

Carlsbad Field Office

Fire Management Plan

2004

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I. Introduction

A. Purpose

In June of 2000, the Carlsbad Field Office entered into an agreement with the Lincoln National Forest that created the Carlsbad Interagency Fire Organization (CIFO). This organization joined personnel, equipment, and financial resources from the Carlsbad portion of the Roswell/Carlsbad Field Office's zoned fire program with those of the Lincoln National Forest's Guadalupe Ranger District. This Fire Management Plan (FMP) is designed to take into account the working relationship and organizational structure resulting from the interagency partnership with the Forest Service. However, it covers only the BLM portion of this interagency fire management program. The next generation of FMP is expected to be a plan covering both agencies.

The Federal Wildland Fire Management Policy states that every area with burnable vegetation must have an approved fire management plan. This FMP is a strategic plan that defines a program to manage wildland and prescribed fires based on the approved land management plan. This FMP provides for firefighter and public safety, it includes fire management strategies, tactics and alternatives, and values to be protected. It addresses public health issues and is consistent with resource management objectives, activities of the area, and environmental laws and regulations.

Overall direction from the RMP and associated activity plans (i.e. ACEC plans) may allow for fire to be used as an integral part of the ecosystem to meet resource management objectives and to improve protection of life and property through the reduction of hazardous fuels.

The purpose of this FMP is to identify the fire management program workload, objectives and constraints; equipment, personnel and facilities; identify the relative cost of the program in current dollars; identify the most efficient and cost effective fire management program that best meets the Field Office needs, and staffing requirements.

This FMP will serve as a guide for fire management decisions within the Carlsbad Field Office. The CFO FMP has been developed to provide a comprehensive framework for managing fire on public lands within the administrative boundaries, and for allocating fire management resources for the area. All fire management objectives, constraints, and fire management activities contained within this plan are consistent with determinations described in the Carlsbad Resource Management Plan (RMP), with objectives described in other planning documents, and from discussions with Field Office Managers and resource program leaders.

This FMP addresses the full range of fire management activities. This includes fire planning, fire management strategies, tactics and alternatives, prevention, preparedness and education. It addresses the role of mitigation, post-fire rehabilitation, fuels reduction, and restoration activities in fire management

The FMP addresses all aspects of the fire management program including: preparedness, prescribed fire, fuels management, prevention, fire investigation and suppression. It also describes the existing and desired future condition for fire management within the CFO along broad treatment objectives for achieving these desired conditions. It will be reviewed annually and updated as necessary.

B. Relationship to Environmental Compliance

The FMP complies with land use decisions related to fire management from the 1988 Carlsbad

RMP, the statewide 2004 RMP amendment, and other planning documents.

The FMP does not make new decisions or change allocations. Future site specific and project specific proposals to implement the RMP decisions will require additional environmental analysis and compliance with relevant laws and regulations. If additional direction is necessary to implement the fire management action in the fire planning unit, it can be developed, analyzed and determined through a RMP amendment or activity plan update.

C. Collaboration

BLM is a partner in the “New Mexico Joint Powers Agreement for Interagency Wildland Fire Protection” (JPA). This is an agreement among the Federal wildland fire management agencies and the New Mexico State Forestry Division to coordinate wildland fire management activities. Under the JPA, New Mexico is divided into initial attack areas. In each of these areas, one agency agrees to take the lead in providing initial attack protection to all lands, regardless of ownership. This provides an equitable exchange of protection and workload, and allows the use of the “closes forces” concept for fire suppression. The net result is a more efficient and effective interagency suppression organization throughout the state. BLM Roswell and the Pecos Valley Interagency Dispatch (PVD) have a Memorandum of Understanding (MOU) that agrees to provide and maintain the present Pecos Valley infrastructure and to provide the Dispatch Coordinator and Initial Attack Dispatcher. Roswell BLM will also make available its 168.500 frequency as the command frequency for the Pecos Valley Dispatch area.

This FMP considers all lands under the administration of the CFO. Fire management actions on other Federal, State, and private lands within Fire Management Unit (FMU) boundaries are governed by their respective federal agency FMP’s, State management plans and/or state and local laws. Officials from other agencies, CFO resource staff members, and adjacent Bureau of Land Management (BLM) fire management personnel were consulted on a regular basis and participated with the development of this plan.

The RMP amendment process included scoping sessions, open houses, and public comment period, consultation with a variety of local, state, and federal agencies to obtain input for the planning process, including development of the FMUs. Further public comment was solicited by publishing the FMP on a website and notifying everyone on the CFO mailing list.

As the BLM and its Federal partners move into the new generation of fire planning, Fire Program Analysis (FPA), the CFO will make a concerted effort to modify FMP and FMU boundaries to incorporate CFO administered lands into multi-jurisdictional planning units. For example, the Guadalupe Escarpment FMU has similar management objectives and constraints as FMU’s currently managed under the Lincoln National Forest’s FMP. The CFO and the Lincoln National Forest will continue to collaborate on a variety of fire management programs through the Memorandum of Understanding (MOU), and with other federal partners as the opportunity arises.

D. Authorities

This FMP derives overall authority and program guidance from the following:

- 2001 Updated Federal Wildland Fire Management Policy (1995 Federal Wildland Fire Management Policy Update).

- 2001 Annual Appropriations Acts for the Department of the Interior.
- United States Department of the Interior Manual (910 DM 1.3)
- New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management-RMP amendment which allowed vegetation treatments to be applied as needed to achieve healthy rangeland standards.
- 1998 Departmental Manual 620 Chapter 1, Wildland Fire Management General Policy and Procedures, defines authorities, responsibilities and gives direction to all Department of the Interior organizations.
- 1998 BLM Handbook 9214, Prescribed Fire Management Handbook, describes authorities and policy for prescribed fire use on public lands administered by the Bureau of Land Management,
- 1995 Federal Wildland Fire Management Policy emphasizes the natural role of fire and provides the philosophical and policy foundation for wildland fire management,
- Disaster Relief Act, Section 417 (Public Law 93-288).
- The 1988 Carlsbad Resource Area, Resource Management Plan outlines broad goals and objectives for land management actions on lands administered by the CFO.
- The Federal Land Management and Policy Act of 1976 (FLPMA) (Public Law 94-579; 43 U.S.C. 1701).
- Reciprocal Fire Protection Act of May 27, 1955(69 Stat. 66; 42 U.S.C. 1856, 1856a).
- Taylor Grazing Act of June 28, 1934 (48 Stat. 1269; U.S.C. 315).
- Economy Act of June 30, 1932 (47 Stat. 417; 31 U.S.C. 686).
- Protection Act of September 20, 1922 (42 Stat. 857; U.S.C. 594).

II. Relationship to Land Management Planning/Fire Policy

The 1988 RMP is inadequate to address fire management issues in light of new policies such as the Federal Fire Policy (1995) and the National Fire Plan (2000). A decision was made to postpone fire planning until the RMP could be revised. Subsequently, a State-wide effort was undertaken to amend each RMP within the State of New Mexico and make them consistent and compliant with current national direction in regards to fire use and appropriate management response, and to make them consistent with interagency fire planning guidance. However, due to the length of time it will take to make the RMP revisions, the Field Office determined that an FMP directing fire management actions in the jurisdiction was needed.

- 2001 Collaborative Approach for Reducing Wildland Fire Risks to Communities and the

Environment, (10 Year Comprehensive Strategy) provides a foundation for wildland agencies to work closely with all levels of government, tribes, conservation, and commodity groups and community-based restoration groups to reduce wildland fire risk to communities and the environment,

- 2001 National Cohesive Strategy goal is to coordinate an aggressive, collaborative approach to reduce the threat of wildland fire to communities and to restore and maintain land health,

- 2000 Department of the Interior Cohesive Strategy includes strategies and measures for success as the agencies work to reduce risk of wildland fire to people, property, and natural resources, while improving land health. For National Fire Plan guidance, visit the website www.fireplan.gov,

-The Federal Wildland Fire Management Policy was developed by the Secretaries of the USDI and USDA in 1995 to respond to dramatic increase 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. Seventeen policy statements are contained in the Federal Wildland Fire Management Policy pertaining to safety, planning, communication, administration, fire management activities, science and evaluation. These policies are addressed throughout the FMP.

Decisions contained in the Carlsbad RMP, Interim Wilderness Guidance, and guidance from other activity plans provides the basis for the development of fire management objectives and constraints. Formulation of objectives was accomplished through consultation with the Field Office Managers and their staffs, and through coordination with CFO program leaders.

III. Wildland Fire Management Strategies

A. General Management Considerations

The fire management program is 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 of these efforts will be made available to managers and will be used in the development of the FMP and implementation plans.

Carlsbad has an affiliation with Texas Tech, one of the best fire ecology departments in the nation, to conduct research in controlling salt cedar (in Roswell) with fire and is establishing prescription guidelines. Fire management will be consulting with them when we burn the Pecos River. In addition, the university is studying the effects of fire to Kuenzler's hedgehog cactus. Carlsbad has a good relationship with the NMSU experiment station in Artesia where they are researching the possible release of biological control agents for salt cedar. Research needs center on the effects of fire on cultural resources such as ring middens. More research is needed into the use of a biological control agent for prickly pear and other cacti.

Current CFO Policy is consistent with Departmental Manual DM 910, BLM Manual 9210 and BLM Manual 9214 direction. The CFO policy regarding fire management activities is described as follows:

- Protection of life and property will receive the highest priority.

- No wildland fire situation, with the possible exception of a threat to human survival, requires unnecessary exposure of firefighters and equipment to life threatening situations. Once people have been committed to an incident, these human resources become the highest value to be protected.

- An appropriate suppression response consistent with management objectives will be taken on wildfires occurring on BLM administered lands and lands under suppression agreements with federal, state, and local partners. Appropriate management response (AMR) is a measured response based on current values at risk and available resources. AMR is also associated with current conditions and national preparedness.

- Fire, as a critical natural process, will be integrated into 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.

- Suppression actions will be taken which result in a combination of lowest suppression costs, acres burned, firefighter and public safety, and/or resource loss based on the specific circumstances of the fire.

- A Wildfire Situation Analysis (WFSA) will be prepared to govern suppression actions for wildfires which escape initial attack and go into extended attack.

- Fire suppression activities in Special Management Areas (SMA) will be conducted in accordance with guidance contained in the RMP. MIST techniques will be used to limit damage to resources such as using natural barriers and limiting dozer use in ecologically sensitive areas.

- Prescribed fires will be preplanned and approved by the Field Office Manager or appropriate State Office official according to complexity analysis and State Office policy. All prescribed fires will have an approved Prescribed Fire Plan that meets National and State agency standards.

