



# NATIONAL WILDFIRE COORDINATING GROUP

September 10, 1999

Memorandum

To: Chairs, Geographic Area Coordinating Groups

From: Don Artley, Chair

Subject: Allocation of Resources

Attached for your use is the report "Allocation of Resources -- for Implementation of the Federal Wildland Fire Management Policy." This report was developed by an interagency task force at the request of the NWCG. The intent is to provide a basis for allocation of resources across the full range of fire management activities, so that all agencies can implement the new Federal policy in the same way and at the same rate, using common situational assessment procedures, prioritization criteria, and resource allocation processes. The NWCG reviewed and discussed this report at its June meeting. Subsequently, during a July conference call, we decided to recommend that the report be implemented by all member agencies.

The report has three components. First, it describes a five-step allocation process. Second, it establishes performance goals at each step that provide an indication or measure of a unit's capability to fully implement and sustain the policy. These performance goals are consistent with the policy's guiding principles. Finally, the report lays out an incremental, three-stage implementation model that programmatically prioritizes wildland fire suppression, prescribed fire, and wildland fire use applications as Geographic Areas progress in developing the skills and infrastructure to manage all activities equally, consistently, and concurrently.

We expect the Sub-Geographic local (zone) and Geographic Area MAC Groups to perform a key role in this allocation process. To be effective, the allocation of critical resources must be driven by local, cooperating agency units using accurate fire danger and current fire status information, especially during the initial phases. During these initial phases, appropriate management responses will influence other options across the full range of fire management activities. Further, the process relies on close multi-agency coordination, at all levels, to reconcile those situations where either wildland or prescribed fire demands are expected to exceed available resources.

To most effectively implement this process, we recommend and encourage each GACG to do the following:

1. Hold a meeting of local agency administrators to review the process and ensure a full understanding of roles and responsibilities.
2. Form MAC Groups at the geographic and (particularly) at the sub-geographic levels (if you have not already done so).
3. Study the three stages of implementation and determine which stage best reflects your sub-geographic and/or GACG's present capabilities. Agency administrators should establish feasible but firm time lines for full implementation.

We encourage you to focus your Geographic Area MAC Group on this topic as we collectively continue the important work of safely and cost-effectively implementing our new fire policy. To this end, the NWCG is considering sponsoring a meeting for all GACGs next spring to thoroughly discuss implementation of this new resource allocation process. If you feel strongly one way or the other, please let your NWCG representative know.

/s/ Don Artley

Attachment

cc: NWCG Members

# **Implementation of the Federal Wildland Fire Management Policy**

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## **Allocation of Resources**

- ! Allocation Process**
  - ! Performance Goals**
  - ! Order of Implementation**
- 



**Final Report to NWCG  
June 15, 1998**

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# Executive Summary

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The Federal Wildland Fire Management Policy establishes the conceptual framework to manage wildland fire suppression, wildland fire use, and prescribed fire programs *equally, consistently, and concurrently*.

<p><b>Equally</b> -- No bias; weigh risks and benefits on an equitable basis between activities. <b>Consistently</b> -- A known, standardized, uniform process. <b>Concurrently</b> -- At the same time.</p>
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This report outlines a model for the allocation of fire management resources in support of these activities. It describes a five-step process that focuses on:

1. **Supporting Plans**

*. . . Predicated on objectives reflected in supporting Land Management Plans (LMP)<sup>1</sup>, Fire Management Plans, and Local Operating Plans.*

2. **Situational Assessments**

*. . . Enabling Multi-Agency Coordination (MAC) Groups, at local and Geographic levels, to develop staffing levels for workload, in context of severity projections.*

3. **Prioritization Criteria**

*. . . Established by Agency Administrators from LMP objectives and used by MACs -- at each organizational level -- to prioritize wildland fire suppression, wildland fire use, and prescribed fire activities.*

4. **Allocation Protocols**

*. . . Establishing the mechanisms to allocate and re-allocate fire management resources for the full range of fire management activities across administrative boundaries.*

5. **Evaluation and Monitoring**

*. . . Outlining a process to evaluate plans, assessments, prioritization criteria, and protocols to refine allocation decisions.*

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<sup>1</sup>Land management agencies have various names for this plan, whose general purpose is to describe land use or resource management objectives for the unit.

At each of these five steps, the report describes important performance goals that serve to measure a unit's capability to successfully implement the Federal Wildland Fire Management Policy. Sophisticated decision support tools and the skills to use them will be essential elements in managing the full range of fire management activities. In addition, the report describes stages that outline an incremental progression toward successful policy implementation as performance capabilities become established.

The approach described in this report is ground-based and proactive, rather than reactive. It signals stronger involvement from Agency Administrators, fire program managers, and new roles and responsibilities for MAC Groups at all levels. It requires strengthened relationships between different levels of the organization, cooperation, and regulatory agencies, including State Air Quality Boards. It relies on field-level input and a high level of performance at the local level, where an appropriate management response in one place will often affect options for other fire management activities elsewhere in the Geographic Area.

Familiarity with the Federal Wildland Fire Policy (Appendix A) and a common understanding of its principles is fundamental to coordinated allocation decisions. The allocation process described in this report is responsive to the policy's Guiding Principles (Appendix B) and provides the basis for consistent operations, improved cooperation, and more effective integration across wildland fire management agencies.

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## Introduction and Objectives

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***In concert with a total, balanced Wildland Fire Management Policy, the goals and actions presented in this report establish the means to manage wildland fire programs equally, consistently, and concurrently.***

This report addresses the implementation of the new Federal Wildland Fire Management Policy (December 1995). It specifically focuses on these three components of resource allocation:

- ! Allocation Process
- ! Performance Goals
- ! Order of Implementation

The Federal Wildland Fire Management Policy is predicated on principles that:

- ! Identify and resolve institutional barriers that may encumber full policy implementation.
- ! Identify and resolve strategic considerations in reconciling socio-political concerns that may impede full policy implementation.



