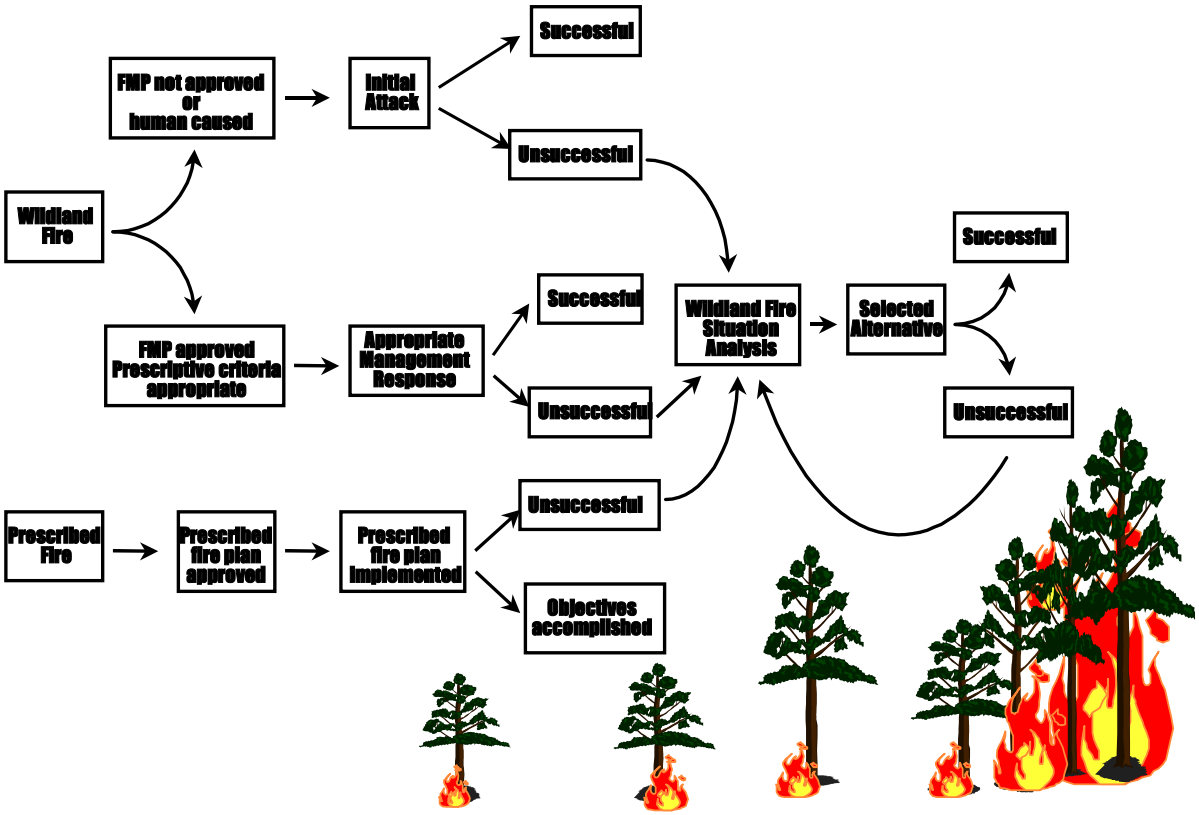
Wildland and Prescribed Fire Management Policy

Implementation Procedures Reference Guide



National Park Service

USDA Forest Service

Bureau of Indian Affairs

U.S. Fish and Wildlife Service

Bureau of Land Management

This document, "Wildland and Prescribed Fire Management Policy, Implementation Procedures Reference Guide," represents an interagency effort designed to provide standardized procedures to guide immediate implementation of the policy described in the 1995 Federal Wildland Fire Management Policy and Program Review. Individual agencies will implement the Wildland Fire Policy to varying degrees, and develop programs utilizing all or part of the full spectrum of available fire management options. Implementation will occur as respective agency Fire Management Plans are approved.

Depending upon individual objectives, capabilities, land management and Fire Management Plan completion status, regulatory compliance, and agency missions, agencies will plan and implement fire management programs that will not necessarily mirror each other. However, the information presented in this document does provide a broad overall framework for agencies to operate within.

The agencies listed below concur with and support this Implementation Procedures Reference Guide. Some minor and agency-specific implementation differences exist among the agencies but the basic policy is sound and fully endorsed. Agencies may choose to implement these procedures through their respective agency system of manuals and handbooks to ensure that the direction has standing within that agency's directive system. Various chapters from this guide may be inserted directly into agency handbooks (FWS), or appropriate manuals, or be referenced by specific manuals and handbooks (NPS, USFS, BIA). BLM accepts this direction as its broad strategy for policy implementation. A bureau handbook will be developed to guide specific implementation at the ground level.

The preparation of this document represents a significant step in the implementation of the Federal Wildland Fire Management Policy. It is hoped that this document will provide answers to many questions facing managers. This document exemplifies interagency cooperation, communication, and standardization of policy and procedures and will be reviewed and revised as necessary to ensure it fully meets agency needs and provides necessary guidance to manage wildland and prescribed fire under the new policy.

National Park Service ***August 1998***
USDA Forest Service
Bureau of Indian Affairs
U.S. Fish and Wildlife Service
Bureau of Land Management

For Additional Information

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Contents

Foreward 2
For Additional Information 3
Executive Summary 6
Chapter 1. Introduction 7
Purpose and Objectives 7
Chapter 2. Federal Wildland Fire Management Policy and Program Review 8
Background 8
Guiding Principles and Basic Policy Areas 9
Chapter 3. Interpreting and Understanding the Wildland Fire Management Policy 13
National Wildfire Coordinating Group Policy Framework and Flowchart 13
Definitions 15
Required Background Documentation 20
Understanding the Wildland Fire Management Policy 25
Chapter 4. Policy Implementation Procedures 30
Wildland Fire Implementation - Absence of an Approved Fire Management Plan or for a Human Caused Fire 30
Wildland Fire Implementation - Approved Fire Management Plan 31
A. Interpretation of the Appropriate Management Response Concept 33
B. Wildland Fire Planning and Assessment 36
C. Detailed Description - Wildland Fire Implementation Procedures 41
1. Wildland Fire Implementation Plan - Stage I: Initial Fire Assessment 41
Fire Situation 42
Decision Criteria Checklist (Initial GO/NO-GO Decision) 43
Suppression Actions 48
2. Wildland Fire Management Plan - Stage II: Short-Term Implementation Actions 49
Fire Behavior Predictions and Risk Assessment 50
Short-Term Implementation Actions 51
Complexity Analysis 52
Stage III Need Assessment Chart 54
3. Wildland Fire Implementation Plan - Stage III: Long-Term Assessment and Implementation Actions 55
Maximum Manageable Area (MMA) Determination 59
Long-Term Risk Assessment 60
4. Periodic Fire Assessment 68
5. Wildland Fire Situation Analysis (WFSA) 75
Prescribed Fire Implementation 76
A. Prescribed Fire Planning 78
B. Prescribed Fire Documentation 81
Selecting a New Strategy - Wildland Fire Situation Analysis 82

Chapter 5. Fiscal Accounting and Personnel Regulations 85
Accounting Code Definitions 85
Emergency Acquisition and Personnel Regulations 87
Interagency Reimbursement for Support of Fuels Management Activities 88
References 91
Appendix 92

Executive Summary

The following reference guide provides direction, guidance, and assistance in interpreting the Federal Wildland Fire Management Policy for the National Park Service, USDA Forest Service, Bureau of Indian Affairs, the U.S. Fish and Wildlife Service, and the Bureau of Land Management. This effort establishes consistent agreement between agencies regarding specific, detailed implementation of manual policy direction. This reference guide will tier directly to agency policy and guidance where it is specifically cited in agency manuals.

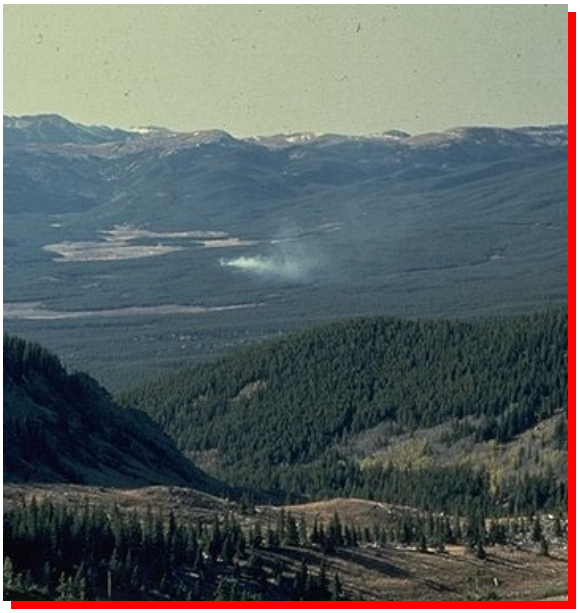
Significant departures from previous fire policy are included in the new policy direction (Chapter 2). The concept and terminology of the wildland fire policy encompasses all natural and accidental ignitions occurring in areas managed by Federal Agencies. This guide distinguishes basic principles and philosophies and makes clear what is and is not applicable within the new policy (Chapter 3). Primary among these changes is that the prescribed natural fire program has been separated from the prescribed fire element of the fire management program and included as part of the appropriate management responses to wildland fire. The objectives previously accomplished through prescribed natural fire are now achieved through application of an appropriate management response to naturally ignited wildland fires. All fire management program funding has been consolidated into a single base to facilitate greater flexibilty in individual program element funding (Chapter 5). Wildfire has been eliminated as a fire type. The term wildfire is defined and exists for use in promoting fire prevention programs.

The purpose of this document is to provide consistent operational level interpretation. This guide provides direction to field units requiring specific procedures and formats for various implementation levels, particularly the policy element described as the appropriate management response to wildland fire occurrence (Chapter 4).

The integration of various planning phases from programmatic to project levels is described (Chapter 3). Recommended formats for consistent implementation of the appropriate management response for each wildland fire occurrence and prescribed fire application are provided. Effective and efficient implementation of the new wildland fire policy is dependent on consistent implementation of this guide. Each step (box) of the NWCG policy flowchart is interpreted in this guide to promote common direction for policy implementation (Chapter 3). This guide provides an efficient mechanism to accommodate expected annual changes and necessary adjustments during future implementation.

Managing wildland fires for resource benefits requires significant documentation to chronicle the decision process of Agency Administrators and fire managers. This documentation process has been the cornerstone of successful applications of prescribed natural fire and alternative suppression actions over the past decade. The progressive documentation process described in this guide is an updated version of these past procedures and is designed to assist managers in implementing fire management activities available under the new policy.

Purpose and Objectives



The Departments of Interior and Agriculture, together with Tribal governments, States, and other jurisdictions, have responsibility for protection and management of natural and cultural resources on public and Indian Trust lands in the United States. Uniform Federal policies and procedures are essential to facilitate greater management efficiency.

Challenges and risks associated with wildland fire management are increasing in both complexity and extent. Threats from wildland fires grow each year as long-term effects from past land use and fire management actions become visible in natural vegetation communities. In addition, escalating values to be protected associated with current land use practices are compounding protection concerns. Federal land management agencies' ability to respond to these challenges is rapidly becoming overextended.

Wildland fire management policy and procedures must change to reflect new considerations, capabilities, and direction, while being responsive to resource management objectives. The purpose of this document is to describe procedures to implement wildland fire management activities consistent with the Federal Wildland Fire Management Policy and Program Review (USDI/USDA 1995) recommendations. This guide provides information on procedures and requirements to implement the full range of wildland fire management actions. All agencies will not necessarily employ all identified procedures on all administrative units at all times. Agencies will, however, make use of those available procedures necessary to accomplish objectives specific to individual or cooperative management units. While unique agency missions may cause minor operational differences, the one set of "umbrella" fire policy implementation procedures described in this guide will enhance effective and efficient operations across administrative boundaries and improve agency capability to meet challenges posed by wildland fires. This guide promotes agency standardization and represents continued interagency cooperation, consistent with direction in the Federal Wildland Fire Management Policy and Program Review.

Chapter 2. Federal Wildland Fire Management Policy and Program Review

Background

Throughout the twentieth century, fire management policy has continued to evolve in response to land and resource management needs, growing knowledge of the natural role of fire, and increased effectiveness of fire suppression. During the earliest stages of wildland fire management, programmatic state-of-the-knowledge indicated aggressive, total suppression to be the likely solution to limit widespread, damaging fires. As knowledge, understanding, and experience expanded, it became increasingly obvious that complete fire exclusion was not the best-suited management direction to support a balanced resource management program. In fact, in many situations, this management direction was detrimental to ecosystem health and functioning.

The events of the 1994 fire season created a renewed awareness and concern among the Federal land management agencies and constituents about safety, the impacts of wildland fire, and the integration of fire and resource management. As a result of those concerns and in response to specific recommendations in the report of the South Canyon Fire Interagency Management Review Team (IMRT), the Federal Wildland Fire Management Policy and Program Review was chartered and completed in 1995. The Secretaries of the Interior and Agriculture convened this review to reaffirm and ensure that uniform Federal policies and cohesive and cooperative interagency and intergovernmental fire management programs exist.

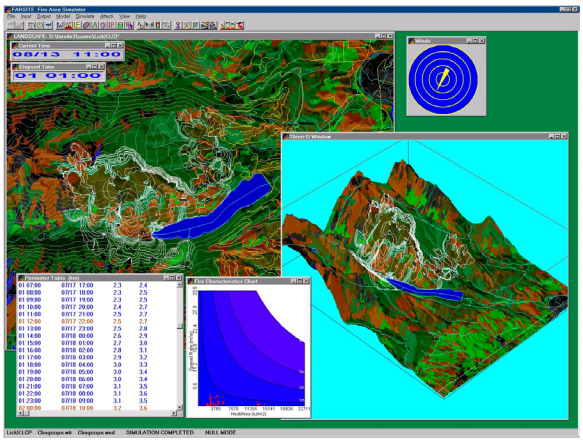
This review represents the latest stage in the evolution of wildland fire management and recommends policy changes that associate suppression and management of wildland fires into a single direction achieving multi-dimensional objectives. This policy directs federal agencies to achieve a balance between suppression to protect life, property, and resources, and fire use to regulate fuels and maintain healthy

ecosystems. Most of the previous barriers and constraints to expanded fire use are removed through this policy.

The 1995 Report provides nine guiding principles that are fundamental to the success of the Federal wildland fire management program and implementation of review recommendations. It also recommends a set of thirteen Federal wildland fire policies in the areas of: safety, planning, wildland fire, prescribed fire, preparedness, suppression, prevention, protection priorities, interagency cooperation, standardization, economic efficiency, wildland/urban interface, and administration and employee roles.

The success of these recommendations and policy implementation depends upon actions and expectations both internal and external to Federal Agencies. Agencies must ensure that wildland fire management is fully integrated into land management planning. Every Agency Administrator must ensure that these policies are incorporated into all wildland fire management actions. Managers and staff personnel must actively embrace and implement the recommendations. Every employee of every agency must be committed to fully carry out implementation at the ground level. Agencies must change their expectations that all wildland fires can and should be controlled and suppressed. The public will then have a better understanding of what we are doing, why it is important to them, and be more open to accept short-term inconveniences of some implementation impacts of the new policy. Absolute protection is an expectation that is difficult, if not impossible to achieve, and based on federal workforce limitations, fiscal constraints, and environmental and fire behavior variables, is unrealistic.

Guiding Principles and Basic Policy Areas



Federal land management agencies must accept new and more complex challenges pervasive to wildland fire management. They must embrace the evolution of fire management to better respond to these challenges. Agencies must also utilize the best science, latest knowledge, and emerging technology to facilitate and support the highest quality issue-resolving decisions possible.

The following guiding principles are fundamental to the success of the Federal Wildland Fire Management Program and the implementation to review recommendations:

- ***Firefighter and public safety is the first priority in every fire management activity.*** **Through actions items in safety leadership, protection priorities, responsibility, and preparedness, every firefighter, fireline supervisor, fire manager, and agency administrator will take positive action to ensure compliance with established safe firefighting practices by: establishing qualifications based on program complexity and staffing fire management leadership positions with individuals qualified and committed to accomplishment of fire management program objectives; development of appropriate tools to assist in the implementation of a safe and effective program; increasing fire experience and qualifications; enforcing a system of accountability to manage a safe program; establishing protection priorities that recognize the relative values of property and natural/cultural resources; and ensuring that firefighters are properly trained and equipped to maintain safety during all operations.**

- ***The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process.*** **Federal agency land and resource management plans set the objectives for the use and desired future conditions of the various public lands.**

- ***Fire management plans, programs, and activities support land and resource management plans and their importance.*** **All agencies will develop Fire Management Plans that: use information about fire regimes, current conditions, and land management objectives to develop fire management goals and objectives; address all potential wildland fire occurrences and provide for a full range of actions; use new knowledge and monitoring results to revise goals, objectives, and actions; and build and maintain a close link between fire and land and resource management.**

  Wildland and prescribed fire are not an end to themselves, but rather are means to an end. They represent planning and implementation actions carried out to facilitate protection and resource management objectives described in Fire Management Plans. These objectives are a direct link to decisions and management goals stated in land and resource management plans. Maintaining and responding to this link is critical to success of the fire management program.

- ***Sound risk management is a foundation for all fire management activities.*** **Risks and uncertainties relating to fire management activities must be understood, analyzed, communicated, and managed as they relate to the cost of either doing or not doing an activity. Net gains to the public benefit will be an important component of decisions.**

- ***Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.*** **Federal agency administrators are adjusting and reorganizing programs to reduce costs and increase efficiency. Investments in fire management activities must**

be evaluated against other agency programs in order to effectively accomplish the overall mission, set short- and long-term priorities and clarify management accountability.

- ***Fire management plans must be based on the best available science.*** Knowledge and experience are developed among all wildland fire management agencies. An active fire research program combined with interagency collaboration provides the means to make this available to all fire managers.

- ***Fire management plans and activities incorporate public health and environmental quality considerations.*** Fire management plans will address desired objectives but will be balanced with other societal needs, including public health and safety, air quality, and other specific concerns.

- ***Federal, Tribal, State, and local interagency coordination and cooperation are essential.*** Increasing costs and smaller workforces require that public agencies pool their human resources to successfully deal with the ever-increasing and more complex fire management tasks. Full collaboration among Federal agencies and between the Federal agencies and Tribal, State, local, and private entities results in a mobile fire management workforce available to respond to the full range of public needs.

- ***Standardization of policies and procedures among Federal agencies is an ongoing objective.*** Consistency of plans and operations provided the fundamental platform upon which Federal agencies can cooperate and integrate fire activities across agency boundaries and provide leadership for cooperation with Tribal, State, and local fire management organizations.

  Full collaboration among Federal agencies and between Federal agencies and State, local, and private entities is prerequisite to successful program implementation as costs increase and workforces decrease. Inconsistency of plans and procedures compounds the difficulty in cooperation and accomplishment of fire management objectives. This policy provides opportunities for Federal agencies to consolidate planning efforts, develop uniform procedures, and move toward more effective management. As consolidation and standardization increase, more and more policy and procedural barriers are being removed. Significant advances are occurring in workforce sharing, reducing inconsistency in funding authorities, and reducing management administrative constraints.

The Federal wildland fire management policies shown in Table 1 were developed as a part of this review:

Table 1. Federal wildland fire policies.

POLICY AREA	POLICY DIRECTION
SAFETY	Firefighter and public safety is the first priority. All Fire Management Plans and activities must reflect this commitment.
PLANNING	Every area with burnable vegetation must have an approved Fire Management Plan. Fire Management Plans must be consistent with firefighter and public safety, values to be protected and land and resource management plans and must address public health issues. Fire Management Plans must also address all potential wildland fire occurrences and include the full range of fire management actions
WILDLAND FIRE	Fire as a critical natural process will be integrated into land and resource management plans and activities on a landscape scale, across agency boundaries, and will be based upon best available science. All use of fire for resource management requires a formal prescription. Management actions taken on wildland fires will be consistent with approved Fire Management Plans.
USE OF FIRE	Wildland fire will be used to protect, maintain, and enhance resources and as nearly as possible, be allowed to function in its natural ecological role.
PREPAREDNESS	Agencies will ensure their capability to provide safe, cost-effective fire management programs in support of land and resource management plans through appropriate planning, staffing, training, and equipment.
SUPPRESSION	Fires are suppressed at minimum cost, considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives
PREVENTION	Agencies will work together and with other affected groups and individuals to prevent unauthorized ignition of wildland fires.
PROTECTION PRIORITIES	Protection priorities are (1) human life and (2) property and natural/cultural resources. If it becomes necessary to prioritize between property and natural/cultural resources, this is done based on relative values to be protected, commensurate with fire management costs. Once people have been committed to an incident these resources become the highest value to be protected
INTERAGENCY COOPERATION	Fire management planning, preparedness, suppression, fire use, monitoring, and research will be conducted on an interagency basis with the involvement of all partners.
STANDARDIZATION	Agencies will use compatible planning processes, funding mechanisms, training and qualification requirements, operational procedures, values-to-be-protected methodologies, and public education programs for all fire management activities
ECONOMIC EFFICIENCY	Fire management programs and activities will be based on economic analyses that incorporate commodity, non-commodity, and social values
WILDLAND/URBAN INTERFACE	The operational role of Federal agencies as a partner in the wildland/urban interface is wildland firefighting, hazard fuels reduction, cooperative prevention and education, and technical assistance. Structural fire protection is the responsibility of Tribal, State, and local governments. Federal agencies may assist with exterior structural suppression activities under formal Fire Protection Agreements that specify the mutual responsibilities of the partners, including funding. (Some Federal agencies have full structural protection authority for their facilities on lands they administer and may also enter into formal agreements to assist State and local governments with full structural protection.)
ADMINISTRATOR AND EMPLOYEE ROLES	Employees who are trained and certified will participate in the wildland fire program as the situation demands; employees with operational, administrative, or other skills will support the wildland fire program as needed. Administrators are responsible and will be accountable for making employees available.