- All fires which escape initial suppression actions, and/or fall into areas where there is critical environmental concerns will have a resource advisor assigned.

- All wildfires that burn public lands will be investigated for cause and determination. Whenever appropriate, and within the guidelines of the Fire Trespass Investigation policy, suppression cost for fire trespass cases will be pursued.

Fires can occur within the area during any time of the year. Typically, fire occurrence begins to increase in February as daytime temperature and relative humidity (RH) values become more conducive to wildfire development. Fires at this time of year are generally human caused. Winds during the spring are often very strong and can reach speeds of over 60 mph. Fires on these days can often grow extremely large. A 50,000 acre fire occurred in northern Lea County in 2000.

Fire season reaches its peak during April and May. Fuel conditions, temperature and RH, combined with often windy conditions create prime conditions for fire growth. While most fires do not escape initial attack, multiple fires across a variety of jurisdictions can dramatically increase the complexity of the fire environment.

Fire season usually continues into early July. Lightning fires are a common occurrence in late May through early July as the weather patterns shift towards the summer monsoons. Monsoons begin in early July. Fire occurrence is usually low through September. A small increase in fires can occur during the fall, especially associated with hunting seasons. The strength of force period for the CFO is March 10th through August 6th.

B. Wildland Fire Management Goals

The CFO will conduct all wildland fire management actions by implementing the 1995 Federal Wildland Fire Policy and the 2001 Federal Wildland Fire Policy Update guiding principles:

- Firefighter and public safety are the highest priority in every fire management activity.
- Assess risk to communities in terms of direct wildland fire impact and economic values, and implement effective programs to mitigate that risk through collaborative planning and projects.
- Implement the full range of wildland fire and fuels management practices, including prescribed fire, fire use, mechanical, chemical, biological, and cultural treatments that will move all affected landscapes toward desired future condition as described in the RMP.
- Establish partnerships with all interagency cooperators to facilitate coordinated fire management activities.
- Maintain an efficient and effective organization for the suppression of wildfires consistent with the values at risk.
- Encourage close coordination and collaboration among specialists within the CFO and among the CFO and Federal, interested organizations, private landowners, state, and local partners.
- Develop and use the best scientific information available to deliver technical and community assistance to support ecological, economic, and social sustainability.
- Allow wildland fire to protect, maintain, and enhance resources, and as nearly as possible be allowed to function in its ecological role when appropriate for the site and situation.
- Create an integrated, systematic approach to fire and resource management.

Specific fire management guidance for each FMU of the CFO is outlined in Chapter III Section D of this FMP. Accomplishment of the fire management goals will assist the CFO in achieving desired future conditions for vegetation within the FMUs, and in the protection of sensitive resources from adverse fire and/or suppression related impacts.

C. Wildland Fire Management Options

The CFO appropriate management response policy for fire suppression is to conduct fire suppression in a timely, effective, and efficient manner with a high regard for public and firefighter safety. Along with safety, management response to all wildland fires will consider suppression costs, values at risk and potential resource damage. Personnel will respond to each wildland fire ignition in a timely manner with appropriate forces, based upon established fire management

direction as documented in the RMP, FMP and subsequent dispatch protocols. The use of appropriate management response will allow land managers to tailor wildland fire responses to meet objectives established in resource management plans and their associated implementation plans.

Any wildland fire may be extinguished, and any fire occurring in an area compatible or suitable for Wildland Fire Use (WFU) can, if it meets specific decision criteria, be managed for resource benefits. Every management response to wildland fire must be identified in the FMP, be based on specific objectives, and have sound rationale that clearly demonstrates the validity of that response. Strict planning and documentation requirements exist in each Wildfire Implementation Plan (WFIP) and the RMP for management of wildland fires where resource benefits are a primary objective.

Prescribed fire will be utilized where applicable for a variety of purposes, including removal of hazardous fuels, to reintroduce fire to its natural role in the environment, and maintain healthy ecosystems by moving them toward Fire Regime Condition Class 1 (see www.frcc.gov). Other non-fire treatments such as mechanical and chemical are authorized where appropriate to meet similar land management objectives.

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

1. General Management Considerations

Current Fire Management direction is provided in the 1988 RMP for the Carlsbad Resource Area and the 2004 New Mexico RMP Amendment. The CFO will provide the appropriate management response to all wildland fires. This response will be based on safety, values at risk, potential resource damage and cost of suppression.

The majority of the FMUs fall into response Category C. This category is defined as “areas where wildland fire is desired but there are significant constraints that must be considered for its use”. The Guadalupe Escarpment FMU falls into response Category D, defined as “areas where wildland fire is desired and there are few or no constraints for its use”.

Category D areas attempt to use the fire for ecological benefit by reviving the soil with nutrients and allowing the landscape to return to a natural rotation. Generally fire suppression activities are damaging to the land and require considerable time for rehab. By encouraging fire in these areas to burn naturally, we maximize benefits and minimize negative effects and risks.

Although wildland fire across the CFO is considered to be desirable, some constraints do exist across all FMUs. These constraints included Threatened, Endangered or Sensitive species habitat, Areas of Critical Environmental Concern, and other Special Management Areas (SMA), among others.

The RMP limits suppression options in a variety of SMAs. Appendix C of the RMP provides specific direction on suppression restrictions for each SMA. A resource advisor will be assigned for all fires that have the potential to impact SMAs

Prescribed fire is authorized for a variety of fuels reduction, range improvement and wildlife habitat actions across all FMUs.

2. Fire Management Unit Descriptions

The FMU is the basic fire management unit upon which the Fire Management Plan is built from. The CFO is divided into four FMUs. Fire management objectives within these FMUs are derived from the 1988 RMP and subsequent Amendment of 2004.

Fire Management Units	Suppression	Prescribed Fire	Community Assistance
Eastern Sandhill Country	<i>Moderate</i>	<i>Low</i>	<i>Low</i>
Western Foothills	<i>Low</i>	<i>High</i>	<i>Low</i>
Guadalupe Escarpment	<i>Low</i>	<i>Moderate</i>	<i>Moderate</i>
Pecos River Corridor	<i>High</i>	<i>Moderate</i>	<i>High</i>

Eastern Sandhill Country 1,139,920 BLM Acres (Category C)

Location and Characteristics: This FMU encompasses the eastern portion of Eddy County and the western, southern and northern portions of Lea County. The boundaries of this area are the Texas-New Mexico border on the south and east, the Pecos River on the west, and Chaves and Roosevelt County lines on the north. Topography ranges from undulating sand dunes and sandy hummocks to the steep canyons running into the Pecos River. There are also several major caprocks that dissect the FMU from north to south. Vegetation is characterized by a mixture of grasses and shrubs with a variety of forbs occurring on an annual basis depending on the level of precipitation.

This FMU includes approximately 3,817,631 total acres, including all ownerships. Approximately 1,139,920 acres are BLM administered surface. The predominant shrub component is shinnery oak, with four-wing salt bush, little-leaf sumac, honey mesquite, catclaw mimosa, juniper species and soapberry represented throughout most of the area as well. Grasses include sand bluestem, little bluestem, three-awns, sand and giant dropseed, plains bristlegrass, plains love grass and a variety of others.

Wildfires will burn well in the shinnery oak rolling dunes and the mesquite swales and draws, depending on the amount of fine fuels. Roads primarily associated with oil and gas development provide good access for suppression resources. However, travel on these roads can present a safety concern due to dust, poor road conditions, and heavy equipment and machinery associated with oil and gas development. Hazardous materials like hydrogen sulfide (H₂S), a by product of oil and gas industry, presents serious safety concerns. Large potash mines and the Waste Isolation Pilot Project (WIPP), a low level nuclear waste repository, are also found in this area. Fire occurrence is low and large fires are rare, except during significant wind events in early spring. Firefighter safety is a significant concern due to hazardous vegetation, poisonous snakes and other wildlife, and the aforementioned industrial hazards. Opportunities to conduct brush control throughout this FMU

are plentiful. Wetland areas, in the form of hyper-saline lakes and natural playas, are scattered throughout the area. These areas are the most susceptible to uncontrolled, human caused fires. Wildlife habitat, wetland areas, range management, recreation, oil and gas, and potash are all considered high to moderate resource programs. Off road vehicle Special Emphasis Areas are scattered throughout this FMU. Suppression restrictions apply in SMAs. See 1986 RMP for location and description of SMAs.

Wildland Fire History: From 1980 through 2002, a total of 190 fires for 47,346 acres occurred within this FMU. The average fire load per year is approximately 8 fires for 2058 acres. Over 50% of the fires were human caused.

Fire Regime Condition Class: Data from a variety of sources indicates that the Eastern Sand Hills was once productive grassland, where desert succulents and woody shrubs, while components of the ecosystem, co-existed with a variety of grasses and forbs. Fire exclusion, initially caused by aggressive grazing practices at the turn of the century, and perpetuated more recently by drought, road building, industrial development, active wildfire suppression, and a continued emphasis on livestock production, has significantly altered the disturbance regime in this FMU. Baseline data, field inventories, and analysis have not been completed to accurately determine condition class across this FMU. Several fire intervals have been missed and there has been a vegetative orientation change across the landscape. Since fire severity is low and some of the original grassland still can be found, a majority of this area falls within Condition Class 2. The desired future condition for this FMU is a land described as Condition Class 1 or similar to pre-settlement appearance.

Values or communities at risk/Resource protection constrains: In general, values at risk due to wildfire within this FMU are considered to be low. Fire, whether management ignited or through natural ignitions, would have far greater benefits to a majority of resources within the FMU than negative impacts. However, there will be times and places when fires must be suppressed to protect specific areas such as industrial sites, isolated homes, or other special features. Also, as per national fire policy, all human caused fires must be suppressed. Suppression actions have the possibility to impact the ecosystem to a greater degree than the fire itself. AMR will always be used when suppressing fire. A resource advisor will be made available to assist the Incident Management Team when assigned to take over a large fire. SMA guidelines will be adhered to (See 1988 Carlsbad Resource Management Plan Appendix C). Fires on public land will be managed according to one of two fire response levels—full or limited. Limited Suppression allows fire suppression activities to be dictated by prescribed fire parameters; i.e. temperature, fuels, wind, humidity, etc., to meet natural resource management objectives. Some areas may also have restrictions on the types of intensities of fire suppression activities allowed; e.g., equipment restrictions, in order to protect other resource values.

Fire Management Objectives:

- 1) Over the life of the plan, convert approximately 20% of the Condition Class 2 areas to Condition Class 1, with an emphasis on where fire can be used to protect and enhance wildlife habitat, livestock grazing, and riparian areas
- 2) Protect wildlife habitat, riparian areas, cultural resources, and SMAs from negative impacts due to wildfire suppression actions.

