Bureau of Land Management – Alaska

Wildland Fire Management Plan

September 2005

Bureau of Land Management-Alaska
Wildland Fire Management Plan

September 2005

This plan was distributed for review to the National Office (FA600), the Alaska State Office (AK930), the BLM-Alaska Field Offices, the Alaska Fire Service and members of the Alaska Wildland Fire Coordinating Group. Comments received were incorporated as appropriate.

Recommended By:

/s/ Scott Billing	**Sept. 20, 2005**
Scott Billing **Manager, Alaska Fire Service**	**Date**

Approved by:

/s/ Julia S. Dougan (Acting)	**Sept. 22, 2005**
Henri Bisson **State Director, Alaska**	**Date**

Bureau of Land Management-Alaska
Wildland Fire Management Plan
Table of Contents

I. Introduction

A. Purpose

This Fire Management Plan (FMP)[1] outlines the direction for wildland fire management on lands administered by the Bureau of Land Management in Alaska. It is based on elements of the Alaska Interagency Wildland Fire Management Plan 1998 (AIWFMP) and is formatted in accordance with the federal FMP template.[2] At this time, the Alaska Wildland Fire Coordinating Group (AWFCG) is devising a process for analyzing and updating of the AIWFMP. The AWFCG update project will require the full participation of all the interagency partners and is expected to take a year or more. The impetus to review and update the AIWFMP was prompted by public comments from the 2004 fire season, various fire season reviews and reports, agencies recommendations, the desire to clarify guidelines, policies and operational direction, and national requirements. This BLM FMP responds to these items as they affect BLM-managed lands.

This FMP incorporates the policies and standards outlined in the 2001 Review and Update[3] of the 1995 Federal Wildland Fire Management Policy which requires that every area with burnable vegetation must have an approved FMP. The BLM in Alaska currently manages approximately 85.5 million acres of which 65 million are considered burnable.

In Alaska, the first set of interagency fire management plans were completed with the oversight of the Alaska Interagency Fire Management Council between 1980 and 1988. They provided a coordinated, cost effective, landscape scale approach to fire management. Each plan contains a description of the local environmental and socioeconomic conditions, natural and cultural resources, fire history and behavior, and local subsistence activities. The plans also provided a consistent interagency approach to operational procedures and the identification and prioritization of values-to-be-protected. The AIWFMP 1998 consolidated the common operational elements of those plans and now provides the land managers and fire suppression organizations unified guidance and direction in a single document.

---

[1] FMPs are strategic plans that define a program to manage wildland and prescribed fires based on the area's approved land management plan. FMPs must provide for firefighter and public safety, include fire management strategies, tactics, and alternatives; address values to be protected and public health issues; and be consistent with resource management objectives, activities of the area, and environmental laws and regulations.

[2] The FMP template is the approved format for federal fire management plans implemented by Memo dated July 11, 2002 to All Agency Offices signed by Chief, USDA Forest Service; Assistant Secretary of Indian Affairs; and Directors of the Bureau of Land Management, the Fish and Wildlife Service and the National Park Service. Distributed within BLM under WO IM 2002-049 dated Aug. 27, 2002 (Implementation of template) with additional guidance issued in OF&A IM 2003-038 dated July 11, 2003 (Interim Guidance for using template).

[3] The 2001 Review and Update is available at http://www.nifc.gov/fire_policy/history/index.htm

To meet federal fire planning requirements, the National Park Service and U.S. Fish and Wildlife Service have implemented agency-specific fire management direction by completing administrative unit fire management plans. The Bureau of Indian Affairs completed a fire management plan for all allotments and Tanana Chiefs Conference has prepared a plan for allotments within their service area. These plans facilitate the achievement of the land use and resource goals and objectives identified in unit land use plans and were developed to be used in conjunction with the AIWFMP.

This BLM-Alaska Wildland FMP will be applicable to all BLM-managed lands including State-Selected and Native-Selected lands. It also applies to withdrawn lands for the military purposes when fire and fuels activities are not in support or a result of the military mission. This FMP complies with 2001 federal fire policy and addresses fire program analysis (FPA) requirements. Public and firefighter safety are clearly emphasized as the highest priority of all BLM fire management activities; agencies recommendations are incorporate as appropriate; policies have been updated, clarified and reflect the consideration of issues raised in public comments, reports and reviews.

In Department of Interior (DOI) Manual 620, BLM-Alaska Fire Service (AFS) is tasked with wildland fire suppression on DOI-managed and Native lands within Alaska. Under a support agreement, AFS works directly with the military for fire management activities in support of the military mission on BLM land withdrawn for use of U.S. Army-Alaska. Within this plan, the wildland fire responsibilities of AFS will only be addressed in how they directly affect BLM-managed lands.

B. Relationship to Environmental Compliance

The Decision Record for the BLM Land Use Plan Amendment for Wildland Fire and Fuels Management, signed on July 20, 2005, amended all BLM-Alaska land use plans and documents the wildland fire and fuels management program for all BLM-managed lands in Alaska. It is supported by an Environmental Assessment. BLM resource management plans and the Amendment meet National Environmental Policy Act requirements as well as other State and federal regulatory requirements. The strategies outlined in this FMP are consistent with the decisions and direction of the wildland fire and fuels amendment and the underlying land use plans and do not constitute decisions that require additional NEPA analysis. New or updates to resource management plans are in progress or scheduled; they are being or will be completed using the NEPA process. Individual fuels treatment projects will require additional site-specific reviews and approvals as they are developed.

Specific to Alaska are Section 810(a) of Alaska National Interest Lands Conservation Act requirements that an evaluation of subsistence uses and needs be completed for any Federal determination to "withdraw, reserve, lease, or otherwise permit the use, occupancy or disposition of public lands." Under longstanding guidance, planning and implementation of activities to suppress natural fire do not constitute decisions to withdraw, reserve, or lease public lands, nor permits use of the public lands. Interagency planning for natural fire and fire suppression does not meet the threshold

requirement to trigger an 810 evaluation. An environmental assessment with a cumulative effects analysis related to subsistence may be appropriate for management options changes.

As prescribed burning and other fuels management projects are developed, they are subject to review under ANILCA § 810. A finding that the proposed action may significantly restrict subsistence uses imposes additional requirements, including provisions for notices to the State and appropriate regional advisory councils and local subsistence committees, a hearing in the vicinity of the area involved, and the making of certain determinations as required by Section 810(a)(3).

C. Collaboration

BLM is a voting member of the AWFCG. The AWFCG mission is to provide a forum that fosters cooperation, coordination and communication for wildland fire and related activities statewide. The AWFCG provides the opportunity to conduct fire management planning, preparedness, prevention, suppression, fire use, restoration and rehabilitation, monitoring, research, and education on an interagency basis with the involvement of all partners.

The AWFCG is responsible for the oversight of the AIWFMP and determines when updates, amendments or revisions are needed. BLM will fully participate in the update of the interagency plan and interagency partners have been given the opportunity to review and comment on this plan.

Agencies membership in the AWFCG include the Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, Bureau of Indian Affairs, U. S. Forest Service, Native regional corporations, and the State of Alaska Departments of Fish and Game, Natural Resources, and Environmental Conservation. Additional organizations seeking membership may petition the AWFCG.

D. Authorities

BLM resource management and planning authorities are cited in the resource management plans. Federal Land Policy and Management Act of 1976 (43 USC 1701) is the primary authority for the BLM's management of public lands.

Alaska-specific authorities related to fire management are:

- Alaska National Interest Lands Conservation Act 1980 (16 USC 3101 et seq.) (ANILCA)
- Alaska Native Claims Settlement Act 1971 (43 USC 1601) (ANCSA)
- Alaska State Statue 41.15.010 – Forested lands protection to Commissioner of Department of Natural Resources. Department Order 113 delegates the fire protection to Division of Forestry. (Forested lands are defined under Alaska State Statue 41.15.170 as all land on which grass, brush, timber and other vegetative material grow.)

- Alaska State Statue 41.15.010 – Natural resources and watershed protection on state, private, and municipality lands to Department of Natural Resources.
- Alaska Statehood Act 1958
- DOI Manual 620 Chapter 2
- Native Allotment Act 1906

II. Relationship to Land Management Planning / Fire Policy

A. BLM Land Use Plans

Current approved plans include:

- Central Yukon Resource Management Plan (RMP) 1986
- Fort Greely RMP 1995, 2001
- Fort Wainwright RMP 1995, 2001
- Fortymile MFP 1980
- Northeast NRR-A Integrated Activity Plan (IAP) 1998
- Northwest NPR-A IAP 2004
- Northwest Management Framework Plan (MFP) 1982
- Steese National Conservation Area RMP 1986
- Southcentral MFP 1980
- Southwest MFP 1981
- Utility Corridor RMP 1991
- White Mountains National Recreation Area RMP 1986
- BLM Land Use Plan Amendment for Wildland Fire and Fuels Management for Alaska 2005

Plan currently released in draft format:

- East Alaska Draft RMP/EIS

Plans in progress:

- Bay RMP/EIS
- Kobuk-Seward RMP/EIS
- Ring of Fire RMP/EIS

B. Planning and Fire Policy

Since the beginning of the statewide interagency fire planning effort, the goal has been to provide for appropriate protection levels and an opportunity for land managers to accomplish individual fire-related land-use and resource objectives in the most cost-effective manner. Each land/resource management agency's mandates and policies shape the selection and application of fire management options; the AIWFMP does not supersede agency-specific direction. The full range of fire management activities has been and will continue to be used to achieve ecosystem sustainability including its interrelated ecological, economic, and social components. Land managers have recognized the beneficial role of fire in most Alaska ecosystems and manage fire with that consideration in mind. Fire, as a critical natural process, has

been integrated into land, and/or resource management plans and activities on a landscape scale, across agency boundaries. As land use plans are updated, fire as a resource management tool is being more clearly identified to meet 2001 federal policy direction. Response to wildland fires is based on ecological, social and legal consequences of the fire. The circumstances under which a fire occurs, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources, and, values to be protected, dictate the appropriate response to the fire. Wildland fire has been and will continue to be used to protect, maintain, and enhance natural and cultural resources and, as nearly as possible, be allowed to function in its natural ecological role. Rehabilitation and restoration efforts are undertaken as needed on a case-by case basis to protect and sustain ecosystems, public health, safety, and to help communities protect infrastructure.

The 1995 Federal Wildland Fire Management Policy and Program Review was chartered to promote cohesive interagency and intergovernmental fire management programs. The Final Report issued December 18, 1995 contained guiding principles that directed federal agencies to achieve a balance between suppression to protect life, property and resources, and fire use to regulate fuels and maintain healthy ecosystems. It provided opportunities nationwide to dramatically increase the use of wildland fire to accomplish resource management objectives and supported implementation of policies and recommendations in conjunction with States, Tribes and local governments.

An in-depth review of the 1995 Policy revealed that some elements of the policy required clarification and that some issues were not fully covered. In 2001 an update of the 1995 Policy was completed and approved by the Secretaries of Interior and Agriculture. The 2001 Review and Update contains specific actions to enhance wildland fire management and seeks to build on the strengths of the original policy. Firefighter and public safety is listed as the first priority and the 2001 policy directs all fire management plans and activities to reflect this commitment. In June 2003, the Wildland Fire Leadership Council approved the "Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy". This strategy is applicable to federal agencies, however, it was developed with Tribal, State, county and local cooperators in mind. This document directs the agencies to work together in developing common language, unified guidance and direction for all agency and bureau manuals, handbooks and guidelines to complete final implementation of the policy. The Council further directed that this effort go forward with State coordination in order that cooperative agreements and other reciprocal fire agreements reflect the implementation direction.

The State of Alaska recognized the importance of the 1995/2001 Federal Wildland Fire Management Policy. The State supports most of the concepts in the policy and is dedicated to working with its federal agency cooperators in assisting them in implementing it in Alaska. If contradictions occur between the Federal Wildland Fire Management Policy and State of Alaska Policy, they will be mitigated on a case-by-case basis.

III. Wildland Fire Management Strategies

A. General Management Considerations

This plan provides the framework from which management options are set based on values-at-risk. Alaska wildland fire and fuels programs advocate the protection of human life and site-specific values and the management of the wildland fire and fuels to maintain key ecosystem components. Firefighter and public safety is the first priority in all fire management activities and fire is recognized as a primary agent and a critical feature of the natural history of many ecosystems. In the Alaska Interior, the natural fire regime is characterized by a return interval of 50 to 200 years; fire regime in Alaska's coastal forests is estimated at 200 to 600 years. Efforts are underway by the AWFCG Fire Regime Condition Class (FRCC) Task Group and the University of Alaska Fairbanks under an approved Joint Fire Science project to develop a systematic assessment tool to be used statewide for FRCCs; to date only project-related classifications have been estimated.

This plan affirms:

- The natural role of fire in the environment must be tempered by the need to protect human life and health, physical developments, and certain valued natural and cultural resources.
- Well-trained, well-equipped, and adequately funded suppression forces are essential to maintain public safety and public confidence in the fire management programs, and to provide cost effective suppression.
- During the fire season availability of suppression resources may become limited due to commitments on numerous initial attack assignments and/or large fires and a system for prioritization is necessary.
- The pre-fire season assignment of management options establishes priorities for allocation of suppression forces and substantially improves the effectiveness of wildland fire management.
- Fires are suppressed at minimum cost, considering firefighter and public safety, benefits, and values to be protected, and consistent with resource objectives.
- Non-standard responses become necessary when situations such as unusual burning conditions, critical shortages of suppression resources, or human safety and health issues arise. These responses occur rarely and are usually restricted to specific instances and specific geographic locations. A convened Multi-Agency Coordination Group (MAC) or the involved fire suppression organization and land managers will document all non-standard responses.
- Lightning caused wildland fires are an important component of the boreal forest and arctic tundra ecosystems, and the complete exclusion of these fires is neither ecologically sound nor economically feasible.
- In the southeastern Alaska coastal forest, lightning caused wildland fire is not ecologically significant. The majority of the fires are human-caused.
- Fuels (vegetation) management activities are necessary and important resource management tools to mitigate risks from wildland fire and

accomplish land and resource management objectives. Treatments by the use of wildland fire, prescribed fire, manual or mechanical means are viable.

- In the wildland urban interface and other areas where aggressive suppression of fires is mandated for the protection of human life, property or natural resources, prescribed fires and other vegetation treatments may be required to reduce risks from wildland fire and maintain healthy ecosystems.
- Agencies will work together and with their partners and other affected groups and individuals to prevent unauthorized ignition of wildland fires.
- Agencies will enhance knowledge and understanding of wildland fire management policies and practices through internal and external communication and education programs. These programs will be continuously improved through the timely and effective exchange of information among all affected agencies and organizations.
- Pre-suppression efforts, such as fuel break construction and hazard fuel reduction will reduce the potential threat to human life and help meet fire-related land and resource management objectives to reduce fire suppression expenditures on adjacent lands.
- Wildland fire management programs, activities, and processes should be compatible within and between land management and suppression organizations. 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.

B. Wildland Fire Management Goals

The goal of both the BLM and the Alaska interagency fire management program is to protect the public, firefighters, and identified sites from wildland fire while providing an opportunity, through interagency cooperation and collaboration, for BLM to accomplish fire-related, land-use and resource management objectives in a cost-efficient manner, consistent with BLM and DOI policies. The protection of human life is the single, overriding suppression priority. Setting priorities among protecting communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection. Once people have been committed to an incident, these human resources become the highest value to be protected.

BLM fire ecologists and other resource specialist support the ecological role of fire in remote areas to maintain the natural range of variation in plant composition and structure, properly functioning watersheds, and habitat conditions for fish and wildlife. Fire suppression activities over the last fifty years in these areas are thought to have had little effect on the natural fire regime. Resource management goals include continuing the use of fire to protect, maintain and enhance natural resources through the natural fire regime wherever possible.

The objectives of the fire management program are to:

- Protect human life and prioritize firefighter and public safety.
- Provide for appropriate suppression actions on fires that threaten human life, cultural and historic sites, physical developments and agency facilities and other identified sites with available firefighting resources.
- Incorporate public health and environmental quality considerations into fire management activities.
- Recognize fire as an essential ecological process and natural change agent in the boreal forest and tundra ecosystems.
- Use a full range of fire management activities to achieve ecosystem sustainability including its interrelated ecological, economic, and social components.
- Use wildland fire to protect, maintain, and enhance natural and cultural resources and, as nearly as possible, allow fire to function in its natural ecological role to maintain Condition Class 1[4].
- Use various fuels treatment techniques to reduce risks of uncontrolled wildland fire in areas where the intent is to exclude or minimize wildland fire occurrence.
- Establish wildland fire management option areas that are based upon protection of human life, and value resources to be protected, not based on administrative boundaries.
- Respond to BLM objectives and constraints.
- Suppress fires at minimum cost considering firefighter and public safety, benefits, values to be protected, and resource objectives.
- Ensure that the costs of fire suppression operations are commensurate with the value of the resources warranting protection.
- Minimize adverse environmental impact of fire suppression activities.
- Maintain each BLM Field Office's responsibility and authority for the selection of fire management options for the lands that they administer.
- Enable Field Office staffs to select fire management options which help accomplish land and resources management objectives within the scope of BLM policies and regulations and in support of their land use and resource management plans.
- Review annually the fire management needs of the Field Offices and adjust management option designations as warranted to meet their current land use, resource objectives, protection needs, laws, suppression concerns, or BLM mandates and policies.
- Continue the ongoing coordination, cooperation and partnerships of federal, State, Tribal, and other local governments in fire management.
- Monitor for the direct, indirect and cumulative effects of wildland fire, suppression actions and fire exclusion.
- Support scientific research.

[4] Condition Class 1: Species composition and structure are functioning within their historical range, especially at a landscape level. **:** Hardy, Colin C., Schmidt, Kirsten M., Menakis, James P., and Sampson R.N., 2001. **Spatial data for national fire planning and fuel management.** International Journal of Wildland Fire. 10: 353-372

- Adhere to federal and State laws and regulations.

BLM also participates on committees of the AWFCG to promote specific interagency programs and standards to meet the goals and objectives of the interagency fire program. AWFCG committees include:

- Air Quality and Smoke Management – provides technical expertise to identify and respond to air quality and smoke management issues.
- Fire Program Analysis – collaborates, promotes and implements for statewide landscape scale Fire Program Analysis.
- Fire Research Development and Applications – identifies and prioritizes fire research needs and facilitates the development and exchange of fire effects, fire behavior, fire danger and weather information and applications.(includes Fire Effects Task Group & FRCC Task Group)
- Fire Training and Qualifications – develops, coordinates and facilitates training.
- Fire Weather
- Fuels and Prescribed Fire - develop a regional interagency approach to implement applicable portions of the National Fire Plan and the fuels program.
- Information Resource Management
- Operations – provides an interagency approach to operational activities and issues.
- Prevention, Education and Awareness – coordinates fire prevention and education programs statewide.
- Safety and Health

C. Wildland Fire Management Options

Policies and procedures among Alaska land managing and suppression agencies were standardized in interagency fire management plans written during the 1980s. As a result, four wildland fire suppression management options (**Critical, Full, Modified, Limited)** are utilized statewide by all federal, State and Native land managers. Each management option is defined by objectives, management constraints, and values to be protected.

The four management option categorizations:

- ensure human life, designated property and identified resources receive an appropriate level of protection with available firefighting resources,
- optimize the ability to achieve land use and resource management objectives,
- and reinforce the premise that the cost of the suppression effort be commensurate with values identified for protection.

Options are assigned on a landscape scale across agency boundaries. BLM Field Office staffs have selected management options based upon an evaluation of their legal mandates, policies, regulations, resource management objectives, and local conditions. Local conditions include but are not limited to population density, fire

occurrence, environmental factors, and identified values. Fuel type, access, topographic features, fire regime and political boundaries are considered for determining management option boundaries but are not necessarily determining factors for landscape scale management option designations. The intent is to have management options designations that are ecologically and fiscally sound, operationally feasible, and sufficiently flexible to respond to changes in objectives, fire conditions, land-use patterns, resource information, and technologies. The designation of a management option pre-selects initial strategies (appropriate management response) to a wildland fire; responses range from immediate and aggressive suppression to periodic surveillance. The map atlas at the local suppression office and the Alaska Interagency Coordination Center is the official record that delineates fire management option boundaries and site-specific designations. Changes are submitted through the AWFCG procedures in **Appendix E**. BLM-AFS maintains the statewide management option data and an updated GIS file is available annually by May 1.

BLM Field Office staffs are responsible for updating and reviewing management option and site designations annually. Only the land managers can select or change the wildland fire management options for the lands that they manage. The authority to determine fire management options for lands selected by the State of Alaska or Natives corporations for potential conveyance rests with the current federal land manager; either entity may negotiate fire management option classifications with that current land manager for those selected lands. Land managers who have received interim conveyance or tentative approval for conveyance of land designate the fire management option for those lands.

Native allotment designations are the responsibility of the Bureau of Indian Affairs and may be managed by a service contract provider. Under State Statue, the Alaska Department of Natural Resources, Division of Forestry represents private landowners (other than Native allotment owners or village or regional corporations); the private landowners may negotiate with the State for management option designations. Federal and State permits, leases, sales contracts and other documents that allow for private use of federal and State lands contain information regarding wildland fire protection levels and management option designation in the document or document's stipulations. Those designations are applicable to the lands and personal property located on that lands; the issuing land management agency designates the management option category for those lands.

The designation of Critical, Full or Modified (pre-conversion) does not ensure protection from wildland fire; a protection response will be based on various factors including the availability of firefighting resources, the site condition and location, surrounding vegetation, and overall statewide situation at the time of a wildland fire. Ultimately it is the personal responsibility of permittees, leasees, allotees and private landowners to mitigate and minimize risk to their property and structures and to be "Firewise".

