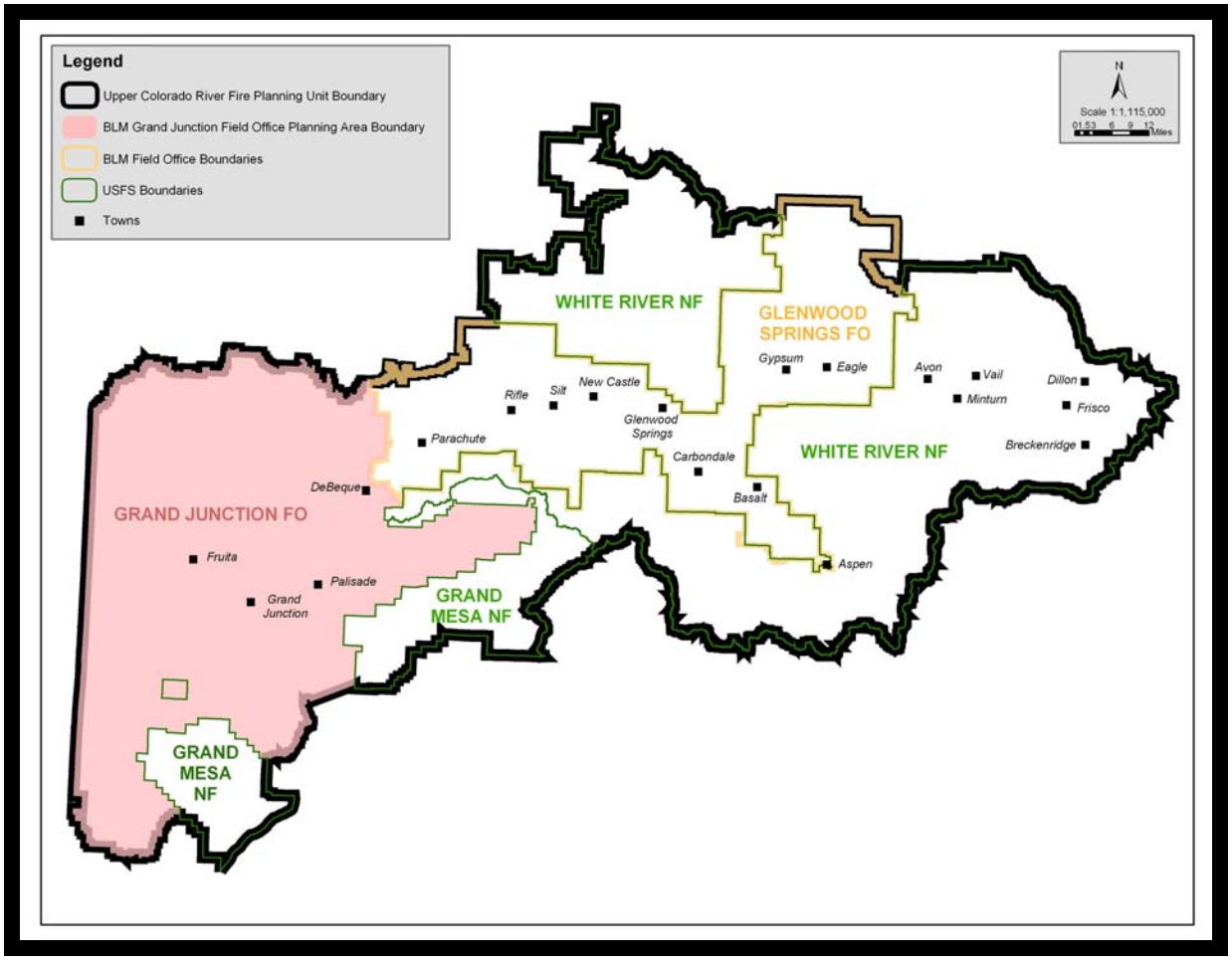
Bureau of Land Management

Grand Junction Field Office

Fire Management Plan

2004



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Fire Management Plan

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Developed By: _____
Date

Recommended By: _____
Date

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Date

Approved By: _____
BLM State Director Date

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Date

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I Introduction

National Fire Policy calls for an interagency and multidisciplinary approach to managing wildland fires, since fires respect no jurisdictional boundaries. The ultimate goal is a fully integrated fire management program with uniform policies and practices providing for a seamless, cross-boundary approach to wildland fire management. Recognizing that fire planning procedures are different among all federal land management agencies, a common template for fire management planning was developed. This document replaces the existing Bureau of Land Management (BLM) Grand Junction Field Office (GJFO) Fire Management Plan (FMP) completed in 2000 and incorporates the required Interagency Fire Management Plan Template. This document will also serve as a new fire management plan for the Colorado National Monument (COLM).

I.A Purpose

Fire Management Plans define a strategy for managing and prioritizing wildland fire and prescribing vegetation treatments for fuel hazard reduction and resource benefit. The 2001 Federal Wildland Fire Management Policy (FWFMP) directs BLM and the NPS to have an approved FMP for every area with burnable vegetation. This FMP was completed to comply with the Federal Wildland Fire Management Policy and Program Review - 1995 and 2001; The Interagency Fire Management Plan Template; and A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan. FMPs will also be the foundation for the Fire Program Analysis (FPA), the new fire budget analysis software program that will become available in October 2004.

This plan identifies resource values and conditions pertaining to fire management in the BLM GJFO and NPS COLM. The FMP recommends strategies for:

- Wildland Fire Suppression,
- Wildland Fire Use (WFU),
- Prescribed Fire,
- Non-Fire Fuels Treatment ,
- Emergency Stabilization and Rehabilitation (ESR), and
- Community Assistance/Protection.

The strategies addressed in detail in Chapters III and IV will implement the long-term direction within the GJFO and COLM Resource Management Plans (RMPs) and will help achieve goals and objectives at both the land use and activity planning levels. These strategies will also be considered in preparation of the Annual Work Plan and development of annual budget requests. The GJFO FMP also incorporates goals, objectives and decisions that differ from the GJFO FMP of 2000 and will require additional environmental analysis upon completion of the plan.

The 2000 GJFO FMP did detail general fire management zones, however specific zone boundaries, management prescriptions and resource goals have been adjusted in this FMP. Many of the goals and objectives of the 2000 GJFO FMP remain, but some strategies for managing and prioritizing wildland fire, prescribing vegetation treatments for fuel hazard reduction and resource benefit, or utilizing wildland fires to accomplish land use and resource management objectives have been added to this document. Firefighter safety, public safety, resource concerns, and resource benefits have always been considered in selecting a fire management strategy, and are also considered in this FMP.

Land uses, land issues and vegetation (fuels) have changed since the completion of the 2000 FMP, especially in the private land - public land interface. The GJFO wildland fire and vegetation management now reflects a consideration of fire history, land status, issues, concerns, and other resource objectives. Management objectives for this FMP are:

1. Firefighter and public safety,
2. Protection of high value resources,
3. Returning fire to its natural role in the ecosystem.
4. Enhancement of natural resources that can benefit from the careful application of fire,
5. Hazardous fuel reduction, and
6. Fiscal efficiency of fire management operations.

I.B Relationship to Environmental Compliance

To fulfill the requirements of the National Environmental Policy Act (NEPA), an environmental assessment (EA) will be prepared to determine the potential environmental impacts of FMP implementation. Site-specific analysis for vegetation treatments will be completed as appropriate, incorporating this document and accompanying EA by reference. Once the EA is completed, the FMP is categorically excluded from further NEPA analysis, unless actions are proposed that are outside the scope of this FMP. The EA will be a programmatic analysis for "fuel hazard reduction" treatments and vegetation treatments that would benefit resources. A new EA will be prepared to analyze changes or updates to the FMP that are not adequately addressed by other NEPA documents.

A future site-specific document that complies with NEPA and other applicable laws and regulations will be written for each prescribed vegetation treatment, incorporating this document by reference. Prescribed vegetation treatments may also be derived from research, assessments and other plans.

The strategies presented in this plan will be used in the development of site-specific projects, including proposed actions, alternatives, and environmental analyses in compliance with the National Environmental Policy Act (NEPA).

The FMP is also consistent with conservation measures outlined in pertinent programmatic Biological Opinions, as well as conservation measures and agreements resulting from formal consultation pursuant to the Endangered Species Act (ESA). Future actions potentially affecting ESA listed species will be subject to consultation as needed.

I.B.1 Adaptability and Plan Monitoring

Adaptability is of utmost importance to this FMP. The FMP allows managers seasonal and annual application flexibility, based on factors such as resources, weather and operational capability. For effective "adaptive management" (a feedback approach to management that uses monitoring results to plan future actions) land management agencies must rely upon a continuous process of interagency and public feedback to monitor the outcomes and consequences of the selected management strategies.

The fire suppression information presented in this FMP will be updated as necessary to ensure that the most current information is available for use in the resource and budget allocation process. The fire management strategies and priorities recommended in this FMP will be updated as appropriate to reflect current issues and conditions. Minor adjustments (refining zone boundaries, authorizing a more conservative management approach based on the previous years' fire activity, changing the allowable burned acreage, border adjustments as counties and other agencies complete their FMPs, etc.) will not require amending the FMP but would be done through FMP maintenance.

I.C Collaboration

The Grand Junction and Glenwood Springs Field Offices of the BLM participate in a fully integrated fire management program with the White River National Forest (WRNF) and the Grand Valley Ranger District (GVRD) of the Grand Mesa - Uncompahgre – Gunnison (GMUG) National Forests.

The Upper Colorado River Interagency Fire Management Unit (UCR) provides preparedness, suppression, prevention, and fuels management services to the above agencies. Each agency maintains discrete budgeting, staffing and support services, which are combined where appropriate to increase program effectiveness and efficiency of participating units. The UCR also provides fire management support to the Colorado National Monument (COLM). Together, the UCR and the COLM constitute the Fire Planning Unit (FPU).

This FMP covers fire management responsibilities on public land administered by the BLM's GJFO (1.2 million acres) and the NPS's COLM (20,500 acres) in Mesa and Garfield Counties in Colorado. Maps showing the UCR and GJFO can be found in Appendix E.

This FMP was coordinated across ownership and jurisdictional boundaries, with the NPS for the COLM and the BLM for the GJFO. To facilitate interagency fire management within the UCR, FMPs from neighboring agencies were considered in the development of this FMP. These included a corresponding FMP for adjacent forest lands completed by the White River National Forest in 2003, and an FMP completed by the BLM's Glenwood Springs Field Office in 2004. In addition, this FMP lays the foundation for future collaborative efforts involving interagency partners and state and local cooperators. The GJFO and COLM participate in the Interagency Fire Advisory Board; other representatives on this Board are the US Forest Service, the Colorado State Forest Service, the Mesa County Sheriff's office, and the Mesa County Office of Emergency Management. This FMP was also developed in collaboration with these partners.

The 2000 Colorado Legislature passed House Bill 1283, which clarified responsibilities for wildfire management. The bill redefines the responsibilities of Sheriff's, State Board of Agriculture, and the State Forester from preventing and controlling wildland fires to managing wildland fires. House Bill 1283 authorizes counties to prepare and implement countywide wildland FMPs that detail individual county polices on fire management for prescribed burns or natural ignition burns. Such plans may include not only county and State lands, but also private and Federal lands where landowners and managers are willing to cooperate. The BLM immediately supported this effort by providing maps, information, technical assistance, and financial support to counties in which the agency managed lands.

Federal, State, and interagency coordination were essential in the development of the FMP and will be fundamental in the application of the FMP. The intention is the eventual creation of a seamless, coordinated, interagency effort toward appropriate management of wildland fires and prescriptive vegetation treatments.

I.C.1 Interagency Coordination

The UCR participates in additional interagency coordination as follows:

- Colorado BLM developed a system with the Colorado State Forest Service to distribute Rural Fire Assistance funds to local fire departments after the department(s) had provided a detailed plan on how the funding would be utilized. The system permits close coordination of Rural Fire Assistance funding and Volunteer Fire Assistance Funding so that more efficient use could be made of the two different sources of rural fire department support.
- The NPS also distributes to local fire protection districts for fire protection.
- A catalog of Federal, state, and private foundation funding sources has been developed and placed on the website, **www.rockymountainwildlandfire.info**. The catalog is intended to provide a "one-stop' location to which communities, fire departments, counties, and others can go to find financial and technical assistance to support fire and wildland health projects. Soon, the catalog will be converted to a searchable database. Development of the catalog and database is supported by the BLM, Colorado State Forest Service, and Western Forestry Leadership Coalition.

- Colorado BLM has contracted with the Natural Resource Conservation Service and Meeker Plant Center to propagate and store seed from native plants to be used in fire rehabilitation efforts.
- Worked with USFS and CSFS to organize and train fire prevention regional teams that can respond rapidly to wildland fires and prepare residents to minimize losses and distress associated with interface fires.

I.C.2 Cooperative Arrangements

The UCR has developed cooperative arrangements to cover administrative and jurisdictional responsibilities that provide for:

- The use of closest-forces and total mobility concepts for wildland fire suppression, including personnel, equipment, and supplies;
- Development and use of fire equipment and supply caches compatible with total interagency requirements by local, geographical, and national needs;
- Training to mutually agreeable common standards and curricula as established by the National Wildfire Coordination Group (NWCG);
- Mutually acceptable performance qualifications and standards for all fire management positions as established by NWCG;
- Mutual assistance for managing wildland fires that are managed for resource benefits; and
- Mutual assistance for conducting hazardous fuels reduction, wildland urban interface treatments, and ecosystem restoration and maintenance using prescribed fire.

I.C.3 Wildland Urban Interface (WUI) Project Collaboration

That area where homes meet wildlands is called the wildland-urban interface. The wildland-urban interface is more than a geographic area where structures intermingle with forests; it is a set of conditions where flammable structures exist within the reach of ignition sources from burning wildlands. The potential exists in wildland-urban interface areas for extremely dangerous and complex fire conditions which pose a tremendous threat to public and firefighter safety.

Effective fire prevention is critical because of the values at risk. As the region’s population grows, the challenge of protecting people, their homes, businesses, and natural resources, escalates yearly. A recent Denver Post article estimated that Colorado's population in the "red zone" – where homes are sprinkled in and around 6 million acres of forest - grew by 33 percent from 1990 to 2000. The population in that red zone is now at 1 million people.

Public Lands managed by the GJFO and COLM are intermingled with private lands and contain a large percentage of wildland-urban interface. This intermixed landscape means wildland fires have a heightened potential to spread onto private property, destroying homes and valued landscapes.

The UCR coordinates with other federal, state, county, and local agencies, and participates in proactive community projects to reduce wildfire risks and damages. Where public lands are adjacent to WUI areas, federal funding is available to plan and implement fuel treatments to mitigate risk, for education and prevention efforts, and to complete plans, inventories, and assessments.

The UCR works with County fire planners to identify communities and other wildland urban interface values-at-risk from wildfire and to set priorities for the mitigation of those threats. When a community or neighborhood has been identified as a priority, the BLM and NPS direct their resources to preparation of the necessary analyses and plans to reduce the fire threat on lands that the agency manages in the vicinity of the community or other values-at-risk.

I.C.4 Cooperative Prevention and Education

The UCR participates in, and distributes funding for, public and community education programs focused on mitigation and reduction of fire risk in the wildland urban interface. Projects that implement or adapt existing models such as FireFree and Firewise communities are encouraged. Examples include education programs that lead to homeowner and community action to reduce fire risk, such as Firewise landscaping and construction, and home and property maintenance.

The Colorado State Forest Service, the Nature Conservancy, the BLM, and NPS are collaborating on a series of workshops to clarify the many messages about wildfire and fire mitigation that are directed to segments of the public from different sources about wildland fire and wildland health. The workshops bring together fire personnel in logical geographical areas who provide fire education and information.

I.C.5 Cooperative Stewardship Projects

The UCR may use stewardship contracting (http://www.blm.gov/nhp/efoia/wo/fy04/im2004-081attach1.pdf) as a tool to achieve resource work identified through the normal planning processes and as described in the 10 year Implementation Plan for the NFP.

The primary objective of a stewardship contracting project is to achieve one or more of the land management goals that meet local and rural community needs. These goals as identified in the authorizing legislation may include but are not limited to:

- road and trail maintenance or obliteration for improved water quality;
- soil productivity, habitat for wildlife and fisheries, or other resource values;
- setting prescribed fires to improve composition, structure, condition, and health of stands or to improve wildlife habitat;
- removing vegetation or other activities to promote healthy forest stands, reduce fire hazards or achieve other land management objectives;
- watershed restoration and maintenance;
- restoration and maintenance of wildlife and fish habitat; and
- control of noxious and exotic weeds and reestablishing native plant species.

I.D Authorities

Authorities for the development of the Fire Management Plan are listed below:

- Protection Act of September 20, 1922 (42 Stat. 857; U.S.C. 594).
- Taylor Grazing Act of June 28, 1934 (48 Stat. 1269; U.S.C. 315).
- O. and C. Act of August 28, 1937 (50 Stat. 874; U.S.C. 1181e).
- Reciprocal Fire Protection Act of May 27, 1955(69 Stat. 66; 42 U.S.C. 1856, 1856a).
- Economy Act of June 30, 1932 (47 Stat. 417; 31 U.S.C. 686).
- The Federal Land Management and Policy Act of 1976 (FLPMA) (Public Law 94-579; 43 U.S.C. 1701).
- Disaster Relief Act of May 22, 1974, Section 417 (Public Law 93-288)
- Federal Fire Prevention and Control Act of October 29, 1974, 88 Stat. 1535; 15 U.S.C. 2201
- The Federal Land Management and Policy Act of 1976 (FLPMA) (Public Law 94-579; 43 U.S.C. 1701)
- Federal Grants and Cooperative Act of 1977, Pub. L. 95-244, as amended by Pub. L. 97-258, September 13, 1982. 96 Stat. 1003 31 U.S.C. 6301-6308
- Supplemental Appropriation Act of September 10, 1982, 96 Stat.837
- Department of the Interior and Related Agencies Appropriation Act, (Public Law 103-32)
- Healthy Forests Initiative and Healthy Forests Restoration Act of 2003 (Public Law 108-148)
- Annual Appropriations Acts for the Department of the Interior.
- United States Department of the Interior Manual (910 DM 1.3).

- 1995 Federal Wildland Fire Management Policy.
- 2001 Updated Federal Wildland Fire Management Policy (1995 Federal Wildland Fire Management Policy Update).
- Departmental Manual 620 Chapter 1, Wildland Fire Management General Policy and Procedures (April 10, 1998)
- BLM Manual 9210 and BLM Manual 9200
- "A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment", Aug. 2001.
- The National Fire Plan 10 Year Comprehensive Strategy and Implementation Plan, 2000.
- National Environmental Policy Act of 1969 (NEPA)
- Federal Clean Air Act (CAA) and CAA Amendments of 1990
- Endangered Species Act of 1973, Section 7
- The Wilderness Act of 1964
- The Archaeological Resources Protection Act of 1979
- The Archaeological and Historical Preservation Act of 1974, as amended
- National Historic Preservation Act (NHPA) of 1966, Section 106
- NPS Organic Act of 1916 (16 U.S.C. Section 1)
- NPS Director's Order 18, Wildland Fire Management (DO-18) (November 1998)
- NPS Reference Manual 18, Wildland Fire (RM-18). (February 1999)
- NPS Director's Order 12, Environmental Impact Analysis (DO-12)
- NPS Director's Order 28, Cultural Resource Management (DO-28)
- NPS Management Policies (2001)

II Relationship to Land Management Planning/Fire Policy

This chapter outlines the national policy, regional guidance, BLM state policy and local land use planning guidance that provide direction for this FMP.

II.A National Policy

II.A.1 The Federal Wildland Fire Management Policy (FWFMP)

The FWFMP was developed by the Secretaries of the USDI and USDA in 1995 to respond to dramatic increases in the frequency, size, and catastrophic nature of wildland fires in the United States. This policy was reviewed and reaffirmed by the Secretaries in 2001. The 2001 Review and Update of the 1995 Federal Wildland Fire Management Policy consists of findings, guiding principles, policy statements, and implementation actions. The guiding principles, policy statements, and implementation actions are called the 2001 Federal Wildland Fire Management Policy. This replaces the 1995 Federal Wildland Fire Management Policy. The 2001 Review and Update of the 1995 Federal Wildland Fire Management Policy directs Federal agencies to achieve a balance between suppression to protect life, property, and resources, and fire use to regulate fuels and maintain healthy ecosystems.

The FWFMP provides nine guiding principles that are fundamental to the success of the Federal wildland fire management program and the implementation of review recommendations. These "umbrella" principles compel each agency to review its policies to ensure compatibility. The Department of the Interior (DOI) Bureau of Land Management (BLM) polices were reflected through the fire management planning process and this plan.

II.A.1.a Guiding Principles

The guiding principles are:

1. Firefighter and public safety is the first priority in every fire management activity.
2. The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process.
3. Fire Management Plans, programs, and activities support land and resource management plans and their implementation.
4. Sound risk management is a foundation for all fire management activities.
5. Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.
6. Fire Management Plans and activities are based upon the best available science.
7. Fire Management Plans and activities incorporate public health and environmental quality considerations.
8. Federal, State, tribal, local, interagency, and international coordination and cooperation are essential.
9. Standardization of policies and procedures among federal agencies is an ongoing objective.

II.A.1.b Policy Statements

Policy statements related to fire management and fire management planning:

1. Safety - Firefighter and public safety is the first priority. All FMPs and activities must reflect this commitment.

2. Fire Management and Ecosystem Sustainability - The full range of fire management activities will be used to help achieve ecosystem sustainability, including its interrelated ecological, economic, and social components.

3. Response to Wildland Fire - Fire, as a critical natural process, will be integrated into land and resource management plans and activities on a landscape scale, and across agency boundaries. Response to wildland fire is based on ecological, social, and legal consequences of the fire. The circumstances under which a fire occurs; the likely consequences on firefighter and public safety; the welfare of natural and cultural resources; and the values to be protected dictate the appropriate management response to the wildland fire.

4. Use of Wildland Fire - Wildland fire will be used to: protect, maintain, and enhance resources and, as nearly as possible, be allowed to function in its natural ecological role. Use of fire will be based on approved FMPs and will follow specific prescriptions contained in operational plans.

5. Rehabilitation and Restoration - Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure.

6. Protection Priorities - The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be 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.

7. Wildland Urban Interface (WUI) - The operational roles of federal agencies as partners in the WUI are: wildland firefighting, hazardous fuels reduction, cooperative prevention and education, and technical assistance. Structural fire suppression is the responsibility of tribal, State, or local governments. Federal agencies may assist with exterior structural protection activities under formal Fire Protection Agreements that specify the mutual responsibilities of the partners, including funding. (Some federal agencies have full structural protection authority for their facilities on lands they administer, and may also enter into formal agreements to assist State and local governments with full structural protection.)

8. Planning - Every area with burnable vegetation must have an approved FMP. FMPs are strategic plans that define a program to manage wildland and prescribed fires based on the area's approved land management plan. Fire Management Plans 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 objective, activities of the area, and environmental laws and regulations.

9. Science - FMPs and programs will be based on a foundation of sound science. Research will support ongoing efforts to increase our scientific knowledge of biological, physical, and sociological factors. Information needed to support fire management will be developed through an integrated interagency fire science program. Scientific results must be made available to managers in a timely manner and must be used in the development of land management plans, FMPs, and implementation plans.

10. Preparedness - Agencies will ensure their capability to provide safe, cost-effective fire management programs in support of land and resource management plans through appropriate planning, staffing, training, equipment, and management oversight.

11. Suppression - Fires are suppressed at minimum cost, considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives.

12. Prevention - Agencies will work together with local partners and other affected groups and individuals to prevent unauthorized ignition of wildland fires.

13. Standardization - Agencies will use compatible planning processes, funding mechanisms, training and qualification requirements, operational procedures, value-to-be-protected methodologies, and public education programs for all fire management activities.

14. Interagency Cooperation and Coordination - Fire management planning, preparedness, prevention, suppression, fire use, restoration and rehabilitation, monitoring, research, and education will be conducted on an interagency basis with the involvement of cooperators and partners.

15. Communication and Education - 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.

16. Agency Administrators and Employee Roles - Agency administrators will 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 will be held accountable for making employees available.

17. Evaluation - Agencies will develop and implement a systematic method of evaluation to determine effectiveness of projects through implementation of the 2001 Federal Fire Policy. The evaluation will assure accountability, facilitate resolution of areas of conflict, and identify resource shortages and agency priorities.

The UCR is committed to addressing the 17 policy statements in all FMPs. A tabular crosswalk between the 17 policy statements from the FWFMP and this fire plan can be found in Appendix D.

II.A.1.c Key Implementation Actions

Key implementation actions related to fire management and fire management planning:

1. Incorporate mitigation, burn plan rehabilitation, and fuels reduction and restoration activities that contribute to ecosystem sustainability into Fire Management Plans and resource management plans. There is a need to more effectively and directly integrate fire management activities with other natural resource goals.

2. Respond to wildland fires based on approved FMPs and land use plans regardless of ignition source or the location of the ignition. The management response to fires, regardless of source, must be based on the approved FMP. Fire Management Plans, based on the land management objectives of the area, guide the appropriate response through criteria and prescriptions.

3. Complete, or update, by the end of FY 2004 Fire Management Plans for all areas with burnable vegetation. Fire Management Plans, based on the underlying land use plans, are the principle foundation for implementation of the 2001 Federal Wildland Fire Management Policy.

4. Consider whether plan amendments are needed to implement the National Fire Plan and comply with the Federal Wildland Fire Management Policy if plans are not undergoing revision in the near future. A Fire Management Plan in compliance with the Federal Fire Policy must be based on the area's land use plan which identifies the fire management decisions outlined in Appendix C of the Land Use Planning Handbook (H-1601-1). If a land use plan does not identify the necessary fire decisions and if the plan is not currently scheduled to be revised or replaced, proceed with a land use plan amendment to ensure fire guidance will be in place by the end of FY 2004.

5. Suppress fires in areas without approved Fire Management Plans or in areas with Fire Management Plans that are not consistent with the 2001 Federal Fire Policy.