Chapter 3. Interpreting and Understanding the Wildland Fire Management Policy

Because the new policy presents some significant departures from previous fire management policies and procedures, a great deal of uncertainty and misunderstanding is associated with it. To fully understand and comprehend the policy, a review of common misconceptions and improper terminology and correctly defined terminology is necessary. The following sections provide clarification of the policy through complete descriptions of the flowchart, terminology, required background documentation, and interpretations and implications.

National Wildfire Coordinating Group Policy Framework and Flowchart

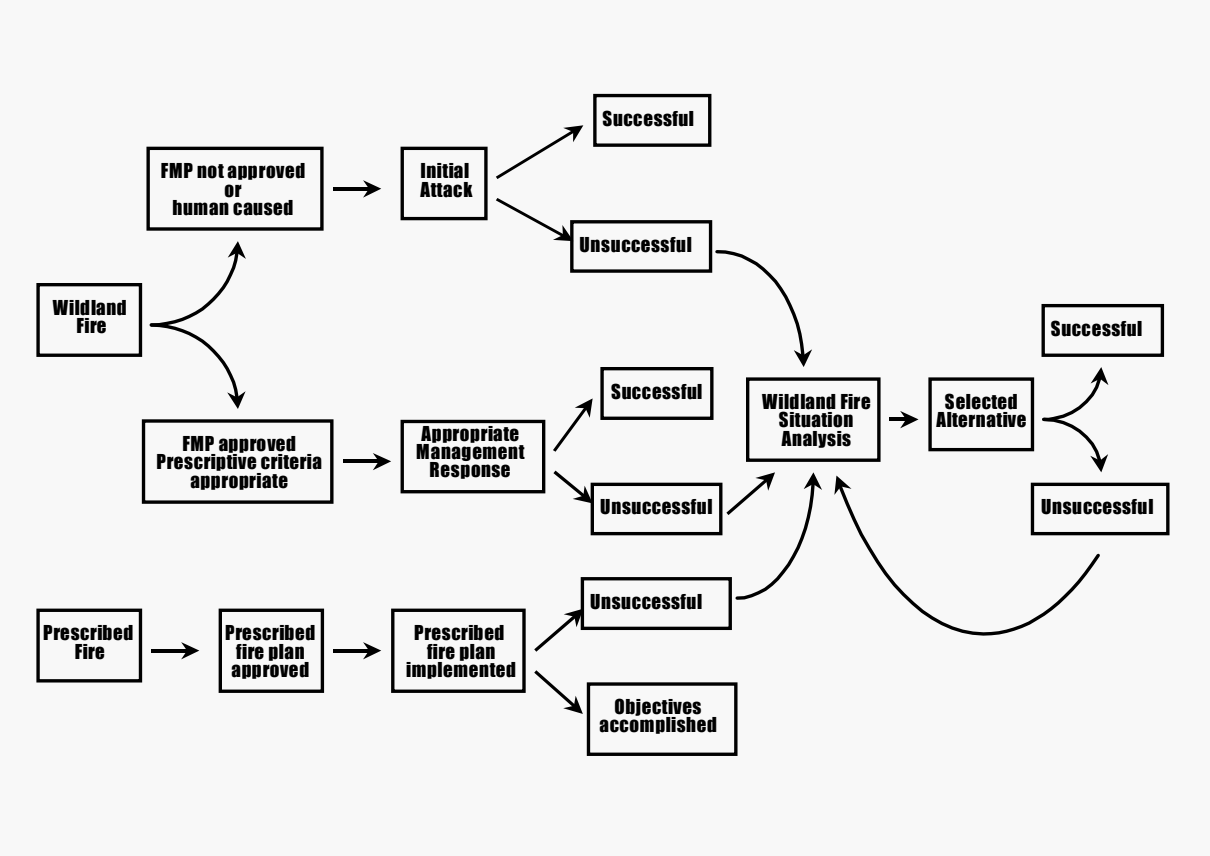


Figure 1. NWCG Wildland Fire Management Policy Flowchart.

To reduce misinformation and provide correct and consistent direction, the National Wildfire Coordinating Group (NWCG) developed and approved an "umbrella" flowchart which illustrates the broad framework encompassing policy implementation. This flowchart has become the cornerstone for policy description, illustration, and development of implementation procedures. The flowchart (Figure 1) represents the interagency-approved diagram illustrating the broad framework within which the new policy will be implemented.

This flowchart portrays all fires as either wildland or prescribed fires. Wildland fire management can follow one of three pathways, depending upon the level of land management planning completed, resource values affected, or fire cause. Administrative units without a completed Fire Management Plan have severely limited management options. In these situations, units may only implement initial attack suppression strategies (Refer to individual definitions of each flowchart pathway for more information. Human-caused fires will be managed through a suppression response both in the presence and absence of an approved Fire Management Plan). When the Fire Management Plan has been completed and approved, and wildland fires are from natural ignition sources, the full extent of management options is available, depending upon resource management objectives presented in the FMP. These options range from monitoring with minimal on-the-ground actions to intense suppression actions on all or portions of the fire perimeter. The appropriate management response is developed from analysis of the local situation, values-to-be-protected, management objectives, external concerns, and land use.

Prescribed fire, as shown in the bottom pathway of the flowchart, differs very little from how it has been managed under previous policy. A Fire Management Plan must be completed and approved, and clearly specify the need for prescribed fire. Specific implementation plans (Prescribed Fire Plans) must be developed before a fire can be ignited. When conditions described in the Prescribed Fire Plan occur and necessary resources are available to implement the prescribed actions, the fire is ignited and the plan implemented.

For either situation, wildland or prescribed fire, if the desired objectives cannot be met, a new strategy must be selected through the Wildland Fire Situation Analysis (WFSA) process.

Complete descriptions of each portion of the flowchart with associated implementation procedures are provided in Chapter 4.

Definitions

A consistent list of terms and their definitions has been developed and approved by the NWCG. This list of defined terms includes terms obsolete under the new policy. Additional terms used in this reference guide but not defined by NWCG are included to provide consistency and interpretation to facilitate policy implementation. All terms and their definitions are listed below.

Appropriate Management Response - Specific actions taken in response to a wildland fire to implement protection and fire use objectives. This term is a new term that does not replace any previously used term.

Expected Weather Conditions - those weather conditions indicated as common, likely, or highly probable based on current and expected trends and their comparison to historical weather records. These are the most probable weather conditions for this location and time. These conditions are used in making fire behavior forecasts for different scenarios (one necessary scenario involves fire behavior prediction under "expected weather conditions").

Experienced Severe Weather Conditions - those weather conditions that occur infrequently, but have been experienced on the fire site area during the period of weather records. For example, rare event weather conditions that significantly influence fires may have occurred only once, but their record can be used to establish a baseline for a worst-case scenario. These are the most severe conditions that can be expected. These conditions are used in making fire behavior forecasts for different scenarios (one necessary scenario involves fire behavior prediction under "experienced severe weather conditions").

Fire Management Plan (FMP) - A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the

approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans and prevention plans.

Fire Management Unit (FMU) - any land management area definable by objectives, topographic features, access, values-to-be-protected, political boundaries, fuel types, or major fire regimes, etc., that sets it apart from management characteristics of an adjacent unit. FMUs are delineated in Fire Management Plans (FMP). These units may have dominant management objectives and pre-selected strategies assigned to accomplish these objectives.

Fire Management Areas (FMA) - a sub-geographic area within an FMU that represents a pre-defined ultimate acceptable management area for a fire managed for resource benefits. This pre-defined area can constitute a Maximum Manageable Area (MMA) and is useful for those units having light fuel types conducive to very rapid fire spread rates. Pre-definition of these areas removes the time-lag in defining an MMA after ignition and permits pre-planning of the fire area, identification of threats to life, property, resources, and boundaries, and identification of initial actions.

Holding Actions - planned actions required to achieve wildland and prescribed fire management objectives. These actions have specific implementation timeframes for fire use actions but can have less sensitive implementation demands for suppression actions. For wildland fires managed for resource benefits, an MMA may not be totally naturally defensible. Specific holding actions are developed to preclude fire from exceeding the MMA. For prescribed fires, these actions are developed to restrict the fire inside the planned burn unit. For suppression actions, holding actions may be implemented to prohibit the fire from crossing containment boundaries. These actions may be implemented as firelines are established to limit the spread of fire.

Initial Attack - An aggressive suppression action consistent with firefighter and public safety and values to be protected.

Management Action Points - also called "trigger points." Either geographic points on the ground or specific points in time where an escalation or alteration of management actions is warranted. These points are defined and the management actions to be taken are clearly described in an approved Wildland Fire Implementation Plan (WFIP) or Prescribed Fire Plan. Timely implementation of the actions when the fire reaches the action point is generally critical to successful accomplishment of the objectives.

Maximum Manageable Area (MMA) - MMA defines the firm limits of management capability to accommodate the social, political, and resource impacts of a wildland fire. Once established as part of an approved plan, the general impact area is fixed and not subject to change. MMAs can be developed as part of the FMP and

described as an FMA. They can also be developed as part of the planning and implementation of management actions after a fire has ignited. If they are developed after the ignition, their definition will occur during the Wildland Fire Implementation Plan Stage III process. In the event a fire occurs in a pre-planned MMA or FMA and the local unit determines that this MMA is not the best-suited alternative for the present conditions, a new MMA can be developed as part of the Stage III process. Once this occurs, the Stage III MMA becomes the firm limits of the fire and is fixed.

Mitigation Actions - Mitigation actions are considered to be those on-the-ground activities that will serve to increase the defensibility of the MMA; check, direct, or delay the spread of fire; and minimize threats to life, property, and resources. Mitigation actions may include mechanical and physical non-fire tasks, specific fire applications, and limited suppression actions. These actions will be used to construct firelines, reduce excesssive fuel concentrations, reduce vertical fuel continuity, create fuel breaks or barriers around critical or sensitive sites or resources, create "blacklines" through controlled burnouts, and to limit fire spread and behavior.

Preparedness - Activities that lead to a safe, efficient and cost effective fire management program in support of land and resource management objectives through appropriate planning and coordination. This term replaces presuppression.

Prescribed Fire - Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition. This term replaces management ignited prescribed fire.

Prescribed Fire Plan - a plan required for each fire application ignited by managers. It must be prepared by qualified personnel and approved by the appropriate Agency Administrator prior to implementation. Each plan will follow specific agency direction and must include critical elements described in agency manuals. Formats for plan development vary among agencies, although content is the same.

Prescription - Measurable criteria which define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social or legal considerations.

Trigger points - see Management action points.

Wildfire - An unwanted wildland fire. *This term was only included to give continuing credence to the historic fire prevention products. This is NOT a separate type of fire.*

Wildland Fire - Any non-structure fire, other than prescribed fire, that occurs in the wildland. This term encompasses fires previously called both wildfires and prescribed natural fires.

Wildland Fire Implementation Plan (WFIP) - A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire. A full WFIP consists of three stages. Different levels of completion may occur for differing management strategies (i.e., fires managed for resource benefits will have two - three stages of the WFIP completed while some fires that receive a suppression response may only have a portion of Stage I completed).

Wildland Fire Management Program - The full range of activities and functions necessary for planning, preparedness, emergency suppression operations, and emergency rehabilitation of wildland fires, and prescribed fire operations, including non-activity fuels management to reduce risks to public safety and to restore and sustain ecosystem health.

Wildland Fire Situation Analysis (WFSA) - A decision-making process that evaluates alternative management strategies against selected safety, environmental, social, economic, political, and resource management objectives.

Wildland Fire Suppression - an appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration, but minimize loss of resource values, economic expenditures, and/or the use of critical firefighting resources.

Wildland Fire Use - the management of naturally-ignited wildland fires to accomplish specific pre-stated resource management objectives in pre-defined geographic areas outlined in Fire Management Plans. Operational management is described in the Wildland Fire Implementation Plan (WFIP). Wildland fire use is not to be confused with "fire use," which is a broader term encompassing more than just wildland fires (see definition below):

- **Fire Use** - the combination of wildland fire use and prescribed fire application to meet resource objectives

Many traditional terms have either been omitted or made obsolete by the Policy. The following terms may have uses or connotations that are contrary to the new Policy. Thus, these terms are not recommended for use and are not included in policy implementation procedures descriptions.

Confine/Contain/Control - These terms, when used in the context of suppression strategies, are confusing since they also have tactical meanings. Containment and

control will continue to be used to represent the status of a particular fire for reporting purposes (i.e., a controlled fire, date of control, date of containment, etc.) and not to represent a type of management strategy

- **Confine - confinement is the strategy employed in appropriate management responses where a fire perimeter is managed by a combination of direct and indirect actions and use of natural topographic features, fuel, and weather factors.**

Escaped Fire Situation Analysis - This term is replaced by Wildland Fire Situation Analysis.

Management Ignited Prescribed Fire - This term is replaced by Prescribed Fire.

Prescribed Natural Fire - This term no longer represents a type of fire and has no further use other than in historical descriptions. No replacement term exists.

Presuppression - The term "presuppression" has been replaced by the term "preparedness" to match Policy and appropriation language.

Required Background Documentation

Land management is the process of making land-use decisions for the future, setting objectives, implementing the correct actions to accomplish objectives, achieving outputs, and performing evaluations which compare results to objectives. In land management programs, objectives are used to establish desired outcomes for management actions. Objectives represent the single most influential factor in land management program implementation. They are fundamental to successful management to achieve desired land-use decision conditions.

In land management, both goals and objectives are important. Goals are primary and basic products of the long range management plans commonly referred to as land-use decisions. They deal with large areas and long time periods. Land-use decisions establish resource condition objectives; allowable, limited, or excluded uses for an area and the term and conditions for such use; and recommend management actions to achieve desired conditions. Objectives, a necessary component of the planning process, provide a bridge between goals and implementation actions. They identify the changes in water, soil, air, or vegetation from the present condition to desired condition. Site-specific treatment objectives must be developed to guide project-level operations. These are very well-defined statements that describe what a treatment must accomplish in order to meet a resource management objective. These objectives must be specific, measurable, achievable, related/relevant, and trackable (USDA/USDI/NASF 1994).

Land-use planning systems utilized by Federal Agencies provide the foundation for wildland and prescribed fire management programs. Table 2 illustrates the relationship of planning tiers to fire management objectives, products, and applications (USDA/USDI/NASF 1994).

Table 2. Relationship of planning tiers to fire management objectives, products, and applications.

Planning Tier	Goal/Objective	Product	Application
Geographically defined management area	Land-use decisions	Forest Management Plan, Integrated Resource Management Plan (BIA) Resource Management Plan (NPS) Comprehensive Conservation Plan (FWS) Forest Management Plan (USFS)	Integration of fire and resource management within a geographically defined management area
Local guidance for individual response components	Resource management objectives	Fire Management Plan	Identification of appropriate allocation of fire suppression, fire use, and fuels management activities to achieve resource management objectives
Site-specific implementation	Treatment objectives	Prescribed Fire Plan Wildland Fire Implementation Plan Wildland Fire Situation Analysis Other	Interpretation and analysis of site-specific conditions and development of specific treatment objectives to guide tactical implementation actions to effect on-the-ground changes.

Wildland fire management is directly influenced by the land management planning process. The flow of information begins with the land and resource management plan; it determines the availability of land for resource management, predicts levels of resource use and outputs, and provides for a variety of resource management practices (USDA Forest Service 1997). Issues and opportunities are identified and acceptable alternatives are selected that address fire management needs for the geographic area encompassed by the plan.

The next planning process step is preparation of the Fire Management Plan. This represents the functional activity plan for the fire management program. The Fire Management Plan (FMP) is the primary tool for translating programmatic direction developed in the land management plan into on-the-ground action. The FMP synthesizes broad fire management goals and places them into a strategic context. Criteria for making initial action decisions must be a component of the Fire Management Plan. The FMP will strive to satisfy NEPA requirements.

The most detailed step in the process involves the tactical implementation of strategic objectives for the wildland and prescribed fire management programs. It is at this level where specific plans are prepared to guide implementation of fire-related direction on the ground. Examples of project level plans include: Prescribed

Fire Plans, Wildland Fire Implementation Plans (WFIP), and the Wildland Fire Situation Analysis (WFSA).

The following tables (Tables 3,4) show relationships between various levels of the planning process. These tables show decisions made at the land management plan level and the Fire Management Plan's role in expanding this land-use decision direction into implementation actions. Each numbered item in the table tracks from land management plan to project implementation. These tables are adapted from Integration of Wildland Fire Management into Land Management Planning, A Desk Guide (USDA Forest Service 1997).

Table 3. Relationship between land management plans, fire management plans, and project-level plans for wildland fire.

WILDLAND FIRE		
Land Management Plan, NEPA (as applicable)	**Fire Management Plan, NEPA (as applicable)**	**Wildland Fire Implementation Plan, Wildland Fire Situation Analysis, NEPA (as needed), and/or Project-Level Analysis**
1. Establishes range of acceptable appropriate management response	1. Identifies appropriate management response strategies for each FMP Fire Management Unit or Fire Management Area.	1. Establishes a specific appropriate management response for each incident
2. Establishes range of acceptable tactics	2. Identifies acceptable tactics for each management area/response zone	2. Establishes incident-specific tactics
3. Establishes strategic priorities	3. Identifies a strategic priority for each area/response zone	3. Establishes strategic-uses priorities to evaluate alternatives
4. Establishes economic parameters (i.e. cost not to exceed resource value)	4. Identifies resource values and suppression cost factors for each management area/response zone	4. Evaluates alternatives using suppression economic factors identified in the FMP
5. Establishes "must-meet" criteria i.e. standards for protection of historical structures, and T&E species)	5. Establishes constraints for fire intensity, size, duration, and seasonality and identifies "must-meet" criteria for each management area/response zone	5. Uses "must-meet" criteria in evaluation of alternatives
6.Establishes objectives/desired and conditions/standards & guides established for each management area	6. Identifies and interprets fire intensity, size, duration, and seasonal constraint criteria for each management area/response zone	6. Develops and evaluates alternatives using constraint criteria
7. Establishes parameters for risk	7. Establishes firefighter safety criteria and identifies areas/conditions where firefighter safety is compromised	7. Develops and evaluates alternatives to meet firefighting safety standards
	8. Identifies objectives/desired conditions/standards and guides for each management area/response zone	8. Objectives/desired conditions/standards and guides used in alternative development and selection
	9. Designates risk analysis process and identifies established risk parameters	9. Use parameters and analysis process in alternative development and selection

Table 4. Relationship between land management plans, fire management plans, and project-level plans for prescribed fire.

PRESCRIBED FIRE, MECHANICAL AND SILVICULTURAL TREATMENTS		
Land Management Plan, NEPA (as applicable)	**Fire Management Plan, NEPA (as applicable)**	**Wildland Fire Situation Analysis, NEPA (as needed), and/or Project-Level Analysis**
1. Establishes the desired condition for management area (e.g. percent of area within a successional stage)	1. Describes the desired condition in context of fire management parameters	1. Develops alternatives from forest plan management -area desired conditions
2. Establishes air-quality	2. Describes operational procedures that meet land management plan objectives (i.e. number of planned ignitions occurring at one time)	2. Uses site-specific analysis of particulate production and plume drift
3. Establishes a range of acceptable management practices	3. Describes operational procedures to implement acceptable management practices	3. Identifies site-specific implementation practices
4. Establishes fuel-treatment priorities	4. Schedules fuel-treatment projects for management areas	4. Implements projects within the context of established priorities
5. Establishes parameters for risk	5. Designates risk analysis process and identifies risk parameters	5. Parameters and process used to develop and select alternatives

The importance of the land management planning process is reinforced in the Wildland Fire Policy Report which states, "Every area with burnable vegetation must have an approved Fire Management Plan. Fire Management Plans must be consistent with firefighter and public safety, values-to-be-protected, and land and resource management plans and must address public health issues. Fire Management Plans must also address all potential wildland fire occurrences and include the full range of fire management actions."

For more detailed information on the land management planning process, refer to agency manuals, desk reference guides, and other guidance. For more information on Fire Management Plans, refer to agency manuals. For more information regarding project level planning, refer to the following sections in Chapter 4 in this guide: Wildland Fire Implementation - Approved Fire Management Plan; Prescribed Fire Implementation; and Selecting a New Strategy - Wildland Fire Situation Analysis.

Understanding the Wildland Fire Management Policy

Interpretation and subsequent understanding of this policy and its implications to management can be confusing. Comparison to previous fire management policies does not necessarily offer similarities and direct replacement terms and defined actions. Looking at the flexibility and range of opportunities presented by the new policy greatly facilitates its interpretation. Understanding of these opportunities and implementation mechanisms is prerequisite to efficient implementation.

Common misconceptions have developed about the new policy and to understand what it can accomplish, we must realize that this policy:

- ***Is not a less safe way of managing wildland fires.***

  The new policy is formulated on a solid basis incorporating safety; this commitment is continually reinforced. Federal agencies will develop, thorough planning processes, and implement management procedures that accomplish objectives while always maintaining a firm commitment to safety. The Guiding Principles, identified as fundamental to the success of the policy implementation, describe the commitment to safety in the very first principle.