Fire suppression organizations use the management options to determine initial response priorities. The highest priority for suppression response is given to fires occurring in or threatening a Critical management option site followed in order of priority by Full, Modified and Limited management option areas. However, the AWFCG and the MAC have the authority to increase levels of suppression regardless of management option designation if conditions warrant.

In addition to the management option designations, the Wildland Fire Situation Analysis (WFSA) is an essential process to fully capture suppression alternatives and constraints related to land use and resource objectives for ongoing wildland fires that have not been contained by initial attack forces; the Wildland Fire Implementation Plan (WFIP) provides the additional documentation required for ongoing fires categorized for Wildland Fire Use (WFU). The Field Office's WFSA selected alternative or the WFIP plus site-specific management constraints are the foundation for the Delegation of Authority for the Incident Commander and/or Fire Use Manager.

The complete exclusion of wildland fires is not realistically feasible. In areas where the objective is to exclude fire or minimize fire size, vegetation manipulation by various methods is a resource management tool to safeguard identified sites and maintain species diversity. Projects are designed with regard to site characteristics and the reproductive characteristics of the plant species present on the site. Fuels management will assist in achieving the objectives stated under each management option classification. Projects are approved and funded on a case-by-case basis. They may also be developed and implemented in support of scientific research and in cooperation with cooperators and partners.

Fuels projects on BLM-lands withdrawn for military purposes are developed and implemented under the terms of the withdrawal. AFS works directly with the military on fuels reduction projects in support of the military mission. These projects are designed to mitigate the fuel load on military ranges to promote firefighter and public safety, protect communities from wildland fire and smoke effects, and offset suppression costs.

D. Description of Wildland Fire Management Strategies by Fire Management Unit

A fire management unit is any land management area definable by objectives, management constraints, and values to be protected. A management option classification equates to a fire management unit.

1. Critical Management Option

Description: These are the highest priority areas/sites for suppression actions and assignment of available firefighting resources. Lands in wildland urban interface[5] and other populated areas where there is an immediate threat to human life, currently or routinely inhabited property, physical developments. and structural resources designated as National Historic Landmarks qualify. This classification is applicable to a single inhabited structure and an entire village or town.

Objectives

- Provide for public safety.
- Protect site without compromising fire fighter or public safety and minimize effects of wildland fire. (Exclude wildland fire from area/site, not control of the wildland fire.)
- Manage vegetation to reduce risk of wildfires.
- Promote prevention and education programs.

Fire Occurrence[6]: The majority of fires in these areas are human-caused and occur in a wildland urban interface setting. The median fire size is 0.1 acres. Ninety percent of the fires igniting in Critical are 1 acre or less.

Fuels Management: The emphases are on prevention and education and working collaboratively with adjacent communities and landowners on planning, risk assessments, and mitigation to prevent and exclude wildland fire. Appropriate mitigation measures to reduce the wildland fire risks to life and property and costs of wildland fires are mechanical and manual fuel treatments that reduce the amount of vegetation (fuel loads) within and around wildland urban interface areas, National Historic Landmarks, and physical developments. Prescribed fire may be used when appropriate for the site and situation (for example, burning

---

[5] Wildland urban interface (WUI) is the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuel. (National Wildland Fire Coordinating Group Glossary). FPA-Preparedness Module white paper "Defining a Common Attribute" (Jan 2005) further refines the WUI definition by adopting the University of Wisconsin parameters. Cited as follows at http://silvis.forest.wisc.edu/Library/WUIDefinitions2.asp

"WUI is composed of both interface and intermix communities. In both interface and intermix communities, housing must meet or exceed a minimum density of one structure per 40 acres (16 ha). Intermix communities are places where housing and vegetation intermingle. In intermix, wildland vegetation is continuous, more than 50 percent vegetation, in areas with more than 1 house per 16 ha. Interface communities are areas with housing in the vicinity of contiguous vegetation. Interface areas have more than 1 house per 40 acres, have less than 50 percent vegetation, and are within 1.5 mi of an area (made up of one or more contiguous Census blocks) over 1,325 acres (500 ha) that is more than 75 percent vegetated. The minimum size limit ensures that areas surrounding small urban parks are not classified as interface WUI.

The California Fire Alliance (2001) defined "vicinity" as all areas within 1.5 mi (2.4 km) of wildland vegetation, roughly the distance that firebrands can be carried from a wildland fire to the roof of a house. It captures the idea that even those homes not sited within the forest are at risk of being burned in a wildland fire."

[6] Statewide figures for fire occurrence 1988-2002 from Alaska Interagency Coordination Center data.

slash piles). Projects that mitigate threats to the safety of the public and employees and reduce risk of unwanted wildland fires to communities, including their critical elements such as resource-related jobs, communication infrastructure, transportation networks, municipal watersheds, and utilities are funding priorities.

Discussion: National Historic Landmarks are designated Critical in compliance with State and federal regulations. BLM Field Office staffs are encouraged to exercise restraint in designating physical developments for the Critical management option, limiting the application of this option to just those sites/areas which are currently or routinely occupied.

2. Full Management Option

Description: This option provides for protection of cultural and paleontological sites, BLM-developed recreational facilities, physical developments, administrative sites and cabins, uninhabited structures, high-value natural resources, and other high-value areas that do not involve the protection of human life and inhabited property. Either broad areas or specific sites within a lower management option may be designated as Full.

Objectives:

- Control all wildland fires at the smallest acreage reasonably possible by initial response forces without compromising fire fighter safety.
- Provide appropriate protection to identified uninhabited structures and property.
- Preserve structures and sites on or eligible for National Register of Historic Places.
- Preserve cultural and paleontological sites.
- Minimize effects of wildland fire in areas where current land use conflicts with natural role of fire.
- Maintain species diversity while decreasing the probability of large wildland fires in areas where land use or resource objectives necessitate wildland fire be excluded or minimized.

Fire Occurrence: The majority of fires in Full are human-caused; historically, approximately one-third are lightning caused. Median fire size is 0.3 acres. Eighty percent of the fires are contained at 25 acres or less; ninety percent are contained at 400 acres or less.

Fuels Management: To reduce the risks and costs of wildland fires, the emphases are on prevention and education to minimize fire occurrence and the effects of wildland fire by:

- working collaboratively and including adjacent landowners, resource specialist and suppression organizations on planning and risk assessments

- using mitigation measures to maintain low fuel loads and promote healthy productive ecosystems,
- developing prevention programs as warranted,
- and maintaining known sites on or eligible for National Register of Historic Places in a viable condition.

Discussion: Structures on or eligible for inclusion on the National Register of Historic Places and non-structural sites on the National Register are placed within this category.

The long range effects on fire-dependent ecosystems are a land management consideration when designating Full at the landscape scale. The attempt to excluded fire may necessitate implementing vegetation management programs. The best use of Full is for a site-specific designations and as a prioritization tool.

3. Limited Management Option

Description: Limited is assigned to broad, landscape scale areas where fire occurrence is essential to the biodiversity of the resources and the long-term ecological health of the land and land use patterns allow fire to routinely function as a vital component of Alaskan ecosystems.

Wildland fire use for resource benefit is the key component of this designation. Wildland fire is used as a management tool to maintain, enhance and improve the ecological condition of ecosystems. Limited provides for vegetation management under the natural fire regime which produces a mixture of seral stages that maintain watershed condition, ecosystem health, and habitat conditions for fish and wildlife. Management under this provides a natural mosaic of habitats and plant diversity for all wildlife species and for subsistence activities.

Limited is also assigned to areas where the cost of suppression may exceed the value of the resources to be protected or the environmental impacts of fire suppression activities may have more negative impacts on the resources than the effects of the fire. Lands withdrawn for military use may be designated Limited due to the presence of significant hazards to firefighting personnel such as unexploded ordinance and hazardous materials.

Site-specific areas that warrant higher levels of protection may occur within the boundaries of Limited areas.

Objectives:
- Within BLM policy constraints, accomplish land and resource management objectives through the use of wildland fire while protecting identified values.
- Sustain the natural range and variation of wildlife habitats and plant composition and structure through the natural fire regime.

- Reduce overall suppression costs through minimum resource commitment without compromising public or firefighter safety while weighing acres burned and value-at-risk.
- Prevent fires from crossing management option boundaries to protect human life and identified resources while ensuring that suppression costs and associated environmental impacts of suppression actions are commensurate with the potential damage to values to be protected.
- Minimize the adverse effects of fire suppression efforts.

Fire Occurrence: The majority of fires in Limited are lightning-caused; historically 16% of fires in Limited have been human-caused. The number of acres burned annually is dependent on weather and vegetation conditions. Median fire size for both BLM-managed lands and statewide is 40 acres. Seventy-eight percent of BLM-managed lands are classified as Limited and routinely available for Wildland Fire Use categorization. (60% of lands statewide are classified Limited.)

Fuels Management: Treatment objectives that assist in balancing acres burned and values-at-risk and, also meet resource objectives are: habitat manipulation, reduction of the amount of available fuels and the continuity of fuels, improvement of ecological health, and preservation of cultural and other identified sites.

Discussion: Current BLM Field Office staffs have not restricted the annual allowable number or size of fires in Limited. Wildland fires occurring within this designation will be allowed to burn under the influence of natural forces within predetermined areas while continuing protection of human life and site-specific values. By allowing for a natural mosaic of fire size and intensity, this option reduces both long-term suppression risks and costs while sustaining a natural range of variation in plant composition and structure.

Mitigation actions may be initiated to keep a fire within the option boundary or to protect identified higher value areas/sites. Appropriate actions to protect these sites will be taken when warranted, without compromising the intent of Limited.

4. Modified Management Option

Description: In these areas, the goal is to balance acres burned with suppression costs and, when appropriate, to use wildland fire to accomplish land and resource management objectives. Modified is intended to be the most flexible option available to land managers.

Operational considerations that are based on an annual evaluation and conversion date are a key aspect of this designation. Modified provides a management level where the appropriate management response changes from those analogous to Full (without the size constraints) when the potential and risks of large wildland

fires are high to those analogous to Limited when potential and risks are low. Therefore, the number of acres burned during the time of year when large wildland fires are likely is restricted in order to minimize disturbance to identified habitats, potential commercial resources, and other identified natural and cultural resources. When the conditions that lead to large fires lessen, wildland fire is allowed to function in its natural ecological role. This benefits resources by sustaining a mosaic of seral stages.

Site-specific areas that warrant higher levels of protection may occur within Modified areas.

Objectives:

- Pre-conversion date - contain fires with initial attack forces.
- Post conversion date - allow fires to function in their natural ecological role.
- Within BLM policy constraints, provide an opportunity to accomplish land and resource management objectives through the use of wildland fire while protecting identified values.
- Reduce overall suppression costs with minimum resource commitment without compromising public or firefighter safety.
- Moderate the adverse effects of fire suppression efforts.
- Maintain species diversity while decreasing the probability of large wildland fires.

Fire Occurrence: The majority of fires in Modified are lightning-caused; historically, 25% of fires in Modified have been human-caused. The number of acres burned annually is dependent on weather and vegetation conditions after conversion. Fifteen percent of lands statewide are classified as Modified with a median fire size of 4 acre. Thirteen percent of BLM-managed land are currently classified Modified and have a median size of 10 acres. All BLM Modified lands are routinely available for Wildland Fire Use categorization after the conversion date.

Fuels Management: Treatment objectives that assist in balancing acres burned and values-at-risk and, also meet resource objectives are: habitat manipulation, reduction of the amount of available fuels and the continuity of fuels, improvement of ecological health, and preservation of cultural and other identified sites.

Discussion: Standardized evaluation dates have been established for the Modified management option areas based on an assessment of the values to be protected and the historical seasonal fire occurrence. Evaluation dates serve as guidelines and are intended to be flexible. On those dates, the AWFCG evaluates a variety of factors including Field Office inputs on local conditions, weather trends, fire intensity levels, and the statewide fire occurrence to determine if conditions are appropriate to "convert" the strategy and tactics in Modified areas from those

similar to Full to the strategy and tactics applicable to Limited lands. If the AWFCG decides to convert the Modified management option area(s), the changes are communicated in writing to land managers and suppression organizations through their AWFCG representatives and to the general public through media releases. The traditional conversion date for most areas has been July 10. Conversion dates may be staggered; historically game management units as defined by the Alaska Department of Fish and Game (ADF&G) have been used to describe the geographic extent of conversion. If the conversion for a game unit(s) is not appropriate on the standard evaluation date, the AWFCG will set a new evaluation date at intervals no longer than 10-days until conversion is suitable for all Modified lands.

A land manager may request, through an AWFCG representative, that the AWFCG consider an earlier evaluation date during unusually wet fire seasons. The land manager desiring the change must inform other land managers potentially affected by the proposed change and solicit their opinion. The Area/Zone FMO may facilitate this process. The requesting land manager must provide the AWFCG representative a written rationale with supporting data for the change as well as the opinions of affected land managers. The written rationale and supporting data will be included with the AWFCG decision record.

Suppression actions may be initiated to keep a fire within the boundary of this management option or to protect identified higher value areas/sites. Appropriate suppression actions to protect these sites will be taken when warranted, without compromising the intent of Modified.

IV. Wildland Fire Management Program Components

A. Wildland Fire Suppression

The direction for the initial appropriate management response to suppression organization based on management option designation is contained in this section. Criteria are cited under each management option for completion of WFSA. The WFSA process examines the suppression alternatives that meet land management objectives, the commitment of fire fighting personnel required and costs estimates. Any site-specific constraints are documented. **Appendix I** contains the guidelines for the joint effort of land managers and suppression Fire Management Officers to complete the WFSA process. The land manager's signature on the WFSA Decision Record approves the implementation of the selected alternative. Certification signature requirements for a WFSA for fires occurring on federal lands are tiered to estimated suppression expenditures. The selected WFSA alternative may be implemented before it is certified. A Delegation of Authority which identifies operational constraints and incident objectives based on the WFSA selected alternative is signed by the suppression FMO. The Delegation conveys incident

operational authorities to the Incident Commander. Implementing mitigation measures under a WFIP may also require a Delegation of Authority.

The response listed under each classification addresses normal fire conditions and a high percentage of wildland fire situations that occur in Alaska. On rare occasions, however, situations arise where non-standard responses to the selected management options are prudent and justifiable. Procedures for those situations are also included.

The operational role of the agencies as partners in the wildland/urban interface are wildland firefighting, hazard fuels reduction, cooperative prevention and education, and technical assistance. Structural fire suppression is the responsibility of volunteer, city or borough fire department. Wildland firefighters also will not take direct suppression action on vehicle or dump fires. Should firefighters encounter structure, vehicle or dump fires during the performance of their normal wildland fire suppression duties, firefighting efforts will be limited to areas where the fire has spread onto agency protected lands. [7]

1. Standard Appropriate Management Responses

a. Critical Management Option

Suppression Priority: Highest
Fires occurring in or immediately threatening this designation will have priority over all other wildland fires for protection from wildland fires. Protection of life or occupied property has priority over National Historic Landmarks. Critical sites will receive maximum aerial or ground detection coverage based on levels of lightning activity and human use.

Initial Response to a Wildland Fire: Immediate and persistent aggressive actions using standard operating procedures to provide complete protection of area/sites from a wildland fire without compromising public or firefighter safety. Response is also dependent upon the prioritization and availability of suppression resources.

The operational decision chart **(Figure 1)** describes the appropriate procedures and course of action for both suppression organizations and the land managers.

Wildland Fire Situation Analysis: If a wildland fire is not contained with initial attack forces, a WFSA is required.

Notification requirements: BLM Field Office staff will be contacted ***immediately*** when fire threatens a critical site.

[7] Interagency Standards for Fire and Fire Aviation Operations, Chapter 10, Dept. of Interior and Agriculture, annual publication

Performance Measure: 95% of the fires contained at 5 acres or less[8].

b. Full Management Option

Suppression Priority: Second
Only wildland fires within or threatening a Critical area receive a higher priority for allocation of suppression resources. Lands designated in this management option will receive the maximum aerial or ground detection coverage available based on levels of lightning activity and human use.

Initial Response to a Wildland Fire: Fires occurring within or immediately threatening this designation will receive aggressive initial attack using standard operating procedures and without compromising public or firefighter safety. Response is also dependent upon the prioritization and availability of suppression resources.

The operational decision chart **(Figure 1)** describes the appropriate procedures and course of action for both the suppression organization and the land managers.

Wildland Fire Situation Analysis: The completion of the WFSA is required if a fire is not contained by initial response forces, requires a significant change in suppression strategy, or if suppression response is delayed beyond 24 hours from discovery.

Notification requirements: On wildland fires where initial attack is successful, the fire suppression organization will notify the affected BLM Field Office staff of these fires through normal briefing procedures.

The affected BLM Field Office staff will be contacted as soon as possible once WFSA criteria have been met.

Performance Measure: 90% of the fires are contained at 50 acres or less[9].

c. Limited Management Option

Suppression Priority: Lowest
Generally, this designation receives the lowest priority for allocations of initial attack resources; however, surveillance may be a high priority.

[8] Federal Fire and Aviations Operations Action Plan, April 18, 2005, distributed to DOI agencies by Memo from the Assistant Secretary, Policy, Management and Budget to Directors on May 11, 2005 states the goals for DOI lands is a 95% initial/extended attack success rate. (Plan is updated and published annually.) In BLM Land Use Plan Amendment for Wildland Fire and Fuels Management for Alaska (AK-313-04-EA-001), the figure for Critical was specified to be contained at 5 acres or less.
[9] from BLM Land Use Plan Amendment for Wildland Fire and Fuels Management for Alaska.

When on-the-ground actions are warranted, the priority for allocation of resources is equivalent to the management option designation of the affected site. For example, if an action on a fire within the Limited is an attempt to keep the fire from burning into a Full option area, the priority for suppression resources allocation should be equal to that given to Full.

Limited areas will receive detection efforts compatible to fire conditions and availability of detection resources. Additional detection will be provided by suppression organizations when requested by BLM Field Office staff based on availability of detection resources.

Response to a Wildland Fire: Surveillance

The operational decision chart **(Figure 2)** describes the appropriate procedures and course of action for both suppression organizations and land managers. For fires categorized as "Wildland Fire Use" see **Figure 3**.

Periodic surveillance will continue for the duration of the fire to evaluate threats to sites assigned higher management levels and to assess the potential of the fire crossing the Limited boundary into a different management area. The fire suppression organization will maintain the primary surveillance responsibilities. Joint surveillance may be conducted when situations warrant or the BLM Field Office staff wishes to implement their own surveillance/fire effects monitoring procedures. Any flights within the vicinity of an active fire, particularly fires with ongoing suppression actions, will be coordinated with the appropriate fire suppression dispatch office. Routine surveillance will be performed and documented until resources are dispatched or the fire is declared out. Surveillance frequency will be determined by the suppression organization or in coordination with BLM Field Office staff. This information will be used to update or revise the WFSA/WFIP as necessary.
Surveillance reports should include:

- 1-3 day weather forecast.
- A local area weather summary including precipitation, drought indices, and fire danger indices.
- A map of the fire which may include the following: fire perimeter, location, topography, fuel type(s), natural barrier locations and areas of special concern such as potential threats to higher management options or other resources requiring protection.
- Fire behavior, including estimated rate of forward spread, direction of spread, estimated flame lengths, description of fire (i.e., crowning, ground fire, surface fire), and spotting activity (including distance).
- Smoke behavior, including estimated plume height and direction of movement.

Information and analysis will be documented to provide a chronological administrative history of the fire.

An immediate threat from a wildland fire in Limited to Critical, Full or Modified (before conversion date) management areas may receive an initial attack response if suppression forces are available. The BLM Field Office staff will be notified immediately, preferably before actions are taken, but actions will not be delayed for notification due to the imminent threat. The reasons for the action will be documented in writing, provided to the BLM Field Office staff, and maintained in the fire record.

Wildland Fire Situation Analysis: When a suppression action other than surveillance is needed because of a potential long-term threat to a higher management option, a WFSA is required. Low impact or indirect suppression tools and tactics will be used whenever possible.

At any time, a WFSA may be initiated by BLM Field Office staff.

Wildland Fire Implementation Plan: Categorization as "Wildland Fire Use" is optional. Completion of the WFIP is at the Field Office's discretion and the Field Office staff's responsibility.

Notification Requirements: The BLM Field Office staff will be notified through normal briefing procedures of all wildland fires detected and their subsequent status. BLM Field Office staff will be provided with information on fire behavior, environmental conditions, fire weather, air quality, and actual and potential fire growth to provide sufficient information for management decisions and to meet agency-specific requirements.

The BLM Field Office staff will be notified immediately if there is an immediate threat to a higher management option or a suppression action is required.

Performance Measure: Current BLM Field Office staffs have not restricted the annual allowable number or size of fires in Limited. Based on historic fire occurrence, the expectation is that 10% of the fires will burn 10,000 acres or more.

d. Modified Management Option

Suppression Priority: Below Full and above Limited
Fires occurring within Modified will receive priority for allocation of initial attack resources after the protection of Critical and Full areas from existing fires or the threat of new starts in those areas has dissipated. Before the conversion date, Modified areas will receive detection coverage with available detection resources based on levels of lightning activity and human use. Evaluation dates will be identified on the map atlas. Any suppression action

that is under way when the conversion date is reached may continue to completion with the approval of the BLM Field Office staff.

Initial Response to a Wildland Fire:

- When there is an ***immediate threat to a Critical or Full area,*** fires will receive an initial attack response if suppression forces are available.
- ***Before the conversion date***, fires occurring within this designation, will receive initial attack, dependent upon availability of suppression resources. Fire containment is the primary objective.
- ***After the conversion date***, the default action for all fires occurring within Modified will be routine surveillance to ensure that identified values are protected and that adjacent higher priority management areas are not compromised.

The operational decision charts **(Figure 1 and 2)** describe the appropriate procedures and course of action for both suppression organizations and land managers. For fires categorized as "Wildland Fire Use" see **Figure 3**.