Under FWFMP, Federal land management agencies with vegetation capable of sustaining wildland fire are required to prepare fire management plans. The FMP is a strategic plan that defines a program to manage wildland and prescriptive vegetation treatments. The foundation of the FMP is the agency's land use plan. FMPs are dynamic documents that are reviewed annually and updated whenever better information is available. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans. Development of this collaborative FMP is an essential implementation task and performance measure for accomplishing the goals of the National Fire Plan and the 10-Year Comprehensive Strategy. The FMP is the on-the-ground, operational framework by which the UCR FPU will implement national direction for: wildland fire suppression, wildland fire use (WFU), fuels treatment, emergency stabilization and rehabilitation (ESR), and community assistance/protection programs.

The FWFMP establishes the concept of Appropriate Management Response (AMR), which is further defined in *The Interagency Strategy for the Implementation of the Federal Wildland Fire Management Policy* (USDA and USDI, 2003). This policy states: "A wildland fire that is not a prescribed fire requires an AMR. The AMR, which can range from aggressively suppressing the incident as a wildland fire, to managing the incident as a WFU event, is guided by the strategies and objectives outlined in the RMP reflecting land and resource values and objectives. The FMP outlines fire management activities and procedures to accomplish those objectives. The objective of a WFU project is to obtain resource benefits whereas a wildland fire is to be extinguished at minimum cost."

The FWFMP identified the need for a new approach to fire management on federal lands and led to the development of the National Fire Plan (NFP).

II.A.2 The National Fire Plan (NFP)

Working with Congress, the Secretaries of Interior and Agriculture jointly developed the NFP in 2000 to address the needs identified in the FWFMP. The NFP (see http://www.fireplan.gov) is not an actual document, but a nationally coordinated effort. It is intended to protect communities and natural resources from the harmful effects of increasing wildland fire occurrence and severity in the United States, and to assure sufficient firefighting capabilities for the future. The NFP establishes the overarching purpose and goals, which are articulated and carried forward through the 10-Year Comprehensive Strategy (USDI, USDA 2001), the Cohesive Strategy for Protecting People and Sustaining Natural Resources (USDA 2000), and other supporting documents. Key points of the NFP are:

- Firefighting: Maintain a cost effective level of preparedness in firefighting and prevention.
- Rehabilitation and Restoration: Rehabilitate fire damaged wildlands and restore high-risk ecosystems.
- Hazardous Fuels Reduction: Invest in projects to reduce fire risk with focused effort in wildland urban interface areas.
- Community Assistance: Work with communities to reduce the risks of catastrophic fire.

- Accountability: Establish and maintain a high level of accountability including oversight reviews, progress tracking and performance monitoring.

II.A.3 The 10-Year Comprehensive Strategy

The *Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment - 10-Year Comprehensive Strategy* (http://www.fireplan.gov/reports/7-19-en.pdf) was prepared in 2001 by the USDI, USDA, and the Western Governor's Association to provide a more detailed framework for accomplishing the goals of the NFP. The *10-Year Comprehensive Strategy* reflects the views of a broad cross-section of governmental and nongovernmental stakeholders.

Successful implementation of the *10-Year Comprehensive Strategy* requires a collaborative process among multiple levels of government and a range of interests resulting in: healthier watersheds, enhanced community protection, and diminished risk and consequences of severe wildland fires.

Figure 1

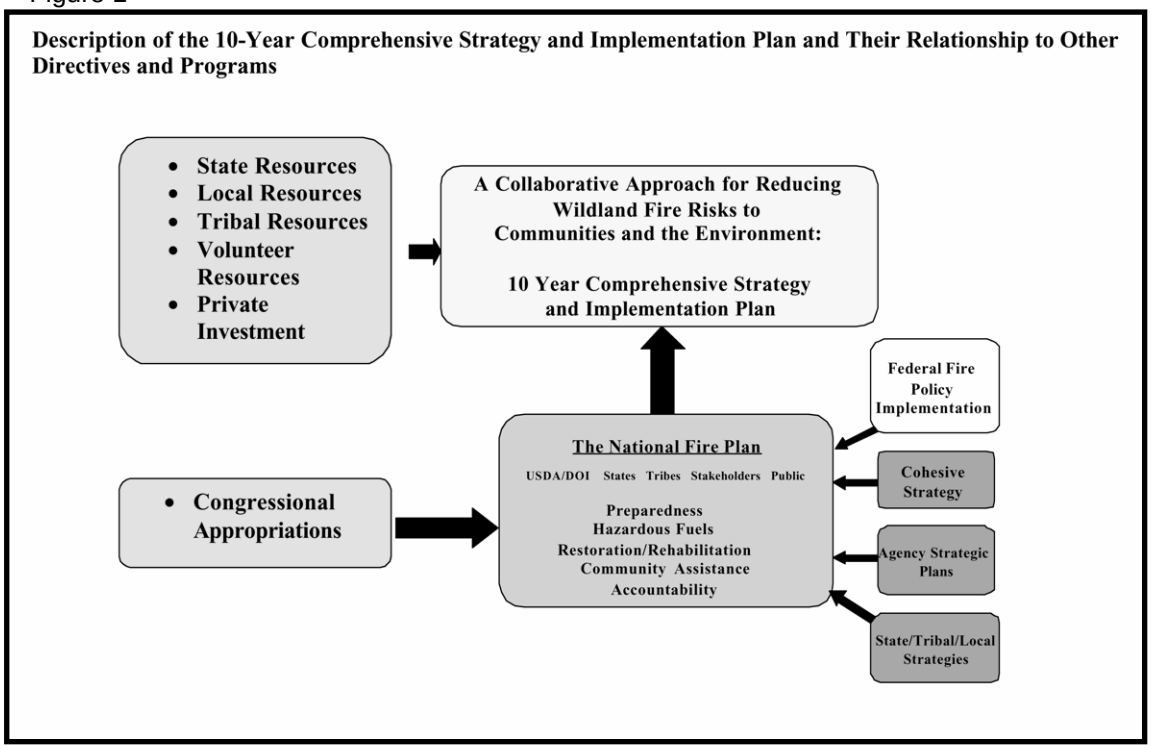

Figure 1. Description of the 10-Year Comprehensive Strategy.

II.A.4 The Cohesive Strategy

The Cohesive Strategy for Protecting People and Sustaining Natural Resources was prepared in 2000 by the USDA. It projects the quantity and rate of fuels reduction treatments required on a landscape scale to restore fire-adapted ecosystems and protect communities from increasing wildland fire. The Cohesive Strategy estimates fuels reduction treatments needing to increase fivefold in order to achieve these goals. It also concludes that treatments are needed both within and outside the Wildland Urban Interface (WUI).

II.A.4.a Fire Regime Condition Class

The Cohesive Strategy establishes a classification system, known as the Fire Regime Condition Class (FRCC), which describes the amount of departure of an area or landscape from historical to present conditions. This departure from the natural state may be a result of changes in one or more ecosystem components such as fuel composition, fire frequency, or other ecological disturbances. As mandated by national direction, this FMP utilizes the FRCC classification system to rank existing ecosystem conditions and prioritize areas for treatment. As taken from the Cohesive Implementation Strategy, FRCC is defined as follows:

Fire Regime Condition Class 1 (CC1): **"**…fire regimes in this condition class are within historical ranges. Thus, the risk of losing key ecosystem components from the occurrence of fire remains relatively low. Maintenance management such as prescribed fire, mechanical treatments, or preventing the invasion of non-native weeds, is required to prevent these lands from becoming degraded." Approximately 7% (97,510 acres) of the GJFO managed public lands are classified as CC1.

Fire Regime Condition Class 2 (CC2): **"**Fire regimes on these lands have been moderately altered from their historical range by either increased or decreased fire frequency. A moderate risk of losing key ecosystem components has been identified in these lands. To restore their historical fire regimes, these lands may require some level of restoration as through prescribed fire, mechanical or chemical treatments, and the subsequent reintroduction of native plants." Approximately 70% (900,215 acres) of the GJFO managed public lands are classified as CC2.

Fire Regime Condition Class 3 (CC3)**: "**These lands have been significantly altered from their historical range. Because fire regimes have been extensively altered, risk of losing key ecosystem components from fire is high. Consequently, these lands verge on the greatest risk of ecological collapse. To restore their historical fire regimes before prescribed fire can be utilized to manage fuel or obtain other desired benefits these lands may require multiple mechanical or chemical restoration treatments, or reseeding." Approximately 23% (277,177 acres) of the GJFO managed public lands are classified as CC3.

As noted above, approximately 97 % of the GJFO managed acres are classified as CC1, CC2, or CC3, with the remaining 3% of the area consisting of non-vegetative landscape (*e.g.*, water and rock outcrops).

II.A.4.b Historic Fire Regime

The Cohesive Strategy utilizes the concept of Historic Fire Regime (HFR). These regimes represent fire intervals prior to Euro-American settlement and are calculated and classified by analyzing natural vegetation, known fire cycles, and fire history data. Based on the FRCC and HFR classifications, the Cohesive Strategy established the following national priorities for implementing vegetation treatments:

- Treat vegetation types within HFR Groups I, II, and III,
- Treat lands that have been either significantly altered (CC3) or moderately altered (CC2) from their historic range, and
- Treat at least 2% of an agency's administered lands annually.

II.A.5 National BLM Special Status Species Policy

It is national policy to:

- Conserve federally listed and proposed threatened or endangered species and the habitats on which they depend.

- Ensure that actions requiring authorization or approval by the BLM are consistent with the conservation needs of special status species (SSS) and do not contribute to the need to list any SSS, either under provisions of the ESA or other provisions of this policy.

The terms conserve and conservation in this national policy and pursuant to the ESA are defined as the use of all methods and procedures necessary to improve the status of federally listed species and their habitats to a point where the provisions of the ESA are no longer necessary.

Fire management planning and activities on site-specific projects should consider the following where ESA species occur:

- Recovery or conservation plans and activities that promote species recovery.
- Terms and conditions of consultation with the USFWS, NOAA Fisheries, and IDFG to promote species recovery.
- Where and how fire management activities can conserve SSS, especially ESA listed proposed and candidate species.

II.B Colorado State Guidance

In January 1997, the Colorado State Office of the BLM approved the Standards for Public Land Health (http://www.co.blm.gov/standguide.htm) and amended all RMPs in the State. Standards describe the conditions needed to sustain public land health and apply to all uses of public lands. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands.

Standard 1: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, and minimizes surface runoff.

Standard 2: Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment, and provides forage, habitat and bio-diversity. Water quality is improved or maintained. Stable soils store and release water slowly.

Standard 3: Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations, and ecological processes.

Standard 4: Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

Standard 5: The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and anti-degradation requirements set forth under State law as found in (5 CCR 1002-8), as required by Section 303(c) of the Clean Water Act.

II.C Land Use Plan Guidance

GJFO RMP Resource Program Direction - The GJFO RMP addresses a wide range of resources, management programs and issues and contains a comprehensive description of resource considerations. The following are major RMP decisions that fire management strategies can help achieve.

- maintain or increase wildlife populations
- stabilize grazing operations
- protect critical watersheds
- protect visual resources

III Wildland Fire Management Strategies

Chapter III further refines the broad programmatic direction provided in Chapter II and provides specific guidance on how wildland fire will be managed. This section summarizes resource and fire management conditions and presents management direction in the form of priorities, objectives, and strategies.

III.A General Management Considerations

Wildland fire does not respect jurisdictional boundaries. No single federal, state, local, tribal, or volunteer agency alone can handle all wildland fire that may occur in its jurisdiction. Agencies must work together to exchange support, protection responsibilities, information, and training, providing an efficient method for protecting lives, property, and natural resources. The UCR works collaboratively and coordinates with local partners in fire and resource management across agency boundaries. The following incorporates the core principles of the 10 Year Comprehensive Strategy.

III.A.1 Collaboration and Coordination to Implement Wildland Fire Management Direction

An organization chart for the interagency fire management staff unit is included in Appendix F. Planned and/or unfunded positions are denoted in addition to existing staffing.

Local cooperators supplement the existing interagency staff and associated preparedness resources primarily in an interface setting for initial and extended attack incidents. Local resources are used for these purposes as well as to suppress escaped fires. National aviation and smokejumper resources are used as appropriate subject to their availability.

Supplemental resources are ordered to provide increased firefighting capability during periods of high fire danger as well as during periods where ongoing and anticipated levels of initial attack would result in a draw-down of local resources. Administratively determined (AD) hiring authority is used on a discretionary basis to supplement agency resources with those staffed by local cooperators outside the parameters of county cooperative fire agreements for initial attack.

III.A.1.a Shared Personnel

The UCR shares personnel as follows:

Program Leadership

The BLM portion of the UCR is managed by a Unit Fire Management Officer (FMO). A Zone FMO and Assistant FMO manage each Zone. The fire management expertise for the COLM is provided by an FMO who covers several NPS units.

Interagency Dispatch

The interagency dispatch center is located at the Grand Junction Air Center at Walker Field, Grand Junction, Colorado. The planned BLM staffing component of the interagency dispatch center includes the Center Manager, the Assistant Center Manager for Aviation, the Supervisory Initial Attack Dispatcher, the Supervisory Aircraft Dispatcher, Air Tanker Base Manager, two aircraft seasonal positions, an administrative assistant, and three seasonal dispatcher positions. The NPS COLM has no personnel stationed at the Grand Junction Air Center.

III.A.1.b Shared Facilities

The UCR shares fire equipment and supply caches on a geographical basis and regional need as follows:

- West Zone Cache
- Central Zone Cache
- East Zone Cache

III.A.1.c Cooperative Management Efforts - Exchange of Protection

When wildland fires burn on, or threaten, lands of more than one agency, joint management is carried out by the representative agencies to suppress the wildland fire. Unless otherwise provided for, an agency is expected to take prompt initial action, with or without request, on wildland fires. Where one agency takes initial action in the protective unit of the other, the initially acting agency shall continue to fight the fire until relieved by an officer of the designated management agency.

The UCR has developed cooperative arrangements to cover administrative and jurisdictional responsibilities that will provide for cooperative management of personnel, equipment (including aircraft), supplies, services, and funds among the agencies.

III.A.2 Resource Advisors

The use of resource advisors (RA) is essential to adequately implement the FMP. Suppression crews may not be familiar with such things as land uses, land management plans, resource concerns, local restrictions, or access routes. The use of resource advisors allows management decisions to be made with full use of available information and local resource expertise. Not all wildland fire situations would require the on-site presence of a resource advisor. However, when management of an unplanned ignition may adversely or beneficially affect resources, the use of a resource advisor is warranted and necessary. Consult NFES # 1831 - Resource Advisor's Guide for Wildland Fire (1996).

III.A.3 Financial Accountability

The GJFO and COLM have established uniform and cost-effective measures, standards, reporting processes, and budget information in implementation plans that will fold into the Government Performance and Results Act process. The Wildfire Situation Analysis (WFSA) process will always include cost efficiency as a concern in all alternatives developed.

III.B GJFO and COLM Wildland Fire Management Goals

The GJFO and COLM fire program goals reflect the core principles and direction of the Comprehensive Strategy and the Cohesive Strategy where supported by the RMPs. The intent of this FMP is to convey fire program direction from the NFP and the RMPs to wildland fire management, fuels treatments, and community assistance/protection actions. The GJFO and COLM will work safely and effectively with partners to manage wildland fire, use prescribed fire, and use mechanical, chemical, hand, and animal vegetation treatments to:

- **Protect firefighter and public safety**.
- Protect high value resources.
- Reduce hazardous fuel loading and the risks of wildfire escaping public lands to an acceptable level.
- Protect facilities on public lands (recreation sites, communication sites, etc).
- Restore physical function and biological health of the land and achieve Colorado Land Health Standards at the watershed scale.
- Prevent the listing of Sensitive, Candidate, and Proposed Species and conserve species currently listed as Threatened and Endangered under the Endangered Species Act.
- Ensure long-term survival of special status species.

- Protect existing and improve degraded riparian vegetation for long-term health.
- Limit the spread of noxious and invasive plants, insect infestations and disease.
- Protect archaeological, historic, and paleontological sites.
- Minimize smoke emissions using available, practicable methods that are technologically feasible and economically reasonable in order to minimize the impact or reduce the potential for such impact on both the attainment and maintenance of national ambient air quality standards and achievement of federal and state visibility goals.

III.C Wildland Fire Management Options

As illustrated in this flowchart (Figure 2), if an approved FMP (meeting NEPA compliance) is not present for a particular unit, or if a fire is human-caused, then by definition the only available option is suppression of the wildland fire and appropriate action will be taken immediately. Common sense will be used in suppression actions considering values to be protected, least cost, resource damage caused by the suppression action, and the first priority at all times, firefighter and public safety. If the initial action is unsuccessful, a WFSA will be prepared to determine the next set of management responses.

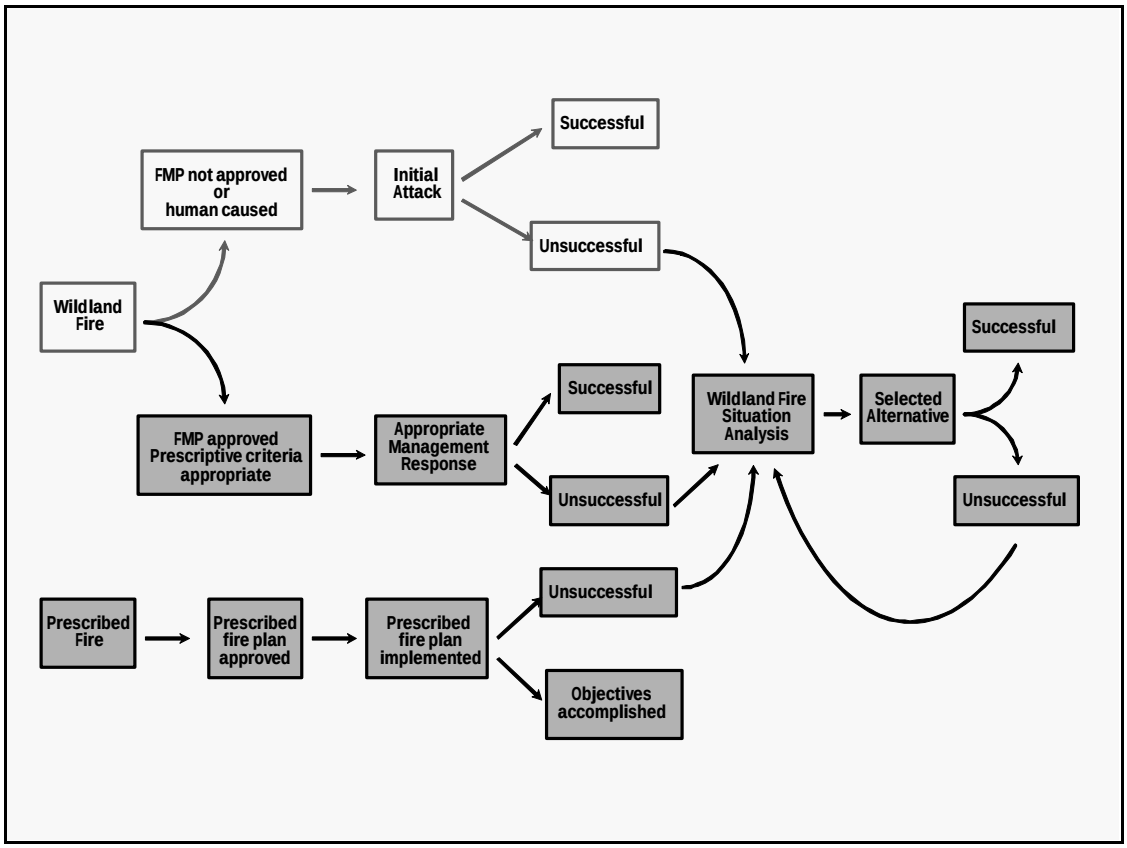

Figure 2. Suppression Pathway Flowchart

As a result of completion and approval of this fire management plan, this pathway will not be required for lightning fires occurring within the GJFO and COLM. While all human-caused fires will be suppressed, lightning-caused fires will receive an appropriate management response (AMR) commensurate with the resource and protection objectives for the management unit in question.

III.C.1 Appropriate Management Response (AMR)

The appropriate management response (Figure 3) is defined as the specific actions taken in response to a wildland fire to implement protection and/or fire use objectives. It allows managers to utilize a full range of responses and as conditions change, the particular response can change to accomplish the same objectives.

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

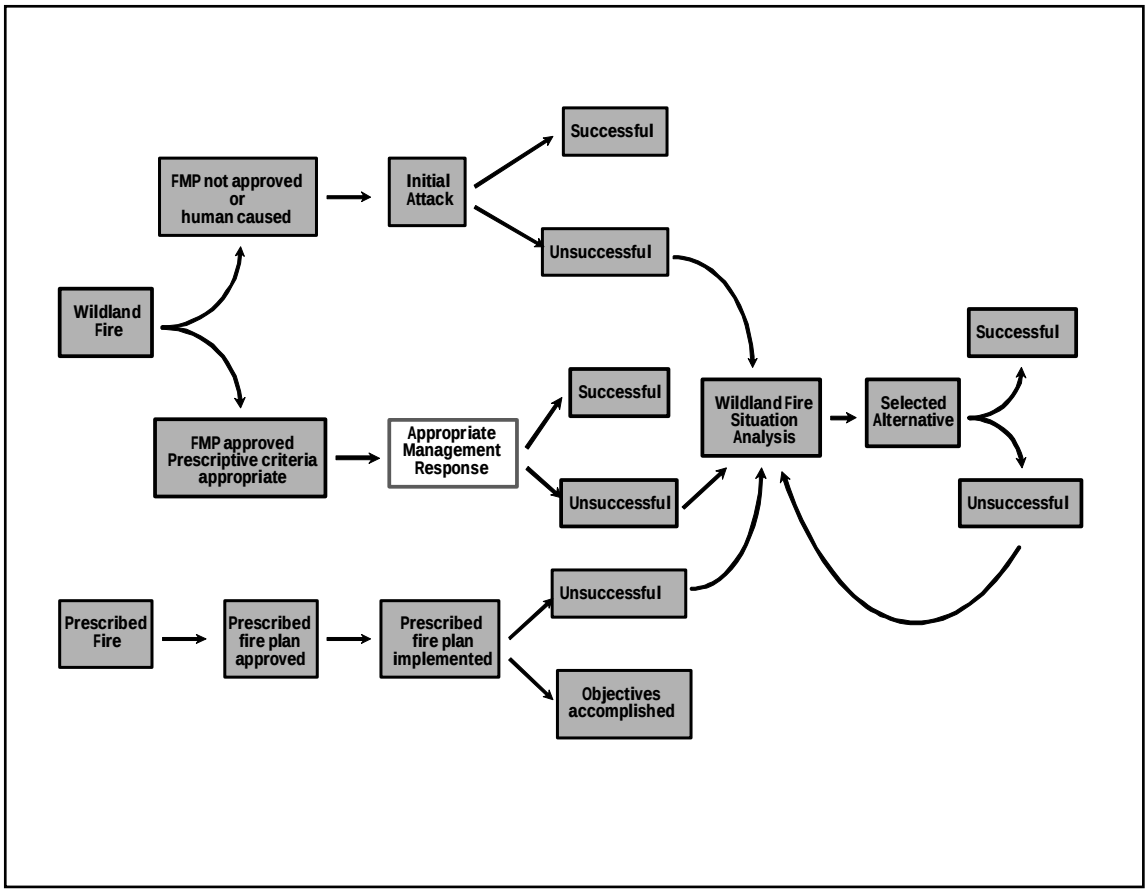

Figure 3. Appropriate Management Response Pathway Flowchart

The purpose of giving management the ability to select the appropriate management response on every wildland fire is to provide the greatest flexibility possible and to promote opportunities to achieve greater balance in the program. To clarify the full range of options available under the appropriate management response, the following figure (Figure 4) utilizes four variables to illustrate development of an appropriate management response.

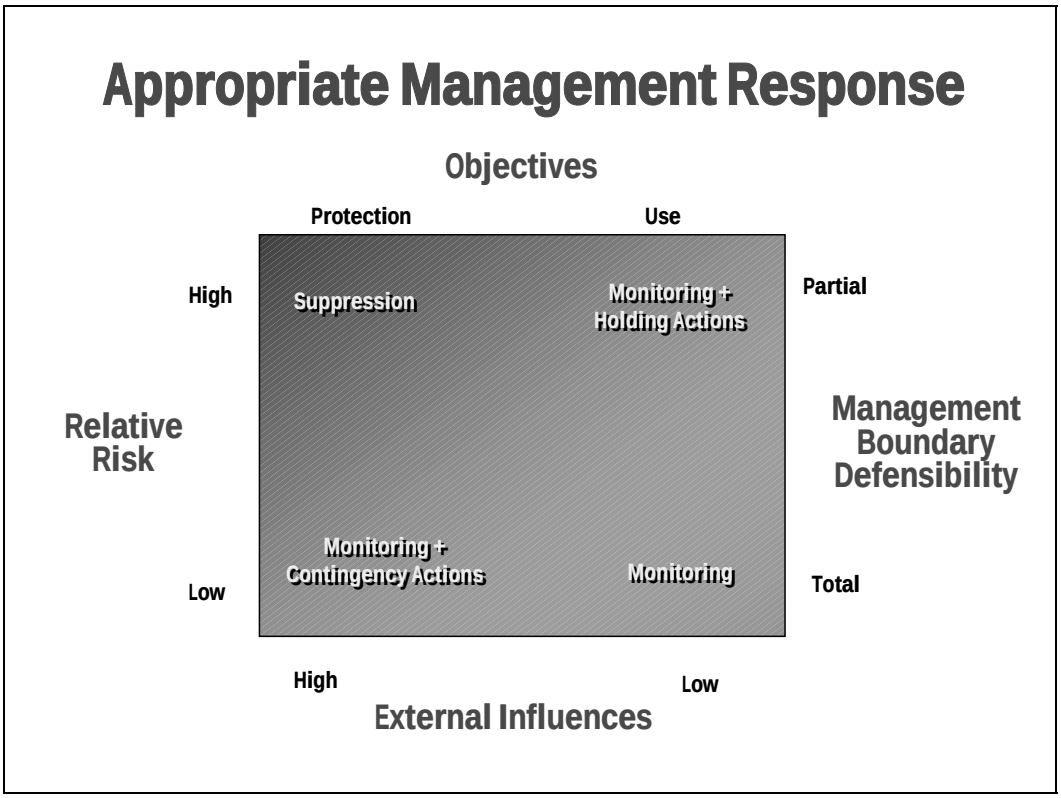

Figure 4. Range of Appropriate Management Responses

This chart can be used to estimate appropriate methods to implement desired/necessary strategies. To obtain this estimate, draw lines that connect the top and bottom variables and the left and right variables. Where the two lines intersect is a potential management response for the defined conditions. It is important to note that even when suppression action is deemed appropriate, the aggressiveness of the action taken will vary depending on the values to be protected, cost containment objectives, potential for resource damage caused by the suppression action, and the first priority at all times, firefighter and public safety.

