

ENVIRONMENTAL ASSESSMENT RECORD

NUMBER: CO-017-WR-99-99-EA

PROJECT NAME: White River Fire Management Plan

LEGAL DESCRIPTION: White River Field Office Public Lands

APPLICANT: BLM

INTRODUCTION

NEED FOR PROPOSED ACTION: The purpose of the Fire Management Plan (FMP, see Appendix A for common acronyms) is to determine the appropriate management response on all natural or unplanned ignitions within the White River Field Office (WRFO). The appropriate management response is determined via the identification of resource criteria and constraints supplied by natural resource and fire specialists. Criteria and constraints that will be considered are: safety of personnel and equipment (including threats to private property or life), resource management objectives, the natural role of fire in the ecosystem, fire suppression costs and net value change (i.e., cost-benefit analyses), and numerous fire weather and behavior indicators.

Current management requires all wildland fires be suppressed. Although in many situations this would be the logical choice for management of a fire, there are other situations where fires may potentially benefit resources found on public lands. Presently, the option to manage a fire for resource benefit does not exist. The proposed action would provide an avenue for determining the viability of managing a fire for resource benefit. It would also allow for implementation of identified decisions when appropriate conditions (weather, resource availability, etc.) exist at the time of ignition.

This plan provides a foundation for integrating fire management with all other resource management programs within the WRFO. It seeks to achieve a balance between fire suppression used to protect life, property, and resources, and the use of fire to regulate fuels and maintain healthy ecosystems. Resource Management Plan (RMP) decisions, fire and ecosystem interactions, special resource constraints, suppression constraints, fire suppression impacts, and potential fire behavior impacts have all been considered during the development of this plan. Key to the development of this plan was input from the Northwest Resource Advisory Council (RAC), local fire departments, the U.S. Forest Service, local public land users, and private landowners or individuals. This plan strives toward consistency across boundaries and attempts to increase use of natural fire ignitions across the landscape where and when appropriate.

PLAN CONFORMANCE REVIEW: The proposed action is subject to the following plan:

Name of Plan: White River Resource Area, Resource Management Plan and Record of Decision

This FMP is tiered and adheres to decisions outlined in the RMP. As identified in the RMP, implementation of decisions found within the Fire Management section requires the development of a FMP. Also contained within the RMP are the potential impacts from fire management on specific resources. Objectives for these other resources will not be undermined by the development of this FMP. All actions identified in the FMP conform to, or are not in conflict with, decisions developed in the RMP.

Date Approved: 7/1/1997

The proposed action has been reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3).

RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS: This plan also conforms to the Federal Wildland Fire Management Policy and Program Review (December 18, 1995), and Wildland and Prescribed Fire Management Policy (August, 1998).

PUBLIC SCOPING: Throughout the preparation of the various components of this FMP, concerns and interests of all publics were addressed in a variety of public participation activities. Various office staff (including Area Manager, team leader, and team members) met with RAC members, Club 20, regional, county, and local government officials, land user organizations, and BLM district fire staff to introduce the ideas behind the proposed action of the FMP, and to assess the support and areas of concern of these groups.

In early February 1999, a public notice was placed in local papers in Meeker, Rangely, Craig, and Rifle, for 3 consecutive weeks (weekly printings). On February 16, 1999, a scoping letter was sent to over 800 individuals/organizations who were identified through the RMP process as being interested in public land issues. The content of these publications included an invitation to attend public meetings that were held in Rangely and Meeker at the end of February. An additional opportunity for comment was offered those in attendance of these public meetings through an additional mailing containing a preliminary draft of the proposed action. A 30 day public comment period occurred in late May on the final draft of the FMP environmental assessment.

PROPOSED ACTION AND ALTERNATIVES

PROPOSED ACTION: Preferred Alternative

In the spring of 1997 an inter-disciplinary (ID) team met to begin "Phase 1" of the fire planning process. Phase 1 was a process used to establish resource and fire management objectives for

public land within the District. The result is a map of polygons outlining objectives based on the following four criteria.

Category A polygons are areas where fire is not desired at all. These areas would include ecosystems where fire never played a significant role in the function of the ecosystem. Another factor that result in a category “A” classification are areas where suppression is required to prevent direct threats to life or property. All fires in these areas would be aggressively suppressed.

Category B polygons are areas where unmanaged wildfire is not desired. These are ecosystems where unplanned ignitions could have negative effects on identified resources unless resource constraints can be met or where mitigation can minimize or remove concerns. Fire suppression in these areas will be aggressive, however, use of natural fires will not be dismissed if suppression tactics could be used such that resource concerns could be mitigated.

“Negative effects” includes risks to private lands and urban interfaces, important cultural resources (e.g. wickiups), areas with unnatural fuel buildups, areas where the seed bank does not exist for natural reseeding, etc.. Mitigation efforts could include fuel reduction through mechanical means or prescribed fire (projects would be considered on an individual basis, and would be covered outside of this FMP) to reduce fuel loading around private land and urban interfaces, creation of agreements to allow fire to cross from public to private lands, cultural resource inventories, preparation of rehabilitation plans prior to a fire event, etc.. Once mitigation is in place, polygon “B” areas could move into a “C” or “D” category where use of wildfire for resource benefit would occur more frequently.

Category C polygons are areas where fire is desired but where there may be social, political, or ecological constraints that must be considered. These constraints could include air quality considerations (proximity to Class 1 airsheds or non-attainment areas), threatened or endangered species considerations (effects of fire on the survival of these species), or habitat considerations (both spatial and temporal). Habitat considerations could be described in terms of maximum burn acreage (e.g., no more than 10% of the polygon acreage can burn per year to preserve grouse habitat) or in terms of time of year (e.g., spring only).

Use of natural ignitions to attain desired resource/ecological conditions would be maximized in these areas when possible.

Category D polygons are areas where fire is desired and where few, if any, constraints to its use have been identified. These areas offer the greatest opportunity to take advantage of the full range of options available to the resource manager for managing fire under appropriate management response.

Flexibility and Plan Review

Flexibility is of utmost importance to this plan. The ability to adapt management direction in these individual polygons to changing ecological or socio-economic situations is requisite to receiving support both from resource specialists in the BLM and from public land users. Prior to each fire season, new information (e.g., acreage burned in individual polygons, whether resource management objectives are being met and are actually the desired outcome, etc.) will be analyzed and discussed to ascertain whether adjustments would be necessary to the FMP. These adjustments could include moving “B” areas to “C” or “D” areas to allow for additional use of fire as a resource benefit. If politics or an exceptional fire year requires a change to a more conservative management approach, “C” or “D” areas could be moved such that fire suppression becomes a higher priority.

Other adjustments may include increasing or decreasing the allowable burned acreage if information gleaned from the cumulative effects of previous fire years warrants such change. Acceptable acreage figures are considered guidelines; singular event figures were gleaned from identified fire scars on aerial photos (including photos taken prior to active fire suppression efforts) and professional judgement (including considerations of fire complexity from a suppression standpoint and acreages that likely would have minimal adverse impacts on the identified resources at risk), while yearly and decadal figures were calculated using vegetation rotation ages in an attempt to allow the full complement of age and structural diversity inherent in these vegetation types (calculations were based on the best available knowledge). Although it is understood and deemed acceptable in an ecological context, singular large-scale events that have the potential to put lives and/or property at risk or that may require extensive and costly fire suppression efforts, and that may compromise land use objectives or values over a long period of time (e.g., human generations) or require management oriented at reestablishing those components altered by fire (e.g., coniferous canopy), would be subject to BLM intervention. In the event that new information is acquired or monitoring indicates that resource objectives or values are not compromised, these polygon acreage figures (singular event, annual, or decadal) can be adjusted or modified.

Minor modifications to the FMP would not require additional public meetings as long as the intent of the objectives and constraints for each individual polygon are not significantly altered, although a working group may be formed (perhaps coordinated through the RAC fire subcommittee as representatives of the general public) to discuss potential modifications prior to implementation in the upcoming fire season. Major changes (e.g., national policy, T&E species listings or delistings, etc.) would likely require the drafting of a new FMP.

Resource and Fire Management Objectives by Polygon

B-01. Blue Mountain (81,000 acres)

1. Vegetation Description and Desired Condition - Wyoming and Mountain Big Sagebrush, Mountain Browse (Chokecherry, Serviceberry), Aspen. Maintain extent of sagebrush habitats suitable for sage grouse nesting and brood-rearing functions.

2. Resource Management Objective - Manage (using Appropriate Management Response [AMR]) for fire disturbance size of <200 acres to promote a vegetation pattern representing a spectrum of successional stages (age classes) in continuous sagebrush stands. Conduct prescribed burns (fuels management) to minimize large scale loss of suitable sagebrush canopies. Maintain overall mature canopy characteristics in the serviceberry, chokecherry and aspen communities as big game/blue grouse cover component (in contrast to forage value).

3. Resource Constraints - Avoid large scale involvement of sagebrush canopies; a modified suppression strategy may be appropriate for natural starts with the potential to burn <200 acres, whereas a full suppression response may be appropriate when the incident is capable of exceeding 200 acres. Minimize involvement of serviceberry, chokecherry and aspen communities. Unavoidable involvement would require temporary livestock/big game fencing to prevent excessive use of regeneration.

4. Suppression Constraints - Retain internal unburned vegetation as much as practicable. No mechanized fire line construction due to high density of cultural sites. Limit development of new roads and/or trails through off road use of fire fighting equipment. Rehabilitate trails to prevent continued use by motorized vehicles. No motorized equipment off designated roads in Moosehead ACEC/Road Closure Area. No retardant in Moosehead ACEC riparian/wetland habitats.

B-02. Elk Springs (5,000 acres)

1. Vegetation Description and Desired Condition - Wyoming Big Sagebrush, Pinyon/Juniper (PJ) Woodlands.

2. Resource Management Objective - Protect private lands and oil and gas facilities when threatened by public land fires. Manage (using AMR) for fire disturbances of <200 acres within the unit to promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.

3. Resource Constraints - A modified suppression strategy may be appropriate for fires with the potential to burn <200 acres, whereas a full suppression response may be appropriate when the incident is capable of exceeding 200 acres.

4. Suppression constraints - None

B-03 Salt Desert Shrub (191,000 acres)

1. Vegetation Description and Desired Condition - Salt Desert Shrubs, Greasewood, Wyoming Big Sagebrush.

2. Resource Management Objective - Minimize fire induced conversion of native plant

communities to cheatgrass or other non-native plant communities. Maintain extent and distribution of low (<3') forms of sagebrush types, particularly east of Wolf Creek, as high density sage grouse winter use habitat.

3. Resource Constraints - Limit fire size, where possible, to 50 acres or less. Provide immediate rehabilitation efforts on any fire exceeding 10 acres in size.

4. Suppression constraints - No mechanized fire line construction due to fragile soils. Off road equipment use should be minimized due to fragile soils, and any disturbance resulting from suppression efforts should immediately be rehabilitated to prevent further motorized vehicular access. Hose lays preferred to running attack. No motorized equipment off designated roads and no retardant use in Raven Ridge and Coal Oil Rim ACECs.

B-04 Crooked Wash/Indian Valley (72,000 acres)

1. Vegetation Description and Desired Condition - Wyoming Big Sagebrush, PJ Woodlands. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.

2. Resource Management Objective - Manage (using AMR) for small sized fire disturbances to promote a vegetation mosaic pattern representing a spectrum of successional stages (age classes) in continuous sagebrush stands. Maintain extent and distribution of low (<3') forms of sagebrush type as high density sage grouse winter use habitat. Guard against inclusion by fire of oil and gas facilities within the White River Dome area.

3. Resource constraints - Avoid large scale involvement of sagebrush canopies, while promoting a vegetation pattern representing a spectrum of successional stages (age classes) in continuous sagebrush stands. A modified suppression strategy may be appropriate for fires with the potential to burn <200 acres, whereas a full suppression response may be appropriate when the incident is capable of exceeding 200 acres. Conduct prescribed burns (fuels management) to minimize large scale loss of suitable sagebrush canopies.

4. Suppression constraints - Retain internal unburned vegetation as much as practicable. No mechanized fire line construction due to high potential of cultural sites and due to fragile soils. Limit development of new roads and/or trails through off road use of fire fighting equipment. Rehabilitate trails to prevent continued use by motorized vehicles. No motorized equipment off designated roads and no retardant use in Blacks Gulch ACEC.

B-05. Douglas Creek (114,000 acres)

1. Vegetation Description and Desired Conditions - PJ Woodlands, Wyoming Big Sagebrush, Greasewood. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.

2. Resource Management Objective - Protect oil and gas facilities and cultural resource sites when threatened by public land fires. Manage (using AMR) for small fire disturbances (up to 30-40 acres in size in PJ or sagebrush) to promote a vegetation mosaic. Conduct prescribed burns to mitigate potential fire impacts to oil and gas facilities and cultural sites.

3. Resource Constraints - A modified suppression strategy may be appropriate for fires with the potential to burn <200 acres in PJ or sagebrush, whereas a full suppression response may be appropriate when the incident is capable of exceeding 200 acres. Maximum acceptable burned acres within unit per year and decade in PJ and/or sagebrush is 1,000 and 2,000 acres, respectively. Wildlife forage:cover ratios would be used as a pre-season evaluation criteria to determine potential changes in polygon management.