Fire Management Strategies:

-Suppression: Appropriate suppression response using all available techniques will be used as appropriate in this FMU. Management response will be mitigated by economic values at risk.

-Wildland Fire Use: Management of natural ignitions will not be permitted within the FMU

-Prescribed Fire: The majority of the land can be converted over time to a Condition Class 1 by landscape scale projects. Prescribed burning and chemical treatments will allow a vegetative change to meet objectives depending on funding levels and resource priorities. Prescribed burning will be limited by resource availability and mitigations due to new policy for endangered species habitat. If allowed to burn 3000 acres a year, the affected acres will meet objectives.

-Non-fire Fuels Treatments: All available treatment options will be used as appropriate in this FMU including chemical and mechanical treatments. Mechanical treatments are designed to reduce mesquite encroachment. Non-fire treatments in this area are limited by site availability and approved action.

-Post-fire Rehabilitation: BAER teams will be assigned in the event of large fire operations; however post-fire rehabilitation on small incidents will be initiated under the direction of resource advisors.

-Community Protection/Community Assistance: Assistance in this FMU is low and will be handled with Eddy County Office.

Western Foothills: 614,623 BLM acres (Category C)

Location and characteristics: This area is located in western Eddy and Chaves Counties in the elevations between 4000-6000 feet in the shadow of the Sacramento and Guadalupe Mountains. It encompasses 1,439,916 acres of which, 614,623 acres is managed by the BLM. The topography ranges from rolling foothills to vast mesas and large canyons. Much of this area is remote with few roads and little access except in the Indian Basin, where petroleum development is expanding rapidly. Vegetation ranges from grasses with woody shrubs and desert succulents, to Piñon-Juniper woodlands in the higher elevations. Desert succulents continue to expand in much of the area.

Steep, inaccessible canyons and mesas make fire fighting difficult and are a safety concern for fire fighters. A few ranches houses and outbuildings are located in this area. Values at risk are generally low to moderate. The area is grazed by sheep and cattle. Significant oil and gas development in the Indian Basin west of Carlsbad creates similar safety concerns as described above. Opportunities to use landscape-scale low intensity prescribed fire are prevalent if range managers and permittees provide sufficient residual fuel to allow for fire spread. Wildland fire use is authorized in designated areas. Suppression restrictions apply in SMAs as described above.

Wildland Fire History: From 1980 through 2002 a total of 224 fires burned a total of 18,184 acres within this FMU. This equates to an average of 10 fires for 791 acres per year. Approximately 50% of these fires were human caused.

Fire Regime Condition Class: Data indicates that the Western Foothills was once productive grassland, where dessert succulents and woody shrubs, while components of the ecosystem, co-existed with a variety of grasses and forbs. Fire exclusion, initially caused by aggressive grazing

practices at the turn of the century, and perpetuated more recently by drought, road building, industrial development, active wildfire suppression, and a continued emphasis on livestock production, has significantly altered the disturbance regime in this FMU. Baseline data, field inventories, and analysis have not been completed to accurately determine condition class across this FMU. Several fire intervals have been missed and there has been a vegetative orientation change across the landscape. Since fire severity is low and some of the original grassland still can be found, a majority of this area falls within Condition Class 2.

Values or communities at risk/Resource protection constrains: In general, values at risk due to wildfire within this FMU are considered to be low. Fire, whether management ignited or through natural ignitions, would have far greater benefits to a majority of resources within the FMU than negative impacts. However, there will be times and places when fires must be suppressed to protect specific areas such as industrial sites, isolated homes, or other special features. Also, as per national fire policy, all human caused fires must be suppressed. Suppression actions have the possibility to impact the ecosystem to a greater degree than the fire itself and care should be taken to use appropriate management response at all times. SMA guidelines will be adhered to (See 1988 Carlsbad Resource Management Plan Appendix C).

The Black River Management Area is located within this FMU. This area is the primary wildland/urban interface area on BLM administered lands within the CFO. While currently there are no significant structures within the recreation area itself, adjacent values at risk include the Washington Ranch Camp, Rattlesnake Springs Recreation Area (managed by Carlsbad Caverns National Park), and the Washington Ranch Natural Gas compressor station, along with several ranch homes and out buildings.

This area also contains the grasslands, which have been determined to be suitable for the Aplomado falcon. The use of chemicals and fire to control shrubs invading these grasslands will be employed on a case-by-case basis. Nesting structure and nests will be protected during prescribed fire events, and when possible, during wild fires.

Fire Management Objectives:

- 1) Over the life of the plan, convert over 20% of the Condition Class 2 areas to Condition Class 1, with an emphasis on where fire can be used to protect and enhance wildlife habitat, livestock grazing, and riparian areas
- 2) Protect wildlife habitat, riparian areas, cultural resources, and SMAs from negative impacts due to wildfire suppression actions.

Fire Management Strategies:

-Suppression: Appropriate suppression response using all available techniques will be used as appropriate in this FMU.

-Wildland Fire Use: Management of natural ignitions will not be permitted within the FMU

-Prescribed Fire: The majority of the land can be converted over time to a Condition Class 1 by landscape scale projects. Prescribed burning and chemical treatments will allow a vegetative change to meet objectives depending on funding levels and resource priorities. Prescribed burning will be limited by resource availability and mitigations due to new policy for endangered species

habitat. If allowed to burn 3000 acres a year, the affected acres will meet objectives.

-Non-fire Fuels Treatments: All available treatment options will be used as appropriate in this FMU including chemical and mechanical treatments. Mechanical treatments will be applied in the Black River and Delaware River riparian areas. Non-fire treatments in this area are limited by site availability and approved action.

-Post-fire Rehabilitation: BAER teams will be assigned in the event of large fire operations; however post-fire rehabilitation on small incidents will be initiated under the direction of resource advisors.

-Community Protection/Community Assistance: Assistance in this FMU is low and will be handled with Eddy County Office.

Guadalupe Escarpment: 300,987 BLM acres (Category D)

Location and characteristics: The Guadalupe Escarpment is one of the more rugged areas in Southeast New Mexico. Bluffs, cliffs, deep canyons and inaccessible country are found in this area. Vegetation ranges from short grassland brush to Piñon-Juniper. Many areas are rocky with sparse vegetation. Long, deep canyons generally running east to west cross the area. These canyons contain important riparian habitat along with some forested stands including Ponderosa Pine, walnut and oak, madrone, hackberry. The entire FMU encompasses 826,145 acres, with 300,987 under BLM administration. This area borders with Carlsbad Caverns National Park and the Lincoln National Forest.

Greatest fire spread occurs when high winds couple with steep, inaccessible slopes. Large fires have occurred in this area. New oil and gas fields can be found in several locations. A few isolated ranch houses and outbuildings are found. Historically, wildfire has played a major role in vegetation management in the area. Prescribed fire has been used by all agencies to control unwanted species invasion in this ecosystem. Most ignitions are lightning caused and can be several hundred acres at initial attack. Due to the inaccessibility of the country, fire fighters face a challenge in locating containment lines. Fire fighter safety in this rugged country is a major concern. The usual strategy of an engine with water as initial attack may not always be successful. The use of hand crews cutting fire line is often used in inaccessible locations. The use of air tankers and helicopters has proven successful. Wildland fire use is authorized in designated areas. Suppression restrictions apply in SMAs as described above.

Wildland Fire History: From 1980 through 2002, 93 fires burned 48,796 acres. This equates to 4 fires for 2109 acres per year. A majority of these fires were natural ignitions.

Fire Regime Condition Class: Data shows the Guadalupe Escarpment was once productive grassland, where desert succulents and woody shrubs such as Piñon pine and juniper species, although components of the ecosystem co-existed with a variety of grasses and forbs. Fire exclusion, initially caused by aggressive grazing practices at the turn of the century, and perpetuated more recently by drought, road building, industrial development, active wildfire suppression, and a continued emphasis on livestock production, has significantly altered the disturbance regime in this FMU. Baseline data, field inventories, and analysis have not been completed to accurately determine condition class across this FMU. Several fire intervals have been missed and there has

been a vegetative orientation change across the landscape. Since fire severity is low and some of the original grassland still can be found, a majority of this area falls within Condition Class 2.

Values or communities at risk/Resource protection constrains: In general, values at risk due to wildfire within this FMU are considered to be low to moderate. Fire, whether management ignited or through natural ignitions, would have far greater benefits to a majority of resources within the FMU than negative impacts. However, there will be times and places when fires must be suppressed to protect specific areas such as industrial sites, isolated homes, or other special features. Also, as per national fire policy, all human caused fires must be suppressed. Suppression actions have the possibility to impact the ecosystem to a greater degree than the fire itself and care should be taken to use appropriate management response at all times. A resource advisor will be made available to assist the Incident Management Team in determining this response. SMA guidelines will be adhered to (See 1988 Carlsbad Resource Management Plan Appendix C).

Fire Management Objectives:

- 1) Over the life of the plan, convert over 20% of the condition class 2 areas to condition class 1, with an emphasis on where fire can be used to protect and enhance wildlife habitat, livestock grazing, and riparian areas
- 2) Protect wildlife habitat, riparian areas, cultural resources, and SMAs from negative impacts due to wildfire suppression actions.

Fire Management Strategies:

-Suppression: Appropriate suppression response using all available techniques will be used as appropriate in this FMU.

-Wildland Fire Use: Management of natural ignitions is permitted within the FMU, when conducted under the auspices of an approved Wildland Fire Implementation Plan. Appropriate suppression response which limits aggressive suppression actions based on firefighter and public safety, and economic considerations is authorized.

-Prescribed Fire: The majority of the land can be converted over time to a Condition Class 1 by landscape scale projects. Prescribed burning and chemical treatments will allow a vegetative change to meet objectives depending on funding levels and resource priorities. Based on current vegetative condition, established uses, and resource constraints, prescribed fire and wildland fire use to enhance vigor of browse species, reduce densities of desert succulents, and where applicable reduction of reduce Piñon/juniper encroachment will be emphasized. If allowed to burn, the affected acres will meet objectives.

-Non-fire Fuels Treatments: All available treatment options will be used as appropriate in this FMU including chemical and mechanical treatments. Chemical treatments designed to reduce catclaw, tarbush, and creosote bush encroachment will also be implemented. Other treatments described above are authorized where appropriate. Non-fire treatments in this area are limited by site availability and approved action.

-Post-fire Rehabilitation: BAER teams will be assigned in the event of large fire operations; however post-fire rehabilitation on small incidents will be initiated under the direction of resource advisors.

-Community Protection/Community Assistance: Assistance in this FMU is moderate with high frequency of interface with volunteers and adjacent agencies.