Wildland Fire Situation Analysis: At any time, a WFSA may be initiated by BLM Field Office staff.

WFSA requirements are:

- **Before Conversion Date:** If a wildland fire escapes initial attack or the fire that did not receive immediate initial attack and has grown to a size that initial attack is not feasible.
- **After Conversion Date:** When a suppression action other than surveillance is needed because of a potential long-term threat to a higher management option.

Wildland Fire Implementation Plan (WFIP): Categorization as "Wildland Fire Use" is optional. Completion of the WFIP is at the Field Office's discretion and the Field Office staff's responsibility.

Notification requirements:

Immediate Threat to Critical or Full areas:

- The BLM Field Office staff will be notified immediately, preferably before actions are taken. Actions, however, will not be delayed for notification due to the imminent threat. The reasons for the action will be documented in writing, maintained in the fire record and identified in the situation report.

Before Conversion Date:

- On wildland fires where initial attack is successful, the fire suppression organization will notify the affected BLM Field Office staff of these fires through normal briefing procedures.

- When a wildland fire escapes initial attack and requires continued suppression efforts or if initial attack cannot be initiated, the affected BLM Field Office staff will be contacted immediately.

After Conversion Date:

- The BLM Field Office staff will be notified through normal briefing procedures of all wildland fires detected and their subsequent status. BLM Field Office staff will be provided with information on fire behavior, environmental conditions, fire weather, air quality, and actual and potential fire growth to provide sufficient information for management decisions and to meet staff requirements.
- The BLM Field Office staff will be notified immediately if suppression actions are initiated after the conversion date, otherwise the status of the wildland fires will be communicated through usual briefing procedures.

Performance Measure: On an average annual basis, 85% of the fires contained at 750 acres or less.[10]

e. Site-specific Designations

In order to prioritize assignment of suppression forces and determine the appropriate actions to be taken within the landscape-scale management option classifications, site designations of **Critical, Full, Avoid** and **Non-sensitive** have been established for structures, cultural and paleontological sites, small areas of high resource value and threatened and endangered species habitat in order for the resource staffs to give suppression agencies more specific guidance for small sites.

- Sites designated ***Critical*** and ***Full*** are to be protected from degradation from fire and are prioritized similar to landscape scale designations.
- Sites designated ***Avoid*** are areas where fire suppression efforts should be avoided and effects from suppression efforts minimized. All aircraft should be restricted from these areas.
- Sites designated as ***Non-sensitive*** are acknowledged as known to the BLM Field Office staff, but requires no additional suppression efforts or restrictions.

Designations are recorded on the map atlas in the suppression offices and it is the joint responsibility of BLM Field Office staff and suppression staff to keep the atlas current. Site designations are subject to annual review and updating. When a structure is discovered during fire management activities, the Field Office representative will be notified immediately. Under normal circumstances during suppression operations, the suppression agencies are not responsible for and will not provide protection to unauthorized structures unless they meet one or both of the following criteria:

[10] Historical data for MOD encompasses both pre &post conversion date statistics.

- It is necessary to preserve structures to save human life.
- The structure is evaluated and determined to be eligible for consideration for the National Register of Historic Places. See **Appendix H**.

2. Non-standard Responses to Individual Fire Incident

BLM Field Office staffs may authorize the suppression organization to provide either an increased or decreased level of suppression on a fire regardless of the fire management option. The Decision Criteria Record **(Appendix C)** will be completed to document the rationale for request and the action taken. It must be completed immediately and placed in the fire record. The written record of this authorization must satisfy federal wildland fire policy documentation and timeframe requirements. If the suppression organization does not concur with the request, their concerns will be documented in writing and included in the fire record.

All non-standard responses that occur will be reviewed at the annual internal and interagency fall fire reviews.

3. Response to Unusual Conditions in a Geographic Area

A statewide MAC group may be convened to implement a temporary change from the selected management options for a specific geographic area(s) during periods of unusual fire conditions (e.g., numerous fires, predicted drying trends, smoke problems, unusually wet conditions or suppression resource shortages). This does not include adjustment of the evaluation/conversion date for Modified lands. Past actions have included discretionary suppression of all new starts regardless of fire management options. These departures usually do not apply statewide but to specific regions of the State.

A Field Office may request a temporary management option change for a specific geographic area through a representative on the MAC group. BLM MAC group representative normally is the AFS Manager. The office desiring the change must inform land managers potentially affected of the proposed change and solicit their opinion. The Area/Zone FMO may facilitate this process. The Field Office requesting the change must provide to the MAC group with a written rationale with supporting the change as well as the opinions of affected land managers. That document will be included with the MAC group decision record.

The changes are communicated in writing to all land managers and suppression organizations through their MAC group representatives and to the general public through media releases.

4. Standard Operating Procedures

Standard Operating Procedures are documented in:

- *Interagency Standard for Fire and Fire Aviation Operations*, (Red Book) an annual publication by the Departments of Interior and Agriculture states, references or supplements BLM policy and guidance to perform safe and effective fire and aviation management operations. Available at http://www.fire.blm.gov/Standards/redbook.htm
- The *Alaska Interagency Wildland Fire Management Plan (AIWFMP) 1998* or an updated version (http://fire.ak.blm.gov/) is the interagency operational reference for fire suppression.
- *Alaska Fire Service Operational Procedures, Policies and Guidelines* (Brown Book) published yearly.

BLM Field Offices also identified the following general constraints and guidelines. Additional constraints applicable to specific incidents are at the discretion of the Field Office and are documented in a WFSA/WFIP and/or the Delegation of Authority.

- Use of minimum impact suppression tactics (MIST) to the extent possible. Fireline will be constructed in a manner that minimizes erosion and will follow natural contours wherever possible. Indirect attack will be used to the extent practical. A fireline rehabilitation plan approved by the Field Office must be completed before the final demobilization occurs.
- Use of tracked or off-road vehicles (for example, bulldozers or all-terrain vehicles) requires written authorization by the Field Office Authorized Officer and will be approved on a case-by-case basis prior to use. Stipulations in the authorization will address use of equipment to avoid line construction near streams where it may cause erosion, damage to riparian areas, harm cultural or paleontological resources, degrade water quality or fish habitat, or contribute to stream channel sedimentation.
- Use of aerial fire retardant near lakes, wetlands, streams, rivers, sources of human water consumption, and areas adjacent to water sources should be avoided to protect fish habitat and water quality. If feasible in these areas, the use of water rather than retardant is preferred. When the use of retardant is necessary, avoid aerial or ground application of retardant or foam within 300 feet of a waterway; application beyond 500 feet is preferred. Examples of when use of retardant is authorized are for the protection of:
    - Human life.
    - Permanent year-around residences.
    - National Historic Landmarks.
    - Structures on or eligible for the National Register of Historic Places.
    - Government Facilities.
    - Sites or structures designated by Field Office resource specialists to be protected.

- ◊ Threatened, endangered and sensitive species habitats as identified by resource specialist.
- High value resources on BLM-managed lands and those of adjacent land owners.
- Avoid the introduction of invasive plants or non-native plants by pursuing the use of seed-free equipment and supplies, and maintaining clean personal gear.
- Establish Riparian Buffer Zones appropriate to the site characteristics to sustain the proper functioning conditions of the area by protecting stream banks, minimizing compaction of soil, preventing stream sedimentation, and protecting water quality.
- Rehabilitate fire and dozer lines by spreading original soil and vegetation on the disturbed ground. In extreme cases where seeding or plugging may be necessary, use native vegetation and seeds. A rehabilitation plan should be developed by the suppression forces working with Field Office wildlife biologists and botanists.

5. Air Quality

Wildland fire smoke is inevitable and public outreach efforts to keep the public informed and provide ample opportunity for individuals to take action based on individual health factors are essential.

Alaska Department of Environmental Conservation (ADEC) regulates air quality. The ADEC Enhanced Smoke Management Plan and the State Implementation Plan stipulate regulations to be followed for prescribed fires. (http://www.state.ak.us/dec/home.htm)

For wildland fires, the AWFCG threshold criteria **(Appendix A)** are intended to provide minimum uniform requirements for interagency use to monitor air quality. The measures were developed to promote a proactive assessment and documentation of potential smoke impacts. Assessments are the responsibility of both the Field Office and suppression organizations. As requested, ADEC provides the technical expertise for addressing air quality and health related issues. Additional information on air quality is available on the ADEC website at http://www.dec.state.ak.us/air/am/smoke.htm.

Air quality levels can be estimated using visibility ranges **(Appendix A)**. As air quality issues develop, portable air quality monitors may be used to better measure particulate matter; the AWFCG will determine location priorities for monitoring when the situation warrants.

6. Cause Determination and Trespass Actions

The initial response Incident Commander is responsible for the initial assessment for determining the point of origin and cause of a wildland fire. When the initial

determination is that the fire is human-caused, it is the responsibility of the suppression organization to immediately notify the Field Office. The Field Office staff is responsible for all investigations procedures and pursuit of any administrative or criminal actions. Suppression organizations may, at the request of the Field Office, facilitate investigations.

B. Wildland Fire Use (WFU)

Wildland fire will be used to protect, maintain, and enhance natural and cultural resources and, as nearly as possible, be allowed to function in its natural ecological role. Alaska land managers have used spatial parameters to identify lands appropriate for WFU. Lands within the geographic boundaries of Modified (after conversion) and Limited management option designations are routinely available to be categorized as Wildland Fire Use.

On rare occasions, based on individual site-specific circumstances and at the documented direction of the BLM Field Office Manager, lands within Full may also be consider for WFU. In extraordinary circumstance and based on documented Field Office direction, Critical areas may be considered.

It is the BLM Field Office Manager's choice to categorize a wildland fire as WFU. Field Office staff are responsible to adhere to BLM direction for WFU and are responsible for the completion of the WFIP. Updated WFU requirements for federal agencies were published in ***Wildland Fire Use Implementation Procedures Reference Guide (May 2005)***[11]**.**

C. Prescribed Fire

Prescribed fires are ignited to achieve land use and resource objectives. Prescribed fires are implemented only with the State Fuels Specialist and Field Office Managers' approval of a formal prescribed fire plan. NEPA compliance is required; an ANICLA 810 statement regarding project effects on subsistence is appropriate. Air quality criteria are included in the prescribed fire plan.

Alaska Department of Environmental Conservation (ADEC) requires permits for prescribed fires 40 acres or greater. The ADEC Enhanced Smoke Management Plan and the State Implementation Plan stipulate regulations to be followed. (http://www.state.ak.us/dec/home.htm). Depending on the location of the project area, additional permits may be required from local government entities such as municipal fire departments or borough air quality offices.

D. Non-fire Fuel Treatments

Mechanical and manual treatments are implemented based on funding availability and under approved project plans. Projects on federal land or expending federal

[11] Available at http://www.nifc.gov/fire_policy/pdf/wildland_fire_use_guide.pdf

monies require site-specific analyses, including the appropriate NEPA documentation and an ANICLA 810 statement regarding project effects on subsistence is appropriate.

E. Emergency Stabilization and Rehabilitation (ES&R)[12]

Stabilization and rehabilitation efforts are planned actions to stabilize and prevent unacceptable degradation to natural and cultural resources, to minimize threats to life and property resulting from the effects of a fire, or to repair/replace/construct physical improvements necessary to prevent degradation of land or resources. The purpose of emergency stabilization is to promptly mitigate the unacceptable effects of the fire and suppression impacts on lands within and adjacent to the burn area in accordance with management policy guidelines. Emergency stabilization actions must be taken within one year following containment of a wildland fire. Rehabilitation is defined as "Efforts undertaken within three years of containment of a wildland fire to repair or improve fire-damaged lands unlikely to recover naturally to management approved conditions, or to repair or replace minor facilities damaged by fire."

At this time, funds for stabilization, rehabilitation or restoration are not available for fires categorized as WFU. Fire line stabilization is the responsibility of the team assigned to fire suppression. Standards should be met before suppression forces are demobilized from the fire. At a minimum, fire and dozer lines should be rehabilitate by spreading original soil and vegetation on the disturbed ground. In extreme cases where seeding or plugging may be necessary, the use of native vegetation and seeds is encouraged. Standard operating procedures are applicable.

Post-fire issues will be assessed by the State ES&R Coordinator and BLM Field Office staff. An initial Emergency Stabilization Plan (Form 1310-20) is due to the State Office, Washington Office and Denver Budget Office within 7 calendar days of containment; the complete ES&R plan is due immediately following the containment of the fire[13].

F. Community Protection/Assistance

Upon a community's request, the AWFCG assigns a lead agency to assist them in completing risk assessments and Community Protection Plans.

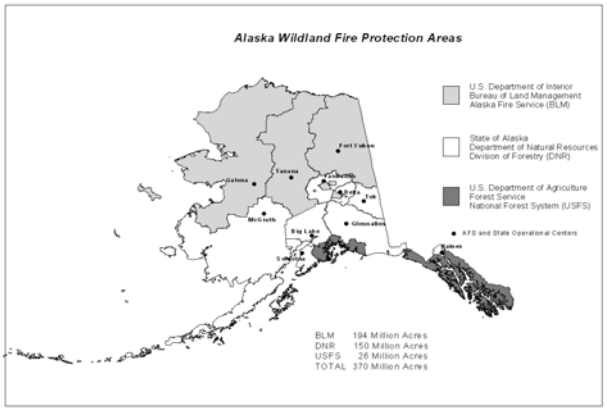
The Rural Fire Assistance (RFA) grant program is designed to support the fire protection capabilities of rural and volunteer fire departments that typically fight fires near or on DOI-responsibility lands. With an annual appropriated budget for the RFA program, the DOI offers awards up to $20,000 to be dedicated to training, equipment

[12] ES&R policies are addressed in 620 DM 3 (May 20, 2004); an Interagency Burned Area Emergency Response Reference Guide is in development and is expect to be released for the 2006 fire season. An additional rehabilitation guide will also be prepared. (BLM WO IM 2005-161)
[13] BLM WO IM 2005-193 Annual Operating Procedures for Post-Fire Emergency Stabilization and Burned Area Rehabilitation Activities

purchases, and fire prevention work on a cost-shared basis. The BLM point of contact is the State Fuels Specialist.

V. Organization and Budget

A. Suppression Organizations



Three agencies are tasked with wildland fire suppression responsibilities. Under reciprocal and cooperative fire agreements, the BLM-AFS, the State of Alaska (Department of Natural Resources, Division of Forestry), and the U. S. Forest Service respond to all wildland fires within their respective protection areas regardless of land ownership. Suppression agencies notify and collaborate with the BLM when fires occur on their lands. Agencies ensure their capability to provide safe, cost-effective fire management programs in support of land, and resource management plans through appropriate planning, staffing, training, equipment and management oversight. BLM-AFS organization is funded through the BLM budget process[14].

The Alaska Interagency Coordination Center is located in the BLM-AFS headquarters.

Agency administrators ensure that their employees are trained, certified and made available to participate in the wildland fire program locally, regionally, and nationally as the situation demands. Employees with operational, administrative, or other skills will support the wildland fire program as necessary. Agency administrators are responsible and are held accountable for making employees available.

B. BLM District/Field Office

The BLM-AFS has fire suppression responsibilities for all DOI-managed and Native lands in Alaska; the BLM Field Offices maintains fire management staff that have overall responsibility for all fire management activities occurring on their respective lands, and directly oversee their own prevention, education, vegetation management and community/rural fire assistance programs. Funded by preparedness dollars, the Fairbanks District which consists of 3 Field Offices, has one permanent full time Fire Management Specialist; the Anchorage Field Office has one permanent full time Fire

[14] Appendix F is the required BLM table of organization annual submission to national office; at this time required annual submissions are: February - Planned Organization and July - Implemented Organization.

Management Specialist; the Glennallen Field Office needs are met by funding 1 workmonth for fire management as a co-lateral duty of a resource specialist.

The AFS Military Zone Fire Management Officer is the primary liaison for military-mission/wildland fire-related issues on BLM-lands withdrawn for military use.

C. BLM State Office

The Manager of AFS has co-lateral duties as the BLM State Fire Management Officer. Several other positions at AFS function in a State Office capacity: the State Fuels Management Specialist, the Fire Ecologist, the Planning and Environmental Coordinator, and a Fire Management Specialist (Fire Planning Analysis lead).

Emergency Rehabilitation and Stabilization Coordinator is stationed at the State Office, Division of Resources, Lands and Planning in Anchorage.

VI. Monitoring and Evaluation

Evaluations assure accountability, facilitate resolution of areas of conflict, and identify resource shortages and agency priorities.

A. Interagency Reviews

The AWFCG reviews the interagency fire plan annually and determines if amendment or revision are appropriate. Any land manager or suppression organization proposal for changes should be submitted to AWFCG in writing. Proposals should include a rationale for the proposed change(s) and be submitted through the AWFCG agency representative.

Under the direction of the AWFCG, an annual, pre-season land manager review of the fire protection needs, landscape scale management option designations, management option boundaries and site-specific designations is required. This annual reviews should included an assessment of previous season fire activity and its effects on the social and economic aspects of surrounding communities. The potential effects on those community and their subsistence use areas of fire activity in the upcoming season should be also considered.

The AWFCG sponsors an annual interagency post-season program review to discuss issues and concerns and evaluate agencies performance and program achievements.

B. Internal Reviews and Monitoring

Systematic BLM Field Office management option evaluation and fire reviews procedures are encouraged to support BLM missions and to determine effectiveness of the fire management program and related projects in achieving goals and objectives.

Instances where actions other than the selected fire management option were initiated will be evaluated to determine if the selected fire management option is appropriate. If a Field Office determines that an option change is necessary, local office policies determine the flow of information and process. Once completed, the change is registered with the suppression organizations using procedures in **Appendix E**.

In addition, the extent of the review of the effects of individual fires will be determined on a case-by-case basis. Vegetative communities will be monitored for the cumulative effects of wildland fire, suppression actions, and the effects of excluding fire from the landscape, as funding permits, to evaluate best management practices when BLM-managed lands:

- Are adjacent to or included as part of a fire that is 200,000 acres or larger.
- Are contained in a hydrologic unit (Level 4) 25% of which has burned in a 25 year period.
- Include areas where fire has been excluded or minimized. Every 10 years the vegetation composition and structure will be examined to determine if it is meeting the resource objectives of the area. Fuel treatment projects and fire management options changes may be recommended.
- Include areas where extensive suppression actions, including retardant and heavy equipment use, have occurred.
- Include areas of concern for specific resources. Monitoring may be initiated on any fire by the Field Office resource specialist to determine the impacts of wildland fire.

All monitoring and suggested management changes will be documented and retained in the appropriate field office database. Other affected land managers including representatives from Native villages adjacent to or within the area will be invited to collaborate in evaluation.

ACRONYMS

ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
AFS	Alaska Fire Service
AIWFMP	Alaska Interagency Wildland Fire Management Plan 1998
ANILCA	Alaska National Interest Land Conservation Act 1980
ANCSA	Alaska Native Claims Settlement Act 1971
AWFCG	Alaska Wildland Fire Coordinating Group
BLM	Bureau of Land Management
CFFDRS	Canadian Forest Fire Danger Rating System
DNR	State of Alaska, Dept. of Natural Resources
DOI	United States Department of Interior
DOF	State of Alaska, Dept. of Natural Resources, Division of Forestry
ESMP	Enhanced Smoke Management Plan
FMO	Fire Management Officer
FMP	Fire Management Plan
FPA	Fire Program Analysis
FRCC	Fire Regime-Condition Class
FWS	U. S. Fish and Wildlife Service
MAC	Multi-Agency Coordinating Group
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFP	National Fire Plan
NPS	National Park Service
RBZ	Riparian Buffer Zone
SIP	State Implementation Plan (for air quality)
SOP	Standard Operating Procedures
T&E	Threatened and Endangered species
USDA	United States Department of Agriculture
USFS	United States Forest Service
WFSA	Wildland Fire Situation Analysis
WFIP	Wildland Fire Implementation Plan
WFU	Wildland Fire Use
WUI	Wildland Urban Interface

GLOSSARY

Federal Fire and Aviation Operations Plan 2005: "The Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy directs agencies to establish common terms and definitions. The newly updated National Wildfire Coordinating Group (NWCG) Glossary of Wildland Fire Terminology is the only authorized source of terms and definitions that meet federal fire management policy. The glossary can be found at: www.nwcg.gov/"

NWCG Glossary is extensive and a recommended reference. The following definitions have been cross-referenced with the NWCG Glossary in August 2005. Most definitions below are Alaska-specific; the original AIWFMP Glossary has been updated below. In most cases, where an NWCF definition existed the old AIWFMP definition was replaced; in several cases, the NWCG definitions has been added prefaced by (definition #) (NWCG).

Alaska Fire Service (AFS): An organization within the Bureau of Land Management with fire suppression responsibilities for Interior Department-managed lands, ANCSA corporate lands, and military lands (through agreements).

Alaska Interagency Wildland Fire Management Plan 1998 (AIWFMP): The interagency document that provides Alaska land managers and fire suppression organizations a single reference for interagency fire management operational information.

Alaska Multi-Agency Coordination Group (MAC): The voting members of the AWFCG activated as a decision-making group to prioritize incidents within Alaska and/or the allocation of critical resources within Alaska when statewide or national fire activity warrants.

Alaska National Interest Lands Conservation Act 1980 (ANILCA): The act that transferred approximately 100 million acres from BLM-management to National Park Service and U.S. Fish and Wildlife.

Alaska Native Claims Settlement Act 1971 (ANCSA): The act provided Alaska Natives $962.5 million and 44 million acres of land. It also set up a system of regional corporations to administer the settlement.

Alaska Statehood Act 1959: The act that made Alaska the 49th state and conveyed 104 million acres of public domain land to state ownership.