4. Suppression Constraints - Retain internal unburned vegetation as much as practicable. No mechanized fire line construction due to high potential of cultural sites and due to fragile soils. Limit development of new roads and/or trails through off road use of fire fighting equipment. Rehabilitate trails to prevent continued use by motorized vehicles. No retardant use in riparian areas of Douglas Creek ACEC. No motorized equipment off designated roads in Canyon Pintado National Historic District.

B-06. Yellow Creek (80,000 acres)

1. Vegetation Description and Desired Condition PJ Woodland, Wyoming Big Sagebrush, Greasewood. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.

2. Resource Management Objective - Protect known cultural sites and vegetation types with high potential for occurrence of cultural sites (PJ type) when threatened by public land fires. Manage (using AMR) naturally ignited fires of up to 200 acres in size throughout the unit to promote vegetation mosaic. Conduct archaeological inventories to better define the locale of high density cultural sites in the PJ type. Conduct prescribed burns or other fuels management treatments in both the PJ type and in sagebrush dominated drainages to break up the continuous fuels connecting large stands of PJ, thus mimicking natural perturbations and minimizing large scale involvement of the PJ type.

3. Resource Constraints - A modified suppression strategy may be appropriate for fires with the potential to burn <200 acres in PJ or sagebrush, whereas a full suppression response may be appropriate when the incident is capable of exceeding 200 acres. Maximum acceptable burned acres within unit is 1,000 acres in PJ and 500 acres in

sagebrush per year. Maximum acceptable burned acres per decade will be 2,000 acres in PJ and 1,000 acres in sagebrush throughout unit. Wildlife forage:cover ratios would be used as a preseason evaluation criteria to determine potential changes in polygon management.

4. Suppression Constraints - No mechanized fire line construction due to high potential of cultural sites, high potential of rare plants or remnant plant associations, and fragile soils. Limit use of retardant due to high potential of rare plants (listed threatened species), notably on barren ridges and slopes where potential habitat exists. Limit surface use (disturbance) of barren lands in hand line construction and access of fire fighting equipment, and limit motorized equipment use to existing roads or trails due to high potential of rare plants. No motorized equipment off designated roads and no retardant use in the Duck Creek ACEC. Retain internal unburned vegetation as much as practicable.

B-07. Piceance Creek (17,000 acres)

1. Vegetation Description and Desired Condition - PJ Woodland, Big Sagebrush, Agricultural Land, Residences.

2. Resource Management Objective - Protect agricultural lands and residences when threatened by public land fires.

3. Resource Constraints - None

4. Suppression Constraints - No mechanized line construction, and limit retardant use on toe slopes (barren lands), on both sides of Piceance Creek from Collins Gulch down to the confluence of Dry Fork Piceance Creek due to rare plants (listed threatened species). No motorized equipment or vehicle use off designated roads and no retardant use in the Dudley Bluffs, Ryan Gulch, and Deer Gulch ACECs.

B-08 Magnolia (2,000 acres)

1. Vegetation Description and Desired Condition - Big Sagebrush

2. Resource Management Objective - Protect oil and gas facilities when threatened by public land fires. Conduct prescribed burns or other fuels management treatments to buffer oil and gas facilities.

3. Resource Constraints - None

4. Suppression constraints - None

B-09 Meeker East (290,000 acres)

1. Vegetation Description -Private Agricultural and Rangeland, Isolated/Intermingled BLM Parcels.
2. Resource Management Objective - Protect private land and structures when threatened by public land fires. Manage BLM lands adjoining National Forest Lands or Colorado Division of Wildlife Lands consistent with fire management goals on those adjoining lands.
3. Resource constraints - None
4. Suppression constraints - None

B-10. White River (30,000 acres)

1. Vegetation Description and Desired conditions - Cottonwood Stands, Riparian Shrubs and Agricultural Lands on River Floodplain, Sagebrush/Greasewood on Upland Terraces.
2. Resource Management Objective - Protect mature cottonwood stands as bald eagle nest and roost habitat, mature riparian shrub, and private lands when threatened by public land fires.
3. Resource Constraints - Minimize loss of cottonwood trees, especially mature individuals, and minimize sediment entering river.
4. Suppression Constraints - No mechanical fire line construction or vehicle use within riparian zones. No retardant use within the White River ACEC (entire unit) due to T&E river fishes.

C-01. Baking Powder/Pinyon Ridge (36,000 acres)

1. Vegetation Description and Desired Condition - PJ Woodlands, Wyoming Big Sagebrush. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.
2. Resource Management Objective - Manage (using AMR) for fire disturbances of <200 acres within the unit to promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.
3. Resource Constraints - Limit fires to 200 acres in the PJ type and 400 acres in sagebrush. Retain internal unburned vegetation as much as practicable. Maximum acceptable burned acres within unit is 250 acres in PJ and 500 acres in sagebrush per year. Maximum acceptable burned acres per decade will be 500 acres in PJ and 2,500

acres in sagebrush throughout the unit. Wildlife forage:cover ratios would be used as a preseason evaluation criteria to determine potential changes in polygon management.

4. Suppression Constraints - No mechanized fire line construction due to high potential of cultural sites, the Pinyon Ridge Roadless Area, and fragile soils. Limit development of new roads or trails through off road use of fire fighting equipment. Restrict use to existing roads and trails to the maximum extent possible due to fragile soils and Pinyon Ridge Roadless Area. Rehabilitate new trails to prevent continued use by motorized vehicles.

C-02. Spooky Mountain (28,000 acres)

1. Vegetation Description and Desired Condition - Juniper Woodlands, Wyoming Big Sagebrush. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.

2. Resource Management Objective - Protect Deserado Coal Mine, conveyor belt, and railroad when threatened by public land fires. Manage (using AMR) for fire disturbances up to 100 acres in size in juniper and 200 acres in size in sagebrush throughout the unit to promote a vegetation mosaic.

3. Resource Constraints - Limit fires to 100 acres in juniper and 200 acres in sagebrush. Maximum acceptable burned acres within unit is 300 acres in Juniper and 500 acres in sagebrush per year. Maximum acceptable burned acres per decade will be 500 acres in PJ and 1,000 acres in sagebrush throughout the unit. Wildlife forage:cover ratios would be used as a preseason evaluation criteria to determine potential changes in polygon management.

4. Suppression Constraints - Limit development of new roads or trails through off road use of fire fighting equipment. Restrict use to existing roads or trails to the maximum extent possible due to fragile soils. Rehabilitate new trails to prevent continued use by motorized vehicles. No motorized equipment off designated roads and no retardant use in Coal Oil Rim ACEC.

C-03. Spring Creek/Big Ridge (115,000 acres)

1. Vegetative Description and Desired Condition PJ Woodland, Wyoming Big Sagebrush, Mountain Shrub. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.

2. Resource Management Objective - Manage (using AMR) naturally ignited fires of up to 500 acres in size throughout the unit to promote a vegetation mosaic representing a spectrum of successional stages (age classes). Protect the Rangely to CA Oil Shale Tract 345 kv powerline and scattered oil and gas facilities when threatened by public land fires.

3. Resource Constraints - Limit fires to 500 acres in both PJ and sagebrush. Maximum acceptable burned acres within the unit is 750 acres in PJ and 2,000 acres in sagebrush per year. Maximum acceptable burned acres per decade will be 1,750 acres in PJ and 4,000 acres in sagebrush throughout the unit. Wildlife forage:cover ratios would be used as a preseason evaluation criteria to determine potential changes in polygon management.

4. Suppression Constraints - East of Spring Creek: no mechanized fire line construction, and limited retardant use due to high potential of rare plants (listed threatened species), remnant plant associations, and fragile soils. Limit surface use (disturbance) of barren lands in hand line construction and access of fire fighting equipment, and limit motorized equipment use to existing roads or trails, due to high potential of rare plants. No motorized equipment off designated roads and no retardant use in the Yanks Gulch ACEC. West of Spring Creek: Limit development of new roads or trails through off road use of fire fighting equipment. Restrict use to existing roads or trails to the maximum extent possible due to fragile soils. Rehabilitate new trails to prevent continued use by motorized vehicles. No motorized equipment off designated roads and no retardant use in Coal Draw ACEC; no retardant use in riparian systems in East Douglas Creek ACEC.

C-04. Rabbit Mountain/Dragon Trail (73,000 acres)

1. Vegetation Description and Desired Condition - PJ Woodlands, Wyoming Big Sagebrush. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.

2. Resource Management Objectives - Manage (using AMR) naturally ignited fires up to 500 acres in size throughout the unit to promote a vegetation mosaic throughout the unit. Protect scattered oil and gas facilities when threatened by public land fires.

3. Resource Constraints - Limit fires to 500 acres in PJ and sagebrush. Maximum acceptable acres burned per year in the PJ and sagebrush types is 750 acres; decadal maximum for the same types is 1,500 acres. Wildlife forage:cover ratios would be used as a preseason evaluation criteria to determine potential changes in polygon management.

4. Suppression Constraints - No mechanized line construction due to high potential of cultural sites. Limit development of new roads or trails through off road use of fire fighting equipment. Restrict use to existing roads or trails to the maximum extent possible due to fragile soils. Rehabilitate new trails to prevent continued use by motorized vehicles.

C-05. Greasewood Creek (47,000 acres)

1. Vegetation Description and Desired Condition - PJ Woodland, Wyoming Big Sagebrush, Mountain Shrub. Provide enhanced deer winter range in the unit and promote a vegetation mosaic representing natural distributions of plant communities of varying

successional stages.

2. Resource Management Objective - Maintain the present extent of mature PJ canopies as big game thermal and security cover. Manage (using AMR) naturally ignited fires up to 40 acres in size in PJ and up to 500 acres in size in sagebrush or mountain shrub types. Fire use may be appropriate to enhance deer winter range. Conduct prescribed burns or other fuels management treatments in both the sagebrush and mountain shrub types to break up the continuous fuels connecting mature stands of PJ to prevent large scale involvement of the PJ type.

3. Resource Constraints - Limit fires to 100 acres in PJ and 200-500 acres in sagebrush or mountain shrub types. Maximum acceptable burned acres per year within the unit is 250 acres in PJ and 1,000 acres in sagebrush or mountain shrub types. Maximum acceptable burned acres per decade will be 750 acres in PJ and 2,000 acres in sagebrush and mountain shrub throughout the unit. Wildlife forage:cover ratios would be used as a pre-season evaluation criteria to determine potential changes in polygon management.

4. Suppression Constraints - No mechanical fire line construction, and limited retardant use, due to high potential of rare plants or remnant plant associations and fragile soils. Limit surface use (disturbance) of barren lands in hand line construction and access of fire fighting equipment, and limit motorized equipment use to existing roads or trails due to high potential of rare plants. No motorized equipment off designated roads, and no retardant use in the Upper Greasewood and Lower Greasewood ACECs.

C-06. Lower Piceance Basin (90,000 acres)

1. Vegetation Description and Desired Condition - PJ Woodland, Wyoming Big Sagebrush. Enhance deer winter range and promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.

2. Resource Management Objectives - Manage (using AMR) naturally ignited fires of up to 200 acres in size in PJ and up to 500 acres in size in sagebrush types throughout the unit to promote vegetation mosaic. Fire use may be appropriate to enhance deer habitat, notably through emphasizing disturbances of 30-40 acres (optimal size) in mature PJ. Maintain continuing development of mature PJ stands on 40% of the large Piceance and Yellow Creek chainings. Conduct prescribed burns or other fuels management treatments in the chained areas to break up the continuous, heavy fuels to prevent large acreage burns within these chainings. Conduct prescribed burns or other fuels management treatments in sagebrush dominated drainages to break up the continuous fuels connecting large stands of PJ. Protect oil shale, sodium, and gas facilities scattered throughout the unit when threatened by public land fires.

3. Resource Constraints - Limit fires to 200 acres in PJ and 200-500 acres in the sagebrush type. Maximum acceptable burned acres per year within the unit is 500 acres

in PJ and 1,000 acres in the sagebrush type. Maximum acceptable burned acres per decade will be 1,500 acres in PJ and 2,000 acres in sagebrush throughout the unit. Wildlife forage:cover ratios would be used as a pre-season evaluation criteria to determine potential changes in polygon management.

4. Suppression Constraints - No mechanized fire line construction, and limited retardant use due to high potential of rare plants or remnant plant associations and fragile soils. Limit surface use (disturbance) of barren lands in hand line construction and access of fire fighting equipment, and limit motorized equipment use to existing roads or trails due to high potential of rare plants. No motorized equipment off designated roads and no retardant use in the Ryan Gulch ACEC.

C-07. Evacuation/Missouri Creeks (36,000 acres)

1. Vegetation Description and Desired Condition - PJ Woodland, Wyoming Big Sagebrush, Greasewood. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.

2. Resource Management Objectives - Manage (using AMR) naturally ignited fires of up to 200 acres in size throughout the unit to promote vegetation mosaic. Increase emphasis on attaining numerous small 30-40 acre fires in mature PJ. Protect scattered oil and gas facilities and known cultural sites when threatened by public land fires.