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# Allocation of Resources

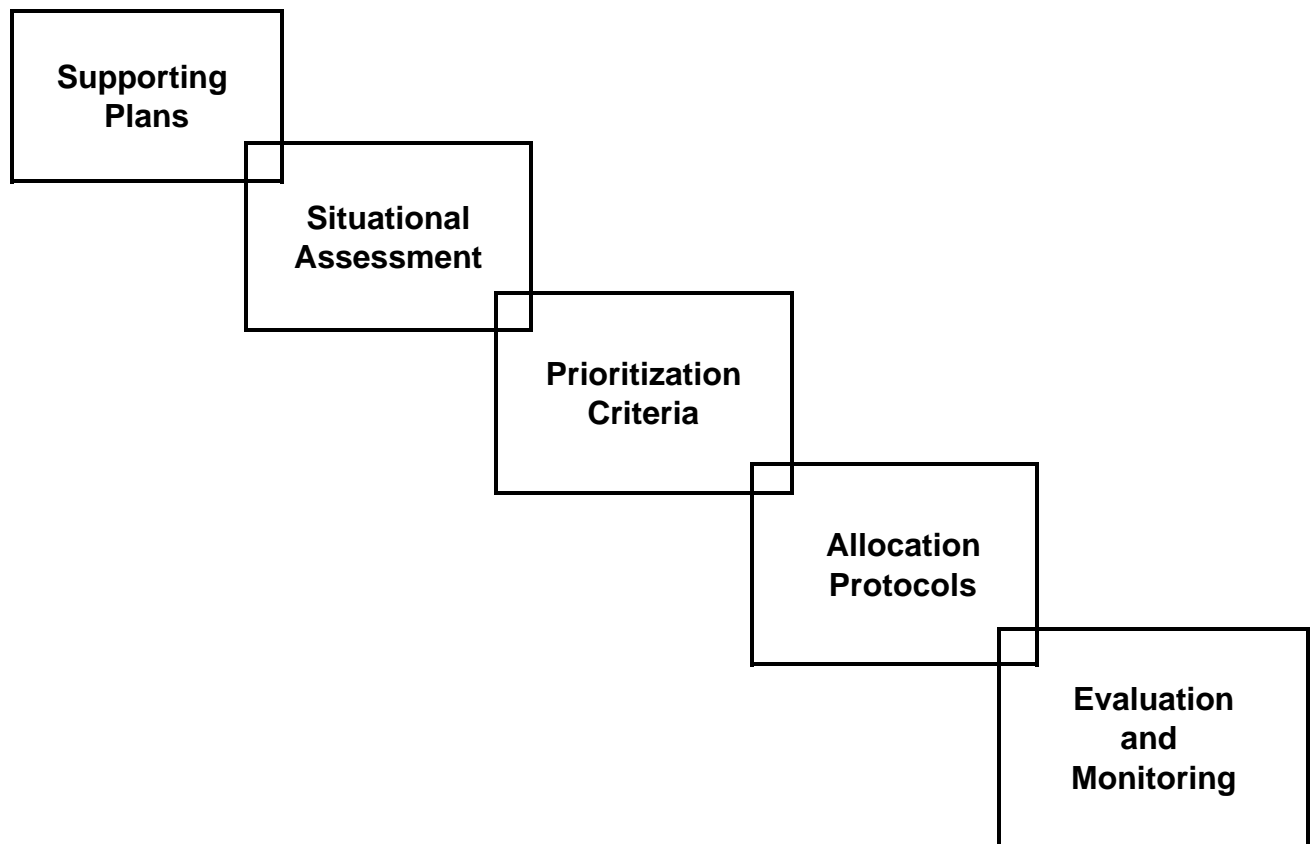
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## I. Allocation Process

A five-step allocation process -- that can be used at all organizational levels -- is displayed as the recommended basis for allocation decisions across the full range of fire management activities (Figure 1).

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**Figure 1. A Process for the Allocation of Resources**



## Supporting Plans

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### SUPPORTING PLANS

-- Land Management Plans/Project Decisions

--Fire Management Plans/Staffing Plans; Drawdown Plans

--Local Operating Plans

Land Management Plans are the foundation for allocation decisions. The goals, objectives, and standards established in these plans should reflect critical measures of risk and benefit. Generally, the more that resource objectives and land management practices are consistent with the dynamics of an area's fire regimes, the less risk that unacceptable resource loss will occur.

Conversely, objectives and practices identified as inconsistent with fire regime dynamics will likely carry higher risks from a fire protection or fire use standpoint. For example, resource objectives that are based upon managing for late seral stand conditions. The historic range of variability and departure from it are a strong indicator of potential risk.

The Land Management Plan amendment process provides an opportunity to revise high-risk resource objectives and standards. In the absence of revision, Fire Management Plans should reflect those areas where high-risk vegetative conditions will represent high exposure to publics, firefighters, and prescribed fire practitioners.

Fire Management Plans, updated annually, describe implementation of Land Management Plan goals.

Local operating plans, tiered from approved Master Agreements, describe the roles and expectations among cooperators. They also lay out protection responsibilities and operating procedures, including cost apportionment, across jurisdictions.

## Situational Assessment

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### SITUATIONAL ASSESSMENT

--Predicted Severity

--Workforce Capability

--Expected Workload

Four factors are critical in assessing the manager's ability to execute objectives:

- ! Availability of the fire management resource pool;
- ! Capability of the fire management resource pool;
- ! Expected workload, across the full range of fire management activities, and other natural resource management demands that will influence fire-related accomplishments; and
- ! Predicted severity as an indication of wildland fire risk, and wildland or prescribed fire opportunity.