Alaska Wildland Fire Coordinating Group (AWFCG): The group's purpose is to facilitate coordination and effectiveness of wildland fire activities and provide a forum to discuss and recommend action, or resolve issues and problems of substantive nature. Membership is comprised of representatives of the Bureau of Land Management, Bureau of Indian Affairs, National Park Service, U.S. Fish and Wildlife Service, U.S. Forest Service, the State of Alaska Departments of Natural Resources, Environmental Conservation and Fish and Game, and Native organizations.

Appropriate Management Response (AMR): Specific actions taken in response to a wildland fire to implement protection and fire use objectives. (2) (NWCG): Any specific action suitable to meet Fire Management Unit (FMU) objectives. Typically, the AMR ranges across a spectrum of tactical options (from monitoring to intensive management actions). The AMR is developed by using Fire Management Unit strategies and objectives identified in the Fire Management Plan.

Canadian Forest Fire Danger Rating System (CFFDRS): The model used to systematically evaluate burning conditions in Alaska.

Control of a Fire: The completion of control lines around a fire, any spot fires, and interior islands to be left unburned; burning out any unburned areas adjacent to the fire side of the control lines; and cooling

down all hot spots that constitute immediate threats to the control lines until these can reasonably be expected to hold under foreseeable conditions**.**

Conversion Date: That day after which most fires in the Modified Protection Option will be treated as being in a Limited Protection Option area. Conversions dates are not uniform and may change from one geographic area to another.

Cooperative Agreement: A written document which identifies who, what, when, where, why, and how certain actions will be done by each individual or agency involved. This is signed by the designated land managers.

Cooperators: Federal, state, and local agencies and Alaska Native groups that participate in planning and conducting fire management projects and activities. (2) (NWCG) Local agency or person who has agreed in advance to perform specified fire control services and has been properly instructed to give such service.

Cultural Resources: Prehistoric and historic remnants and physical and oral evidence of human activities.

Defensible Space: An area, typically a width of 30 feet or more, between an improved property and a potential wildfire where the combustibles have been removed or modified.

Delegation of Authority: A statement provided to the incident commander by the agency executive delegating authority and assigning responsibility. The delegation of authority can include objectives, priorities, expectations, constraints and other considerations or guidelines as needed. Many agencies require written delegation of authority to be given to incident commanders prior to their assuming command on larger incidents.

Designated Site: A site which has been assigned a protection level: Critical, Full, Avoid or Non-Sensitive.

Direct Attack: Fireline is built at the edge of the fire or the edge and interior of the fire are worked on directly. (2) (NWCG) Any treatment applied directly to burning fuel such as wetting, smothering, or chemically quenching the fire or by physically separating the burning from unburned fuel.

Division of Forestry (DOF): The organizational section of the Alaska Department of Natural Resources responsible for wildland fire suppression on state, municipal and private lands.

Ecosystem: (1) In Tansley's original concept, any complex of living organisms with their environment that we may isolate mentally for purposes of study. (2) Totality of an environment plus its included organisms, or habitat and community as an interacting unit. (3) A community, including all the component organisms, together with the environment, forming an interactive system. The fundamental unit in ecology. Ecosystems exist in both space and time but their exact outlines are somewhat arbitrary because each is interconnected with other ecosystems as components of larger systems. (4) (NWCG) An interacting natural system including all the component organisms together with the abiotic environment and processes affecting them.

Ecosystem Sustainability: A concept that promotes the use of natural resources to benefit humans while conserving and wisely managing natural ecosystems for the future.

Emergency Firefighter (EFF) Crew: Type 2 crew hired as needed. Alaska has 72 designated EFF crews in 55 towns and villages.

Environmental Assessment (EA): Authorized by the National Environmental Policy Act (NEPA) of 1969, they are concise, analytical documents prepared with public participation that determine if an Environmental Impact Statement (EIS) is needed for a particular project or action. If an EA determines an EIS is not needed, the EA fulfills the NEPA compliance requirements.

Environmental Impact Statement (EIS): A detailed written analysis that meets the requirements of NEPA Section 102(2).

Escaped Fire: Fire which has exceeded or is expected to exceed initial attack capabilities or prescription.

Evaluation Date: Date established for the Modified management options areas based on an assessment of the values to be protected and historical seasonal fire occurrence. Evaluation dates serve as guidelines and are intended to be flexible enough to adjust suppression actions when weather conditions or fire activity appreciably change.

Federal Land Policy and Management Act of 1976 (FLPMA): The act that establishes the Bureau of Land Management's multiple-use mandate to serve present and future generations. It establishes public land policy, guidelines for its administration, and provides for the management, protection, development, and enhancement of the public lands.

Fire Behavior: Manner in which a fire reacts to fuel, weather, and topography; common terms used to describe fire behavior include smoldering, creeping, running, spotting, torching, and crowning

Firebreak: A natural or constructed barrier utilized to stop or check fires that may occur, or to provide a control line from which to work.

Fire Dependent Ecosystem: An ecosystem can be called fire-dependent if periodic changes in the system due to fire are essential to the functioning of the natural system. In such systems fire is a significant environmental factor that initiates and terminates key vegetation successions, controls the age structure and species composition of the vegetation, produces the vegetative mosaic on the landscape, affects insects and plant diseases, influences nutrient cycles and energy flows, regulates the productivity of the system, and determines the habitats for wildlife.

Firefighting resources: Personnel or equipment used for fighting fire including but not limited to: handcrews, engines, aircraft, smokejumpers, dozers.

Fire Effects: Physical, biological, and ecological impacts of fire on the environment.

Fire Management: Activities required for the protection of burnable wildland values from fire and the use of prescribed fire to meet land management objectives.

Fire Management Activities: Include fire planning, fire management strategies, tactics, and alternatives, prevention; preparedness, education, and addresses the role of mitigation, post-fire rehabilitation, fuels reduction, and restoration activities in fire management

Fire Regime: Description of the patterns of fire occurrences, frequency, size, severity, and sometimes vegetation and fire effects as well, in a given area or ecosystem. A fire regime is a generalization based on fire histories at individual sites. Fire regimes can often be described as cycles because some parts of the histories usually get repeated, and the repetitions can be counted and measured, such as fire return interval.

Firewise: Focuses on pre-fire preparedness and community education and involvement.

Fuels: All combustible material within the wildland/urban interface or intermix, including vegetation and structures.

Hazardous Fuels: A fuel complex defined by kind, arrangement, volume, condition, and location that creates a special threat of ignition and resistance to control.

Indirect Attack: A method of suppression in which the control line is located some considerable distance away from the fire's active edge. Generally done in the case of a fast-spreading or high-intensity fire and to utilize natural or constructed firebreaks or fuelbreaks and favorable breaks in the topography. The intervening fuel is usually backfired; but occasionally the main fire is allowed to burn to the line, depending on conditions.

Initial Attack: A planned response to a wildfire given the wildfire's potential fire behavior. The objective of initial attack is to stop the spread of the fire and put it out at least cost. An aggressive suppression action consistent with firefighter and public safety and values to be protected.

Interagency: Coordination, collaboration, communication among cooperating agencies.

Interim Conveyance: Lands approved for conveyance to the Native corporations and a document of interim conveyance issued. This document is used for conveyance until survey has been accomplished and a patent issued. After lands have been interim conveyed (IC) they are administered and managed by the Natives.

Invasive Species: Species that are not native to the ecosystem being examined, and whose introduction threatens the integrity and productivity of native landscapes.

Land Manager: The responsible Line Officer for a Federal, State, or Native organization that is authorized to make decisions concerning the management of specified land areas.

Management Option: A fire management suppression classification assigned by the land manager that indicated the initial appropriate management response to a wildland fire. Responses range from full fire suppression to managing fires for resource benefits (fire use).

Monitoring: The systematic process of collecting, recording and mapping of fuels, topography, weather, fire behavior, and fire effects data to provide a basis for evaluating and adjusting prescribed fire programs. Monitoring generally requires both on-the-ground and aerial observations. (2) (NWCG) Periodic or continuous surveillance or testing. Monitoring on wildland fires can be to obtain observation of fire effects (e.g., Fire Effects Monitor - FEMO), fire behavior (e.g., Field Observer - FOBS), or both.

National Environmental Policy Act 1969 (NEPA): The act that established a national policy to encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.

National Fire Plan (NFP): The collective term used to describe the long-term commitment based on cooperation and communication among federal agencies, states, local governments, tribes and interested publics, that will help protect communities and natural resources, and most importantly, the lives of firefighters and the public.

National Historic Landmarks are nationally significant historic buildings, sites, districts, structures, and objects designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States. All National Historic Landmarks are included in the National Register of Historic Places.

National Register of Historic Places is the Nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. Properties listed in the Register include districts, sites, buildings,

structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The National Register is administered by the National Park Service, which is part of the U.S. Department of the Interior.

Native Allotments: Prior to the passage of the Alaska Native Claims Settlement Act, any Indian, Aleut, or Eskimo of full or mixed blood who resides in and is a Native of Alaska, who is head of a family or twenty-one years of age can be allotted land not to exceed 160 acres of non-mineral land. The selected land can consist of up to four parcels of land. The allotted land shall be deemed the homestead of the allottee and their heirs in perpetuity, and shall be inalienable and nontaxable until otherwise provided by Congress. Allotment applications on record, if not appealed or in conflict with other land selections, were administratively approved by ANILCA. The BIA is responsible for administering the land, trust responsibility, for pending, approved or after it is conveyed to the Native allottee and so long as it remains in restricted status.

Native Corporation: a. **Regional**: An Alaska Native Regional Corporation, established under the laws of the State of Alaska in accordance with the provisions of ANCSA. The State of Alaska has been divided into 12 Native Regional Corporations with a thirteenth formed for Alaska Natives who live outside of Alaska. Regional Corporations receive all subsurface rights of lands acquired by Village Corporations within their region. They also receive the surface and subsurface rights of lands conveyed to the region. b. **Village**: An Alaskan Native Village Corporation, organized under the laws of the State of Alaska as a business for profit or nonprofit corporation to hold, invest, manage and/or distribute lands, property, funds and other rights and assets for and on behalf of a native village in accordance with the terms of ANCSA. Village Corporations receive ownership of the surface estate on the land conveyed to them. The Village Corporation entitlement varies from three to seven townships, depending on their population as of 1970.

Native-Selected: Lands withdrawn for Native selection under ANCSA and selected by Native village or regional corporations.

Over-Selected Lands: Lands selected by the Native corporations or the State in excess of their entitlement.

Patented Lands: Lands for which the Native corporations, State of Alaska, or individuals have received the final document of ownership, subject to reservations by the U.S. Government.

Prescribed Fire Plan: .A plan required for each fire application ignited by management. Plans are documents prepared by qualified personnel, approved by the agency administrator, and include criteria for the conditions under which the fire will be conducted (a prescription). Plan content varies among the agencies.

Prescribed Fire: See Wildland Fire

Prescription: (1) A written statement defining the objectives to be attained as well as the conditions of temperature, humidity, wind direction and speed, fuel moisture, and soil moisture, under which a fire will be allowed to burn. A prescription is generally expressed as acceptable ranges of the prescription elements, and the limit of the geographic area to be covered. (2) (NWCG) Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions.

Prevention: (1) Activities directed at reducing the incidence of fires, including public education, law enforcement, personal contact, and reduction of fuel hazards (fuels management). (2) Actions to avoid an incident, to intervene for the purpose of stopping an incident from occurring, or to mitigate an incident's effect to protect life and property. Includes measures designed to mitigate damage by reducing or eliminating risks to persons or property, lessening the potential effects or consequences of an incident.

Private Patented: Lands that have been conveyed to private individuals or organizations. These lands are owned in "Fee Simple." They have a patent, which assures ownership.

Property: (*Interagency discussion point – appropriate definition for property*.)

Regional Corporation: see Native Corporation

Resource Objective: A desirable management decision of a course of action, which provides targets for program accomplishment.

Retardant: A substance or chemical agent which reduces the flammability of combustibles.

State-Selected: Land selected by the State under the Statehood Act for possible future conveyance.

Strategy: Overall plan of attack for fighting a fire which gives regard to the most cost-efficient use of personnel and equipment in consideration of values threatened, fire behavior, legal constraints, and objectives established for management of natural resources. (2) (NWCG) The general plan or direction selected to accomplish incident objectives.

Suppression The work of confining, containing, controlling or monitoring a fire or portions of a fire beginning with its discovery. (2) (NWCG) All the work of extinguishing or confining a fire beginning with its discovery

Surveillance: The systematic process of collecting, recording or mapping the fuels, topography, weather' fire behavior and location of values to be protected to provide suppression agencies or land managers the information necessary to make appropriate suppression action decisions on wildland fires.

Sustained Attack: Continuing suppression action with consideration for firefighter safety and within established work-rest ratios on a fire until control is achieved. (2) (NWCG) Continuing fire suppression action until fire is under control.

Tactic: The selection of suppression methods and the coordination of all forces committed to a fire to accommodate a designated strategy. (2) (NWCG) Deploying and directing resources on an incident to accomplish the objectives designated by strategy

Threatened and Endangered Species (T&E): Federally listed species under the Endangered Species Act of 1973 for special protection.

Tribal Organization: An Alaskan Tribe/Village, Tribal Consortium, or other group formed by Tribes/Villages that have either by a compact or 638 contract under the Indian Self-Determination and Education Act has assumed the delivery of Bureau of Indian Affairs services to Natives, including Native allotments.

Trust Lands: Is land (or an interest in land) which is held between the United States as legal owner and the Native individual(s) as equitable owner. The legal owner holds the legal title to the property but only for the benefit of the equitable owner. The equitable owner (Native allottee) has the full right to use and occupy the property and do anything with it except to sell or lease it, grant rights-of way, or sell the natural resources off it.

Village Corporation: See Native Corporation

Wildfire: see Wildland Fire.

Wildland: An area in which development is essentially non-existent, except for roads, railroads, power lines, and similar transportation facilities. Structures, if any, are widely scattered.

Wildland Fire: Any non-structure fire, that occurs in the wildland. Three distinct types of wildland fire have been defined and include **wildfire, wildland fire use** and **prescribed fire.**

- **Wildfire:** An unplanned, unwanted wildland fire, including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects and all other wildland fires where the objective is to put the fire out.
- **Wildland Fire Use**: The application of the appropriate management response to naturally ignited wildland fires to accomplish specific resource management objectives in predefined designated areas outlined in Fire Management Plans.
- **Prescribed Fire**: Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements (where applicable) must be met, prior to ignition.

Wildland Fire Implementation Plan (WFIP): A progressively developed assessment and operational management plan that documents the analysis and describes the appropriate management response for a wildland fire.

Wildland Fire Situation Analysis (WFSA): A decision-making process that evaluates alternative wildfire suppression strategies against selected environmental, social, political, and economic criteria, and provides a record of those decisions.

Wildland Urban Interface (WUI): The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels

.

Appendices

A. Air Quality Guidelines (Visibility Ratings)
B. CFFDRS Write-Up; Fuel Model Descriptions
C. Decision Criteria Record
D. Fire Notification Form
E. Management Option Change Procedures
F. Organization Tables by Agency
    F-1. BLM
    F-2a. AFS Planned
    F-2b. AFS Implemented)
G. Resource Advisor Guides
    G-1. Field Guide for BLM Archaeologist Assigned to Wildfires, Feb 2005
H. BLM Structure Protection Policies May 2007
I. WFSA Decision Matrix

Appendix A

Smoke Effects Mitigation
and
Public Health Protection
Procedures

Smoke Effects Mitigation and Public Health Protection Procedures

At the April 2007 meeting, the Alaska Wildland Fire Coordinating Group (AWFCG) approved the Smoke Effects Mitigation and Public Health Protection Procedures. These Procedures were first implemented during the 2005 fire season and were developed to promote a proactive assessment and documentation of potential smoke impacts; the AWFCG continued to apply the same criteria during the 2006 fire season. For 2007, the name has been changed from 'Smoke Effects Mitigation and Public Health Protection Proposal' to 'Smoke Effects Mitigation and Public Health Protection Procedures.'

Wildland fire smoke in Alaska is inevitable. Public outreach efforts are essential to keep the public informed and provide ample opportunity for individuals to take action based on individual health factors. Land managers, the Alaska Department of Environmental Conservation (ADEC), and suppression providers share the task of providing pro-active and adequate public information on wildfire smoke before, during and after wildland fires occur. Examples of how land managers, ADEC, and suppression providers provide public information about wildland fire smoke include:

1. Incorporating information about health effects of smoke and potential for smoke from wildfires in FIREWISE-type newspaper notices.
2. Working with local communities to incorporate information about health effects of smoke and what should be done about it into FIREWISE and other public fire prevention activities. Refer to the website http://www.epi.hss.state.ak.us/wildfire/default.htm for "Wildfire Smoke - a Guide for Public Health Officials" and links to other publications for public education guidelines.
3. Incorporating within communications to the public the role of fire, its importance in Alaska, the inevitability of smoke impacts in the short term, and the long-term ecosystem benefits.
4. Using Fire Information Officers to disseminate information on smoke health effects during wildfires.
5. Identifying sensitive smoke receptors before the fire season (i.e. communities, villages, recreational areas, tour industry, public highways, hospitals, schools, groups at higher risk for smoke related problems, etc) and target them for dissemination of special information on how to prepare for and deal with smoke when it occurs.
6. Pre-planning public health mitigation scenarios, ranging from increased public education during the incident to providing respite from smoke during a smoke event.

Besides the need for public information, there is a need to disseminate important smoke-related information among the land management agencies, ADEC, and suppression service providers before, during and after wildfire incidents. This is facilitated by:

1. Predictive Services incorporating smoke concerns and forecasts as a routine subject into suppression service providers and land managers briefings during wildfire activity to assist with operational and land manager assessments and decisions.
2. Suppression service providers including information on smoke impact potential or smoke conditions on the Fire Notification and Fire surveillance reports given to land managers.
3. Land managers providing ADEC and suppression service providers with information on smoke impacts obtained during their surveillance/monitoring activities, requests for smoke monitoring at specific-locations and land management concerns or decisions that affect smoke management.
4. Suppression and land manager FMOs, Predictive Services personnel and the ADEC meteorologist routinely tracking smoke plume locations and smoke distribution using satellite imagery.
5. ADEC broadcasting smoke advisories to assist Alaska Multi-Agency Coordinating (MAC) Group, suppression providers and land mangers with decisions related to smoke.

Each AWFCG member is responsible to implement these educational and informational procedures within their agencies as appropriate. These smoke mitigation procedures must remain flexible to respond to the changing needs and priorities of land managers, ADEC and suppression service providers. An analysis on the effectiveness of implementing these measures will be included in the annual AWFCG fall fire program review. Proposed changes to the threshold criteria will be documented at that meeting and will be relayed to the AWFCG Smoke Management Committee, who will change the procedures, if necessary. Changes will be approved by the AWFCG and implemented by AWFCG members within their agencies the following fire season. In this way, the threshold criteria will be adopted for a period of one year and will be available for revision on an annual basis. It is the responsibility of each AWFCG member to distribute and provide operational direction within their agencies. The threshold criteria are intended to provide minimum uniform requirements for interagency use; they do not preclude more restrictive agency-specific measures nor should they discourage an assessment of any fire of any size at any time that may have potential impacts on a community. It is not the intent of the following threshold criteria to

constrict the use of fire as a management tool or to produce an unreasonable workload; it is the intent to facilitate and document (on forms already in use) an acceptable interagency systematic review of smoke impacts and furnish the public with appropriate air quality information. Examples of the range of actions that may be implemented as a result of an assessment include indirect attack on an ongoing fire to inhibit fire growth to suppression of new starts within a defined geographic area. An assessment may also clearly indicate that no action is necessary.

The following three threshold criteria based on air quality impacts have been approved for ***assessments, documentation*** and ***management actions*** for wildland fires that are allowed to burn under the influence of natural forces and where the cost of suppression may exceed the value of the resources to be protected, the environmental impacts of fire suppression activities may have more negative impacts on the resources than the effects of the fire, or the exclusion of fire may be detrimental to the fire dependent ecosystem i.e. Limited and Modified (post conversion) Fire Management Option areas. Air quality impacts are not immediately addressed for fires occurring in Critical, Full and Modified (pre-conversion) Fire Management Option areas since, under the standard operating procedures, actions to suppress the fires in those areas are implemented by the suppression service providers upon discovery of the fire. If initial response forces do not contain a fire in one of these management option areas, a WFSA is required; the WFSA includes an analysis of smoke impact and conditions.

Assessments are the responsibility of both the land manager and suppression organizations. ADEC provides the technical expertise for addressing air quality and health related issues. Additional information on air quality is available on the ADEC website at http://www.dec.state.ak.us/air/.

ADEC confirms that visibility is a good indication of air quality. Air quality categories can be estimated using the visibility ranges in the Air Quality Guidelines table on page 5. As air quality problems develop portable air quality monitors may be used to better measure particulate matter (PM2.5). When monitoring equipment readings are available, they will be the used to determine if threshold criteria are met; the AWFCG will determine location priorities for monitoring when the situation warrants.

Threshold Criteria 1 *Minimal Impacts*:

Smoke concerns are generally few. Smoke will only be produced for a short period of time or is barely visible to the public. Smoke amounts are not expected to reach ***"unhealthy"*** levels. Members of the public have expressed few or no concerns about smoke. No impacts or minor impacts to isolated residences, remote roads or other facilities may occur.

Assessment: Upon discovery of a fire, suppression agencies and land managers make an initial assessment of potential impacts. When fires are first discovered, suppression agencies document pertinent fire information including potential smoke impacts on the Fire Notification Form. Those forms are forwarded to land managers. Fire activity and potential impacts including those related to smoke for ongoing fires is documented on fire surveillance reports. This information is summarized and submitted by Zone/Area Dispatch Offices to the Alaska Interagency Coordination Center (AICC) and incorporated daily into the AICC Situation Report. Land managers may use other assessment tools such as spot forecasts, satellite imagery, local knowledge, websites, monitoring data, Rare Event Risk Assessment Process (RERAP), etc. to further assess potential impacts. Land Managers will consider the potential consequences of the fire on air quality and the impact of smoke on the public when making fire management decisions. The land manager will also consider the cumulative effects of the fire within the context of other fires burning within the same watershed (hydrologic unit (HUC)). The assessments/decisions are documented on one of the forms listed below.

