting observed.
3. Rate of spread 12 chains per hour or greater.
4. Fire Size: 3 acres or more
5. More than one Class B size fire burning concurrently.

	YES	NO
<b>TOTAL</b>		

Exhibit 2

**B. PERSONNEL COMMITTED PARKWIDE**

		YES	NO
1.	Unusual initial response forces committed.		
2.	Park cooperative agreement crews committed.		
3.	Park incidental firefighters committed.		
4.	Fires remaining unstaffed after commitment of above park forces.		
5.	Relief forces more than two hours away.		
<b>TOTAL</b>			

**C. OPERATIONS**

		YES	NO
1.	Access/egress route likely to be heavily used by suppression traffic.		
2.	Extensive air operations in vicinity of developed areas.		
3.	Potential incident base location in area which conflicts with routine visitor activities.		
<b>TOTAL</b>			

**D. LOCATION AND DIRECTION OF SPREAD**

		YES	NO
1.	Fire north of developed areas, proceeding south.		
2.	Fire south of developed areas, proceeding north.		
<b>TOTAL</b>			

**E. EXIT**

		YES	NO
*	Any vehicular egress route directly threatened for extended period (i.e., to point where no traffic could safely get through).		

Exhibit 3

**PREPAREDNESS PLANNING CHECKLIST**

<b>COMMAND</b>	<b>OPERATIONS</b>
Pre-loaded WFDSS files	Helispot, helibase locations
Pre-positioning needs	Flight routes, restrictions
Draft delegation of authority	Water sources
Management constraints	Control line locations
Interagency agreements	Natural barriers
Evacuation procedures	Safety Zones
Structural protection needs	Staging area locations
Closure procedures	
<b>LOGISTICS</b>	<b>PLANNING</b>
ICP, base, camp locations	Park base map
Road, trails (including limitations)	Topographic maps
Utilities	Infrared imagery
Medical facilities	Vegetation/fuel maps
Stores, restaurants, service stations	Hazard locations (ground and aerial)
Transportation resources location	Archeological/cultural base map
Rental equipment sources (by type)	Endangered species critical habitats
Construction contractors	Sensitive plant populations
Sanitary facilities	Special visitor use area
Police, fire departments	Land status
Communications (radio, telephone)	
Sanitary landfills	
Portable water sources	
Maintenance facilities	