  One of the key points stated in the Federal Wildland Fire Management Policy and Program Review recommendation report is, "Protection of human life is

reaffirmed as the first priority in wildland fire management. Property and natural/cultural resources jointly become the second priority, with protection decisions based on values to be protected and other considerations." Actions to be taken by Federal agencies, as stated in the report, include, " Once people are committed to an incident, those resources become the highest value to be protected and receive the highest management considerations."

- ***Is not a significant change in what we do.***

The wildland fire management program strives to accomplish objectives designed to maintain, enhance, protect, and preserve natural and cultural resources. Fire management programs will maintain the capability to provide safe, ecologically sound, and economically efficient actions in support of land and resource management plans through planning, staffing, training, and equipment readiness.

- ***Is not a wholesale shift to "let burn" actions.***

Federal wildland fire management programs have never included "let burn" activities. The implication of this term - that fires do not receive appropriate levels of management, scrutiny, and attention - is not correct. In fact, wildland and prescribed fires have and will continue to receive significant focus during planning, implementation, and evaluation management phases. All wildland fire management decisions and operational activities will be given the attention and priority to ensure that proper management will occur.

A wholesale shift to one management strategy over another is undesirable, unrealistic, inconsistent with policy goals, and will not occur. The aggregate strategies available to implement the fire management program will achieve a better balance of protection and land and resource management objectives.

Agencies will work together and with other affected groups and individuals to prevent unauthorized ignition of wildland fires. When suppression of wildland fires is necessary, actions will be designed to expend the minimum cost while remaining consistent with firefighter and public safety, values-to-be-protected, and resource objectives.

Agencies will utilize the full spectrum of fire management actions - from prompt suppression of unwanted fires to managing naturally-ignited fires to realize and accomplish specific resource management objectives. The vast majority of wildland fires will continue to receive a suppression-oriented response. Suppression capabilities will continue to expand and grow in sophistication and capability to meet increasing demands such as the rapid expansion of wildland/urban interfaces.

- ***Is not a less efficient way of doing business.***

  The new policy promotes application of fire management actions along a "sliding scale" ranging from minimal on-the-ground actions to prompt, aggressive actions to fully extinguish the fire. Use of this spectrum of responses allows agencies more flexibility to design responses closely allied with objectives and fuel, weather, and topographic conditions. In the past, responses were driven by fire type as well as other considerations. Under the new policy, responses will be appropriate for individual conditions and objectives associated with that ignition; they will not be related to a fire type or classification. This will permit Federal agencies to achieve effectiveness and efficiency in operations.

What the new policy actually represents is:

- ***A more cohesive way of approaching wildland fire management.***

  Management actions on wildland fires will no longer be driven by fire type designation. Fires will no longer be extinguished under a default response but will be suppressed for specific reasons. Fires that are managed for resource benefits will have specific rationale for such management identified in the Fire Management Plan.

- ***A foundation to facilitate more efficient operations.***

  Classification of all fires into a single category of wildland fires will enable managers to respond to each and every fire in a manner appropriate for the objectives, constraints, and conditions associated with that fire. Managers will not be forced to adopt a strategy due to fire classification. Greater attention to ecological concerns will occur and each fire will have a greater probability of accomplishing desired objectives.

- ***A program of action that promotes concurrent use of available management strategies.***

  Through the appropriate management response, managers can respond to different fires in different manners, using different strategies to accomplish different objectives. Nothing precludes this from happening concurrently. In fact, the most efficient program management will make simultaneous use of fire management strategies. Different strategies may also be employed on various portions of individual fires, thus reducing costs and utilization of scarce resources.

  Fire Policy Review Recommendation goals support the concurrent utilization of available management strategies by stating, for protection capabilities, "Federal Agencies will maintain sufficient fire suppression and support capability." They

further state for reintroduction of fire, "Based upon sound scientific information and land, resource, and fire management objectives, wildland fire is used to restore and maintain healthy ecosystems and to minimize undesirable fire effects. Fire management practices are consistent for areas with similar management objectives, regardless of jurisdiction."

- ***A program of action that does not automatically place priority on one strategy over another without analysis of specific information.***

  No wildland fire will automatically be categorized as having a lower priority than others. All wildland fires will compete for resources on the basis of objectives, values-to-be-protected, safety, risk, complexity, and other specific considerations. During periods of resource shortages, those fires determined to be in greater need will receive priority for resource allocation.

  Policy review action items for values to be protected and preparedness planning state, " Federal agencies will define values to be protected, working in cooperation with Tribal, State, and local governments; permittees; and public users. Criteria will include environmental, commodity, social, economic, political, public-health, and other values." As part of the standardization goals, the report states that agencies will use compatible methodologies to determine values-to-be-protected. Common priority setting standards to facilitate allocation of scarce resources will be developed.

- ***A common planning process for all agencies, resulting in one plan.***

  The Fire Policy Review Recommendation for planning states, " Fire management goals and objectives, including the reintroduction of fire, are incorporated into land management planning to restore and maintain sustainable ecosystems. Planning is a collaborative effort, with all interested partners working together to develop and implement management objectives that cross jurisdictional boundaries." Recommendations stated in the Policy Review include, " the use, by Federal Agencies, of a compatible fire management planning system that recognizes both fire use and fire protection as inherent parts of natural resource management; this system will ensure adequate fire suppression capabilities and support fire reintroduction efforts." The Policy Review further states that Federal agencies will " continue on-going efforts to jointly develop compatible, ecosystem-based, multiple-scale, interagency land management plans that involve all interested parties and facilitate adaptive management."

- ***A process based on uniform budget and fiscal procedures.***

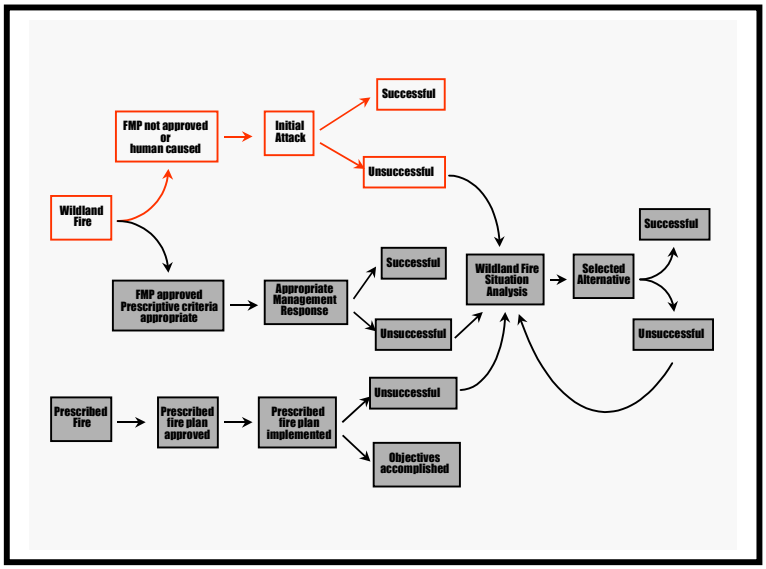
  Agency standardization and development of common procedures will reduce administrative barriers. Action items to achieve this include:

- **develop consistent language to be included in budget appropriations, enabling the full spectrum of fire management actions on wildland fires,**
- **seek authority to eliminate internal barriers to the transfer and use of funds for prescribed fire on non-Federal lands and among Federal agencies,**
- **seek authority or provide administrative direction to eliminate barriers to carrying over from one year to the next all funds designated for prescribed fire,**
- **work with the Office of Personnel Management to acquire authority for hazard pay to compensate employees exposed to hazards while engaged in prescribed burning activities.**
- **jointly develop simple, consistent hiring and contracting procedures for prescribed fire activities,**
- **jointly develop programs to plan, fund, and implement an expanded program of prescribed fire in fire-dependent ecosystems.**

Wildland Fire Implementation - Absence of an Approved Fire Management Plan or for a Human Caused Fire

If an approved FMP (meeting NEPA compliance) is not present for a particular unit, then by definition the only available option is suppression of the wildland fire and appropriate action will be taken immediately. Common sense must be used in suppression actions considering values to be protected, least cost, resource damage caused by the suppression action, and the first priority at all times, firefighter and public safety. If the initial action is unsuccessful, a WFSA will be prepared to determine the next set of management responses.

Key Points:



- ***This scenario does not represent the previous "wildfire pathway." Its purpose is to show that the full range of management responses is not available if the FMP is not approved.***

- ***Management responses or actions are not developed or implemented to gain resource benefits because there is not an approved FMP. There are no options other than suppression.***

- ***A Fire Management Plan has not been completed or has not been approved. Upon implementation of the FMP, this pathway will no longer be applicable.***

- ***Suppression actions are taken while keeping safety as the number one priority consistent with values to be protected and keeping costs commensurate with resource values.***

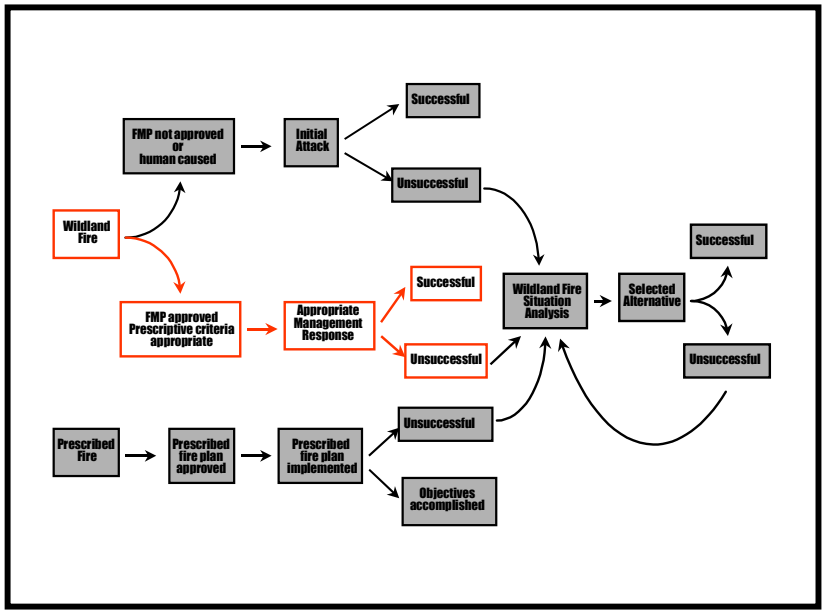
Wildland Fire Implementation - Approved Fire Management Plan

This is the most complex of scenarios but offers full advantage of the fire policy. It allows wildland fires to be managed in a manner which achieves resource benefits. The FMP block represents an approved FMP which meets NEPA requirements and contains appropriate prescriptive criteria and language to specify the full range of management responses applicable. <u>It must be noted that having an approved FMP does not mandate that a particular administrative unit or agency will choose to make use of the full range of management responses.</u> Agencies and/or units within various agencies will identify strategies which accomplish their needs in the FMP. These strategies will include the best options to safely, economically, and effectively accomplish stated objectives. <u>Units will designate their specific management responses, which may include not managing wildland fires for resource benefits.</u>

The box identified as the Appropriate Management Response represents the range of available responses within a Fire Management Unit (FMU) to implement protection or fire use objectives for each wildland fire occurrence.

The full range of management responses runs the spectrum from aggressive suppression of the fire to managing fires to accomplish resource benefits. Human-caused fires will occur in this pathway. FMPs will clearly state that appropriate management responses for human-caused fires will not include resource benefits as a consideration and these fires will be suppressed.

Key Points:



- ***A Fire Management Plan has been completed and is approved.***

- ***NEPA compliance must be completed before taking full advantage of the fire policy and full range of management options to meet resource objectives.***

- ***This is not a replacement pathway for "prescribed natural fire." This pathway could lead to suppression of over 90% of all wildland fires occurring in areas covered by completed FMPs. In some cases, FMPs will program suppression as the only acceptable response for any wildland fire.***

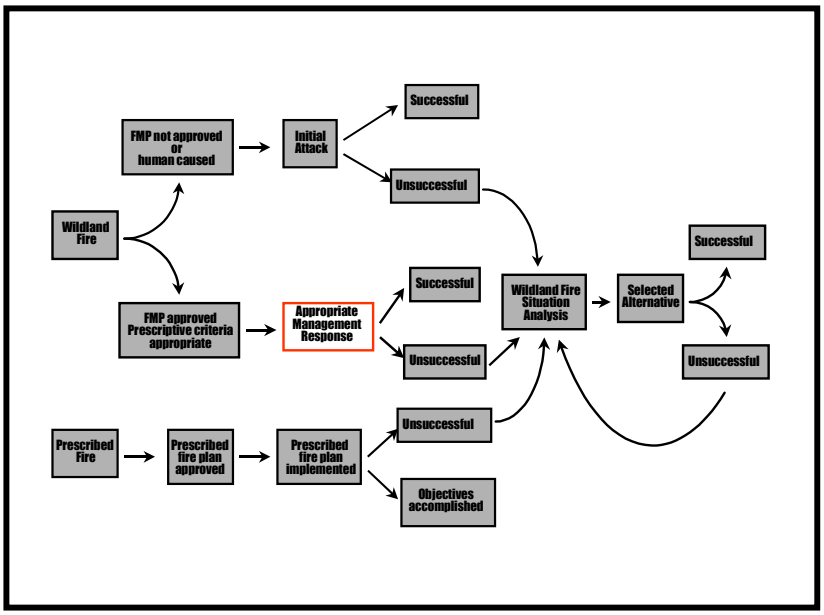
- ***Management actions applied to a fire are identified in the FMP and can consist of suppression, ranging from aggressive initial attack to a combination of strategies to achieve confinement, or can exclusively deal with managing fire for resource benefits. There may be periodic fire occurrences that warrant a combination of strategies that result in suppressing a portion of an unwanted wildland fire as well as confining the fire within the remaining fire perimeter to achieve resource benefits. These situations will be closely scrutinized. Clear fire management objectives must be provided in the FMP for successful implementation. Management actions for specific units do not have to include all potential responses, but can consist of only a part of all possibilities. All human-caused fires will be suppressed.***

- ***Any wildland fire can be extinguished, and any fire occurring in an area designated for fire use, can, if it meets specific decision criteria, be managed for resource benefits. Every management response to wildland fire must be identified in the FMP, be based on objectives, and have sound rationale that clearly demonstrates the validity of that response.***

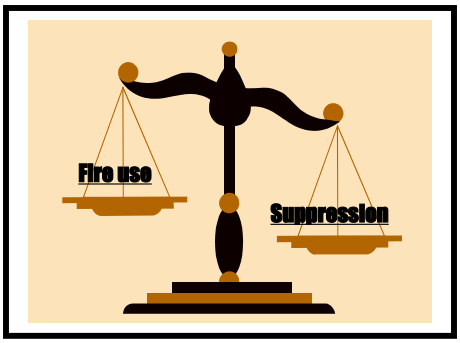
A. Interpretation of the Appropriate Management Response Concept

The concept of appropriate management response is integral to the new policy. Management responses are programmed to accept resource management needs and constraints, reflect a commitment to safety, be cost-effective, and accomplish desired objectives while maintaining the versatility to vary in intensity as conditions change.

The appropriate management response is defined as the specific actions taken in response to a wildland fire to implement protection and/or fire use objectives. It allows managers to utilize a full range of responses. It does not lock tactical options to fire type designations. As conditions change, the particular response can change to accomplish the same objectives.



It is important to note that the appropriate management response <u>is not</u> a replacement term for prescribed natural fire, or the suppression strategies of control, contain, confine, limited, or modified, but is a concept that offers managers a full spectrum of responses. It is based on objectives, environmental and fuel conditions, constraints, safety, and ability to accomplish objectives. It includes wildland fire suppression at all levels, including aggressive initial attack. Use of this concept dispels the interpretation that there is only one way to respond to each set of circumstances.



The purpose of giving management the ability to select the appropriate management response on every wildland fire is to provide the greatest flexibility possible and to promote opportunities to achieve greater balance in the program. To clarify the full range of options available under the appropriate management response, the following figure (Figure 2) utilizes four variables to illustrate development of an appropriate management response.

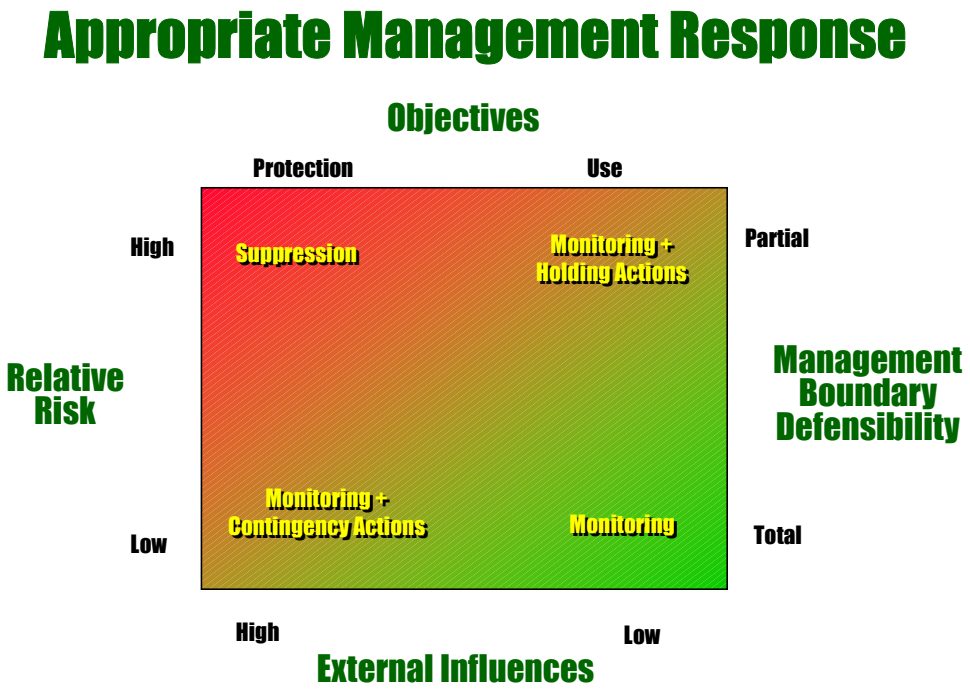


Figure 2. Ranges of appropriate management responses based on objectives, relative risk, complexity, and defensibility of management boundaries.

This chart can be used to estimate appropriate methods to implement desired/necessary strategies. To obtain this estimate, lines must be drawn to connect the top and bottom variables and the left and right variables. Where the two lines intersect is a potential management response for the defined conditions.

For those situations indicating a suppression-oriented response, a range of responses dealing with only suppression actions is available. The following chart (Figure 3) illustrates how the range of suppression-oriented appropriate management responses can vary.

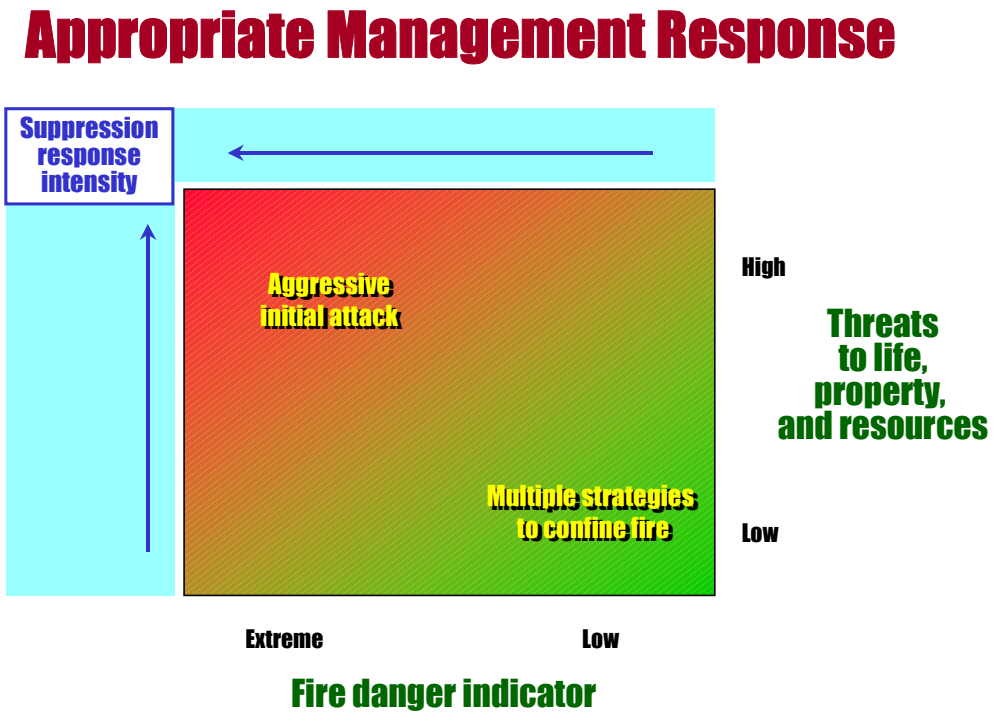
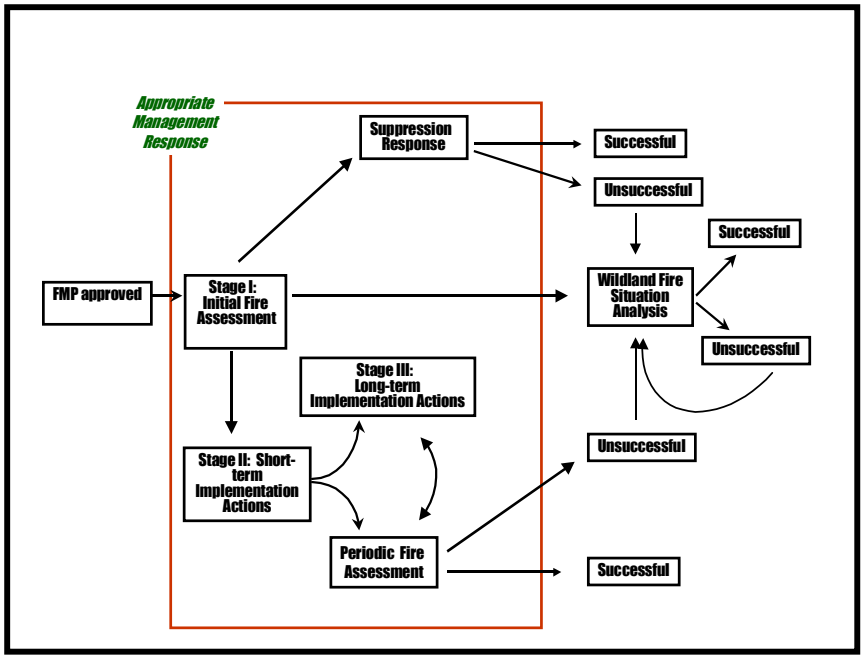


Figure 3. Range of suppression-oriented appropriate management responses.