Management Action and Responsibility: If the Fire Notification Form, the fire surveillance report or land manager's assessment indicates no potential impacts to a community or sensitive area, the fire is managed in accordance with the predetermined fire management option. If the Fire Notification Form, fire surveillance report and/or the land manager's assessment indicate that there are potential impacts to a community or sensitive area, the land manager in consultation with the Suppression FMO will determine the appropriate management response based on the best available information, including Threshold Criteria level. Smoke management issues and potential smoke impacts must be considered if a Decision Criteria Record implements a fire management response different from the predetermined fire management option. If a fire requires a WFSA or the fire is to be managed under a WFIP, potential consequences of the smoke on air quality and the impact of smoke on the public will be considered in developing management alternatives as required in both processes.

Assessments and/or alternatives chosen should be reviewed and validated routinely throughout the duration of the fire to ensure that smoke mitigation actions are implemented on a timely basis, if required.

Documentation: The suppression provider and land manager will document the assessments/decisions on one of the following:

1. Fire Notification Form (new starts)
2. Fire Surveillance Report (ongoing fires)
3. Decision Criteria Record (Alaska Interagency Wildland Fire Management Plan Appendix E)
4. Wildland Fire Implementation Plan (WFIP)
5. Wildland Fire Situation Analysis (WFSA).

Threshold Criteria 2 *Localized Impacts:*

Smoke concerns are moderate, although some concerns may require special mitigation. Smoke will be visible to the public over several days. Smoke exposures or amounts at the ***"unhealthy"*** level may cause health or safety concerns over a short period of time. Vistas, roads, and some residences may experience short-term decreases in visibility. Members of the public have expressed concerns about smoke. A few health related complaints may occur. Smoke intrusions may occur into smoke sensitive areas. Mitigation measures or additional smoke modeling may be needed to address potential concerns with smoke impacts. Specific smoke monitoring may be required to determine smoke plume heights and directions.

Assessment: Upon discovery of a fire, suppression agencies and land managers make an initial assessment of potential impacts. When fires are first discovered, suppression agencies document pertinent fire information including potential smoke impacts on the Fire Notification Form. Those forms are forwarded to land managers. Fire activity and potential impacts including those related to smoke for ongoing fires is documented on fire surveillance reports. This information is summarized and submitted by Zone/Area Dispatch Offices to the Alaska Interagency Coordination Center (AICC) and incorporated daily into the AICC Situation Report. ***"Unhealthy"*** air levels detected in a community and projected to continue or degrade further will prompt assessments by land managers. Examples of additional reference materials available to estimate the potential impacts from that fire and its affect a community's air quality include spot forecasts, satellite imagery, local knowledge, websites, monitoring data, and RERAP. Land Managers will consider the potential consequences of the fire on air quality and the impact of smoke on the public when making fire management decisions. The land manager will also consider the cumulative effects of the fire within the context of other fires burning within the same HUC. The decisions based on these assessments of mitigation alternatives and impacts are documented on one of the forms listed below. The assessment must be completed and documented within 72 hours from detection of ***"unhealthy"*** conditions.

Management Action and Responsibility: If the Fire Notification Form, Fire surveillance report and/or the land manager's assessment indicates **no potential** impacts to a community, sensitive area, or localized area, the fire is managed in accordance with the predetermined fire management option. If the Fire Notification Form, fire surveillance report and/or the land manager's assessment indicate **potential** impacts to a community, sensitive area, or localized area where ***"unhealthy"*** smoke impacts exist and are projected to continue, the land manager(s) in consultation with the Suppression FMO will determine the appropriate management response based on the best available information, including Threshold Criteria level. Existing localized smoke management issues and potential smoke impacts must be considered if a Decision Criteria Record implements a fire management response different from the predetermined fire management option. If a fire requires a WFSA or the fire is to be managed under a WFIP, potential consequences of the smoke on air quality and the impact of smoke on the public will be considered in developing management alternatives as required in both processes.

Assessments and/or alternatives chosen should be reviewed and validated routinely throughout the duration of the fire to ensure that smoke mitigation actions are implemented on a timely basis, if required.

Documentation: The suppression provider and land manager will document assessments/decisions on one of the following:

1. Fire Notification Form (new starts)
2. Fire Surveillance Report (ongoing fires)
3. Decision Criteria Record (Alaska Interagency Wildland Fire Management Plan Appendix E)
4. Wildland Fire Implementation Plan (WFIP)
5. Wildland Fire Situation Analysis (WFSA).

Threshold Criteria 3 *Regional Impacts:*

Smoke concerns are high and require special and sometimes difficult mitigation. Smoke will be readily visible to the public and last several days to weeks. Smoke exposures or amounts at the ***"unhealthy"*** level are likely to cause health and safety concerns. Large segments of the public are concerned about smoke. Vistas, roads, and residences may experience longer-term decreases in visibility or significant decreases in visibility over the short-term. Major smoke intrusions may occur into smoke sensitive areas, such as hospitals and major airports, at ***"unhealthy"*** levels and trigger air quality and health concerns. Special coordination with air quality officials is required. Mitigation measures or additional smoke modeling are required to address potential concerns with smoke impacts. Specific smoke monitoring is required to determine smoke plume heights and directions.

Assessment: Upon discovery of a fire, suppression agencies and land managers make an initial assessment of potential impacts. When fires are first discovered, suppression agencies document pertinent fire information including potential smoke impacts on the Fire Notification Form. Those forms are forwarded to land managers. Fire activity and potential impacts including those related to smoke for ongoing fires is documented on fire surveillance reports. This information is summarized and submitted by Zone/Area Dispatch Offices to the Alaska Interagency Coordination Center (AICC) and incorporated daily into the AICC Situation Report. When fires with multiple land ownership cause air quality in a community to reach ***"unhealthy"*** levels and it is projected to continue or degrade further, land managers should complete additional assessments documentation within 72 hours from detection of ***"unhealthy"*** conditions. Land managers will follow assessment procedures identified under Threshold 2 and forward those assessments to their AWFCG representative. The AWFCG will evaluate the situation.

Management Action and Responsibility: Convene the AWFCG to evaluate the situation. The AWFCG may implement smoke mitigation actions such as initial attack of fires in a specific geographic area or region regardless of fire management option. AWFCG members are responsible to communicate AWFCG decisions within their agencies. Once air quality improves to ***"unhealthy for sensitive groups"*** for 72 hours or more**,** the AWFCG should re-evaluate decisions and on-going actions to determine if decisions and actions remain valid and should continue or if new parameters are needed.

If the Fire Notification Form, Fire surveillance report and/or the land manager's assessment indicates that the fire is **outside** of any geographic area that the AWFCG has implemented smoke mitigation actions and **no potential** impacts to a community, sensitive areas, or the regional area exist, the fire is managed in accordance with the predetermined fire management option. If Fire Notification Form, Fire surveillance report and/or the land manager's assessment indicates that the fire is **outside** of any geographic area that the AWFCG has implemented specific smoke mitigation actions and indicates **potential** impacts to a community, sensitive area, or regional area where ***"unhealthy"*** smoke impacts exist and are projected to continue, the land manager(s) in consultation with the Suppression FMO will determine the appropriate suppression response based on the best available information, including Threshold Criteria level. Existing smoke mitigation actions, regional smoke management issues and potential smoke impacts must be considered if a Decision Criteria Record implements a fire management response different from the predetermined fire management option. If a fire requires a WFSA or the fire is to be managed under a WFIP, potential consequences of the smoke on air quality and the impact of smoke on the public will be considered in developing management alternatives as required in both processes.

Assessments and/or alternative chosen should be reviewed and validated routinely throughout the duration of the fire to ensure that smoke mitigation actions are implemented on a timely basis, if required.

Documentation: The suppression provider and land manager will document the assessments/decisions on one of the following:

1. Fire Notification Form (new starts)
2. Fire Surveillance Report (ongoing fires)
3. Decision Criteria Record (Alaska Interagency Wildland Fire Management Plan Appendix E)
4. Wildland Fire Implementation Plan (WFIP)
5. Wildland Fire Situation Analysis (WFSA)

Air Quality Guidelines				
Visibility Range*	**Categories**	**Monitored Particulate Value (PM2.5, 24 hr. average) ****	**Health Effects**	**Cautionary Statements**
10 miles and up	**Good**	0-15	None	None
6 miles to 9 miles	**Moderate**	16-35	Possibility of aggravation of heart or lung disease among persons with cardiopulmonary disease and the elderly.	None
3 miles to 5 miles	**Unhealthy For Sensitive Groups**	36-55	Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly.	People with respiratory or heart disease, the elderly and children should limit prolonged exertion.
1.5 to 2.5 miles	**Unhealthy**	56-140	Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; increased respiratory effects in the general population.	People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion; everyone else should limit prolonged exertion.
0.9 to 1.4 miles	**Very Unhealthy**	141-209	Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant risk of respiratory effects in the general population.	People with respiratory or heart disease, the elderly, and children should avoid any outdoor activity; everyone else should avoid prolonged exertion.
0.8 miles or less	**Hazardous**	>210	Serious aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; serious risk of respiratory effects in the general population.	Everyone should avoid any outdoor exertion; people with respiratory or heart disease, the elderly, and children should remain indoors.

* Procedures for making personal observations to estimate visibility

1 Face away from the sun

2 Look at objects/landmarks that are at known distances.

3 Estimate the distance at which the known objects totally disappear

**Updated April 2007 to EPA Proposed AQI

Appendix B
Canadian Forest Fire Danger Rating System

Rating Fire Danger and Potential Fire Behavior in Alaskan Ecosystems
By M.E. ALEXANDER and F.V. COLE

The Canadian Forest Fire Danger Rating System (CFFDRS) has officially been used in Alaska since 1992. The CFFDRS comprises chiefly two major subsystems or modules (Fig. 1a): The Canadian Forest Fire Weather Index (FWI) System (Fig. 1b) and the Canadian Forest Fire Behavior Prediction (FBP) System (Fig. 1c).

The FWI System really constitutes the "spine" of the CFFDRS. The six standard components of the FWI System provide relative numerical ratings of wildland fire potential for a standard fuel type on level terrain based on four weather inputs.

The first three components are fuel moisture codes that follow daily changes in the moisture contents of three classes of forest fuel with different drying rates. For each, there are two phases – one for wetting by rain and one for drying – arranged so that the higher values represent lower moisture contents and hence greater flammability. The Fine Fuel Moisture Code has a maximum value of 101 but the other two codes are "open ended", although significant differences in fire potential eventually become inconsequential.

The final three components are fire behavior indexes, representing rate of spread, amount of available fuel, and fire intensity; their values increase as fire weather severity worsens (all three indexes are technically "open ended", but there are practical limits). The system is dependent on weather only and does not consider differences in ignition risk, fuel types or topography. It provides a uniform method of rating fire danger.

Calculation of the FWI System components can be accomplished with the use of manual tables or by a computer program. Because calculation of the components depends solely on weather readings, they can just as easily be calculated from forecast weather to yield a fire danger forecast.

Each component of the FWI System conveys direct information about certain aspects of wildland fire potential. Because the FWI System is dependent solely on weather, the actual fire behavior can in turn be expected to vary from one fuel type to another at the same code or index value. Thus, the following "quick and dirty" guidelines, recently formulated for inclusion in the 2001-2002 edition of the "Handy-Dandy" Alaska Fire Suppression Field Handbook, are *general* interpretations based on fire research information and operational experience with the system over many years in conifer stands in the boreal forest.

- **Fine Fuel Moisture Code (FFMC)**: There is little chance of ignition, and surface fire spread with an open flame is unlikely at 74 or less. Continuous surface fire spread begins to occur when 80 is exceeded. Spot fire ignition potential approaches certainty at 90, and the onset of extreme fire behavior generally occurs at 92, depending on the wind and BUI level.

- **Duff Moisture Code (DMC)**: The duff layer doesn't generally become involved in the combustion process until about 20 is reached, which coincidentally represents the threshold for lightning fire ignitions. At 40, the influence of the duff layer on surface fire behavior noticeably increases. The onset of extreme fire behavior often occurs at 60, depending on the wind and FFMC. Very little decrease in duff moisture content occurs when a level of around 150 is attained.

- **Drought Code (DC)**: The potential for significant ground or sub-surface fire activity is relatively minimal at levels less than 300. However, the tendency for persistent smouldering increases as values of around 500 are approached in which case mop-up and extinguishment gradually becomes increasingly more difficult as the DC continues to rise.

- **Initial Spread Index (ISI):** Fires tend to spread on the ground surface until values of about 10 are exceeded at which time the onset of crowning can be expected, especially in the spring, in fuel types that will support crown fires. Extreme fire behavior is generally associated with values in excess of 20, depending on the BUI. Severe fires or major conflagrations occur when 70 is approached, a level of fire danger severity that is rarely exceeded.

- **Buildup Index (BUI):** Low-intensity surface fires are commonly associated with values less than 30. A fire's behavior or vigor noticeably increases once the BUI climbs above this level as the additional fuel for combustion becomes available. A BUI of 60-80 is commonly viewed as the transition threshold for extreme fire behavior, although this does depend on the ISI. A value of 90 is regarded as representing severe fire behavior potential.

- **Fire Weather Index (FWI):** An FWI of 3 constitutes a threshold for sustained flaming combustion and fire growth. The onset of crowning and other characteristics associated with extreme fire behavior occur at values of 25-30. Most wildfire disasters have occurred when the FWI exceeds 50.

More specific interpretations of potential fire behavior should be sought through the use of the FBP System and other CFFDRS based guides (e.g., Lawson and Dalrymple 1996; Lawson et al. 1997).

In contrast to the FWI System, the FBP System provides for actual quantitative estimates of various fire behavior parameters for 16 distinct fuel types and topographic situations based in part on inputs from the FWI System (principally the ISI and BUI). For example, head fire rate of spread is outputted in metres/minute or chains/hour. For further information, fire personnel are encouraged to consult the FBP System "Red Book" (Taylor et al. 1997).

As an aid to fostering a greater appreciation of the CFFDRS amongst Alaskan fire managers, readers are reminded that a head fire intensity class graph and interpretive table for FBP System Fuel Type C-2 (Boreal Spruce) were produced in 1995 (Alexander and Cole 1995), including a color wall poster (Cole and Alexander 1995a), as reported on in a previous issue of ***Fireline*** (Cole and Alexander 1995b).

Marty Alexander is a senior fire behavior research officer with the Canadian Forest Service at the Northern Forestry Centre in Edmonton, Alberta, and Frank Cole is the interagency fire danger rating specialist with the Alaska Division of Forestry at the Alaska Interagency Fire Coordination Center in Fairbanks.

References Cited

Alexander, M.E.; Cole, F.V. 1995. Predicting and interpreting fire intensities in Alaskan black spruce forests using the Canadian system of fire danger rating. Pages 185-192 in Managing Forests to Meet People's Needs. Proceedings of 1994 Society of American Foresters/Canadian Institute of Forestry Convention (Sept. 18-22, 1994, Anchorage, Alaska). Society of American Foresters, Bethesda, Maryland. SAF Publication 95-02.

Cole, F.V.; Alexander, M.E. 1995a. Head fire intensity class graph for FBP System Fuel Type C-2 (Boreal Spruce). Alaska Department of Natural Resources, Division of Forestry, Fairbanks, Alaska and Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre, Edmonton, Alberta. Poster (with text).

Cole, F.V.; Alexander, M.E. 1995b. Canadian fire danger rating system proves valuable tool in Alaska. Fireline 8(3): 2-3.

De Groot, W.J. 1993. Examples of fuel types in the Canadian Forest Fire Behavior Prediction (FBP) System. Forestry Canada, Northern Forestry Centre, Edmonton, Alberta. Poster (with text).

Lawson, B.D.; Dalrymple, G.N. 1996. Probabilities of sustained ignition in lodgepole pine, interior Douglas-fir, and white spruce-subalpine fir forest types. Canadian Forest Service, Pacific Forestry Centre

and British Columbia Ministry of Forests, Research Branch, Victoria, British Columbia. FRDA Supplement 1 to FRDA Handbook. 12. 17 p.

Lawson, B.D.; Frandsen, W.H.; Hawkes, B.C.; Dalrymple, G.N. 1997. Probability of sustained smouldering ignition for some boreal forest duff types. Canadian Forest Service, Northern Forestry Centre, Edmonton, Alberta. Forest Management Note 63. 11 p.

Taylor, S.W.; Pike, R.G.; Alexander, M.E. 1997. A field guide to the Canadian Forest Fire Behavior Prediction (FBP) System. Canadian Forest Service, Northern Forestry Centre, Edmonton, Alberta. Special Report 11. 60 p.

Table 1. Selected Properties of the FWI System Fuel Moisture Codes

FWI System Fuel Moisture Code	Fuel Moisture Timelag (days)	Rainfall Threshold* (mm)	(in.)	Nominal Fuel Depth (cm)	(in.)	Nominal Fuel Load (t/ha)	(T/ac)
FFMC	2/3	0.6	~0.02	1.2	~0.5	2.5	~1.1
DMC	15	1.5	~0.06	7	~2.8	50	~22
DC	53	2.9	~0.11	18	~7.1	250	~112

*The 24-hour rainfall total must reach these amounts before it is considered to have any effect on the respective code.

Table 2. List of FBP System Fuel Types*

Group / Identifier	Descriptive name
Coniferous	
C-1	Spruce-lichen woodland
C-2	Boreal spruce
C-3	Mature jack or lodgepole pine
C-4	Immature jack or lodgepole pine
C-5	Red and white pine
C-6	Conifer plantation
C-7	Ponderosa pine/Douglas-fir
Deciduous	
D-1	Leafless aspen
Mixedwood	
M-1	Boreal mixedwood – leafless
M-2	Boreal mixedwood – green
M-3	Dead balsam fir mixedwood – leafless
M-4	Dead balsam fir mixedwood – green
Slash	
S-1	Jack or lodgepole pine slash
S-2	White spruce-balsam slash
S-3	Coastal cedar/hemlock/Douglas-fir slash
Open	
O-1a	Matted grass
O-1b	Standing grass

Appendix C
DECISION CRITERIA RECORD

Fire Number: _____ Fire Name: _____

Land Manager/Owner: _____ Fire Management Option: _____
(Point of Ignition) (Point of Ignition)

Adjoining Land managers: Adjacent Mgmt Option(s):

_____ _____
_____ _____
_____ _____
_____ _____

Current Fire Size: _____ Location (Legal Description):

T _____ R _____ S _____ M ___

Map Quad: _____ Lat/Long (if available): _____

Decision Criteria

Public Safety at Risk	Yes	No
Firefighter Safety at Risk	Yes	No
Threatening Property	Yes	No
Improvements at Risk	Yes	No
Threat to Natural/Cultural Resources	Yes	No
Initial Attack Resources Not Available	Yes	No
Unacceptable Factor(s) to Land managers	Yes	No
Other Unacceptable Factors	Yes	No

Weather:

Current:

Past:

Predicted:

Fire Behavior:

Current:

Past:

Predicted:

Resistance to Control/Extinguish:

Topography/Natural Barriers:

Fuels:

Other Contributing Factors: (Fire Danger Ratings, Greenness, etc.):

Fire Representative Summary Statement

Objectives:

Strategy:

Estimate Duration of Actions:

Signature: _____Date: _____
Fire Representative

Land Manager Summary Statement and Authorization

Objectives:

Constraints:

Authorization: _____Date: _____
Land managers Representatives

Appendix D
FIRE NOTIFICATION FORM

FIRE NUMBER:
FIRE CODE:
FIRE NAME:

ZONE REP:

MANAGEMENT OPTION:

DATE/TIME FIRE REPORTED:

NEARBY PROTECTION BOUNDARIES:

LAND MANAGER:

NEARBY OWNERSHIP BOUNDARIES:

LAND MANAGER REP CONTACTED
WHO:
WHEN:

COORDINATES:

LEGAL:

MAP QUAD:

<u>MOST RECENT FIRE SIZE UP:</u>

ACREAGE:

FUELS:

WIND:

PROBABILITY OF GROWTH:

TOPOGRAPHY:

NATURAL BARRIERS:

ALLOTMENTS:

STRUCTURES:

Risk to Public Safety?	**Yes**	**No**
Risk to Firefighters?	**Yes**	**No**
IA forces available?	**Yes**	**No**
Fire catchable?	**Yes**	**No**

Smoke Impact Potential:

ACTION PLAN:

OTHER PERTINENT DATA:

Appendix E
Management Option Change Procedures

Boundaries between management options should be readily identifiable from both the air and on the ground throughout the fire season and also be feasible for potential placement of suppression control lines. The absence of readily available boundaries should not result in providing protection to very large geographic areas when the land manager only wants to protect a small area or specific site. Any management option may border against any other management option. Either the suppression organization or land managers may make recommendations for relocating or reinforcing fire management option boundaries through prescribed fire or mechanical methods. Only the land managers can approve boundary changes or boundary reinforcement activities for the lands they manage or own. Consensus between land managers adjacent to proposed fire management option boundary changes should be attempted to minimize establishing boundaries that reflect administrative unit boundaries or creates boundaries that are not operationally or ecologically feasible. Hazard reduction plans may be developed to reinforce fire management option boundaries. Any reinforcement activities will be reviewed by the suppression organization, but can only be authorized by the land managers.

Alaska Interagency Wildland Fire Management Plan
Management Option Boundary or Management Level Change Procedures
2005 Revision

The AWFCG approved these procedures and deadlines for changing the management option boundaries and/or management levels. These procedures and deadlines supersede the AWFCG Management Option Change Procedures memorandum dated April 14, 2000 and the deadlines for submitting changes identified in the AIWFMP.