Under the Appropriate Management Response concept, management responses will be programmed to accept resource management needs and constraints, reflect a commitment to safety, be cost-effective, and accomplish desired objectives while maintaining the versatility to vary in intensity as conditions change. The FMU descriptive narratives in Appendix B define what specific management responses are considered "appropriate" within each fire management unit. These may contain all or only a portion of the full range of options available depending on resource and protection objectives for each particular unit. The Field Office Manager may choose to extinguish any wildland fire, or manage any fire occurring in an area designated for fire use if it meets specific decision criteria found in Appendix B.

III.C.2 Fire Management Categories

Public lands will be managed under one of four fire management categories for the purposes of wildland fire and prescribed vegetation management.

"A" FMUs	***Areas where fire is not desired at all.***

General description: This category includes areas where mitigation and suppression is required to prevent direct threats to life or property. It also includes areas where fire never played a large role historically in the development and maintenance of the ecosystem or because of human development fire can no longer be tolerated without significant loss or where fire return intervals were very long.

Fire Mitigation Considerations*:* Emphasis should be focused on those actions that will reduce unwanted ignitions and threats to life, property, natural and cultural resources.

Fire suppression considerations: Emphasis should be placed on prevention, detection, and rapid suppression response and techniques. Virtually all wildland fires would be actively suppressed and no fire is prescribed unless the management ignited fire (burnout) is for the sole purpose of reducing an immediate threat to firefighter or public health and safety.

Fuel treatment considerations: Non-fire fuel treatments should be employed. Unit costs for prescribed fire would be too prohibitive to implement efficiently. Pile burning of mechanically removed vegetation is acceptable.

"B" FMUs	***Areas where unplanned wildland fire is not desired because of current conditions***

General Description: Fire plays a natural role in the function of the ecosystem, however these are areas where an unplanned ignition could have negative effects unless/until some form of mitigation takes place. Sagebrush ecosystems, for example, can fall into this category because of encroachment of cheatgrass or a prolonged lack of fire which leads to large monotypic stands of sagebrush that won't burn as they historically would have.

Fire Mitigation Considerations*:* Emphasize prevention/mitigation programs that reduce unplanned ignitions and threats to life, property, natural and cultural resources.

Fire suppression/use considerations: Fire suppression is usually aggressive.

Fuel treatment considerations*:* Fuel hazard reduction as a major means of mitigation potential risks and associated loss are a priority. Fire and non-fire fuels treatments are utilized to reduce the hazardous effects of unplanned wildland fire. Restorative treatments may consist of multiple non-fire treatments before the use of fire will be considered. Unit costs for prescribed fire are high and require stringent mitigation and contingencies. Concurrently, achieve fire protection and resource benefits, when possible.

"C" FMUs	***Areas where wildland fire is desired, but there are significant constraints that must be considered for its use.***

General Description: Areas where significant ecological, social or political constraints must be considered. These constraints could include air quality, threatened and endangered species considerations (effect of fire on survival of species), or wildlife habitat considerations.

Fire Mitigation Considerations: Programs should reduce unwanted fire ignitions and resource threats.

Fire suppression/use considerations: Ecological/resource constraints may be applied. These constraints along with human health and safety, etc., are utilized in determining the appropriate suppression tactic on a case by case basis by the incident commander and sub-unit agency administrator. Areas in this category would generally receive lower suppression priority in multiple wildfire situations than would areas in "A" or "B" FMZs.

Fuel treatment considerations: Fire and non-fire fuels treatments may be utilized to ensure constraints are met or to reduce any hazardous effects of unplanned wildfire. Significant prescribed fire activity would be expected to help attain desirable resource/ecological conditions. Prescribed fire for hazard/fuel reduction are of a lower priority than in "B" zones. Prescribed fire unit costs are low to moderate and are generally non-complex. Concurrently, achieve fire protection and resource benefits, when possible.

"D" FMUs	***Areas where wildland fire is desired and, under prescribed conditions, there are few or no constraints for its use.***

General Description: Areas where unplanned and planned wildfire fire may be used to achieve desired objectives such as to improve vegetation, wildlife habitat or watershed conditions.

Fire Mitigation Considerations: Implement programs that reduce unwanted human-caused ignitions, as needed.

Fire suppression/use considerations: These areas offer the greatest opportunity to take advantage of the full range of options available for managing wildfire under the appropriate management response. Naturally occurring fires under prescribed conditions are permitted to run their course where approved Fire Management Action Plans or Prescribed Fire Plans exist. Health and safety constraints will apply. Resource use considerations similar to those described for Category C may be identified if needed to achieve resource objectives. Areas in this category would be the lowest suppression priority in a multiple fire situation.

Fuel treatment considerations: There is generally less need for hazard fuel treatment in this category. Prescribed fire for fuel hazard reduction is not a priority except where there is an immediate threat to public health and safety. If treatment is necessary however, both fire and non-fire treatments may be utilized. Prescribed fire to obtain desired resource/ecological condition is appropriate.

Table 1. Fire Management and Vegetation Treatment Summary by Category

		Wildland Fire Management			Vegetation Treatments	
		Suppression Priority	**Suppression Strategy**	**Wildland Fire Use Strategy**	**Prescribed Fire**	**Mechanical/ Chemical/ Hand/Other**
A FMU	Fire not desired at all.	High	Aggressive suppression	No	No, except pile burning of mechanically removed vegetation	Yes
B FMU	Unplanned wildland fire not desired.	High	Aggressive suppression	No	Yes, fuel hazard reduction to mitigate risks a priority	Yes
C FMU	Wildland fire desired - must consider significant constraints.	Moderate	Varied suppression responses	No	Yes, fuel hazard reduction lower priority than "B" zones; used to attain desirable resource conditions	Yes
D FMU	Wildland fire desired - few or no constraints.	Low	Varied suppression responses	Yes, natural occurring fires under prescribed conditions	Yes, used to attain desirable resource conditions; fuel hazard reduction is generally not a priority	Yes

III.C.3 FMU Prioritization

In the event of multiple wildland fire ignitions or limited resources/funding, priorities within fire management categories are also considered. The rationales for establishing priorities are derived from national, state, and local guidance. The relative ranking is established using a rating system of LOW, MODERATE and HIGH (Table 2) for:

- Wildland Fire Suppression,
- Wildland Fire Use (WFU),
- Fuels Treatment,
- Emergency Stabilization and Rehabilitation (ESR), and
- Community Assistance/Protection.

III.C.3.a Wildland Fire Suppression Prioritization

With consideration for NFP and RMP direction, each FMU was assessed for several key factors including the threat to human life and public safety, property/improvements on or nearby public lands,

municipal watersheds, historic/cultural resources, and natural values. For the UCR, areas designated as HIGH priority for suppression are at a greater risk for loss of life and property from wildland fire (see Table 2). Areas designated as MODERATE and LOW generally have less concentrated WUI areas but have potential to impact resource values sensitive to unplanned wildland fire.

Note: Regardless of the category (A-D) or priority ranking, wildland fires threatening human life and property will always receive the HIGHEST priority for fire suppression. Once people are assigned to an incident, these human resources become the highest value to be protected.

III.C.3.b Wildland Fire Use (WFU) Prioritization

On public lands managed by the GJFO and COLM, there are 8 FMUs where wildland fire may be used to accomplish specific, pre-stated resource management objectives. These FMUs are:

1. D-01 Black Ridge
2. D-02 Bangs Canyon
3. D-03 Wagon Park/Nine Mile Hill
4. D-04 Palisade
5. D-05 Colorado National Monument
6. D-06 Blue Mesa
7. D-07 Demaree
8. D-08 South Shale Ridge

III.C.3.c Fuels Treatment Prioritization

As with suppression, each FMU was assessed for several key factors including the threat to human life and public safety, property/improvements on or nearby public lands, municipal watersheds, historic/cultural resources, and natural values. These factors all contribute to the ranking process for fuels treatments. FMUs designated as HIGH priority for fuels treatments have the greatest concerns for public safety, protecting property/investments protecting municipal water supplies and protecting historic/cultural resources, and natural values (see Table 2). Fuels treatments are discussed in more depth in sections IV.C, Prescribed Fire, IV.D, Non-Fire Fuel Treatments, and Appendix B of this plan.

III.C.3.d Emergency Stabilization and Rehabilitation (ESR) Prioritization

As with fuels treatment prioritization, each FMU was assessed for several key factors including the threat to human life and public safety, property/improvements on or nearby public lands, municipal watersheds, historic/cultural resources, and natural values. FMUs designated as HIGH priority for ESR have the greatest concerns for public safety, protecting property/investments, protecting municipal water supplies and protecting natural values (see Table 2). Section IV.E, Emergency Stabilization and Rehabilitation, of this plan discusses ESR in more depth.

III.C.3.e Community Assistance/Protection Prioritization

As with ESR prioritization, each FMU was assessed for several key factors including the threat to human life and public safety, property/improvements on or nearby public lands, municipal watersheds and findings from WUI hazard assessments. FMUs designated as HIGH priority for community assistance and protection have the greatest concerns for public safety, protecting property and investments, and protecting municipal water supplies (see Table 2).

Table 2. Summary of Prioritization by FMU.

Fire Management Unit	Acres	Wildland Fire Suppression	WFU	Emphasis on Fuels Treatment?	Emphasis on ESR	Community Assistance / Protection
Whitewater Desert	44,800	**H**	N	**M**	**H**	**H**
Urban Interface (Glade Park)	16,052	**H**	N	**H**	**M**	**H**
Upper DeBeque	103,475	**H**	N	**H**	**M**	**M**
Plateau Valley	67,415	**H**	N	**H**	**H**	**H**
Rabbit Valley, McDonald Creek	30,133	**H**	N	**M**	**H**	**M**
Unaweep Canyon	12,269	**H**	N	**H**	**M**	**H**
West Glade Park	119,906	**H**	N	**H**	**M**	**H**
Sinbad Valley	4,628	**M**	N	**L**	**L**	**L**
Palisade and Upper Kannah Creek	23,848	**H**	N	**H**	**H**	**H**
Grand Valley Deserts	161,464	**H**	N	**M**	**H**	**M**
Roan Creek	35,779	**H**	N	**M**	**M**	**M**
Riparian River CorridorS	40,780	**H**	N	**H**	**M**	**H**
Gibbler and Cactus Park	21,781	**M**	N	**M**	**M**	**L**
Gateway Blackbrush	11,862	**M**	N	**L**	**M**	**L**
Outlaw and Calamity Mesa, Cone Mtn, Sewemup	100,377	**M**	N	**M**	**H**	**L**
Bookcliffs	260,629	**M**	N	**M**	**H**	**L**
Black Ridge	79,914	**L**	**Y**	**L**	**H**	**L**
Bangs Canyon	16,250	**L**	**Y**	**L**	**L**	**L**
Wagon Park/Nine Mile Hill	56,341	**L**	**Y**	**L**	**L**	**L**
Colorado National Monument	16,410	**L**	**Y**	**M**	**H**	**H**
Blue Mesa	16,291	**L**	**Y**	**L**	**L**	**L**
Demaree	11,858	**L**	**Y**	**L**	**L**	**L**
South Shale Ridge and Little Bookcliffs	43,849	**L**	**Y**	**M**	**M**	**L**
Palisade	7,747	**L**	**Y**	**L**	**L**	**L**

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

III.D.1 Fire Management Unit Descriptions, Objectives, and Strategies

All Federal agencies within the UCR have identified specific Fire Management Units (FMUs). Public lands administered by the GJFO were delineated into 24 FMUs. For each FMU, fire managers, fuels specialists, and resource specialists performed an assessment of the risk of wildfire, potential damage to resource values, similar vegetation type and condition, management constraints, WUI issues, objectives and strategies.

FMU maps can be found in Appendix A. A narrative for each FMU, including an FMU description, fire management objectives, and fire management strategies can be found in Appendix B.

Wildland Fire Suppression Protocols (Restrictions and Recommendations) common to all FMUs are outlined below in section III.D.2. The protocols apply solely to BLM managed land within the FMUs.

III.D.2 Wildland Fire Suppression Protocols (Restrictions and Recommendations)

III.D.2.a Restrictions Specific to Heavy Equipment

Mechanized equipment, such as dozers or excavators, is infrequently used in the UCR to assist in fire suppression actions. In instances where the use of mechanized equipment is contemplated, the following will apply:

- All use of heavy equipment (dozers, graders, etc) requires authorization from the agency administrator or designated acting. *Exception: When the fire is outside a Wilderness Study Area (WSA), and lives or homes are nearby and in imminent danger of being loss, the FMO may authorize the use of heavy equipment.*
- The Zone FMO will involve the appropriate resource staff. On-site reconnaissance and review will be conducted prior to engaging in line construction activities unless there is an imminent threat to firefighter or public safety or an imminent threat to private land and improvements (structures). All identified cultural resources will be protected to the extent possible unless firefighter and public safety is compromised.
- In general, dozers will be prohibited from operating on slopes greater than 40%.

III.D.2.b Restrictions Specific to Motorized Vehicle Use

Travel Restricted Areas

Motorized travel restrictions do not apply to federal, state and local law enforcement officers or fire-fighting forces in the performance of official duties. However, motorized vehicle use in designated closed areas and on non-motorized routes is discouraged. If vehicle use is necessary, RAs will be consulted to develop vehicle use strategies that minimize vehicle impacts and address resource concerns.

Within Wilderness Study Areas (WSAs) and Areas of Critical Environmental Concern (ACECs)

(see maps in Appendix A) The use of motorized vehicles, fire engines, and mechanical ground-disturbing equipment within these areas requires approval of the Field Manager (FM) or designated acting FM. *Exception: When lives or homes are nearby and in imminent danger of being lost, the Fire Management Officer (FMO) may authorize vehicle use within WSAs and ACECs.*

III.D.2.c Restrictions Specific to the Aerial Application of Retardant or Foam

Avoid aerial application of retardant or foam within 300 feet of any body of water including lakes, rivers, streams and ponds whether or not they contain aquatic life. Exceptions (as per Instruction Memorandum No. OF&A 2000-011):

- When alternative line construction tactics are not available due to terrain constraints, life and property concerns, or lack of ground personnel, it is acceptable to anchor the foam or retardant application to the waterway. When anchoring a retardant or foam line to a waterway, use the most accurate method of delivery in order to minimize placement of retardant or foam in the waterway (e.g., a helicopter rather than an air tanker).
- When life or property is threatened and the use of retardant or foam can be reasonably expected to alleviate the threat.
- When potential damage to natural resources outweighs possible loss of aquatic life, the FMO may approve retardant or foam use within 300 feet of waterways.

If retardant is applied within 300 ft of a water body:

- Ditches should be dug as soon as possible to minimize entry of fire retardant into waterways. Mitigation may also include the use of straw bales, tree slash, or other materials to trap fire retardant and limit entry into aquatic systems.
- As soon as practicable after an aerial application of retardant within 300 ft of a waterway, the FM or acting FM must initiate a post application assessment of aquatic systems to determine effects to T&E species or their habitat. If there were no adverse effects to aquatic T&E species or their habitats, there is no requirement to consult with the USF&WS. If the FM or designated acting determines that there were adverse effects on T&E species or their habitats then the GJFO must consult with the USF&WS, as required by 50 CFR 402.05 (Emergencies). Procedures for emergency consultation are described in Part 11.

III.D.2.d Restrictions Specific to Wilderness Study Areas and Areas of Critical Environmental Concern

Wildland fires will require immediate and continued close coordination with the resource advisor (RA). The RA also notifies the appropriate GJFO staff person of fires and actions taken in WSAs and ACECs.

Restrictions Specific to WSAs

To protect wilderness characteristics (roadlessness and naturalness), wildland fire management follows H-8550-1 – Interim Management Policy for Lands under Wilderness Review and Grand Junction District WSA Fire Suppression Tactics Policy (05-10-95) (see maps in Appendix A). Specifically:

- The use of motorized vehicles, fire engines and mechanical ground disturbing equipment within WSAs requires approval of the Field Manager (FM) or designated acting FM. *Exception: When lives or homes are nearby and in imminent danger of being lost, the Fire Management Officer (FMO) may authorize vehicle use within WSAs and ACECs.*
- The use of airtankers, chain saws / pumps, and the delivery of personnel / equipment / water by helicopter require the approval of the FM or designated acting.
- Reduce the negative effects of wildland fire management by applying minimizing measures (see Appendix C for Minimum Impact Suppression Tactics (MIST)).
- Placement of large fire camps should be outside WSAs.
- Perform rehabilitation of fire suppression impacts as defined by the resource advisor to restore visual and/or wilderness characteristics.
- The use of natural firebreaks and existing roads to contain a wildland fire is encouraged.

Restrictions Specific to ACECs

Same as for WSAs (see maps in Appendix A).

III.D.2.e Other Wildland Fire Suppression Recommendations

- Private landowner or sheriff permission should be obtained to cross private property and use access roads.
- Erosion control and rehabilitation recommended on all surface disturbances (see section IV.E).
- During wildland fire suppression consider visual qualities in Visual Resource Management Class I and II areas where the classification goal is to preserve the landscape character and landscape modifications are not evident.
- Protect known heritage resources (cabins, homesteads, mine structures, prehistoric sites, pole structures, etc.). As possible and when necessary, inventory fire line construction in sensitive areas, avoid placing control lines, base camps, and support facilities within site boundaries, inventory ground-disturbing rehabilitation activities and use non-ground-disturbing techniques within known or newly identified site boundaries.
- Protect special status species. As possible and when necessary, inventory fire line construction in sensitive areas, avoid placing control lines, base camps, and support facilities within important habitats, inventory ground-disturbing rehabilitation activities, and use non-ground-disturbing techniques within known or occupied areas.
- Notify the resource advisor/archaeologist of any cultural resources encountered.
- When practical and possible, equipment used for wildland fire suppression activities should be washed before arriving on-site and staging/parking areas should avoid weed patches to reduce the spread of noxious weeds.
- Monitor for hazardous materials that may also be introduced as a result of the fire fighting activities. Rehabilitation plans should consider any contaminated waters and soils.

III.D.3 Threatened & Endangered / Special Status Species Wildland Fire Suppression Guidelines

Suppression activities can be detrimental to fish, wildlife and plants. This section provides information about threatened and endangered (T&E) and special status species (SSS) at risk from wildland fire suppression activities. The resource advisor (RA) should provide the guidelines (Table 3) and any additional measures identified by the FO biologist or USFWS to wildland fire managers.

Of paramount importance are the safety of the firefighters and the protection of life and property. If a suppression action is determined to be necessary to: (1) control a wildland fire, (2) save lives and/or property, or (3) ensure that fire crews can do their jobs safely and efficiently, and then it is appropriate to act even if it results in the take of an endangered species. DO NOT stand in the way of the response efforts (8.2.(A) - Final ESA Section 7 Consultation Handbook, March 1998). No wildland fire suppression guideline (Figure III.D.5), for the protection of endangered species or their habitat, will be considered if the FMO or Incident Commander feels they place firefighters or life or property in danger.

Table 3. T&E / Special Status Species Wildland Fire Suppression Guidelines

Species The plants are listed by scientific name	FMUs	Wildland Fire Suppression Guidelines for Federally Threatened, Endangered and Candidate Species
Federally Threatened, Endangered and Candidate Species		
Big River	B-01	• Avoid aerial application of retardant or foam within 300 feet of the river or any stream within a mile of the river.

Species The plants are listed by scientific name	FMUs	Wildland Fire Suppression Guidelines for Federally Threatened, Endangered and Candidate Species
Fishes (incl. Flannelmouth sucker and Roundtail chub) [*endangered & BLM sensitive*]	B-02 B-03 B-05 B-07 B-08 B-10 C-01 C-02 C-03 C-04 D-01 D-02 D-03 D-06 All FMUs*	• Within any watershed where heavy fuel ash can enter the rivers, that is, those drained by perennial streams and major ephemeral streams: - minimizing vegetation losses, except in "D" FMUs, - coordinating fire line placement with RA or hydrologists, - constructing fire lines in a manner that limits the potential for erosion, - rehabilitating constructed hand/dozer lines/impacted areas in critical watershed areas and placing water bars where erosion potential is high(see FMP Part 12). * Depletion log: The GJFO Biologist will report 1-acre foot of water to be added yearly to the water depletion log to account for water depletions associated with fire abatement within the planning area. If, in the event of a large wildland fire or severe fire season more water is used, the log will be adjusted accordingly and all depletions accounted for.
Bald Eagle [*threatened*]	A-01 B-01 B-02 B-05 B-08 B-10 C-03 C-04 D-01 D-02 D-03 D-05 D-06 D-08	In order to avoid adverse effects, both direct and indirect, to potential nesting, roosting, and hunting bald eagles, the following measures are required along main waterways: • Avoid unnecessary tree cutting, especially within ¼ mile of known roost trees. • Give priority to protecting streambank and riverbank trees. • Avoid aerial application of retardant or foam on trees within a mile of the river.
Canada lynx [*threatened-experimental non-essential*]	B-02	Wildland fire suppression within mapped potential Canada lynx habitats will be performed in a manner consistent with conservation measures outlined in the *Canada Lynx Conservation Assessment and Strategy* (2000) Chapter 7 – Pages 7-6, 7-7 and 7-8. Considerations include; • Attempts will be made to keep linear openings (fire line, access routes and escape routes) out of mapped potential habitat and away from key components such as denning areas. • When managing wildland fire, minimize the creation of linear openings (fire line, access routes and escape routes) that could result in permanent travel ways for competitors and humans. • Obliterate and reclaim linear openings (fire line, access routes and escape routes) associated with wildland fire suppression constructed within lynx habitat in order to deter future human and competitive species use. • Avoid constructing permanent firebreaks on ridges or saddles in lynx habitat.
Uinta Basin hookless cactus [*threatened*]	A-01 B-01 B-02 B-10 C-04 D-03 D-08	• Minimize surface disturbance by using retardant, water, engines/wet lines, etc in known habitat for this species. • Where firefighter safety is not compromised, construct fire line outside the perimeter of known cactus populations. • Avoid off-route use of motorized vehicles and mechanical equipment within known cactus populations.
Boreal toad [*candidate*]	B-02	Not known to exist - potential habitat near Lands End communication site. • Avoid aerial application of retardant or foam within 300 feet of any

Species The plants are listed by scientific name	FMUs	Wildland Fire Suppression Guidelines for Federally Threatened, Endangered and Candidate Species
		body of water including lakes, rivers, streams and ponds (as per OF&A - IM No. 2000-011, see FMP Part 9).
Western yellow-billed cuckoo [*candidate*]	B-10	This species historically occurred in portions of western Colorado, No individuals have been recorded or confirmed to nest within the public land portion of this FMU. • Avoid aerial application of retardant or foam on tall shrubs or trees (as per OF&A - IM No. 2000-011, see FMP Part 9).
Gunnison Sage-grouse [*candidate*]	A-02 B-05 D-01	• Identify and avoid known lek sites (private land) when managing wildland fire and using heavy equipment from March 15 to May 15. • Aggressively suppress wildland fires in sagebrush vegetation within mapped sage grouse habitats to minimize expansive losses of sagebrush. • Protect unburned patches of sagebrush within the fire perimeter. • Post-fire; Evaluate burned area to determine whether reseeding is necessary to achieve habitat management objectives as recommended in the *Guidelines to manage sage grouse populations and their habitats (Connelly, Schroeder,Sands and Braun 2000)*.
Greater Sage-grouse [*BLM sensitive with status under ESA review*]	B-01 B-02 B-08 B-09 C-04	• Identify and avoid known lek sites (private land) when managing wildland fire and using heavy equipment from March 15 to May 15. • Aggressively suppress wildland fires in sagebrush vegetation within mapped sage grouse habitats to minimize expansive losses of sagebrush. • Protect unburned patches of sagebrush within the fire perimeter. • Post-fire; Evaluate burned area to determine whether reseeding is necessary to achieve habitat management objectives as recommended in the *Guidelines to manage sage grouse populations and their habitats (Connelly, Schroeder,Sands and Braun 2000)*.
Penstemon debilis [*candidate*]	B-01	Located on Mt Logan in T7S, R97W, Sections 25, 35, & 36, Habitat is rocky clay loam soils of Green River slopes. Elev. 7000-8500 ft. • Minimize surface disturbance by using retardant, water, engines/wet lines, etc in occupied habitat. • Avoid road widening within or near occupied habitat. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
Phacelia submutica [*candidate*]	B-01 B-02 C-04	Habitat is steep, barren slopes; in chocolate-brown or gray clay; on Atwell Gulch and Shire members of the Wasatch Formation. Soils often riddled by cracks because of the shrink-swell clays. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
		BLM Sensitive Species
Colorado River cutthroat trout	B-05 B-09	• Attempts will be made to minimize losses of vegetation within 100 yards of occupied streams to minimize the potential for erosion of sediments into occupied waters. • Provide for drainage with water bars on constructed hand/dozer lines and impacted areas in critical watershed areas (see Part 12 for guidelines). • Avoid aerial application of retardant or foam within 300 feet of Roan, Carr, Brush, and Payne Creeks and the Little Dolores River. (as per OF&A - IM No. 2000-011, see FMP Part 9). • For fire control purposes obtain water from Roan, Carr, Brush, or Payne Creek or the Little Dolores River below the fish barrier at the downstream end of the occupied habitats.
Bluehead sucker	B-01 B-02	• Attempts will be made to minimize losses of vegetation within 100 yards of occupied streams to minimize the potential for erosion of sediments into occupied waters.