Severity is the most sensitive of these factors and must be continually reassessed. The use of fire danger becomes the basis for interpreting variance from normal or average patterns. The stronger the focus on forecasting, the more time becomes available to plan, position and respond to threats or opportunities. (Reference: the *Pacific Northwest Preparedness Plan*.) When fire danger trends are placed in context of the temperature/moisture gradient (using habitat type classifications or other ecological classification systems), they provide important insights to potential wildland fire threats or prescribed fire use opportunities. (Reference: *Fire Dynamics in the Northern Rocky Mountain Stand Types*, Williams and Rothermel, 1992.)

Data bases that archive fire danger and record observed fire behavior relationships can be important in recognizing and understanding the thresholds that distinguish threats from opportunities. Local tracking and Geographic Area summaries of these relationships will become an essential component in the assessment process. Fire use opportunities and fire protection demands, while complementary between some units and Geographic Areas, may be competitive between other units. Trends and patterns of prescribed fire activity across Geographic Areas are changing; the number of acres reflecting this activity may be different today than in the past.

Although large fire occurrence does not necessarily equate to a large commitment of fire management resources, the graphic in Figure 2 indicates a pattern in seasonal demands and the possible opportunities to coordinate suppression, wildland fire use, and prescribed fire activities across Geographic Areas. (Figure 2. Fifteen-Year Fire Suppression Summary of Federal Wildfires [500 acres and larger] by Time of Year and Geographic Area.)

Staffing assessments are becoming more important as the number of employees available to support fire activities continues to decline. Capability assessments, where skill shortages can be identified, are becoming equally important. Assessments should be conducted early in the process. The earlier that shortages are known, the wider the options become in mitigating them. Capability assessments also allow managers to build training programs well in advance of critical needs. These assessments can enable managers to prepare for mobilization needs within agency limits, or prepare for contract support when agency capabilities are exceeded. Management controls -- in the form of supervisory span of control and oversight -- also serve as an important measure of a unit's overall workload capacity.

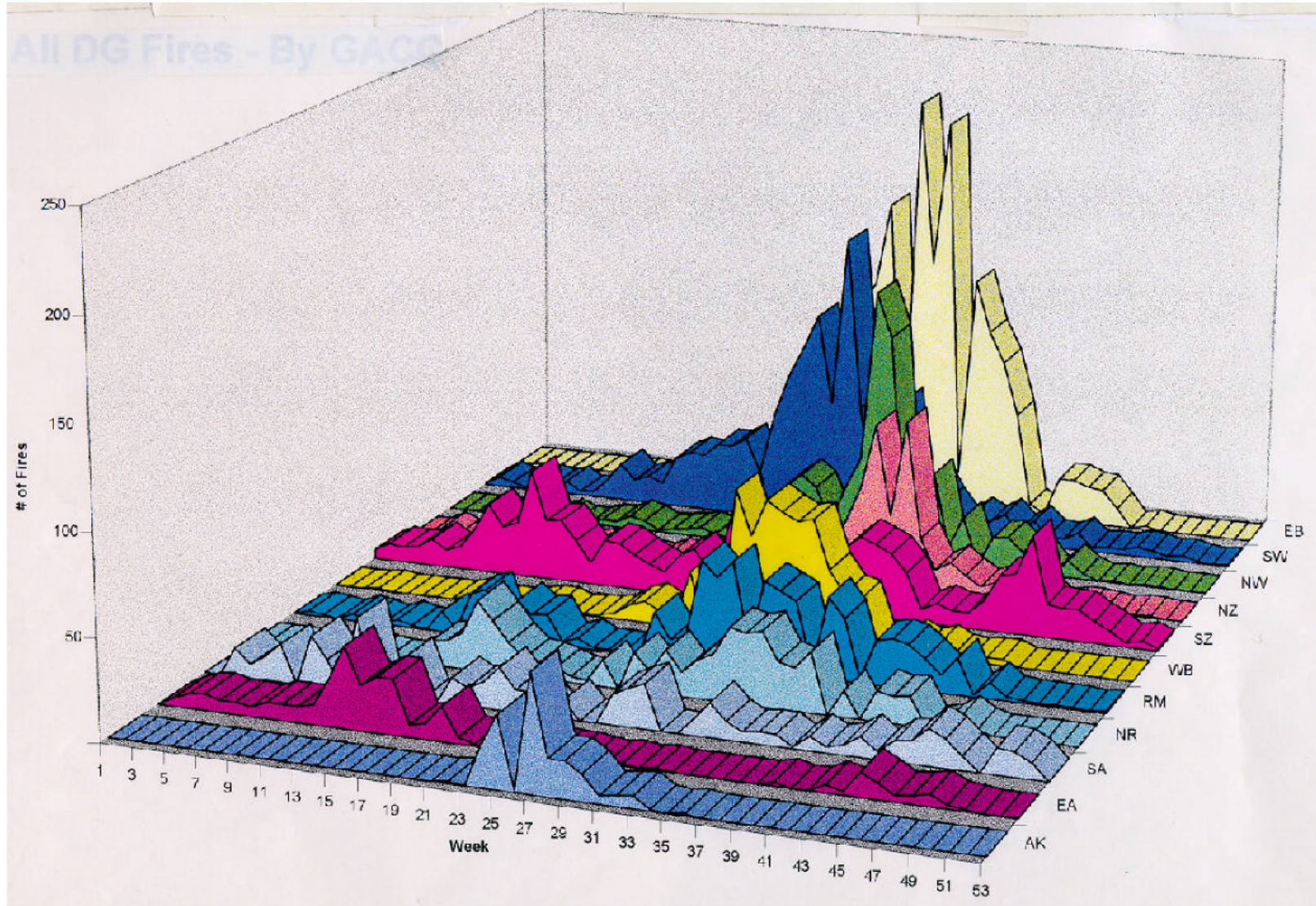
Tracking and anticipating fire danger trends can help managers assess workload demands in preparation for fire management resource needs and placement. Fire planning models<sup>2</sup> provide the means to prepare for average initial attack needs. Prescribed fire plans are developed with adequate lead-time for assessing fire management resource needs. Large fire mobilization and unexpected wildland fire use