B. Wildland Fire Planning and Assessment



Stricter planning and documentation requirements exist for management of wildland fires where resource benefits are a primary objective. The figure to the right provides an exploded view of the full range of appropriate management responses and necessary steps involved to accomplish the range of objectives.

A Wildland Fire Implementation Plan (WFIP) will be initiated for all wildland fires. However, only the most complex fires being managed for resource benefits will require completion of all parts of a WFIP. The full WFIP consists of three distinct stages (Stage I - III in the figure). For an estimated 90+% of all wildland fires, information needed for WFIP stage I decision analysis is contained in the FMP. When wildland fires occur, pre-planned descriptions in the FMP in combination with the Fire Situation guide Stage I decisions.

Progressive development of these stages will occur for wildland fires managed for resource benefits or where initial attack is not the selected response. Objectives, fire location, cause, conditions of fuel continuity, current fire activity, fire location, predicted weather and fire behavior conditions, and risk assessment results will indicate when various WFIP Stages <u>must</u> be completed (full descriptions of all stages are available later in this chapter). Most wildland fires will require completion of only Stage I and part of Stage II information during their management. As resource benefits become more important as strategic decision factors, additional planning and documentation requirements (additional WFIP Stages) are involved.

The following table (Table 5) shows critical components of each stage of WFIP completion, requirement status, and completion timeframes. The following sections describe each WFIP stage in detail.

Table 5. WFIP implementation stages, requirement status, and completion timeframes.

Requirement status key:

1 = mandatory
2 = mandatory, but can be preplanned
3 = optional
4 = completed if Stage II or Periodic Fire Assessment, Part 2 indicate need.
5 = completed if fire exceeds management capabilities
6 = completed if Periodic Fire Assessment, Part 1 indicates need

WFIP Stage	Planning and Assessment Element	Requirement Status			Maximum completion timeframe
		Initial Attack	Other Suppression-oriented appropriate management responses	Fire use actions	
WFIP Stage I: Initial Fire Assessment	Fire Situation	1	1	1	As soon as possible
	Decision Criteria Checklist (Initial GO-NO-GO Decision)	3	1	1	2 hours after first fire detection
WFIP Stage II: Short-term Implementation Actions	Short-Term Fire Behavior Predictions and Risk Assessment	3	1	1	24 hours after Stage I completion
	Short-term Implementation Actions	2	1	1	
	Complexity Analysis	3	1	1	
	Stage III Need Assessment Chart	NA	1	1	
WFIP Stage III: Long-Term Implementation Actions	MMA Definition	3	4	4	Within 24 hours after Stage II or Periodic Fire Assessment indicates need
	Fire Behavior Predictions	3	4	4	
	Long-Term Risk Assessment	3	4	4	
	Long-term Implementation Actions	3	4	4	
Periodic Fire Assessment	Part 1: Re-validation	NA	1	1	On assigned frequency
	Part 2: Stage III Need Assessment Chart	NA	1	1	
WFSA		5	5	6	Before implementing new strategy

A standard Wildland Fire Implementation Plan form has been developed. Since the WFIP will be prepared progressively (by Stages), specific forms and formats will apply to each individual Stage. As each stage is prepared, it will be attached to previous stages until completed or management of the fire accomplishes the objectives. When the complete WFIP has been developed, it will be a highly specific operational management plan and include all of the following elements:

WFIP Stage I: Initial Fire Assessment

- ❑ **Fire name**
- ❑ **Fire number**
- ❑ **Jurisdiction(s)**
- ❑ **Administrative unit(s)**
- ❑ **Geographic Area(s)**
- ❑ **Management Code(s)**
- ❑ **Start date/time**
- ❑ **Discovery date/time**
- ❑ **Current size**
- ❑ **Location**
- ❑ **Cause**
- ❑ **Fuel model(s)/conditions**
- ❑ **Current weather**
- ❑ **Forecasted weather**
- ❑ **Current fire behavior**
- ❑ **Forecasted fire behavior**
- ❑ **Availability of resources**
- ❑ **Decision criteria checklist**

- **Recommended response action**

WFIP Stage II: Short-Term Implementation Actions

- **Short-term fire behavior predictions for different scenarios**
- **Risk assessment (may vary in detail and range from relative risk rating to quantitative analysis results)**
- **Short-term implementation actions (this section includes the following information)**
  - **Objectives and desired effects**
  - **Safety considerations**
  - **External concerns**
  - **Environmental concerns**
  - **Threats**
  - **Short-term implementation actions (include description of action and expected duration)**
  - **Estimated costs**
- **Complexity Rating Worksheet**
- **Stage III need assessment chart**

WFIP Stage III: Long-Term Implementation Actions

- **Objectives and Risk Assessment Considerations**
  - **Natural and Cultural resource objectives and constraints/considerations**
- **MMA Definition and Maps**
- **Fire Projections and Map**
- **Weather Season/Drought Discussion and Prognosis**

- **Long-Term Risk Assessment (describe techniques and outputs, include maps as appropriate)**
- **Probability of Success and Consequences of Failure**
- **Threats**
  - **Threats to MMA**
  - **Threats to Public Use and Firefighter Safety**
  - **Smoke dispersion and effects**
  - **Other**
- **Monitoring Actions (types of actions, frequency, and duration)**
- **Holding Actions (describe holding actions, management action points that initiate these actions, and key to map if necessary)**
- **Resources needed to manage the fire**
- **Estimated costs of long-term implementation actions**
- **Contingency Actions (describe contingency actions, management action points that initiate them, and resources needed)**
- **Information Plan**
- **Post-burn evaluation**
- **Signatures and Date**

Periodic Fire Assessment

- **Part 1: Re-validation**
- **Part 2, Stage III Need Assessment Chart**
- **Signature Page**

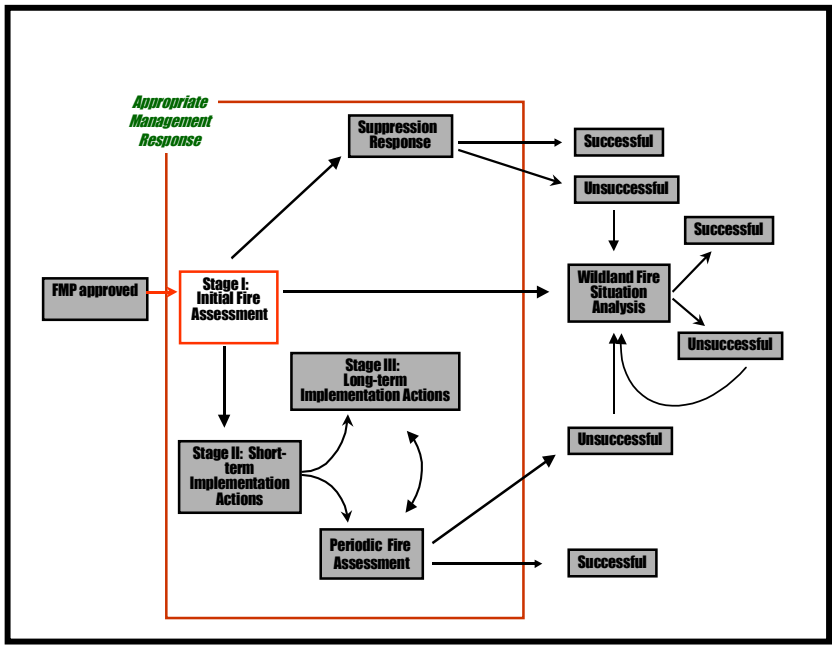
C. Detailed Description - Wildland Fire Implementation Procedures

1. Wildland Fire Implementation Plan - Stage I: Initial Fire Assessment

Summary:

Purpose:	**This is the preliminary stage of the WFIP and establishes documentation groundwork for further stages. It is both an information gathering stage and decision-making stage. This information provides location, fire cause, administrative information, fuel conditions, weather, and fire behavior situation. It consists of the Fire Situation, Initial GO/NO-GO Decision Criteria Checklist, and Recommended Response Action. It aids Agency Administrators in making the initial decision to manage a fire for resource benefits or to suppress by providing location of fire (FMP suppression or fire use unit), cause of fire (human or natural caused), and validation of fire use decision (GO/NO-GO decision).**
Information Source:	**Initial fire size-up information, staff completion of Decision Criteria Checklist, and staff development of Recommend Response Action.**
Estimated Completion Time:	**Fire Situation ≤ .25 hours** **Initial GO/NO-GO Decision ≤ .5 hour**

The WFIP Stage I represents the Initial Fire Assessment step. It is necessary to establish the foundation information critical to manage the fire. It documents the current and predicted situation, documents all appropriate administrative information, and aids managers by providing them with decision criteria to make the initial decision whether to continue management of



the fire for resource benefits or to take suppression action. It also provides the manager with a recommended response action. Stage I consists of two specific components: Fire Situation, and Initial GO/NO-GO Decision.

The full WFIP Stage I will provide the information shown in the figure to the right. These components are described in the following sections.

WFIP Stage I: Initial Fire Assessment

- ❑ Fire name
- ❑ Fire number
- ❑ Jurisdiction(s)
- ❑ Administrative unit(s)
- ❑ Fire Management Unit (FMU)
- ❑ Geographic Area(s)
- ❑ Management Code(s)
- ❑ Start date/time
- ❑ Discovery date/time
- ❑ Current size
- ❑ Location
- ❑ Cause
- ❑ Fuel model(s)/conditions
- ❑ Current weather
- ❑ Forecasted weather
- ❑ Current fire behavior
- ❑ Forecasted fire behavior
- ❑ Availability of resources
- ❑ Decision criteria checklist
- ❑ Recommended response action

Fire Situation

The Fire Situation consists of two pages of information. These pages are shown in reduced format on the following page. The information needed for this step comes directly from the initial fire assessment or size-up. This information will be recorded and can be transferred, as needed, to later planning stages or to the WFSA. Necessary information consists of: fire name, fire number, jurisdiction(s), administrative unit(s), geographic area, management code, start date/time, discovery date/time, current date/time, current size, location, fuel model/conditions, weather, fire behavior, and availability of resources. Of particular importance are two items: fire management unit (from FMP), and cause. Standard size, fully reproducible copies of the forms are enclosed in the Appendix.

FIRE SITUATION

Fire Name	
Fire Number	
Jurisdiction(s)	
Administrative Unit(s)	
FMP Unit(s)	
Geographic Area	
Management Code	
Start Date/Time	
Discovery Date/Time	
Current Date/Time	
Current Size	
Location: Legal Description(s)	T. R. Sec. Sub.
Latitude	
Longitude	
UTM:	
County:	
Local Description	
Cause	

Fuel Model/ Conditions	
Weather: Current	
Predicted	
Fire Behavior: Current	
Predicted	
Availability of Resources	

Decision Criteria Checklist (Initial GO/NO-GO Decision)

The Decision Criteria Checklist provides the Agency Administrator with standard evaluation criteria to determine if the current wildland fire meets criteria to be managed for resource benefits. The standard criteria have been developed by experienced representatives from Federal wildland fire management agencies. These criteria assess threats from the fire, potential effects of the fire, risk from the fire, effects of other fire activity on management capability, and allow the Agency Administrator to evaluate other, possibly unforeseen or unanticipated, issues.

The Decision Criteria Checklist is illustrated in reduced format to the right. To complete the checklist, the Agency Administrator evaluates the

DECISION CRITERIA CHECKLIST

Decision Element	*Yes*	*No*
Is there a threat to life, property, or resources that cannot be mitigated?		
Are potential effects on cultural and natural resources outside the range of acceptable effects?		
Are relative risk indicators and/or risk assessment results unacceptable to the appropriate Agency Administrator?		
Is there other proximate fire activity that limits or precludes successful management of this fire?		
Are there other Agency Administrator issues that preclude wildland fire use?		

The Decision Criteria Checklist is a process to assess whether or not the situation warrants continued wildland fire use implementation. A "Yes" response to any element on the checklist indicates that the appropriate management response should be suppression-oriented.

Recommended Response Action (check appropriate box)	NO-GO (Initial attack/suppression action)	
	GO (Other appropriate management response)	

Signature _____ Date _____

criteria, based on input from his/her staff, and detemines if the fire should receive an appropriate management response to achieve resource benefits or a suppression-oriented response. A "Yes" response to any of the five elements indicates that management should consider a suppression-oriented appropriate management response. All "No" answers to the decision elements indicate that the fire is a viable candidate to be managed for resource benefits. Standard size, fully reproducible copies of the form are enclosed in Appendix.

Detailed explanations of decision elements are:

- **The first decision element provides an indication of the degree of risk of identified threats to life, property, and resources. If identified threats cannot be adequately mitigated (i.e., "yes" answer), an indication of the seriousness of the threat(s) is provided. It further indicates that managing the fire for resource benefits has potential flaws due to fire location and strong consequences of failure.**

- **The second decision element relates to objectives for wildland fire management as stated in the FMP. Potential outcomes will be closely correlated with burning conditions and fire behavior. Objectives and constraints will encompass safety, cost, and effects on natural and cultural resources, as applicable.**

- **The third decision element involves risk assessment for the fire. Since the decision to suppress or manage the fire is time constrained (2 hour decision space), it may not be possible to complete a long-term assessment of risk. For pre-planned management areas it is possible to have weather files prepared to complete the Rare Event Risk Assessment Process (RERAP) and in some cases the level of preplanning may be so complete (pre-planned MMAs and established weather files) that the RERAP assessment will have been done prior to ignition. If this has not been done, or cannot be done within the two hour limit, the RERAP assessment should be completed as soon as possibe (required in Stage III) if the fire continues to be managed for resource benefits. In lieu of the quantitave long-term risk assessment, a qualitative assessment process has been devised to provide the Agency Administrator with a quick and fairly comprehensive asessement of the "relative risk" of the fire. This indicator can be completed in a matter of minutes and will provide information for the Agency Adminsitrator to answer the third decision element of the checklist. The Wildland Fire Relative Risk Rating chart is shown in the following figure (Figure 4).**

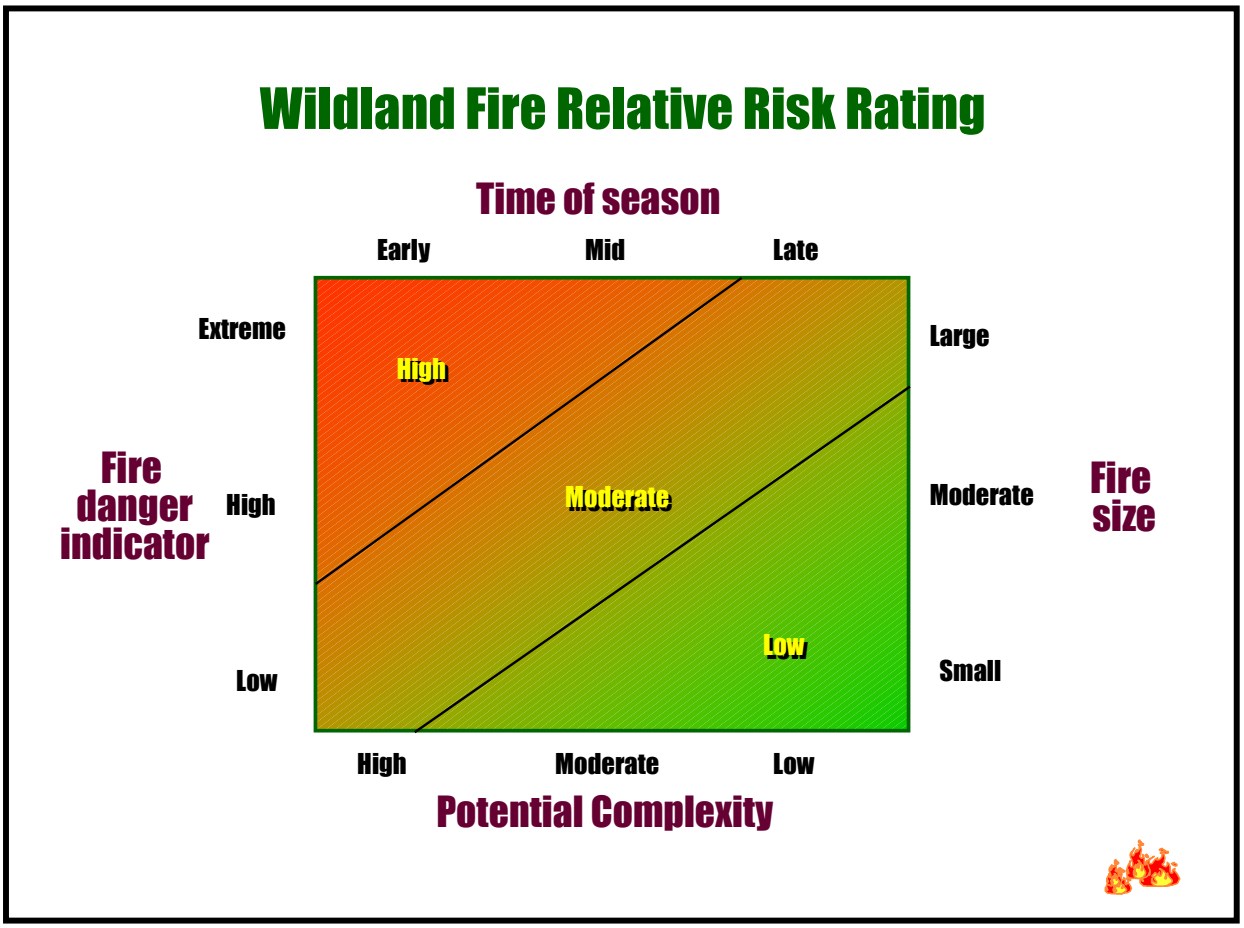


Figure 4 . Wildland fire relative risk rating chart.

To use this chart, assessments must be made of four variables. The appropriate fire danger indicator can be derived from components or indexes from the National Fire Danger Rating System (NFDRS) outputs. Local fire staff determine the appropriate indicator to use for this variable and develop the numerical value ranges (the NFDRS firefighter pocket card can be used to provide a rapid assessment for this variable - see Figure 5 and explanation).

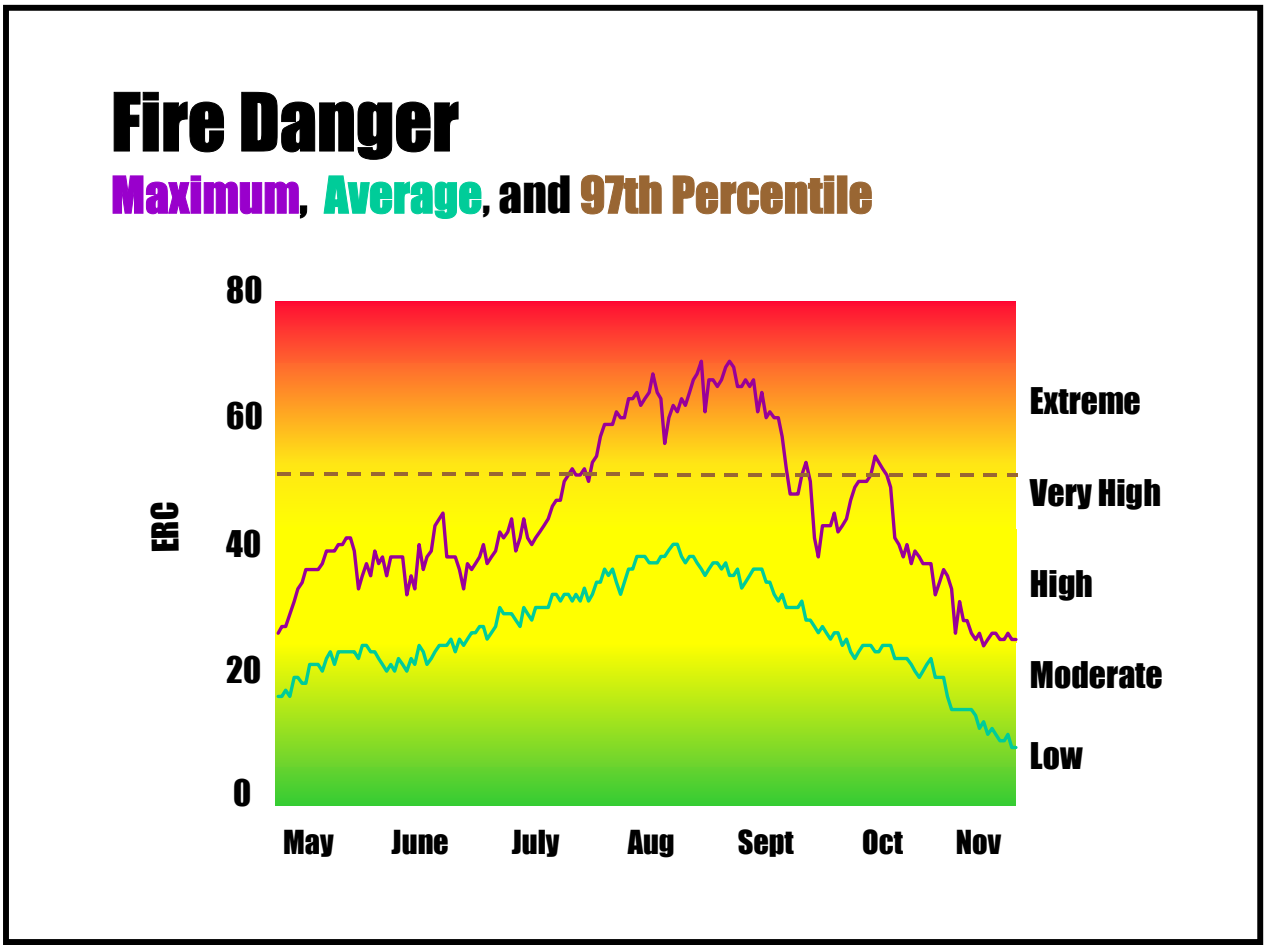


Figure 5. NFDRS firefighter pocket card (example of most western United States fire seasons).