Species The plants are listed by scientific name	FMUs	Wildland Fire Suppression Guidelines for Federally Threatened, Endangered and Candidate Species
	B-03 B-05 B-07 B-09 B-10 C-03 D-03 D-06	• Provide for drainage with water bars on constructed hand/dozer lines where drainage into a perennial stream is possible (see Part 12 for guidelines). • Avoid aerial application of retardant or foam within 300 feet of any perennial stream. (as per OF&A - IM No. 2000-011, see FMP Part 9). • Within any watershed where considerable heavy fuel ash can enter the perennial steams and rivers: - minimizing vegetation losses, - coordinating fire line placement with RA or hydrologists, - constructing fire lines in a manner that limits the potential for erosion, - rehabilitating constructed hand/dozer lines/impacted areas in critical watershed areas and placing water bars where erosion potential is high (see FMP Part 12).
Northern goshawk	A-02 B-01 B-02 B-05 B-09 C-01 C-03 C-04 D-02 D-03	• Fire line construction will attempt to avoid the taller, more dense stands of aspen and tall conifers. Lines may be constructed around known nest trees to protect them. All fire line will be obliterated and reclaimed to minimize human use. • Linear openings (fire line, access routes and escape routes) associated with fire suppression will be obliterated and reclaimed in order to deter future human use.
Ferrugininous hawk	A-01 B-03 B-08	• Priority will be given to protecting the scattered juniper trees at the edges of the desert. • Minimize the time spent in the vicinity of (within half mile of) active ferruginous hawk nests.
Fringed myotis (bat)	All FMUs	• Priority will be given to protecting old growth pinyon and juniper woodlands including dead trees.
Yuma myotis (bat)	A-01 B-02 B-05 B-07 B-08 B-10 C-03 C-04 D-01 D-02 D-03 D-08	• Priority will be given to protecting large cottonwood trees, including dead trees.
Longnose leopard lizard	B-03 B-08 B-10 C-02	• Priority will be given to protecting the taller desert shrub communities, e.g., greasewood, spiny hopsage, Fremont barberry • Post-fire; Evaluate wildland fires to assess the need for cheatgrass control and/or re-seeding with native competitors of cheatgrass.
Northern leopard frog	All FMUs	• Avoid aerial application of retardant or foam within 300 feet of any body of water including lakes, rivers, streams and ponds (as per OF&A - IM No. 2000-011, see FMP Part 9).
Great Basin spade-foot toad	A-02 B-03 B-05 B-08	• Post-fire; Evaluate wildland fires within the lower elevation pinyon-juniper woodlands and sagebrush habitats to assess the need for cheatgrass control and/or re-seeding.???????

Species The plants are listed by scientific name	FMUs	Wildland Fire Suppression Guidelines for Federally Threatened, Endangered and Candidate Species
	C-04 D-02	
Aletes (Lomatium) latilobus	A-02 D-01 D-05	Habitat is along the base of sandstone, especially Entrada. • Avoid cliff and slick rock faces in setting up fire management staging sites.
Amsonia jonesii	B-03	Habitat is dry shallow drainages or rills at the juniper/desert ecotone. Elev. 4500–5000 ft. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
Astragalus debequaeus	B-01 B-02 C-04 D-08	Habitat is varicolored, fine-textured, seleniferous, saline soils of the Wasatch Formation-Atwell Gulch member. Barren outcrops of dark clay interspersed with lenses of sandstone. Elev. 5100-6400 ft. • Post-fire evaluations within the lower elevation pinyon-juniper woodlands and salt desert shrub habitats should review the need for cheatgrass control and/or re-seeding. Re-seeding should emphasize locally-adapted native species or short-lived introduced species that will not out-compete the DeBeque milkvetch.
Astragalus linifolius	A-02 B-10 D-02 D-03	Habitat is soils from the Chinle and Morrison Formations, in the PJ and sagebrush zone. Often along dry wash edges. Elev. 4800-6200 ft. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
Astragalus musiniensis	B-03 B-08	Habitat is gullied bluffs, knoll, benches and open hillsides; in juniper savannah or desert shrub communities, mostly on shale, sandstone, or alluvium derived from them. Elev. below 7000 ft. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
Astragalus naturitensis	B-02 B-10 C-04	Habitat is sandstone mesas, ledges, crevices and slopes in PJ woodlands. Elev. 5000-7000 ft. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
Astragalus piscator	B-10	Habitat is sandy, some places gypsiferous soils of valley benches and gullied foothills. Elev. 4300-5600 ft. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
Astragalus rafaelensis	B-10 C-03	Habitat is gullied hills, washes, and talus under cliffs; in seleniferous soils. Elev. 4400-6500 ft. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
Circium perplexans	B-01 B-02 C-04 D-08	Habitat is open areas and disturbed sites; vertisolic soils; in mixed shrublands and PJ woodlands. Elev. 5000-8000 ft. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
Eriogonum contortum	B-03 B-08	Habitat is Mancos shale gray badlands, in shadscale and other salt desert shrub communites. Elev. 4500-5100 ft. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
Gilia stenothyrsa	B-08 C-04	Habitat is silty to gravelly loam soils, along ephemeral stream banks. Elev. 4900-5000 ft. in Mesa County. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
Lygodesmia dolorensis	B-10 C-02 C-03	Habitat is sandy alluvium and colluvium of the Cutler Formation. Often found in (protected by) prickly pear cactus clumps. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
Mentzelia	B-01	Habitat is Green River shale slopes, may be well below the escarpment.

Species The plants are listed by scientific name	FMUs	Wildland Fire Suppression Guidelines for Federally Threatened, Endangered and Candidate Species
(Nuttallia) argillosa (rhyzomata)	B-09	• Minimize surface disturbance by using retardant, water, engines/wet lines, etc in known habitat for this species. • Avoid off-road use of motorized vehicles and mechanical equipment in occupied habitat.
Oreocarya (Cryptantha) osterhoutii	B-03 B-10 D-01 D-05	Habitat is dry, barren sites, in reddish-purple decomposed sandstone. Elev. 4500-6100 ft. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.
Pediomelum aromaticum	C-02	Habitat is open PJ woodlands. Elev. 4800-5700 ft. • Avoid off-route use of motorized vehicles and mechanical equipment in occupied habitat.

Special status species present in the some of the FMUs, but not considered susceptible to harm from fire suppression activities include the following: kit fox, white-tailed prairie dog, big free-tailed bat, spotted bat, Townsend's big-eared bat, American white pelican, white-faced ibis, Barrow's goldeneye, peregrine falcon, mountain plover, snowy plover, long-billed curlew, black tern, burrowing owl, midget-faded rattlesnake, canyon treefrog, milk snake, New Mexico spadefoot toad, Great Basin silverspot butterfly, *Lesquerella parviflora, Mimulus eastwoodiae*. Reasons a species may not be vulnerable to fire management activities are that it is out of reach (burrowing or only present as migrants) or it is in habitat where customary suppression techniques are not hazardous to it.

III.D.3.a Emergency Consultation with the U.S. Fish and Wildlife Service

Fire can and often does destroy endangered species and alters critical habitat. However, fire itself is considered a disaster or an act of God in the sense of 50 CFR 402.05. Consultation is conducted only for the actions (suppression response to the wildland fire emergency) under control of the BLM, not the effects of the fire itself. These consultations are in a special category, *Emergency Consultations*, and are handled in a very expeditious manner. The RA will be responsible for initiating emergency consultation with the U.S. Fish and Wildlife Service (USFWS). The RA should notify and involve the FO biologist and/or ecologist as soon as possible.

Typically, the RA contacts the USFWS by telephone if a wildland fire is determined to involve an endangered species or if response actions may affect the species or habitat. This contact should be made as soon as practicable. The RA should advise the USFWS contact of the nature of the emergency, location, fire size, species/critical habitats in the area, and the anticipated effects. An emergency consultation number will be provided. Subsequent calls to the USFWS can add information. An estimate of "incidental take" of the endangered species can be discussed, if specific information is known. After the wildland fire is controlled, the RA will work with the FO biologist or ecologist to provide an oral or written report to the USFWS. The USFWS provides an after the fact opinion that documents the effects of the emergency response on the listed species or critical habitat.

IV Fire Management Components

IV.A Wildland Fire Suppression

IV.A.1 UCR Fire History

IV.A.1.a Fire History

Lightning caused fires have been an integral factor in the formation and arrangement of vegetation types in the Rocky Mountains. Ironically, while fire burned forest and rangelands, it also renewed them. There is growing recognition that land-use practices, combined with fire suppression, have altered the natural cycle and role of fire. These actions have resulted in heavy accumulations of dead material (tree and shrub branches, leaves, and decaying organic matter), unnatural vegetative structure and composition, and often a continuous arrangement of fuels. Invasive species have been introduced in to some areas. Cheat grass and tamarisk are species that are fire adapted and tend to become monocultures when fires occur. Ecosystems are said to be out of balance or outside their natural range of variability. When this occurs, wildland fires may ignite more quickly, burn with greater intensity, and spread more rapidly and extensively than in the past (http://www.fs.fed.us/land/wdfire6.htm).

IV.A.1.b Occurrence

During the period of 1980 – 2003, the UCR averaged 180 fires per year, burning 167 acres annually. Approximately 99.7% of these wildfires are Size Class A, B, C and D incidents (less than 300 acres in size). On average, lightning accounts for approximately 66% of the annual number of fires while a variety of human caused fires accounts for another 15%, and 19% are from unknown cause. While the majority of fires are relatively insignificant in terms of size and fire intensity, periodic stand replacement events typically burn at high fire intensity levels (FIL 5 and 6). These fires can be several thousand acres in size. The Coal Seam Fire (2002) which burned 9,000 acres is the largest historic fire on BLM land. The Big Fish WFU (2002) which burned 17,000 acres is the largest fire on the UCR. Large fire (> 1,000 acres) occurrences for the UCR FPU can be found in Appendix G.

Table 4. Historical Fire Data for the UCR

Area	Avg. # of Starts/Year	Average Total Acres Burned/Yr.	Average Annual % Fire Starts by Cause		
			Lightning	Human Caused	Unknown
GSFO:80-03	55	25	76	07	17
GJFO:80-03	82	40	68	12	20
WRNF:80-02	33	38	38	41	21
CNM:48-02	2	8	78	22	0
GVRD:80-02	8	56	58	20	22
FPU Total	180	167	66	15	19

IV.A.1.c Range of Potential Fire Behavior

During green-up and following seasonal precipitation events, fire behavior is normally characterized as smoldering or creeping with limited rates of spread. Lightning starts are usually confined to single trees or small clumps of trees and associated vegetation. Prior to green-up and during peak seasonal burning periods, active fire behavior may be observed with higher rates of spread and intensities that exceed manual and mechanized suppression efforts.

During extreme burning conditions, such as those associated with seasonal drying and/or long duration drought conditions, significant stand replacement events may occur. These events are typically wind-driven and may cover hundreds to tens of thousands of acres during a single burning period.

The Colorado Plateau region is experiencing a long-term drought that has led to water-stressed and/or insect-damaged vegetation. As drought conditions persist in the West, there is increased potential for large, high intensity wildland fires indicating the need for a progressive and complete fire management program.

IV.A.2 Suppression/Preparedness Actions

IV.A.2.a Operational Roles

The operational roles of the BLM 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 tribal, State, or local governments, as described in the Interagency Standards for Fire and Fire Aviation Operations.

IV.A.2.b Suppression

Following direction in the NPS and BLM's Resource Management Plans, the UCR suppression strategy is to use Appropriate Management Response (AMR) on all fires in accordance with management objectives and based on current conditions and fire location. Every wildland fire will receive AMR to protect firefighter and public safety, values at risk, and minimize suppression costs. AMR can vary from aggressive initial action to monitoring. See the detailed descriptions of the FMUs (Appendix B) for specific suppression objectives and fire management constraints.

Requirements for fire operations/suppression plans can be found in the Interagency Standard for Fire and Fire Aviation Operations (Red Book) (USDI and USDA 2004) and the Office of Fire and Aviation website at http://www.fire.blm.gov/. All plans for fire and resource personnel use can be accessed at the Dispatch Office. See Section V.A of this document for a complete summary of the preparedness organization including staffing, budget, equipment, etc.

IV.A.2.c Preparedness Levels

The UCR Operations Specialist or the designated acting will determine daily preparedness level using the processes outlined in the Unit Fire Danger Operating and Preparedness Plan (see Appendix I). The two NFDRS components used in developing the adjective rating are energy release component (ERC) and ignition component. Preparedness levels are tracked daily and over a rolling three day period. Guidelines for initiating appropriate management actions for each preparedness level are identified on the following pages. It should be noted that trends will be used to guide appropriate management actions to be undertaken by the UCR staff to avoid rapid changes in management actions in response to short term weather conditions.

IV.A.2.d Annual Preparedness Reviews

Zone preparedness resources undergo a readiness review by agency/interagency fire management specialists prior to June 15th annually. Readiness reviews may include Dispatch Center, Helitack and staff management functions at the discretion of the Unit FMO and review team. Review elements will examine those items on the checklists included in the Fire Readiness Review Guide (1998 as amended) at a minimum.

IV.A.2.e Employee Participation

Agency Administrators will ensure employees are trained, certified and available to participate in the wildland fire program locally, regionally and nationally as the situation demands, as described in the Interagency Standards for Fire and Fire Aviation Operations.

IV.A.3 Fire Prevention, Community Education, Community Risk Assessment, & Other Community Assistance Activities (Firewise).

IV.A.3.a Prevention Program

Prevention activities are an integral part of the fire management program within the UCR FPU because a significant percentage of fires are human caused. This is due to population, the amount of intermingled private lands, the interest in outdoor recreation activities, and the large amounts of public land accessible by roads and rivers. The greatest risk for human caused fires exists in areas of high use and major travel corridors (roads, highways, and rivers). When warranted, prevention efforts such as posting signs, increased patrols, and public contact are focused on these areas.

Year round activities include normal fire prevention programs and public awareness of fire conditions. Details of the prevention program may be found in the existing Wildland Fire Prevention Plan for the BLM Grand Junction District, which is on file in the West Zone FMO's office in Grand Junction. This plan was completed before the advent of the interagency organization and the BLM reorganization into Field Offices. The activities identified in the plan are still valid. A revised plan encompassing the other participating agencies is targeted for completion by September 2006. Fire prevention activities for the FPU are accomplished by the interagency fire management and visitor information staff groups. A typical range of program efforts is undertaken including signing, press releases and public service announcements, educational programs targeting school children and UCR visitors and coordination with local cooperators during periods of high fire danger.

Smokey Bear Program

The UCR and COLM participate in the Smokey Bear Program to maintain public awareness of the need to prevent wildfires. Smokey Bear related fire prevention materials are distributed at agency offices as well as through educational programs that focus on local school children. Employees dressed as Smokey Bear participate in local festivals and parades throughout the local area.

Direct Contacts and Visitor Information

Office and field contacts with public land visitors across the GJFO and COLM provide opportunities to share information regarding current fire danger and tips for camping and backcountry use. The GJFO and COLM receive heavy visitor use in dispersed backcountry settings as well as at developed recreation facilities. High recreational use and the potential for human caused fire begins in March and continues through the big game hunting seasons in October and November.

Media Contacts

These contacts are made through radio, television, newspapers, and signing. Press releases, informal contacts, and feature articles are also used to get fire prevention messages to the public. The fire program relies heavily upon the expertise of the agency public affairs officers for professional interaction with the media. In addition a cadre of media liaisons and Type III Information Officers is used to give timely response to media inquiries.

Interagency Fire Prevention Programs

The fire staff routinely coordinates fire prevention activities with Federal, State and local cooperators and communities.

Fire Mitigation Positions

The UCR has one full time individual in the position of mitigation and education specialist.

Risk Assessments and Mitigation Plans

Fire Management Plans have been completed for Mesa and Garfield Counties. These county fire plans identified communities-at-risk and set mitigation priorities.

Community Wildfire Protection Plans are prepared based on the county fire plan. These plans assess the wildfire threat to a neighborhood or community and the surrounding landscape and locate values-at-risk in detail. They also determine the specific vegetation management, road improvements, water sources, warning systems, evacuation routes, changes to buildings to make them less flammable, fire department preparedness, and other actions needed to reduce the threat of wildfire.

The Colorado State Forest Service takes the lead in community wildfire protection planning, but the county fire mitigation specialist, sheriff, American Red Cross, rural fire department, or other organization may carry out the actual planning. In every case, the NPS and BLM seek to collaborate as a partner in the planning effort, and provide technical advice and financial assistance in many cases. To the extent possible, the NPS and BLM involve interested community residents and other stakeholders in data collection and analysis for fire planning on neighboring public lands the agency manages and provide advice on fire ecology, vegetation management, and fire preparedness to communities. Field inventories are being conducted to assess fuel conditions on NPS and BLM lands adjacent to communities. An inventory process has been developed to rank and prioritize risks to communities and neighborhoods. These inventories are being used to develop mitigation plans.

Wildfire Investigations

All wildfires are investigated for cause. The UCR has had incidents of arson in the past, but it is not a regularly occurring problem. If human cause is suspected and sufficient evidence is available and/or the cost of the fire is significant, then a fire investigator is called in for investigation.

IV.A.3.b Special Orders and Closures

Coordination and Authority

During times of high fire danger, restrictions may be imposed to reduce the risk of human-caused fire during periods of extended high fire danger. Emergency closures have a substantial impact on the public, and are only used under the most severe conditions.

The UCR has developed a guide to determine when it is necessary to implement fire restrictions and closures. This guide is based on projected Energy Release Components (ERCs), predicted weather, and human-caused risk. This guide is reviewed and discussed annually with the county sheriffs to assure uniform implementation of fire restrictions.

The UCR coordinates fire restrictions, recommended by FMOs, and approved by the appropriate land managers, with local cooperators, primarily county Sheriffs, and other federal land management agencies. Coordination with county sheriffs and other agencies is done to ensure that restrictions are implemented as consistently as possible across boundaries. The County Wildland Fire Operating Plans guide fire restrictions and closures for the UCR. This agreement outlines procedures for cooperative and uniform implementation of fire restrictions when Very High to Extreme fire danger is predicted to continue. A cooperative effort to revise and standardize the fire restriction implementation process began late in 2004. The draft process was tested during the 2004 fire season. A final version should be complete in time for implementation during the 2005 fire season.

Restrictions and closures are keyed to the National Fire Danger Rating System ERC Index trend. There are two fire restriction stages and one closure stage, which are implemented as shown below. Refer to the Fire Restriction Toolbox (2002) for further information.

Table 5. Fire Restriction Stages

Stage I	Restricts open fires to developed recreation sites or improved sites. Restricts smoking to an enclosed vehicle or building, a developed recreation site or while stopped in an area at least three feet in diameter that is barren or cleared or all flammable materials. Use of an approved spark arrestor for use of any internal combustion engine is required.
Stage 2	Stage two prohibits fires or campfires, smoking except within an enclosed vehicle or building, possession and discharge of any fireworks or pyrotechnic device, use of explosives, welding and use of any internal or external combustion engine without an approved spark arrestor. Chainsaw operations as well as other equipment powered by an internal combustion engine are prohibited between 1:00 PM and 1:00 AM. In addition, cross-country use of a motor vehicle off-route is prohibited except when parked in an area devoid of vegetation within 10 feet of the roadway or parked overnight in a developed campground or at a trailhead.
Stage 3	This stage is an area closed to all entry except for individuals carrying a written permit, Federal, State and local officers or members of organized search and rescue or firefighting forces performing official duties and resident landowners and lessees.

IV.A.3.c Industrial Operations and Fire Precautions

Generally, contractors conducting business on public land are subject to the same provisions defined above for restrictions or closure. Situations or conditions may occur when specific activities may be exempted from restrictions or closures. Exemptions are clearly defined in the restriction or closure order or authorized on a case-by-case basis. The order details when the restriction, closure, or exemption goes into effect, longevity of the restriction, and what activity or equipment is affected.

Structures and Improvements

Zone fire management staff and/or facility managers or their appointed representatives make inspections of UCR facilities periodically. Measures to reduce the risks of and hazards from wildfire are taken immediately whenever problems are noted.

Rights-of-Way

Rights-of-way in the form of roads and power lines must be periodically reviewed to minimize the potential for fire starts. This is an integral part of the special use inspection process. Inspections and removal of hazardous vegetation may be required under the terms of the permit.

Roads

Public roads are numerous, offer many attractions, and are the primary means of public access into and through the UCR. Fuel loading along major roads is treated in accord with Land and Resource Management Plan direction.

Industrial Operations (Timber and Special Use Operations)

Compliance inspections are completed in accordance with contract requirements or per manual direction in the case of special use permits. Inspections are for the protection of the public land resources and the operators. Agency representatives enforce all requirements of the contract related to fire prevention precautionary measures.

Spark Arresters and Equipment

All internal combustion engines that operate on the GJFO must have properly working spark arresters. Spark arrester inspections are conducted by agency personnel.

IV.A.3.d Community Education

The BLM and NPS work to protect communities through prescribed fire and fuel reduction efforts around communities, and work to ensure adequate federal funding for these efforts. The BLM and NPS help to provide opportunities for education, training, and participation in fuel reduction projects for home and property owners. Recent activities undertaken include community workshops to describe Firewise, and meetings with communities and homeowner's associations.

The Colorado State Forest Service, often working with the American Red Cross, Sheriffs, local Offices of Emergency Management, and local fire departments, organizes educational programs for residents of the communities-at-risk to encourage fire hazard mitigation on private lands. The NPS and BLM provide technical and financial assistance to support the community fire education.

Firewise

Fire staff from the UCR, especially the Fire Mitigation Specialist, provide local communities with information about coexisting with wildfire along with mitigation information tailored to our specific area. The UCR Fire Staff, Colorado State Forest Service, American Red Cross, and local Fire Districts routinely make Firewise presentations to homeowners associations and the community at large. The wildland agencies within UCR help communities identify and implement local solutions. The communities are encouraged to take the lead in assessing fire risk and creating a network of cooperating homeowners, agencies and organizations.

IV.A.3.e Assistance Programs

Recognizing that UCR fire risk mitigation around communities needs to be a collaborative effort between agencies and local citizens, we focus our efforts in the wildland-urban interface and reduce fuel loads on public lands near communities. Recent activities undertaken include:

- Mesa County Fire Management Plan
- Unaweep Canyon Hazard Mitigation Project
- Glade Park Hazard Mitigation Project
- Debeque Hazard Mitigation Project
- Collbran Hazard Mitigation Project
- Mesa Hazard Mitigation Project

In 2001, Colorado Counties, Inc. (an association of county commissioners and administrators) implemented a series of workshops with counties to encourage county-wide fire planning throughout the state. The workshops were funded in part by the BLM, and the agency participated as part of the training cadre. The workshops were attended by representatives from most counties in the state. The BLM, through its community assistance grant program, has provided grant funding to county fire planning efforts in all of the UCR counties: Mesa, Garfield, Pitkin, Eagle, and Summit.

IV.A.4 Fire Training and Fitness Activities

IV.A.4.a Recurring Training Activities

Zone FMOs are the primary coordinators of training needs. All agency personnel having wildland fire qualifications in Command and/or Operations functions are required to attend an annual fire refresher. This refresher includes fire shelter deployment and recurrent safety topics such as Standards for Survival; Look Up, Look Down, Look Around; or similar safety oriented training. Attendance at refresher training along with successful completion of the appropriate level of work capacity testing is a pre-requisite for receipt of a red card prior to June 1st annually.

All employees with fire suppression support functions and Agency Administrators are encouraged to attend annual fire refresher training. Basic Firefighter training (S-130, S-190) is offered annually to new employees and interested members of local cooperating agencies and fire departments. Up to twenty-five 100 and 200 level courses are conducted locally by UCR personnel in order to meet specific field office or crew training needs required in 310-1 or 5109.17.

A formalized UCR training committee with charter will be in place for FY 2005. The committee will consist of two employees (primary and alternate) from each zone and the Grand Junction Air Center. This committee will survey UCR staff for needs and prioritize all local training courses. National training needs assessment requests will also be documented by the training committee.

Guidance regarding the new 401 series standards in Biological Science is another topic which the training committee will be looking into for course ideas for UCR and BLM and FS.

IV.A.4.b Recurring Fitness Activities

Fitness requirements for all personal involved in fire/suppression support can be found in the Interagency Standards for Fire and Fire Aviation Management. Successful completion of the appropriate level of work capacity testing is a prerequisite for issuance of a red card. Fire staff with a fireline duty or qualification are authorized one hour of physical training per day, when not on fire assignments, to maintain the level of fitness required for rigorous fireline duty.

UCR fire funded personnel are allotted one hour of physical fitness time daily. Each zone has developed their own physical training (PT) program which includes cardiovascular training, strength training, and calisthenics. These PT programs aid with firefighter safety and promote team spirit and unity. UCR Agency Administrators and Fire Management Staff are extremely supportive of fitness activities which promote the goal of making firefighter and public safety always the first priority.

IV.A.4.c Qualifications

The UCR fire management organization will make every reasonable effort to have sufficient numbers of qualified wildland fire and support personnel available to meet current and anticipated fire management needs safely and efficiently. All personnel with fire program responsibilities will meet established agency competencies and associated qualifications, as identified in the Wildland and Prescribed Fire Qualification Systems Guide (NWCG PMS 310-1, and FSH 5109-17) (NWCG 2000), BLM Manual 9214 Fire Training and Qualifications, the Interagency Standards for Fire and Fire Aviation Operations (2004), and other competency guides as applicable.

Agency Administrators and fire management staff will ensure that all able-bodied 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 will be held accountable for making employees available.

Critical Qualification and Position Needs for the UCR

The interagency (UCR) Red Card and Qualifications committee meets annually or as needed to review Wildland Fire qualifications for all agency personnel. This committee reviews the list of personnel qualified by position to undertake assignments in support of wildfire or prescribed fire and identifies positions where insufficient personnel are qualified to meet short term management needs.

The needs assessment is forwarded to the Geographic Area Training Coordinator for discussion at the Area level. The Red Card and Qualifications committee identifies individuals for priority classroom and on-the-job training assignments to address short-term needs by functional area.

