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Cibola National Forest and National Grasslands

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Wildland-Urban Interface/Fire Management Specialist Report

Kiowa, Rita Blanca, Black Kettle and McClellan Creek National Grasslands Plan Revision

Environmental Impact Statement Analysis

Submitted by: __/s/ __
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Executive Summary

Alternative A would establish wildland fire use and prioritized fuel reduction treatments, provide for meeting Federal and state air quality regulations, select an appropriate suppression strategy on all fires, develop and annually update fire management plans, use unplanned fires to meet resource objectives, reduce the number of human-caused wildfires, and increase public awareness for the need to use fire as a management tool.

Alternative B would emphasize reducing the threat of wildfire to communities by treating wildland-urban interface (WUI) areas and would provide for an annual treatment of 2,000 to 3,000 acres per year with prescribed fire, mechanical methods, and/or thinning to reduce fire hazard in the WUI areas. A standard would require that response to unplanned ignitions meet either protection or resource objectives. Coordination with other jurisdictions in response to unplanned ignitions should be emphasized. Future planned ignitions should mimic the historical role of fire to achieve resource objectives.

Alternative C would provides the same WUI and fire management direction as alternative B and similar direction to alternative A. However, WUI would not apply in a wilderness, and planned and unplanned ignitions would be subject to directives in FSM 2320. Planned ignitions would be allowed when mimicking the historical fire regime for the vegetation type present in the potential wilderness (pinyon-juniper) and for fuel reduction.

Overview of the Affected Environment

Currently, as a whole, the Grasslands are within the natural range of variability. This is due in part to wildfire, and mimicking the natural occurrence of wildfire through the use of prescribed fire. Prescribed fire is used to resist the encroachment of woody plants into the grassland system.

Summary of Environmental Consequences

There would be no environmental consequences incurred in meeting the desired conditions for WUI/Fire. Beneficial affects would occur to other resources on the grassland. Wildlife could benefit from the different structural stages created through the use of prescribed fire.

Specialist Report

Introduction

This report discloses and evaluates the potential environmental consequences on the WUI/Fire resource that may result with the adoption of a revised land management plan. It examines, in detail, three different alternatives for revising the management direction from the 1985 Cibola National Forest Land Management Plan (only that which is relevant to the National Grasslands).

Relevant Laws, Regulations, and Policy that Apply

National Environmental Policy Act of 1969

National Forest Management Act of 1976

Cibola National Forest Fire Management Plan 2011

National Fire Plan 2001

Forest Service Manual Direction (FSM 5100)

Forest Service Manual Direction (FSM 2320)

Methodology and Analysis Process

FIRE REGIME CONDITION CLASS DEFINITION

A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (Agee 1993, Brown 1995). Coarsescale definitions for natural (historical) fire regimes have been developed byHardy et al. (2001) and Schmidt et al. (2002) and interpreted for fire and fuels management by Hann and Bunnell (2001). The five natural (historical) fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation. These five regimes include:

I – 0-35 year frequency and low (surface fires most common) to mixed severity (less than 75% of the dominant overstory vegetation replaced);
II – 0-35 year frequency and high (stand replacement) severity (greater than 75% of the dominant overstory vegetation replaced);
III – 35-100+ year frequency and mixed severity (less than 75% of the dominant overstory vegetation replaced);
IV – 35-100+ year frequency and high (stand replacement) severity (greater than 75% of the dominant overstory vegetation replaced);
V – 200+ year frequency and high (stand replacement) severity.

As scale of application becomes finer these five classes may be defined with more detail, or any one class may be split into finer classes, but the hierarchy to the coarse scale definitions should be retained.

A fire regime condition class (FRCC) is a classification of the amount of departure from the natural regime (Hann and Bunnell 2001). Coarse-scale FRCC classes have been defined and mapped by Hardy et al. (2001) and Schmidt et al. (2001) (FRCC). They include three condition classes for each fire regime. The classification is based on a relative measure describing the degree of departure from the historical natural fire regime. This departure results in changes to one (or more) of the following ecological components: vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated disturbances (e.g. insect and diseased mortality,

grazing, and drought). There are no wildland vegetation and fuel conditions or wildland fire situations that do not fit within one of the three classes.

The three classes are based on low (FRCC 1), moderate (FRCC 2), and high (FRCC 3) departure from the central tendency of the natural (historical) regime (Hann and Bunnell 2001, Hardy et al. 2001, Schmidt et al. 2002). The central tendency is a composite estimate of vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated natural disturbances. Low departure is considered to be within the natural (historical) range of variability, while moderate and high departures are outside.