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<sup>2</sup>Federal agencies use the following models: National Fire Management Analysis System, USFS; FIREPRO, NPS; Fire Management Activity Plan, BLM; National Fire Management Preparedness Analysis, BIA; FireBase, FWS. Other models also exist at State levels.

needs, however, are less certain and can cause a rapid decline in personnel numbers, particularly when multiple demands for fire management resources occur simultaneously. Predetermined drawdown levels at the local level indicate the need for reinforcement. These staffing drawdown standards are established at the preparedness stage to avoid compromising safety. Pre-identifying these levels in preparedness planning is an important element of situational assessment. As fire management resources are depleted, the rate of decline provides important information to coordinators on the need to pre-position or re-allocate back-up resources before staffing drops below safe, effective levels.

**Figure 2. Fifteen-Year Fire Suppression Summary (1980 - 1995) of Federal Wildfires (500 Acres and Larger) by Time of Year and Geographic Area**



## Prioritization Criteria

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<b>PRIORITIZATION CRITERIA</b>
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-- Risk Factors: Probability of Success; Consequence of Failure
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--Cost/Benefit
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Ultimately, prioritization criteria are developed against two main considerations in the contexts of both probability of success and consequence of failure. Both considerations are evaluated in short- and long-term contexts, understanding that risk avoidance compounds long-term consequence, particularly in fire-dependent systems.

! **Risk**

- Firefighter/public safety
- Values to be protected

! **Cost/Benefit**

- Economic
- Social
- Biological
- Safety

Uncertain outcomes surround fire operations in the wildland environment. However, at a basic level, several factors often predestine outcomes. These factors influence probabilities of success and must be included in the prioritization process. A thorough treatment of risk assessment, risk management, and risk mitigation is described in Chapter Four of the *Wildland and Prescribed Fire Management Policy -- Implementation Procedures Reference Guide*, Bunnell and Zimmerman, 1998.

Risk assessments are dynamic. They change in response to changing conditions. Agency Administrators must remain cognizant of present and projected fire danger as they assess risk. In some fuel types, the initial decision is critical. Under these circumstances, especially with stand replacement fire regimes, decisions are often irretrievable and have the potential to result in enormous adverse economic, social, biological, and safety consequences. In other fuel types, initial decisions must be reversed, disrupting allocation plans and priorities elsewhere. Understanding fire regime dynamics, basing decisions on credible information, and remaining proactively engaged through periods of change, is key in the decision process for Agency Administrators, fire program managers, and MACS at all levels.

When the value of protection or treatment for expected economic, social, biological, and safety benefits exceeds the risk of not protecting or treating, the decision to commit fire management resources is relatively simple. Less straightforward are those situations in which short-term risks increase as benefits diminish (or become longer term). Under these circumstances, prioritization criteria assume greater importance. Criteria need to be based on analysis that focuses on net expected benefits (see Appendix C).

The Land Management Plan and environmental assessments (at the appropriate level) remain the formal documents in which tradeoffs and decisions are framed in compliance with National Environmental Policy Act (NEPA) requirements. The clarity of land management objectives becomes more important as tradeoffs increase.

## **Allocation Protocols**

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**ALLOCATION  
PROTOCOLS**

-- *Coordination*

-- Transition from  
decentralized to  
centralized  
control of  
resources

-- Dis-allocation  
and re-allocation  
procedures

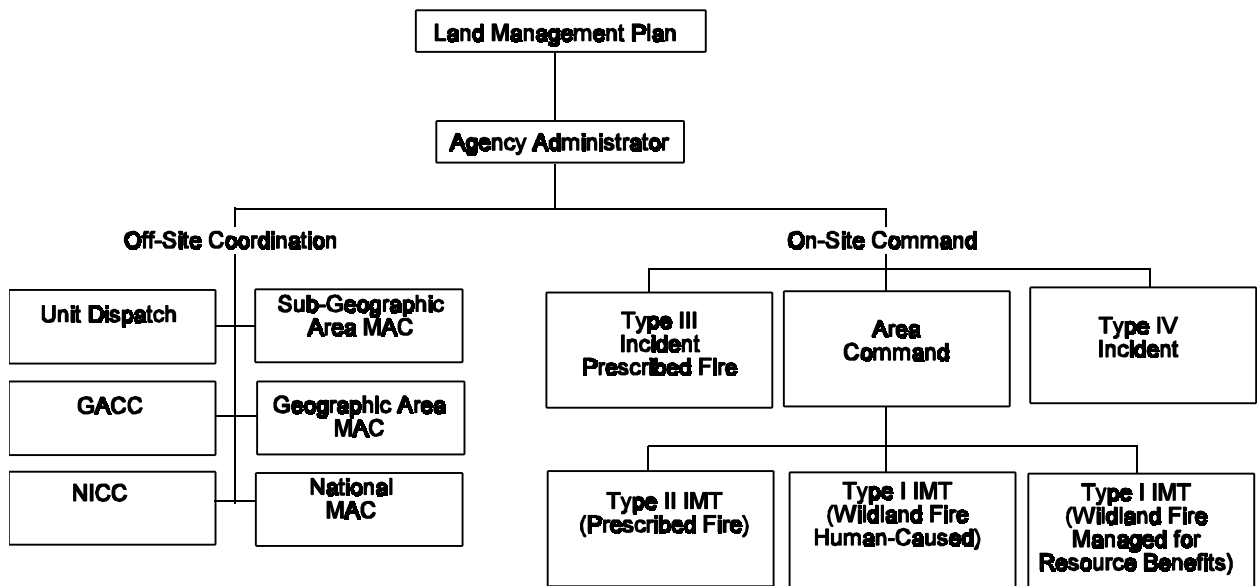
This allocation process uses the coordination model currently in place, but expands its application to include management across the full range of fire activities (Figure 3).