Training Budget Needs for the UCR

Increases in training requirements for currency and qualification advancement have increased the training costs per person. The current budget is lagging in meeting these training requirements. The FY 2004 budget is five hundred dollars annually per employee, while the dollar amount required to ensure a safe and efficient program which meets or exceeds national standards would be two thousand per employee.

IV.A.4.d Fire Season Readiness

Wildland fire, prescribed fire operations, and aviation preparedness reviews are conducted annually in accordance with the Fire Preparedness Review Guide found in the Interagency Standards for Fire and Fire Aviation Operations, USDI and USDA. National Office reviews are conducted every three years by fire operations personnel in Boise.

Typical Fire Season Dates

The normal fire season start and stop dates for the Colorado National Monument, and Grand Junction and Glenwood Springs Field Offices are from May 1st to October 15th. The fire season start and stop dates represent the period of time during which approximately 90% of the fires will occur. The seasonal analysis of fires utility in the Personal Computer Historical Analysis (PCHA) was used to determine these dates for initial attack planning purposes and calculation of the Fire Fighting Production Capability (FFPC) target. These dates are used as guidance for staffing initial attack resources. However, it must be noted that fires can occur any time of year and it is possible for large fires to happen outside of the established fire season. In these instances, permanent employees and local cooperator units will be used to suppress fires on the interagency staff unit pending the arrival of outside ground based and aviation resources.

IV.A.5 Detection

Detection and fire reporting follow state and local operating plans. Wildland fires outside the UCR protection jurisdiction are reported to the appropriate county or neighboring agency dispatch.

The UCR altered the aerial detection program in 1995 in order to save funding and to add flexibility to FMOs. Zone FMOs may request aerial detection services on an as-needed basis from the Grand Junction Interagency Dispatch Center. Currently an air attack platform (ASM) or smokejumper aircraft are requested to undertake aerial detection mission subject to their availability.

IV.A.6 Fire Weather and Fire Danger

IV.A.6.a Fire Weather

Typical weather patterns consist of hot, dry afternoon winds (10-15 mph) with gusts up to 45 mph near thunderstorms. Thunderstorms with dry lightning and warm unstable conditions are common. Cold fronts and storm squalls can bring sustained winds in excess of 50 mph. Thermal belts are very distinct in the mountainous and canyon country.

Temperatures:

- 80-90s in high terrain
- 95-100+ in high desert and plateau areas.
- 45-50s at night

Relative Humidity:

- 5%-20+% typical summer lows during burning periods in high desert and plateau areas; 10%-25+% typical lows in high terrain.
- 30%-50+% typical nighttime highs at all elevations
- During extremely hot days, many areas may experience little or no relative humidity (RH) recovery

Fire weather is usually at its worst in early summer (mid June) up until monsoon moisture arrives in mid July. After monsoons retreat, a second drying period is common during the fall that runs from mid August up until September or even October in some years. Weather during the second season is typically cooler and days are shorter. While the potential for large fires exists in the fall, the first season has the greatest potential for hot/dry conditions that would sustain large fire spread.

Table 6. Monthly Climate Summary for UCR

Monthly Climate Summary for UCR at Eagle, Colorado												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean High Temp. (°F)	34	40	48	68	69	80	86	83	76	64	47	35
Mean Low Temp. (°F)	3	9	19	25	33	39	46	44	36	25	15	5
Avg Total Precip.			.80	.81	.85	.86	1.21	1.03	1.09	.94		
Avg. Low Relative Humidity (%)			25	20	17	12	14	15	15	15		

Monthly Climate Summary for UCR at Rifle, Colorado												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean High Temp. (°F)	36	43	53	64	74	84	90	88	79	67	51	39
Mean Low Temp. (°F)	9	16	24	31	39	45	52	50	41	31	21	12
Avg Total Precip.			.95	1.01	.98	.74	1.03	1.13	1.11	1.21		
Avg. Low Relative Humidity (%)			25	19	18	15	12	17	17	15		

Monthly Climate Summary for UCR at Grand Junction, Colorado												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean High Temp. (°F)	37	44	53	65	79	86	93	89	81	68	51	39
Mean Low Temp. (°F)	17	23	31	39	49	57	64	62	53	42	29	19
Avg Total Precip.	.59	.58	.76	.74	.73	.44	.61	1.03	.89	.90	.59	.58
Avg. Low Relative Humidity (%)	59	25	24	22	20	12	23	20	22	25	49	52

IV.A.6.b Fire Danger

Agency policies for both Bureau of Land Management and US Forest Service (see Standards for Fire and Aviation Operations, 2003; FSM 5120) require each dispatch unit to have a Fire Danger Operating Plan (FDOP). The UCR has combined a Preparedness Plan with the FDOP into a Fire Danger Operating and Preparedness Plan (FDOPP). This plan is the basis for the fire danger message provided to the public as well as the decision-making tool for agency administrators, fire managers, dispatchers, agency cooperators, and firefighters for setting planning and dispatch levels using the National Fire Danger Rating System (NFDRS). Activities, events, and fire operations

affected by fire danger are identified and appropriate NFDRS components or indices are selected as decision guides.

The Fire Danger Operating and Preparedness Plan addresses fire danger levels and ratings and corresponding appropriate responses, with an emphasis on aggressive information and resource sharing between federal agencies, cooperating state and county agencies, private industry, and the public. A copy of the FDOPP can be found in Appendix I of this document.

IV.A.6.c Remote Automated Weather Stations

The BLM utilizes 13 Remote Automated Weather Stations (RAWS) (Table 7).

Table 7. Remote Automated Weather Stations (RAWS) for UCR

Name	NWS ID	NESS ID	Elevation	Latitude	Longitude
Deadhorse	051404	323603A4	8960	40° 04' 43"	107° 22' 05"
Dowd Junction	051606	3241B960	8998	39° 37' 39"	106° 27' 07"
Soda Creek	051703	323591C8	9600	39° 34' 00"	105° 59' 00"
McClure Pass	052810	3235B724	8980	39° 07' 36"	107° 17' 03"
Jacks Canyon	052409	325A137C	7660	38° 45' 12"	108° 34' 47"
Demaree	051507	3265F06C	7460	39° 27' 36"	108° 52' 48"
Carpenter Ridge	053808	323C241A	8088	38° 27' 34"	109° 02' 49"
Little Dolores	052410	326607E6	6796	38° 58' 09"	108° 56' 40"
Pine Ridge	052407	32778496	6600	39° 15' 37"	108° 24' 26"
Rifle	051504	324A7104	6120	39° 30' 44"	107° 44' 57"
The Crown	051506	325A9568	8303	39° 21' 10"	107° 05' 35"
Gypsum	051607	3259D16C	7340	39° 41' 43"	106° 58' 23"
Storm King	051508	324AA76C	8793	39° 33' 45"	107° 25' 12"

The UCR also has a portable RAWS station that can be installed to provide site specific weather information for projects where permanent RAWS information is not felt to reflect need site specific conditions. All weather stations use NFDRS fuel models along with the energy release component to develop fire danger ratings on a daily basis.

The Grand Junction Interagency Dispatch Center is responsible for recurrent daily activities in order to manage RAWS data and for the input of key dates to initiate seasonal data collection and termination. Dispatch response levels for the UCR are based on the Burning Index (BI) for the day, which also determines the fire danger rating of low, moderate or high. These are utilized to set response levels in Wildland Fire Computer Aided Dispatch (WildCad), which identifies the needed response level and closest available forces for a particular wildland fire start. Dispatch response levels are set at the following break points:

- LOW when BI = 0 – 59
- MODERATE when BI = 60 – 75
- HIGH when BI = 75+

IV.A.6.d Energy Release Component

The Energy Release Component (ERC) chart, in general, is one of many charts wildland firefighters use to determine what kind of fire behavior that may be expected from a wildland fire, especially in heavier fuels. The chart is derived from data collected at weather stations. The ERC is based on the estimated potential available energy released per unit area in the flaming front of a fire. The day-to-day variations of the ERC are caused by changes in the moisture contents of the various fuel classes,

including the 1,000 hour time lag class. The ERC is derived from predictions of; (1) the rate of heat release per unit area during flaming combustion and, (2) the duration of flaming. The 3-Day Average ERC Chart is used to look at the seasonal trends, and as a comparison tool against previous years.

IV.A.6.e Fire Severity / Severity Guide

Severity planning is done for both short and long duration situations. Short duration considers a period of 1 day to a couple of weeks when conditions are expected to subside. Long duration contingency planning is for an extended time period.

Short duration planning can be an appropriate strategy for conditions when adjective rating class is high or greater. Typical planning would include increased staffing, pre-positioning of local forces, close coordination with fire management partners, escalated interagency prevention efforts, etc. The objective is to get through a short duration critical period, with existing budgets.

Long duration severity planning involves requesting severity funding to supplement existing preparedness resources to increase staffing levels in response to long duration or uncharacteristic weather trends. Severity requests must be submitted two weeks in advance of planned needs.

Severity planning considers the following:

- Energy Release Component (ERC)
- sustained departure from normal long range weather forecasts
- observed fire behavior
- measured departure from normal in live fuel moisture conditions
- abnormal/unforeseen numbers of fire starts
- uncharacteristic fire sizes adjusted for seasonal norms.

Funding requests are based on anticipated needs and are only used if predicted conditions are realized. Severity funds do not make up the difference between the UCR funding level and the Most Efficient Level (MEL), but rather provide for capability beyond the MEL staffing level identified in the UCR National Fire Management Analysis System (NFMAS) analysis.

Severity Index

The Severity Index uses Energy Release Component values (ERC), 1000-hour fuel moisture, current Keetch-Byram Drought Index (KBDI) and local drought conditions represented by percent of normal precipitation as monitored at UCR weather stations.

The following chart describes the Severity Indices and is to be used as a guide for severity planning. Three of the four weather stations must meet the criteria for the UCR to meet the specified severity level.

Table 8. Severity Index Levels

LEVEL	CRITERIA
LOW	ERC is within the 0-24 percentile range for the weather stations within the geographical area. 1000 HR. FUEL MOISTURES greater than 20%. YEARLY PRECIPITATION of weather stations at normal or above. KBDI 0 to 100.
MODERATE	ERC is within the 25-50 percentile range for the weather stations within the geographical area. 1000 HR. FUEL MOISTURES range between 16-20%. YEARLY PRECIPITATION at weather stations averages no more than 10% below normal. KBDI 100 to 300.

HIGH	ERC is within the 51-80 percentile range for the weather stations within the geographical area. 1000 HR. FUEL MOISTURES range between 13-15%. YEARLY PRECIPITATION at weather stations averages 10 to 25% below normal. KBDI 300 to 400.
VERY HIGH	ERC is within the 81-95 percentile range for the weather stations within the geographical area. 1000 HR. FUEL MOISTURES range between 8-12%. YEARLY PRECIPITATION at weather stations averages 25 to 45% below normal. KBDI 400 to 500.
EXTREME	ERC is greater than the 95 percentile range for the weather stations within the geographical area. 1000 HR. FUEL MOISTURES are less than 8%. YEARLY PRECIPITATION at weather stations averages more than 45% below normal. KBDI greater that 500.

IV.A.6.f Fire Weather Watch/Red Flag Conditions

Fire Weather Watches and Red Flag Warnings are issued to inform land management agencies of the possible development of or actual occurrence of Red Flag conditions. A Red Flag event occurs when critical weather patterns develop that could lead to large and dangerous fires.

Conditions that warrant Fire Weather Watch or Red Flag Warning, either alone or in combination are the expected or actual occurrence of:

- General dry thunderstorm activity (Lightning Activity Level (LAL) 6), i.e. considerable lightning but little or no measurable precipitation.
- The combination of strong winds (usually 25 mph or more), low humidity (15% or lower), and high temperatures (usually 80 degrees and above).
- Fire danger in the “Very High” or “Extreme” category.
- In the judgment of the forecaster, weather conditions and fire danger combine to indicate a severe fire weather episode.

A Fire Weather Watch will be issued whenever the potential for Red Flag conditions exists. A watch will normally be issued 12 to 36 hours in advance of the expected onset of Red Flag conditions. If dry lightning is the only condition expected in the 0 to 12 hour time frame, a Fire Weather Watch may be issued or continued in place of a Red Flag Warning.

A Red Flag Warning will be issued whenever Red Flag conditions are imminent or occurring. A warning will generally be issued within 12 hours of the expected onset of Red Flag conditions, or whenever the forecaster becomes aware of an ongoing Red Flag event.

Fire Weather Watches will most likely be issued with the morning or afternoon forecast while Red Flag Warnings may be issued at any time. The Watch or Warning will be headlined in the forecast with information on the affected area, the valid time of the watch or warning, and a description of the expected severe fire weather conditions included. Both Watches and Warnings will continue to be highlighted in the routine fire weather forecast until threatening conditions cease.

Fire Weather Watches and Red Flag Warnings will be entered into the Weather Information Management System (WIMS) and the affected agencies notified by telephone usually before, but always after a Watch or Warning has been issued. A Watch or Warning will be cancelled by the forecaster when the conditions are no longer expected to occur. During the off-season, if very warm, dry and windy conditions are expected, the National Weather Service (NWS) will notify the Rocky Mountain Area Coordination Center by phone.

The NWS Fire Weather Watch/Red Flag Warning program is used to warn land management agencies of the onset or occurrence of critical fire weather conditions. The NWS does not make any management decisions as a result of the Fire Weather Watch or Red Flag Warning. Specific actions

are determined by user agencies. Preparedness levels will be adjusted commensurate with the Red Flag Warning and Weather Watches based on existing local conditions.

IV.A.6.g Spot Weather Forecasts

Spot weather forecasts are required for prescribed burning and are commonly needed to assist with plans for wildfire suppression. The procedures for obtaining a spot forecast are as follows:

1. Fire (or prescribed fire) personnel take weather observations at site of fire.
2. Observation data is forwarded directly to the Grand Junction Dispatch (GJC) who in turn forwards the information to the NWS.
3. NWS formulates a forecast and either sends a FAX copy to GJC Dispatch or puts the forecast onto the NWS spot weather forecast webpage.
4. GJC forwards the spot weather forecast to the Incident Commander or Zone FMO via FAX or radio. (Radio broadcast is preferred over cell phones to allow field personnel the opportunity to hear the weather forecast.)

Spot Weather Forecasts and other Fire Weather Information are provided through the National Weather Service Offices in Grand Junction for most of the UCR.

IV.A.7 Aviation Management

The UCR has a varied aviation workload and there is a steady need for agency, contract, and "Call When Needed" aircraft for fire and resource uses. Regional vendors are available to provide point-to-point transportation, aerial ignition platforms, and reconnaissance missions to support resource management activities.

All aviation operations will comply with the UCR Aviation Management Plan, the Air Tanker Base Plan, the Helicopter Operations Plan, and the UCR SEAT Operations Plan, all of which are available at the Grand Junction Dispatch Center.

Aviation resources available to the UCR include:

- Type III exclusive use helicopter and helitack crew from June 1st to September 30th in Rifle
- Type IV air tanker (SEAT) from May 10th to September 12th in Grand Junction
- Smokejumpers from mid-June through September in Grand Junction
- Aerial supervision resources (ASM, Lead plane, Air Attack) in Grand Junction

The Grand Junction Air Center/Air Tanker Base (ATB) located on the west end of the Grand Junction Airport can get extremely busy during fire season, June through September. It is not unheard of to have 20+ aircraft working fires across Colorado and surrounding states, including heavy air tankers to Wyoming, Utah, South Dakota, and New Mexico. Grand Junction ATB historically has dropped more retardant than any other ATB in the country.

Smokejumper operations can add an extra workload by adding up to four aircraft and fifty jumpers during high initial attack periods.

Single Engine Air Tankers (SEATs) and Helicopters (Types 1, 2, and 3) are staged in Grand Junction on a regular basis by Rocky Mountain Coordination Center in Denver throughout fire season for severity. State of Colorado Division of Forestry, Craig District, and Montrose District also utilize the Grand Junction ATB for extended attack and Type I & II Incidents creating an added workload for Air Center/ATB personnel.

IV.A.8 Initial Attack

Annual Operating Plans (AOPs) are in place for Delta, Eagle, Garfield, Mesa, Pitkin, Rio Blanco, and Summit Counties. Participants in the AOPs are the NPS, BLM, USFS, Colorado State Forest Service, and the county sheriffs. Initial attack of wildland fires within the UCR is consistent with the AOPs. The purpose of this FMP is to facilitate cooperation in fire management activities within the protection areas of the signatory parties of the AOPs. On UCR jurisdiction fires, the closest available federal resources will implement initial attack. There may be times when nonfederal cooperators are utilized due to resource shortages, and a federal resource will be dispatched at the earliest opportunity.

All fires on UCR federal lands will be managed with the appropriate management response consistent with preplanned dispatch protocols (agency run cards and preplanned dispatch plans) in conformance with resource management objectives identified in this plan. Tactics and strategies will be based on the current and predicted weather, fire behavior, and risk to Firefighter and public safety. Firefighter and public safety is always the first priority. Use the following information for determining initial attack priorities. For initial attack, FMUs within the UCR are ranked as High, Moderate, or Low (see Table 2).

Initial attack forces are made up of the first suppression personnel to arrive at a fire plus reinforcements arriving during the first burning period. A qualified individual on scene will undertake control of the incident and identify himself or herself as the Incident Commander (IC). This will be communicated over the radio to Dispatch as well as to the remaining initial attack personnel on scene.

Should the fire complexity increase to a level exceeding the qualifications and capability of the Initial Attack IC, that individual will advise Dispatch via the radio that a more qualified Incident Commander is required along with recommendations for additional resources and overhead positions consistent with Incident Response Pocket Guide, and UCR Guidelines – Management of Type III incidents complexity and resource requirements (See Appendix L).

For all initial attack incidents, the Incident Commander and/or Duty Officer shall review the incident organization complexity and complete the Incident Complexity Analysis found in the Interagency Standards for Fire and Fire Aviation Operations or UCR Incident Organizer. This analysis will determine the appropriate level of incident organization.

IV.A.9 Extended Attack and Large Fire Suppression

UCR Fire Staff direction for extended attack and large fire suppression is outlined in the Interagency Standards for Fire and Fire Aviation Operations. Extended attack efforts may also involve interagency cooperation.

A wildfire is considered to be in extended attack status when:

- Suppression efforts have not succeeded or are not expected to reach containment within 24 hours.
- The Initial Attack Incident Commander (ICT4 or ICT5) requests additional resources that result in fire complexity attaining Type III status within or following the first 24 hours following the arrival of the first suppression resources.

During extended attack fire suppression operations the appropriate Agency Administrator or delegated official and Zone FMO are notified, a Resource Advisor(s) identified, and a Wildland Fire Situation Analysis (WFSA) completed.

All fires will remain staffed until declared controlled or out. The Zone FMO will determine continued staffing procedures. At a minimum, regular checks will be made until the IC or Zone FMO declares the fire out.

IV.A.9.a Wildland Fire Situation Analysis (WFSA) Development

The Agency Administrator is responsible to ensure that a Wildland Fire Situation Analysis (WFSA) is prepared for all wildfires that escape or are expected to escape initial attack. Preparation of the WFSA will be done with assistance from fire management staff and resource specialists.

The Agency Administrator is responsible to select the preferred management strategy for the incident. Selection of the preferred management strategy will not consider positive resource benefits resulting from wildfire as an objective.

Alternatives developed through the WFSA process must be consistent with the goals of the land use plan and must address the following:

- Firefighter and public safety
- The ability to implement the alternative.
- Each alternative must be accompanied by a strategic plan of action.
- The probability of success and consequences of failure must be assessed and displayed.
- Each alternative will display the estimated numbers of acres burned, times for containment and control, suppression costs and resource damage.

Approval authorities and qualifications for unit Agency Administrators have been established for certifying a WFSA. In addition, training and experience requirements must be met for a agency administrator to certify a WFSA. The following list identifies qualified Agency Administrators and their respective levels of authority:

- Field Manager (BLM) or Park Superintendent (NPS) -- Approval authority up to $2,000,000

- State Director (BLM) or Regional Director (NPS) -- Approval authority from $2,000,000 to $10,000,000

Exceeding Existing WFSA - Selecting a New Strategy

A new WFSA is required when the objectives of the existing WFSA have been compromised (or are expected to be compromised). The revised WFSA will include a new set of objectives and a range of alternatives and associated fallback strategies and worst case outcomes.

Given the inherent inaccuracies in developing estimated costs associated with each alternative, exceeding the cost estimate for the preferred alternative should not in and of itself generate a need to the revise the existing WFSA.

IV.A.9.b Incident Management

Type III Incident Management

A Type III Incident Commander will manage incidents that reach a Type III complexity level and the associated overhead positions will be staffed as appropriate for the incident. The UCR maintains a list of local interagency personnel qualified at the Type III level and above. Individuals qualified and current at the Section Chief or Unit Leader level are included on the Type III cadre.

When a situation is beyond UCR capabilities, an overhead team is brought in at the request of the NPS Park Superintendent or BLM Field Manager to manage the incident. The type ordered depends on the complexity and severity of the situation.

Type I or Type II Incident Management

An incident complexity analysis is used to document the rationale of the fire management staff and responsible Agency Administrator in determining whether an extended attack incident is expected to, or has increased in complexity to warrant ordering a Type II or Type I Incident Management Team.

Transition Requirements for Incoming Incident Management Teams

The following elements will be completed prior to the arrival of a Type 2 or Type 1 Incident Management Team on the Unit:

- Wildland Fire Situation Analysis (WFSA) complete with applicable incident objectives and a selected alternative to guide tactical suppression actions. The line manager will select the preferred alternative and certify the wildland fire situation analysis within their approval authority.
- Agency Administrator Briefing guide completed.
- Delegation of Authority completed and signed by the NPS or BLM Agency Administrator.

The ordering agency should also do the following prior to the arrival of the incoming team:

- Determine the fire camp location.
- Order supplies and equipment (pre-order), as directed by the Logistics Section Chief.
- Make an ample supply of topographic maps, base maps, etc.
- Determine transportation needs of incoming fire teams (from ordering unit mobilization point to fire, and on the fire).
- Determine Agency Administrator briefing time and location.
- Obtain necessary information for the Agency Administrator briefing.
- Order communication equipment for the fire.

The Agency Administrator and FMO will conduct two briefings for the incoming fire team. The first briefing should be by the Agency Administrator at a site away from the fire. The second briefing should be by the current Incident Commander and staff at the fire site.

The Agency Administrator briefing should be as soon as possible after the arrival of the command and general staff. It is impossible to list everything a team needs to know, however, as a minimum the Wildland Fire Situation Analysis and Agency Administrator Briefing Checklist should be completed.

The local Incident Commander briefing shall take place when the incoming team arrives at the fire. The incoming team will not assume responsibility for the fire until they are thoroughly briefed and comfortable with the situation. Both Incident Commanders shall determine the exact time of command change. After the briefing, the team should start phasing into their areas of responsibility, but shall not assume control until the predetermined time.

The local unit's suppression forces may continue to work on the fire in various functions but should be relieved as soon as possible so that they can be rested and ready for initial attack or as reinforcements on other parts of the UCR.

Dispatching Resources

Initial Attack remains an Interagency Dispatch Center responsibility. In most cases when an Incident Management Team has been ordered, the Dispatch Center Manager in consultation with the Unit FMO will initiate an expanded dispatch plan to support the incident management team.

Demobilization

Demobilization shall be carried out in an orderly manner to accomplish a cost effective program commensurate with efficient and effective organization practices. Planning for demobilization shall begin while the fire is being mobilized. Adequate records of personnel, transportation, and equipment used or being moved during mobilization are necessary. In many instances, demobilization occurs at the same time mobilization is occurring elsewhere. Communications for demobilization shall be through established dispatch channels. All release orders shall be recorded on the appropriate Resource Order Form.

The following are guidelines for release priorities. Special situations may exist that will change these priorities.

Table 9. Guidelines for Release Priorities

Crews	Out-of-Region agency regulars (Type II) Region 2 agency regulars (Type II) Out-of-Region Hotshot crews (Type I) Other organized crews (contract, AD, etc., Type II) Region 2 Hotshot crews (Type I)
Helicopters	'CWN' or rental agreement Within Region helicopters required for initial attack at home unit due to fire activity or potential thereof Out-of-Region helicopters Within Region helicopters **not** required home for initial attack
Radios	Assemble National Fire Cache Radio Systems and ship to Boise via air freight or charter aircraft as soon as possible. Coordinate with Regional dispatch on transportation. DO NOT hold radios on UCR. They must be returned to cache for refurbishing for next fire. RMA Radio Systems may be retained for mop-up and then sent to RMA Cache for refurbishing.
Fire Cache Equipment and Supplies	Local unit cache items Local cooperator cache items Regional cache items Out-of-Region cache items
Engines and Water Tenders	Local units needed for initial attack Local cooperators and other units needed for initial attack Out-of-Region engines Local cooperator and other units not needed for initial attack Local Units not needed for initial attack
Heavy Equipment	Same as Engines. National Guard equipment should be released as soon as local resources can handle or replace National Guard equipment.
Overhead	Overhead releases shall be as required by the fire team and the local unit's needs. Strive to consolidate overhead in groups of common destinations.

Release of Interagency Incident Team

The date and time must be approved by an Agency Administrator or a designated representative. The transition must be as smooth as possible and UCR fire team members should be assigned to start working with interagency team members at a predetermined time. The local fire team should be rested and off fire duty 24 hours prior to takeover.

The Interagency team should begin phasing in the UCR team as soon as demobilization planning is complete and implementation is started. Fire management activity should be at a level and workload that UCR personnel can reasonably handle. Criteria to be considered before the release of an Interagency team:

- Fire must be controlled.
- Most line crews should be released that are not needed for patrol and/or mop up.
- Base fire camp shut down, reduced, or in the process.
- Plans Chief has prepared a narrative fire report and individual fire report as part of the final fire package.
- Finance Chief should have all known finance problems resolved. Contact made with UCR Budget and Finance personnel. (Finance and/or Logistics Chief may have to stay longer or return to resolve problems.)
- Fire rehabilitation work completed to agency's satisfaction or plan written to satisfaction.
- Overhead ratings completed and submitted to UCR as final package.