The general guidelines for fire management option revisions are addressed in the Alaska Interagency Wildland Fire Management Plan (AIWFMP) on pages 38 and 39. While these guidelines cover the basic procedures for management option boundary or management level changes, they do not cover procedures for documenting the changes. To ensure consistent documentation of management option changes, the suppression providers and land managers will adopt the following procedures for all future changes.

Revised Change Procedures

A. General

1. Changes are typically initiated by land manager/owners, but may be suggested by suppression providers or resource managers. The Area/Forest/Zone Fire Management Officers (FMO) will mail out a letter in September reminding land manager/owner(s) to review the selected management options on their land and be prepared to discuss anticipated changes at the Fall Fire Workshop.

2. If a departure from the selected management option occurs for a given area during the fire season, the AIWFMP requires a review of the selected management option in that area by the land manager/owner(s) and suppression providers to determine if the management option needs to be changed.

3. The land manager/owner(s) approve the management option boundary and/or management level changes. The Area/Forest/Zone FMO verifies that (a) the land managers have notified interested parties of the changes, (b) that the changes are operationally feasible and (c) the required map products are provided. The Area Forest/Zone FMO submits the approved changes to BLM-AFS. BLM-AFS updates the GIS files and provides AICC the information required to update the statewide map atlas.

4. Changes in allotment management levels occur through negotiation with the Bureau of Indian Affairs (BIA) and the allotment owner(s). The land manager/owner(s) will notify the BIA of

management option boundaries and/or management levels changes for lands that surround or abut Native Allotments.

5. The land manager/owner(s), resource managers and suppression providers should work closely together to facilitate changes in the management option boundaries and/or management levels.

6. The land manager/owner(s) and suppression providers may negotiate who will complete the map or GIS products and notification of interested parties based upon capability to perform those functions.

7. If a land manager/owner(s) or suppression provider believes that the change process has been delayed they will notify their AWFCG representative. The AWFCG is the final arbitrator for resolving procedural issues that have delayed change implementation.

B. Land Manager/Owner Responsibilities

1. The land manager/owner delineates the boundary or level change(s) either on 1:63,360 scale paper maps or as an electronic GIS shapefile(s) at the 1:63,360 scale.

2. If changes are only on lands of one manager/owner

   a. The land manager/owner should notify interested local entities (adjacent land manager/owners, local resource managers, BIA if change occurs around allotments). Certified return mail is recommended to document the notification.

   b. The land manager/owner completes their section of the AWFCG - Fire Management Option Boundary or Management Level Change Approval Form (Approval Form) with a written description and 1;63,360 Map Name and Number (e.g. Northwest corner of Denali National Park on Denali A-1; 300 acres MOD to LIM), signs and dates it, confirms that notification of interested entities is completed, and lists electronic file or map names that delineates the management boundary or management level change(s).

   c. The land manager/owner provides either electronic files or paper maps delineating the changes and the appropriately filled out Approval Form to the Area/Forest/Zone FMO who will coordinate the change process and submit the approved change packet.

3. If changes occur on lands with different management or ownership.

   a. All land manager/owner(s) upon whose lands the changes occur and who agree to the changes must sign and date the Approval Form. The land manager/owner(s) proposing the change(s) is responsible for (1) notifying interested parties, (2) providing either the electronic files or paper map products delineating the changes, (3) ensuring the land manager/owner portion of the Approval Form is completed and (4) submitting the Form to the Area/Forest/Zone FMO.

   b. The land manager/owner provides either electronic files or paper maps delineating the changes and the appropriately filled out Approval Form to the Area/Forest/Zone FMO who will coordinate the change process and submit the approved change packet.

C. Area/Forest/Zone FMO Responsibilities

1. Once the Approval Form is submitted, the FMO issues a transaction name and number (for filing purposes) e.g. TAD/NPS-2005-001-Denali. At this time a file will be started. If the proposed change involves more than one Area/Forest/Zone, the FMO who coordinates the process will issue the transaction number and descriptive name.

2. The Area/Forest/Zone FMO reviews the management option boundary and/or management level change to determine if they are operationally feasible. If they are not operationally feasible the

FMO should contact the land manager/owner(s) who submitted the changes and propose modifications to make the changes operationally feasible.

3. The FMO verifies that the land manager/owner(s) have completed the notification of interested parties and all required electronic GIS files or paper map products have been provided by the land manager/owner(s).

4. The FMO signs and dates the Approval Form.

5. The FMO submits the completed change packet: (1) AWFCG - Fire Management Option Boundary or Management Level Change Approval Form, and (2) electronic GIS files or paper map products to the Chief, Division of Information Systems, BLM – AFS, P.O. Box 35005, Ft. Wainwright, Alaska, 99703 or 1541 Gaffney, Ft. Wainwright, 99703-0005 (FedEx, UPS, etc).

6. The FMO will keep a copy of the Approval Form and update the Area/Forest/Zone map atlas with the approved changes to the management option boundaries and/or management levels.

7. The FMO will be notified by the Chief, Division of Information Systems when the approved change(s) have been incorporated into the interagency fire management option shapefile/database. The FMO will record the date when the notification occurs and informs the land manager/owner(s).

D. BLM-AFS and AICC Responsibilities

1. The Chief, Division of Information Systems is responsible for ensuring that the approved changes are incorporated into the interagency fire management option shapefile/database in a timely manner. If there are questions about the GIS files or map products the individual identified on the Approval Form as the one responsible for the preparing the files or maps will be contacted.

2. The Chief, Division of Information Systems will provide the complete package to AICC/IA so the statewide map atlas can be updated and for storage in the statewide management option change archive.

3. The Initial Attack Coordinator will ensure that the AICC statewide map atlas is updated in a timely manner and maintain the historical archive of management option changes correspondence statewide.

4. The Chief, Division of Information Systems will ensure that the annual interagency fire management option shapefile/database is archived and readily available to interagency partners if analyses are desired at a later date.

5. The Chief, Division of Information Systems will ensure that the Area/Forest/Zone FMO is notified when approved changes have been incorporated into the interagency fire management option database.

E. Deadlines

1. Approved and verified changes of management option boundaries or management levels will be submitted by the Area/Forest/Zone FMO to Chief, Division of Information Systems no earlier that September 30 and no later than April 1.

2. The deadline for updating the interagency fire management option database and statewide map atlas is May 1, the effective date of change.

The AWFCG Approval Sheet is attached.

Alaska Wildland Fire Coordinating Group
Fire Management Option Boundary or Management Level Change
Approval Sheet

Area/Forest/Zone FMO

The submitted fire management option boundary or management level change(s) are operationally feasible. The required notifications have been completed, the required signatures are recorded below and the GIS shapefiles or map products are included with this approval sheet.

_____ _____
Area/Forest/Zone FMO Date

Transaction Number _____ Descriptive Name: _____

Notification of Interagency Management Option Database update with approved change(s):

By: _____Date: _____

Land Manager/Owner(s)

The following land manager(s)/owner(s) have approved fire management option boundary or management level change(s) for the lands that they manage/own.

_____ _____
Agency Administrator or Land Manager/Owner Date
Notification of interested parties completed: _____ YES _____ NO

_____ _____
Agency Administrator or Land Manager/Owner Date

_____ _____
Agency Administrator or Land Manager/Owner Date

Rationale for Change: _____

AWFCG - Fire Management Option Boundary or Management Level Change Approval Sheet

The fire management option changes for _____
Agency/owner or geographic area (if multiple owners)
(i.e. Denali National Park or Minto Flats)
are contained in shapefile format or are delineated on the 1:63,360 maps named:

Shapefile	or	Map(s)
_____.shp		_____
_____.shx		_____
_____.dbf		_____
_____.prj		_____

Individual who prepared either the shapefile or map products:

Name _____ Phone Number _____ email _____

- Use additional sheets if necessary. **Send completed Package to Chief, Division of Information Systems, Alaska Fire Service, P.O. 35005, Ft. Wainwright, AK 99703.**

Appendix F
Planned and Implemented Fire Preparedness Resources

For Information Contact:
Mary Lynch
Planning and Environmental Coordinator
BLM – AFS
Phone: 907-356-5863
Email: Mary_Lynch@blm.gov

Appendix G
Resource Advisor's Guides

G-1 Field Guide for BLM Archaeologist Assigned to Wildfires, February 2005
Distributed in Feb 2005 under BLM WO IM 2005-071

FIELD GUIDE FOR BLM ARCHAEOLOGISTS ASSIGNED TO WILDFIRES

February 2005

Stephen Horne
California State Office, Sacramento, CA
Bureau of Land Management

Kate Winthrop
Washington D.C. Office
Bureau of Land Management

Issued by WO-240: Cultural and Fossil Resources and Tribal Consultation Group
Bureau of Land Management
1849 C St NW, MS L204
Washington D.C.20240
202-452-0330

TABLE OF CONTENTS

FIELD GUIDE FOR BLM ARCHAEOLOGISTS
ASSIGNED TO WILDFIRES

INTRODUCTION

The purpose of this Field Guide is to provide practical, useful information for the Bureau of Land Management's cultural resource specialists (usually an archaeologist) who are assigned to fires. This Field Guide supplements the "Resource Advisor's Guide for Wildland Fire," issued by the National Wildfire Coordinating Group for the Department of Interior and Department of Agriculture, and available online at:
http://www.nwcg.gov/pms/pubs/RAguide_2004.pdf.

Cultural resource specialists (CRS) work within the Incident Command System (ICS). This Field Guide supplements, but does not replace existing ICS guidance. CRS working in a wildland fire situation are subject to the procedures that govern all fire participants. The priorities of all Incident Command teams are life, property, and resources, in that order. CRS are reminded that human safety is without exception the top priority and never secondary to cultural resource concerns.

Depending on the incident type and complexity, the nature of the on-site incident organization, and preferences of the IC and the Agency Administrator, the actual location of the CRS position within the incident may vary. Frequently, the CRS is assigned directly to the Resource Advisor, who, in turn works directly for the Agency Administrator. On other assignments the CRS or Archaeologist may be attached to the ICS structure, most typically assigned to the Planning Section Chief. The CRS, regardless of assignment within the ICS, will typically coordinate extensively and thoroughly with the Resource Advisor.

Fire situations are fluid and changeable, and require flexibility in actions from those who participate in them. These guidelines provide suggestions for cultural resource specialists, who should adopt and adapt them as needed.

1.0 BEFORE RECEIVING AN ASSIGNMENT

1.1 Get to Know Your Fire Staff

If you haven't already done so, introduce yourself to your local Fire Management Officer (FMO) and Fire Staff. Get to know them and give them a chance to get to know you. Find out how best to work with them, and what you need to know to do so effectively. The FMO and staff will be your best contacts for questions, training information, and other issues that will arise.

1.2 The Incident Qualifications and Certification (IQCS) Card (Red Card)

You need a red card as a Firefighter 2 to go on the fireline unescorted. A red card for a CRS may also show "Technical Specialist" with a red card code for archaeology showing ARCH. Red cards are valid for 12 months.

To get a Firefighter 2 red card you must:

- Complete classroom training
- Provide personal health information on a health screening questionnaire (HSQ)
- Pass the Work Capacity Test (WCT)

Classroom training: It is required to take the initial introductory sequence of classes for fire-fighting, which provides important information about the Incident Command System, safety, and fire fighting concerns. The Basic Wildland Firefighter courses are taken together and last about a week, and consist of the following:

- I-100 Introduction to Incident Command System (ICS)
- S-130 Basic Wildland Firefighting
- S-190 Introduction to Fire Behavior.

Once you have completed the basic sequence, you will need to complete the one-day "refresher" course, the HSQ, and the WCT each year to keep your red card current. Consider also taking more advanced training in fire behavior. The refresher and basic training course (Basic Wildland Firefighter) are offered locally; check with your local Fire Management Officer (FMO) for schedules. Check the following website for links to training opportunities, and/or discuss your training needs with your local FMO:

http://www.nifc.gov/training_quals/index.html

Health Screening Questionnaire (HSQ): The purpose of the HSQ is to identify individuals who may be at risk in preparing for and completing the WCT. Information provided on the questionnaire is confidential and is kept in the employee's file. If you answer "yes" to any questions you may need to have a medical exam or a clearance statement from your doctor. Your office/unit may also require a baseline medical exam.

Work Capacity Test: This is a physical fitness test that qualifies you to do different things on a fire, depending on your fitness level. There are three levels of qualification. At a minimum, an ARCH needs to pass at a "light" level to go unescorted to the fireline. See Red Book Chapter 6, page 06-12 for visits to the fireline requirements.

Work Capacity Test Requirements

Work Category	Test Required	Distance	Weight Carried	Time Completed
Arduous	Pack Test	3 miles	45 lbs	45 min.
Moderate	Field Test	2 miles	25 lbs	30 min
Light	Walk Test	1 mile	None	16 minutes

More information on red card qualifications is located at:

http://www.fire.blm.gov/Standards/redbook.htm

1.3 Technical Qualifications

Technical Specialists are personnel with unique skills. There are no minimum qualifications identified in the Wildland and Prescribed Fire Qualifications System Guide (National Wildfire Coordinating Group, PMS 310-1, 2000) for Technical Specialists. It is presumed that technical specialists are certified in their field or profession. **In BLM, those who work as Technical Specialists, Archaeologists, should meet the requirements set out in BLM Manual 8100.2 for cultural resource specialists and technicians.** Cultural Resource Team leads should be fully qualified cultural resource specialists, while crew members may be cultural resource technical assistants.

1.4 Local Preparation

Fire Management Plans: Preparation for cultural resource protection begins with fire management planning. Fire management plans should provide direction regarding appropriate actions to protect cultural resources in the event of a fire that escapes initial attack. These plans should address such important issues as: whom to call, when to "order up" cultural resource specialists, who has access to cultural resource data, who provides back-up to the local CRS, which resources are most at risk, which need special protection measures during a fire, and which need "pre-attack" plans or protective action (such as brush-clearing around significant historic structures). If your local Fire Management Plans do not include such details, then you should work with your fire staff before the fire season to establish appropriate procedures.

Resource Advisor's Kit: Cultural resource specialists should ensure that information necessary to protect local cultural resources during a fire is readily available to the Resource Advisor before a fire takes place. At a minimum, this information includes site and survey location maps and site records. To the extent possible, you should identify the vulnerability of sites, or types of sites, to wildland fire and fire suppression operations. You should also work with your FMO to define who has access to these cultural resource data and to develop appropriate mechanisms for maintaining confidentiality of these data when a fire occurs.

Back-up: You should establish who will provide back-up for you in the event that you are unavailable when a fire in your jurisdiction occurs. You should make sure that local fire resources know whom to call, and that those designated as back-up have access to relevant information and procedures. You may wish to work out a rotation schedule with other state or local CRS, including those in neighboring agencies.

Site-specific Protection: To the extent possible, develop protection plans for high-value cultural resources in your jurisdiction that would be at risk from wildland fire (e.g. rock art panels) or fire suppression actions. If a fire occurs, these resources are more likely to survive if you can be specific about what needs to be protected and how to do it. Work with your local fire staff to develop reasonable measures. Whenever possible, "fire-proof" significant, vulnerable sites ahead of time by brush clearing, creating defensible space, storing material for wrapping structures in the fire cache, etc.

Manager Briefing: Make sure your Agency Administrators understand the importance of protecting cultural resources during a fire, and which resources are the top priorities. Although this information should be detailed in land management or fire management plans, it is a good idea to personally brief and update managers before the onset of the fire season. When a fire starts it is important to have management backing for cultural resource protection, so that site protection becomes part of the suppression effort (Incident Management Team) objectives.

1.5 Call-up

How they find you: Once you get your red card, your name and availability will go into the national, interagency dispatch system (ROSS: Resource Ordering and Status System). You set your availability; if it changes, make sure you notify the appropriate dispatch unit and change it in ROSS. You can access ROSS via the internet at:

http://ross.nwcg.gov/

When to order an archaeologist: As a general rule-of-thumb, archaeologists should be ordered and assigned as called for in the plan, and especially at the same time the incident calls up heavy equipment (e.g. bulldozers).

Getting on a fire: You may need to be proactive to actually get out on a fire. If one occurs in your jurisdiction, work through the system to get yourself out there. If the fire is small or in the early stages, contact the local Incident Commander, if it is larger you will need to be designated by your Agency Administrator. Make sure your local fire units know that you are available.

If you have special interests or expertise in an area where there is a fire, you may be able to work through the assigned resource advisor or local cultural resource specialists in that area to get a "name request" order for yourself. Letting people know your interest and availability will help you get an assignment, and also help you avoid inappropriate assignments.

1.6 Supervisor Approval

You must work ahead of time with your supervisor to clear your availability. It's a good idea to have a pre-season agreement regarding your periods and areas of availability, and whether you have blanket or conditional approval to receive assignments.

1.7 Readiness

Red Bag: You will need to obtain a red bag from the National Fire Equipment System (NFES) Cache in your area (Personal Gear Pack NFES 1855), and make sure that you have the necessary personal protective equipment (PPE). Get this before you go on a fire and have it ready before you are called. You must have your PPE before the incident. Order these items from your Cache. Check with your local fire staff to do this.

You are limited to a total of 65 lbs: 45 pounds in a soft, frameless pack plus up to 20 pounds in web gear or a briefcase (National Interagency Mobilization Guide, 2004, p. 11; Internet citation below):

http://www.nifc.gov/news/mobguide/

Fireline required PPE:

- Approved wildland firefighting hardhat, with chin strap and if possible a shroud
- Fire resistant polyamide pants and shirts, or equivalent (e.g. Nomex)
- Fire shelter
- Leather gloves
- Leather lace-up boots: must be at least 8" high, with traction sole; avoid boots with metal toes or metal in them
- Safety goggles or safety glasses
- Handheld flashlight and batteries
- Headlamp with batteries
- Cotton undergarments

Other Equipment, as needed

- Radio with incident frequencies and extra batteries: you must have a radio if you are on the line in a fire situation
- Camera
- GPS unit
- Basic office supplies
- Cell phone with national coverage
- Hand tool

Computer equipment, if needed

- Laptop computer and portable printer, surge protector, electronic storage media
- Topo map program (e.g. Topo!, TopoUSA, Maptech).
- Electronic site forms and other forms as needed

Specialist Field Gear

- USGS 7.5' Topo maps
- Compass
- Measuring equipment (3 meter/10' tape)
- Mapping equipment for hand-drawn maps (e.g. ruler, protractor)
- Digital or disposable camera
- Pack or vest (non-flammable or fire resistant material)
- Plastic/paper bags
- Blank site forms or site recording checklist
- Site records and maps
- Flagging tape (appropriate color)

Vehicle: When possible, drive to a fire in a field vehicle since vehicles are usually in short supply.

Personal items: You may wish to consider taking some or all of the following, especially if you expect to be in a camp distant from a town or store. You should take whatever (within reason) you will need for two weeks, bearing in mind the weight limits noted above.

- Tent
- Towel
- Toiletries, medications
- 10 pr sox (wool or cotton)
- 6-8 pr underwear (cotton)
- 6-8 T-shirts (cotton) to wear under the Nomex
- bandana (for breathing if necessary when smoky)
- leather belt
- earplugs
- alarm clock
- flashlight/ batteries
- small 1st aid kit
- light jacket, coat, sweatshirt
- knit hat
- foot powder, chapstick, sun screen, soap, bug repellant, moleskin
- eyeglass repair kit
- Resume or c.v.(this may be required to obtain site records)
- DO NOT TAKE VALUABLES

2.0 WHEN A FIRE STARTS

2.1 Reporting Locally

Your fire management plan should specify procedures for considering cultural resources when a fire starts in your local unit. Your fire staff should notify you whenever a fire in your local unit escapes initial attack. You will need as much lead time as possible to assess the situation, to ensure you have the necessary documentation, and to develop a plan to protect cultural resources that are potentially at risk.

When a fire starts:

- Monitor the situation as it develops
- Make a field atlas of site locations from hard copy or GIS if these data are not already available in the Resource Advisor's Kit. This "working" atlas should cover areas that you, or others, believe likely to burn in the fire
- Identify sensitive and previously surveyed areas in the atlas
- Copy site records for those sites included within the "working" atlas
- Recommend involvement of an archaeologist as a Technical Specialist when and if it is appropriate to do so
- Initiate consultation with Tribes and the appropriate State Historic Preservation Office as per your established procedures

2.2 Assigned Off-Unit

A fire assignment lasts a maximum of 14 days, not including travel. You must have at least a two-day break between assignments, exclusive of travel.

Dispatch Call: You will get a call from dispatch with a resource order. You will need a hard copy of the resource order form. At that time you need to make sure you obtain the following:

- Incident name
- Incident number
- Order Number
- Check-in and reporting locations
- Phone numbers for the incident
- Names of Planning Section Chief and Resource Advisor
- Situation information if available
- Transportation information
- Fire funding code

You may also request any special equipment you will need when you arrive (e.g. laptop, GPS, cell phone, office supplies).