3. Resource Constraints - Limit fires to 200 acres in PJ and sagebrush/greasewood. Maximum acceptable burned acreage per year for the PJ and sagebrush types is 750 acres; decadal maximum for the same types is 1,500. Wildlife forage:cover ratios would be used as a pre-season evaluation criteria to determine potential changes in polygon management.

4. Suppression Constraints - No mechanized line construction due to high potential of cultural sites. Limit development of new roads or trails through off road use of fire fighting equipment. Restrict use to existing roads or trails to the maximum extent possible due to fragile soils. Rehabilitate new trails to prevent continued use by motorized vehicles. No motorized equipment in Oil Spring Mountain WSA.

C-08. Baxter/Douglas Pass (62,000 acres)

1. Vegetation Description and Desired Conditions - Douglas Fir, Spruce, Mountain Shrub, Mountain Big Sagebrush. Maintain the over-mature forest characteristics for big game security cover.

2. Resource Management Objective - Maintain the mature to over-mature forest characteristics as big game security cover and for specialized non-game and fisheries habitat. Promote and/or enhance intra-stand structural complexity (age/composition) in

the forest types. Allow fires in the shrub and sagebrush types throughout the unit to promote a vegetation mosaic.

3. Resource Constraints - Suppress fires with potential for stand replacement or large scale events in the forest type, notably when fires have the capability or opportunity of exceeding 5 acres. Contain extent of burn to acreage burned in first burning period to avoid potential of including additional coniferous stands. Limit burned acreage to less than 250 acres per decade in the coniferous type. No constraints currently apply to the shrub and sagebrush communities.

4. Suppression Constraints - No mechanized line construction due to fragile soils on steep slopes. Rehabilitate hand lines and surface disturbances to prevent sediment loads from erosive soils from entering critical fishery habitats. Restrict use to existing roads or trails to the maximum extent possible due to fragile soils. Rehabilitate new trails to prevent continued use by motorized vehicles. No retardant use in riparian systems in East Douglas Creek ACEC.

C-09. Danforth Hills (50,000 acres)

1. Vegetation Description and Desired Condition - Mountain Shrub, Mountain Big Sagebrush, Aspen, PJ Woodlands. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.

2. Resource Management Objective - Manage (using AMR) naturally ignited fires of up to 200 acres in size throughout the unit to promote a vegetative mosaic. Protect oil and gas facilities in the Wilson Creek Oil Field and major powerlines crossing the unit when threatened by public land fires .

3. Resource Constraints - Limit fires to 200 acres in any fuel type. Maximum acceptable burned acres per year within the unit is 1,000 acres in mountain shrub and 750 acres in other fuel types. Maximum acceptable burned acres per decade will be 2,500 acres in mountain shrub and 1,500 acres in other fuel types throughout the unit. Wildlife forage:cover ratios would be used as a pre-season evaluation criteria to determine potential changes in polygon management.

4. Suppression Constraints - No mechanized line construction due to fragile soils on steep slopes. Restrict use to existing roads or trails to the maximum extent possible due to fragile soils. Rehabilitate new trails to prevent continued use by motorized vehicles.

D-01. Blue Mountain/Dinosaur Boundary (43,000 acres)

1. Vegetation Description and Desired Condition - Grassland, Big Sagebrush, PJ Woodland. Manage area consistent with existing Dinosaur National Monument fire management program efforts.

2. Resource Management Objectives - Provide a buffer area adjacent to Dinosaur National Monument which enhances the Park Service's ability to implement their PNF program within the monument. Buffer area provides a natural fuel break along the Yampa River and Wolf Creek divide separating the important sagebrush habitats on Blue Mountain.

3. Resource Constraints - none

4. Suppression Constraints - No mechanized line construction due to fragile soils on steep slopes. Restrict use to existing roads or trails to the maximum extent possible due to fragile soils. Rehabilitate new trails to prevent continued use by motorized vehicles.

D-02. Bull Canyon/Skull Creek WSAs (73,000 acres)

1. Vegetation Description and Desired Condition - PJ Woodland, Sagebrush. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.

2. Resource Management Objective - Manage (using AMR) naturally ignited fires throughout the unit to promote a vegetation mosaic.

3. Resource Constraints - none

4. Suppression Constraints - No mechanized line construction due to three wilderness study areas. No motorized vehicle use within the WSAs. Limit surface disturbance from all fire fighting activities to minimum necessary to protect life and property. Rehabilitate all disturbance in accordance with interim policy (handbook H-8550-1).

D-03. Citadel/Gray Hills (80,000 acres)

1. Vegetation Description and Desired Condition - Mountain Shrub, PJ Woodland, Sagebrush, Douglas Fir. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.

2. Resource Management Objectives - Manage (using AMR) naturally ignited fires throughout the unit to promote a vegetation mosaic. Conduct prescribed burns within the mountain shrub type to achieve a younger age class of shrubs for improved big game habitats.

3. Resource Constraints - none

4. Suppression Constraints - No mechanized line construction due to the Black Mountain and Windy Gulch WSAs. No motorized vehicle use within the WSAs. Limit surface disturbance from all fire fighting activities to a minimum necessary to protect life or

property. Rehabilitate all disturbance in accordance with interim policy (handbook H-8550-1).

D-04. Little Hills (133,000 acres)

1. Vegetation Description and Desired Condition - Mountain Shrub, PJ Woodland, Big Sagebrush, Douglas Fir. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.
2. Resource Management Objective - Manage (using AMR) naturally ignited fires throughout the unit to promote a vegetation mosaic. Conduct prescribed burns or other vegetation treatments on the mountain shrub type to achieve age and structural diversity.
3. Resource Constraints - Protect communications sites on Kendall Peak and Meeker to Cb tract 345 kv powerline when threatened by public land fires.
4. Suppression Constraints - No mechanized line construction, and limit retardant use due to high potential of rare plants, remnant plant associations, and fragile soils. Limit surface use of barren lands in hand line construction and access of fire fighting equipment, and limit motorized equipment use to existing roads or trails due to high potential of rare plants. No motorized equipment off designated roads and no retardant use in the Dudley Bluffs and Deer Gulch ACECs.

D-05. Cathedral Bluffs/Roan Plateau (455,000 acres)

1. Vegetation Description and Desired Condition - Mountain Shrub, PJ Woodland, Big Sagebrush, Douglas Fir. Promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.
2. Resource Management Objective - Manage (using AMR) naturally ignited fires throughout the unit to promote a vegetation mosaic. Conduct prescribed burns or other vegetation treatments on mountain shrub and sagebrush type to achieve age and structural diversity.
3. Resource Constraints - Protect communications sites on Cathedral Bluffs when threatened by public land fires.
4. Suppression Constraints - No mechanized line construction due to the Oil Spring Mountain WSA. No motorized vehicle use within the WSA. No mechanized line construction and limit retardant use due to high potential of rare plants, remnant plant associations, and fragile soils. Limit surface use of barren lands in hand line construction and access of fire fighting equipment, and limit motorized equipment use to existing roads or trails due to high potential of rare plants. No motorized equipment off designated roads and no retardant use in the Deer Gulch and South Cathedral Bluffs

ACECs; no retardant use in riparian systems in East Douglas Creek ACEC.

Resource Advisors

The use of resource advisors is essential to adequately implement the proposed action. Suppression crews may not have firsthand knowledge of all aspects of the FMP, thus decisions could be made without all available information. The use of resource advisors would allow management decisions to be made with full use of available information and resource expertise. Well-informed decisions would likely meet requirements outlined in the FMP while still providing opportunities for suppression activities to continue without subjecting firefighters and the public to increased risk or excessive cost. Not all wildland fire situations would require the use of a resource advisor. However, when management of an unplanned ignition may adversely or beneficially impact identified resources, the use of a resource advisor in the decision-making process is warranted and necessary.

Emergency Fire Rehabilitation

Regardless of the management unit, following a wildfire the burned area would be evaluated to determine whether rehabilitation is needed. This evaluation would include the following three factors:

- 1.) If life or private property will be threatened if rehabilitation practices are not implemented.
- 2.) If the vegetation that will reestablish naturally is unacceptable, e.g., exotic annual grasses or noxious weeds, or will not meet Land Use Plan Objectives.
- 3.) If adequate desirable vegetation will recover to stabilize soil and prevent on- or off-site soil erosion problems.

If the evaluation shows problems with the above criteria, an Emergency Fire Rehabilitation Plan (EFRP) would be prepared. This plan would be in accordance with the Emergency Fire Rehabilitation Handbook and White River Resource Area (WRRRA) RMP. Following approval of the EFRP the area would be rehabilitated as detailed in the plan.

Implementation of Proposed Action

National Fire Policy dictates that all unplanned ignitions would receive full suppression unless an approved FMP is in place. The proposed actions identified above would be implemented based upon criteria addressed in local, regional, and national planning level documents. Significant consideration to numerous factors must be given before any unplanned ignition would be managed as a resource benefitting fire. Figure 1 graphically displays the decision-making process required for FMP implementation while Appendix A provides a more in-depth review of the individual components within that process. If national, regional, or local policy/guidelines

does not prevent further consideration for letting a wildfire burn for resource benefit, a “decision criteria checklist” (at a minimum similar to that identified in Appendix B) would be used at the local level to aid in recommending a response action (“No-Go”--Initial Attack/Suppression Action; “Go”--Appropriate Management Response).

The following prescriptive criteria would be used to guide strategic decision making when the resource area is going to make a determination on whether to manage a new fire start for the benefit of the resource in addition to managing for fire fighter safety and least cost. This prescription is, in essence a “go/no go checklist” to ensure that all factors beyond fire fighter safety and least cost have been evaluated in the future management of a particular fire. There are environmental components, social/political components and economic components that need to be evaluated to make a sound decision. The components that will be considered in this field office are:

A. Environmental

- Will this fire threaten to cross polygon boundaries (if No, continue)
- Do environmental parameters indicate that this fire will burn as planned-- parameters will include items such as Energy Release Component (ERC), Drought Index, Burn Index, National Fire Danger Rating System (NFDRS) rating, etc. (if Yes, continue)
- Is the fire meeting resource constraints outlined by polygon in the Fire Management Objectives section of this plan (if Yes, continue)
- Is there a defensible perimeter that will contain the fire within the objectives outlined in the FMP (if Yes, continue)

B. Social Political

- Are smoke management forecasts favorable and is there a smoke permit in place (if Yes, continue)
- The risk assessment indicates that the level of risk in managing this fire is acceptable to the field office manager (if Yes, continue)
- Are local resource commitments at 75% or less of available resources (if Yes, continue)
- There are sufficient forces, including contingency forces, available to manage this fire (if Yes, continue)

C. Economic

- As clearly as can be determined (using both tangible and intangible estimates of cost and benefit), managing this fire as selected will result in a comparable cost as compared to prescribed fire or a suppression response (if Yes, continue)

Upon receiving a report of a fire in a C or D polygon, dispatch would respond forces to the fire. Following initial size-up information, and as soon as possible, the duty officer, in consultation

with the field office manager (and resource advisor) would run through the go/no checklist, and formulate potential fire management options.

If, at the end of this checklist, all the questions indicate that the field office should continue with the selected strategy the decision would be documented and approved by the field office manager. A daily recertification would take place to ensure that all considerations remain valid and that the course of action would be maintained.

Unless specific discussions have taken place determining a different management approach, fires will generally have the following management options available. As fire conditions become more extreme (determined from any number of fire indices), management options generally become more restrictive.

| FIRE INTENSITY LEVEL | B POLYGONS | C POLYGONS | D POLYGONS |
|----------------------|-------------------------------------|--------------------------------------|--------------------|
| LOW | FULL ¹ /MOD ² | LTD ³ /WFURB ⁴ | LTD/WFURB |
| MODERATE | FULL/MOD | MOD/LTD/WFURB | MOD/LTD/WFURB |
| HIGH | FULL | FULL/MOD | FULL/MOD/LTD/WFURB |

- ¹ Full Suppression Action: Complete line construction around entire fire perimeter, including any spot fires, burn out adjacent interior islands and mop-up standards adequate to hold under high fire intensity level conditions. Full response objectives are based on a safe yet aggressive approach to achieve containment of fire by the beginning of the next burn period.
- ² Modified Suppression Action: Utilization of natural barriers and constructed line to surround and stop fire spread with the objective to contain the fire by the end of the next burn period. Line construction and mop-up modified to a standard adequate to hold under moderate fire intensity level conditions.
- ³ Limited Suppression Action: Little or no interference with fire spread, allowing natural barriers to limit fire growth to a predetermined size. Actions could include monitoring or improving existing barriers. Limited response objectives include fire fighter safety and a least cost suppression approach to values at risk.
- ⁴ Wildland Fire Used as a Resource Benefit: The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas.

ALTERNATIVE #1: No Action Alternative

Under the No Action Alternative, all fires would be suppressed (considered “B” polygons). Appropriate management response actions would still be employed, thus allowing for consideration of values to be protected, least cost, resource damage caused by the suppression action, and the first priority at all times, firefighter and public safety. If the initial action is not successful, a Wildland Fire Situation Analysis (WFSA) would be prepared to determine the next set of management responses. Management responses or actions would not be developed or implemented to gain resource benefits.