Debriefing

Agency Administrator should debrief the Interagency team and prepare evaluation before release. The Agency Administrator should give overall team performance evaluation in writing considering the following:

- Was the incident managed in a manner that provided for firefighter and public safety?
- Were incident operations conducted in a cost effective manner?
- Were other incident objectives met?
- Did the team keep the Agency Administrator and FMO informed of progress and developments?
- Identify outstanding or poor performance of individuals, crews, or others involved in the management of the fire.
- Were there any special problems or recommendations to be brought to the attention of the RMA Fire Coordinator?

IV.A.10 Other Fire Suppression Considerations

IV.A.10.a Safety

Safety is the number one priority for all personnel engaged in or supporting fire management activities. Fire management work is one of the most hazardous jobs encountered by federal personnel. The Incident Commander and all supervisors will always put the safety of his/her personnel first. **There is no fire situation so serious that the life of anyone should be risked in order to get to the fire sooner, get the fire out quicker, or to keep the burned areas smaller.**

All employees will abide by the **'Safety First'** policy. Each employee has a responsibility for his/her personal safety and that of fellow employees. It is also everyone's responsibility to call attention to any unsafe practice that is observed.

- All fire personnel will follow the 10 Standard Fire Fighting Orders, emphasize the principles of Lookouts, Communications, Escape Routes, and Safety Zones (LCES) and insure mitigation of any of the 18 Watch-Out Situations encountered while taking suppression or prescribed fire actions. These basics of fire fighting survival are utilized as a checklist for supervisory personnel on the fire, and as a source for other fire line personnel to pose questions to supervisory personnel whenever they have concerns about their personal safety.

- All Type III and more complex incidents are staffed with a qualified safety officer.

- Seat belts are used at all times while traveling in any vehicle. Speed limits and other traffic laws will be obeyed at all times.

- Required personal protective equipment (PPE) will be worn at all times. Job Hazard analyses will dictate appropriate PPE to be utilized for fire management activities other than suppression. Fire shelters will be worn by all firefighters at all times on all wildland fires.

- Safety rules, standards and accepted procedures will be adhered to at all times.

- Personnel will be fully qualified and current for the position they are assigned to.

IV.A.10.b Communications

Firefighters are responsible to maintain radio contact with Grand Junction Dispatch while suppressing fires, and will check in at regular intervals. If the fire is in a location with poor or no radio communications (a 'dead spot'), a relay will be set up and maintained while firefighters are in that area.

Cell Phones

UCR fire management staff and resources use cell phones for routine contacts and coordination. Cell phones should be used by initial and extended attack resources for lengthy conversations regarding operational tactics, logistical needs and coordination and other matters that would unnecessarily tie up available radio frequencies.

Cell phones should **not** be used to contact Dispatch or zone fire management staff during incident size up. Staff members are prohibited from making personal calls on agency-provided cell phones for other than emergency contacts with family members or within the guidelines of agency policy for extended assignments away from home and their duty station.

Radio Communications/Procedures

Fire size-up information shall be communicated to the Interagency Dispatch Center using the appropriate interagency frequency.

During an ongoing fire, interagency dispatchers may request that fire related radio traffic be prioritized over routine resource management traffic on specific agency repeaters.

A list of available radio frequencies is available from the Zone Fire Management staff. A list of commonly used interagency and cooperator frequencies is included in the Appendices in the Incoming Resource Briefing Guide.

IV.A.10.c Wilderness Fire Suppression

Within the Colorado National Monument and Grand Junction Field Office, the fire suppression policy for wilderness areas is to conduct all fire management activities in a manner compatible with overall wilderness management objectives.

The BLM Field Manager and NPS Superintendent are delegated the authority to approve the use of helicopters, and ground-based mechanized equipment such as chainsaws and portable pumps within wilderness areas to respond to an emergency fire situation. The responsible Zone Fire Management Officer secures this approval on a case-by-case basis. There is a blanket authorization for the use of helicopter landings in the event of a medical emergency that requires firefighter medevac or transportation of medical personnel.

The UCR utilizes the concept of Minimum Impact Suppression Tactics (MIST) (see Appendix C) to effectively achieve the fire management protection objectives consistent with land and resource management objectives.

IV.A.10.d Critical Incident Management

Tragedies, deaths, serious injuries, hostage situations, and threatening situations are some of events that are critical incidents. In the event of a critical incident a critical incident debriefing team will be ordered through Grand Junction Dispatch. The purpose of this team is to assist managers responsible for dealing with critical incidents that may have long-term adverse effects on an individual, families, communities or the agency.

IV.A.10.e Field Fatality/Serious Injury Plan

The intent of this plan is to list the steps that must be taken in response to fatalities or serious injury, to list the people/agencies with whom coordination must be maintained, and where pertinent information is found.

Until delegated, the Line Officer has the responsibility for implementing the appropriate response(s) to address the situation when a fatality or serious injury occurs.

See Appendix M for more details.

IV.A.10.f Interagency Accident/Incident Reporting Guide

This guide was developed to assist first line supervisors, staff members and Agency Administrators in responding to incidents or accidents in the workplace on an interagency basis.

Refer to the Guide in the Appendix N for further information.

IV.B Wildland Fire Use

IV.B.1 Description of the Wildland Fire Use (WFU) Opportunities

WFU refers to the management of naturally ignited wildland fires to accomplish specific, pre-stated resource management objectives in predefined geographic areas as defined in the agency's land use plan and outlined in this FMP.

Fire regimes may vary between vegetation types and different regions. Parameters for WFU consider this natural range of variability. For example, if a natural fire regime included very frequent, cool burning surface fires, but also included an occasional long return interval stand replacement fire, then that stand replacement fire is within the natural range of variability and will be considered when analyzing WFU.

The desired result is that the landscape should take on an appearance of what would exist naturally and historically. It should display a mosaic of complex vegetation patterns and types that would have evolved naturally with ecological and geological processes. There generally are less continuous, uninterrupted vegetation types, more openings, a variety of seral stages and different communities in a random patchwork.

On public lands managed by the GJFO and COLM, there are 8 FMUs where wildland fire maybe used to accomplish specific, pre-stated resource management objectives. These FMUs are:

1. D-01 Black Ridge
2. D-02 Bangs Canyon

3. D-03 Wagon Park/Nine Mile Hill
4. D-04 Palisade
5. D-05 Colorado National Monument
6. D-06 Blue Mesa
7. D-07 Demaree
8. D-08 South Shale Ridge

Wildland fires in "D" FMUs receive a suppression response commensurate with values-to-be-protected, firefighter and public safety and cost efficiency or they may be managed to accomplish resource management goals as specified in Appendix B.

Two types of fires may be approved for use within the "D" FMUs:

1. Wildland Fire Use -- Those naturally ignited wildland fires allowed to burn under pre-determined conditions. *All ignitions determined to be human caused will be suppressed using an appropriate management response.*

2. Prescribed Fire -- Those fires ignited by qualified agency personnel designed to reintroduce the type of fire that would be expected to occur naturally. Prescribed fire is discussed in section IV.C, below.

IV.B.2 Preplanned Implementation Procedures

IV.B.2.a Annual Activities Required to Implement the Wildland Fire Use Program

Annual activities required to designate and manage incidents for wildland fire use include:

- Wildland Fire Use management procedures must be reviewed and updated to reflect current policy as part of the annual UCR and county annual operating plan and GJFO Fire Management Plan reviews.
- Coordination with key agency staff and stakeholders, focusing on special use permittees, recreationists, and public or communities that would be potentially affected by a wildland fire use incident.
- Coordination with agency public affairs staff to prepare pre-season news releases.
- Internal coordination with interagency staff members, particularly with respect to prescriptive elements and weather factors that may affect WFU implementation during the fire season.
- Preparation and receipt of an open burning permit from the Colorado State Department of Health and Environment, Air Pollution Control Division.
- Wildland fire use applications will follow the National Interagency Mobilization Guide direction when in preparedness level IV and V.

IV.B.2.b Decision Criteria for Wildland Fire Use

The following factors are considered in evaluating a candidate ignition for designation as a wildland fire use incident:

- Firefighter and public safety.
- The ignition must be lightning caused.
- Key management positions such as a fire use manager (FUMA) must be available and dedicated to management of the incident.
- Proximity to boundary of wildland fire use area and/or potential to exceed pre-established boundaries.
- Ability of the incident to meet resource management objectives.
- Potential to damage or destroy significant improvements, natural or cultural resource values.
- Projected scope and duration of impacts to air quality.

- Political considerations and impacts to social values.
- Projected duration of the incident and ability to provide management oversight and necessary implementation actions.
- Fire management activity at the National, Geographic Area and Unit level.
- Current and predicted fire behavior including expected spread into adjacent fuel types.
- Seasonal, current and predicted weather conditions (drought, time of year, probability of a season-ending weather event).
- Historic fire occurrence, historic weather and evaluation of past fire intensity, size and duration.

IV.B.2.c Wildland Fire Implementation Plan (WFIP) Implementation Stages

The Zone FMO or designee shall initiate a Wildland Fire Implementation Plan (WFIP) for all wildland fires determined to be candidates for management as wildland fire use incidents. Fire and resource managers, with agency administrators, shall then use the WFIP as an analysis tool to determine whether WFU management is the appropriate management response for these candidate wildland fires. The complete implementation process and standardized WFIP format developed by the National Wildfire Coordination Group can be found in the Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide (USDA and USDI, 1998), Chapter 4. The WFIP format is also available as part of the WFSAPlus v4.3 software package, available on-line at http://www.fs.fed.us/fire/wfsa/.

The WFIP documents existing conditions, predicted conditions, decisions made, and trigger points for future decisions. Progressive development of the three WFIP stages will occur for wildland fires managed for resource benefits, where initial attack and aggressive suppression are not the selected responses. Most wildland fires will require completion of only stages I and II during their management; only long-term, more complex WFU incidents will require completion of all three stages. When the WFIP is complete, it becomes the WFU incident's strategic management plan.

Table 10. WFIP Documentation Process

Fire Name	
Fire Number	

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

Table 11. WFIP Implementation Stages

Stage 1	Initial Fire Assessment is completed by the Zone FMO or designee along with the responsible Agency Administrator /Manager within two hours of receipt of size up information that confirms that the ignition was started by lightning. The Stage I assessment provides the decision framework for selecting the appropriate management response. Operational management decisions are described in the WFIP
Stage 2	Short-term Implementation Actions are completed by the Fire Use Manager (FUMA) and staff within twenty-four (24 hours) following the completion of the Stage I assessment. Key components of the Stage II assessment include development of short-term fire behavior predictions, implementation actions required, and incident complexity analysis. Individual wildland fire use plans identify the responsible Agency Administrator who must approve the Stage II assessment. This responsibility is in large part based on the projected complexity of the incident, potential to affect multiple jurisdictions and projected duration of the incident.
Stage 3	Long Term Assessment and Implementation Actions include identification of the maximum manageable areas (MMA) and long-term risk assessment. In addition to the fire use manager (FUMA) a Long Term Fire Analyst (LTAN) or fire behavior analyst (FBAN) is required to complete applicable risk assessments and projections.

IV.B.2.d Key Considerations in Managing Wildland Fire Use

In addition to the factors listed above, the following considerations should be addressed in the Stage III – Long-Term Implementation Actions:

- The proposed maximum Manageable Area (MMA) should be highly defensible.
- The MMA should be large enough to reduce the need for resources to tactically implement management actions at selected trigger points.
- The MMA can be produced in electronic format and added to both the electronic and hard-copy WFU documentation packages.

IV.B.3 Initial Action Procedures

All wildfires will be subject to an initial response. This response will include size up of the current fire situation, determination of probable fire cause, and estimate of potential for fire spread. A suppression action will be initiated unless the fire is determined to be a candidate ignition for management as a wildland fire use incident. All candidate ignitions will be managed in accordance with the procedures and requirements outlined in the Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide. All ignitions determined to be human caused will be suppressed using an appropriate management response.

Before a wildland fire is managed for resource benefit, authorized and qualified personnel must follow a clearly defined decision making process. Figure 5 provides a brief overview of the full range of appropriate management responses and necessary steps for evaluation and management of wildland fires to accomplish specific resource management objectives in defined geographic areas.

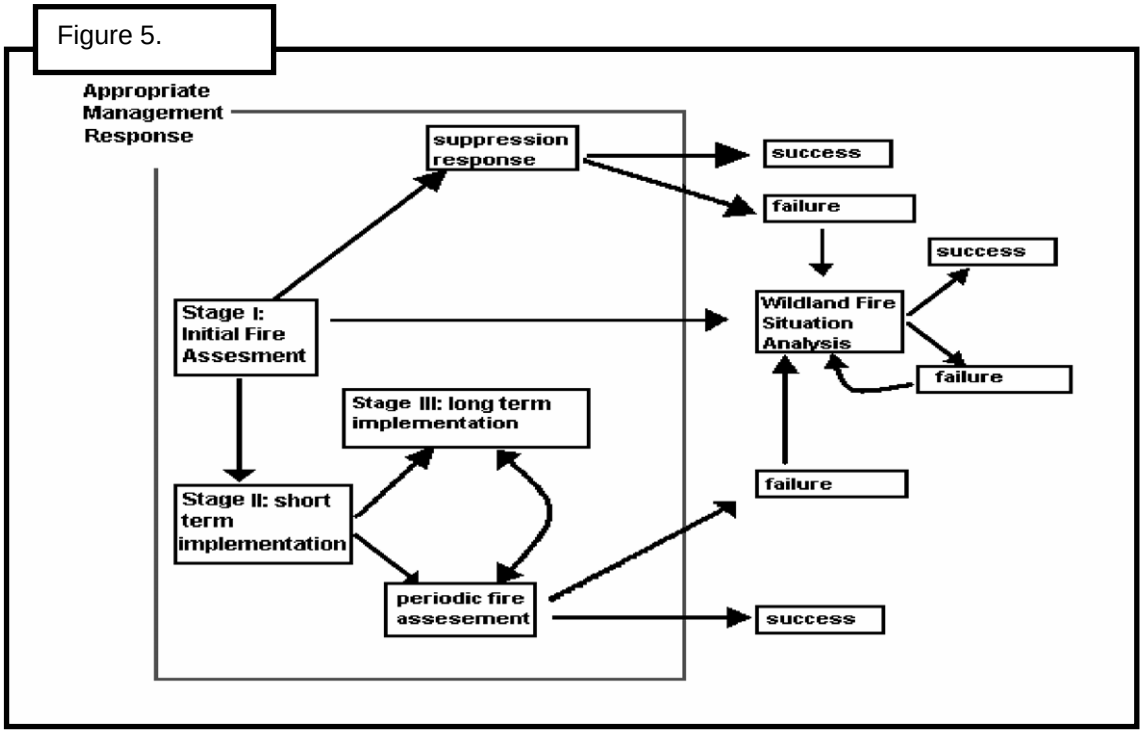

Figure 5. Overview of Appropriate Management Responses

IV.B.4 Required Personnel

The UCR can usually manage wildland fire use incidents up to and including those requiring a Fire Use Manager Type 2 (FUM2). A Fire Use Management Team will be ordered for incidents exceeding this level of complexity. Current qualified staff members may act as interim fire use managers pending the arrival of a Fire Use Manager (FUMA) or Fire Use Management Team. A current list of all personnel required and qualified to manage and/or assist in wildland fire use incidents is available in the Grand Junction Interagency Dispatch Center Mobilization Guide.

IV.B.5 Public Information

Public information/coordination should occur with agency public affairs staff to prepare pre-season news releases. Target audiences include agency staff and stakeholders focusing on special use, permittees, recreationists, and public or communities that would be potentially affected by a wildland fire use incident.

The following agencies and media outlets are generally contacted.

Table 12. Agency and Media Contacts

Grand Junction Dispatch	County Commissioners
WRNF Supervisor's Office	County Health Departments
GMUG Supervisor's Office	US Fish and Wildlife Service
BLM - Glenwood Springs Field Office	CO State Forest Service
BLM – Grand Junction Field Office	Colorado Division of Wildlife
NPS – Colorado National Monument	Local Fire Departments
Colorado State Highway Patrol	Local TV Stations
CO Department of Transportation	Local Newspapers
County Sheriff's Office	Local Radio Stations

IV.C Prescribed Fire

Fire is an essential ecological process in many ecosystems. Protecting lives, property, and natural resources does not mean eliminating fire from the environment. The use of fire to accomplish land and resource management objectives is referred to as prescriptive or prescribed fire, *a management ignited fire that is used to alter, maintain, or restore vegetative communities to achieve desired resource conditions.* Prescribed burning allows fire to play a role in the environment under controlled conditions.

Prescribed burning is a well-established practice utilized by public and private land managers. Often, multiple fire protection and resource management benefits are achieved concurrently. Natural resource managers set "prescribed fires" for many purposes including:

- Reducing accumulated vegetation and hazardous fuels reduction,
- Restoring natural conditions by re-introducing fire into the ecosystem,
- Improving ecosystem health,
- Maintaining or restoring healthy wildlife habitat,
- Creating barriers for protecting high-value areas such as timber investments, private property, or administrative sites,
- Controlling spread of noxious weeds,
- Increasing water availability by eliminating encroaching plants,
- Stimulating grass/ forb growth in areas to decrease erosion potential, and
- Enhancing soil pH and increasing soil nutrients.

IV.C.1 Planning and Documentation

The prescribed fire program is supported by NPS and BLM planning documents and appropriate environmental documentation, and is implemented in accordance with NPS and BLM manual sections.

IV.C.1.a Summary of Prescribed Fire Program

Planning and Analysis

Prescribed fires are identified by field office specialists and UCR staff to meet resource management objectives as outlined in the RMP. The proposed treatments have traditionally included wildlife and range habitat improvement, site preparation for artificial and natural regeneration, hazardous fuels reduction and the re-introduction of fire into the ecosystem. Proposals are put together to comprise a 5 year plan of projects. Projects are then reviewed and submitted for funding and implementation on an annual basis as determined by the Field Office Manager. Designing projects, conducting resource inventories, and writing the NEPA documentation will typically take one to two years in advance of implementation of the planned treatment.

Prior to conducting a prescribed fire, NEPA documentation is prepared and approved. NEPA documentation describes and documents the purpose and need, goals and objectives, issues, conformance to existing plans (including the FMP), the proposed action and alternatives, impacts and mitigation, and public participation.

Priority Setting

Proposed projects are listed on a five year plan located on vegetation maps in Appendix K. The five year plan and future project workloads will be maintained in the RAMS system.

Projects are selected and recommended to the Field Office Manager from the 5 year or new ones added through coordination meetings between the field office and UCR staffs. Prioritization of projects occurs on an annual basis for submittal as target units of accomplishment into the annual work plan for each field office.

Table 13. Summary of 5 Year Prescribed Burn Plan

	2004	2005	2006	2007	2008
Number of prescribed fire projects proposed.	2	1	2	1	2
Number of acres proposed for treatment.	400	600	725	500	900
Number of projects implemented through local contractors.	0	0	0	0	0
Total acres treated in Condition Class 2 moved to Condition Class 1.	400	600	725		400
Total number of acres treated in Condition Class 3 moved to Condition Class 2 or 1.				500	500

Primary Burn Windows

The primary burn windows for UCR occur in the spring. Burning is also accomplished in the summer and fall. Pile burns are planned and implemented during the winter.

Development of Prescribed Fire Plans

The UCR has developed a format for burn plans used on an interagency basis (see Appendix J). Prescribed Fire plans are developed at the Zone level by fire management staff qualified as Level II Burn Bosses (RXB2) or subordinates for developmental training opportunities. Detail in the prescribed fire plan may vary with type and complexity of the job.

Review of Prescribed Fire Plans

All prescribed fire plans are subject to a peer review by other UCR staff members not involved with project planning or implementation. In addition, a technical review is conducted by the Unit Operations Specialist and/or the Fire Ecologist. This technical review focuses on development of prescription parameters, complexity analysis, risk assessment, and smoke management mitigation activities. A subsequent operational review is conducted by the UCR interagency fire operations specialist focusing on project staffing and organization, as well as resource allocation and planning for instances where the fire may exceed planned treatment areas. The Unit Aviation Officer reviews and approves all plans proposing the use of aerial ignition or aviation resources.

Approval of Prescribed Fire Plans

Each prescribed burn plan requires approval by the appropriate Agency Administrator. Once the prescribed burn plan is approved by the appropriate Agency Administrator, the execution, including mop up, must follow that plan. The approving Agency Administrator must authorize any changes to the approved burn plan.

Agency Administrator approval has been delegated to the Field Office Managers for Level I, II and III projects. The Colorado State Office Fire Ecologist provides technical review for Level I (Complex) prescribed burning projects.

Documentation Requirements

Documentation requirements relative to burn plan preparation have been established by the UCR fire management staff. All prescribed fires are documented with the following information:

- Prescribed Fire Plan
- Map of project area and surrounding area
- Monitoring data, including weather, fire behavior, and fire effects observations
- Weather forecasts, spot, short and long-term
- Smoke dispersal information.

Reporting Requirements

Project level reporting and pre-burn notification requirements have been established for the UCR staff group. Separate reporting requirements also include submittal and annual reporting requirements for smoke emissions to the Colorado Department of Health, Air Quality Control Division.

Exceeding Existing Prescribed Fire Plan

Any prescribed fire that exceeds either the maximum manageable area (MMA) or available funding is declared an escaped fire. Following an escaped fire declaration, a Wildland Fire Situation Analysis (WFSA) is completed and approved by the responsible Agency Administrator. This process is the same as previously described for wildfires that escape initial attack.

Prescribed Fire Project Critiques

The burn boss, key subordinates, zone fire management officer or UCR staff representative will conduct and document an informal post-burn critique. Formal project reviews are not required except in the instance of an escaped fire.

IV.C.1.b Qualified Personnel Necessary for Prescribed Fire Program

Qualified personnel required to plan and execute the prescribed fire program are largely involved in the UCR interagency fire management program. At the zone level, a fuels specialist is responsible for project level planning as assigned by the Zone FMO. Each individual acts as the interdisciplinary team leader or subject matter specialist on assigned projects.

Several Level I and II burn bosses (RXB1 and RXB2) are available from the UCR staff group to assist in project implementation. Subordinate positions may be filled by qualified employees from on an interagency basis from field offices and ranger districts.

Few of the required personnel for implementing a prescribed fire program are stationed at COLM. Typically, National Park Service units that do not host a FIREPRO staff are provided fire management support from a near-by park having a fire staff. COLM fire management support is provided by the fire staff at Dinosaur National Monument (DINO). The Fuels Management Specialist at DINO is responsible for preparing prescribed fire burn plans and securing the smoke permits for units served by the DINO fire management office. Filling positions required to execute a prescribed fire is accomplished by using personnel from local park service units, and interagency partners such as the BLM and FS.

All personnel participating on a prescribed fire will be red-carded and will meet or exceed training and qualification standards as identified in NWCG PMS 310-1.

IV.C.1.c Short-term and Long-term Overall Program Effectiveness Monitoring Objectives

Short term monitoring requirements include pre-burn fuel moisture sampling conducted by preparedness staff members or designated fuels crew members. Pre-burn monitoring may include vegetative transects or establishing permanent photo points depending on the specific project objectives. Post-burn monitoring conducted by fire management staff or resource specialists includes similar activities as required by the project monitoring plan.

Resource specialists and fire management staff with GIS specialist support conduct long term monitoring at the UCR level.

IV.C.1.d Fuel Treatment Map of Past and Proposed Accomplishments

Past and proposed fuel treatments are shown on vegetation maps found in Appendix K.

IV.C.1.e Level of Vegetation Treatments

When considering vegetation management goals along with anticipated funding, personnel, planning priorities and climatic conditions; the reasonable foreseeable vegetation treatment level (e.g. level of fuel treatment and amount of prescribed fire) for the GJFO is generally assumed to be no more than 10% of the Resource Area over a 10 year period.

IV.C.1.f Vegetation Treatment Guidelines

The following guidelines will be considered in site-specific projects. Project-level environmental analyses may determine the need for additional considerations.

- Pile burning of mechanically cleared vegetation/debris is acceptable in “A” FMUs.

- Equipment used in vegetation treatments should be washed and weed-free before arriving onsite.
- Except where specific treatments are designed to control or manage vegetation within riparian areas, treatments will be designed to avoid riparian areas. Adequate buffer strips around water courses and drainages may be necessary to protect riparian areas. The extent of the buffer strip depends on a number of factors such as: the slope, the type of treatment, acres treated, current vegetation condition, etc., and will be determined through a site-specific environmental analysis.
- Vegetation treatments conducted on uplands adjacent to the Colorado River will be designed and conducted in a manner that limits potential for soil erosion and sedimentation and increases vegetative ground cover. This includes riparian restoration work, and salt cedar removal, intended to improve habitats. Where erosion potential is high, establish baseline water quality data prior to conducting vegetation treatments and conduct water quality studies until the site is revegetated and soils are stabilized to determine impacts of vegetation treatments on water quality.
- Consider visual qualities in Visual Resource Management Class I and II areas where the classification goal is to preserve the landscape character. Landscape modifications should replicate a natural shape, form, color and texture found in the surrounding area.
- To help maintain the appropriate habitat components on big game ranges, attempt to provide a 40/60 split of forage to cover for mule deer and elk.
- To minimize large losses of key big game winter habitat on Public Lands, limit vegetation changes within localized big game severe winter ranges to 10% of the range per year over a 10 year period.
- Prescriptive treatments with the potential to disrupt visitors, should avoid high use areas and occur outside of high use seasons, such as the fall big game rifle hunting seasons.