2.3 Arriving at the Incident Command Post (ICP)

- Check in immediately with Status/Check-in Recorder
- Identify and check in with your supervisor for this assignment; normally you will report to the Resource Advisor or Planning Section.
- Check out a handheld programmable radio with current incident frequencies; check frequencies daily as they change
- Check in with other CRS already on duty or the Resource Advisor (or with person requesting a CRS) if you are the first CRS to arrive at the incident
- Determine what cultural resource information is available; if there is none, plan to get it right away
- Get current Incident Action Plan (IAP) (check with the Planning Section)
- Set up your tent in the best available spot (e.g. afternoon shade, away from toilets, showers, generators, roads)
- Obtain necessary equipment and supplies

3.0 AT THE FIRE

3.1 Reporting Off-unit

When you are the first to report to an incident off your local unit you will need to contact the local CRS (or back-up) or the Resource Advisor to obtain the information you need:

- Site records and locations (maps)
- Location of especially sensitive and important resources; plans for their protection during fire if such exist
- Areas of sensitivity or concern in the vicinity of the fire

- Types of cultural resources in the area and background inventory information if possible and practical
- Tribal and SHPO contacts, if needed, and concerns from these entities if known

3.2 Organizing a Cultural Resources Team

You may be the only person assigned to the incident. But when the incident increases in size you may find that it is necessary to order more CRS. When this need becomes apparent, you must act quickly because it is difficult to find cultural resource specialists who are willing, permitted, and qualified to accept an assignment. It is important to recognize the various roles that make up an effective team. It is also important to know that you may be working with cultural resource specialists and technicians from many agencies, with widely differing experiences, and each with their own way of doing things. Although CRS are assigned to incidents as single resources, they will be working together as a team.

When and how to order more CRS:

Order CRS as early as the need becomes apparent, or even if you think that the need will become apparent—based on what you and others believe the fire will do. You will need to seek supervisor approval. Don't hesitate and don't minimize; remember, Incident Commanders (ICs) order what they need without hesitation, you should as well. Ordering is done by completing a request for one or more cultural resources specialists on an Overhead Resource Order form (ICS-259-13) or General Message form (ICS-213), then submitting that request through the local dispatch office or to the Ordering Unit in Logistics. If you know the names of individuals that you want, or that you know are seeking assignments, then put those names with their contact information in the order as "name requests."

Roles and Responsibilities of the Cultural Resources Team Leader

There are no National Wildfire Coordinating Group (NWCG) Position Descriptions, no training guides, and no Position Task Book for resource specialists. This Field Guide defines responsibilities for positions within a cultural resources team on an Incident. The roles and responsibilities may be combined in one or more positions, depending on personnel and complexity of the incident.

The CRS Team Leader occupies a position roughly equivalent to a Crew Boss but without the recognition of the role within the Wildland Fire Qualification System. The Team Leader should be an individual who meets the cultural resource specialist standards in BLM Manual 8100.2. The Team Leader has the responsibility to:

- Create and maintain a functioning and safe team
- Establish and maintain appropriate coordination with the IC through the appropriate Section Chief (typically Planning Section)
- Establish and maintain appropriate coordination with the Resource Advisor, and fireline overhead such as the division supervisor if appropriate.
- Document training assignments

- Lead the team in developing a strategy for identification and protection of cultural resources
- Develop daily tactics
- Assign crew chiefs that are technically and tactically proficient
- Ensure that the following responsibilities are accomplished, either by the leader or by other personnel in the Team:
    - Record time
    - Properly brief field crews; make sure they possess current IAP and are integrated with Incident Operations for every shift. Ensure that the briefing is understood by each member of your field team
    - Field crews have radios with current frequencies
    - All field personnel have hand tools in addition to full PPE
    - Operations planned within the Cultural Resources team are safe
    - Debrief field crews daily
    - Collect and store all field documentation
    - Organize and complete appropriate cultural resources documentation
    - Make cultural resources documentation available for: Suppression Rehabilitation, BAER/ESR, and the local unit CRS
    - Complete demobilization for each Team member

Appendix A of this Guide provides a checklist and standard protocols for CRS team leads and crew members. Many of the responsibilities of the Cultural Resources Team Leader are recurring. If resources permit, the leader should assign some of the following tasks to a single, camp-based individual: attending briefings and meetings, organizing and maintaining files, and ordering supplies or resources.

3.3 Supplying the Cultural Resources Team

When you arrive at an Incident you should have your personal equipment and a few supplies. Equipment that you ordered at the time of dispatch (e.g. laptop computer, cell phone, GPS unit, office supplies) may have arrived before you, but be prepared to operate without essential equipment for the first few days if you don't bring it yourself. But as the incident develops you will need to acquire the supplies and tools the CRS Team will need to function for the duration of the Incident. Order what you need early.

You can order an Office Supply Kit (NFES 0760) that contains a wide variety of supplies including file folders, staplers, envelopes, and the like. You may also wish to order: film, disposable cameras, laptop computer with color printer, compact disks, topographic map programs for the local area, USGS topographic maps, storage/filing boxes, cell phone, drafting supplies, folding table and chairs, flagging, GPS units, flip charts and markers.

Durable equipment will be checked out in your name. When you demobilize at the end of the incident you need to return the items to the Supply Unit. If you are leaving the incident before it is over, you will need to sign over the durable equipment to your successor. This is also done at the Supply Unit during your demobilization.

3.4 Staking Out Some Territory

If you are among the first CRS to arrive at the Incident, you will probably find a home in a prefab shelter set up for Planning or for the Resource Advisor. If the fire becomes very large and you are able to gather together a sizeable team, then you may want to order a 15' x 27' shelter (NFES 0430).

Get a table, some chairs, and a place to store your files. In the absence of file boxes, you can probably get an empty box at Supply or food unit.

4.0 STARTING WORK AT THE INCIDENT

4.1 Developing and Modifying a Strategic Plan

If the fire is small you may be the only CRS. On a larger incident, you may find yourself part of a team of CRS, with someone—possibly yourself—as the lead.

It is your or your team's responsibility to develop a cultural resource protection strategy and to adjust that strategy as the situation develops and as the incident comes to an end. The tactics that you develop for daily work will derive from the overall strategy.

Initially you will need to:

- Check incident objectives as stated in the IAP and determine whether they reflect appropriate cultural resource issues. If not, you need to develop a strategy to elevate the issues
- Compare incident objectives to known cultural resource locations and to unsurveyed sensitive areas
- Check the Wildland Fire Situation Analysis (WFSA) and determine whether it reflects appropriate cultural resource issues. The WFSA is validated daily during an incident. This validation process is the opportunity to influence its modification, should that be necessary
- Develop a strategy to address short and long term suppression of the incident. For example, consider the need to work with individual dozers, to survey after line construction, to monitor on-going actions, early involvement with suppression rehab, documentation of suppression impacts, and preparation for BAER/ESR
- Determine whether the size/skill mix of CRS is adequate to address cultural resource issues, and if not, order more right away
- Determine the roles for CRS (see above) so that each person is clear on his/her responsibilities

4.2 Staying Connected to ICS

When you work within the Incident Command System, even on small operations, you are personally accountable for knowing your position in the organization and to whom you report, and for obtaining the information you need to do your job. You are also responsible for making sure that those who need to know, such as your supervisor in camp or in the field, are informed of your plan of action and where you will be so that

you are accounted for at all times. In addition you, or someone who reports to you, should:

- Attend evening planning meetings for information related to the next day's shift.
- Attend the morning briefing to finalize the day shift responsibilities and field assignments and to obtain a copy of the Incident Action Plan (IAP). Keep this with you.
- Check in with the Division Supervisor for each division that will have archaeologists present during the shift and do this after the morning briefing, before they disperse.
- Provide **brief** cultural resource protection messages/updates at morning or evening briefings when it is necessary and appropriate to do so.
- Clone radio to changes in the communication plan; do a radio check to Incident Dispatch and the Division Supervisor as emergency radio traffic permits.

5.0 SETTING UP FIELD PROCEDURES

5.1 Establishing and Modifying Tactics

The core of the tactical plan is fitting available resources to need. Put your resources where they will do the most good. Know in advance that you and your crew may not be able to do everything, and that setting priorities is essential.

Consider recommending survey for all new construction: mechanically constructed line, camps, helispots, and staging areas. Hand line should be a lower priority given that the impacts are smaller and you will have lots to do anyway.

Consider the sensitivity of landforms and associated environmental variables as you would for any archaeological survey. Do not waste scarce resources doing survey in areas where the likelihood of finding sites is low. Since you may find yourself working in an area where you have no prior experience, you will need to consult with local experts to determine culturally sensitive areas. Local CRS or the local fire management plan may identify particular cultural resources as needing protection. If so, ensure that suppression resources are devoted to meeting that defined need.

You may need to establish the minimum acceptable level of site documentation given such factors as resources available and the behavior and size of the wildland fire. Minimally, aim to complete a primary site record supplemented by GPS data on site location.

5.2 Survey

Safety is always the primary concern, especially if you are working away from the fireline (indirect) as a single resource.

- Carry a radio, programmed to the correct frequencies
- Ensure that your supervisor and the Division Supervisor know your location at all times
- Arrange transportation to and from the survey area

- Know and use the 10 and 18's and LCES and base all tactical, on-ground decisions on appropriate hazard assessment
- Make sure others know that you are there and what you are doing, especially if you are working around heavy equipment. Work closely with the dozer boss as he/she surveys the line
- Route equipment (dozers) around sites when possible, but the dozer boss has the final say as the person responsible for the safety of the equipment and operator
- Carry a hand tool (shovel, combination tool, etc.). If you have to deploy your fire shelter, you will use the tool to clear the flammable material from your deployment site
- Stay at least 100' in front and 50' behind dozers
- Do not sit or bed down near dozers or other heavy equipment.

You should select a distinctive color/pattern/combination of flagging and provide this information to Planning, who will insert the information into the IAP. Once selected, this flagging must be used consistently by field crews.

Flag site boundaries and leave the flagging in place until suppression rehab is completed. Remember, suppression rehab may involve a bulldozer passing along the fire line to restore soil contours at least one more time.

Develop a numbering system for sites so that numbers can be assigned in the field and encoded into GPS.

Implement standard survey and documentation procedures to the extent possible:

- Look at high probability areas
- Survey less likely locations as conditions permit
- Be prepared to make continuous adjustments based on on-the-ground conditions
- Document survey coverage on maps as you go
- Collect field notes from each crew member, from every shift
- Identify GPS site locations
- Photograph site, complete photo log
- Document sites: It may not be possible to document sites to normal standards during a fire. At a minimum, site documentation should include:
    - Site identifier/ site number
    - UTM/ GPS data point
    - Artifacts/ features present (brief description)
    - Date, name of recorders
    - Photograph
    - Presence/ absence of damage from fire suppression
    - Description of damage from fire, if present
    - Site dimensions
- Flag sites, dozer lines
- Photograph and record disturbance to sites from suppression activities.

5.3 Site Protection

Protections from Suppression Activities: For most fire suppression actions, site avoidance is the primary method of site protection. Flag sites heavily with appropriately colored flagging and make sure that these areas are known by those who might affect them.

Protection from Fire: Sites may need to be protected from the effects of fire itself. In these cases, it may be necessary to target those that are the most important and most vulnerable. If you are not on your home district, it will be very helpful to have this information from the local CRS or the Resource Advisor assigned to the incident by the local unit. If you are lucky, it will exist in a fire management plan, along with suggestions for appropriate protection measures. Protection measures include a number of strategies (See Appendix B):

- Fire lines around at-risk sites or structures
- Sprinklers
- Foam wetting agents and fire retardants
- Burnout
- Wrapping buildings with reflective material

5.4 Coordination of Plans and Findings with the IC staff

One of your principal responsibilities will be coordination with the IC staff. You or your team cannot work in a vacuum. Although your primary contact with Incident Command will be through the Planning Section, you may be required to coordinate directly with Operations and with other components of the ICS as needed.

Coordinate your tactical plans with the IC. For example, leadership on the incident should know if you are recommending special action for resource protection as part of your tactical plan. The Planning Section Chief should let you know what activities are being planned for suppression rehabilitation work and you will have to respond with a revised tactical approach.

The Planning Section must be kept informed of your findings. If GIS capability exists on the incident, you may need your Section Chief's support in getting the attention of the GIS activity. Instances of suppression-caused site damage need to be brought to the attention of the Planning Section (and the Resource Advisor) and these data need to be incorporated into the incident close-out report, especially if you will recommend funding a site evaluation or other expenditure of incident funds after control.

6.0 DOCUMENTING YOUR WORK

You will, as always, need to document your work and keep these documents in order. On a long incident, you may be one of several to maintain these records. Maintaining orderly records is an important part of the transition process.

6.1 Setting up Office Procedures

Keep your paperwork and records in order. Some things to keep in mind:

- Document survey coverage on master maps at the end of each period. This may be a paper and pencil exercise or, if the incident has the capability, it may be done through a GIS.
- Collect field notes and organize them by date.
- Collect film and photo logs, send film for development
- Download digital images and collect image logs, store imagery on disks and drives
- Collect site records and confirm assignment of temporary numbers.
- Download and store GPS data, transfer to GIS if the incident has this capability
- Write daily narrative of work done; include developing issues and issues resolved, discussions with Incident Command staff and Resource Advisor, and decisions made concerning priorities and areas selected for surveys.
- Maintain control over site atlas and site records

6.2 Records to Keep

- Personnel: name, arrival date, assignments, performance, demobilization (date), post incident contact information.
- Site records and daily field notes
- Survey Coverage Map: running record of areas surveyed annotated with date and surveyor name(s), plot locations of newly recorded sites
- Documentation of effects: document situations of suppression and wildfire damage to cultural resources
- Photo logs
- Ordering information (copies of General Message Forms, requisitions, and receipts)
- Meeting and briefing notes
- Every IAP

6.3 Prepare a Report

You will need to prepare a report. Use good professional judgment and defer to local standards; there is no set format. See Appendix C for an example of a report format. The report will be used by unit managers and the follow-up ES/R or BAER team. Copies of the report go to the Documentation Unit, the Plans Section Chief, the Agency Representative, the ES/R-BAER team leader, and the local unit archaeologist. If there are adverse effects, the SHPO may need a copy. The report should include:

- Areas surveyed (maps), with dimensions and acres,
- Sites located and site forms, and locations on a map
- Areas surveyed before and after impacts
- Suggestions for ES/R rehabilitation team
- Sites damaged from fire suppression activities, as noted
- Site protection actions taken (from suppression and/or fire effects)
- Consultation records

The report should be completed within 10 days of control of the fire. Try to keep some archaeologists on the fire to help until the report is complete.

6.4 Transitions

Orderly paperwork is essential to good transitions: to the next IC team as you depart or to the ES/R or BAER team after the fire, and to the home unit that has land burning. Don't leave a mess for the home unit to clean up.

7.0 CONSULTATION

At the outset of a wildland fire, or when you arrive at an incident, you should make sure that you or the local CRS has contacted the SHPO and tribes, as appropriate, to inform them of the situation and give them the chance to notify the IC (probably through the CRS team lead) of any significant concerns within or near the fire (e.g. sacred sites, burials).

It is your responsibility to ensure that the documentation from your assignment to the incident is complete and organized so that any consultation can be properly supported.

8.0 DEMOBILIZATION

Demobilization is the process of getting yourself released from the incident. Make sure all your paperwork is completed, and the materials that you need to return are turned in.

If you are a team lead, complete documentation for those on training assignments at the time of their demobilization.
Pay attention to work-rest guidelines during your travel home from the incident**.**

APPENDICES

A: Standard Protocols and Checklist for Cultural Resource Specialists: Team Leads and Crew (Archaeological Technicians)

B: Site Protection Protocol

C. Cultural Resource Report Format: Example

APPENDIX A
Standard Protocols and Checklists
for
Cultural Resource Specialists, Team Leads and Crew (Archaeological Technicians)

ALL CULTURAL RESOURCE SPECIALISTS: TEAM LEADERS AND CREW

- Upon notification by dispatch of an assignment, obtain resource order form and the following information:
    - Incident Name
    - Incident Number
    - Incident Order Number
    - Check-in and Reporting Location
    - Phone numbers (if available)
    - Planning Section Chief and Resource Advisor
    - Current Situation
    - Fire fund code
    - Transportation information
- Request necessary equipment (laptop, GPS, etc.)

- Upon arrival:
    - Check in at incident with Status/Check-in/Recorder
    - Secure/check out portable radio with all incident frequencies
    - Check in with person that requested a CRS (e.g., Resource Advisor, CRS Team Lead, or Agency Administrator)
    - Identify your supervisor
    - Team Lead: find out what cultural resource information is available
    - Crew: receive briefing from CRS team leader
    - Get a copy of the Incident Action Plan (from Planning Section)
    - Obtain necessary equipment and supplies

CRS TEAM LEADER

- Review IAP Suppression Objectives, past and present suppression activities, and determine if cultural resource values are being adequately addressed
- Acquire baseline resource data (i.e. previous survey coverage, site records and reports) from designated source
- Assess current data situation and data needs
- Develop a priority strategy for involving Cultural Resource Objectives within the scope of the Fire Suppression Plan. Develop this strategy on both a site-specific, division-specific, and incident-specific level. Determine resources necessary to achieve the strategy in terms of inventory, monitoring, staffing, etc.
- Order appropriate resources (personnel, etc.) to meet those needs
- Secure copies of the local unit's cultural resource paperwork/forms for field use.
- Maintain daily liaison with the Resource Advisor, Incident Commander, Operations and Plans Sections
- Attend all planning meetings and shift briefings
- Advocate the elevation of resource protection to Incident Objective status, when appropriate
- Provide input to Operations regarding CRS staffing needs for the next shift

- Debrief incoming field teams and brief on assignments for next shift
- Collect, organize, maintain, and provide for safe deposition of the following documents and items:
    - Incident Action Plans from all shifts
    - Daily field notes, site records, photograph logs, coverage map information from all field teams
    - Exposed film and collected artifacts with provenience
    - Time log of CRS personnel assigned to the Incident
- Maintain Daily Unit Log with information on all briefings, meetings, issues, decisions, and daily field operations
- Provide briefings to local unit cultural resource staff as appropriate
- Provide all information and objects curated during the incident to local unit cultural resource personnel
- Provide Cultural Resource Technical Report (i.e. Archaeological Survey Report) and supporting documentation to the local unit cultural resource staff
- Provide incident information and counsel to local unit cultural resource staff for Section 106 compliance
- Prepare transition to BAER team.

ARCHAEOLOGICAL TECHNICIAN/ CREW

- Get briefing from CRS Team Leader:
    - Determine location of assignment
    - Type of data/information required
    - Priorities
    - Time limits for completion
    - Method of transportation and how to get to assignment
- Identify appropriate Division Supervisor for each assignment and check in with that individual to present planned activities in terms of personnel and location
- Do a radio check at the beginning of each shift on location with Division Supervisor; respect priority of emergency radio traffic
- Perform archaeological duties including, but not limited to the following:
    - Inspect fire lines and other areas disturbed by incident operations per strategy determined by Cultural Resource Specialist, and/or areas planned for ground disturbing operations, to locate cultural resources and determine effects related to the incident
    - Record cultural resources utilizing appropriate site record forms. Revisit previously recorded archaeological sites to determine and document effects, if any, related to the incident. Collect diagnostic artifacts per established procedure.
    - Work with Division Supervisor(s) and fire crews to protect cultural resources from suppression related impacts.
    - May work in conjunction with heavy equipment while at all times observing Standard Safety Procedures
    - Maintain field notes (i.e. vegetation, topography, hydrology, cultural resources suppression related damage, etc.)
    - Report information to the CRS lead by established procedure.

APPENDIX B
SITE PROTECTION PROTOCOLS

Management Measures

There are a number of actions which cultural resource specialists can take or promote to help preserve cultural resources from the effects of fire, including fire suppression:

- Serve as a technical specialist during fire events; the best protection for cultural resources during a wildfire is to have knowledgeable professionals ready and able to participate in the suppression effort.
- Prepare plans for protecting high value cultural resources before a fire occurs, and make sure that appropriate authorities know about and have access to these plans. Define in advance those high value cultural resources which are really worth saving. "Fire proof" vulnerable sites ahead of time when possible.
- Ensure that cultural resource concerns are included in fire management plans, especially with regard to appropriate management responses to fire whenever fire occurs in specific areas. For example, where there are areas of high value cultural resources and these are also areas where fires will be suppressed, ensure that plans include the necessity for "ordering up" a cultural resource specialist when a fire occurs.

Protection Measures

There are many actions that will help protect cultural resources from the effects of fire. Cultural resource specialists should work with fire specialists to implement these measures. The amount of protection afforded to cultural resources during an incident will depend in part on prior planning, readiness, and on the factors at play during an incident, including availability of resources and safety considerations.

Suggestions for protecting cultural resources include the following. This list is not exhaustive.

- Identify and avoid vulnerable cultural resources during fire suppression actions such as dozer-line construction.
- Before a fire occurs, record and collect information from significant sites that would be lost during a fire. For important rock art, thorough recordation and collection of samples of the surface varnish for dating may be the best protection possible.
- Manually reduce fuels on and/or around vulnerable sites; pile debris offsite.
- Create fire breaks near/around sites. This may be an effective way to protect rock art panels, for example.
- Use retardant or foam to protect structures when necessary. NEVER use retardant or foam on rock art. (See note on these materials below).
- Wrap structures in fire proof materials to protect from fire.
- Remove logs/heavy fuels from vulnerable sites/features (e.g. clear snags off bedrock mortars), or cover with foam or retardant prior to burn.
- Flush cut and cover stumps with dirt, foam, or retardant, where burnout could affect subsurface cultural resources.
- Identify and reduce hazard trees next to historic structures.

- Saturate ground/grass adjacent to vulnerable structures with water, foam, or gel before burning.
- Burnout around vulnerable sites.
- Wrap carved trees, dendroglyphs, and other such features in fire retardant fabric.
- Limb carved trees to reduce ladder fuels.
- Cover rock art in fire resistant fabric.
- Minimize fuels and smoke near rock art.
- Cover fuels near rock art with foam, water, or retardant, avoiding the rock art.

For a good discussion of protection measures for historic structures, see Matz (2002).

Fire Retardant/ Chemical Products

Application of fire retardant and other chemical products has the potential to affect cultural resources, although use of fire retardants on historic structures may protect them from destruction during a fire. Cultural resource specialists may need to consider the effects of fire itself versus the effects of retardant use or the possibility of other protection options during a fire. See these references for further information: Saleen 2004, Corbeil 2002, and the USDA Wildland Fire Chemical Systems website. This website (see references at end of this document) has brief descriptions of the types of chemicals used and their potential effects on structures.