Resource management objectives, resource constraints, and suppression constraints identified in the Proposed Action would still be considered in the management of a wildland fire, however, these considerations would only be employed in a suppression action with no opportunity for a benefit to the resource. There may be more latitude in the manner in which a fire is suppressed, with more opportunities for limited and modified suppression tactics rather

than full suppression.

Current management, as outlined in the RMP, identifies that all naturally-ignited and human-caused fires would be managed under an Appropriate Management Response (AMR) strategy. Resource constraints would be applied to all fire management areas, notably relating to the avoidance of riparian areas, rehabilitation of fire lines and identified burned areas, and limiting the use of heavy equipment for fireline construction. A prescribed natural fire plan would be developed (this, however, is no longer a possibility under current policy, and has been replaced with the proposed action) that would detail the prescription for burning, specific burning objectives, and parameters to allow fire to burn naturally. Resource advisors would be consulted to make suppression decisions and to assist in establishing site-specific rehabilitation requirements. Also, integrated activity plans would be developed to identify areas and conditions where prescribed natural fire would be managed to achieve resource objectives. These items have all been addressed in the proposed action and remain consistent with the intent of the RMP decisions.

ALTERNATIVES CONSIDERED BUT ELIMINATED: Let Burn Alternative

In many smaller, isolated areas, a let burn policy may be appropriate, but a let burn policy over a large area is neither warranted nor desired. Factors that prevent/curtail the possibility of implementing a prescribed natural fire policy over the entire area include: Colorado state statutes requiring county sheriffs to protect private land; liability issues dealing with private property; federal laws and regulations (e.g., National Historic Preservation Act, Archaeological Resource Protection Act, Threatened and Endangered Species Act, etc.) requiring protection of identified public land resources; situations where wildland fires may potentially endanger human safety. These laws, guidelines, mandates, etc., have been put in place because of the values of those identified resources. Any management decision that would potentially allow the destruction of those resources would not be considered. These very issues, however, are addressed in the proposed action in a manner which conforms to regulations yet meets the desire of introducing fire into the ecosystem.

**AFFECTED ENVIRONMENT/ ENVIRONMENTAL
IMPACTS/MITIGATION MEASURES/RESIDUAL IMPACTS**

GENERAL SETTING:

A general discussion of the area covered by this document can be found on pages 1-2 through 1-3 in the WRRRA Draft RMP and EIS (1994). This FMP covers only those public lands whose surface is managed by the BLM.

There are four Landscape Units (LUs) represented within the boundaries of the WRFO area. The

LU delineations have been adapted from the U.S. Forest Service's (FS) draft map of "Ecological Sub-sections of the Rocky Mountain Region." These LUs are tracts of land where the various biotic and abiotic characteristics (climate, physiography, soils, vegetation, wildlife, water, etc.) are similar.

Green River Basin

This LU is located in the Western portions of the resource area and is the largest landscape unit within the resource area. Elevation ranges over 5,300 to almost 9,500 feet. Alluvial fans, piedmont plains and slopes from the surrounding mountains join to form broad intermountain basins. Vegetation consists of grasses to grass-shrub to forests. Potential vegetation is sagebrush steppe (sagebrush-wheatgrass), saltbush-greasewood, and wheatgrass needlegrass shrub steppe.

North Central Highlands and Rocky Mountains

This LU is located in the central third of the resource area. Elevation ranges from about 4,800 to 12,800 feet. The area is made up of steeply sloping to precipitous flat-topped mountains dissected by narrow steep gradient stream valleys. High plateaus have steep walled canyons. There are gently rolling mountain parks, mountain ridges, and foothills. Vegetation consists of western spruce/fir forest, pine/Douglas-fir forest, PJ woodland, mountain mahogany/oak-scrub, and sagebrush. At lower elevations, there are pinyon pine, shrubs, grass, and shrub-grass vegetation. Precipitation ranges from 7 to 45 inches annually.

Northern Parks and Ranges

This LU is meadows and barren, fescue-mountain muhly prairie, sagebrush steppe, pinon-juniper woodland, and Great Basin sagebrush. Precipitation ranges from 5 to 50 inches annually.

Uinta Mountains

A very small portion of this LU is located in the extreme Western portion of the resource area. Elevations range from 5,200 to 8,600 feet. Mountains are an anticlinal uplift with an east-west orientation. Higher elevations, periglacial and glacial processes shape landforms through freezing and thawing. Lower elevations, erosion by water and wind are active land forming processes. Vegetation located in the eastern portion of the resource area. The landscape is steeply sloping to precipitous mountains dissected by many narrow stream valleys with steep gradients. Parts are gently rolling mountain parks and valleys, with some mountain ridges. Elevation ranges from nearly 5,300 to over 14,000 feet. Vegetation (from higher to lower elevations) consists of alpine tundra, Engelmann spruce, spruce/fir, lodgepole pine, subalpine meadow, Douglas-fir, ponderosa pine, aspen, mountain big sagebrush, oak and mountain brush, and PJ. Precipitation ranges from 8 to 35 inches annually.

Descriptions of major plant communities found within these landscape units can be found on pages 3-11 through 3-15 of the Draft RMP/EIS (1994).

Fire records from 1980-1998 in the WRFO area show an annual fire occurrence of 97 fires/year burning approximately 2,491 acres/year. The vast majority of fires are of smaller size (single tree events up to 10 acres), with relatively few reaching larger size classes (>1000 acres). In recent years approximately 88% of lightning-caused fires were <10 acres in size and burned only 2% of the acreage blackened by fire. Only 7 fires >1,000 acres have been recorded in this time period, burning approximately 22,100 acres, the largest consuming 5,400 acres. In many cases, fires >1,000 acres in size have involved an unnatural buildup of fuel (e.g., 1960's era chainings), and would not likely have grown as large under natural vegetation conditions. Large fires occur infrequently and apparently do not consume substantial acreage; aerial photos from the late 1930's (prior to coordinated fire suppression efforts) substantiate this conclusion in that numerous, large fire scars are not evident throughout the area. Considering the longevity of many of the plant communities found in the area (300-600 year old stands of pinyon and juniper are common) and the length of time needed to reestablish these communities (likely 50-100 years in the pinyon and juniper type), these photos represent a significant body of evidence from which to make fire history inferences.

Fire activity generally peaks in July but will vary depending upon weather patterns (generally late spring and summer thunderstorm activity) and precipitation amounts (dry or wet storm events) which directly influence fire occurrence and acreage burned. Occasionally the peak periods have started in the latter part of June and lasted late into August. This initial peak in fire activity usually lasts from 2-4 weeks. A second peak generally occurs in late August. The earliest reported fire was in April and the latest occurred in late October.

A description of resources located in the WRFO area which may be affected by the proposed action is located in Chapter 3 (Affected Environment) of the Draft RMP/EIS (1994). Resources having specific fire-related discussions follow.

Wherever possible, the Affected Environment and Environmental Consequences were evaluated through the application of the Colorado Rangeland Health Standards. Because the preferred alternative covers all public lands in the area managed by the WRFO, the assessment of the standards is generally applicable to the landscape bounded by the White River drainage.

STANDARD 1: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes.

Affected Environment: Soils within the project area have been mapped by the Natural Resource Conservation Service (NRCS) in four separate order III soils surveys. These include Rio Blanco County Area (1982), Moffat County Area (draft), Rifle Area (1984), and Douglas-Plateau Area (draft).

The semi-arid climate found in the resource area has affected soil development. Lack of

moisture, cool nights, and infrequent high temperatures suppress vegetation growth and slow the chemical and biological processes needed for good soil development. In addition, geologic erosion has progressed too rapidly for soils to develop distinct deep horizons.

The draft RMP identifies soils that are fragile within the resource area. These soils have slopes >35% and exhibit the following criteria;

1) Areas rated as highly or severely erodible by wind or water, as described by NRCS area soil survey reports or as described by on-site inspections.

2) Areas with slopes >35%, if they have one of the following soil characteristics: (a) a surface texture that is sand, loamy sand, very fine sandy loam, fine sandy loam, silty clay, or clay; (b) a depth to bedrock that is <20 inches; c) an erosion condition that is rated as poor; and (d) a K (erosion potential) factor >0.32.

Typical of semi-arid areas, plant growth is limited because soil moisture is in short supply for at least part of each growing season. The ability of soil to hold moisture is at least as important as nutrient availability. Finer textured soils (loams and clay loams) are more effective at holding moisture than coarser textured soils (sandy loams, rocky sandy loams, and, very rocky sandy loams) but will hold onto the water more tightly making it unavailable for plant growth. Soils on steep slopes will generate more runoff than gently sloping soils. Water is not available for plant growth from sites having high runoff events while bottomland soils in concave areas derive additional moisture during periods of runoff. These bottomland areas tend to have deeper, strongly developed horizons, are more heavily leached, and are often more productive than the side slopes or uplands since they receive more effective precipitation. Badland areas are a worst-case example of fragile soils. They are steep, sparsely vegetated, shallow, high in salt concentrations, and often fine textured.

Environmental Consequences and Mitigation Measures:

Proposed Action: Soil conditions following a wildfire can be extremely variable. Some factors influencing soil condition would be vegetation type, vegetative condition, climatic conditions, soil texture, duration of the fire, and heat intensity. Fire may temporarily reduce soil moisture content, expose mineral soil surface to full raindrop impact, and reduce surface organic matter. Removing protective vegetative cover exposes bare soil to wind and water erosion increasing the potential for overland flows and sedimentation. Following a fire, the temperature of the unshaded, blackened soil surface is appreciably increased. This increase in soil temperature would initiate grass growth in the spring 1-3 weeks earlier than normal.

The significance of these impacts would be dependent on climatic conditions during the time following a fire and prior to successful revegetation. The vulnerability of overland erosion, usually decreases significantly after the first growing season and diminishes to pre-fire conditions or better within three years.

There is evidence suggesting that the timing of natural fires (mid-June to late August) may be more beneficial to soils than when prescribed fires are usually ignited (early spring and early to mid-fall). During typical periods of natural fire, soils and fuels are drier. This either drives biological activity deeper into the soil (making them more resilient to damage), or impacts soil-borne biological activity to a lesser degree because microbes would be dormant during the dry summer period when wildfires are more likely to occur.

Soil compaction from vehicle traffic, building mechanical fire lines, and new road construction are some of the major impacts associated with fire management today. With the implementation of fire constraints (i.e., fewer one-tree fires, no mechanical fire lines, rehabilitation of trails, consideration of fragile soils) in polygons B, C and D, these impacts are likely to be minimized. Also, the ability to manage fires for resource benefit in C and D polygons may provide additional opportunities to enhance soil conditions in the long-term through allowing natural fires to burn in a more controlled environment (via NEPA analysis in WFURB situations).

Alternative #1: Although fires would still be managed appropriately (without the option of resource benefitting fires), including consideration of identified suppression constraints, it is likely that soil impacts attributable to compaction via vehicle traffic, fireline construction, and inadvertent opening of new roads would continue to adversely affect soil resources. In the short-term, use of standard suppression techniques would be greater than under the proposed action, thus maintaining current suppression-related soil impacts. In the long-term, continued suppression of fires at smaller acreages predisposes the landscape to potentially more fire of greater size. Mitigation after fires that occur under extreme conditions (presently, most fires remain small under normal conditions) which affect a large land base may not be adequate or timely to mitigate the negative impacts associated with wildland fire. In addition, fires of this size are usually associated with larger suppression crews which may exacerbate suppression-related soil impacts.

STANDARD 2: Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance.

Affected Environment: Riparian vegetation is generally associated with small, perennial streams, man-made reservoirs and stock-ponds holding year-round waters, and spring sources. Riparian plant communities or zones are typically narrow bands that follow stream courses and are directly influenced by live water associated with these streams or with subsurface moisture. On a per acre basis, these systems support much higher densities and greater diversity of species of both plants and animals than other rangeland plant communities. Because of the limited distribution and extreme importance of these systems, many riparian-dependent species

of plants and animals are of special management concern.

There are approximately 408 miles of riparian systems and associated riparian vegetation in the project area. Of these, 71 miles are in properly functioning condition, 83 miles are functional at risk, and 130 miles are nonfunctioning. The remaining 123 miles have not yet been assessed. Riparian wetland areas are functioning properly when adequate vegetation, land form, or large woody debris is present to: dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. All of these characteristics need not be present for a system to be stable and functional, however, if a number of these characteristics are missing, it is likely that the system would be susceptible to degradation in the event of an adverse action.

Environmental Consequences and Mitigation Measures:

Proposed Action: Most natural ignitions in the FMP area occur in uplands associated with pinyon and juniper. Only under extreme conditions can the ensuing fire make runs through bottomlands where potential riparian vegetation exists. Bottomlands containing riparian vegetation are often grazed by ungulates, both domestic and wild, thus creating a fuel break of sorts via fine fuel removal. Road systems are also highly tied to drainage bottoms. The removal of fine fuels and a de facto fire line are often sufficient to halt the advance of a fire through a riparian area, or minimize its involvement. In the event a fire does involve a riparian area and associated vegetation, the suckering ability of most riparian-associated plants along with a strong, binding root system that is already in place, is usually sufficient to maintain the integrity of the channel until natural revegetation occurs.