Characteristic vegetation and fuel conditions are considered to be those that occurred within the natural (historical) fire regime. Uncharacteristic conditions are considered to be those that did not occur within the natural (historical) fire regime, such as invasive species (e.g. weeds, insects, and diseases), "high graded" forest composition and structure (e.g. large trees removed in a frequent surface fire regime), or repeated annual grazing that maintains grassy fuels across relatively large areas at levels that will not carry a surface fire. Determination of amount of departure is based on comparison of a composite measure of fire regime attributes (vegetation characteristics; fuel composition; fire frequency, severity and pattern) to the central tendency of the natural (historical) fire regime. The amount of departure is then classified to determine the fire regime condition class. A simplified description of the fire regime condition classes and associated potential risks follow.

Fire Regime Condition Class	Description	Potential Risks
Condition Class 1	Within the natural (historical) range of variability of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances	Fire behavior, effects, and other associated disturbances are similar to those that occurred prior to fire exclusion (suppression) and other types of management that do not mimic the natural fire regime and associated vegetation and fuel characteristics. Composition and structure of vegetation and fuels are similar to the natural (historical) regime. Risk of loss of key ecosystem components (e.g. native species, large trees, and soil) are low
Condition Class 2		

	Moderate departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances	Fire behavior, effects, and other associated disturbances are moderately departed (more or less severe). Composition and structure of vegetation and fuel are moderately altered. Uncharacteristic conditions range from low to moderate; Risk of loss of key ecosystem components are moderate
Condition Class 3	High departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances	Fire behavior, effect, and other associated disturbances are highly departed (more or less severe). Composition and structure of vegetation and fuel are highly altered. Uncharacteristic conditions range from moderate to high. Risk of loss of key ecosystem components are high

In general throughout all of the grasslands vegetation types, FRCC is estimated to be in the following percentages: 60% FRCC 1, 35%FRCC 2, and 5% FRCC 3.(Holsinger 2006). This relates to the grasslands with average fire return intervals of 2-20 years, most likely less than 10 years. This return interval may be longer in the cottonwood/willow areas along rivers, streams and in the Pinon/Juniper savannas, but most likely less than 35 years. The large landscape historical fires are now hampered by broken landscapes (roads, agriculture fields, urban development, etc).

Assumptions

In the analysis for this resource, the following assumptions have been made:

- The land management plan provides a programmatic framework for future site-specific actions.
- Land management plans do not have direct effects. They do not authorize or mandate any site-specific projects or activities (including ground-disturbing actions).
- Land management plans may have implications, or environmental consequences, of managing the forests under a programmatic framework.
- The plan decisions (desired conditions, objectives, standards, guidelines, management areas, monitoring) will be followed when planning or implementing site-specific projects and activities.
- Law, policy, and regulations will be followed when planning or implementing site-specific projects and activities.
- Monitoring will occur and the land management plan will be amended, as needed.
- We will be funded similar to past budget levels (past 5 years).
- The planning timeframe is 15 years; other timeframes may be analyzed depending on the resource (usually a discussion of anticipated trends into the future).

Summary of Alternatives

Alternative A (No Action)

Implementation would continue as it is currently being accomplished with minimal and limited direction. Direction includes meeting Air Quality regulations, selecting an appropriate suppression strategy on all fires, developing fire management plans, using unplanned fires to meet resource objectives, reduce number of man-caused wildfires, and increase public awareness for the need to use fire as a management tool.

Alternative B (Preferred)

This alternative would have the same outcome as Alternative A. Most if not all of Alt. A is being carried forward with more specific guidance such as annual treatment of 2-3,000 acres per year with prescribed fire, mechanical methods, and thinning to reduce fire hazard in the WUI areas. Wildfires should be managed under appropriate management strategies identified at the time of the fire.

Alternative C

This alternative would provide the same directions as Alternative B, except it adds a wilderness component to the Mills Canyon Inventoried Roadless Area. These objectives are to permit lightning caused fires to play, as nearly as possible, their natural ecological role within wilderness, and reduce, to an acceptable level, the risks and consequences of wildfire within wilderness or escaping from wilderness.

Description of Affected Environment (Existing Condition)

Historically, natural disturbances were a regular component found on the Grasslands. Fire plays a key role in the maintenance of the grassland system, and probably the most significant process in sustaining plains grassland ecosystems. Grassland fires release nutrients into the soil, which stimulates nutrient cycling and soil productivity (Brockway et al. 2002a). Grassland fires reduce

the establishment of woody trees and shrubs, which helps maintain a more resilient grassland composition and structure (Brockway et al. 2002a, Ford 2003). The encroachment of woody species that threatens plains grasslands in the region is not only the result of over 100 years of fire suppression, but also the planting of shelterbelts and other tree species during the early years of grasslands restoration in the 1940s.