Pecos River Corridor: 37,052 BLM acres (Category C)

Location and characteristics: This area is within the 500 year flood plain of the Pecos River which runs north to south through the middle of the area. Predominant vegetation includes salt cedar and a variety of wetland species as well as lowland grasses, shrubs, and agricultural land. Some areas such as the dried-up Lake McMillian lake-bed consist of hundreds of acres of salt cedar and represent a very high fire hazard.

Fire suppression in salt cedar is extremely difficult and dangerous to fire fighters. Access into the river corridor is very limited and difficult. Most wildfires burn well in the river bottom but can be easily contained once they transition into the grass fuel types found adjacent to the corridor. Suppression tactics are usually accomplished by containing the fire to the river bottoms and suppressing it as it changes fuel types on adjacent uplands. South of Carlsbad, all of the salt cedar on BLM administered lands was treated with chemicals. Subsequently, fire will not readily spread through the skeleton trunks of the salt cedar until sufficient understory herbaceous cover exists to carry a fire. Many fires occur along the Pecos Corridor as many landowners burn the salt cedar to eradicate it. Several of these burns escape control each year and must be suppressed as a wildfire. Other ignition sources include lightning, abandoned campfires, and smoking. Numerous ranches, farms, some residences, oil and gas facilities, and Brantley Lake State Park are located adjacent to the river. Some of these facilities may be threatened by wildfires starting in the river. Suppression restrictions apply in SMAs as described above.

To further complicate this fire environment, the BLM, although a minority land owner, has initial attack responsibility for a large portion of the areas dominated by the salt cedar fuel type, though the New Mexico Joint Powers Agreement. Much of this land is administered by the Bureau of Reclamation (BOR). The Area is pursuing an MOU with the BOR to address fire management issues. Areas along the river south of Carlsbad are under the jurisdiction of the State of New Mexico. Primary initial attack response is provided by rural Volunteer Fire Department's (VFD) and the City of Carlsbad. Although primary responsibility is not the BLM's, Area resources are often called to respond to assist under-staffed and under equipped local departments. Values at risk are considered moderate to high. Prescribed fire opportunities are limited due to intermixed land ownership and conflicting management directions.

Wildland Fire History: From 1980 through 2002, 67 fires burned 1,317 acres. This data does not include the 3,600-acre Brantley Lake fire, which is under investigation. Including that fire, the average fire occurrence in the FMU is 3 fires for 214 acres. Almost all the fires in this FMU are human caused.

Fire Regime Condition Class: The Pecos River riparian ecosystem has been significantly altered from what was once a natural disturbance regime. Frequent flooding, along with fire during dry periods both acted as a catalyst for change within the floodplain. The natural hydrological regime has been entirely altered by the construction of dams and the use of river water for irrigation. Subsequent invasion of exotic species such as salt cedar have further altered the health of the ecosystem. Therefore the existing vegetation has been altered affecting the Fire Regime. Because

of the divergence from the natural vegetation a Condition Class of 3 has been assigned for the Pecos River Corridor. The high fire severity of the invasive fuel type classifies the area as Condition Class 3 as well.

Values or communities at risk/Resource protection constrains: Values at risk are considered to be moderate to high in this FMU. Several campgrounds, housing developments, industrial developments and Brantley Lake State Park are located in this FMU, along with several game management areas. Some of these areas are susceptible to fire damage. They also could be significantly impacted by suppression actions. Mixed ownership and, at times, conflicting management and/or agency mandates will have significant constraints on the use of fire and suppression tactics. That being said, re-introduction of fire as a follow-up to chemical treatments for the eradication of Salt Cedar is important and should be explored.

Fire Management Objectives:

- 1) Over the life of the plan, convert over 20% of the Condition Class 3 areas to Condition Class 1, with an emphasis on where fire can be used to protect and enhance wildlife habitat, livestock grazing, and riparian areas
- 2) Protect wildlife habitat, riparian areas, cultural resources, and SMAs from negative impacts due to wildfire suppression actions.

Fire Management Strategies:

-Suppression: Appropriate suppression response using all available techniques will be used as appropriate in this FMU. Until 2006, aggressive suppression action should be taken within fuel treatment areas to allow the chemical treatment to come to fruition. Management response will be mitigated by economic values at risk.

-Wildland Fire Use: Management of natural ignitions will not be permitted within the FMU

-Prescribed Fire: The majority of the land can be converted over time to a Condition Class 1 by landscape scale projects. Prescribed burning and chemical treatments will allow a vegetative change to meet objectives depending on funding levels and resource priorities. Based on current vegetative condition, established uses, and resource constraints, prescribed fire, mechanical, and chemical treatments will be used in unison to reduce salt cedar encroachment. Prescribed burning will be limited by resource availability and mitigations due to new policy for endangered species habitat. If allowed to burn, the affected acres will meet objectives.

-Non-fire Fuels Treatments: All available treatment options will be used as appropriate in this FMU including chemical and mechanical treatments. A large portion of this area was recently treated chemically to reduce salt cedar invasion. Non-fire treatments in this area are limited by site availability and approved action.

-Post-fire Rehabilitation: BAER teams will be assigned in the event of large fire operations; however post-fire rehabilitation on small incidents will be initiated under the direction of resource advisors. There are several federally listed species occurring within and adjacent to the Pecos River and its tributaries. Precautions should be taken to reduce erosion and sediment loading into the river caused by suppression activities.

-Community Protection/Community Assistance: Assistance in this FMU is high and will be

handled through agreements with Eddy County.

IV. Fire Management Components

A. Wildland Fire Suppression

1. Fire History – From 1980 to 2002 there were 574 fires which 115,643 acres, about 25 fires per year. Approximately 50% of these fires are human caused. The average fire size is roughly 200 acres, but large fires in excess of this are infrequent wind driven events in light fuels. Incidents of Type I or II complexity are extremely rare.
2. Suppression/Preparedness Actions - The Carlsbad FMP is based on the concept that all wildfires will be subject to an initial response. As per policy, all ignitions determined to be human caused will be suppressed using an appropriate management response. Natural ignitions will be suppressed unless they are located in specific areas identified in the Guadalupe Escarpment FMU and have an approved Wildland Fire Use Plan (see Section III-B). In areas where cooperators provide suppression services an agreement outlining constraints and management objectives will be developed. A wide range of suppression options are available including modifying suppression to improve firefighter safety and/or to reduce costs. Limits on suppression tactics will be employed in designated SMAs as per RMP direction.

The operational roles of the BLM in the wildland/urban interface 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, as described in the Interagency Standards for Fire and Fire Aviation Operations.

The CFO will work with cooperating agencies and other affected groups and individuals to prevent unauthorized ignition of wildland fires. Unwanted wildfires will be suppressed at a minimum cost, while considering firefighter and public safety, and consistency with resource benefits. Once firefighters have been committed to an incident, these human resources become the highest value to be protected.

A complete list of all required fire operations/suppression plans can be found in the Interagency Standard for Fire and Fire Aviation Operations (Red Book) and the National Interagency Fire Center website <http://www.fire.blm.gov/>. All plans for the CFO are located for fire and resource personnel use in the CFO FMO Office.

3. Fire Prevention, Community Education, Risk Assessment and Other Community Assistance. - The Carlsbad Field Office participates actively in a highly recognized interagency fire prevention/environmental education program led by the Guadalupe Ranger District, which provides a GS-7 Fire Prevention Specialist for the interagency organization. A Fire Prevention Plan (2002) is on file at the Field Office.

An ignition management analysis has not been conducted specifically for the Carlsbad area. 1990-1999 fire data for the Roswell/Carlsbad zoned program indicated that about 1/3 for the fires occurring on BLM administered lands were human caused. However, a significant number of human-caused fires occur on lands under the BLM's response area north of Carlsbad. A majority of this land is administered by the Bureau of Reclamation (BOR). The BLM has been delegated primary initial attack responsibility for these lands under an interagency MOU.

The Field Office participates actively in the Rural Fire Assistance Program. At the time of this plan, the CFO was administering 11 fire assistance grants to local fire units in Eddy, Lea, and Chaves Counties. The CFO will collaborate with rural and municipal fire departments through joint training, grants, local emergency planning, mutual prevention and education programs, and other similar collaborative efforts.

During times of critical fire danger, the Field Office Manager may choose to restrict access to and use of BLM administered lands and facilities. To date, no restrictions or closures have been implemented. Should these restrictions or closures be considered, they will be implemented in close conjunction with the Roswell Field Office, Lincoln National Forest, and county officials.

4. Annual Training Activities –

a. Qualifications and Fireline Refresher. Training and fitness requirements for all personnel involved in fire suppression can be found in the Interagency Standards for Fire and Aviation Management Handbook. Attendance at annual refresher training along with successful completion of the appropriate work capacity test is a prerequisite for issuance of a firefighter qualifications card prior to April 15th, annually.

Along with this annual training, the CFO participates actively in training programs at the zone and regional level. A training needs survey will be submitted to the Lincoln Zone training coordinator annually. This training needs survey will be used to schedule training within the zone. CFO personnel will participate as needed as course coordinators or cadre members, and the CFO, in conjunction with other local, state, and federal partners, will serve as hosts for a variety of courses.

The Field Office Manager 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. Employees with operational, administrative, or other skills will support the wildland fire program as necessary and according to their capabilities.