Repeated burning of riparian-associated plants may harm them beyond their capability to reestablish adequately and in a timely manner following a burn event. Another concern is the subsequent use of these drainage bottoms by ungulates following a fire event. If excessive use occurs on new growth, plants may not have sufficient energy reserves to sustain themselves, thus putting the riparian system at risk through the loss of armoring vegetation. Therefore, in situations where a significant portion of a riparian system is burned, subsequent rest from livestock grazing may be warranted. Additionally, recent prescribed bottomland burns have shown a tendency toward weed infestations. Weeds can compete directly with riparian vegetation and can downgrade a system from functional to functional-at-risk by their presence alone. Heavy infestations can cause a stream to become nonfunctional due to the inability of weedy species to form dense root systems necessary for holding banks together during heavy flow events. Post-burn monitoring should indicate whether weeds are becoming a

problem, and in cases where infestations are occurring, subsequent weed eradication programs should be initiated.

Perhaps more importantly than direct involvement by fire on these riparian areas, suppression efforts may have a greater impact. Construction of firelines through riparian areas (bulldozers, graders), crossing streams with heavy equipment (engines), and the use of airplane released retardant in drainage bottoms all can exacerbate existing problems with channel stability or cause new problems to arise such as gully formation and runoff collection. These potential impacts should be minimized through the use of an on-scene resource advisor via avoidance of suppression actions within riparian areas or through proper and timely rehabilitation of disturbed areas. Reseeding efforts in drainage bottoms and in fragile soils and watershed areas would aid in soil retention (thus preventing excessive sedimentation of streams) and promote watershed and channel stability.

Through plan implementation, it is assumed that the number of 40-200 acre fires would increase due to less aggressive suppression efforts (when appropriate, considering weather conditions, resources at risk, and suppression resources available). Fires of this size are generally not considered adverse to natural resources, and rarely would acreage of this magnitude occur in the limited riparian areas present. Riparian concerns and issues can be alleviated through a more aggressive suppression approach if deemed necessary by a resource advisor, followed by adequate and timely rehabilitation. Fires managed for resource benefit would require a separate NEPA document (in essence a burn plan) within which riparian issues can be addressed and mitigated as necessary.

Alternative #1: Environmental consequences associated with the no action alternative would be similar to that of the proposed action. The use of resource advisors, suppression constraints within or adjacent to riparian areas, rehabilitation opportunities, and a more aggressive stance on suppression efforts would likely minimize involvement of riparian systems.

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

PLANT COMPONENT

Affected Environment: Table 1 lists the different vegetation or surface cover types which occur within the three polygon categories derived from soil mapping. A more detailed description of each of these vegetation or surface cover types can be found in the WRRRA RMP/EIS.

| TABLE 1. VEGETATION/SURFACE COVER TYPES BY POLYGON TYPE | | | | |
|--|------------------|----------------------|--------------------|--------------------|
| VEGETATION ASSOCIATION | BLM ACRES | PRIVATE ACRES | STATE ACRES | TOTAL ACRES |
| B POLYGONS | | | | |
| Grassland | 38343 | 13812 | 2262 | 54417 |
| Greasewood | 1846 | 4214 | 499 | 6559 |
| Salt Meadow | 237 | 23 | 0 | 260 |
| Swale Meadow | 100 | 3090 | 0 | 3190 |
| Lodgepole Pine | 720 | 1463 | 0 | 2183 |
| Mountain Shrub | 32386 | 80586 | 7804 | 120776 |
| PJ Woodland | 176041 | 26831 | 2316 | 205188 |
| Quaking Aspen | 1935 | 11288 | 158 | 13381 |
| Riparian/Wetland | 309 | 875 | 65 | 1249 |
| River/Cottonwood | 279 | 5083 | 40 | 5402 |
| Rock Outcrop | 18927 | 4815 | 247 | 23989 |
| Salt Desert Shrub | 52033 | 17163 | 2120 | 71316 |
| Sagebrush | 142368 | 179067 | 10771 | 332206 |
| Spruce/Fir | 33 | 118 | 0 | 151 |
| Water | 183 | 1167 | 131 | 1481 |
| TOTAL | 492160 | 359860 | 27691 | 879711 |
| C POLYGONS | | | | |
| Barren Land | 11902 | 1516 | 410 | 13828 |
| Douglas Fir | 25602 | 6667 | 0 | 32269 |
| Grassland | 21076 | 3145 | 272 | 24493 |
| Greasewood | 1649 | 971 | 237 | 2857 |
| Swale Meadow | 18 | 170 | 0 | 188 |
| Mountain Shrub | 36999 | 20251 | 274 | 57524 |
| PJ Woodland | 250438 | 15812 | 10243 | 276493 |
| Quaking Aspen | 971 | 537 | 0 | 1508 |
| Riparian/Wetland | 71 | 10 | 0 | 81 |
| Rock Outcrop | 8235 | 1031 | 316 | 9582 |
| Salt Desert Shrub | 6414 | 462 | 175 | 7051 |
| Sagebrush | 85573 | 19175 | 3446 | 108194 |
| Spruce/Fir | 2640 | 201 | 0 | 2841 |
| Water | 2 | 16 | 0 | 18 |
| TOTAL | 451590 | 69964 | 15373 | 536927 |
| D POLYGONS | | | | |
| Barren Land | 29182 | 6019 | 1657 | 36858 |
| Douglas Fir | 614 | 900 | 0 | 1514 |
| Grassland | 16562 | 11152 | 232 | 27946 |
| Greasewood | 1819 | 3041 | 290 | 5150 |
| Swale Meadow | 2183 | 4619 | 129 | 6931 |
| Mountain Shrub | 104523 | 105878 | 4037 | 214438 |

| VEGETATION ASSOCIATION | BLM ACRES | PRIVATE ACRES | STATE ACRES | TOTAL ACRES |
|------------------------|-----------|---------------|-------------|-------------|
| PJ Woodland | 243485 | 31838 | 2461 | 277784 |
| Quaking Aspen | 5467 | 17396 | 1941 | 24804 |
| Rock Outcrop | 27733 | 3585 | 2473 | 33791 |
| Salt Desert Shrub | 5156 | 1764 | 10 | 6930 |
| Sagebrush | 82676 | 53713 | 2481 | 138870 |
| Spruce/Fir | 3793 | 1186 | 15 | 4994 |
| Water | 0 | 7 | 6 | 13 |
| TOTAL | 523193 | 241098 | 15732 | 780023 |

Aside from the barren land, rock outcrop, and water surface cover types, most of these vegetation associations have been influenced over time by natural fire occurrence and in recent history by fire suppression or manipulation of fuels (grazing). Three vegetation associations were identified in the WRRRA RMP of significant importance to many resource uses, and are characterized by large acreages of plant communities with similar structure and composition of species. Most lack a natural distribution of diversity in structure and composition primarily from recent historical influences on the natural fire regime due in part by man-caused influences (e.g., fine fuel removal via grazing, plant composition changes). These vegetation associations (comprising 80% of the public land in the resource area) are the sagebrush/grass shrub lands, the PJ woodlands, and the mountain shrub lands.

The sagebrush association is a mixed low to high growing shrub community dominated by various sagebrush species. The overstory varies from open to completely closed with understory species density and diversity inversely related to overstory closure. The association is influenced by many interacting and independent ecological factors, mainly climate, soils, topography, fire history, and grazing history. Stands below 7,000 feet are generally dominated by Wyoming big sagebrush and support a shadscale, winterfat, or rabbitbrush component in many stands. Stands above 7,000 feet are generally dominated by mountain big sagebrush and commonly mixed with associated mountain shrub species. Stands on deep soils in valley bottoms at most elevations are generally dominated by basin big sagebrush and support a rabbitbrush or greasewood component in some stands. Small isolated stands of black sagebrush and three-tip sagebrush are scattered at lower elevations of the resource area. The sagebrush association covers over 21% of the resource area.

The mountain shrub type is a mixture of large to medium-sized deciduous shrubs that have a mixed understory of new growth shrubs, grasses, and forbs. The overstory varies from open to dense and understory species density and diversity reflects an inverse relationship to overstory closure. In some areas, the type appears to support the highest herbaceous production and species diversity of any plant association. The association occupies higher elevations on east, west, and north slopes, but extends into lower elevations on cool exposures and comprises about 12% of public lands in the resource area.

The PJ association is a broad classification covering several associations of pinyon pine and various western junipers. The primary juniper species found in the resource area is Utah juniper. The type characteristically occurs on xeric ridgetops with shallow soils. It apparently has a competitive advantage over other vegetation types and is the climax association on these sites. The PJ association varies from an open to closed overstory of woodland conifers supporting highly variable understory shrub and grass-forb production. Understory production generally varies inversely with overstory closure. The type exists on a wide range of soils, elevations, and exposures and is limited primarily by semi-arid or cool-mesic climatic conditions and saline-alkaline soils. The type is found from about 5,200 to 8,000 feet corresponding to a general precipitation range of 10 to 20 inches per year. About 46% of the public lands in the resource area comprise this association.

Table 2 profiles a natural fire return interval for the three major vegetation associations. These fire return intervals have been inferred for the three associations considering the generalization of plant communities specific to these associations. An annual and a decadal rotation period for each polygon has been included in the table which portrays the amount of each of the three associations which would logically turn over (via burning) if the assumed fire return interval were to be maintained.

| TABLE 2. FIRE RETURN INTERVALS FOR MAJOR VEGETATION TYPES | | | | | | |
|--|------------------|---|--|--|---|---|
| POLYGON | BLM ACRES | ECOLOGICAL LIMIT FOR ACREAGE CONVERSION (Annual) <u>1/</u> | ECOLOGICAL LIMIT FOR ACREAGE CONVERSION (Decadal) <u>1/</u> | FMP CONSTRAINT 1 YEAR (Acres) <u>2/</u> | FMP CONSTRAINT 10 YEAR (Acres) <u>2/</u> | PROPOSED FIRE INTERVAL (Years) <u>3/</u> |
| B1 BLUE MOUNTAIN SAGE GROUSE | | | | | | |
| Mountain Shrub | 230 | 3 | 30 | None | None | N/A |
| P/J Woodland | 1002 | 3 | 33 | None | None | N/A |
| Sagebrush | 30878 | 515 | 5146 | None | None | N/A |
| B2 ELK SPRINGS OIL & GAS | | | | | | |
| P/J Woodland | 1723 | 6 | 57 | None | None | N/A |
| Sagebrush | 1017 | 17 | 170 | None | None | N/A |
| B3 SALT DESERT SHRUB | | | | | | |
| Mountain Shrub | 821 | 11 | 109 | None | None | N/A |
| P/J Woodland | 11691 | 39 | 390 | None | None | N/A |
| Sagebrush | 39550 | 659 | 6592 | None | None | N/A |
| B4 CROOKED WASH/INDIAN VALLEY | | | | | | |
| Mountain Shrub | 4 | 0 | 1 | None | None | N/A |
| P/J Woodland | 23281 | 78 | 776 | None | None | N/A |
| Sagebrush | 22057 | 368 | 3676 | None | None | N/A |
| B5 DOUGLAS CREEK | | | | | | |
| Mountain Shrub | 1783 | 24 | 238 | None | None | N/A |
| P/J Woodland | 78340 | 261 | 2611 | 1000 | 2000 | 392 |

| TABLE 2. FIRE RETURN INTERVALS FOR MAJOR VEGETATION TYPES | | | | | | |
|---|-----------|--|---|---|--|--|
| POLYGON | BLM ACRES | ECOLOGICAL LIMIT FOR ACREAGE CONVERSION (Annual) <u>1/</u> | ECOLOGICAL LIMIT FOR ACREAGE CONVERSION (Decadal) <u>1/</u> | FMP CONSTRAINT 1 YEAR (Acres) <u>2/</u> | FMP CONSTRAINT 10 YEAR (Acres) <u>2/</u> | PROPOSED FIRE INTERVAL (Years) <u>3/</u> |
| Sagebrush | 18955 | 316 | 3159 | 1000 | 2000 | 95 |
| B6 YELLOW CREEK | | | | | | |
| Mountain Shrub | 89 | 1 | 12 | None | None | N/A |
| P/J Woodland | 51324 | 171 | 1711 | 1000 | 2000 | 257 |
| Sagebrush | 19503 | 325 | 3251 | 500 | 1000 | 195 |
| B7 PICEANCE CREEK | | | | | | |
| Mountain Shrub | 546 | 7 | 73 | None | None | N/A |
| P/J Woodland | 3095 | 10 | 103 | None | None | N/A |
| Sagebrush | 2126 | 35 | 354 | None | None | N/A |
| B8 MAGNOLIA OIL & GAS | | | | | | |
| Mountain Shrub | 623 | 8 | 83 | None | None | N/A |
| P/J Woodland | 612 | 2 | 20 | None | None | N/A |
| Sagebrush | 606 | 10 | 101 | None | None | N/A |
| B9 MEEKER EAST | | | | | | |
| Mountain Shrub | 27571 | 368 | 3676 | None | None | N/A |
| P/J Woodland | 3446 | 11 | 115 | None | None | N/A |
| Sagebrush | 6802 | 113 | 1134 | None | None | N/A |
| B10 WHITE RIVER | | | | | | |
| Mountain Shrub | 719 | 10 | 96 | None | None | N/A |
| P/J Woodland | 1527 | 5 | 51 | None | None | N/A |
| Sagebrush | 2720 | 45 | 453 | None | None | N/A |
| C1 BAKING POWDER/PINYON RIDGE | | | | | | |
| P/J Woodland | 8433 | 28 | 281 | 250 | 500 | 169 |
| Sagebrush | 4879 | 81 | 813 | 500 | 1000 | 49 |
| C2 SPOOKY MOUNTAIN | | | | | | |
| P/J Woodland | 12921 | 43 | 431 | 300 | 500 | 258 |
| Sagebrush | 4944 | 82 | 824 | 500 | 1000 | 49 |
| C3 SPRING CREEK/BIG RIDGE | | | | | | |
| Mountain Shrub | 1999 | 27 | 267 | None | None | N/A |
| P/J Woodland | 69130 | 230 | 2304 | 750 | 1750 | 395 |
| Sagebrush | 30520 | 509 | 5087 | 2000 | 4000 | 76 |
| C4 RABBIT MTN/DRAGON TRAIL | | | | | | |
| Mountain Shrub | 239 | 3 | 32 | None | None | N/A |
| P/J Woodland | 49822 | 166 | 1661 | 750 | 1500 | 332 |
| Sagebrush | 8738 | 146 | 1456 | 750 | 1500 | 58 |
| C5 GREASEWOOD CREEK | | | | | | |
| Mountain Shrub | 3812 | 51 | 508 | None | None | N/A |