This card can be generated for any appropriate fire danger indicator by accessing and evaluating historical weather data. The historical time period maximum, average, and 97th percentile levels (or other applicable percentile level) for that fire danger indicator can be created and formatted onto the color card as shown in Figure 5. Significant past fires can be marked on the chart to provide an indicator of conditions present during that fire. The final chart then provides a quick visual reference that can be formatted as a pocket card and distributed to firefighters, aerial observers, monitors, etc., or can be enlarged to wall-size for quick office reference. The information revealed by this card can be used as the

source of input for the decision criteria checklist, or for other input information described in later WFIP stages. Instructions for creating and using this card are available from the Intermountain Fire Sciences Lab, Missoula, Montana.

Continuing with the relative risk chart, the time of season is an indicator of the potential duration of newly-ignited fires. The earlier in the season, the longer the potential duration of the fire. The fire size represents the current fire size and should be available from the Fire Situation information. Potential complexity is an estimate of complexity. If time and sufficient information are available to complete the full Wildland and Prescribed Fire Complexity Rating (see page 47), then the result of that analysis can provide this information. If sufficient time and information are not available, then complexity must be estimated by local fire staff and used for this variable. Complexity can be identified in advance of a fire (pre-planned MMAs designated in the Fire Management Plan and complexity confirmed daily for each MMA).

To obtain the relative risk rating, connect the top and bottom variables with a single line, then connect the left and right variables with a single line. Determine the relative risk of this fire at the intersection of the two lines. Use the relative risk as input information for the Decision Criteria Checklist. Neither a high or low rating necessarily predispose a "yes" or "no" answer. They provide an indication, but the Agency Administrator must still decide what level of risk is acceptable.

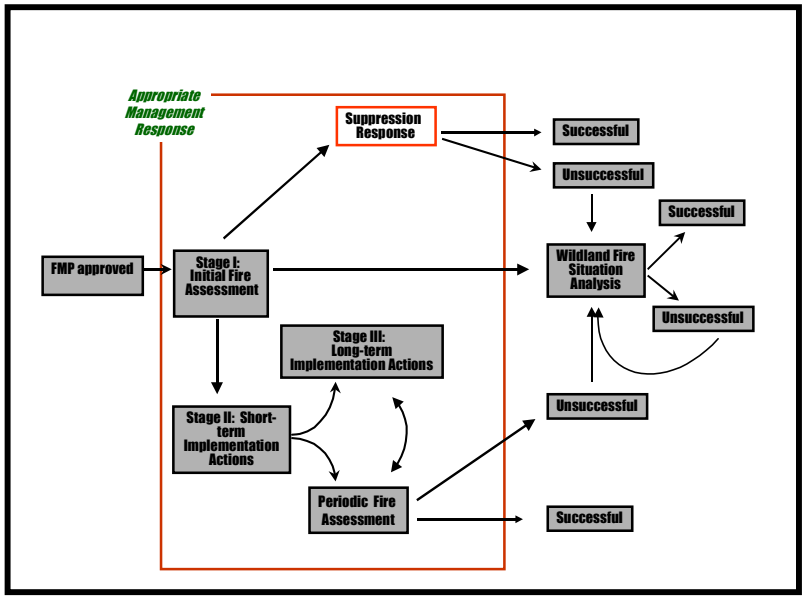
- **The fourth decision element gives an indication of other local and regional fire activity, commitments of unit and cooperator resources, and availability to fill special skill positions from local resources for this fire. If current fire activity precludes the ability to manage fire with adequate resources and skill mixtures, then the response to this element will be "Yes" and a suppression-oriented suppression response is indicated.**

- **The final decision element allows Agency Administrator discretion in the event there are other issues which were unknown to fire staff which need to be considered when making the decision to manage the fire for resource benefits.**

Once the Decision Criteria Checklist is complete, managers can determine whether to initiate actions to manage the fire for resource benefits or to initiate a suppression response. At the bottom of the Decision Criteria Checklist is a check box for the recommended response action (suppression or other appropriate management response) followed by the Agency Administrator's (or other delegated individual's) signature and date. This will complete the WFIP Stage I.

Suppression Actions

For many wildland fires, the appropriate management response will be a suppression action. Numerous situations exist where suppression will be needed and desired. Examples of these situations include, but are not limited to:



- **The Fire Situation shows that the fire is located in an FMP-defined Suppression Unit.**
- **The Fire Situation shows that, regardless of the fire location, it is human-caused.**
- **The fire is located in an FMP-defined Fire Use Unit and the Initial GO/NO-GO decision indicates that managing the fire for resource benefits is not within described limits or capabilities at this time.**

For these or other situations, the local fire staff will implement an adequate level of suppression action as the appropriate management response. Some agencies or units will have the FMP define initial action levels. Other agencies or units will determine the suppression response on a case-by-case basis from variables of values-to-be-protected, fire danger, potential fire intensity and spread rates, available resources, and management concerns.

As stated in the Fire Policy Review, "fires will be suppressed at minimum cost, considering firefighter and public safety, benefits, and values-to-be-protected, consistent with resource objectives." When initial attack or other suppression responses are unsuccessful in accomplishing the objectives, a WFSA will be the tool to analyze alternatives, select a new appropriate management action, and specify necessary actions.

2. Wildland Fire Management Plan - Stage II: Short-Term Implementation Actions

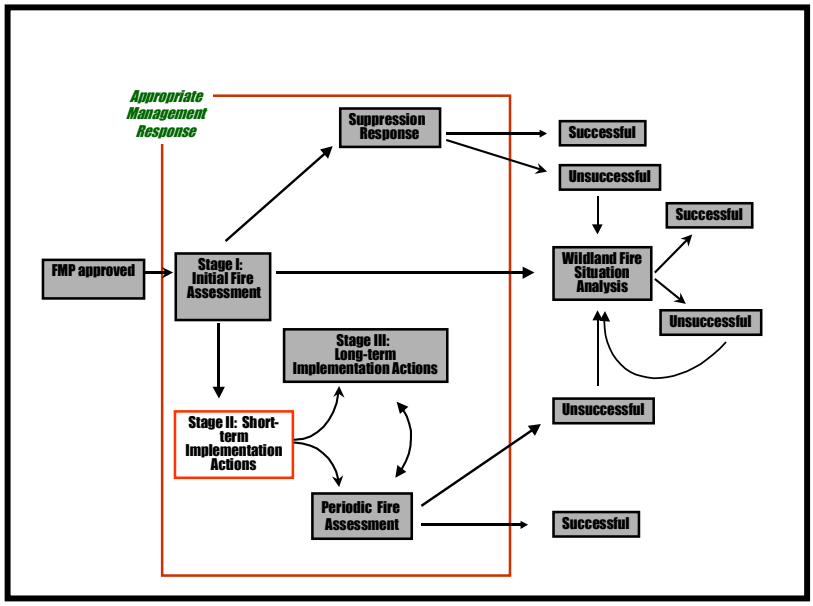
Summary:

Purpose:	**This stage will provide managers and staff with information to initiate and continue management of the wildland fire for resource benefits. It includes validation of short-term implementation actions as a decision. This stage will provide predictions of where the fire may go, how intense it may burn, how fast it may spread, what the necessary short-term management actions are, what the full complexity is, and if long-term management actions need to be addressed immediately.**
Information Source:	**Fire behavior prediction = generated through the Fire Behavior Prediction System (FBPS) using the BEHAVE system to obtain predictions of fire intensity and rate of spread based on fuel model, wind, topography, and fuel moisture conditions.** **Risk assessment = a variety of techniques can provide specific estimates of degree of risk. Example products may include: probability of fire reaching MMA (if MMA location is known from FMP), probability of a season-ending event, description or map of predicted fire perimeters. The minimum risk assessment required is a relative risk chart output.** **Short-term implementation actions = developed from staff input, predicted fire behavior, risk assessment, fuel types, fuel continuity, overall objectives. Represents tactical implementation actions.** **Complexity analysis = developed from staff input and review of standard complexity elements.** **Stage III need assessment chart = determined from completion of relative risk, complexity rating, fire behavior predictions, and Fire Situation (Stage I).**

Summary, continued:

Estimated Completion Time:	**Fire Behavior Prediction ≤ 2 hours** **Risk assessment ≤ 24 hours** **Short-term implementation actions ≤ 24 hours** **Complexity Analysis ≤ .5 hour** **Stage III Need Assessment Chart ≤ .5 hour**

The WFIP Stage II, Short-Term Implementation Actions, represents the initiation of management for resource benefits. During this stage, the potential fire behavior is calculated; uncertainty is reduced by assessing risk of the fire, how quickly it could spread, and how intense the fire may burn; fire complexity; necessary immediate and short-term management actions and resources; and evaluation of the need to move directly to the Stage III section.



Components of the WFIP Stage II and output products are shown in to the right.

WFIP Stage II: Short-Term Assessment and Implementation Actions

- **Fire Behavior Predictions and Risk assessment**
- **Short-term implementation actions**
  - **Objectives and desired effects**
  - **Safety considerations**
  - **External concerns**
  - **Environmental concerns**
  - **Threats**
  - **Short-term implementation actions (include description of action and expected duration)**
  - **Estimated Costs**
- **Complexity Rating Worksheet**
- **Stage III need assessment chart**

Fire Behavior Predictions and Risk Assessment

Short-term fire behavior predictions are vital to initial implementation actions because they provide:

- **estimates of fire size and shape at a given time,**
- **models of management alternatives,**

- **determinations of resource needs, production rates, and requirements,**
- **placement of resources,**
- **estimates of behavior under differential weather patterns,**
- **estimates of ignition patterns, including spotting,**
- **modeling for contingency action planning,**
- **developing prescriptions through historical weather records,**
- **verifying prediction outputs**

The sum total of these efforts can be information on where the fire may go, how fast it may travel, and how intensely it will burn. This will support decisions on initial actions, resource needs, and the overall decisions concerning the appropriate management response.

For this stage, risk assessment can be quickly assessed. However, if the unit has the capability to complete full long-term risk assessments through the use of RERAP or FARSITE, it is strongly encouraged that they do so. This will provide the best information available. In the event such quantitative methods cannot be completed in a timely manner, the relative risk chart can be used to obtain a subjective assessment of the risk.

Short-Term Implementation Actions

The Short-term Implementation Actions section describes what the initial or immediate implementation actions will be. These actions can vary significantly, depending upon specific circumstances of the particular fire. In cases where the fire may be fuel-limited, surrounded by sparse fuels or natural barriers with only limited spread potential, monitoring may be specified as the necessary implementation actions. In other cases, monitoring plus some form of limited mitigation actions may be necessary. In still other cases, fuel types in which the fire is burning may require immediate actions to delay, check, or direct the spread of fire.

The Short-Term Implementation Actions are shown on the reduced format form (two pages) below. Full-size reproducible forms are enclosed in the Appendix.

Page one covers:

- **Objectives and Desired Effects**
- **Safety Considerations**
- **External Concerns**
- **Environmental Concerns**

Page two covers:

- **Threats**
- **Short-Term Implementation Actions**
- **Estimated Costs**
- **Signatures**

SHORT-TERM IMPLEMENTATION ACTION

Attach Stage I information.

Action Items	*Information specific to this fire*
Objectives and Desired Effects	
Safety Considerations	
External Concerns	
Environmental Concerns	

Threats	
Short-Term Actions (describe)	
Estimated Costs	
Signature	
Title/date	

Complexity Analysis

A Wildland and Prescribed Fire Complexity Analysis has been developed to aid in evaluating the overall complexity of specific fires. This analysis incorporates an assigned numeric complexity value for specific complexity elements that are weighted in their contribution to overall complexity. The weighted value is

multiplied times the numeric value to provide a total element rating. Then all total values are added to generate the summed complexity numeric value. Breakpoint values are provided for low, moderate, and high complexity.

Complexity elements that have been established include:

- **Safety**
- **Threats to boundaries**
- **Fuels and fire behavior**
- **Objectives**
- **Management organization**
- **Improvements to be protected**
- **Natural, cultural, and social values to be protected**
- **Air quality values to be protected**
- **Logistics**
- **Political concerns**
- **Tactical concerns**
- **Interagency coordination**

The Wildland and Prescribed Fire Complexity Rating Worksheet is shown in reduced format on the right. A full-size reproducible checklist and instructions are enclosed in the Appendix.

WILDLAND AND PRESCRIBED FIRE COMPLEXITY RATING WORKSHEET

Complexity element	*Weighting factor*	*Complexity value*	*Total points*
Safety	5		
Threats to boundaries	5		
Fuels and fire behavior	5		
Objectives	4		
Management organization	4		
Improvements	3		
Natural, cultural, social values	3		
Air quality values	3		
Logistics	3		
Political concerns	2		
Tactical operations	2		
Interagency coordination	1		
Total complexity points			

Complexity Rating (circle) L M H

Complexity Value Breakpoints:

Low	*40 - 90*
Moderate	*91 - 140*
High	*141 - 200*

The Wildland and Prescribed Fire Complexity Analysis provides a method to assess the complexity of both wildland and prescribed fires. The analysis incorporates an assigned numeric rating complexity value for specific complexity elements that are weighted in their contribution to overall complexity. The weighted value is multiplied times the numeric rating value to provide a value for that item. Then all values are added to generate the total complexity value. Breakpoint values are provided for low, moderate, and high complexity values.

The complexity analysis worksheet is accompanied by a guide to numeric values for each complexity element shown, provided on the following pages.

In addition to the checklist, a guide to numeric values has been prepared. This guide gives example scenarios for numeric ratings of 1, 3, and 5 points for all complexity elements. This numeric rating guide is also enclosed in the Appendix.

Stage III Need Assessment Chart

This assessment chart provides the Agency Administrator and staff with an aid to determine if the Stage III, Long-Term Assessment and Implementation Actions need to be developed, documented, and implemented immediately, or if the fire can be managed through the established short-term implementation actions until indicated otherwise by the Periodic Fire Assessment. For many wildland fires, fuel continuity and spread potential will be low. In other situations, environmental conditions will preclude active burning and spread. For instances such as these, immediate completion of Stage III of the WFIP will not need to occur until specific thresholds are reached. These thresholds are assessed subjectively on this chart or through the continued assessment provided by the Periodic Fire Assessment.

The Stage III Need Assessment Chart (Figure 6) will help Agency Administrators prioritize planning needs for multiple fires and ensure that those having the greatest need will receive the necessary planning in response to management capability and time constraints.

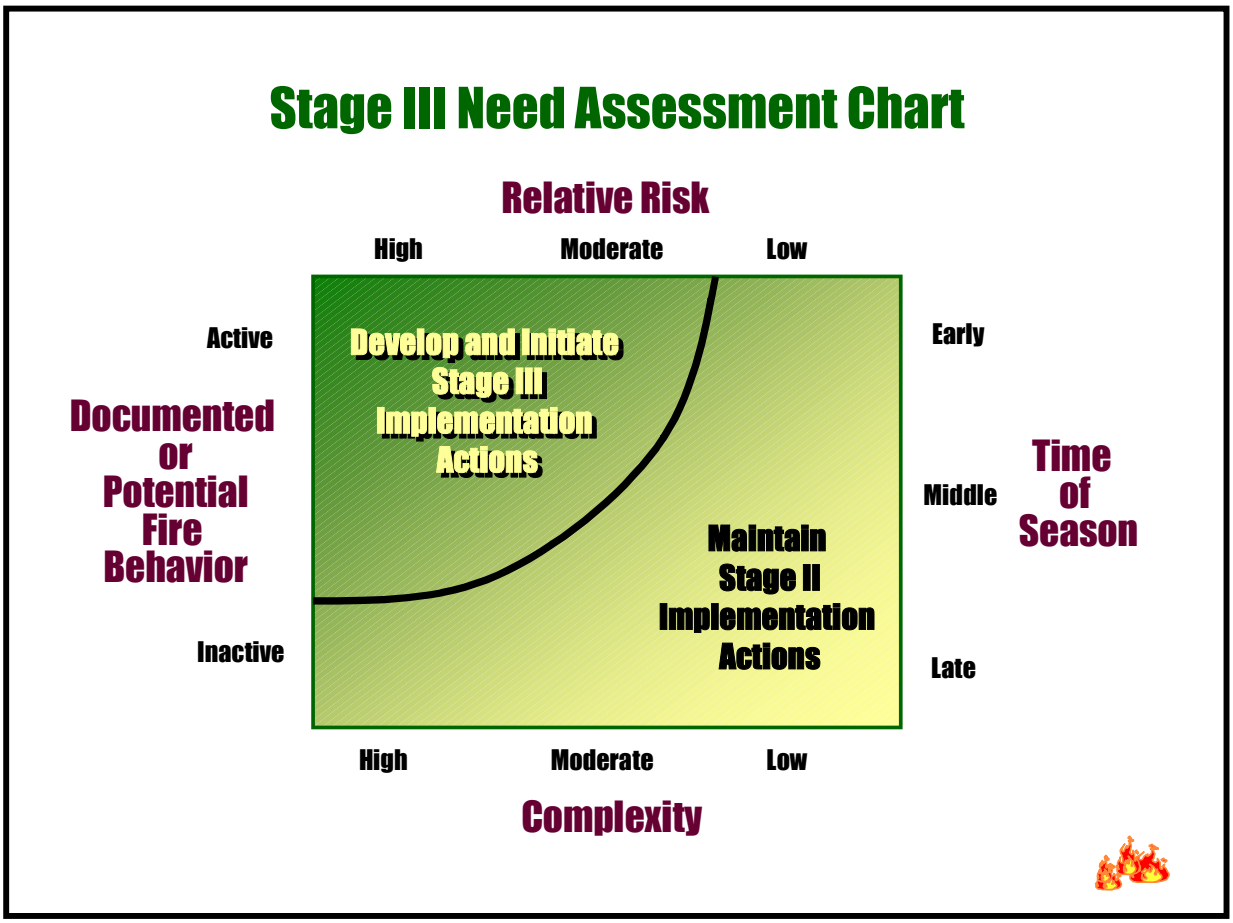


Figure 6. Stage III Need Assessment Chart (prepared as part of WFIP Stage II).

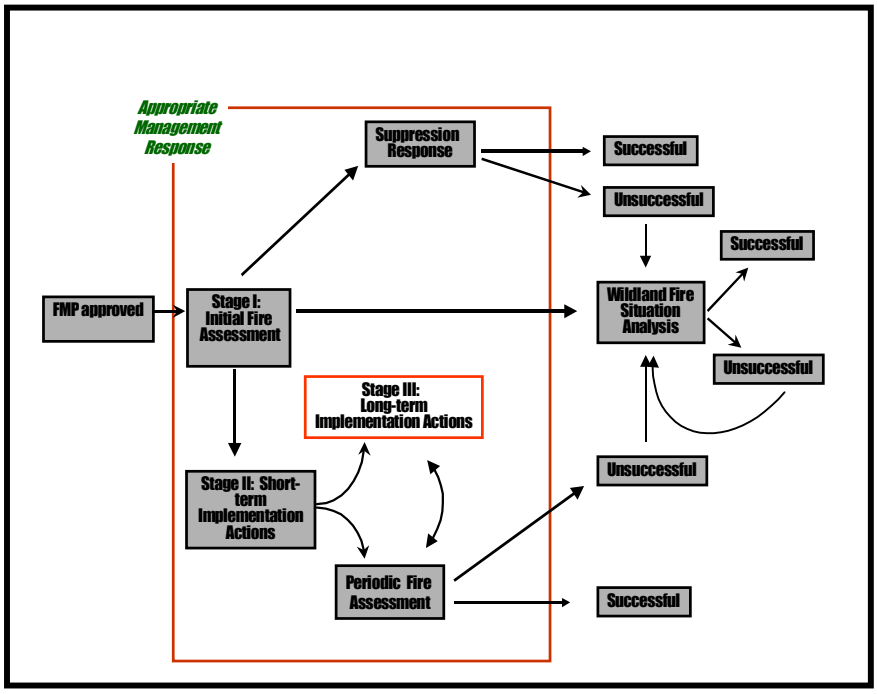
To complete the assessment, local fire staff evaluate the criteria and detemine if the fire warrants completion of the long-term implementation actions (Stage III) at this time or if Stage II implementation directions are adequate (if Stage II actions continue, the Periodic Fire Assessment will determine if and when Stage III will be prepared). To obtain the need indication, connect the top and bottom variables with a single line and then connect the left and right variables with a single line. Where the line crosses indicates the need for WFIP Stage III. The appropriate need is read directly off the chart.