Generally the program needs incident commanders and single resource qualified personnel to effectively suppress fire. Several ICT4s and a couple ICT3s are desirable to go along with resource specialists in engines and crews. In addition, support qualifications should include fire business and dispatch recorders. The aviation program needs qualified helicopter crewmembers, helicopter managers, and seat managers. Safety Officer, Division, and Helibase Manager qualified personnel are on short supply nationally as well as other support services.

b. Fire Season Readiness. Requirements for preparedness and operational plans can be found in the Interagency Standards for Fire and Aviation Management Handbook. The New Mexico State Office Fire and Aviation Staff has established a rotation and schedule for preparedness reviews. While this is subject to change, the following review schedule applies:

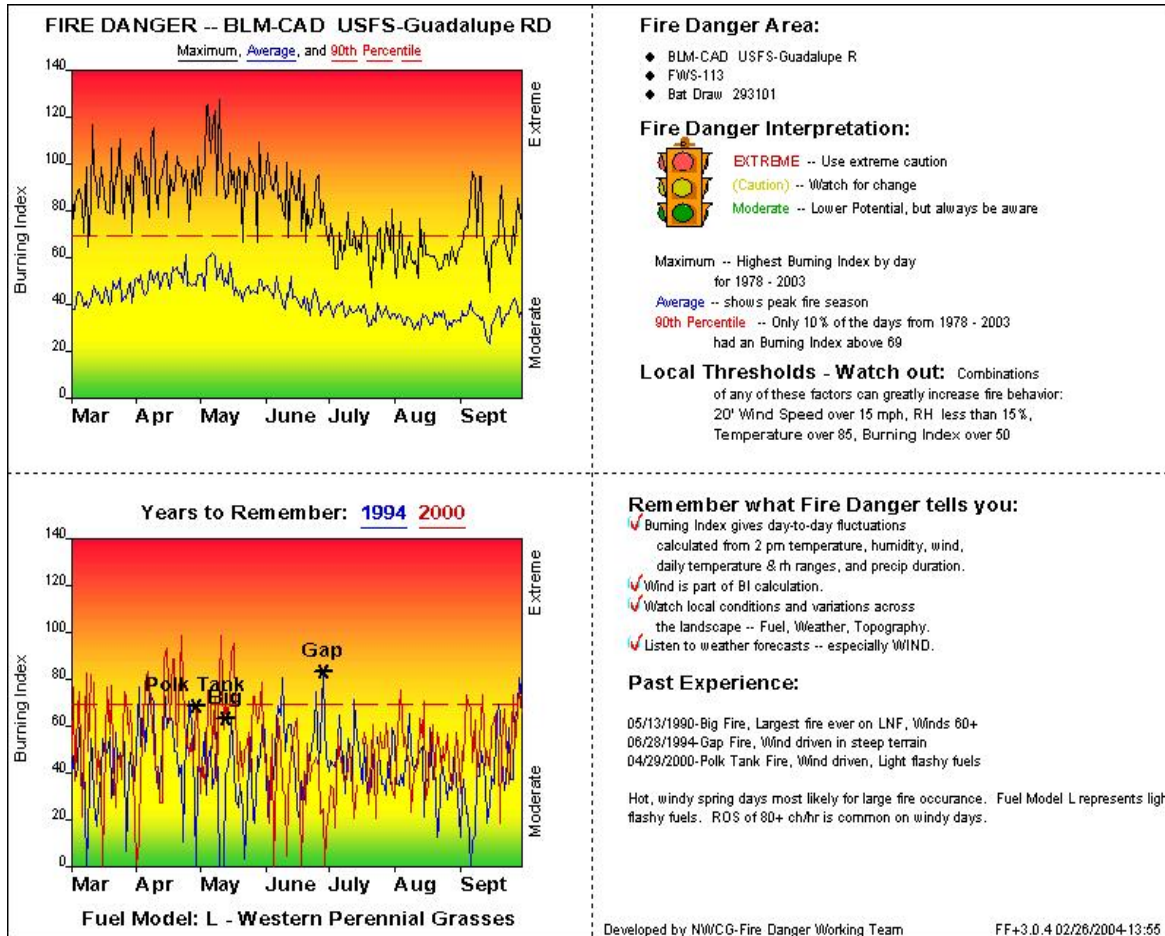
2004 – Internal Preparedness Review – FMO, Manager

2005 – National Review

2006 – State Officer/Inter-office Review.

5. Detection – No pre-planned fire detection system is in place for the CFO. However, during periods of extreme fire danger, significant lightning events, or on-going suppression activities, the FMO has full authority to order a detection flight through Pecos Valley Dispatch. This flight should be ordered after consultation with other zone partners.

6. Fire Weather and Fire Danger –



7. Aviation Management – The CFO maintains a single engine airtanker (SEAT) base at the Cavern City Air Terminal. Facilities at this base include a storage shed, camper trailer (Office), and water storage tanks. The space for the base is leased from the City of Carlsbad. Water used for base operations is paid for by the gallon using a meter on the adjacent fire hydrant.

As part of the CIFO, the CFO helps to support the Forest Service’s helibase at Queen. This helibase is used by all agencies in the Carlsbad area to support suppression and prescribed fire projects.

In order to support these two operational bases, the CFO will maintain a minimum level of aerial expertise within its organization, including one fully qualified SEAT manager and one fully qualified helicopter manager. Other desired positions include helicopter crew members and plastic sphere dispenser operators. The CFO FMO is the designated Unit Aviation Manager and should maintain minimum qualifications standards as outlined in the Interagency Standards for

Dispatch Run Card		
Carlsbad Field Office		
Eastern Plains		Jurisdiction- BLM

Dispatch Level	Break Point	Actions
High	B.I. >75	2 engines to fire. 1 engine move up and cover
Low	B.I. <74	1 engine to fire

Hazards include:
 Off road travel may be hazardous due to soft sand.
 Numerous oil & gas facilities, including pipelines
 Continuous grass fuels may allow extreme fire spread.
 East side of district has Prairie Chicken habitat (T & E)
 Areas of concentrated H2S may be present
 Areas of Shinnery Oaks may exhibit extreme fire behavior under certain weather conditions.

ACECs, SMAs: Laguna Plata Archaeological District, Maroon Cliffs Archaeological District, Phantom Banks Heronries, Poco Site, Hackberry Lake ORV area

Suppression Strategy:
 Much of area is road-less. Will need to go indirect or use non-mechanical means to suppress fire.
 Caution must be used on any off-road travel.
 Order Oil & Gas Advisor from Carlsbad Field Office.
 Aircraft and retardant may be effective on large fires.
 Roads are numerous in oil fields

Fire and Fire Aviation Handbook.

All request for special use mission aviation resources including detection aircraft, tactical aircraft, survey flights, and point-to-point charter flights, will be ordered through Pecos Valley Dispatch. All special use missions will be conducted under the auspices of an approved aviation plan. All personnel will receive required aviation safety training prior to participation in aviation activities. An approved unit aviation plan is on file at the CFO Office.

8. Initial Attack – All fires on CFO administered lands or cooperator lands where the CFO has initial attack responsibilities will be managed with suppression actions based on pre-established dispatch protocols and in conformance with resource objectives outlined in this plan in section III.d. Strategies and tactics will be based on observed and predicted fire behavior, values at risk, and firefighter and public safety, which is always the first priority. In general, the highest priority FMUs for initial attack are as follows:
- a. *Eastern Sandhill Country*
 - b. *Western Foothills*
 - c. *Guadalupe Escarpment*
 - d. *Pecos River Corridor*

These priorities are to be used as guidelines only. In all cases, the FMO or dispatcher should prioritize resource allocation based on factors listed above and on the pre-established protocols. See the attached Dispatch Run Card examples for information.

Dispatch Run Card

Carlsbad Field Office

Pecos River Corridor South

Jurisdiction- BLM/BOR/State

Dispatch Level	Break Point	Actions
High	B.I. >75	2 engines to fire. 1 engine move up and cover
Low	B.I. <74	1 engine to fire

Hazards include:

Off road travel may be hazardous due to soft sand, mud, sinkholes and standing water.

Primary vegetation is Salt Cedar and may exhibit extreme fire behavior. Additional fuels are bunch grasses (**i.e. alkali and giant sacaton), kochia and baccharis.**

Oil & gas facilities, including pipeline crossings are found along river corridor.

ACECs, RNAs:

Pecos River Canyons Complex ACEC/RNA,

T&E species and other special status species associated with the riparian habitat (Bluntnose shiner, Interior least tern, Bald eagle, other minnows, etc.)

Seven River Wildlife and Waterfowl Area

Brantley Lake State Park (high public use)

Suppression Strategy:

Utilize breaks in heavy vegetation for containment.

Native vegetation such as Cottonwood and willows will be protected

Avoid the use of retardant and foam near water.

Advise Bureau of Reclamation as soon as possible.

Helicopters with bucket may be effective in many areas.

Dispatch Run Card		
Carlsbad Field Office		
Western Foothills	Jurisdiction- BLM	

Dispatch Level	Break Point	Actions
High	B.I. >75	2 engines to fire. 1 engine move up and cover
Low	B.I. <74	1 engine to fire

Hazards include:

Rocky, rough terrain, steep slopes
 Cactus and vegetation with sharp spines and stickers
 Numerous oil & gas facilities, including pipelines
 Isolated ranches found in area.
 Off road vehicle use may be difficult because of cactus and rocky ground.

ACECs, RNAs, WSAs:

Dark Canyon ACEC, Lonesome Ridge ACEC, Chosa Draw ACEC, Blue Springs ACEC, South Texas Hill Canyon RNA, Mudjets WSA, Lonesome Ridge WSA, Devil’s Den WSA, Yeso Hills RNA, Springs Riparian Habitat (6 springs) SMA
 Kuenzler Cactus -- **occupied and suitable habitat**
Gypsum wild buckwheat populations
 Potential for cave-karst sites near National Park boundary

Suppression Strategy:

Utilize rocky, sparsely vegetative slopes for fire breaks.
 Contain wildfires in draws and canyons.
 Utilize aircraft and retardant to protect life & property.
 Water will be scarce in most areas.

B. Wildland Fire Use

1. Description of the wildland fire use opportunities – Wildland fire use is authorized in the 1988 RMP for portions of the Guadalupe Escarpment FMU. The 2004 statewide RMP amendment expanded that authorization to include the entire Guadalupe Escarpment FMU.

2. Planned Implementation Procedures - Currently, no prescriptions exists for managing natural ignitions. An interagency group is developing a set of prescription criteria to be used for natural ignition management on both BLM, Forest Service (FS), and National Park Service administered lands. Once these prescriptions have been developed, implementation will be conducted in accordance current with State and National standards under auspices of an approved Wildfire Implementation Plan (WFIP). Annual activities required prior to designate and manage incidents for wildland fire use will include:
 - Coordination with key agency staff and public 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.
 - Preparation and receipt of a smoke management permit from the State of New Mexico

Environmental Department.

3. Initial Attack Procedures - All fires within the Guadalupe Escarpment will be sized up and assessed as if suppression action were to be taken. After assessment, the FMO or designate, and the Field Office Manager or designate will evaluate the fire to determine if it might meet criteria for wildland fire use. If the decision is made to evaluate the fire for fire use, a WFSA and subsequent WFIP will be developed in conjunction with field office resource staff and adjacent agencies. Current State and National Standards for fire use will apply.
4. Required Personnel – The CFO is authorized to manage wildland fire use incidents up to and including those at the Type III/IV complexity level. Incidents exceeding this level of complexity require ordering a Fire Use Management Team.

Wildland fire use applications will follow the National Interagency Mobilization Guide direction when in preparedness level IV. Both wildland fire use applications can be continued or be initiated if the proposed action is approved by an agency at the regional or state office level. This approval must be based on an assessment of risk, impacts of the proposed actions on area resources and activities and include feedback from the Multi-Agency Coordinating Group (MAC). The MAC group provides information or perspectives to agencies wishing to proceed with or implement a Wildland fire use or prescribed fire application. The final decision to implement resides with the implementing agency. For preparedness level V, the National agency representative must assess the approved action for risk and impacts. The National agency representative will then discuss the action with the National MAC Group. The final decision to implement resides with the implementing agency.