TABLE 2. FIRE RETURN INTERVALS FOR MAJOR VEGETATION TYPES

| POLYGON | BLM ACRES | ECOLOGICAL LIMIT FOR ACREAGE CONVERSION (Annual) <u>1/</u> | ECOLOGICAL LIMIT FOR ACREAGE CONVERSION (Decadal) <u>1/</u> | FMP CONSTRAINT 1 YEAR (Acres) <u>2/</u> | FMP CONSTRAINT 10 YEAR (Acres) <u>2/</u> | PROPOSED FIRE INTERVAL (Years) <u>3/</u> |
|--|------------------|---|--|--|---|---|
| P/J Woodland | 29314 | 98 | 977 | 250 | 750 | 391 |
| Sagebrush | 9856 | 164 | 1643 | 1000 | 2000 | 49 |
| C6 LOWER PICEANCE BASIN | | | | | | |
| Mountain Shrub | 144 | 2 | 19 | None | None | N/A |
| P/J Woodland | 54338 | 181 | 1811 | 500 | 1500 | 362 |
| Sagebrush | 15753 | 263 | 2626 | 1000 | 2000 | 79 |
| C7 EVACUATION/ MISSOURI CREEKS | | | | | | |
| Mountain Shrub | 1794 | 24 | 239 | None | None | N/A |
| P/J Woodland | 19449 | 65 | 648 | 750 | 1500 | 130 |
| Sagebrush | 7969 | 133 | 1328 | 1000 | 2000 | 40 |
| C8 BAXTER/ DOUGLAS PASSES | | | | | | |
| Mountain Shrub | 13269 | 177 | 1769 | None | None | N/A |
| P/J Woodland | 1727 | 6 | 58 | None | None | N/A |
| Sagebrush | 2448 | 41 | 408 | None | None | N/A |
| C9 DANFORTH HILLS | | | | | | |
| Mountain Shrub | 15742 | 210 | 2099 | 1000 | 2500 | 63 |
| P/J Woodland | 5304 | 18 | 177 | 750 | 1500 | 35 |
| Sagebrush | 2115 | 35 | 353 | 750 | 1500 | 14 |
| D1 BLUE MTN/ DINOSAUR BOUNDARY | | | | | | |
| P/J Woodland | 3196 | 11 | 107 | None | None | N/A |
| Sagebrush | 5455 | 91 | 909 | None | None | N/A |
| D2 BULL CANYON/ SKULL CREEK WSAs | | | | | | |
| P/J Woodland | 14018 | 47 | 467 | None | None | N/A |
| Sagebrush | 3994 | 67 | 666 | None | None | N/A |
| D3 CITADEL/GRAY HILLS | | | | | | |
| Mountain Shrub | 10671 | 142 | 1423 | None | None | N/A |
| P/J Woodland | 29340 | 98 | 978 | None | None | N/A |
| Sagebrush | 16426 | 274 | 2738 | None | None | N/A |
| D4 LITTLE HILLS | | | | | | |
| Mountain Shrub | 35030 | 467 | 4671 | None | None | N/A |
| P/J Woodland | 66655 | 222 | 2222 | None | None | N/A |
| Sagebrush | 14870 | 248 | 2478 | None | None | N/A |
| D5 CATHEDRAL BLUFFS/ ROAN PLATEAU | | | | | | |
| Mountain Shrub | 58822 | 784 | 7843 | None | None | N/A |
| P/J Woodland | 130276 | 434 | 4343 | None | None | N/A |
| Sagebrush | 43750 | 729 | 7292 | None | None | N/A |

1/ The fire interval for White River vegetation types was assumed to be 300 years for P/J woodlands; 60 years for sagebrush types; 75 years

for mountain shrub types. The ECOLOGICAL LIMIT FOR ACREAGE CONVERSION (Decadal) was calculated using assumed fire intervals on acres of mapped vegetation burned in 10 years. ECOLOGICAL LIMIT FOR ACREAGE CONVERSION (Annual) was calculated using the decadal figure.

2/ The 1 and 10 year constraints defined in the polygon descriptions in the proposed action.

3/ The PROPOSED FIRE INTERVAL (Years) calculated from the FMP 10 Year Constraints based on acres of mapped vegetation.

Environmental Consequences and Mitigation Measures:

Proposed Action: The discussions of the impacts of the proposed action are organized by the upland vegetation associations influenced by fire and/or fire suppression. The impact assessment also includes some discussion of fire effects on the major plant species comprising these associations.

Grassland–Grasses/Forbs:

The grassland types in the resource area are characterized by both a fire maintained disclimax and a community type not influenced by fire. Those not influenced by fire are generally the grass/forb communities on shallow soils, wind- swept ridges, or the low elevation desert grasslands. The fire maintained grasslands are generally associated with early seral sagebrush or PJ woodland types that have recently burned or been mechanically treated.

The non-fire grasslands occur in numerous polygons. They would not be impacted from identified management prescriptions in those polygons and would likely maintain their amount and distribution. The amount of grassland created on early seral sagebrush or PJ burn sites would likely increase in the C and D polygons. Grasslands in the B polygons would not expand significantly. Burns in many of the B Polygons, by virtue of current cheatgrass infestations, have a greater chance of cheatgrass invasion which would create non-desirable grassland types maintained by more frequent fire events. Management prescriptions proposed in the B Polygons (suppression of all fires) would minimize the extent and distribution of cheatgrass types. However, in the long-term, suppression efforts would delay fire events and potentially create larger burns with greater potential for cheatgrass invasion.

Fire effects depend on the growth habit and phenology of affected plants, as well as season of burn, fire intensity, and burn severity. Fires usually top kill and consume vegetation to ground level. Rhizomatous grass and forb species are frequently favored by fire, as fire may stimulate the initiation of new shoots. Rhizomatous species usually have coarse stems and lesser amounts of leafy material which results in rapid combustion and little downward transfer of heat to below ground plant parts. Heat transferred downward may adversely impact meristematic growth tissues and injure the affected plant. Bunchgrass crowns characterized by coarse stems and leaves are generally considered to be less prone to prolonged burning than fine-leaved bunchgrasses.

Burns occurring in the spring (an unlikely scenario given the rare incidence of

natural ignitions at that time of the year) after new growth is initiated can severely injure most grass and forb species. Likewise, burns when grasses and forbs are in the fruiting stage (generally in early to mid-summer) when root carbohydrate reserves are low can result in significant damage. Fires that would be allowed to burn for benefit in early summer in C and D polygons could adversely impact plant species prior to fruiting. However, fires would likely remain small because of higher fuel moisture in most plants at this stage of growth, and resource benefitting burns (WFURB) would be subject to NEPA analysis which could identify and mitigate these and other concerns.

Grasses and forbs spread rapidly via surviving rhizomes following a burn. Non-rhizomatous plants establish relatively rapidly from seed banks in the soil or from off-site seed sources. Composition and production of most grass and forb species usually exceed (under optimal conditions) pre-burn levels within two growing seasons following a burn.

Salt Desert Shrub:

The salt desert shrub association occurs on the most xeric soils and lowest elevations in the resource area. The association consists of several species of *Atriplex* shrubs and half shrubs with small occurrences of Wyoming and basin big sagebrush on inclusions of more productive soils. Natural fire events are usually rare in this association because of sparse fuels. Many of the native species within this association are able to survive occasional fire events either by resprouting or reestablishing from on-site seed. However, non-native species such as cheatgrass and halogeton make it near impossible for native species to recover from any disturbance event, including fire, due to their competitive nature.

The most significant occurrences of this association have been included in B polygons (suppression areas) primarily due to the proliferation potential of non-native species. Polygon B3 encompasses over 80% of this association in the resource area. Fire management objectives proposed for this polygon would attempt to keep any fire within this association to less than 50 acres and require rehabilitation of any fire exceeding 10 acres. These objectives would minimize impacts to this association from fire disturbances.

Sagebrush:

Most sagebrush species are easily killed by fire. Site productivity affects the ease with which sagebrush will burn. Highly productive sites have greater plant density and more biomass which, in turn, provide more fuel to carry a fire. Black and three-tip sagebrush species occupy sites with low productivity, thus low biomass is available to carry a fire. These latter species occupy sites with very long fire return intervals (100-250 years between events).

Big sagebrush, which comprises a majority of the sagebrush association, has a

shorter fire return interval than the low sagebrush types. Among the three major subspecies of big sagebrush, basin big sagebrush is considered intermediate in flammability. Mountain big sagebrush is most flammable, and Wyoming big sagebrush is least flammable. Fire return intervals for mountain big sagebrush are in the 15-40 year range, for basin big sagebrush in the 25-70 year range, and for Wyoming big sagebrush in the 50-100 year range.

All subspecies of big sagebrush re-invade a site by soil-stored or off-site seed. The rate of stand recovery depends on the season of fire, availability of seed, post fire precipitation patterns, and the amount of competition provided by other plant species regenerating after the fire. If a good moisture year occurs soon after the fire, reestablishment can be greatly accelerated. Pattern of burning also greatly influences the rate of post fire reestablishment. Small areas are more rapidly re-invaded from adjacent seed sources; individuals surviving within the fire perimeter may provide much of the seed for recolonization. Sagebrush seed is not disseminated for great distances; most is shed near the base of the parent plant.

Sagebrush seedlings re-establish readily and grow rapidly on light to moderate intensity burns; reproductive maturity may occur in 3 to 5 years when competition is removed and growth conditions are optimal. Desirable pre-burn density and cover may be achieved in 15 to 20 years under favorable conditions. It may take 30 years or more before desirable pre-burn densities and coverage of big sagebrush subspecies are regained on high intensity, large burns or where herbaceous competition impedes sagebrush reestablishment.

Currently, many of our sagebrush communities are at or beyond the age (structure and composition) when fire would normally have intervened to move these communities back to an earlier seral stage. Lack of fire may be due in part to fire suppression efforts, lack of fine fuels related to grazing issues, or many other factors that influence the susceptibility of a vegetation community to fire. Continued exclusion of fire from these communities has and will continue to allow succession of sagebrush to advance to a point where native herbaceous plant species (fine fuels) may be limited where fuels are currently not limited. Many of these sagebrush communities in the PJ zone have seen an increased abundance of pinyon and/or juniper trees which replace sagebrush and more importantly, the herbaceous species needed to carry fire. These herbaceous species are critical to maintenance of the natural fire regime for these communities.

Decreased herbaceous species in the sagebrush community extends the fire return interval outside the norm until extreme conditions are necessary for a fire or other disturbance to occur. At that point, the site is susceptible to cheatgrass or other non-native plant invasion and the fire return interval may become much shorter than normal. A non-desirable sagebrush community (lacking or devoid of native herbaceous vegetation) may increase the chance for cheatgrass invasion following a

disturbance which in turn would be perpetuated by more frequent fire events.

Based upon the extent of sagebrush communities in the area, approximately 50,000 acres could burn over a ten year period which would maintain the natural fire regime for these communities. Based upon fire records for the past 20 years, less than one-half this acreage burned in all fires in all vegetation types in a ten year period. The proposed action offers an opportunity to return to a natural fire renewal process in the sagebrush communities in C and D polygons. These communities in B polygons (46% of the type in the resource area) would continue to be negatively influenced from the fire suppression/management proposed.