Generally, as competition for available fire management resources increases, the more coordination is required between local units, Sub-Geographic, Geographic Area, and National MACs. The ability to coordinate effectively as demands increase is a key performance indicator in the allocation process.

The process outlined here encourages an earlier, more proactive approach -- initiated at the local level -- to better position a capable fire management resource pool ahead of anticipated workload needs.

Pre-identified preparedness levels and projected workload, in the context of forecast dangers or opportunities, may indicate the need to transition from decentralized control to centralized control of fire management resources. Generally, the more intense the competition for remaining fire management resources becomes, the more centralized the control of those resources should become. Local Operating Plans, preparedness plans, and mobilization plans must address procedural roles and responsibilities for Agency Administrators, fire program managers, Coordinators, and Incident/Area Commanders at different fire danger levels (for both the threat associated with wildland fire suppression, as well as the opportunity associated with wildland fire use).

**Figure 3. Example of Organizational Relationships between Agency Administrator and Coordination/Command Functions**





As competition increases or is forecasted to increase - for either wildland fire protection needs or prescribed fire opportunities - the more disciplined the prioritization process should become.

Our ability to recognize and respond to those situations in which we are committing fire management resources beyond their effectiveness is critical to the mobilization, demobilization, or reassignment of resources in the allocation process.

## **Evaluation and Monitoring**

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**EVALUATION  
and  
MONITORING**

-- **Programmatic  
Review:** Risk;  
Cost/Benefit

-- **Supporting  
Plans**

-- **Prioritization  
Criteria**

-- **Allocation  
Protocols**

Evaluation and monitoring provide the means to strengthen the entire allocation process. The objectives identified in supporting plans, the factors considered in situational assessments, the criteria applied in prioritization, and the ways in which allocation occurs, may each be modified on the basis of findings that result from evaluation and monitoring.

In a larger sense, evaluation and monitoring also enable a programmatic review of accomplishments.

Ultimately, on-the-ground results must be compared against the policy's intent to:

- ! Reduce threats to firefighter and public safety.
- ! Reduce threats to public and private resource values.
- ! Restore wildland fire as an important ecological process.

## II. Performance Goals

Standards are established to benchmark implementation progress -- and to ensure this progress is maintained. They also infer a measure of capability.

At each of the five steps:

- ! Supporting Plans
- ! Situational Assessment
- ! Prioritization Criteria
- ! Evaluation and Monitoring

The following performance goals describe some of the standards that indicate a unit's capability to safely and effectively manage wildland fire suppression, wildland fire use, and prescribed fire progress equally, consistently, and concurrently.

These goals are consistent with the Guiding Principles outlined in the Federal Wildland Fire Management Policy (Appendix B).

### Supporting Plans

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### Performance Goals

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- ! Land Management Plans reflect the role of fire.
- ! Resource objectives, management prescriptions, and treatment schedules are compatible with the dynamics of each fire regime.
- ! Risks and consequences of various management options, including "No Action," are fully displayed in the Land Management Plans.
- ! Best Management Practices, across agency boundaries, are coordinated and consistent.
- ! The full range of fire management activities (prevention, wildland fire suppression, wildland fire use, and prescribed fire) are complementary and prescribed to achieve resource objectives that are ecologically appropriate, as well as economically viable and socially feasible.

**Situational  
Assessment**

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**Performance Goals**

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- ! Reliable information is gathered and used to describe the wildland fire environment now and in the future.
- ! Fire danger thresholds are consistently used to distinguish prescribed fire and wildland fire use opportunities from those levels indicating a potential for wildland fire threats.
- ! Staffing skills are in place to gather, interpret, and apply the data necessary to make consistently credible decisions.
- ! The location, status, and expected availability of fire management resources is known.
- ! Expected needs are forecast and contingencies are prepared.

**Prioritization  
Criteria**

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**Performance Goals**

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- ! Agency Administrators, using LMP objectives, are engaged in establishing and reconciling prioritization criteria across agency boundaries.
- ! Common understanding and the acceptance of different values and differing mission objectives exist on an interagency basis.
- ! The prioritization process uniformly applied across adjoining units and Geographic Areas.
- ! Prioritization decisions emphasize firefighter and public safety, and optimize net expected economic, social, and ecological values.

**Allocation  
Protocols**

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**Performance Goals**

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- ! Allocation decisions are based on accurate situational assessments and follow established prioritization criteria.
- ! Allocation decisions are dynamic; they anticipate change and remain responsive as conditions change.
- ! Clearly defined protocols distinguish the transition in decision authority from one organizational level to another as needs intensify and fire management resources become more scarce.

**Evaluation  
and  
Monitoring**

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**Performance Goals**

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- ! Decisions are routinely evaluated and constructively critiqued in after-action assessments.
- ! Decisions are corrected when needed.
- ! Decision criteria and decision-making processes are iterative, evolving in response to new information and better tools.
- ! High-risk, high-consequence decisions have the benefit of analytical assessments, to the full extent possible.
- ! Multi-agency Coordination Groups, at all levels, are learning organizations.