IV.C.1.g Species Specific Vegetation Treatment Guidelines

Table 14. Species-Specific Vegetation Treatment Guidelines

Species	FMUs	
Federally Threatened, Endangered and Candidate Species		
Big River Fishes (inc. Flannelmouth sucker & Roundtail chub)		• Vegetation treatments conducted on uplands adjacent to the Colorado River will be designed and conducted in a manner that limits potential for soil erosion and sedimentation and increases vegetative ground cover. This includes riparian restoration work, and salt cedar removal, intended to improve habitats.
Bald eagle		• In order to minimize effects, both direct and indirect, to potential nesting bald eagles avoid vegetative treatments, within ½ mile of known bald eagle nest sites between December 15 and June 15. • To reduce indirect effects to bald eagles from potential modification of winter roost sites avoid vegetative treatments within ¼ mile of known roost trees from Nov 16 to April 15.
Greater sage grouse (potential Gunnison sage grouse)		• Vegetative treatments will avoid (1/4 mile radius) around known lek sites, and no activity will be allowed around active lek sites from March 15 to May 31. • Evaluate vegetation treatments to determine whether reseeding is necessary to achieve habitat management objectives as recommended in the *Guidelines to manage sage grouse populations and their habitats (Connelly,*

Species FMUs	
	Schroeder, Sands and Braun 2000). • Develop vegetative treatments to minimize impacts and improve habitats as prescribed in the *Guidelines to manage sage grouse populations and their habitats (Connelly, Schroeder, Sands and Braun 2000)*.
Uinta basin hookless cactus	• Vegetative treatments will avoid known cactus populations. • Vegetative treatments will be designed to limit the spread of cheatgrass and enhance Uinta Basin hookless cactus habitat.
Canada lynx	Vegetation treatments within mapped potential Canada lynx habitats will be planned in a manner consistent with conservation measures outlined in the *Canada Lynx Conservation Assessment and Strategy* (2000) Chapter 7 – Pages 7-1 to 7-17. Considerations include: • Attempts will be made to keep linear openings (fire line, access routes and escape routes) out of mapped potential habitat and away from key components such as denning areas. • Avoid constructing permanent firebreaks on ridges or saddles in lynx habitat. • When planning vegetation treatments, minimize creation of linear openings (fire line, access routes and escape routes) that could result in permanent travel ways for competitors and humans. • Linear openings (fire line, access routes and escape routes) associated with fire suppression or vegetative treatments constructed within lynx habitat will be obliterated and reclaimed in order to deter future human and competitive species use. • Design burn prescriptions to regenerate or create snowshoe hare habitat (e.g., regeneration of aspen and lodgepole pine). • Planning of treatments will ensure that no more than 30% of lynx habitat within a Lynx Analysis Unit will be in unsuitable condition at any time. If the 30% threshold is already exceeded then no further reduction shall occur as a result of vegetation management. In addition, particular consideration will be given to amounts of denning habitat, condition of summer foraging, winter foraging and shrub-steppe habitats, and habitat linkages, to ensure that treatments do not negatively impact lynx.
BLM Sensitive Species	
Colorado river cutthroat trout	• Develop vegetative treatments to minimize impacts to cutthroat trout in consultation with the Field Office biologist and following guidelines outlined in the *Conservation Agreement and Strategy for Colorado River Cutthroat Trout in the States of Colorado, Utah, and Wyoming, April 2001.* • Vegetation treatments conducted on uplands adjacent to streams occupied by Colorado River cutthroat trout will be conducted in a manner that limits potential for soil erosion and sedimentation and increases vegetative ground cover. This includes riparian restoration work intended to improve habitats.
Northern	• Vegetative treatments will be designed to maintain dense tree

Species FMUs	
goshawk	canopies in nesting habitats while improving understory vegetation and maintaining foraging habitats. Large blocks of unroaded habitat will be protected or reclaimed. • Vegetation treatments should maintain a 1/4 mile buffer zone around known nest sites from February 1 to August 15**.**
Great Basin spade-foot toad	• Vegetative treatments will consider the need for re-establishment of desired native species in order to minimize the invasion of cheatgrass.
Harrington's penstemon	• Protect Harrington's penstemon populations by treating sufficient acres of vegetation so as not to create small areas that would lead to concentrated grazing by big game and livestock. • Avoid treatments that create significant amounts of surface disturbances.
Debeque milkvetch	• Vegetative treatments will consider the need for cheatgrass control and/or reseeding. Reseeding should emphasize native species or short-lived introduced species that will not out compete the Debeque milkvetch.

IV.C.2 Air Quality and Smoke Management

Prolonged exposure to smoke can cause significant health problems, especially with the elderly and young populations, and for people suffering from respiratory illnesses. Smoke also adversely affects the clarity of our air, which impairs our views. Therefore, predicting smoke dispersion and concentration is a major component of wildland fire management and prescribed burn plans.

All prescribed fire and fire use activity shall conform to the state standard to minimize emissions using all available, practicable methods that are technologically feasible and economically reasonable in order to minimize the impact or reduce the potential for such impact on both the attainment and maintenance of national ambient air quality standards and achievement of federal and state visibility goals.

IV.C.2.a Pertinent Air Quality Issues

Smoke sensitive areas, Class I airsheds and proposed project mitigation actions are identified in the modeling and project permit submittal forwarded to the Colorado Department of Health and Environment.

Location of Class I Air Sheds and Clean Air Corridors

There are no designated Class I air sheds located within Mesa county; the nearest Class I areas are 50+ air miles away, with the Flattops and Maroon Bells wilderness areas and Black Canyon NP being the closest.

Description of Pre-Identified Smoke Sensitive Areas

Air quality across the UCR is generally good. Typically, inversions have occurred during the winter months, and are not a factor in designing or implementing prescribed fire projects.

The following are considered sensitive to the impacts of smoke:

- Schools
- Hospitals

- Communities

Local and Regional Smoke Management Restrictions and Procedures

The UCR and COLM must apply for and obtain a permit for a planned ignition (e.g., human ignited) or unplanned ignition (e.g., lightning ignited) prescribed fire from the Colorado Department of Health and Environment, Air Pollution Control Division (http://apcd.state.co.us/smoke/prescribed/). The Division reviews and approves a smoke permit for each management ignition project prior to implementation. Annual reports on acres treated are submitted for upward reporting at the State level.

IV.C.2.b Measures to Prevent or Mitigate Adverse Smoke Events

Project planning addresses and quantifies potential levels of emissions incurred through project implementation. The current acceptable smoke model used is SASEM (Simple Approach Smoke Emission Model). The original intent of SASEM was for it to be used as a screening model for exceedances and visibility impairment. As more sophisticated models become available, they will be used for planning purposes within this FMP.

When the UCR or COLM manages wildland fires for resource benefit and conducts prescribed fires, areas affected by the smoke must still meet air quality standards to protect public health. Despite the FMP's anticipated increases in prescriptive fire, clean air and public health goals can be met through careful planning and cooperation among land managers, air quality regulators and local communities. Fire managers realize that suppressing all wildland fires with no preventative fuels treatments would improve air quality in the short term. However, preventing periodic fires has already contributed to unacceptable fuel loadings in many areas, which has increased the risk of larger, more intense wildland fires burning for longer periods. Large uncontrolled wildland fires typically cause greater air pollutant emission levels and more widespread air quality impacts. The key to successfully balancing prescriptive fire and meeting air quality standards is a smoke management program. The FMP allows proactive management flexibility to control smoke production and impacts in smoke-sensitive areas. In addition, mitigation measures have been built into the FMP to reduce potential negative impacts from smoke pollution.

First and foremost, air quality is considered in the Prescriptive Criteria of the "Go/No Go Checklist" to determine the viability of implementing a prescriptive fire treatment. If the established federal and state standards for air quality cannot be met or mitigated in an acceptable manner, the project will not be implemented until conditions change. The Go/No Go Checklist is evaluated on a daily basis.

Secondly, even when these standards are met, the FMP also identifies smoke management techniques and procedures to mitigate the potential impacts of smoke. Application of these techniques will minimize air quality impacts (seeing, smelling, breathing). The techniques are described in the Smoke Management Guide for Prescribed and Wildland Fire 2001 Edition, PMS 420-2, NFES 1279, December 2001.

Best management practices from the Interagency Smoke Management Guide are incorporated into individual prescribed burn plans. Examples of smoke management techniques and procedures include:

1. Authorization to Burn

- Consultation and approval by the State of Colorado is a continuing process. Interagency fire managers will cooperate with other land managers and the State of Colorado to minimize air quality impacts from smoke. The BLM and NPS will obtain all necessary air pollutant emission permits and approvals from the State of Colorado prior to initiating a prescriptive fire. The agency will follow and implement the terms of the Colorado Air Quality Control Commission Regulation No. 9 and the Interagency Colorado Smoke Management Plan and (Memorandum of Understanding) MOU as well as any site specific open burning permit.

2. Actions to Minimize Emissions and Enhance Dispersion

- Each prescriptive fire has unique characteristics, but in general, smoke impacts can be greatly minimized by burning during weather conditions that provide optimal dispersion and wind conditions for the types of materials being burned.
- Smoke impacts minimized by limiting the amount of materials and acreage burned at one time. Whenever feasible and necessary, mechanical thinning (such as selective timber thinning, pruning or cutting of small trees) used as a "pretreatment" to prescriptive burning. Burning with higher intensities when possible provides for more convection and greater dispersion of smoke.

3. Modeling

- Interagency fire managers assess potential air quality impacts through the use of smoke dispersion modeling techniques (e.g.; SASEM, etc.) to predict particulate matter emissions, smoke plume characteristics, exposure and visibility impacts.

4. Monitoring

- Once a prescriptive fire is initiated, the agency monitors weather, burning and smoke dispersion conditions to assure air quality impacts remain within prescribed smoke management levels. If monitoring indicates conditions are no longer within prescription, managers stop the prescriptive treatment or declare the fire an unwanted wildland fire and initiate the Appropriate Management Response.
- Personnel stationed along roadways to visually monitor for smoke impacts and warn motorists of adverse conditions.
- The field personnel maintain communications with the dispatch offices. The dispatch office acts as a clearinghouse, providing and maintaining daily information on burning projects throughout the region.
- Particulate monitors used as a monitoring tool at sensitive receptors.

5. Public Notification and Awareness

- Interagency fire managers inform the general public of the status of wildland fires, prescribed burns and smoke through local press, radio and television.
- Interagency fire managers establish and maintain close communications with State and local agencies regarding the status of prescriptive fire treatments and wildland fires When necessary managers notify concerned smoke-sensitive organizations (i.e. hospitals, schools, retirement centers) of management intentions and burning conditions.
- Implementing fire hazard awareness and mitigation programs for the public.

Air Quality and Smoke Management Personnel

The BLM has an Air Quality Specialist available to assist in modeling projected emissions or monitoring emissions during project implementation.

IV.D. Non-Fire Fuel Treatments

Non-fire fuels treatments are an essential component of the BLM and NPS fire management programs. Where prescribed burning is not feasible to accomplish resource objectives, areas may be identified for non-fire fuels treatment. This would consist of manual, mechanical, chemical, grazing, and possibly biological treatments. Not all treatments are suitable for all vegetation types. Treatments will vary depending on factors including the condition of the vegetation, vegetation management goals, proximity to development, time of year, and various environmental

circumstances. Often several types of treatments may be used in combination. For example, mechanical treatments may be used to create fuel breaks before a prescribed fire. Whenever possible, the treatment method will be designed to provide local economic benefits. Examples include post and pole harvesting, provision of firewood, and awarding contracts for the treatment of noxious weed infestations.

Types of treatments to be utilized include:

Manual **-** Non-powered hand tools and powered tools, including chain saws and motorized brushcutters, are used to cut, clear, thin or prune herbaceous and woody vegetation. Hand tools include axes, brushhooks, hoes, and hand clippers.

Mechanical **-** Mechanical methods include thinning and piling, crushing, cutting, chipping, lopping, cutting and chaining. Rubber-tired and treaded heavy equipment outfitted with blades or mowing attachments are most commonly used for mechanical treatments. Often fuel breaks are created to help change the behavior of a wildland fire by modifying the fuel structure in an area immediately adjacent to or surrounding developments and sites to be protected in the wildland urban interface.

Thinning - Thinning reduces stand density by removing stems in the understory, mid-story and overstory. Once thinning is accomplished, the slash may be treated in several ways, including piling the material so it can be burned. Piles will be burned in the fall and winter season and potentially during the summer if conditions become suitable. The actual piling of the material may be accomplished by hand or machine piled. Equipment such as dozers and small tractors will haul the material to piles. Slash may also pushed or dragged into windrows. Some slash may be "rough-piled" or "jackpot piled" where heavier concentrations of fuel are left where they fell and burned on site. Material that is large enough to be of commercial value, usually > 6" may be removed to a landing using a rubber-tire skidder, or tracked vehicle. Both rubber-tire skidders and tracked skidders are used**.**

Crushing - Crushing involves dragging a large drum with spokes or spikes protruding over the vegetation, effectively breaking the fuel into smaller pieces.

Chipping - Chipping is a process where slash is forced through a chipping machine, reducing the larger pieces of slash to small chips that are left on site to naturally decompose. Tractors with attached discs, like the Hydroax, are also used to remove unwanted vegetation. Machines can either partially or totally clear a site.

Lopping - Lopping is where large cutting tools are attached to a "Bobcat" type tractor and trees are cut off at ground level. The trees can be left to lay where they fall, assisting in soil retention or piled and burned.

Chaining - Dozers can drag cable or chain systems to remove vegetation.

Chemical **-** Herbicides may be used to control competing and unwanted vegetation. These chemicals kill plants by disrupting biochemical growth processes. Herbicides are usually applied as liquids mixed with water or oil carriers. Some herbicides are applied in solid form, usually as granules placed on the soil surface to be absorbed by plant roots. Four methods of applying herbicides may be considered:

- aerial application
- mechanical equipment, truck or ATV mounted sprayers
- backpack equipment, generally a pressurized container
- hand application, painting cut surfaces or application of granular herbicides to the soil.

Grazing **-** Prolonged or forced grazing of cattle, sheep or goats may be used to control both noxious weeds and the composition or amount of vegetation. This differs from the typical grazing program in that vegetation control, rather than animal weight gain or forage utilization, is the primary objective.

Biological - The possibility of releasing biological control insects to reduce tamarisk is being studied.

IV.D.1 Non-Fire Fuel Treatments Summary

IV.D.1.a Level of Vegetation Treatments

When considering vegetation management goals along with anticipated funding, personnel, planning priorities and climatic conditions; the reasonable foreseeable vegetation treatment level (e.g. level of fuel treatment and amount of prescribed fire) for the GJFO is generally assumed to be no more than 10% of the Resource Area over a 10 year period.

Table 15. GJFO Non-fire Fuel Treatment Summary

	2004	2005	2006	2007	2008
Number of projects proposed.					
Number of acres treated by non-fire methods.					
Number of acres treated mechanically with by-products utilized.					
Number of projects implemented through local contractors.					
Total acres treated in Condition Class 2 moved to Condition Class 1.					
Total number of acres treated in Condition Class 3 moved to Condition Class 2 or 1.					

IV.D.1.b Guidelines

The guidelines found in section IV.C.1.f, Vegetation Treatment Guidelines, and section IV.C.1.g, Species Specific Vegetation Treatment Guidelines, will be considered in site-specific projects. Project-level environmental analyses may determine the need for additional considerations.

IV.D.1.c Monitoring Requirements

Monitoring requirements are developed in response to resource management and project objectives from interdisciplinary input.

IV.E Emergency Stabilization and Rehabilitation

Rehabilitation and restoration efforts are undertaken to protect and sustain ecosystems, public health, public safety, and to help communities protect infrastructure. Rehabilitation is any action taken to restore an area to the pre-burn or natural condition. Historically, the Emergency Stabilization and Rehabilitation (ESR) workload has been approximately 2000 acres per year.

IV.E.1 Long-term Rehabilitation

All burned areas will be evaluated by a Resource Advisor and, if necessary, by an interdisciplinary team review to determine whether post-incident rehabilitation is needed *(e.g., evaluate to determine whether seeding is necessary to prevent excessive erosion or the invasion of noxious weeds and to restore a native vegetative community)*. If the evaluation shows that post-incident rehabilitation is necessary, a rehabilitation plan will be prepared and implemented in accordance with the Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook, the BLM Supplemental ESR

Guidance, the Department of Interior ESR Handbook (http://fire.r9.fws.gov/ifcc/esr/handbook/), the fire management zone direction, and other applicable guidance.

IV.E.2 Short-term Rehabilitation

Incident commanders and resource advisors are responsible for implementing short-term actions to mitigate the effects of fire suppression activities. The following action items will guide short-term rehabilitation of surface disturbing suppression impacts (including closing routes opened during fire suppression) prior to releasing fire crews and equipment following containment. These would be actions taken in addition to standard mop-up duties.

IV.E.2.a General Rehabilitation Action Items

- Linear openings created by wildland fire suppression should be closed and rehabilitated in accordance with RA guidance.
- Washed and weed-free equipment should be used in rehabilitation activities.
- Remove all trash, debris, temporary road signing and flagging.
- Flush cut suppression-created tree stumps down to 2-3 " above ground level along recreational trails, around recreation areas, and within WSAs and ACECs. Cross-cut the top of all 8"+ diameter stumps to speed decay.
- Where fire lines cross or parallel streams, remove line construction debris from the channel and place debris sufficiently above the channel so it will not roll back down into the stream.
- Conduct a Class III cultural resource inventory of all ground disturbing rehabilitation activities and use non-ground disturbing techniques within known or newly identified cultural site boundaries.
- Evaluate road systems for damage and report damage to appropriate FO staff person.
- Evaluate and rehabilitate helispots, camps and parking areas.

IV.E.2.b Rehabilitation Action Items for Hand Lines/Other Trails

- Scatter limbs/deadfall/rocks (weathered side up) to obliterate evidence of fire line.
- Weed-free seeding should occur prior to pulling organic matter back over hand lines.
- Hand lines should be seeded at rates specified for the particular region.
- Where a recreation foot trail was used for fire line, reconstruct the trail tread to 24 inches in width.
- Where fire lines cross recreational trails, discourage recreational use of fire lines, by camouflaging with rocks/debris.
- Block off fire lines to motorized access with rocks, natural woody material and signs.
- Remove hazards from along recreational trails.

IV.E.2.c Rehabilitation Action Items for Dozer Lines

- Rip and disturb soil to a depth of 6-12 inches.
- Pull fire line berms onto hand line and blend organic matter with undisturbed soil contours.
- Pull trees/limbs/rocks and other organic material back into line perpendicular to slope.
- Block off dozer lines to motorized access using boulders/natural large woody material/signs.
- Dozer lines that were constructed across slopes will need to be fully obliterated with slash.
- Weed-free seeding should occur after pulling organic matter back over dozer lines.

IV.E.2.d Rehabilitation Action Items for Water Bars

- General water bar spacing should be as follows:
    - 300' for 1-6% grade
    - 200' for 7-9% grade
    - 150' for 10-14% grade

  - 90’ for 15-20% grade
  - 50’ for 21-40% grade
  - 25’ for 41% or steeper grade
- Provide for drainage with water bars on constructed hand/dozer lines and impacted areas.
- Place water bars, 20-40 degrees perpendicular to the fall line, where natural drainage occurs.
- Hand line water bars should be 8" deep.
- Water bars for dozer lines should be 12"+ deep and 18-24" high for the berm.
- If soil is loose, augment water bar with woody debris and/or rocks.
- Ensure that each water bar has a direct outlet and drains into a vegetation or rock filter.
- On slopes >30%, water bars should be installed perpendicular to the fall line and constructed as "cup trenches" rather than drainage features.
- Water bars on steeper slopes (> 50%) may be built from tree boles and should be alternated to opposite sides of the line.
- Water bar spacing and location should consider site-specific topography during installation.

IV.E.2.e Rehabilitation Action Items to Reduce Sedimentation

- To reduce sedimentation, straw bale or log check dams are prescribed in areas where resource values are at risk.
- Specific sites where check dams should be considered include:

  - ephemeral and small intermittent channels,
  - areas where logs/branches created natural check dams and were burned out,
  - locations with less steep gradients that will naturally store large quantities of sediment,
  - where there are natural sediment catch basins.

IV.E.2.f Documentation

Documentation requirements have been established by the resource and fire management staff and are identified in the Fire Stabilization and Rehabilitation Handbook. Requirements include identification of projects in the Rangeland Improvement Project System (RIPS), Annual Work Plan (AWP), Management Information System (MIS), and National Fire Plan Operations Reporting System (NFPORS).

IV.E.2.g Monitoring

Short-term monitoring requirements include evaluation of treatment implementation and its initial effectiveness. Post-treatment monitoring may include vegetative transects or the establishment of permanent photo points depending on specific project objectives. Resource specialists and fire management staff with GIS specialist support conduct long term monitoring at the UCR level.

IV.F Community Protection/Community Assistance

As a part of the National Fire Plan, to assist with hazardous fuel reduction and to promote community assistance, Congress directed the development of a list of WUI communities that are at high risk from wildland fire. These are referred to as WUI Communities at Risk. The list was prepared from information provided by the states and tribes and was first published in the Federal Register on January 4, 2001. Subsequent cooperative efforts by the states, tribes, and federal, county, and local agencies, provided a more comprehensive list that better reflects local knowledge, issues, and concerns. The most recent list of Communities at Risk was published in the Federal Register on August 17, 2001, and contains 35 Communities at Risk within the COLM/UCR area.

Following is a list of these communities designated Communities at Risk:

1. Aspen
2. Avon
3. Basalt
4. Breckenridge
5. Carbondale
6. Collbran
7. Copper Mountain
8. Debeque
9. Dillon
10. Dotsero
11. Eagle
12. Edwards
13. El Jebel
14. Frisco
15. Gateway
16. Glade Park
17. Glenwood Springs
18. Gypsum
19. Kannah Creek
20. Mack
21. McCoy
22. Mesa
23. Mesa Lakes
24. New Castle
25. Palisade
26. Parachute
27. Redlands
28. Silt
29. Snowmass
30. State Bridge
31. Unaweep Canyon
32. Vail
33. Vega
34. Ward Lake
35. White Water

Rural Fire Assistance grants have been awarded for:

- Personal Protective Equipment (primarily fire protective clothing, hard hats, fire shelters, and gloves).
- Fire Suppression Equipment (radios, tools, and other equipment).
- Funding for Firewise and other public education meetings and projects.
- Fuels projects to provide a fuel break between public lands and the communities.

Grants have been awarded to the following communities:

1. Aspen F.D.
2. Basalt F.D.
3. Debeque F.D.
4. Gateway F.D.
5. Glade Park F.D.
6. Grand Valley F.D. (Parachute)
7. Mesa County Sheriff Office
8. Palisade F.D.
9. Plateau Valley F.D. (Collbran and Mesa)
10. Snowmass F.D.

The summary of prioritization for community assistance and protection by FMU is shown in Table 2.

IV.F.1 Community Assistance/Protection Protocols Common to all FMUs

Actions include:

- Working with other federal agencies, state, county and private entities to update county mitigation plans.
- Providing Rural Fire Assistance, as identified in mitigation plans, to rural fire districts. Assessing and increasing suppression capabilities and effectiveness by providing Rural Fire Assistance to local fire suppression organizations.
- Providing planning and implementation assistance to private landowners so hazardous fuels can be reduced as identified in mitigation plans.
- Providing funding to implement fire education projects identified in mitigation plans.
- Reducing fuel hazards and the threat of catastrophic fire events, including consideration of any local Community at Risk.
- Obligating adequate funding to the Mesa and Garfield County WUI Coordinators.
- Providing training to local fire protection agencies.

V Organization and Budget

V.A Budget and Organization

V.A.1 UCR Organization

An organization chart for the UCR is included in Appendix F. Planned and/or unfunded positions are denoted in addition to existing staffing.

The COLM has no fire management staff or organization. Fire management responsibilities are handled by the COLM Resource Staff and the NPS Zone FMO, who handles fire management for several NPS organizations. There are several fire qualified members of the COLM staff that are available for fire assignments as needed. The COLM relies primarily on the UCR and local cooperators for initial attack fire suppression resources.

Non-fire agency staff and local cooperators supplement the existing interagency staff and associated preparedness resources. Local resources are used for these purposes as well as to suppress escaped fires. Local and national aviation and smokejumper resources will be used subject to their availability as appropriate.

Supplemental resources are ordered to provide increased firefighting capability during periods of high fire danger as well as during periods where ongoing and anticipated levels of initial attack would result in a draw down of local resources. Administratively Determined (AD) hiring authority is used on a discretionary basis to supplement agency resources.

V.A.2 Staffing and Budget Requirements Summarized for UCR

Each agency's individual NFMAS analysis identified location and distribution of suppression resources according to desired response times and zones. The UCR has worked to use these analyses and budgetary parameters to integrate the various agencies and provide an operationally efficient fire program.

Table 16. Bureau of Land Management Implemented Fire Resources for UCR

Resources	Quantity	Number of Personnel	Total Work Months
Number of Engines:	5	25	220
Number of Water tenders:	0	0	0
Number of Dozers:	0	0	0
Number of Tractors / plows:	0	0	0
Number of Fire Boats:	0	0	0
Number of Type 1 Crews:	0	0	0
Number of Helitack Crews:	1	5	24
Number of Fuels Crews:	1	5	21
Number of Type 2 Crews sponsored:	1		0
Number of Smokejumpers (AK & NIFC only):			
Number of Fire Management Officers:	2		24
Number of Assistant FMOs / FCOs:	0		0
Number of Fire Operations Specialists:	1		12
Number of Dispatchers:	6		62
Number of Other Aviation Staff (Aviation Mgr., Seat Mgr, etc.):	4		35
Number of Mitigation/Education/Prevention Specialists / Techs:	2		19
Number of Resource Specialists:	1		12
Number of Fuels Specialists:	1		12
Number of Other Fire Staff:	4		37
Number of PFT funded by Preparedness:	15		
Number of Career Seasonals funded by Preparedness:	17		
Number of Temporaries funded by Preparedness:	17		
Number of PFT funded by Fuels:	3		
Number of Career Seasonals funded by Fuels:	1		
Number of Temporaries funded by Fuels:	3		

Preparedness resource numbers funded by Fire Preparedness (2810) and reflecting the peak fire organization resources for the year. Resources funded under severity are not included. The fuels related resources numbers include the resource funded by the non-WUI (2823) and WUI (2824) programs.

Table 17. National Park Service Planned Fire Resources for COLM

Resources	Quantity	Number of Personnel	Total Work Months
Number of Engines:	1	0	0
Other Fire Staff:	0.2		2.4
PFT funded by Preparedness:	0		

V.A.3 Staffing and Annual Budget Requirements Summarized by Agency

Each agency within the UCR maintains discrete budgeting, staffing and support services which are combined where appropriate to increase program effectiveness and efficiency to participating units.