Mountain Shrub:

Many of the plant species common to the mountain shrub association are fire tolerant and adapted. True mountain-mahogany, serviceberry, and snowberry sprout vigorously after fire and Gambel oak is extremely fire tolerant. Most, however, are top-killed by moderate to severe fire. Larger branches may survive light-severity fires. Shrub density usually increases, and pre-fire cover is often reattained in the ensuing years. Even when there is little change between pre- and post-fire cover, fire usually makes shrubs more accessible to browsing animals by lowering shrub height. Likewise, many of the herbaceous species associated with these resprouting shrubs are also resprouters. Most are shade tolerant and probably show increased cover following a burn.

Fire return intervals in these communities are probably greater than in the sagebrush communities. The mountain shrub types occur on more mesic sites in the resource area and are dependant upon infrequent dry periods to support fire. Fires are probably larger and consume most of a stand when conditions are right. Currently, most of the mountain shrub communities in the resource area are older, and several are being influenced by the encroachment of pinyon trees and to a lesser extent by Douglas-fir stands. Normal fire return intervals were probably spaced sufficient to keep tree encroachment at a level much below what is occurring at present.

Over 80% of the mountain shrub type on public lands is within C and D polygons, 73% in D polygons. Management objectives proposed for this type would have a positive impact on mountain shrub communities in C and D polygons. Fire intensity constraints prescribed for benefit fires in C polygons are likely to be exceeded on those infrequent dry years when fire would benefit those communities and provide the opportunity for stand replacement. Mountain shrub communities in B and perhaps C polygons would not be positively influenced by proposed management prescriptions.

Pinyon/Juniper:

In areas classified as B polygons, resource constraints requiring fire suppression efforts would likely not achieve the natural fire regimes for the PJ community, as the

yearly and decadal limits for PJ replacement would not normally be reached. The exception would be B6 which has large areas of PJ which have either been burned or chained. On these converted stands, large (>200 acre) fires are expected regardless of suppression actions taken. To improve the age class distribution of the stands in B6, hazardous fuel reduction projects would be important in preventing large stand replacing fires. The FMP offers the opportunity for changing boundaries of management classification as new information is analyzed, which could change the fire control strategies to more closely match vegetation goals.

Under the preferred alternative, the C polygons could burn without the constraints of fire control efforts (natural edges) when conditions and circumstances are deemed appropriate. In the PJ type, most if not all fires capable of moving through the canopy would occur in conditions outside of the appropriate prescription and would likely have fire suppression efforts implemented if other resources would be at risk. If other resources are not at risk, WFURB may be implemented which could increase burn size to benefit identified resources. Even under suppression actions, C category areas may be allowed to burn to natural barriers, and indirect control measures could be used, thus increasing the opportunity for additional acreage to burn. Overall the additional acreage burned is expected to be insignificant compared to the total PJ woodland base. The yearly and decadal limits for PJ replacement are not expected to be achieved, but would offer additional opportunity over current management and can be viewed in a cumulative and long-term sense as being beneficial.

Under the D category, the opportunity for small (<40 acres) patch type fires in the PJ would be increased as a result of enhanced flexibility in fire management options; notably, single tree fires could expand to larger sizes when optimal fire conditions exist. This flexibility is increased because fewer at-risk resources have been identified in these polygons. The D category offers the greatest opportunity to manage individual fires through their natural conclusion with variable control responses and tactics (WFURB). Large stand replacing fires would occur on a regular but infrequent basis regardless of suppression efforts with their size based on burn conditions, fuel conditions, and topography.

Alternative #1: The discussions of the impacts of the proposed action are organized by the upland vegetation associations influenced by fire and/or fire suppression. The impact assessment also includes some discussion of fire effects on the major plant species comprising these associations.

Grassland:

The non-fire influenced grasslands would not be impacted by this alternative. Those resulting from early seral sagebrush or PJ burns would decrease in C and D polygons for a time. Continued fire suppression would maintain plant communities of mature structure over larger areas. When a fire does occur, it would probably be large creating an early seral stand of the original community. This early seral community

could be a native grassland or more likely, a cheatgrass or other non-native, non-desirable monoculture.

Salt Desert Shrub:

A majority of this association is in a B polygon. The impacts under this alternative would be essentially the same as in the proposed action.

Sagebrush:

Continued exclusion of fire from these communities (resulting from fire suppression efforts or lack of flammability due to little residual herbaceous growth) has and would continue to allow succession of sagebrush to advance to a point where native herbaceous plant species could be limited. Pinyon and juniper densities in many of these sagebrush communities continue to increase, thus replacing sagebrush, and more importantly, the herbaceous species needed to carry fire. When fire does occur, it would burn larger acreages and could develop a non-desirable plant community following the fire.

The impacts noted to B polygons for the proposed action would occur within C and D polygons under this alternative. Fire disturbances needed for stand renewal would continue at a rate 3 times below that needed to maintain the assumed natural fire regime.

Mountain Shrub:

Most of the mountain shrub communities in the resource area have not been disturbed by fire in a period longer than might be expected under a natural fire regime. Several are being influenced by increased pinyon and juniper colonization (and to a lesser extent Douglas-fir) which changes the nature of these stands. The opportunity for increasing diversity in structure that could occur under the proposed action would not happen with continued fire suppression. The potential for adversely affecting the mountain shrub communities via pinyon encroachment would continue in the near future. When a fire does occur in this type, it would probably involve complete consumption of numerous mountain shrub stands and possibly spread to adjacent stands of other vegetation types. Fires involving whole complexes would maintain an even-aged characteristic (albeit at a younger age) without structural variability across a larger area.

Most plant species occurring in this association are fire tolerant with fire stimulating new shoot development from root crowns or rhizomes. Without this stimulus, plants can become more susceptible to disease, decreasing productivity and increasing the potential for loss from the overall community.

Pinyon/Juniper:

The resource constraints and fire control efforts would be similar to the preferred alternative within B polygons. With or without this FMP there remains the option

for using hazardous fuel reduction projects to prevent large fires which would involve contiguous stands. Without a FMP there is no opportunity for changing the area classifications to modify fire control strategies to match resource objectives.

Under this alternative, smaller fires in C polygons with potential to increase in size would be suppressed using appropriate management response strategies. The size of most large fires (>200 acres) have generally not been affected by control efforts, rather, size has been a function of burn conditions, fuel conditions, and topography. Firefighting tactics (burning out and back burning) have the opportunity to increase the size of the fire beyond the natural fire's potential, but often leave artificial edges and may exacerbate existing problems (weeds) or create additional ones (road proliferation).

Under the no action alternative, all fires in D polygons would suppressed, decreasing the opportunity for fire expansion. Edges of fires would probably not have a natural appearance. Single tree fires would have less opportunity to burn to their natural conclusion. Large stand replacing fires would still occur during extreme conditions as suppression efforts on these large fires would have little effect on their size.

ANIMAL COMPONENT

Affected Environment: Information concerning the animal component has been addressed by animal groupings. Habitats, behaviors, and ecological principles are often similar between like animals.

Big Game:

A resident population of about 250 pronghorn antelope occupy the sagebrush/salt-desert shrub community in the upper Crooked Wash drainage (polygon B4) and the Highway 40 corridor from Pinyon Ridge to the Utah state line (polygons B3, B4, C1, and C2). Generally, habitat quality is limited by insufficient availability of broad-leaved herbaceous forage and poorly distributed sources of reliable water. Woody forage and cover conditions are considered favorable.

Mule deer and elk summer at higher elevations (above 7400') throughout the Resource Area and are generally associated with mountain sagebrush/serviceberry and aspen habitats in close proximity to water. One of the more important functions of summer range is to provide a high nutrition forage base that can be used in an energetically efficient manner. Optimal summer habitat provides an abundant and diverse source of succulent broadleaf herbs liberally interspersed among cover types that offer effective security and thermal protection for fawns and calves. The interspersed of effective woody cover (i.e., later successional forms) among forage-producing sites (e.g., parks, meadows as earlier seres) is paramount in enhancing efficient energy use and maximizing energy allocated to growth and replenishment of fat reserves. The condition and suitability of late spring and summer deer ranges has not been extensively evaluated. The fact that deer production and fawn winter survival is somewhat

lower than desired across the Resource Area may be, in part, indicative of nutritional deficiencies during the summer and fall months. Although elk are subject to the same principles discussed above, by merit of larger size, greater mobility and less pronounced fidelity to a defined home range, they are capable of optimally fulfilling physiological needs across landscapes that are more simply configured. The productivity and survival of elk in this Resource Area are indicative of adequate cover and forage conditions on all ranges.

The greater extent of BLM lands in this Resource Area are used by deer during the late fall through middle spring months as winter range. The distribution and dispersion of forage and cover on winter range, particularly those PJ ranges occupied from January through March, is perhaps an even more important consideration in habitat utility and its ultimate effect on population status than that discussed for summer range. Wintering deer are sustained principally by woody forages during this time frame, especially mountain mahogany, bitterbrush, rubber rabbitbrush, and Wyoming big sagebrush. It is believed that the majority of winter ranges are adequately stocked with desirable woody forage species, but these stands, especially deciduous browse, typically display low vigor because of excessive and persistent use by big game. Average use of dominant woody forage on higher elevation winter ranges generally exceed rates considered maximum for sustained productivity. This condition is intensified on lower elevation late winter range where site conditions impose further limitation on regeneration and production and where maximum animal densities are attained.

Tantamount to the availability of forage on winter range, are sources of thermal cover required to minimize energy expenditures necessary to maintain body temperature, and operating throughout the year, hiding or security cover which mitigate metabolic loads associated with predator-induced (including human) harassment and avoidance. In general, cover requirements during the winter are provided by PJ woodlands. With few exceptions, coniferous woodland cover is sufficient in extent or in greater supply than necessary to support optimal winter cover needs of deer. It is generally accepted that deer make most efficient use of forage resources within 200 feet of effective cover, although terrain and any form of vegetation that is effective in screening deer can modify this general guideline.

Raptors:

Roughly 25 raptors or raptor-like birds reside in the project area on a seasonal or yearlong basis, and occupy nearly all vegetation types. Resident buteo hawks and eagles make extensive use of open shrub and grasslands (e.g., sagebrush, salt-desert shrub, and agriculture types), while most accipiter and owls nest and forage in close association with woodland, mountain shrub, and timbercanopies. Additional details on these birds and pertinent habitat relationships may be found in the WRRRA RMP.

Grouse:

Blue grouse are relatively common and widely distributed across the area at elevations above 7200 feet and in association with the mountain-shrub and aspen types. Blue Mountain and the Piceance Rim/Roan Plateau are 2 important blue grouse areas in terms of habitat availability and bird numbers.

Sage grouse, a species obligate to sagebrush communities, are considered a sensitive species by the BLM, mainly because of large-scale reductions in suitable sagebrush habitats, significant declines in continental populations. The BLM currently administers 298,481 acres of sage grouse habitat. The largest and most prominent populations occurring on Blue Mountain and along the Piceance Rim/Roan Plateau. Breeding takes place on the approximately 40 leks found in the project area. Leks are usually open or sparsely vegetated areas adjacent to suitable sagebrush communities used for loafing or hiding cover. Birds concentrate here during the spring breeding season, and nest most frequently in suitable sagebrush cover within 2 miles of leks. Brood-rearing areas are closely tied to wet meadows and more mesic rangeland situations.

Fisheries:

Aquatic systems that primarily provide cold-water stream and cool-water riverine fisheries comprise the bulk of game fisheries habitats managed by the BLM. However, BLM-managed segments are often small and/or fragmented. Predominant species found in these systems include rainbow trout and mountain whitefish with smaller components of brown, cutthroat, and brook trout. Channel catfish are found in the lower sections of the White River. Divide Cr. and Peterson Draw Reservoirs provide some opportunity for game fish recreation with warm-water species (mainly channel catfish and black bullhead) being found in the former and rainbow trout in the latter. Other warm-water fisheries can be found at Rio Blanco Lake and Kenney Reservoir.

Numerous non-game fish species are found throughout the resource area. Speckled dace is thought to be the most prevalent and widely distributed native non-game fish, appearing regularly in perennial streams in the Douglas and Piceance Cr. basins. The remaining species, primarily suckers and chubs, are believed to be primarily confined to the White River and its larger tributaries.

Environmental Consequences and Mitigation Measures:

Proposed Action: Information concerning the animal component has been addressed by animal groupings. Habitats, behaviors, and ecological principles are often similar between like animals.

Big Game:

Summer/Transition Ranges:

Polygons D1 (Dinosaur boundary), D3 (Gray Hills), D4 (Little Hills) and D5 (Cathedral Bluffs) encompass much of the higher elevation summer, transition, and resident big game populations in the Resource Area. Based on historical incidence and extent of fire, it is thought that these polygons could accommodate a sharp rise in typically-sized events (30-150 acres) with no impairment to big game distribution or their efficient use of habitat on a local scale. It is assumed that the infrequent large-scale events (600-800 acres) would continue to occur as present. Increasing the frequency of starts or smaller events that are allowed to attain an extent and pattern

thought typical would be consistent with improving not only the dispersion of forage types within cover (i.e., mountain shrub), but enhancing the distribution and availability of early successional forage favored from early spring through fall (i.e., forbs). Although localized enhancement of herbaceous quality and availability (i.e., improved nutrition and foraging efficiency) for big game on these ranges would be realized in the short-term, an accumulation of beneficial effects across the Game Management Units sufficient to gain recognizable herd-scale influence (e.g., fawn survival) would require a minimum of several decades.