3. Wildland Fire Implementation Plan - Stage III: Long-Term Assessment and Implementation Actions

Summary:

Purpose:	**To supplement the Fire Management Plan by providing the full long-term implementation actions necessary to manage the wildland fire to accomplish identified objectives. This stage will provide a definition of the ultimate acceptable geographic size of the fire (represented by the MMA). It will consider long-term fire behavior predictions and long-term risk assessment. It will assess the likelihood of the fire reaching the MMA perimeter, and will document those operational management actions necessary to manage long duration fires that will need mitigating measures to strengthen and defend the MMA.**
Information Source:	**Staff development from local expertise, experience, knowledge, maps, monitoring data, fire behavior predictions, risk assessment, and operational evaluation and identification of tactics and resources.** **MMA = staff negotiated and developed from objectives, maps, on-the-ground evaluation, aerial observation, monitoring, etc.** **Risk assessment can be obtained from RERAP, FARSITE, or BEHAVE, or a combination of some or all these techniques.**
Estimated Completion Time:	**MMA determination ≤ 24 hours** **Long-term risk assessment ≤ 24 hours (unless FARSITE or other assessment process requires more time)** **Long-term implementation actions ≤ 24 hours**

This stage represents completion of long-term implementation actions necessary to successfully accomplish the desired objectives. The WFIP has been progressively developed throughout all stages; this represents the final stage. It presents tactical implementation information and will be attached to information developed in previous stages.



Stage III consists of the information shown in the box to the right.

This stage details operational activities and documents the planning completed to ensure adequate mitigation actions have been developed. These actions will provide the best protection against fire activity exceeding acceptable limits. **Mitigation actions are those on-the-ground activities that will serve to**

WFIP Stage III: Long-Term Assessment and Implementation Actions

- Objectives and Risk Assessment Considerations
  - Natural and Cultural resource objectives and constraints/considerations
- MMA Definition and Maps
- Fire Projections and Maps
- Weather season/drought discussion and prognosis
- Long-Term Risk Assessment (describe techniques and outputs, include maps as appropriate)
- Probability of Success
- Threats
  - Threats to MMA
  - Threats to Public Use and Firefighter Safety
  - Smoke dispersion and effects
  - Other
- Monitoring Actions (actions, frequency, and duration)
- Holding Actions (describe holding actions, management action points that initiate these actions, and key to map if necessary)
- Resources needed to manage the fire
- Estimated costs of long-term implementation actions
- Contingency Actions (describe contingency actions, management action points that initiate them, and resources needed)
- Information Plan
- Post-burn evaluation
- Signatures and Date

increase the defensibility of the MMA , check, direct, or delay the spread of fire, and minimize threats to life, property, and resources. Mitigation actions may include mechanical and physical non-fire tasks and specific fire applications. Their purpose is to construct firelines, reduce excesssive fuel concentrations, reduce vertical fuel continuity, create fuel breaks or barriers around critical or sensitive sites or resources, create "blacklines" through controlled burnouts, and limited suppression actions to limit fire spread and behavior.

Completion of this stage is determined (triggered) by either the Stage III Need Assessment Chart (WFIP Stage II) or through the Periodic Fire Assessment, Part 2 Stage III Need Assessment Chart. Once Stage III has been completed, the full WFIP will have been developed.

A standard format is illustrated in the next six reduced format examples. Full-size, reproducible forms are enclosed in the Appendix.

Stage III: Long-Term Implementation Actions

Attach Stage I and Stage II information. Update and/or revise Stage I and II as necessary.

Objectives and Risk Assessment Considerations
Natural and Cultural Resource Objectives and Constraints/ Considerations

Maximum Manageable Area (MMA)
Acres in MMA:

Attach Map of MMA

Fire Projections, Weather, and Map
Projected Fire Area Under *Expected* Weather Conditions

For date:

Area:

Projected Fire Area Under Experienced *Severe* Weather Conditions

For date:

Area:

Weather Season/Drought: Discussion and Prognosis

Long-Term Risk Assessment and Map (if applicable)
Risk Assessment (Describe techniques utilized and outputs, include maps as appropriate)

Probability of Success
Describe Probability of Success

Threats
Threats to MMA

Threats to Public Use and Firefighter Safety

Smoke Dispersion and Effects

Other

Monitoring Actions
Describe Monitoring Actions, Frequency, Duration

Holding Actions
Describe Holding Actions, Management Action Points that initiate these actions, and Key to Map if necessary

Resources Needed to Manage the Fire
Describe resources necessary to accomplish holding and monitoring actions

Estimated Costs of Managing the Fire
Describes costs in terms of resources needed, projected duration, etc.

Contingency Actions
Describe Contingency actions, management action points that initiate them, resources needed, etc.

Information Plan
Describe Information Plan, Contacts, Responsibilities, etc.

Post-burn Evaluation
Describe post-burn evaluation procedures, resource requirements, costs, duration, etc.

Signatures
Include signatures/titles/ dates for preparing, approving, and any concurring individuals

Maximum Manageable Area (MMA) Determination

All wildland fires being managed under appropriate management response strategies requiring WFIP Stage I, II, and III (meaning those fires where the WFIP planning has progressed to Stage III) will have a defined Maximum Manageable Area (MMA). This is to ensure that there is a clear and common understanding of the authorized size and location of the fire among Agency Administrators and cooperators.

The maximum manageable area delineates the ultimate acceptable size for a given wildland fire managed for resource benefits. It provides for closely directed fire management application in a specific area defined by resource objectives, fire and weather prescription elements, social needs, political considerations, and management capability.

All Maximum Manageable Areas will:

- **be based on pre-determined MMAs identified in the Fire Management Plan or be developed as part of Stage III of the Wildland Fire Implementation Plan.**
- **be fixed and not subject to change once established and approved by the Agency Administrator.**
- **serve as a definition of firm limits of management capability to accommodate the social, political, and resource impacts for all wildland fire managed for resource benefits.**

> ***NOTE:*** ***The complex nature of fires and land management precludes the ability of managers to write a set of guidelines or directions that cover all potential situations. Past experiences and recognition of future potential situations require the following consideration regarding the rigid nature of drawing lines on a map.***
>
> ***There may be isolated cases where formal implementation of the WFSA process because a wildland fire exceeded an established MMA is not prudent or logical. In these situations, experience may indicate that the MMA will be exceeded by the specific wildland fire on a very small or non-threatening scale. Management options in this situation include:***
>
> - ***Constraining the fire spread to the small or non-threatening overrun of the original acceptable area using available holding forces currently in use, and identified in the Wildland Fire Implementation Plan, Stage II or III. This return must be accomplished within two burning periods.***
> - ***In the case of relatively long range spotting, treat an isolated spot generated by this natural process as a separate fire. Determine***

appropriate management action for this new ignition separately from the original wildland fire, based on criteria specific to this fire.

If the Agency Administrator and Fire Management Officer determine that the fire cannot continue to be managed within its original approved boundary, a WFSA will utilized to select a new strategic alternative and appropriate management response.

Long-Term Risk Assessment

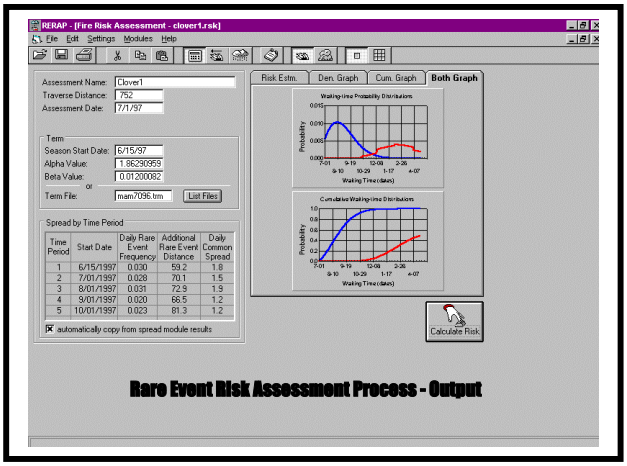
Decision-making associated with managing wildland fire for resource benefits can have critical impacts. It is important to make the highest quality informed decisions as possible. Decision-making is facilitated by factual information and prediction of outcomes or consequences of the decision. Of particular importance is the ability to assess the degree of risk presented by the particular wildland fire.

An array of decision-making support aids is available to support wildland and prescribed fire risk assessment. The use of technological tools is appropriate when a specific tool can give the decision-maker information that reduces uncertainty associated with possible outcomes of the decision, reduces the risk of undesirable outcomes, and facilitates the best decision possible.

The choice of technique will depend on the information needed and the state of knowledge regarding that subject area. Techniques may range from a subjective, descriptive comparison to a very objective in-depth analysis using sophisticated mathematical models.

The importance of risk assessment is reinforced through the Guiding Principles from the Fire Policy Review Recommendations that state, "Sound risk management is a foundation for all fire management activities," and "Fire management plans are based on the best available science."

Technological advances in fire behavior prediction, fire spread estimation, fire effects prediction, smoke production and dispersal, rare event assessment, and fire area simulation now make it possible to obtain better information, reduce uncertainty, assess potential fire outcomes, evaluate consequences of failure, and determine probabilities of success more effectively than ever before. Using this type of information in decision-making promotes better management decisions and ultimately, more desirable outcomes. As new technology becomes available for application in management situations, it must be utilized to improve operational actions to the greatest degree possible.



Specific assessment products useful in evaluating risk include:

- **Probability of the fire reaching the MMA perimeter,**
- **Probability of a season-ending weather event,**
- **Indications of where the fire may spread, or total area that may be burned by the fire,**
- **How fast the fire will travel,**
- **How soon the fire may reach critical sites or the MMA perimeter,**
- **Indications of how the fire may burn; predictions of intensity and severity,**
- **Fuel conditions, moisture conditions, departures from average conditions,**
- **Fire dynamics - indicators of potential rapid escalation in fire behavior,**
- **Analysis of fire danger indicators, comparison with 10 years statistics,**
- **Fire history reviews, records of past fires in terms of area burned and type of fires (i.e., low - moderate intensity, surface fire, stand replacement, etc.),**
- **Predictions of the range of potential fire effects on natural and cultural resources,**
- **Probability of adverse smoke events and dispersal.**

No mandatory requirements exist for risk assessment. However, an assessment must be completed that yields much of the information listed in the product list above. Units are encouraged to acquire and utilize available long-term risk assessment techniques such as the Rare Event Risk Assessment Process [RERAP], and Fire Area Simulator [FARSITE]. As the quality of risk assessment increases, the quality of subsequent decisions and probability of desirable outcomes will increase. Units should strive for the highest quality decisions possible.

Emerging technology cannot become mandatory before all potential users have the opportunity to become fully functional in its use through training and experience. The following table (Table 6) lists current state-of-knowledge fire weather, fire behavior, fire effects, smoke management, and other applicable computer software programs and technology available to wildland fire managers for assessing risk in wildland fires situations (taken from USDA Forest Service 1997).

Table 6. List of decision support tools useful in supporting wildland fire management planning and implementation.

Tool	Description	Source
BEHAVE	BEHAVE can be used to predict fire behavior given different fuel loadings and arrangements.	Larry Bradshaw/Bob Burgan Intermountain Research Station IFSL PO Box 8089 Missoula, MT 59807
CALPUFF	A research-level, three dimensional model designed to predict ground-level concentrations of particulate matter and gaseous pollutants from multiple sources in complex terrain.	Sue A. Ferguson USDA-Forest Service Pacific Northwest Research Station 4043 Roosevelt Way Northeast Seattle, WA 98105-6497 206-553-7815
CONSUME	Predicts fuels consumption for broadcast burns or underburns in logged units in Pacific Northwest timber types and mixed conifer.	Software Support Group Fire and Environmental Research Applications PNW Research Station 40443 Roosevelt Way N.E. Seattle, WA 98105-6497 206-553-7815
CRBSUM	Simulates broad-scale landscape vegetation changes as a consequence of various land management policies.	Robert Keane Intermountain Research Station IFSL PO Box 8089 Missoula, MT 59807
DDWOODY	Uses the planer intercept method to predict dead and down fuel loading based on user plot data.	Cam Johnston Fire Sciences Laboratory Intermountain Research Station PO Box 8089 Missoula, MT 59807
DEBMOB	Calculates debris prediction using plot data such as stand examinations.	Cam Johnston Fire Sciences Laboratory Intermountain Research Station PO Box 8089 Missoula, MT 59807
ECODATA and ECOPAC	ECODATA provides detailed, multilevel intensity sampling methodologies and paper forms for collecting topographic, vegetation, soil, wildlife, hydrologic, riparian, and other information at the plot level. Linked to ECOPAC is a group of analysis programs and models.	Robert Keane Intermountain Research Station IFSL PO Box 8089 Missoula, MT 59807
FARSITE	PC program that simulates the spread and behavior of fires under conditions of heterogeneous terrain, fuels, and weather.	Pat Andrews Intermountain Fire Sciences Laboratory PO Box 8089 Missoula, MT 59807

Tool	Description	Source
FEIS	Fire effects Information System-provides up-to-date information on fire effects on plants, animals, and ecosystems.	Dennis Simmerman USDA Forest Service Fire Sciences Laboratory IFSL Missoula, MT
FIRE-BGC	Simulates tree growth, organic matter decomposition, litterfall, and other ecological processes using detailed physical relationships. Includes spatial simulation of fire behavior and fire effects on ecosystem components across the landscape. Insect and disease interactions are included in the model.	Robert Keane Intermountain Research Station IFSL PO Box 8089 Missoula, MT 59807
FIRES	A PC program that merges fire and weather/index files; allows plotting and analysis of fire occurrence and fire danger.	Larry Bradshaw Fire Behavior Research Work Unit Intermountain Fire Sciences Lab PO Box 8089 Missoula, MT 59807
FOFEM	Computes duff and woody fuel consumption, mineral soil exposure, fire-caused tree mortality, and smoke production for forest stands.	PC version available upon request from: Robert Keane Intermountain Research Station IFSL PO Box 8089 Missoula, MT 59807
FVS	Provides simulated estimates of the future conditions of primary vegetation.	Nick Crookston Intermountain Research Station 1221 So. Main Moscow, ID 83843
MAGIS	Used for planning land management and transportation-related activities on a geographic and temporal basis in the presence of multiple and sometimes conflicting objectives.	Dr. Hans Zuuring School of Forestry University of Montana Missoula, MT 59812
MT CLIM	Mountainous Terrain Microclimate Simulator.	Roger Hungerford Intermountain Forest and Range Experiment Station Research Work Unit Missoula, MT 59807
NPSPUFF	Smoke dispersal model developed in Region 6 that models smoke plume dispersion and concentrations of pollutants (particulate matter and others) from prescribed and wildland fires.	WYNDsoft Inc.
PCHA	PC program that completes the Historical Analysis required for the National Fire Management Analysis System (NFMAS).	USDA Forest Service Region 5 630 Sansome St. San Francisco, CA 94111 415-795-2874

Tool	Description	Source
PROBACRE	Assesses the long-term risk associated with the level of protection provided to an area.	Marc Wiitala USDA Forest Service PSW Research Station 208-387-5676
QDEBRIS	Uses planer intercept method to predict dead and down fuel loading based on user plot data.	Cam Johnston Fire Sciences Laboratory Intermountain Research Station PO Box 8089 Missoula, MT 59807
RERAP	Determines probabilities that a wildland fire will exceed an MMA before a fire-ending event (precipitation) will halt spread.	Mike Hilbruner USDA Forest Service PNW Region Portland, OR
RXBURN/ RXWEATHER	Analyzes and assesses burn prescriptions.	Mike Barrowcliff USDA FW-WO, F&AM 208-387-5280 DG: WO1A Cam Johnston USDA FS IFSL 406-329-4810 DG: S22L01A
SASEM	Predicts ground-level particulate matter and visibility impacts from single sources in relatively flat terrain in the Western United States.	Mike Sestak USDI-National Biological Service Environmental Science and Technology Center Fort Collins, CO 80526
SMOKE	Smoke prediction system: determines volume of smoke.	Roger Ottmar Pacific Northwest Forest & Range Experiment Station Portland, OR
SPECTRUM	Helps decision-makers explore and evaluate management choices; provides and integrating framework for multi-resource analysis.	Kathy Sleavin USDA Forest Service WO-EM Analysis Center 3825 East Mulberry Street Fort Collins, CO 80524
SYSDYN	Landscape-scale model on fire-induced changes in vegetation types.	Marc Wiitala USDA Forest Service PSW Research Station 208-387-5676

Tool	Description	Source
TSAR3 EPM: Emission Production Model SASEM: Simple Approach Smoke Estimation Model VALBOX: Ventilated Valley Box Model	Three-part smoke dispersion prediction program: each can be used independently or linked to each other.	USDI Bureau of Land Management Wyoming State Office Divisions of Lands and Renewable resources PO Box 1828 Cheyenne, WY 82003
UTOOLS	Geographic analysis software developed for watershed-level planning. Watershed Analysis and Visualization Software.	Forest: R01F12A Cabinet: Public Drawer: UTOOLS Folder: UTOOLS Files: UTOOLS1.EXE UTOOLS2.EXE UTOOLS3.EXE
VSMOKE-GIS	Predicts ground-level particulate matter concentration and visibility impacts from single sources in relatively flat terrain in the southeastern United States.	Leonidias Lavdas USDA Forest Service Southeast Experiment Station Route 1, Box 182A Dry Branch, GA 31020 912-744-0252
Wildland Fire Assessment	PC program that guides users in developing Wildland Fire Situation Analysis and completes Wildland Fire Implementation Plan documentation requirements	Carl Dammann Riverside Fire Lab 3833 South Development Ave. Boise, ID 83705 208-387-5093
WIMS	Weather Information System is an interactive environment to access and manipulate weather data.	Roger Tucker Watershed & Air Management USDA Forest Service Washington, DC

No interagency standards exist for the configuration of teams responsible for preparation of Wildland Fire Implementation Plans, the duration of time that they must be in place, and what products they must create. For more complex situation, formalized teams may make the most significant contribution in support of local units and management of the fire. These teams may be developed locally from unit and cooperator personnel or be a formal, established team obtained through the established resource ordering process. Teams must include a leader (preferably Fire Use Manager or higher qualification with fire use experience), a fire behavior specialist (preferably RXFA), and other specialists as needed to support tactical

operations, planning, and logistical support needs. In any case, the capability to predict fire behavior and assess risk is critical. This capability can be fulfilled in most situations by a Prescribed Fire Behavior Analyst (RXFA) or Fire Behavior Analyst (FBAN). But, these positions have somewhat different training, experience backgrounds, and slightly different capabilities. Prescribed Fire Behavior Analysts are significantly important in predicting the potential area and extent of burning, assessing long-term risk, and validating the maximum manageable area (MMA). An FBAN can best provide fire behavior predictions, access weather observations and forecasts, assess short-term risk, and predict the potential area and extent of burning. The RXFA position will most effective for long-term planning as needed for wildland fires managed for resource benefits while the FBAN will be markedly important for short-term predictions with special emphasis on interrelationships between safety and tactical implementation actions.

Estimates of fire behavior and risk are prerequisite to successful preparation of a Wildland Fire Implementation Plan. A complete review of MMAs, input regarding fire potential, potential risk, and extended fire behavior predictions for comparisons of expected and experienced severe fire scenarios is required. During Stage I and II, either Prescribed Fire Behavior Analyst or Fire Behavior Analyst positions can be utilized to provide the necessary information. Long-term risk assessment can be conducted through use of the RERAP or FARSITE programs in Stage II, and must be done in Stage III unless not physically possible. During this process, a qualified RXFA [or FBAN who has successfully completed S-492, Long-Term Risk Assessment, and S-493, Fire Area Simulator (FARSITE)] is required. An RXFA does not have to remain continually involved with the wildland fire after completion of the WFIP. The local fire staff or Fire Use Manager (FUMA) will determine the necessary level of involvement of the RXFA during implementation activities.

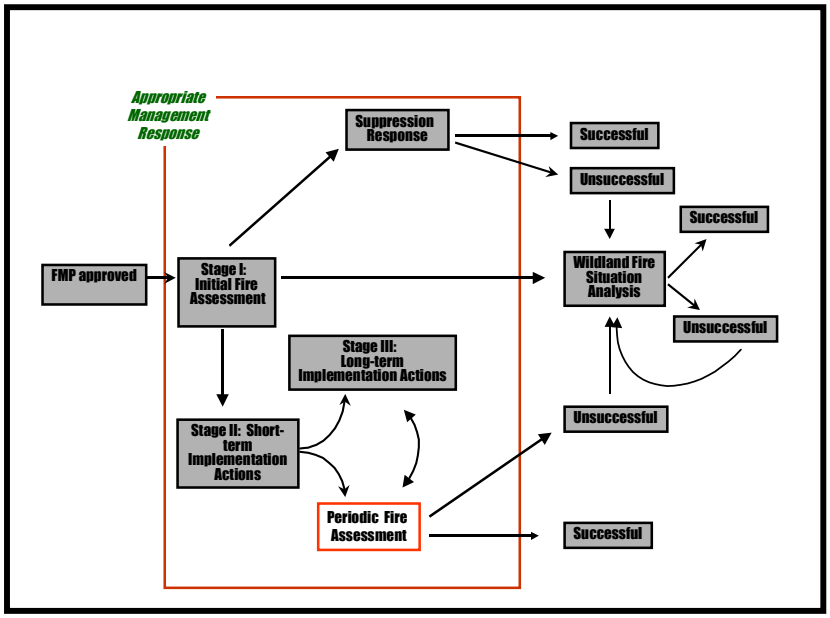
As WFIP Stage III is prepared, the information will be attached to Stage I and II information to complete the WFIP. In the event that the fire has been burning for a relatively long duration and information contained in Stages I and II is no longer current, it will be updated or replaced during preparation of WFIP Stage III.