5. Public Information – Public information and coordination will occur with federal, state and local partners at the onset of the fire. Information dissemination could include formal meetings, regular telephone updates, sharing of (staff) ICS-209's, press releases, etc. Information will also be provided to local residents and other interested parties through press releases, press conferences, telephone calls, and face to face contacts. Public meetings may also be held as needed.

C. Prescribed Fire/Fuels Management

1. Prescribed Fire Planning and Direction

The CFO fuels/prescribed fire program focuses in four main areas: (1) reduction of hazardous fuels in the Wildland - Urban Interface; (2) reduction of juniper encroachment and desert succulents; (3) salt cedar control; and (4) restoration of healthy watersheds for a variety of resource benefits.

Eastern Sandhills - Based on current funding levels and existing staff, approximately 10,000 acres of prescribed fire treatments in condition class 2 areas could be accomplished over the next ten years. These treatments would be used to reduce shrub densities, moving towards a natural composition of grasses and shrubs, to rejuvenate browse species and increase grasses and forbs.

Western Foothills – Prescribed fire has broad applications within this FMU. It will be used for fuels reduction in the Black River Management Area; to reduce desert succulent and shrub encroachment in draw bottoms and grasslands; and to return juniper densities to more closely resemble pre-settlement densities.

Prescribed fire will also be used in the Pecos River tributaries such as the Black River and Delaware River to reduce salt cedar invasion. Prescribed burns in this vegetation type are principally follow-up treatment to chemical or mechanical treatments. Over the next ten years, approximately 20,000 acres of condition class 2 lands could be treated with prescribed fire.

Guadalupe Escarpment – This area will receive the greatest amount of treatment using prescribed fire. Fire will be used primarily to reduce juniper and desert succulent encroachment, increase vigor on browse species. Prescribed fires will be planned and implemented with adjacent federal partners when possible. As budgets allow, the CFO will continue to support ongoing research into fire effects on Kuenzler’s Hedgehog Cactus, a federally endangered species, to conduct prescribed burns along the Guadalupe escarpment (potentially in conjunction with the Lincoln National Forest), meeting the objectives outlined for this FMU. Over the next ten years, approximately 30,000 acres of condition class 2 areas will be treated with prescribed fire.

Pecos River Corridor – Prescribed fire opportunities within this area are limited and will be focused primarily as follow-up treatments to mechanical and chemical projects designed to reduce salt cedar. Within the next three years, approximately 3,000 acres of chemically treated salt cedar stands will be ready for prescribed fire treatments. Subsequent treatments will depend on future chemical and mechanical treatments as well as the need for maintenance prescribed fire.

As budgets allow, the CFO will maintain a full-time Fuels Management Specialist who is responsible for planning prescribed fire projects and other brush treatments for the CFO. Along with that, the CFO will maintain a cadre of personnel with prescribed fire qualifications including Burn Boss, ignition specialist, and plastic sphere dispenser operators.

All prescribed fires will be conducted under the auspices of an approved prescribed fire plan. The BLM Handbook 9214 has established documentation requirements relative to burn plan preparation. A technical review is conducted by a burn boss qualified individual that was not involved with the preparation of the burn plan. The Fire Management Officer also provides a review of the burn plan. This technical review focuses on development of prescription parameters, complexity analysis and risk assessment, and smoke management mitigation activities.

The fire operations specialist conducts an additional operational review. The focus for this review is on project staffing and organization, as well as resource allocation and planning for instances where the fire may exceed planned treatment areas. A similar review is conducted by the field office aviation manager for projects involving aerial ignition.

Project level reporting requirements have been established and include submissions in Rangeland Improvement Project System (RIPS), Budget Planning System (BPS), Management Information System (MIS), and National Fire Plan Operations Reporting System (NFPORS). Separate reporting requirements also include submittal and annual reporting requirements for smoke emissions to the New Mexico State Environmental Department.

The burn boss, key subordinates, fire management officer, or staff representative will conduct and document an informal post-burn critique. This critique will include a discussion of what went right/wrong, issues with implementation, corrective actions, and recommendations for the next project. Formal project reviews are not required except in the instance of an escaped fire.

The CFO fuels staff is responsible for monitoring through the first year following completion of the prescribed fire project. After the first year, the resources staff assumes monitoring responsibility. Minimum monitoring requirements include pre-burn weather and fuel moisture measurements, and establishing photo points, photo plots, and transects. During the prescribed burn monitoring includes taking weather observations every 30 minutes, recording fire behavior such as flame lengths and rates of spread, and monitoring smoke dispersal. Post-burn monitoring includes retaking photos, re-reading transects, estimating fuel consumption, and recording fire perimeter.

2. Air Quality and Smoke Management

No public lands administered by CFO are classified as Class I airsheds. However, Class I airsheds are located over wilderness areas in Carlsbad Caverns and Guadalupe Mountains National Parks. Close coordination of prescribed fire projects is needed to ensure maintenance of air quality within these airsheds. Smoke monitors are available through the State Office to monitor emissions. Burns which may impact these airsheds or other receptor cites should make use of these monitors if they are available.

The nearest non-attainment area is near Anthony, New Mexico. All prescribed fires will be conducted in accordance with State of New Mexico Air Quality regulations. The CFO will comply with all applicable policies regarding air quality.

D. Non-Fire Fuels Treatments

1. Mechanical Treatments

Mechanical treatments will be focused primarily within the Black River Special Management Area and along the Pecos River tributaries in the Western Foothills FMU and within the Pecos River Corridor FMU. These treatments will be designed primarily to remove salt cedar and other invasive species and will normally be combined with associated chemical and/or prescribed fire treatments. Total mechanical acres planned for the entire CFO for the next ten years are approximately 1,000 acres.

Mechanical treatments are not excluded from any FMU and may be used at any time to meet specific fuels reduction needs which might include fuel reduction in preparation for prescribed fire treatments, protection of private property or developments on BLM administered lands, protection of important wildlife habitat or cultural sites, or other acute protection needs. Widespread use of mechanical treatments, however, is not anticipated due to the higher costs.

2. Chemical Treatments

Chemical treatments are a cost effective way to reduce shrub encroachment into grasslands as well as restoring grasslands that are dominated by shrubs. Chemical treatments have proven to be very effective in reducing salt cedar encroachment in riparian areas along the Pecos River and its tributaries. Chemical treatments will be primarily focused in the Eastern Sandhill FMU to reduce mesquite and other shrubs, and in the Western Foothills and Pecos River Corridor FMUs to reduce catclaw mimosa, mesquite, salt cedar and other shrubs. Chemical treatments may also be used in the Western Foothills FMU to treat juniper and desert succulent encroachment. Total chemical treatments for condition class 2 lands over the next ten years will be approximately 50,000 acres.

All chemical applications will be conducted under an approved Pesticide Use Proposal (PUP) by a certified pesticide applicator or licensed, contracted applicator. The CFO will maintain at least one certified pesticide applicator on staff, preferably the Fuels Management Specialist. The PUP will follow agency guidelines for application as well as all manufacturer's standards and recommendations and any applicable State regulations and policies. Special precautions must be taken to ensure that chemical applications do not adversely impact lands and waterways not covered under the application plan. A set of prescribed weather criteria should be included as needed in the chemical application plan and applicators should coordinate with the National Weather Service Forecast Office to ensure that short-term and long-term weather forecast are favorable for application. The type of weather forecast data needed will be dependent on the type of chemical being applied and the chemical delivery system being utilized.

E. Emergency Stabilization and Rehabilitation

None of the FMUs within the CFO have specific emergency stabilization and rehabilitation (ESR) guidelines. General guidance on this subject can be found in the BLM Emergency Stabilization and Rehabilitation Handbook. All ESR actions for fires within the CFO will be developed by a qualified resource advisor on a case by case basis. Some general guidelines which might apply include assigning a BAER team on fires on slopes greater than 30%, or excluding grazing when fires occur on certain soils.

A resource advisor will be assigned to fires on BLM administered lands that extend beyond initial attack. The decision to assign a resource advisor to Type IV and V fires will be left to the discretion of the IC or the FMO. On Type III or greater fires, the resource advisor shall work directly with the Incident Management team to develop and implement emergency stabilization and rehabilitation plans. Burned Area Emergency Rehabilitation (BAER) teams may be ordered at the discretion of the resource advisor in conjunction with the Incident Commander (IC), Fire Management Officer (FMO), and Field Office Manager.

In general terms, ESR should be conducted on all fires where significant threats to riparian and watershed stability are likely. These conditions are most often found in the Guadalupe Escarpment FMU but could occur in all FMUs. All standard ESR treatments could be used at the discretion of the resource advisor, BAER team, or other appropriate authority. Cost of treatments, however, should be commensurate with values at risk.

F. Community Protection/Community Assistance

Within the CFO area, there are no identified communities at risk as designated by the State of New Mexico communities at risk task force. The most significant Wildland Urban Interface (WUI) area within the CFO is in the vicinity of the Black River Management Area. Other isolated ranching developments, industrial sites, and other private and public facilities are scattered across all FMUs. Fuel build-up in the vicinity of these developments should continue to be monitored and appropriate treatment developed as needed.

Although there are no significant communities at risk in the CFO area, community assistance, cooperation and coordination is an important aspect of the CFO fire program. The CFO, through State and local suppression agreements, is responsible for initial attack for a variety of public and private lands, especially in the Pecos River Corridor FMU. Additionally, local rural departments and municipal departments often request assistance from BLM resources for both initial and

extended attack fires within their jurisdiction.

Because of overlapping jurisdictions and interdependency across agency lines, it is vital that the CFO foster and maintain close ties with adjoining state and local fire agencies. This will be accomplished through the following actions:

1) Rural Fire Assistance - The CFO has overlapping or adjacent jurisdiction with approximately 16 municipal or rural fire departments in three counties of southeastern New Mexico. At the time of this plan, eleven of these departments or their parent county emergency management offices had received some type of assistance through the Rural Fire Assistance program. The CFO will continue to actively participate in this program, which provides much needed equipment, supplies, and training to these important cooperators.

2) State and Local Preparedness – The CFO through the Carlsbad Interagency Fire Organization will continue to play an important role in participating in local emergency management. This will include representation on the Eddy County Local Emergency Planning Committee, conducting joint classroom and field training with local cooperators, and providing resources to assist in non-fire emergencies as needed.