### III. Order of Implementation

The allocation process' rate of implementation is based on the performance capabilities at each step within the five-step process (described in preceding section).

- ! Supporting Plans
- ! Situational Assessment
- ! Prioritization Criteria
- ! Allocation Protocols
- ! Evaluation and Monitoring

The equal, consistent, and concurrent use of fire activities across the full range of fire management options requires that each of the five steps be fully developed, in place, and operational.

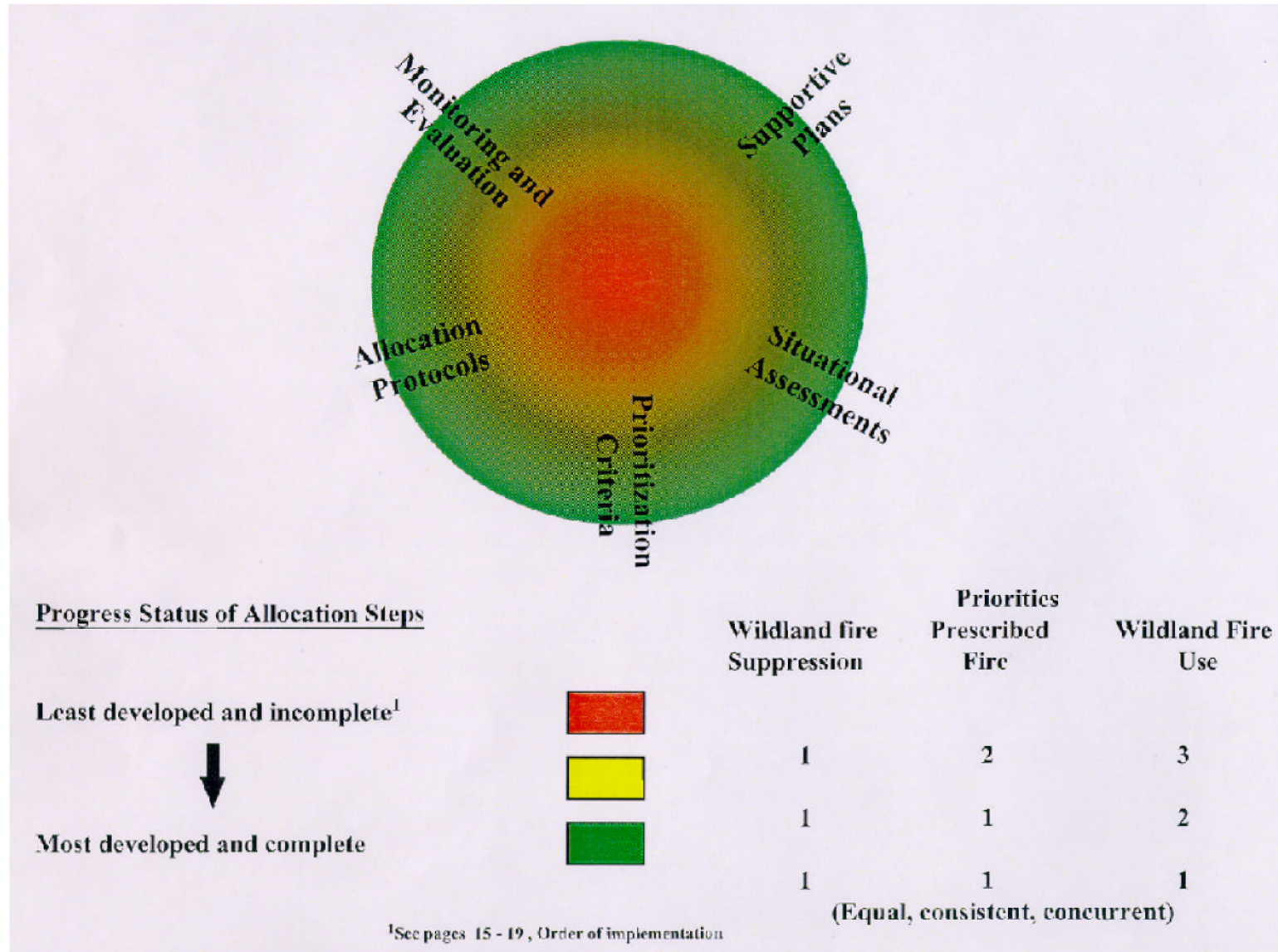
The following three stages reflect a unit's capability to fully implement the policy, based on its performance at each of the five steps (described in preceding section). In addition, the stages outline performance to methodologically progress toward full implementation (as described in Stage III on page 18). This rate of implementation also depends on an understanding of the roles, responsibilities, and expectations of Agency Administrators, fire program managers, MAC Groups, and Coordinators. The separation between stages is not absolute (Figure 4). *Agency Administrators should establish timelines for reaching the goals in each of the allocation steps.*

#### **Stage I**

At this stage, supporting plans are not always adequate. Situational assessments are not usually conducted. Prioritization criteria are not well established, nor consistently used. Allocation protocols are not always clearly understood. Evaluation mechanisms are not yet in place, and monitoring is not routine. No coordinated smoke management program exists to plan for and address air quality effects of fire management. The working relationships with State/local air quality regulators are weak or non-existent.

At Stage I, Agency Administrators (or their designees) are not always engaged in the prioritization process, nor do they oversee allocation decisions. MAC Groups are not performing effectively outside of agency interests. Sub-Geographic MACs generally make allocation decisions that place local interests ahead of geographic interests.

Figure 4. Relationship of Implementation Priorities to Performance within Allocation Steps



At this stage, until performance goals become strengthened, MAC Groups priorities must be arranged in the following order:

**Priority #1.**

**Wildland Fire Suppression** - Priorities are based on existing mobilization criteria (life, property-resources, based on values to be protected).