4. Periodic Fire Assessment

Summary:

Purpose:	**This step provides a process to evaluate the continued capability of the local unit to manage the fire for resource benefits, and to determine if the fire is escalating in complexity and operational needs. If the assessment shows inadequate capability to continue to manage the fire, an indication is given to proceed to development of a WFSA. If complexity and operational needs are escalating, the assessment indicates the need to fully define a MMA, develop long-term fire behavior predictions, conduct long-term risk assessment procedures, and define detailed long-term implementation actions (WFIP - Stage III). This assessment is completed as frequently as specified by the local unit (within maximum assessment frequency guidelines provided below in the procedural description).**
Information Source:	**Fire monitoring information, risk assessment results, current fire activity, fire location, fire size, fire danger indicators, time period of fire season, fire behavior and weather forecasts, and staff input.**
Estimated Completion Time:	**Part 1: Re-validation ≤ .5 hour** **Part 2: Stage III need ≤ .5 hour**

For each wildland fire use action, the Agency Administrator (or delegated individual) is required to periodically affirm the capability to continue management of the fire. This stage is intended to prevent the unchecked escalation of an individual fire situation or the total fire management situation without evaluation and adequate planning. A checklist of information must be completed that accomplishes two purposes. First, this checklist affirms the appropriateness of continued management of the fire for resource benefits. Second, this checklist confirms the decision pertaining to the need to develop and document the WFIP - Stage III. The Periodic Fire Assessment consists of three components: a re-validation of the appropriateness of continued management for resource benefits, an assessment of the need to escalate from WFIP Stage II to Stage III, and a signature table that affirms the Agency Administrator's concurrence.



Periodic Fire Assessment

- Part 1: Re-validation
- Part 2, Stage III need assessment chart
- Signature page

For Part 1, local fire staff review and complete the assessment checklist. Once this form is initially completed, it does not have to be re-done, but it **must be reviewed and affirmed on the specified assessment frequency.** The local unit must note the valid dates and the frequency of the assessment on the form. The valid dates are the inclusive dates where the checklist has re-validated continued management of the fire. The “valid date(s)" box on page 1 can be inclusive of those dates where the assessment remains valid, as indicated by the dated signature. When any decision elements change from “No” to “Yes”, a new checklist must be completed for documentation purposes. The assessment frequency is how often the assessment will be reviewed. This frequency can be daily, but if the unit desires it can be less frequent than a daily requirement.

Recommendations for assessment frequency include:

- **grass fuel types = daily**
- **shrub and timber types = every 1 - 5 days**
- **Alaska area = every 1 - 10 days**

These are recommendations for monitoring and assessment frequency but local units can determine what best meets their needs (that selected frequency, if different than the recommended frequency, must be documented with an associated rationale). However, to ensure that unchecked and unknown escalation of an individual fire situation or the total fire management situation does not occur, continued monitoring and assessment is mandatory. This must occur to facilitate continual evaluation and timely planning.

When units establish a monitoring and assessment frequency, they should consider developing a "step-up" frequency based on fire size or levels of fire activity. Then, as an individual fire gets larger, or becomes more active, the monitoring and assessment frequency can correspondingly increase. Conversely, as fire activity lessens and fire size increases become less common, monitoring and assessment can "step-down" and become less frequent. Units must identify standards and rationale for establishing assessment frequency, especially "step-up" and "step-down" actions. If fire size is used as a determinant, then past burning rates and areas should be used to formulate standards. If fire activity is used, then levels of burning (acres per day, etc.) should form the basis. In either case, the determinants must be definable and justifiable.

PERIODIC FIRE ASSESSMENT
PART 1: RE-VALIDATION CHECKLIST

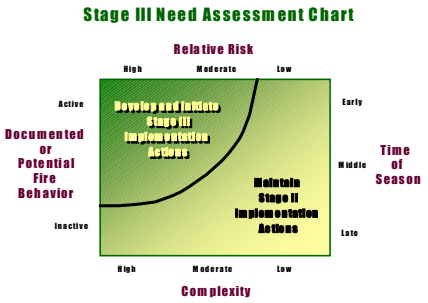
Decision Element	*Yes*	*No*
Is there a threat to life, property, or resources that cannot be mitigated?		
Are potential effects on cultural and natural resources outside the range of acceptable effects?		
Are relative risk indicators and/or risk assessment results unacceptable to the appropriate Agency Administrator?		
Is there other proximate fire activity that limits or precludes successful management of this fire?		
Are there other Agency Administrator issues that preclude wildland fire use?		
Do expected management needs for this fire exceed known capabilities?		

The Periodic Fire Assessment is illustrated in the reduced format forms above and on the next page. Full-size and reproducible forms are enclosed in the appendix. When completing Part 1 of this checklist, a "Yes" answer to one or more decision elements indicates inability to continue management of the fire within defined limits of the current response. This triggers preparation of the

Wildland Fire Situation Analysis to guide selection of a different appropriate management response alternative.

The Periodic Fire Assessment, Part 2, is a process that validates the level of implementation actions. It must be completed periodically for all wildland fires managed for resource benefits where Stage III has not yet been completed. When completing Part 2 of this checklist, if the chart indicates that WFIP Stage III is needed, it must be prepared within 24 hours. The purpose of this chart is to aid managers in assessing the need to complete detailed, long-term assessment and implementation plans for the particular fire. It guides managers in determining if the particular fire is presenting concerns that warrant more detailed planning and preparation for mitigation actions. The Stage III Need Assessment Chart can also guide Agency Administrators in setting priorities for planning needs for multiple fires and ensuring that those fires having the greatest need will have the necessary planning done within the framework of management capabilities and time constraints.

PERIODIC FIRE ASSESSMENT
PART 2: STAGE III NEED ASSESSMENT CHART



For many wildland fires, fuel continuity and spread potential will be low. In other situations, environmental conditions will preclude active burning and spread. For instances such as these, completion of WFIP Stage III may not be warranted until specific thresholds are reached. It must be noted that Agency Administrators and staff have the prerogative to complete WFIP Stage III for any or all wildland fires.

PERIODIC FIRE ASSESSMENT

SIGNATURE TABLE

		Fire can continue to be managed for resource benefits (wildland fire use action).	Fire can continue to be managed under the short-term Implementation Action.
Assessment Frequency			
Valid Date(s)			
Name/Title	*Date*	*Y/N*	*Y/N/N/A*

The Part 1 checklist essentially consists of the same decision elements present in the Decision Criteria Checklist. However, at this point in the process it

is necessary to periodically review management capability. In order to accomplish this, one additional decision element has been added, "Do expected management needs for this fire exceed known capabillities?"

The Wildland Fire Relative Risk Rating Chart and NFDRS Firefighter Pocket Card are again useful in determining answers to specific criteria (see pages 42 - 43). The additional decision element in this checklist is related to management and organziational capabilities. If supervisory and tactical needs for this fire exceeed known capabilities, then movement to the WFSA is warranted.

Part 2 of this assessment consists of the same chart utilized in the final assessment in Stage II (Stage III Need Assessment Chart). This chart is presented as a full-size figure in the Appendix and on page 51. The chart evaluates the following variables:

- **Complexity - determined from the Wildland and Prescribed Fire Complexity Rating, includes review of objectives and type of fire behavior required to achieve those objectives (i.e., low intensity, surface fire, high intensity, stand replacement burning, etc.),**

- **Time of the fire season - this element is important in determining whether or not Stage III should be completed immediately. Using the figure showing generalized fire season dynamics (Figure 7), local staff can determine if they are at a point in time where the potential mazimum fire behavior has not occurred, or if they have passed that point. The closer the time of season is to that potential maximum, the greater the need to prepare Stage III.**

  The generalized information in Figure 7 is drawn from Williams and Rothermel (1992) (Figure 8) which shows a comparison of expected fire behavior over a period of increasing fire danger. In utilizing Figure 7, local staff should orient their specific fire season timeframes along the x axis and determine where they currently are. For example, some western fire seasons will persist from May to October so the x axis represents a period of several months. Other western fire seasons may only last a period of weeks so the timeframes may be compressed as represented by the Alpine fir curve in Figure 8. Alaska and eastern fire seasons persist for differing periods and have different orientations than the western seasons (may persist from May to July, March to July or February to June, etc.) but still can be oriented to Figure 7.

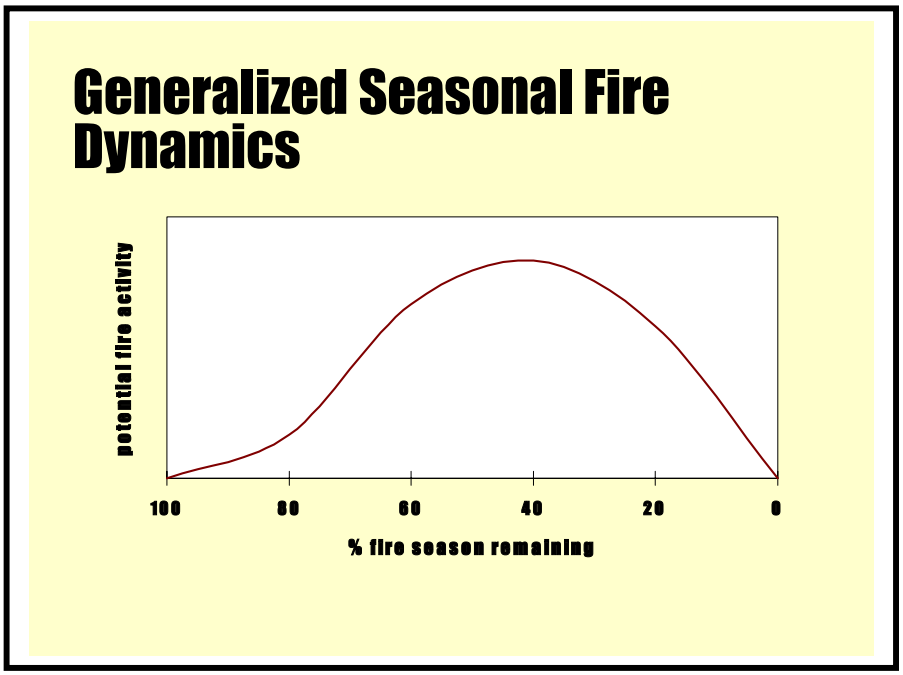


Figure 7. Generalized seasonal fire dynamics.

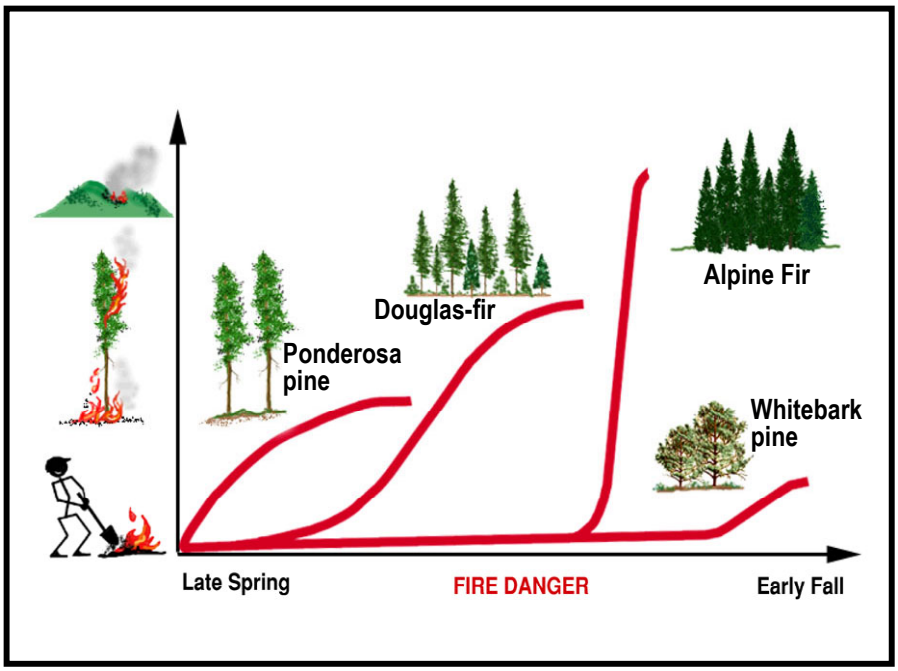


Figure 8. Comparison of expected fire behavior over a period of increasing fire danger for grass, brush, and timber-dominated examples (adapted from Williams and Rothermel 1992).

Although these curves were developed as approximations of fire behavior in Northern Rocky Mountain habitat types, they are conceptual curves that distinguish critical differences between fuel types and can be applied elsewhere. The value in the curves is not as much in their shape or amplitude but in their relationship to their defining thresholds. For example, on the Alpine fir curve the change from a horizontal to a vertical orientation represents an abrupt transition from benign to severe fire behavior. Past observations and archived fire danger interactions can be used to identify contributing factors and time periods when this transition will occur. The factors contributing to this transition become important determinants of risk for this fuel type.

The curves shown in Figure 8 are not exclusive to the species listed. These curves can be extrapolated to other fuel types. For example, the ponderosa pine curve is representative of other warm, arid fuel types, including grasses, shrubs, and other timber species. The Douglas-fir curve applies equally to other western mixed conifers. Trends illustrated by the Alpine fir curve are also indicative of trends observed for sand pine (southeast), jack pine (lake states), pinyon-juniper (southwest), and pine species of the pine barrens (Atlantic coast - northeast). In each case, fire behavior rapidly escalates from inconsequential to severe. Historical records for each fuel type can be used to determine what factors (and at what levels) contribute to the transition. For those fuel types where fire occurs infrequently but at high intensities, factors of drought, high Energy Release Components (ERC), low relative humidities, high temperature, and high winds combine to result in sustained high-intensity crown fire activity. The importance of this information lies in the identification of the current point in time, its position along the representative curve, and its proximity to the fire behavior transition point. Where the affected administrative unit is temporally in relation to this threshold is a critical consideration determining the level of WFIP planning and implementation to be done. The closer to this point, the greater the need to prepare WFIP Stage III.

The remaining variables addressed by the Stage III Need Assessment Chart include:

- **Relative risk - can be determined from the Wildland Fire Relative Risk Rating chart or from long-term risk assessment procedures such as RERAP or FARSITE.**

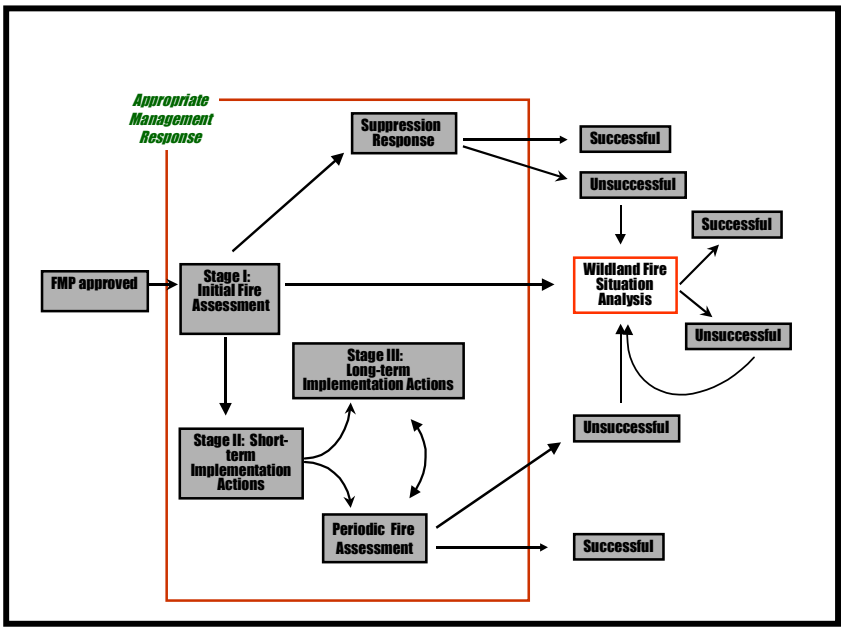
- **Fire behavior - determined from short-term and long-term fire behavior predictions and forecasts**

The Agency Administrator or designated individual must sign the Periodic Fire Assessment Signature Page on the specified assessment frequency for the time period encompassed by the valid dates. The Periodic Fire Assessment signature authority can be re-delegated to specific positions as appropriate. Agency Administrators can delegate, in writing, the revalidation authority to

other designated individuals. This permits the delegated individual to affirm that management capability exists to continue to manage the fire for resource benefit. If or when fire conditions or complexity levels escalate, Periodic Fire Assessment signature authority will automatically and immediately revert to the Agency Administrator who made the initial delegation of authority. For a particular fire, the responsible Agency Administrator can make the decision regarding delegation of this authority.

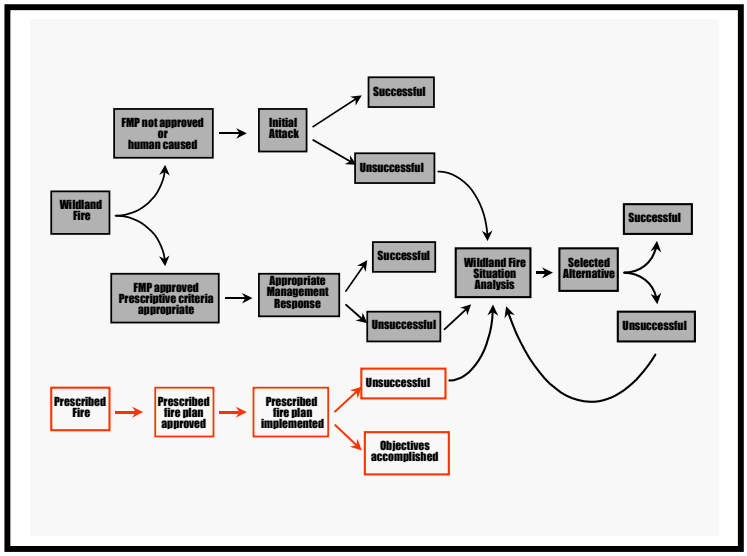
5. Wildland Fire Situation Analysis (WFSA)

Refer to Selecting a New Strategy - Wildland Fire Situation Analysis section later in this document (page 79).



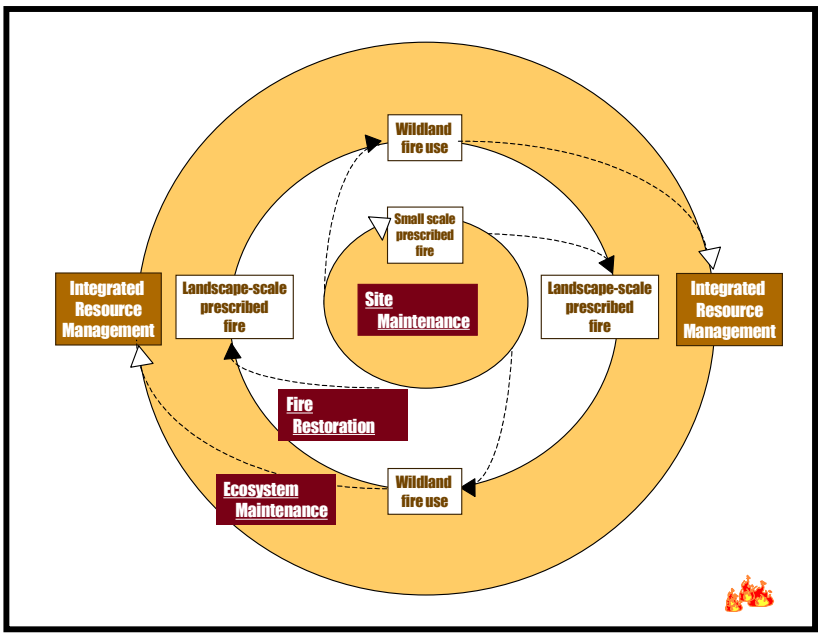
Prescribed Fire Implementation

Prescribed fire includes all fires ignited by management actions to meet specific objectives. Prescribed fire is a well-accepted and established practice utilized by Federal, Tribal, State, and private land management agencies. In order to effectively use prescribed fire, a Fire Management Plan must be completed, and a comprehensive, written, approved Prescribed Fire Plan must exist. The FMP specifies the overall need for the application of fire. The Prescribed Fire Plan describes why the fire is needed, what the fire will accomplish, when conditions will permit achievement of desired effects, how specific fire application will occur, and how the progress and results will be monitored and evaluated.



The NWCG Policy Flowchart shows prescribed fire in the bottom action pathway. If land management plans identify needs that can be accomplished by fire use, Fire Management Plans will carry this need forward and identify locations and objectives. Site specific operational plans, Prescribed Fire Plans, will be prepared, approved, and implemented. Prescribed fire plans might not be fully implemented due to circumstances such as exceeding the prescriptive criteria, adverse fire behavior due to unexpected weather and fire behavior activity, external considerations that direct change to other management alternatives, or movement of the fire outside of the planned burn area. In these cases, a new strategic alternative will be selected and implemented. The WFSA is the tool to analyze alternatives, identify the appropriate management action, and specify necessary actions.