Grasslands managers have increasingly used prescribed burns to eliminate the excess of woody trees and shrubs, including invasive trees like black locust and eastern red cedar, improve the diversity of structural stages, and restore fire-adapted ecosystems. Over the past 10-12 years, approximately 80% of the Black Kettle and McClellan Creek National Grasslands have been burned, with some units burned two to four times, and about 2% of the Kiowa and Rita Blanca National Grasslands units have been burned, mostly in the piñon-juniper ecosystem (GIS Geodatabase – Prescribed Fire History 2007). In addition, approximately 7,300 acres burned in wildfires on all four Grasslands in the ten years from 1995 to 2005. The 2006 wildfire season was especially unique due to prolonged drought and burned over 3,700 acres of Black Kettle, 1,500 acres of McClellan Creek and 850 acres of the Kiowa and Rita Blanca National Grasslands (GIS Geodatabase – Fire History 2007.) Research shows that the grasslands had a fire occurance on average of 2-20 years intervals. Fire is used primarily to improve range conditions by reducing the shrub to grass ratio in areas where shrubs are gaining dominance. The use of fire on the grasslands is subject to several constraints, one of these being drought. Fire use preceding drought conditions could potentially cause negative impacts to the grasslands such as soil erosion from winds and rain, and the possibility of non-native or invasive species out competing native grasses. The use of prescribed fire during this time is usually limited by managers to little or none.

Environmental Consequences

Alternative A. Grassland resource objectives would be met and wildland-fire-caused damage would be reduced on an unspecified number of acres in grassland WUI areas.

Alternatives B and C. Resource objectives would be met and wildland-fire-caused damage would be reduced on 2,000 to 3,000 acres annually in grassland WUI areas.

Cumulative Environmental Consequences

Adjacent private land (within about 1 mile of the Grasslands boundary) is the cumulative effects analysis area. Wildland-fire-caused damage would be reduced on the grasslands as off-grasslands fire severity decreases in response to the creation and maintenance of defensible space on private land adjacent to the grasslands.

Unavoidable Adverse Impacts

The land management plan provides a programmatic framework that guides site-specific actions but does not authorize, fund, or carryout any project or activity. Before any ground-disturbing actions take place, they must be authorized in a subsequent environmental analysis. Therefore none of the alternatives cause unavoidable adverse impacts.

Irreversible and Irretrievable Commitment of Resources

The land management plan provides a programmatic framework that guides site-specific actions but does not authorize, fund, or carryout any project or activity. Because the land management plan does not authorize or mandate any ground-disturbing actions, none of the alternatives cause an irreversible or irretrievable commitment of resources.

Adaptive Management

All alternatives assume the use of adaptive management principles. Forest Service decisions are made as part of an on-going process, including planning, implementing projects, and monitoring and evaluation. The land management plan identifies a monitoring program. Monitoring the results of actions will provide a flow of information that may indicate the need to change a course of action or the land management plan. Scientific findings and the needs of society may also indicate the need to adapt resource management to new information. The Forest Supervisor annually evaluates the monitoring information displayed in the evaluation reports through a management review and determines if any changes are needed in management actions or the plan itself. In general, annual evaluations of the monitoring information consider the following questions:

- What are the effects of resource management activities on the productivity of the land?
- To what degree are resource management activities maintaining or making progress toward the desired conditions and objectives for the plan?
- What changes are needed to account for unanticipated changes in conditions?

In addition to annual monitoring and evaluation, the Forest Supervisor reviews the conditions on the land covered by the plan at least every 5 years to determine whether conditions or demands of the public have changed significantly. The forest plan is ordinarily revised on a 10-year cycle and the Forest Supervisor may amend the plan at any time.

Consistency with Law, Regulation, and Policy

All alternatives are designed to guide the Kiowa, Rita Blanca, Black Kettle and McClellan Creek National Grasslands' management activities in meeting federal law, regulations, and policy.

Other Planning Efforts

There are no potential conflicts between the proposed action and the objectives of the Federal, State, Local, or Tribal land use plans, policies and controls.

List of Preparers

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Geographic Information System (GIS) Data Location

All GIS data is from 2007 and can be accessed by contacting the Cibola National Forest's Supervisor's Office.

Prescribed Fire Data
Other Cibola Data Geodatabase
Fire
Prescribed Fire History

Wildfire Data
USFS-R3_UTM13 Geodatabase
Fire Management
Fire History