There are various types of products:

- Long-term retardants, which contain salts (fertilizers) with additives that may color covered items red or which may turn metals bluish;
- Foam fire suppressants, which are detergents and surfactants (wetting agents);
- Water enhancers which increase the effectiveness of water.

There are various potential effects from use of retardants, foams, and water:

- Rapid cooling: dumps of any of these materials on hot surfaces may cause effects to archaeological materials (e.g. artifact fracture) from rapid temperature change.
- Materials dumped onto fragile archaeological features may break/ displace them.
- Long-term retardants contain salts which can be desiccants, which damage old, fragile wood and may cause spalling in sandstone; chemicals may cause corrosion in metals; iron oxide additives may leave a permanent red stain and corrosion inhibitors in the retardant may turn surfaces, especially metals, blue or black.
- Foams may hasten rusting on metal surfaces by removing protective coatings and may cause wood to flake due to swelling and contracting.
- Water enhancers are desiccants and may damage wood surfaces, strip surfaces of finishes, and damage sandstone; they are also difficult to remove from wood surfaces, especially for old or fragile wood.
- Retardant should be washed off important structures as soon as possible. Pre-soaking, then hand-brushing with water and a mild detergent may work for

sandstone or painted wood. Metals and glass may be wiped with water and a mild detergent. Power washing, sand-blasting, and acid based washes may damage historic materials.

References

Corbeil, Don
2002 After the Fire: Investigating Fire Suppression Impacts on Historic Resources. PowerPoint presentation:
http://www.blm.gov/heritage/powerpoint/Fire_Corbeil/Impacts%20to%20Historic%20Resources_2_files/frame.htm

Matz, Steve
2002 Historic Structure Protection during a Wildland Fire.
http://www.blm.gov/heritage/powerpoint/Matz_HistoricStructureProtection_files/frame.htm

Saleen, Merrill,
2004 Fire Chemicals and Cultural Resources. PowerPoint presentation:
http://www.blm.gov/heritage/powerpoint/ARCHEO~1_files/frame.htm

USDA Wildland Fire Chemical Systems
Links to information on wildland fire chemicals:
http://www.fs.fed.us/rm/fire/

Wildland Fire Chemical Products: (Brief descriptions of chemicals used):
http://www.fs.fed.us/rm/fire/documents/defin.pdf

Wildland Fire Chemical Products Effects on Structures:
http://www.fs.fed.us/rm/fire/retardants/current/gen/pdf/effstructure.pdf

Appendix C
Cultural Resource Report Format: Example

1. TITLE OF INCIDENT:

---

2. NAME AND TITLE OF REPORTER:
STATION AND ADDRESS:

NO. OF PERSONNEL: **NO. OF PERSON DAYS:**

AREA SURVEYED:

---

3. LOCATION OF UNDERTAKING: (Describe location)

Figure 1. Undertaking Area Map
(Paste or attach small scale map

---

4. DESCRIPTION OF INCIDENT (describe APE and agents of effect):

---

5. DESCRIPTION OF ENVIRONMENT:

---

6. PRE-FIELD RESEARCH AND CONSULTATION

a. ☐ **Field Office Files**

b. ☐ **Other Files (specify):**

c. ☐ **Other Records (specify):**

d. ☐ **State Historic Preservation Officer (attach correspondence or record of conference)**

e. ☐ **Sources:**

Name
Address

Name
Address

f. ☐ Published or Unpublished Documents:
Author **Title**
Publisher or Document Location
Date **Relevant Pages**

Author **Title**
Publisher or Document Location
Date **Relevant Pages**

Author **Title**
Publisher or Document Location
Date **Relevant Pages**

g. Consultation
(Describe consultation efforts including tribal and OHP)

---

7. OBSERVATIONAL EXPECTATIONS

a. Expected Prehistoric Land Use:

b. Ethnographic Group: .

c. Prehistoric Complexes:

d. Expected Historic Land Use:

e. Expected Areas of Archeological Sensitivity:

f. Special Problems Encountered in Pre-field Research:

---

8. FIELD RESEARCH

a. Type of Survey

☐ **Class II** ☐ **Class III** ☐ **Mixed**

b. Rationale for Selection of Survey Type:

c. Coverage Technique:

d. Portions of APE not Inspected Directly (key to coverage map):
Location:
Reason Not Inspected:

Figure : APE (insert or attach map of Incident)

---

9. RESULTS

a. Cultural Properties Recorded, Updated, or Monitored (attach site record for each property listed, key to Site Location Map):

Field Designation	Site Type (prehistoric or historic)	Trinomial/Primary Number

b. Cultural Resources Noted But Not Formally Recorded (key to Site Location Map):

Field Designation	General Description	Reason Not Recorded

c. Problems Encountered in Field Research:

d. Comments:

e. Effects
Will/has the incident have/had any effect on cultural properties?
Yes ☐ No ☐

f. Describe effects for each affected property exclusive of isolates and properties outside APE:

10. RECOMMENDATIONS

---

11. PERSONNEL CONDUCTING RECONNAISSANCE

Name	Title	Duty Station

_____ _____

Preparer's Signature **Date**

Appendix H
BLM Structure Protection Policy
AK IM 2007- 033

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Alaska State Office
222 West Seventh Avenue, #13
Anchorage, Alaska 99513-7504
http://www.blm.gov/ak

In Reply Refer To:
9210 (300) I

April 24, 2007

Instruction Memorandum No. AK-2007-033
Expires: 9/30/08

To: All Employees

From: State Director

Subject: BLM Alaska Wildland Fire Structure Protection Policy

Attached is the BLM Alaska Wildland Fire Structure Protection Policy. This Alaska policy operates in conjunction with Resource Management Plans, Land Management Plans, and the Alaska Interagency Wildland Fire Management Plan to provide guidance for determining structure protection levels during wildland fire events. This policy was developed by the Field and District Offices with assistance from the Alaska Fire Service.

The policy is meant to serve as guidance to the Alaska Fire Service and its cooperators in meeting their delegated fire suppression responsibilities concerning cabin/structure protection priorities in relation to wildland fire activities on lands managed by the Bureau of Land Management in Alaska. This policy reaffirms that the highest priority for the BLM is the protection of human life. Personal property located on BLM managed lands will only be protected in accordance with this policy. This policy recognizes that availability of resource may preclude protection of some sites indicated for protection during portions of the fire season. This policy supersedes all previous direction and guidance regarding wildland fire structure protection on BLM managed land.

Signed by:
Gust C. Panos
Acting State Director

Authenticated by:
Maria Rivero-Folmar
Records Manager

Attachment
BLM Alaska Wildland Fire Structure Protection Policy (3 pp)

BLM Alaska Structure Protection Policy 2007

The following policy and procedures are meant to serve as guidance to the Alaska Fire Service (AFS) and the Alaska Division of Forestry (DOF), as appropriate, concerning cabin/structure protection priorities in relation to wildland fire monitoring and suppression activities on lands managed by the Bureau of Land Management in Alaska. Item 2 lists the protection priorities on BLM managed lands. This policy recognizes that availability of resource may preclude protection of some sites indicated for protection during portions of the fire season.

1. The safety of the public and fire suppression personnel will remain the first priority when fire suppression/protection decisions are made.

2. The Bureau of Land Management (BLM) will provide protection of structures on Bureau lands using the following criteria in priority order:
   a) Regardless of the value of the cabin/structure, the protection and safety of human life will take precedence. This means that high value cabin/structures may not be protected if suppression puts human life at risk. Conversely, low value cabin/structures may be protected to ensure public safety.
   b) It is necessary to preserve structures to save human life due to an imminent threat of the structure(s) being burned over.
   c) If the structure has been evaluated and is on or has been determined to be eligible for the National Register of Historic Places.
   d) If the structure has not been evaluated for eligibility to the National Register of Historic Places, the Evaluating Structures for Historic Value process (attached below) will be initiated.
   e) Public funds have been expended in the construction and/or maintenance of the structure. These federal facilities should receive protection commensurate with their monetary or resource management value as established by the Field Office Manager.

3. Field Offices will initiate the actions to reduce hazardous fuels adjacent to federal facilities, structures that have been identified for protection.

4. The policy for unauthorized structures will be consistent with policy items 1-3 above.

5. Decisions made pursuant to this policy will be recorded on the fire map atlas. Keeping the fire maps current is a joint responsibility of the field office specialist, field office fire personnel, and the AFS/DOF fire management officers. Changes in fire maps should be initiated as part of the annual fire plan. Part of the annual review will be to re-evaluate any fire operations that included cabin/structure protection actions in the preceding year.

Evaluating Structures for Historic Value

The Normal Situation

The current fire map atlas or an equivalent source will be kept updated with current information, including protection standards for structures based in part on an assessment of their historic value. Part of this historic assessment will be a determination of eligibility arrived in consultation with the State Historic Preservation Officer in exactly the same fashion as we do for other activities.

Sites will be designated for full protection unless they have been determined to be not eligible for the National Register.

In a Wildfire Situation

In a wildfire situation, it may be necessary to try to determine appropriate levels of protection for structures whose eligibility to the National Register has not been determined, or it may be necessary to provide priorities among structures designated for full or critical protection. In those cases, the following process will be followed. All decisions that are based on this process will be documented and submitted to the Field Office Manager.

1. A qualified cultural resource specialist is available.

    1.0 If at all possible[1], a qualified cultural resource specialist will evaluate structures to determine if they appear to have sufficient historic value to warrant protection. The specialist will also try to assign relative value to multiple structures so that resources can be concentrated on the most important sites.

    1.1 If time and circumstances allow, the cultural resource specialist will arrive at determinations of historic value only after an on-site visit to the structures involved.

    1.2 If circumstances do not allow for an on-site visit by a cultural resource specialist, the determination will be made by the cultural resource specialist on the basis of the best available information.

        1.2a If AFS/DOF personnel can get to the site, they should try to obtain the following information for use by the cultural resource specialist:

            - photograph(s) – digital or Polaroid images
            - number of structures
            - conditions of structures (collapsed, standing, ruin)
            - construction materials (logs, plywood, sheet metal)
            - associated features (bottle/can dumps, equipment)

        1.2b Use of a standard data gathering form, which would be available for fire personnel, is encouraged. This would greatly facilitate determinations of the historic value of structures and sites.

    1.3 Once information has been gathered regarding structures involved in a wildfire situation, protection status and protection priorities will be made after communication with the State Historic Preservation Office (SHPO) if time and circumstances allow. Use of current technology may assist in this communication. (For example, digital images might be gathered and posted on a web page or transmitted via e-mail.)

[1] If the home Field Office cultural resource specialist is not available, attempts will be made to contact a cultural resource specialist from another Field Office or the State Office to provide assistance.

1.3a If circumstances do not allow for communication with the SHPO, a determination of historic value will be made by the cultural resource specialist.

2. A qualified cultural resource specialist is not available.

   2.0 Historic evaluations will be made by the Field Office fire personnel.[2]

   2.1 Training will be provided to the Field Office fire personnel to allow him/her to better make these evaluations. The details and extent of this training will be worked out by the FMO and the field archaeologists

3. If the Field Office Manager or their acting cannot be contacted

   3.0 If no other options are available, evaluations should be made by AFS/DOF personnel on site. The following is meant to provide some guidance in making these evaluations.

   3.1 An older structure is probably more important than a younger one. Several characteristics of structures can be used to estimate relative age, such as the state of collapse; construction materials (logs vs. plywood); vegetation re-growth around the structure; and associated artifacts (wagon vs. *1934 Dodge*)

   3.2 A settlement, meaning a site with multiple dwelling structures, is probably more *important* than a single structure.

   3.3 A site with a single dwelling structure and associated outbuildings, such as barns, sheds, outhouses or caches, is more important than an isolated structure.

   3.4 A site with associated non-structural features, such as can or bottle dumps is probably more important than one without.

[2] If the home Field Office fire personnel are not available, attempts will be made to contact the Field Office Manager or their acting.

Appendix I
Wildland Fire Situation Analysis(WFSA) Matrix

WFSA Components	Purpose	Primary Author*	Signature (Preparer, Approval)	When Required
Fire Situation Analysis	Provide basic information describing the fire situation at the time the analysis is conducted.	Suppression organization	Suppression organization FMO	A WFSA is required when one of the following occurs: ♦ Fire escapes Initial Attack. ♦ Fire requires significant change in suppression strategy. ♦ Suppression response is delayed beyond 24 hrs from fire discovery.
Safety Analysis	Provide detailed evaluation of current safety concerns.	Suppression organization	Suppression organization FMO	
Alternative Description	Develop a sufficient number of alternatives to represent a reasonable range for the situation. (a minimum of 2)	Suppression organization with reference to Land Manager objectives and constraints	Suppression organization FMO	
Cost Summary	Estimate of total cost of suppression actions includingstabilization/ rehabilitation needs for each alternative.	Suppression organization	None necessary	
Resource Analysis	Ensure that estimates of potential fire consequences for each alternative are consistent with resource objectives, values, fire effects, and policy.	Land Manager	Land Manager	
Objectives and Constraints	Identify land managers operational constraints and land management objectives.	Land Manager	Land Manager	
Decision Record	Select an alternative that best implements the objectives and constraints for the management of the area.	Suppression organization summarizes input from all land managers.	Land Manager approves implementation of selected alternative; Suppression FMO signature is for concurrence.	
Daily Review	Reviewed prior to each operational period to determine if the selected alternative is still valid	Incident Commander Suppression organization	May be delegated to Suppression organization FMO	
Maps	Display estimates for acreage burned under each alternative.	Suppression organization	Suppression organization	
Complexity Analysis Matrix	Determine the level of incident support	Suppression organization	Suppression organization	When complexity levels exceed initial attack capabilities.

* At any time, a land manager or a suppression organization may choose to initiate/complete a WFSA. List here are the "normal" preparer and signatory for each piece of the WFSA process.

FIGURES

OPERATIONAL DECISION CHARTS

1. Critical, Full and Modified (before conversion) Management Options
2. Modified (after conversion) and Limited Management Options
3. Wildland Fire Use

Figure 1
OPERATIONAL DECISION CHART
Critical, Full and Modified (before conversion) Management Options

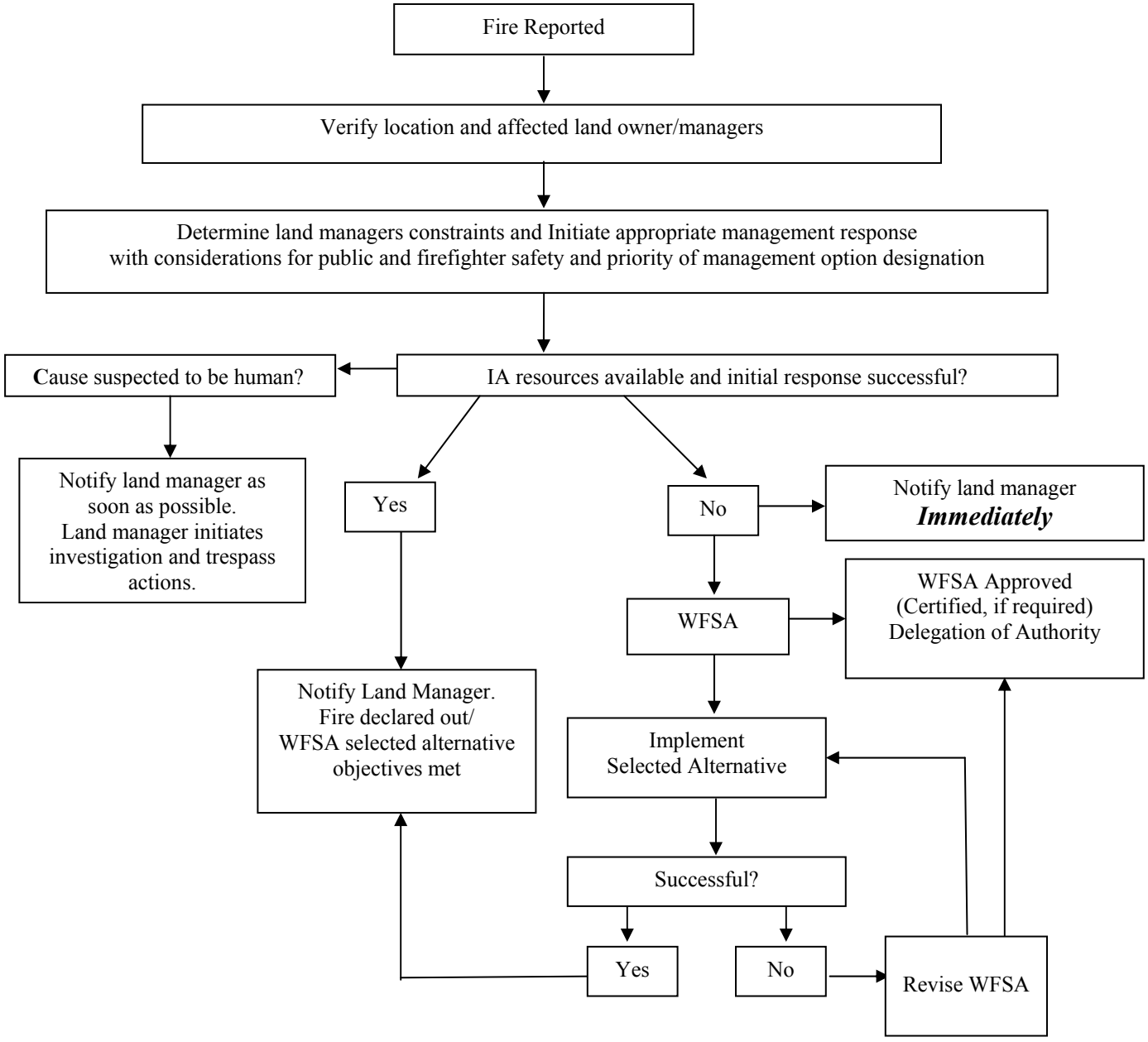


Figure 2
OPERATIONAL DECISION CHART
Modified (after conversion) and Limited Management Options

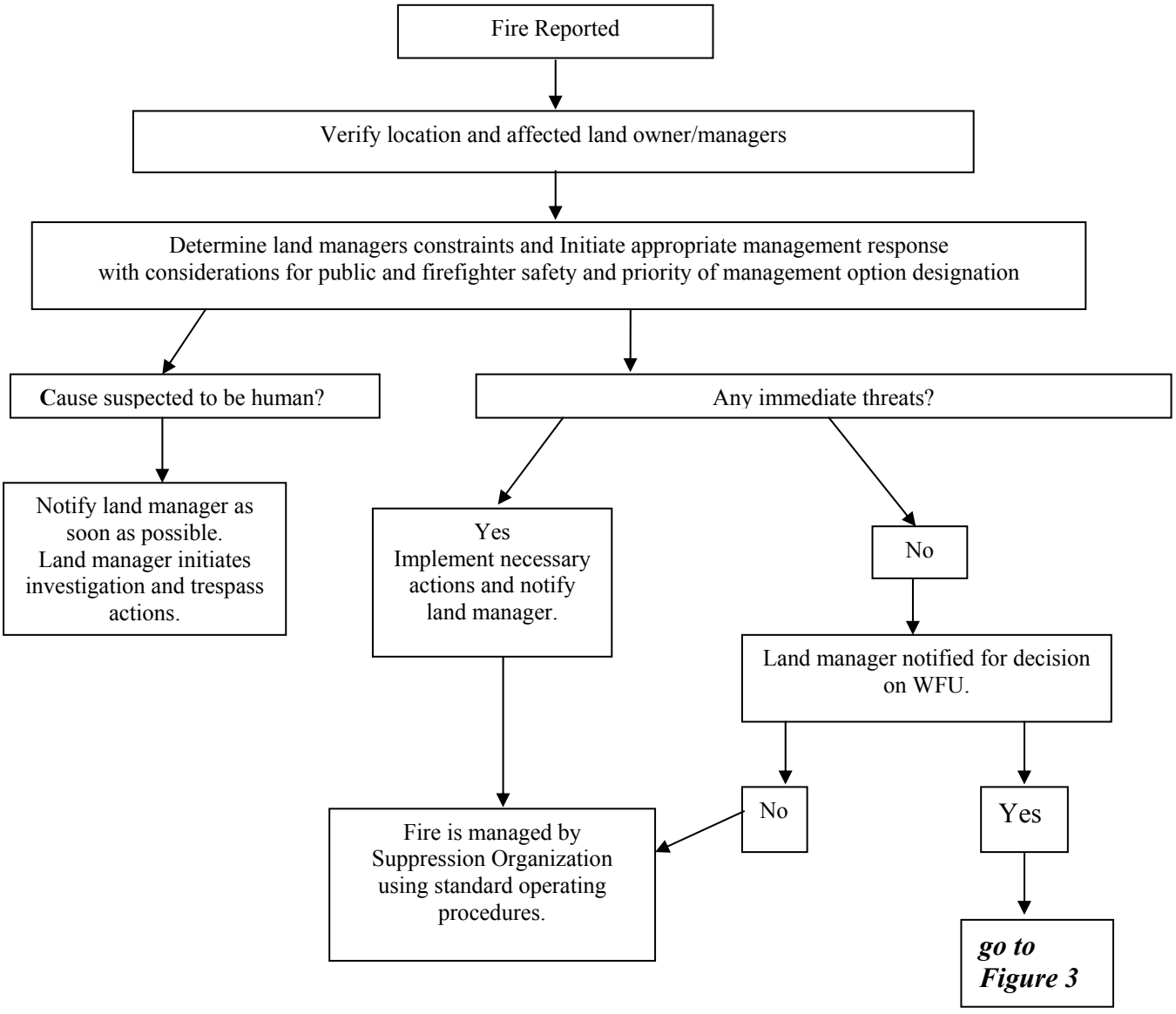


Figure 3
OPERATIONAL DECISION CHART
Wildland Fire Use