3) Fire Prevention and Environmental Education – The Carlsbad Interagency Fire Organization serves as the lead organization in Carlsbad and surrounding communities for fire prevention and education programs. Annual events such as Sitting Bull Falls Environmental Education Week and Fire Prevention Week have become the cornerstone of this program. The CIFO also takes an active role in other civic and community organizations and events such as the Carlsbad Beautification Committee, International Bat Festival, Christmas on the Pecos, the Eddy County Fair, MADD Balloon Festival, Earth Day events, Christmas Light Parade, Independence Day Parade and other events on a case by case basis. The FS will provide funding for a Fire Prevention Specialist with the Lincoln National Forest, who will coordinate these prevention education, and community outreach activities.

V. Organization and Budget

A. Fiscal Year Budget

Resource	Current Staffing	Desired Staffing	Normal Activation	Sub Activity	Cost
FMO	1	1	Yearly	2810	\$77,000
AFMO	FS	FS	FS	FS	-
Type 4-Engine	3	5	Mar-Aug	2810/2823	\$95,000
Type 6-Engine	3	5	Mar-Aug	2810/2823	\$90,000
Type 6-Engine	3	5	Mar-Aug	2810/2823	\$90,000
Fuels Specialist	1	1	Yearly	2823	\$65,000
Fire Clerk	1	1	Yearly	2810	\$55,000
Risk/Mitigation/Education Specialist	FS	FS	FS	FS	-
Fuels Module Leader	FS	FS	FS	FS	-
Fuels Crew	FS	FS	FS	FS	-
Medical Testing				2810	\$2,000
Fire Prevention Supplies				2810	\$5,000

Detection Flights				2810	\$5,000
Pecos Valley Dispatch Support				2810	\$10,000
Fire Cache Replacement				2810	\$7,500
FMO Vehicle				2810	\$10,000
Chase Vehicle				2810	\$10,000
Fuels Vehicle				2823	\$10,000
Training				2810	\$20,000
Total					\$551,500

B. Interagency Assistance Agreements/Cooperation

The Carlsbad Field Office was established as a separate Field Office in mid-1998. The Field Office is located in southeastern New Mexico, and administers 2.2 million surface acres of public land in four (4) counties. The CFO fire management resources are combined with those from the Guadalupe Ranger District of the Lincoln National Forest to form the Carlsbad Interagency Fire Organization. This organization is managed through an MOU with the Lincoln National Forest (See Reference section). Current staffing includes a Fire Management Officer (BLM employee), an Assistant Fire Management Officer (USFS Employee), a Fuels Management Specialist (BLM), a Fire Prevention Specialist (USFS Employee) three Engine Modules with three employees each, and a Fire Clerk (BLM). The Forest Service provides a Type VI engine with three employees, a ten-person suppression module, and a Risk/Mitigation/Education Specialist. The Fuels Management Specialist and Fire Clerk support Forest Service programs as well. The Field Office maintains a strong relationship with the Roswell Field Office, which supports Carlsbad’s programs by providing initial attack dispatching services and fire administrative services at Pecos Valley Dispatch under a MOU (See Reference section).

Cooperating fire agencies from which the CFO requests assistance and for which it provides support on initial attack and extended attack are: State of New Mexico, Forestry and Resources Conservation Division (State Forestry), Lincoln National Forest, Carlsbad Caverns National Park, Guadalupe Mountains National Park, BIA, Mescalero Indian Reservation, Department of Energy-Waste Isolation Pilot Project (WIPP) the U.S. Fish and Wildlife Service-Bitter Lakes National Wildlife Refuge. The Roswell Office maintains an interagency Initial Attack Dispatch Office-Pecos Valley Dispatch.

Both Roswell and Carlsbad are within the sphere of the Lincoln Zone. Cooperative fire management among the agencies listed above is conducted through the Lincoln Zone Joint Powers Agreement (See Reference section). Federal and state agencies in New Mexico conduct reciprocal fire suppression activities under a statewide Joint Powers Agreement designed to provide mutual wildland fire suppression assistance and cooperation among all agencies. The Joint Powers Operating Plan divides the area into initial attack zones in order to provide an equal exchange of workloads based upon placement of fire fighting resources and the closest force concept.

The CFO also maintains an MOU with the Bureau of Reclamation for fire suppression services on BOR administered lands within the Pecos River Corridor. This MOU gives the BLM authority to initiate suppression actions on BOR administered lands. For fires which exceed initial attack, the BOR is required to provide a liaison to the BLM to manage subsequent suppression actions.

C. Equipment Rental Agreements

All emergency equipment rental agreements (EERA), contracts, and other privately available fire

resources are available through and managed by the Lincoln National Forest through the Lincoln Zone Coordination Center. Copies of these EERAs and contracts are distributed annually to all zone partners by the coordination center. These resources and contract resources from adjacent zones are ordered initially through Pecos Valley Dispatch who makes requests to Lincoln Zone. The CFO reserves the right to negotiate EERAs and contracts for specific apparatus or equipment on an as needed basis.

D. Contract Suppression and Prescribed Fire Resources

See section C above.

VI. Monitoring and Evaluation

The field office has established a systematic method of evaluating the fire management program to determine effectiveness of the program, assure accountability, and assures accomplishment of priorities and to identify shortcomings.

The CFO is responsible for the management, amendments, and revisions of this FMP. The CFO-FMP is a working reference for wildland fire management and hazardous fuels treatments within the CFO. It will be reviewed annually and revised as needed to ensure strategic guidance is provided in the plan to assist the CFO in meeting its resource management and fire management goals and objectives. Revisions, additions, and adjustments that are compliant with the RMP may be incorporated into the FMP through plan maintenance. During review, the fire program will be evaluated to determine if the program and associated projects are consistent with and accomplishing fire-related resource management plan objectives. Any major changes may require amending the RMP. The review will also ensure the fire program is being implemented in a safe, cost effective manner and as directed in this fire management plan. Public and firefighter safety will continue to be the top priority regardless of plan objectives.

Specific project "monitoring needs" will be identified as a requirement of each project plan and evaluated to determine if changes/modifications are required. Monitoring will be consistent with National and State policies and RMP direction. General guidance for prescribed fire project monitoring can be found in BLM Manual 9214. Guidelines for monitoring the success of prescribed fire and fuels projects are contained in Chapter IV. C. of this FMP.

Pre-treatment monitoring is cursory and based on physical characteristics. Hal Anderson's 1982 *Aids to determining fuel models for estimating fire behavior* provides base line information such as fuel model and approximate fuel loading. Further clipping and weighing is performed to determine pounds per acre, typically done by Rangeland Management Specialist. An ocular assessment of fuel distribution, fuel moisture observations collected at least two weeks prior to burning, and photo points are taken to record landscape and plant community features and photo plots are taken to record vegetative measurements

During the burn, weather observations are taken and recorded every half hour and fire behavior characteristics are recorded. Data such as relative humidity, wind speed, and cloud cover will have an effect on fire rate of spread and flame length. Smoke observations such as height, dispersion, and direction are tabulated. Observing these distinctions will develop the fuels program to achieve desirable results.

Post burn monitoring emphasizes rerecording physical characteristics. Retake photographs, reread transects, re-clip, and weigh at end of growing season, estimate crown scorch height and percent, GPS blackened acres, and document indicators of fire severity.

After the first year, the range or wildlife staffs are responsible for fuels monitoring

The CFO conducts a pre-season readiness review when seasonal employees are hired to ensure everyone is properly trained and equipped to for the season. Follow-up reviews are conducted at the conclusion of projects and daily during operations. Fore example, personnel group up after a day of prescribed burning to discuss strategies and tactics used and provide a forum to dispel any dissention from the day's activities. The CFO conducts formal evaluations of the employee's performance bi-annually. If an unusual situation warrants an After Action Review (AAR) or Critical Incident Stress Debriefing (CISD), agency protocols will be initiated according to policy.

As national wildland fire performance measures are issued, monitoring and evaluation protocols will be developed to meet those requirements and follow Department and Bureau guidelines.

VII. References:

Carlsbad Resource Management Plan September 1988. U.S. Department of the Interior, Bureau of Land Management Roswell District, New Mexico.

Memorandum of Understanding: between the USDI Bureau of Land Management Carlsbad Field Office and USDA Forest Service Lincoln National Forest Guadalupe Ranger District. Agreement Number: BLM – CFO-04-01, RFO – 04-01 FS – 04-MU-11030803018

Memorandum of Understanding: between the Bureau of Land Management – Roswell/Carlsbad Field Offices and Carlsbad Caverns National Park, Guadalupe Mountains National Park, and the Lincoln National Forest for operation of the Pecos Valley Interagency Dispatch Center. Agreement Number NM-MOU-01-07

Joint Powers Operating Plan: Lincoln Unit. 2001. AGE. NO. 16-R3-77-0003, NO. CANMSO 90, NO. 66-4.

Glossary of Terms and Acronyms

Adjective Rating – A descriptive title used to communicate wildfire danger, as determined by NFDRS, to the public. Five classes exist: Low, Moderate, High, Very High and Extreme.

Aggressive Attack – Usually follows fire discovery immediately and with sufficient force to affect control at the earliest possible time with minimum acres burned.

Agency Administrator –responsible line officer

Agency Representative – Individual assigned to an incident from an assisting or cooperating agency, which has been delegated full authority to make decisions on all matters affecting that agency’s participation in the incident.

Air Quality - The general term alluding to how clean or dirty the atmosphere is from undesirable substances (gases, liquids or solid particles).

Appropriate Management Response – Suppression response composed of confine, contain, control, or a combination that most efficiently meets fire management direction under current and expected burning condition with the minimum use of people and equipment.

Area of critical Environmental Concern (ACEC) - An area where special management attention is needed to protect and prevent irreparable damage to important historical, cultural, scenic or other natural resource systems.

Backfire – A fire set along the inner edge of a fireline which burns against the wind and is used to consume the fuel in the path of a wildfire.

Burning Conditions – The state of the combined factors of the environment that affect fire behavior in a specified fuel type.

Cave-Karst - An area of geological features based upon the presence of naturally occurring caves, pits, sinkholes and underground passages.

Class of Fire – (as to size of wildland fires)

- Class A – A fire of one-fourth acre or less. (0 acres to 0.25 acres)
- Class B– A fire of more than one-fourth acres, but less than 10 acres (0.26 acres to 9.99 acres)
- Class C – A fire of 10 acres or more, but less than 100 acres (10 acres to 99.9 acres)
- Class D – A fire of 100 acres or more but less than 300 acres (100 acres to 299.9 acres)
- Class E – A fire of 300 acres or more, but less than 1,000 acres. (300 acres to 999.9 acres)
- Class F – A fire of 1,000 acres or more, but less than 5,000 acres. (1,000 acres to 4999.9 acres)
- Class G – A fire of 5,000 acres or more. (5,000 acres +)

Command Staff – staff that report directly to the incident commander, for example the safety officer.