The practice of prescribed burning has historically been applied on a small scale to accomplish site-specific, maintenance objectives. This practice has primarily been confined to single land ownerships or jurisdictions. Wildland fire activity during recent years has increased the awareness of the need to reduce hazardous fuel accumulations.



Immediate treatment is needed to reduce conditions conducive to large-scale, high-intensity fires and to maintain ecosystem health. Fuels treatment, as well as restoration of natural fire frequencies and function, can be achieved through the application of prescribed fire. This application can no longer be limited to small-scale operations. As the above figure shows, fire restoration actions need to include much larger scale prescribed fire applications, such as landscape-scale applications that may involve multiple jurisdictions. Fire restoration may also include managing wildland fire for resource benefits. When the full complement of fire management options is utilized (both small and large scale prescribed fire and wildland fire use), each application type may facilitate others and advance fire restoration objectives. As fire restoration objectives are achieved, managers can move into ecosystem maintenance activities.

Strategic landscape-scale fuels management and fire use planning must be capable of supporting ecosystem maintenance goals through the integration of a variety of treatment methods. Hazardous fuel accumulations may result from resource management programs, fire exclusion, land use activities, insect or disease infestations, etc. Treatment methods include fire, mechanical, chemical, and biological methods to effect reductions in both naturally occurring fuels and hazardous fuel accumulations resulting from resource management, fire exclusion, and land-use activities. A key point illustrated by this figure is that prescribed fire is evolving to include multi-scale applications and represents a programmatic strategy critically important to accomplishment of fire restoration and ecosystem maintenance objectives and the success of integrated resource management programs.

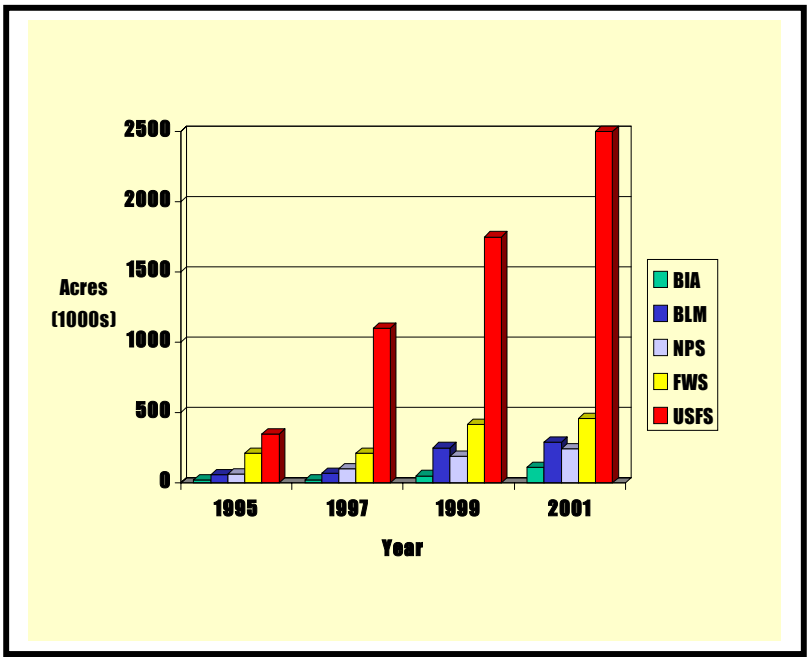
Goals of the wildland fire policy include the following:

- **The use of fire is accepted as an essential process in a fully integrated program to improve forest and rangeland health and to maintain wildland ecosystems.**

- **Wildland fuels are managed at levels consistent with wildland fire protection and resource management objectives identified in land and resource management plans.**

- **Agencies will collectively develop and maintain an organization that can effectively plan and safely implement prescribed fire and fuel management programs.**

Increases in prescribed fire applications are planned by all Federal agencies. Implementation will occur as long as effects on sensitive natural and cultural resources, water quality, air quality, and public health are acceptable. The graph shown on the right provides an indication of the increasing magnitude of the prescribed fire program in the coming years.



A. Prescribed Fire Planning

Prior to prescribed fire implementation, thorough planning must take place. All prescribed fire actions must be developed from resource management objectives carried forward from land management plans. A specific operational plan for each prescribed fire must be completed and approved before ignition can begin.
The local Agency Administrator has final approval authority for all Prescribed Fire Plans, unless special circumstances warrant higher review and concurrence (such as may occur during higher Preparedness Levels or for extremely large, complex projects). Although the Agency Administrator has final approval authority for the Prescribed Fire Plan, the Prescribed Fire Burn Boss has responsibility to make the on-site, tactical, "go-no-go" decision. The Burn Boss ensures that all prescription, staffing, equipment, and other plan specifications are met before, during, and after

the burn. Prescribed fire plans cannot be implemented when prescriptive elements have been exceeded.

Prescribed Fire Plans will vary in their degree of detail. Large-scale applications, particularly those involving multiple days, will require the most specific analysis, and greatest planning detail. Applications rated as low complexity may not require as much detail but each element must be fully considered. Area plans for multiple ignitions under like conditions may be appropriate.

Due to the variety of information required by individual agencies, a standard prescribed fire plan form has not been developed. However, an individual plan is required for all prescribed fire applications. These plans must include the following minimum elements:

- **Description of the Prescribed Fire Area**, including map, using the Maximum Manageable Area concept.

- **Goals and Objectives**: Identification of the purpose of the burn, resource management goals stated in the land management plan, and specific objectives of the fire, stated in measurable terms.

- **Range of acceptable results expected**, expressed in quantifiable terms.

- **Project Assessment**

  - **Complexity:** Identification of the level of complexity of the prescribed fire.

  - **Risk Assessment.** A risk assessment that portrays an indication of the probabilities of success and consequences of failure for this prescribed fire. As a minimum, consider all risk and complexity elements described in the NWCG Complexity Guidebook as well as planned mitigation measures.

- **Prescribed Fire Implementation Actions.**

  - **Pre-burn Considerations, on- and off-site:** Define line to be built, snags to be felled or protected, equipment to be pre-positioned, special features to be protected, warning signs to be placed, weather recording and monitoring needs, etc. Include responsibility and timeframes.

  - **Briefing:** Identify and analyze the safety hazards unique to the individual prescribed fire project and specify personnel safety and emergency procedures. Include requirements for use of personal protective equipment. If aerial ignition devices will be used, include an Aerial Ignition Operation Hazard Analysis and Aviation Operating Plan including firing map and primary/secondary aircraft landing sites.

- **Test Fire:** Provisions for a test fire and recording the results. The test fire must be ignited in a representative location within the prescribed fire area to test key fire behavior characteristics prescribed to meet management objectives. In many applications, analysis of the initial ignitions may provide adequate test fire results. On multiple-day projects, evaluation of current fire behavior may provide a comparative basis for continuing. When in doubt, initiate a separate test fire and evaluate results.

- **Prescribed Fire Prescription:** A prescribed fire prescription containing those key parameters needed to achieve desired results. Prior to ignition, compare prescription elements, both individually and collectively, against local weather forecasts and any other predicted conditions. Any changes to prescriptive parameters must be approved by the same level of authority required for plan approval.

- **Special Conditions, Public and Personnel Safety:** Describe public and personnel safety and emergency procedures. Specify that all personnel who are within the active burn area will have personal protective equipment. Identify safety hazards on the burn, measures taken to reduce those hazards, and EMS personnel on the burn. Specify emergency medical procedures, evacuation routes, and emergency facilities to be used.

- **Burn Organization:** List required management personnel, and positions they will fill. Specify the number of crew personnel that are needed. No less than the organization described in the approved plan shall be used to execute the burn.

- **Ignition Plan:** Describe necessary ignition operation including firing techniques and patterns. Maps showing firing patterns may be included. Necessary resources, personnel qualifications, equipment, and supplies must be listed.

- **Holding Plan:** Provision for holding actions to maintain the prescribed fire within prescription. Firing, holding, patrol and mop up procedures are required. If actions needed to keep the fire within project boundaries exceeds predetermined definition of holding actions, suppression action will be taken. However, when the necessary holding action exceeds the capability of the on-site contingency resources or poses significant threats to life, property, or high value resources, a new strategy is determined through a Wildland Fire Situation Analysis.

- **Cooperation:** Provisions for interagency and intra-agency pre-burn coordination and, where applicable, public involvement and burn day notification to appropriate individuals, agencies and the public.

- **Contingency Plan**: Identification of contingency actions to be taken if the fire exceeds prescription parameters and/or line holding capabilities and cannot be returned to prescription. **Use the Wildland Fire Situation Analysis (WFSA) process to determine appropriate strategy.**

- **Funding:** The source of funding and estimated costs.

- **Smoke Management and Air Quality:** Smoke management requirements. Describe how the project will comply with County, State, Tribal, and Federal air quality regulations. Include modeling outputs and mitigation measures to reduce the impacts of smoke production, if taken.

- **Monitoring:** Provisions for post-burn evaluation to enable resource managers and the Agency Administrator to determine if project objectives have been met. Document burn day conditions, fire behavior, smoke dispersal, first order fire effects, and cost per acre of treatment. Specify the weather information (forecast and observed) required during all phases of the project, the procedures for acquiring it, including when and by whom, and if spot weather and smoke dispersal forecasts need to be requested. In addition to short-term monitoring to document the results of a burn, long-term monitoring is strongly recommended. Permanent photo points, transects, or plots which are revisited in years following a burn will provide information on successional trends which result from the burn. Longer term monitoring may be necessary to determine if objectives were met.

- **Post-burn Activities:** Provisions for post-burn evaluations.

B. Prescribed Fire Documentation

All prescribed fires will be documented with the following information. Agencies and/or administrative units may require additional information.

- Prescribed Fire Plan

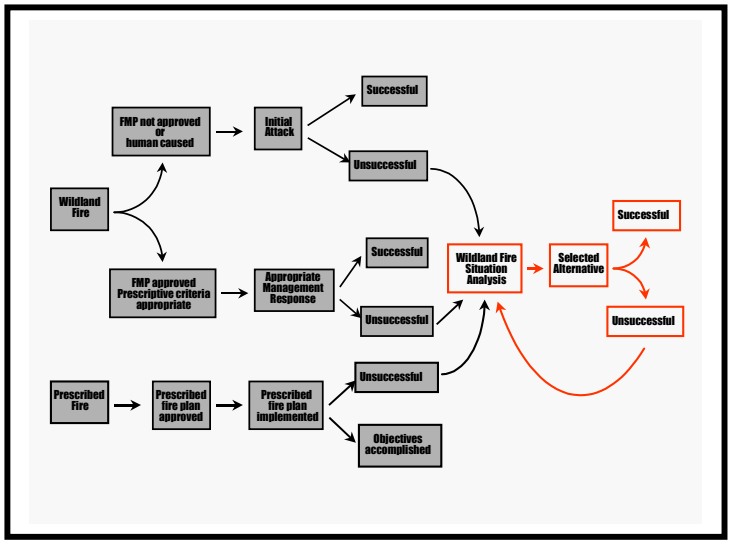
- Map of project area and surrounding area

- Monitoring data, including weather, fire behavior, and fire effects observations
- Weather forecasts, spot, short- and long-term
- Smoke dispersal information
- Agency individual fire occurrence form

Selecting a New Strategy - Wildland Fire Situation Analysis

The Wildland Fire Situation Analysis (WFSA) is a decision-making process in which the Agency Administrator or representative describes the situation, establishes objectives and constraints for the management of the fire, compares multiple strategic wildland fire management alternatives, evaluates the expected effects of the alternatives, selects the preferred alternative, and documents the decision. The format and level of detail required is dependent on the specific fire and its complexity. The key is to document the decision.

Use of the WFSA is integral to successful management of both wildland and prescribed fires. It serves as a contingency to undesirable outcomes by providing a mechanism to quickly and thoroughly analyze new strategic alternatives for any type of fire management activity. If the alternative selected through the WFSA does not accomplish the objectives, the WFSA can be amended or a new WFSA can be completed to develop new alternatives.



The WFSA (refer to the Appendix for complete document and instructions) contains sections which document the process and decision. Components of a WFSA include:

- **WFSA initiation section (Specific fire information and date/time initiated)**
- **WFSA completion/final review (information concerning when the selected alternative was achieved or when a new WFSA was prepared. This provides closure to this particular WFSA. Also includes Agency Administrator signature).**
- **Wildland Fire Situation Analysis (WFSA Information Page)**
- **Objectives and Constraints**
- **Alternatives**
- **Evaluation of Alternatives**
- **Analysis Summary**
- **Decision**
- **Daily Review**
- **Guide for Assessing Fire Complexity (Evaluates fire conditions and provides recommendations concerning management level of fire i.e., Type 1, Type 2, Type 3).**

The WFSA is vital when fire spread and behavior exceed suppression efforts, when management capability is inadequate to accomplish wildland fire use objectives, or when prescribed fires can no longer be implemented in accordance with the approved plan. The WFSA document can be used to compare alternatives reflecting the full range of appropriate management responses and can assess alternatives for realizing protection and/or resource benefits opportunities.

The document used for this purpose under the previous policy was the Escaped Fire Situation Analysis (EFSA) which differed in use from the WFSA in that it analyzed only suppression alternatives. The WFSA can, in selected situations, be used to analyze alternatives that will accomplish resource benefits in combination with protection objectives. The following table (Table 7) provides guidelines to determine how the WFSA may be used for specific circumstances. But, its use is not limited to these circumstances only. Other situations may develop that require a different focus. The key is to use the document to select alternatives most compatible with objectives.

Table 7. Basic situational guidelines for WFSA preparation.

Situation	WFSA considerations	
	Protection	Protection + resource benefits
Human-caused fire = unwanted fire	✔	
Fire exceeds initial attack = unwanted fire	✔	
Fire exceeds extended suppression action in suppression unit = unwanted fire	✔	
Fire exceeds Wildland Fire Implementation Plan in fire use unit, completely breaches MMA = unwanted fire	✔	
Fire exceeds Prescribed fire Plan - unwanted fire	✔	
Fire remains consistent with WFIP and MMA in fire use unit but external concerns result in suppression of fire (may occur totally within the existing MMA)	✔	
Fire exceeds Wildland Fire Implementation Plan in fire use unit, partially breaches MMA = original MMA area still has potential benefits while new fire outside MMA is unwanted		✔
Fire exceeds suppression action in suppression unit and moves into fire use unit, fire in suppression unit is unwanted while fire now in fire use unit has potential benefits		✔

The new fire policy specified as a goal of agency standardization that Federal agencies will develop and use compatible planning and funding processes for all fire management activities. The policy set forth a goal of reducing administrative barriers and creation of administrative procedures to support the accomplishment of interagency fire use programs and objectives. Action items include obtaining the authority for temporary hiring of personnel needed to conduct on-the-ground prescribed fire activities, elimination of internal barriers to transfer and use of funds for prescribed fire on non-Federal lands and among Federal agencies, authorization to provide hazard duty pay for employees exposed to hazards while engaged in fire use activities. The following sections describe recently developed procedures intended to standardize funding, emergency acquisition, personnel regulations, guidelines for reimbursement, and fire reporting guidelines. Since policy implementation is an evolving process; updated information and revised protocols will be provided as they become available.

Accounting Code Definitions

The following table displays the Federal agency accounting codes for the range of options involved in managing wildland and prescribed fires.

Table 8. Federal agency fire management accounting code definitions.

Agency	Fire Classification and Appropriate Accounting Code		
	Suppression action	Wildland fire use	Prescribed fire
BIA	92310[1]	92310[1]	92330
BLM	2821[2]	2821[2]	2823
FWS	9261[3]	9261[3]	9263
NPS	249	248	252
USFS	P	G	T

[1]The same BIA account code will be used for these fires, reporting differences will appear on the Individual Fire Occurrence Form, DI-1202.
[2]The same BLM account code will be used for these fires, reporting differences will appear on the Individual Fire Occurrence Form, DI-1202.
[3]The same FWS account code will be used for these fires, reporting differences will appear on the Individual Fire Occurrence Form, DI-1202.

Emergency Acquisition and Personnel Regulations

The following table (Table 9) lists emergency acquisition and personnel regulations and relationships to wildland and prescribed fire implementation responses.

Table 9. Emergency acquisition and personnel regulations for fire management activities.

Authority	Wildland Fire managed for protection objectives	Wildland fire managed for resource benefits	Prescribed fire
Emergency acquisition authorities	XX	XX	
Emergency equipment rental agreements	XX	XX	XX[1]
National suppression contracts	XX	XX	XX[1]
Spot change of duty	XX	XX	XX
Use of AD Plan to hire emergency workers	XX	XX	XX (Interior agencies)
Hazard duty pay	XX	XX	
Pay for meal periods	Use current rules	Use current rules	
Overtime without prior authorization	XX	XX	
Two days off per work week	Use R&R Regulations	Use R&R Regulations	XX[2]
Rest and recuperation on assignment	XX	XX	
Rest and recuperation upon return to home unit	If authorized by Incident Commander and approved by Immediate Supervisor	If authorized by Incident Commander and approved by Immediate Supervisor	N/A
Pay while in travel status	XX	XX	Emergency travel regulations do not apply, FLSA regulations do apply

[1]Interior agencies will reimburse USFS for use of USFS national contract resources (see pages 83 - 84).

[2]Standard work schedules will remain in effect, two days off per week is not a mandatory requirement and overtime can be authorized for prescribed fire duty on regularly scheduled days off.

Interagency Reimbursement for Support of Fuels Management Activities

Hazardous fuel reduction operations among the five Federal agencies will require cooperation and sharing of resources among the agencies. The general policy of cross-billing between agencies has been determined to be inappropriate and inconsistent with Congressional approval. However, special situations will occur that limit an individual agency's ability to support cooperative activities. The five agency Fire Directors concurred that some unique situations may develop where reimbursement (cross-billing) might be warranted.

Guidelines for Interagency Reimbursement for Support of Fuels Management Activities:

- Fuels management projects are considered regular planned land management activities as opposed to emergency activities; therefore offices have the right to turn down requests from other offices to assist in fuels management activities. Offices should not consider providing personnel and resources at the expense of their own target accomplishments, and no office should be placed in a position of subsidizing another office's fuels management activities.

- Offices in need of assistance in accomplishing their target should try to work out arrangements with neighboring offices where sharing personnel and or resources throughout the year will be offsetting and there will be no need for reimbursement.

- Where assistance cannot be fully offset by sharing personnel and resources between offices, arrangements should be made for the requesting office to provide as many prepaid services as possible, such as travel, lodging, food, and fuel, by covering these items on a blanket purchase order, credit card, or other appropriate means, thereby eliminating the need for reimbursement.

- Offices anticipating the need for assistance in accomplishing workloads should coordinate with their local fire management cooperators early in the planning of

the project and ascertain if their Federal neighbors can assist. If not, consider tribal, state, local, and private sector resources for contract. It is very important not to overlook this source of personnel and resources.

When the above steps have been addressed, and reimbursement between the five Federal agencies is economically efficient and operationally effective, the Task Order process outlined in the master "Interagency Fire Management Agreement" of 1997, section VII, should be followed (see the National Mobilization Guide for the agreement and agency reference numbers). A general guiding philosophy for reimbursement is agency resources (goods, services, and personnel) that are planned and funded as part of an agency's program are not reimbursable items. Due to the costs of establishing and processing reimbursables, it is recommended that the reimbursable amount be at least one thousand dollars before initiating a Task Order.

Examples of items not reimbursable are:

- **All personnel regular planned salary ("base 8")**
- **Minimal amounts of overtime (1-2 hours) on base-8 regular days**
- **Contract/lease availability for activated contracts**
- **Fixed operating rates (FOR)**
- **Incidental support costs associated with personnel and owned, leased or contracted equipment (e.g., fuel, supplies, normal maintenance and repairs, PPE)**
- **Administrative surcharges (disallowed as per the Interagency Agreement)**
- **Payments and hiring for emergency AD Pay Plan workers**
- **Units should plan overtime for dispatch centers and other support entities for services supporting prescribed fire**

Examples of reimbursable items:

- **Equipment and aircraft use rates**
- **Major repairs or equipment replaced**
- **Contract/lease availability for early activation or extensions**
- **National caterer, shower, and type I and II CWN helicopter costs**

- **Cache charges (e.g., shipping, refurbishment, replacement)**
- **Overtime for weekends and holidays**
- **Emergency workers (EFF) where the using office has no Assistant Disbursing Officer (ADO) means to pay crews**

References

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USDA/USDI/NASF. 1994. Fire effects guide. Sponsored by National Wildfire Coordinating Group (NWCG). Publications Management System NFES 2394. National Interagency Fire Center, Boise, ID. 173 p.

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Appendix

The following Appendix contains reproducible forms for use in documenting implementation activities for wildland fires. Included in this section are:

- **WFIP - Stage I: Initial Fire Assessment**
  - **Fire Situation**
  - **Initial GO/NO-GO Decision**
- **WFIP - Stage II: Short-Term Implementation Actions**
  - **Short-Term Fire Behavior Predictions And Risk Assessment**
  - **Short-term Implementation Actions**
  - **Complexity Analysis**
  - **Stage III Need Assessment Chart**
- **WFIP - Stage III: Long-Term Implementation Actions**
- **Periodic Fire Assessment**
  - **Part 1, Re-validation**
  - **Part 2, Stage III Need Assessment**
- Wildland Fire Situation Analysis