**Priority #2.**

**Prescribed Fire Use** - Project priorities are based on net expected benefit (economic, social, biological, safety).

**Priority #3.**

**Wildland Fire Use** - Priorities are based on an assessment of resource benefits, recognizing firefighter/public safety.

At Stage I, wildland fire suppression demands must be generally satisfied before prescribed fire projects can proceed. Demands for prescribed fire needs, in turn, must also be generally satisfied before wildland fire use opportunities can be considered.

**Stage II**

At this stage, supporting plans are in place, although not yet complete nor fully coordinated. Situational assessments are conducted, but the information is not fully applied. Prioritization criteria are established for each fire management option, but not yet fully coordinated between agencies. Allocation protocols are outlined, but are not always consistently observed. Evaluation mechanisms and criteria are established, but not always routinely conducted on an interagency basis.

Supporting criteria plans address air quality effects of fire management, but do not have criteria to evaluate against (e.g., location of known air quality sensitive areas; duration, concentration or frequency of smoke event). Further, the information is not part of a State's Implementation Plan or other planning documents. A smoke management program exists but is internal to an agency, is seasonal, or has other limitations. There is a working relationship with the State and local air quality regulators, but they are not fully engaged or aware of the implications of operational decisions.

At Stage II, until the five steps are further strengthened, MAC Group priorities must be arranged in the following order:

**Priority #1.**

**Wildland Fire Suppression and Prescribed Fire Use** - Priorities are based on clearly defined criteria, recognizing values to be protected.

## **Priority #2.**

**Wildland Fire Use** - Priorities are based on an assessment of resource benefits, recognizing firefighter/public safety.

At Stage II, wildland fire suppression needs and prescribed fire use opportunities are managed equally, consistently, and concurrently. All suppression needs and prescribed fire opportunities are generally satisfied before wildland fire use opportunities can be pursued.

## **Stage III**

At this stage, all of the performance goals are generally in place. All of the Guiding Principles (Appendix B) are widely embraced and routinely practiced at most levels of the organization and across all agency boundaries. The roles, responsibilities, and expectations among Agency Administrators, fire program managers, and MAC Groups - at all levels of the organization - are understood and observed. Cooperators and the public understand and support prioritization criteria and fire management decisions.

Supporting plans fully address air quality effects of fire management and the information is incorporated into a State Implementation Plan or other planning documents. A fully coordinated, interagency smoke management program is in place during the entire burning year. State and local air quality regulators are fully engaged and aware of the implications of operational decisions - they are a full partner in the operations of a smoke management program.

At Stage III, wildland fire suppression, wildland fire use, and prescribed fire activities are managed equally, consistently, and concurrently. Fire management activities, across the full spectrum of options, complement one another and are planned and implemented to achieve policy objectives.

- ! Reduce threats to firefighter and public safety.
- ! Reduce threats to public and private resource values.
- ! Restore wildland fire as an important ecological process.

Prioritization decisions emphasize firefighter and public safety. They optimize social, economic and ecological values. Allocation decisions are based on the need to address immediate threats, as well as on expected longer-term benefits. Allocation decisions are also made that place organizational objectives and the interests of the Geographic Area ahead of local interests.

Managers throughout the wildland fire management program mobilize fire management resources for opportunities, much like the organization has traditionally mobilized for wildfire threats.



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## Summary

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The Federal Wildland Fire Management Policy represents a significant transformation in thought and practice. The policy recognizes the ecological role of wildland fire in sustaining safe, healthy, productive, and resilient fire-dependent ecosystems.

This report outlines a five-step process that allocates fire management resources across the full range of fire management activities. While it utilizes familiar procedures and models, it represents a departure from reaction to more proactive coordination.

The report relies heavily on the capabilities of Agency Administrators, fire program managers, and Multi-Agency Coordination Groups at all levels, but particularly at the local level. The approach is ground-based. It requires early planning and close scrutiny of trends in the:

- ! Workforce (fire management resource pool)
- ! Workload (wildland fire suppression, wildland fire use, prescribed fire)
- ! Fire danger (threats and opportunities)

The order of implementation, described in three stages, allows for an incremental progression toward full policy accomplishment, based on capabilities. *Agency Administrators should establish expectations and timelines for reaching these stages.*

While this is a preliminary report intended to begin implementation of the Federal Wildland Fire Policy, another more strategic examination of fire management resource pool configurations and management controls should follow to sustain the policy's implementation over time. Additionally, more work needs to be accomplished in public relations and education, both internal and external to the agencies.

Before allocation decisions are made, it is essential that administrators, managers, and supervisors all commit to a working familiarity with the Federal Wildland Fire Management Policy, its decision flow chart, and its terminology. A commonly understood, consistently applied approach forms the basis of this policy's Guiding Principles.

Finally, while this report centers on progress, fundamentally smart prioritization and allocation decisions will rest largely on individual performance, agency culture, and public support.