Table 18. Staffing and Annual Budget Requirements Summarized by Agency

	BLM	USFS		NPS	UCR Total
	UCR	GVRD	WRNF	CNM	
Staff					
Suppression	50	1	47	0	98
Fuels / WUI	8	5	4	0	17
Prevention / Mitigation	2	0	0	0	2
Budget					
Suppression	1,600,000	53,000	1,200,000	2,500	2,855,500
Fuels / WUI	750,000	152,000	1,600,000	0	2,502,000
Prevention / Mitigation	70,000	600	2000	0	72,600

V.A.3.a Equipment Requirements for the Existing Initial Attack and Support Organizations

Table 19 is a summary of equipment requirements for the existing initial attack and support organizations.

Table 19. Summary of Equipment Needs for Initial Attack and Support Organizations

	Equipment Needs	
	Initial Attack	Support/Chase Vehicles
Engines, Type 4	3	3
Engines, Type 6	7	6
Initial Attack Squads	2	2
Helitack	0	4
Fire Cache	0	3
Prevention/Mitigation	0	2
Fuels	0	9
Aviation Support (Air Center)	0	3
Management	3	6

V.A.3.b Fire Cache Considerations

The UCR maintains fire caches in each of three Zones. Zone fire caches are located at:

- The Grand Junction Field Office (West Zone)
- The Rifle Interagency Fire Center at the Garfield County Airport (Central Zone)
- The Eagle Ranger District facility (East Zone)

Zone cache inventories will be completed and input into a computerized record keeping system prior to May 1st annually. Zone FMOs are responsible to ensure appropriate stocking levels of fire caches and to provide for receiving and distribution functions as appropriate.

Table 20. Fire Cache Considerations

	East Zone	Central Zone	West Zone	Total
cache size (number of personal supported)	40	70	50	160
staffing	1	1	1	3
annual budget	15,000	38,000	25,000	78,000

V.A.3.c Interagency Training and Development Considerations

Table 21. Desired Training and Development

Functional Area	Type	Sub-Activity	Estimated Cost ($)
Suppression & Prescribed Fire	Recurrent Training	2810 / 2823 / 2824	25,000
Suppression & Prescribed Fire	ICS and Rx Training	2810 / 2823 / 2824	50,000
Estimated Total			**75,000**

V.A.3.d Interagency Dispatch Considerations

The Grand Junction Interagency Dispatch Center is located at the Grand Junction Air Center (GJAC) at Walker Field, Grand Junction, Colorado. The BLM is responsible for the facilities management, utilities, and fees associated with the air center. The GJAC staffs the following non-seasonal positions:

- Air Center Manager (GS-455-11), BLM
- Assistant Air Center Manager, Dispatch (GS-455-09), WRF
- Assistant Air Center Manager, Ramp and Facilities (GS-455-09), BLM
- Lead Initial Attack Dispatcher (GS-455-07), BLM
- Lead Aircraft Dispatcher (GS-455-07), BLM
- Initial Attack Dispatcher, (GS-462-05), GMF
- Air Tanker Base Manager (GS-455-07), BLM

V.A.3.e Fuels Management Considerations

The fuels management program consists of WUI hazard reduction, non-WUI hazard fuels reduction, and ecological restoration of impaired landscapes. The UCR fuels management program is the responsibility of the fire ecology section of the fire management staff.

The COLM fuels management program is the responsibility of the Dinosaur National Monument (DINO) fuels management specialist. With input from the COLM Chief of Natural Resources, fuels projects are developed and prioritized for funding and implementation.

Prescribed fire is conducted with the support of the operations staff, and will utilize, where possible, an interagency approach to fill required organizational positions for each prescribed burn. The BLM also hosts a fire use module for prescribed fire and wildland fire use events. There are two Colorado State Office fuels positions, one in Grand Junction and one in Glenwood Springs. These positions assist the Field Offices in fuels management projects.

V.B Assistance Agreements and Intra/Interagency Agreements

Cooperative Agreements and Interagency Contacts - The UCR conducts the fire management program with Federal and State partners under the terms of the following agreements:

Colorado Interagency Cooperative Fire Management Agreement - between the USDI, Bureau of Land Management, Colorado; USDA Forest Service, Region 2; USDI National Park Service, Intermountain Region; USDI Fish and Wildlife Service, Mountain and Prairie Region; USDI Bureau of Indian Affairs, Southwest Region and Colorado State Forest Service. This agreement establishes statewide authority for interagency fire protection assistance and cooperation between the above agencies for mutual cooperation in fire training, prescribed fire, prevention, preparedness, and suppression activities.

Cooperation exists in fire suppression between Colorado National Guard and USDI, Bureau of Land Management. This agreement permits the use of National Guard resources within the State of Colorado without the State declaring a state of emergency. Activation of this agreement is accomplished through the Rocky Mountain Area Coordination Center (RMACC).

At the unit level, the BLM and NPS have a Memorandum of Agreement that provides the basis for interagency fire management activities and the exchange of funds via reimbursable agreements to support the interagency staff unit.

Both the BLM and NPS are signatories to cooperative fire plans for each county within the affected jurisdictions that are executed on an annual basis to provide for cooperative fire management activities between affected Federal and local jurisdictions.

Copies of these plans are available on CD from agency fire management staff and or Colorado State District Foresters.

V.C Equipment Rental Agreements

A UCR Service and Supply Plan is prepared annually that includes:

- Emergency Equipment Rental Agreements (EERA)
- Local Vendors who will supply incident support (lodging, meals, equipment and supplies)
- Incident Command Post and Large Helibase locations and points of contact

Hard copies of the above information are in the Service and Supply plan, copies of which are retained by agency procurement specialists and the interagency dispatch center in Grand Junction. The above information is loaded onto CD's for distribution to incoming incident management teams during the incoming IMT briefing.

V.D Contract Suppression and Prescribed Fire Resources

The UCR does not maintain national contracts for suppression or prescribed fire crews, or equipment. National resources may be ordered as needed during high fire danger and/or severity conditions as warranted and available.

The UCR participates in the national Indefinite Delivery Indefinite Quantity multi-agency fuels reduction contract for treatment of hazardous fuels. The Indefinite Delivery Indefinite Quantity (IDIQ) includes a list of contractors and the types of fuel reduction work they are interested in and qualified for. Units initiating NFP related fuel reduction work are required to utilize the Indefinite Delivery Indefinite Quantity contract. Additional information can be obtained from the Western Slope Center Purchasing Agent in Grand Junction.

VI Monitoring and Evaluation

VI.A Monitoring Performance

VI.A.1 Fire Behavior and Fire Effects Monitoring

A program of monitoring and evaluation is required to determine whether the FMP is being implemented as planned, and whether fire-related goals and objectives are being met. The goal of the monitoring program is to provide fire and resource managers information necessary to better conduct fire management activities. Some uses of this information include:

- Making decisions regarding management strategy and tactics for all ignitions
- Comparing actual prescribed fire effects with stated burn objectives
- Validating/refining current management prescriptions
- Assessing the efficacy of management techniques
- Suggesting improvements or alternatives to existing management techniques
- Identifying concerns which require further research
- Guiding future decisions pertaining to fire management
- Updating the FMP and the RMP

Monitoring related to wildland fire or fire related projects falls under the general monitoring and evaluation guidelines outlined in the various agencies Land Use Plan (LUP). Site specific monitoring needs are identified in analysis for individual fire related projects.

Tracking and coordinating of monitoring will be conducted by the GJFO in conjunction with the UCR. The UCR has developed and implemented a systematic method of evaluation to determine the effectiveness of projects. The evaluation assures accountability, facilitates resolution of areas of conflict, and identifies resource shortages and agency priorities.

VI.A.1.a Short-term and Long-term Program Effectiveness Monitoring Objectives

Fire behavior monitoring, including fuel consumption and weather, is done to help make planning and immediate decisions, which promote firefighter safety and effective use of existing resources.

Fire effects monitoring may be divided into long and short term monitoring. Short-term monitoring will provide nearly immediate information regarding fire effects, serving as a feedback mechanism to assess and evaluate the degree to which fire management objectives are being achieved. Long-term monitoring will track changes in overall resource conditions over one or more complete fire cycles, as they are currently understood. Resource specialists and fire management staff with GIS specialists support conduct long term monitoring at the agency level.

Effective monitoring to assess whether treatments met the associated purpose and need requires comparison of pre-treatment and post-treatment conditions. It is important that baseline inventory efforts take place prior to any vegetation treatments associated with prescribed fire, WFU, and non-fire fuels treatments. A comprehensive monitoring program entails some form of vegetation sampling prior to and following implementation of fuels or vegetation treatments.

General objectives which must be addressed include:

- treatment objectives, including prescribed fire, WFU, and non-fire fuels treatments
- ESR project objectives
- overall long-term FMU objectives

VI.A.1.b Procedures

Fire effects monitoring, both short and long term, will vary depending on criteria established by the land use plan. General guidelines can be found in the *Fuels Survey Data Dictionary User Manual*.

Short-term monitoring requirements include pre-burn fuel moisture sampling conducted by preparedness staff members or designated fuels crewmembers. Pre-burn monitoring may include the establishment of photo points, vegetation transects, plots, or other scientific methods, which will assess the primary and secondary effects of either wildland or prescribed fire, depending on the specific project objectives. Post-burn monitoring conducted by fire management staff or resource specialists includes similar activities as required by the project monitoring plan.

The UCR does not have a monitoring plan, but agencies include monitoring requirements in implementation plans. The GJFO has a field office monitoring schedule that will incorporate monitoring requirements of the FMP.

VI.A.1.c Timeframes

Fire behavior monitoring will occur at the time of the fire, and fire effects monitoring will occur starting immediately following the fire or vegetation treatment. After all treatments and ESR projects, effectiveness monitoring continues for a minimum of three years. Additional years of monitoring may be necessary to measure the full effects of treatments, depending on the design and objectives of the project.

In addition to treatment-level objectives, overall long-term FMU objectives must be monitored on an ongoing basis. This includes monitoring and recording the occurrence and total acreage of both prescribed fire and WFU, non-fire fuels treatments, and wildland fire. This ensures that burn acre thresholds are not exceeded and aids in the evaluation of the cumulative effects of these and other disturbances.

VI.A.1.d Funding

Current BLM National Office direction allows for both prescribed fire and non-fire treatment funds (2823/2824) to be utilized within one-year post fire or non-fire treatment and to be designated for monitoring treatment objectives or specific protection objectives. ESR efforts will also be monitored using 2822 funds.

VI.A.1.e Responsibilities

Fire behavior monitoring is generally the responsibility of the incident commander or the burn boss of the incident. Monitoring related to fire effects is the responsibility of the district/unit and may be conducted by either fire management or resource management personnel.

VI.A.1.f Reporting Requirements

Reporting requirements for fire behavior monitoring are fairly uniform and concise in light of their immediate relevance. Short and long term reporting requirements vary widely depending on their purpose and the design of the monitoring protocols and procedures.

VI.B Evaluating Performance

VI.B.1 Project Level

Project level plans are evaluated to ensure that the treatment/action meets the purpose and need of the project.

VI.B.2 FMP Level

Adaptability is of utmost importance to this FMP. As provided in H-1601-1 - Land Use Planning Handbook, the FMP allows managers seasonal and annual application flexibility, based on factors such as resources, weather and operational capability. For effective "adaptive management" (a feedback approach to management that uses monitoring results to plan future actions) land management agencies must rely upon a continuous process of interagency and public feedback to monitor the outcomes and consequences of the selected management strategies. Prior to each fire season, managers intend to analyze the cumulative effects of the previous fire seasons, examine monitoring results and incorporate new information into the management strategy. Adjustments (refining zone boundaries, authorizing a more conservative management approach based on the previous years' fire activity, changing the allowable burned acreage, border adjustments as counties and other agencies complete their FMPs, etc.) would not require amending the FMP but would be done through plan maintenance.

VI.B.3 Land Use Plan (LUP) Level

Overall FMP performance is reviewed as part of the LUP evaluation process. LUP evaluations use staff reviews, various monitoring data, and GIS analysis. LUP evaluations determine if decisions are being implemented, whether mitigation measures are satisfactory, whether there are significant changes in the related plans of other entities, whether there is new data of significance to the plan, and if decisions should be changed through amendment or revision. The results of evaluations are used by the agencies to determine if LUP decisions and NEPA analyses are appropriate.

VI.C Reporting Accomplishments

The UCR FPU annually tracks accomplishments through the National Fire Plan Operating and Reporting System (NFPORS), which is required by all federal agencies. The BLM also tracks accomplishments through the BLM management information system (MIS).

VII Glossary and Acronyms

Please visit http://www.fireplan.gov/resources/glossary/a.html for a more complete glossary.

ACEC - Area of Critical Environmental Concern

AD - Administratively Determined

AFMO - Assistant Fire Management Officer

AMR - Appropriate Management Response

AOP - Annual Operating Plan

Area of Critical Environmental Concern (ACEC) - Acreage within BLM public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historical, cultural, or visual values; fish and wildlife resources, or other natural systems or processes; or to protect life and safety from natural hazards.

ATB – Air Tanker Base

AWP - Annual Work Plan

BA - Biological Assessment

BI - Burning Index

BLM - Bureau of Land Management

BO - Biological Opinion

Burnable Acres - Any vegetative material/type that is susceptible to burning.

Burned Area Rehabilitation - The treatment of an ecosystem following disturbance to minimize subsequent effects. (1995 Federal Wildland Fire Policy.)

CAR - Communities At Risk

Condition Class (CC) - Based on coarse scale national data**,** Fire Condition Classes measure general wildfire risk as follows:

Condition Class 1	For the most part, fire regimes in this Fire Condition Class are within historical ranges. Vegetation composition and structure are intact. Thus, the risk of losing key ecosystem components from the occurrence of fire remains relatively low.
Condition Class 2	Fire regimes on these lands have been moderately altered from their historical range by either increased or decreased fire frequency. A moderate risk of losing key ecosystem components has been identified on these lands.
Condition Class 3	Fire regimes on these lands have been significantly altered from their historical return interval. The risk of losing key ecosystem components from fire is high. Fire frequencies have departed from historical ranges by multiple return intervals. Vegetation composition, structure and diversity have been significantly altered. Consequently, these lands verge on the greatest risk of ecological collapse. (*Cohesive Strategy, 2002, in draft)*

COLM - Colorado National Monument

Critical Habitat - Under the Endangered Species Act, critical habitat is defined as habitat of federally listed threatened or endangered species where those physical and biological features essential to conservation of the species are found and which may require special management considerations or protection. This habitat may currently be occupied or determined by the Secretary of the Interior to be essential for areas outside the species' current range.

CSFS - Colorado State Forest Service

CSO - Colorado State office (BLM)

DINO – Dinosaur National Monument

DOI – Department of Interior

Ecosystem - 1) A community of living plants and animals interacting with each other and with their physical environment; a geographic area where it is meaningful to address the interrelationships with human social systems, sources of energy, and the ecological processes that shape change over time. 2) The complex of a community of organisms and its environment functioning as an ecological unit in nature.

EERA - Emergency Equipment Rental Agreements

EIS - Environmental Impact Statement

Endangered Species - Any species of animal or plant in danger of extinction throughout all or a significant portion of its range and so designated by the Secretary of Interior in accordance with the 1973 Endangered Species Act.

Environmental Assessment (EA) - Environmental Assessments were authorized by the 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 becomes the document allowing agency compliance with NEPA requirements.

Environmental Impact Statement (EIS) - A detailed public document which complies with NEPA law and regulation; an EIS describes a major Federal action which significantly affects the quality of the human environment, provides alternatives to the proposed action, and analyzes the effects of the proposed action.

ERC - Energy Release Component

ESA - Endangered Species Act

ESR - Emergency Stabilization and Rehabilitation

FBAN – Fire Behavior Analyst

FDOP – Fire Danger Operating Plan

FDOP – Fire Danger Operating and Preparedness Plan

FIL - Fire Intensity Level

Fire-Adapted Ecosystem - An ecosystem with the ability to survive and regenerate in a fire-prone environment.

Fire Frequency (Fire Return Interval) - How often fire burns a given area; often expressed in terms of fire return intervals (e.g., fire returns to a site every 5-15 years).

Fire Management Planning - A generic term referring to all levels and categories of fire management planning, including: preparedness, prevention, hazardous risk assessment, and mitigation planning.

Fire Management Unit – A land management area definable by objectives, management constraints, topographic features, access, values to be protected, political boundaries, fuel types, and fire regime groups; that set it apart from the management characteristics of an adjacent FMU.

Fire-prone Ecosystem - Ecosystems that historically burned intensely at low frequencies (stand replacing fires), those that burned with low intensity at a high frequency (understory fires), and those that burned very infrequently historically, but are now subject to much more frequent fires because of changed conditions. These include fire-influenced and fire-adapted ecosystems.

Fire Regime - Periodicity and pattern of naturally occurring fires in a particular area or vegetative type, described in terms of frequency, biological severity, and area of extent.

Fire Severity - Denotes the scale at which vegetation and a site are altered or disrupted by fire, from low to high. It is a combination of the degree of fire effects on vegetation and on soil properties.

Fireline Intensity Level (FIL) - The rate of heat energy released during combustion per unit length of fire front. It is usually expressed in BTUs/second/foot.

Firewise - A public education program developed by the National Wildland Fire Coordinating Group that assists communities located in proximity to fire-prone lands. (For additional information visit the Web site at: http://www.firewise.org)

FM - Field Manager

FMO - Fire Management Officer

FMP - Fire Management Plan

FMU - Fire Management Unit -- An FMU is any land management area definable by objectives, management constraints, topographic features, access, values to be protected, political boundaries, fuel types, major fire regime groups, and so on, that set it apart from the management characteristics of an adjacent FMU. Fire Management Units are scalable, and cannot be separated geographically. The FMUs may have dominant management objectives and pre-selected strategies assigned to accomplish these objectives. The development of FMUs should avoid redundancy. Each FMU should be unique as evidenced by management strategies, objectives and attributes.

FO - Field Office

FPA - Fire Program Analysis -- The new fire budget analysis software program that will become available in October 2004.

FPD - Fire Protection District

FPU - Fire Planning Unit -- The FPU is defined to describe the geographic planning area. It can include a single or multiple LUP planning area(s), cross jurisdictional boundaries including adjacent BLM office lands, and/or other partner lands. The FPU will be a key component of the new Fire

Program Analysis (FPA) software program. FPA defines a FPU as the geographic area for fire management analysis. Fire Planning Units are not predefined by the agency administrative office boundaries, and may relate to one or more agencies. They may be described spatially. A Fire Planning Unit consists of one or more Fire Management Units.

FRCC - Fire Regime Condition Class

Fuel Model - Simulated fuel complex (or combination of vegetation types) for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

Fuel Type - An identifiable association of fuel elements of distinctive species, form, size, arrangement or other characteristics.

Fuel Reduction - Manipulation, including combustion, or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control.

FUM2 - Fire Use Manager Type 2

FUMA - Fire Use Manager

FWFMP - Federal Wildland Fire Management Policy

GJAC - Grand Junction Air Center

GJC – Grand Junction Dispatch

GJFO - Grand Junction Field Office

GJRA - Grand Junction Resource Area

GMUG - Grand Mesa - Uncompahgre – Gunnison National Forests

GSFO - Glenwood Springs Field Office

GSRA - Glenwood Springs Resource Area

GVRD - Grand Valley Ranger District

Hazardous Fuels - A fuel complex defined by kind, arrangement, volume, condition, and location that forms a special threat of ignition or of suppression difficulty.

HFR - Historic Fire Regime

IC - Incident Commander

ICS - Incident Command System

IDIQ - Indefinite Delivery Indefinite Quantity

IM - Internal Memorandum

Interdisciplinary Team - A group of individuals with different specialized training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one discipline is sufficiently broad to adequately solve the problem; through interaction, participants bring different points of view and a broader range of expertise to bear on the problem.

KBDI - Keetch-Byram Drought Index

LAL - (L)ightning (A)ctivity (L)evels numbered 1 through 6:

- LAL 1 - No thunderstorms.
- LAL 2 - Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud to ground strikes in a 5 minute period.
- LAL 3 - Widely scattered thunderstorms. Light to moderate rain will reach the ground. Lightning is infrequent, 6 to 10 cloud to ground strikes in a 5 minute period.
- LAL 4 - Scattered thunderstorms. Moderate rain is commonly produced. Lightning is frequent, 11 to 15 cloud to ground strikes in a 5 minute period.
- LAL 5 - Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 cloud to ground strikes in a 5 minute period.
- LAL 6 - Dry lightning (same as LAL 3 but without the rain). This type of lightning has the potential for extreme fire activity and is normally highlighted in fire weather forecasts with Red Flag Warning.

LCES - Lookouts, Communications, Escape Routes, Safety Zones

LTAN - Long Term Fire Analyst

LUP - Land Use Plan

MEL - Most Efficient Level

MIS - Management Information System

MIST - Minimum Impact Suppression Tactics

MMA – Maximum Manageable Area

MOU - Memorandum of Understanding

Maximum Manageable Area (MMA) - The maximum manageable area in a Wildland Fire Implementation Plan designates the ultimate acceptable size for a given wildland fire managed for resource benefits.

NEPA - National Environmental Policy Act

NFDRS - National Fire Danger Rating System

NFES - National Fire Equipment System

NFP - National Fire Plan

NFPORS - National Fire Plan Operations Reporting System

NFRP - Normal Year Fire Rehabilitation Plan

Noxious Weeds - Any plant designated by a federal, state, or county government to be injurious to public health, agriculture, recreation, wildlife, or any public or private property. Noxious weeds generally possess one or more of the following characteristics: aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host for serious insects or diseases, and generally non-native.

NPS - National Park Service

NWCG - National Wildfire Coordination Group

NWS - National Weather Service

OHV - Off Highway Vehicle

Performance measures - A quantitative or qualitative characterization of performance (Government Performance and Results Act of 1993).

PPE – Personal Protective Equipment

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

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

Prescribed Fire Plan (Burn Plan) - This document provides the prescribed fire burn boss information needed to implement an individual prescribed fire project.

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

Prevention - Activities directed at reducing the number of person-caused fires, including public education, law enforcement, dissemination of information, and the reduction of hazards.

RA - Resource Advisor

RAWS - Remote Automated Weather Stations

Rehabilitation - The activities necessary to repair damage or disturbance caused by wildland fires or the fire suppression activity.

Resource Management Plan (RMP) - A document prepared by BLM Field Office staff with public participation and approved by the State Director that provides general guidance and direction for land management activities.

Restoration - The active or passive management of an ecosystem or habitat toward its: original structure, natural compliment of species, and natural functions or ecological processes (Cohesive Strategy, 2000).

RFA - Rural Fire Assistance

RFD - Rural Fire Department

RH – relative humidity

RIPS - Rangeland Improvement Project System

RMACC - Rocky Mountain Area Coordination Center

RMP – Resource Management Plan

RXB1 - Level I Burn Boss

RXB2 – Level II Burn Boss

SASEM - Simple Approach Smoke Emission Model

SEAT – Single Engine Air Tanker

Sensitive Species - Those plant and animal species identified by the BLM State Director as sensitive, usually in cooperation with the State Agency responsible for managing the species. Sensitive species are also defined as those (a) which are under status review by the USFWS or NOAA Fisheries; or (b) whose numbers are declining so rapidly that Federal listing may become necessary; or (c) with typically small and widely dispersed populations; or (d) inhabiting ecological refugia of other specialized or unique habitats.

Severe Wildland Fire - A fire that burns more intensely than the natural or historical range of variability, thereby: fundamentally changing the ecosystem, destroying communities and/or rare or threatened species/habitat, or causing unacceptable erosion (Society of American Foresters, 1998).

SHPO - State Historic Preservation Office

SI - Severity Index

Special Recreation Management Area – BLM administrative units established to direct recreation program priorities, including the allocation of funding and personnel, to those public lands where a commitment has been made to provide specific recreation activities and experience opportunities on a sustained yield basis.

SSS - Special Status Species

Suppression - All the work of extinguishing or containing a fire, beginning with its discovery.

T&E – Threatened & Endangered

Threatened Species - Any species likely to become endangered within the foreseeable future throughout all or a significant portion of its range and that has been designated in the Federal Register by the Secretary of Interior as such.

UCR - Upper Colorado River Interagency Fire Management Unit

Unplanned and Unwanted Wildland Fires - An unplanned and unwanted fire is one burning outside the parameters as defined in land use plans and fire management plans for that location (including areas where the fire can be expected to spread) under current and expected conditions. Unplanned and unwanted fires includes fires burning in areas where fire is specifically excluded; fires that exhibit burning characteristics (intensity, frequency, and seasonality) that are outside prescribed ranges, specifically including fires expected to produce severe fire effects; unauthorized human caused fires (arson, escaped camp fires, equipment fires, etc.); and fires that occur during high fire dangers, or resource shortage, where the resources needed to manage the fire are needed for more critical fire management needs.

USDA - United States Department of Agriculture

USDI - United States Department of the Interior

USFS - United States Forest Service

USFWS - United States Fish and Wildlife Service

Watershed - The area of land bounded by a divide, that drains water, sediment, and dissolved materials to a common outlet at some point along a stream channel, or to a lake, reservoir, or other body of water; also called drainage basin or catchment.

WFIP - Wildland Fire Implementation Plan

WFSA - Wildland Fire Situation Analysis

WFU - Wildland Fire Use

Wildland - An area in which development is essentially non-existent, except for roads, railroads, powerlines, and similar transportation facilities; structures, if any, are widely scattered.

Wildland Fire for Resource Benefit (also known as Wildland Fire Use) - The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in FMPs.

Wildland Fire Implementation Plan (WFIP) - A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits.

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

Wildland-Urban Interface - The line, area, or zone where structures or other human development meet or intermingle with undeveloped wildland or vegetative fuels.

WIMS - Weather Information Management System

WRNF - White River National Forest

WSA - Wilderness Study Area

WUI - Wildland-Urban Interface

VIII References

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IX Appendices