Community Assistance - A collaborative process among multiple levels of government, which is characterized by a common strategy, with the goal of community protection, diminished risk and consequences of severe wildland fires.

Communities at Risk - Area of human development that have been identified by a collaborative process as having the potential of extensive damage from wildland urban interface type fires

Containment – The completion of a control line around a fire and any associated spot fires which can reasonably be expected to check the fire’s spread.

Debris Burn – a fire used to dispose of scattered, piled or windrowed dead biomass, generally in the absence of an overstory. Examples are windrows, piles, stubble and residue burns, etc.

Desired Plant Community - The plant community which provides the vegetation attributes required for meeting or exceeding RMP vegetation objectives.

Dozer line - The removal of vegetative material by using the blade of a bulldozer to push it aside creates a fireline to mineral soil.

Energy Release Component – the NFDRS index defined as the total heat release per unit area within the fire front at the head of the moving fire.

Escaped Fire – Wildfires that cannot be successfully controlled by initial attack forces and prescribed fires that escape prescription and burn as wildfires.

Fire Adapted Species – species that remain on site within a burned area and adjust their feeding habits and habitat requirements to post burn conditions. No significant increases or decreases in the population are attributed directly to the fire.

Fire Behavior – The response of fire to its environment of fuel, weather, and terrain including its ignition, spread, and development of other phenomena such as turbulent and convective winds and mass gas combustion.

Fire Danger Rating – fire management system that integrates fire danger factors into qualitative or numerical indices which indicate the need for current levels of fire protection preparedness or activity.

Fire Dependent or Fire Maintained Ecosystems – An ecosystem can be called fire dependent or fire maintained if periodic perturbations by fire are essential to the functioning of the system.

Fire Dependent Species – species that rely on fire as a proliferating event. In the absence of fire, marked declines in the population are detected over time.

Fire Family – statistical analysis program fed by the National Weather Library, capable of reproducing NFDRS components and currently in use for specific locations.

Fire Intolerant Species – species that leave a burned over area and its proximity immediately following fire and do not return until many years post burn or until preburn conditions are again duplicated. No reproduction of species within burned area is documented.

Fire Impervious Species – species that remain unaffected by fire since due to habitat preference (areas that will not burn) or morphological/physiographic defenses (barrier) to the environment.

Fire Management Objectives – The planned, measurable result to be obtained from fire protection and use.

Fire Management Unit (FMU) – A distinct parcel of land that can be recognized and mapped by its external features and in which suppression responses to fire have been predetermined.

Fire Monitoring – The systematic process of collection and recording fire-related data, particularly with regard to fuels, topography, weather, fire behavior, fire effects, smoke, and fire location.

Fire Occurrence Map – A map that shows by suitable symbols the starting points of all fires of various causes for a given period.

Fire Prescription – A written statement defining the objectives to be attained, and the conditions of temperature, humidity, wind direction and speed, and fuel moisture, under which a fire will be allowed to burn.

Fire Season – The portions of the year during which fires are likely to occur, spread, and do sufficient damage to warrant organized fire control (Strongly dependent on climate).

Fire Program Analysis (FPA) - A new fire analysis software program which will analyze initial attack resources at the Fire Planning Unit level.

Fire Planning Unit (FPU) - The FPU is defined to describe the geographic planning area. It can cross jurisdictional boundaries, including BLM office lands and/or other partner's lands.

Fire Prevention – Activities directed at reducing the number of fires that start, including public education, law enforcement, personal contact and reduction of fuel hazards.

Foam – Compounds introduced into a stream of water by special nozzles or proportioning devices to develop a stream of bubbles surrounded by a tenacious film of water and foaming agent capable of smothering fire.

Fuel Loading – Oven-dry weight of fuel per unit area referenced by fuel size or time lag categories.

Fuel Model – Simulated fuel complex for which all fuel descriptions required for the solution of a mathematical rate of spread have been specified.

Fuel Type – An identifiable association of fuel elements including species, form, size arrangement or other characteristics that will cause a predictable rate of spread or resistance to control under specified weather conditions.

Handline - The removal of vegetative material using shovels, Mcleods and other tools in order to create a fireline to mineral soil.

Head Fire – fire front spreading or ignited to spread with the gradient (with the wind).

Helitorch – Aerial ignition device slung from or mounted on a helicopter that dispenses ignited globs of gelled gasoline.

Incident Command System – Combination of facilities, equipment, personnel, procedures and communications operating within a common organizational structure and responsibility for assigned resources to effectively accomplish stated objectives pertaining to an incident.

Incident Commander – the person responsible for the management of all activities on an incident; exercises the command function.

Initial Attack - An aggressive response to a wildland fire based on values to be protected, benefits of response, and reasonable cost of response.

Inversion – Departure from the usual increase or decrease in temperature with altitude (increase in temperature with increasing height).

Management Ignited Prescribed Fire – fire purposely set under a predetermined prescription (set of weather or fire behavior conditions) for purposes of achieving a specific response management objective.

Minimum Impact Suppression Strategy (MIST) - A suppression strategy which allows fire fighters to fight a wildland fire with tactics commensurate with the fires potential or existing behavior, yet leave minimal environmental impact

Memorandum of Understanding (MOU) - An agreement between two governmental agencies which allow them to provide services to one another with certain stipulations.

Mutual Aid - Any form of direct assistance from one fire agency to another during an emergency, based upon a pre-arrangement between agencies involved and generally made upon the request of the receiving agency.

National Fire Danger Rating System (NFDRS) -- A system which uses historical analysis of fire weather data to identify thresholds for staffing class, adjective rating and preparedness levels.

Normal Fire Year – The year with the third greatest number of fires in the last ten.

Normal Unit Strength – The amount of non-capitalized fire fighting equipment need by the station to meet 70% of its fire suppression needs.

Prescribed Fire Units – stratification of a land parcel by the same fuel type, vegetation type or resource management objective for purposes of managing the application of prescribed fire on a rotational basis.

Prescription – written statement defining burning objectives to be attained through the application of prescribed fire including temperature, humidity, wind direction and wind speed, fuel moisture content, etc., generally expressed as acceptable ranges of the various indices.

Presuppression – Activities undertaken in advance of fire occurrence to help ensure more effective fire suppression, including planning, recruitment and training of fire personnel, procurement and maintenance of equipment and supplies, fuel treatments and maintenance of fuel break network.

Rate of Spread – Relative activity of a fire in extending its horizontal dimension, expressed as a rate of increase of fire perimeter, in total area or fire length of the active fire front, depending on the intended use of the information; generally expressed in chains per hour.

Red Card – A qualification card issued to fire rated persons showing their qualification to fill given positions and also their training needs.

Red Flag – Term used by fire weather forecasters to alert fire management personnel to special or adverse weather conditions that present a high probability of extreme fire behavior.

Resource Advisor - An trained person who has the education and experience which allows him/her to analyze fire behavior, potential and conditions and make recommendations as to suppression strategies and tactics in order to protect sensitive resources and sites.

Riparian Area - Situated on or pertaining to the bank of a river, stream or other body of water. Normally refers to plants and other types of vegetation from along banks.

Run Cards - Individual cards which tell the dispatcher what suppression resources that are to be sent to a wildland fire. They are preplanned and based upon fire weather, indices and suppression strategies for the particular area where the fire is located in.

Smoke Sensitive Area – Area in which smoke from outside sources is intolerable, for reasons such as heavy population, existing air pollution, or intensive recreation or tourist use, location of medical facilities, retirement communities, etc.

Staffing Level – A readiness class of one to five determined by NFDRS and related to fire danger to trigger presuppression and readiness actions.

Step Up Plan – A series of preplanned actions or steps taken at various staffing levels to maximize wildfire prevention and preparedness.

Spot Weather Forecast – special prediction of atmospheric conditions at a specific site, usually requested by personnel managing a wildfire or a prescribed fire.

Suppression – All the work of extinguishing or confining a fire beginning with its discovery.

Timelag Fuels – The time necessary under specified conditions, for a fuel partial to lose approximately 63% of the difference between its initial moisture content and the equilibrium content.

Values at Risk - The value of natural resources in relationship to how easily it can be restored or replaced should it be damaged or destroyed by human or natural causes.

Ventilation Factor – A numerical value relating the potential of the atmosphere to disperse airborne pollutants from a stationary source calculated by multiplying the mixing height by the transport wind speed.

Wetlands – Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soil conditions.

Wetline – A line of water or chemical and water, sprayed along the ground and serves as a temporary control line from which to ignite or stop a low intensity fire.

Wilderness Study Area (WSA) - A “roadless” area which has been determined to have wilderness characteristics.

Wildland Fire for Resource Benefit - The term used for a natural ignition which will be managed as a wildfire under limited suppression strategy in order to provide a resource benefit to a fire dependent ecosystem.

Wildfire – A free burning fire not within prescription. All fires, other than prescribed fires, that occur on wildlands.

Wildland Fire Management – All activities related to the prevention, control or use of fire burning through vegetation under specific prescriptions for the purpose of achieving fire management objectives.

Wildland Urban Interface - WUI is defined as the line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

Work Capacity Test (WCT) - A physical fitness test that all fire fighters must pass before they are allowed an assignment on the fireline.

Abbreviations and/or Acronyms:

(ACEC)	Area of Critical Environmental Concern
(BAER)	Burned Area Emergency Rehabilitation
(BLM)	Bureau of Land Management
(BOR)	Bureau of Reclamation
(BPS)	Budget Planning System
(CFO)	Carlsbad Field Office
(CIFO)	Carlsbad Interagency Fire Organization

(ESR)	Emergency Stabilization and Rehabilitation
(FMO)	Fire Management Officer
(FMP)	Fire Management Plan
(FPA)	Fire Program Analysis
(FPU)	Fire Planning Unit
(FS) (USFS)	Forest Service
(IC)	Incident Commander
(MAC)	Multi-Agency Coordinating Group
(MIS)	Management Information System
(MOU)	Memorandum of Understanding
(NFPORS)	National Fire Plan Operations Reporting System
(PUP)	Pesticide Use Proposal
(RH)	Relative humidity
(RIPS)	Rangeland Improvement Project System
(RMP)	Resource Management Plan
(RNA)	Research Natural Area
(SMA)	Special Management Areas
(VFD)	Volunteer Fire Department
(WFIP)	Wildfire Implementation Plan
(WFSA)	Wildfire Situation Analysis
(WFU)	Wildland Fire Use
(WIPP)	Waste Isolation Pilot Project
(WSA)	Wilderness Study Area
(WUI)	Wildland Urban Interface