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## **Task Group Members**

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### **The Resource Allocation Task Group for the Federal Wildland Fire Management Policy Implementation**

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#### **Clark Seely**

Protection from Fire Program Director, Oregon Department of Forestry

#### **Linda Wright**

Leadership Facilitator, National Park Service

## References

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- ! Federal Wildland Fire Management Policy Report; December 1995
- ! Federal Wildland Fire Management Policy Implementation Action Plan Report; May 1996
- ! Wildland and Prescribed Fire Management Policy - Implementation Procedures Reference Guide; May 1998
- ! Pacific Northwest Preparedness Plans
- ! Fire Dynamics in Northern Rocky Mountain Stand Types; June 1992

## Appendices

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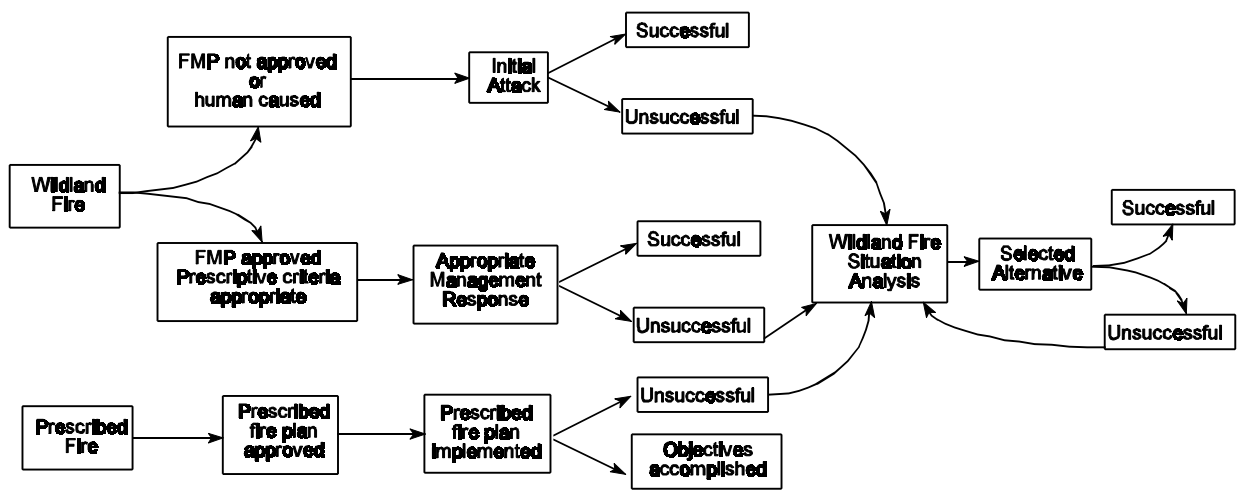
Appendix A. Federal Wildland Fire Management Decision Flow Chart

Appendix B. Guiding Principles Federal Wildland Fire Policy, Federal Wildland Fire Management Review Report (December 1995)

Appendix C. The Net Present Value to the Government

# Appendix A. Federal Wildland Fire Management Decision Flow Chart

## National Wildfire Coordinating Group Policy Framework and Flowchart



## Appendix B. Federal Wildland Fire Management Guiding Principles and Policies

### GUIDING PRINCIPLES

- A. *Firefighter and public safety is the first priority in every fire management activity.*
- B. *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 condition of various public lands.***
- C. *Fire management plans, programs, and activities support land and resource management plans and their implementation.*
- D. *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.***
- E. *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 efficiencies. As part of this process, 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.***
- F. *Fire management plans and activities are based upon the best available science. **Knowledge and experience are developed among all wildland fire management agencies. An active fireresearch program, combined with interagency collaboration, provides the means to make this available to all fire managers.***

- G. *Fire management plans and activities incorporate public health and environmental quality considerations.*
- H. *Federal, State, Tribal, 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 Federal agencies and State, local, and private entities results in a mobile fire management workforce which is available to the full range of public needs.***
- I. *Standardization of policies and procedures among Federal agencies is an ongoing objective. **Consistency of plans and operations provides the fundamental platform upon which Federal agencies can cooperate and integrate fire activities across agency boundaries and provide leadership for cooperation with State and local fire management organizations.***

## **Appendix C. The Net Present Value (NPV) to the Government**

**At full implementation of Stage III (see Implementation section under Allocation of Resources), all decisions would be based upon maximizing the commodity and/or amenity value to the land owner, the resource, and/or the Government. The concept of discounting values that occur in the future, or calculating Net Present Value (NVP), is a method of comparing different projects with different streams of values.**

**The economic case for NPV is elementary: Given a flow of cash over time, you would prefer to invest in the one that makes you the most money. People value an amount of money more now than the same amount in the future. That is, most people would rather have \$100 today than \$100 in ten years. In other words, the NPV of \$100 is greater today than the NPV of \$100 ten years from now.**

**The NPV is a function of two things, the interest rate at which you can invest your \$100 and the length of time. In this case, the NPV of \$100 in ten years at 5.0% is \$61.39. Therefore, having \$61.39 now, or \$100 in ten years, is equivalent to you if you value money at 5.0% per annum.**

**What happens if the cash flows over the ten years vary for different projects (the choices we are faced with which are demanding resource allocation)?**

**Consider the following table, where Project 1 is a wildfire suppression project and Project 2 is a wildland fire use project. Initially, you have to spend a lot of money on Project 1 but you save a lot at Year 3 (wildlife habitat preserved, for example), and have to incur costs in Years 5 and 8 to deal with fuels problems. In Project 2 you don't spend much, but you gain a benefit stream in the future years, and at Year 10 you have to maintain your investment with a re-entry of prescribed fire.**

<b>Project Comparisons</b>		
	<b>Project 1</b>	<b>Project 2</b>
<b>Year</b>	<b>Amount</b>	<b>Amount</b>
<b>1</b>	<b>(\$1,000.00)</b>	<b>(\$100.00)</b>
<b>2</b>		
<b>3</b>	<b>\$2,000.00</b>	<b>\$500.00</b>
<b>4</b>		
<b>5</b>	<b>(\$100.00)</b>	<b>\$200.00</b>
<b>6</b>		
<b>7</b>		<b>\$50.00</b>
<b>8</b>	<b>(\$100.00)</b>	
<b>9</b>		<b>\$50.00</b>
<b>10</b>		<b>(\$20.00)</b>
<b>NPV (5.0%)</b>	<b>\$629.26</b>	<b>\$548.87</b>