Polygon B1 is a sagebrush-dominated summer use area where fire extent and distribution is constrained by sage grouse considerations. These constraints, by promoting more numerous, smaller, and widely distributed fires in the mountain big sagebrush and mixed brush communities, would complement deer-oriented management as discussed above, although elk, too, would efficiently exploit this pattern.

Polygon C8 (Douglas Pass) and C9 (Danforth Hills) have had very little fire history over the last 20 years. Constraints in C8 are oriented toward the maintenance of mature uneven-age timber stands. The allowances provide for infrequent episodes of stand renewal and the potential for aspen development as an important feature of big game summer range. Decadal limits for mountain shrub communities in C9 are believed compatible with the maintenance of stand extent and allow for cyclic redevelopment, but provide a mechanism for enhancing the dispersion of woody and herbaceous forage supplies among successional advanced cover types. Considering the small number of starts in these units (as well as the amount of interspersed private lands), it is unlikely that proposed management would alter current big game summer range character.

Fairly consistent among these summer use areas is the tendency for only 15% of natural ignitions to progress beyond an average of 2 acres. It is believed under proposed management strategies (i.e., de-emphasis on traditional wildfire suppression) that average fire size and total extent would increase, at least moderately, and the sustained, long-term accumulation of younger successional inclusions would yield incremental, but progressive improvements in big game nutritional status during the summer and fall months.

The winter and late winter use associated with these polygons and fire's influence in the development of woody forage sources among coniferous cover types would be similar to that discussed below.

Winter Ranges:

Big game winter ranges would be influenced by fire in a manner similar to that discussed for summer range components above. Throughout the Resource Area's winter ranges, historical data indicates that about 20% of recorded starts reach an

average size of 2-3 acres; about 10% of all starts progress to an average size of 25 acres or more. Under the proposed management strategy, particularly in C and D polygons, it is conceivable that the frequency and acreage attributable to mid-range fires of 25-40 acres would increase.

There is a pattern for woodland fires to commonly achieve an average 30-40 acre size once they progress beyond single tree or 2-3 acre events. Assuming a circular or block pattern, the forage patch size considered optimum for efficient use by mule deer is about 30 acres. Deer's tendency to remain in close proximity to cover governs this premise such that, as the diameter of an opening increases, the area available for efficient forage use declines (e.g., 42% fully exploited at 50 acres, 23% at 200 acres, and 11% at 1000 acres). Note that full and efficient use of all plant production is often undesirable from a plant community standpoint (see below).

Although decadal thresholds in C polygons, resource constraints in B polygons, and relatively low incidence of fire in D polygons suggest that less-intensive fire suppression strategies would, in an overall sense, remain fairly consistent with a climax-oriented PJ regimen (i.e., a continuum of successional states that tend to remain in equilibrium), PJ ecology is poorly understood and there is little reliable data to detail fire response. For example, historical fire occurrence in Piceance Basin is difficult to evaluate due to a number of large fires whose size was likely exaggerated by heavy continuous ground fuels available in vintage chainings or in woodcutting areas.

Exceeding a calculated climax-oriented woodland regimen is acceptable in the short-term as a means of adjusting the long-term dispersion of forage producing sites among cover types. With the exception of Game Management Unit 10 (Blue Mountain), the Resource Area's winter ranges possess sufficient woodland extent to accommodate more numerous, small-scale shrubland parks that would tend to optimize big game habitat utility on a local scale. In the Piceance and Douglas Creek basins (polygons B5-6, C3-6, and D4), woodland extent is generally high relative to more open sagebrush or deciduous shrub types. Considerable opportunity exists to increase, by a factor of 2 or 3, the frequency and acreage associated with mid-range wildfire events (10-100 acre) without adversely affecting forage and cover distribution patterns considered advantageous in the context of deer management. Several to many decades of meeting or approaching prescribed decadal limits would be required before cover distribution would become an issue of concern.

Coniferous winter cover in GMU 10 (polygons B1-3, C1-2, and D1-2) is limited and unevenly distributed. Opportunities to disperse woody forage sites among available woodlands in configurations benefitting deer are similarly constrained. In these polygons, annual and decadal thresholds are thought to exceed climax woodland (mainly Utah juniper) maintenance regimes, although large recent fires in the Wilderness Study Areas (polygon D2, consistent with interim wilderness

management policy) and an inability to accurately classify fire history by vegetation type may contribute to an overly conservative evaluation.

The progressive development of more optimal forage and cover configurations and woody forage availability would be realized only after lengthy periods. Plant succession on these lower elevation ranges progresses slowly, and especially on ranges where Wyoming big and black sagebrush comprise the staple forage components, 30+ years may elapse before shrub reoccupation provides a substantive forage base on any given site. Those PJ ranges which support sprouting deciduous browse understories (e.g., mountain mahogany) would respond more rapidly after a burn (3-5 years), but, depending on a burn's position relative to winter deer distribution and burn extent (e.g., large enough to deter efficient exploitation), these sites can be subject to levels of use detrimental to sustained plant vigor.

Across all winter ranges, allowable decadal thresholds are consistent with the maintenance of lower elevation sagebrush communities both in terms of a winter forage supply for deer and cyclic redevelopment to a mature successional state. Short-term allowances often far exceed what are considered maintenance regimens (C polygons), but this feature accounts for year to year variability in fire effects and helps avoid overly reactive reassessment of fire management policy. If the program proves adverse in terms of yielding desired habitat objectives for big game (especially mule deer), opportunities to adjust management are inherent in the system.

Besides the emphasis inevitably placed on woody forage, winter ranges must also provide a reliable source of early emerging herbaceous growth for nutritional recovery by deer beginning as early as March. Wildfire acreage serves for several or more years in this capacity by providing an abundance of favored broadleaf forbs.

Sage Grouse:

Constraints associated with the Blue Mountain (B1), Salt Desert Shrub (B3), and Crooked Wash (B4) polygons are intended to distribute fire-induced effects more widely over the landscape. These units possess contiguous stands of sagebrush that are vulnerable to large-scale fire events that, because of the insular nature of associated sage grouse populations, could exert strong, long-term declines in the extent and continuity of suitable habitat and jeopardize the long term persistence of local grouse populations.

Historical fire records in these units is believed to indicate a regimen with an acceptable extent, but less than desirable distribution, for maintaining a large percentage of sagebrush habitats in seral states amenable to both short- and long-term grouse occupation. It is anticipated, through wildland fire suppression management, that the extent of historical fires in the 300+ acre categories would eventually be substituted with an increased frequency of starts that progress to 40-

200 acre events (e.g., doubling the current number ascribed to this category). Promoting smaller scale, more widely interspersed fire-induced effects throughout the polygons would prevent significant reductions in the suitable habitat base (and associated populations) and promote long-term increases in the percentage of sagebrush habitat that fulfills sage grouse nesting, brood-rearing, and winter use functions.

Fire response needs to be closely monitored in these polygons to verify the effective development and application of resource constraints (e.g., assumptions on fire recurrence intervals and canopy redevelopment timeframes). Although there is some question as to whether the assumed recurrence interval allows a sufficient accumulation of mature sagebrush stands to provide adequate extent and distribution of cover components in the long-term, the consequences of applying slightly errant community redevelopment information over the course of a few years are insignificant.

Historical fire records in the Little Hills (D4) and Cathedral Bluffs (D5) polygons indicate fire involvement at levels below that considered appropriate to maintain a desirable successional spectrum for sage grouse. This alternative would promote an increase in the frequency of starts that are allowed to attain their probable unfettered extent (30-150 acres) and would, in the long-term (e.g., 20-40 years), increase the proportion and extent of sagebrush habitat that provides more optimal sage grouse brood-rearing and nesting conditions.

Raptors and Fish:

Implementing the proposed action is expected to remain consistent with climax-oriented woodland and timber management. Based on known fire history, it seems unlikely that wildfire would play a significant role in altering woodland extent or age structure. Based on these assumptions, it is surmised that proposed fire management, in and of itself, would have little effect on the current status of any fisheries, raptor, or raptor group. It is probably more appropriate to evaluate these effects in the context of the overall land management program as discussed in the WRRR RMP. Yearly review of the FMP, in the context of raptor and fisheries management, would provide an opportunity to address concerns and possibly revise or update information to mitigate potential impacts caused by fire on these wildlife groups. Case-by-case scrutiny of fire effects on these groups would likely not be necessary, as potential impacts accrue over time and cover larger areas, requiring a broader analysis to ascertain appropriate courses of action.

Alternative #1: Information concerning the animal component has been addressed by animal groupings. Habitats, behaviors, and ecological principles are often similar between like animals.

Big Game:

All Ranges:

The bulk of big game habitats, as discussed under the Preferred Alternative, appear to be operating on a wildfire regimen that is well below those levels that provide optimum big game-oriented cover/forage availability and distribution. It is a fairly consistent trend that nearly 85% of wildfire starts in these polygons remain under 2 acres. This pattern seems to suggest timely and effective suppression of some portion of starts in these polygons, which consequently limits the potential benefits derived from a less regulated fire regimen. Continuing to promote the ongoing pattern of subtle successional advance would likely culminate in less frequent, but larger scale wildfire events. It is believed that this management strategy would continue to sustain strong elk populations, as large, mobile and behaviorally plastic herbivores, but would persist in aggravating the suppression of deer populations in this Resource Area over extended periods of time.

Sage Grouse:

Continued full suppression response in polygons encompassing sage grouse habitats would forego incremental opportunities to integrate fire processes considered essential in maintaining the long-term suitability of sage grouse habitat. A comparable number of undesirable large-scale events in the short term (i.e., beyond the immediate influence of suppression) would likely be expected, and in the long-term, the development of more homogenous, arborescent sagebrush stands would be expected. These stands would not only be less than ideal in terms of nesting substrate (e.g., suppressed herbaceous expression important for supplemental nest/brood cover and microclimatic conditions at the nest site), but would become increasingly susceptible to large scale fire events that may simultaneously involve large expanses of available habitat and exaggerate undesirable distribution of younger successional stands. These effects would, in the context of insular populations and limited habitat base, culminate in the long-term deterioration in the temporal and/or spatial continuity of habitats available for grouse occupation. Such impacts would further the downward trend in sage grouse population viability in these areas.

Raptors and Fish:

Based on known fire history, it seems unlikely that wildfire would play a significant role in altering woodland extent or age structure. Based on this assumption, it is surmised that current fire management, in and of itself, would have little affect on the current status of any fisheries, raptor, or raptor group. It is probably more appropriate to evaluate these effects in the context of the overall land management program as discussed in the WRRR RMP.

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

Affected Environment: Table 3 lists the special status plant species which occur within the project area. This table also notes the ACECs where the most significant habitats for these species occur. Most of these species are associated with habitats which are nearly devoid of vegetation. Most are endemic to the barren land surface cover type (Table 1).

| TABLE 3. SPECIAL STATUS PLANT SPECIES | | | | |
|--|------------------------------|---------------------------------|-----------------------------|---|
| SPECIES | COMMON NAME | FEDERAL STATUS <u>1/</u> | STATE LIST <u>2/</u> | ACEC <u>3/</u> |
| <i>Astragalus detrilalis</i> | Debris Milkvetch | BLM | 2 | School Gulch (no designation) |
| <i>Boechea fernaldiana</i> | Park Rockcress | BLM | 2 | Bull Canyon WSA |
| <i>Cryptantha rollinsii</i> | Rollins Cat's Eye | BLM | 2 | Raven Ridge |
| <i>Eriogonum ephedroides</i> | Ephedra Buckwheat | BLM | 2 | Raven Ridge |
| <i>Gentianella tortuosa</i> | Utah Gentian | BLM | 2 | South Cathedral |
| <i>Gilia stenothyrsa</i> | Narrow-Stem Gilia | BLM | 2 | Lower Greasewood |
| <i>Lesquerella congesta</i> | Dudley Bluffs Bladderpod | T | 1 | Dudley Bluffs Ryan Gulch Duck Creek |
| <i>Lesquerella parviflora</i> | Piceance Bladderpod | BLM | 1 | Deer Gulch South Cathedral Upper Greasewood East Douglas Creek |
| <i>Oenothera acutissima</i> | Narrow-Leaf Evening Primrose | BLM | 1 | |
| <i>Parthenium ligulatum</i> | Ligulate Feverfew | BLM | 2 | Raven Ridge |
| <i>Penstemon albifluvis</i> | White River Penstemon | C | 1 | Raven Ridge |
| <i>Penstemon grahamii</i> | Graham Beardtongue | C | 1 | Raven Ridge |
| <i>Physaria obcordata</i> | Piceance Twinpod | T | 1 | Dudley Bluffs Yanks Gulch Ryan Gulch |
| <i>Sullivantia purpusii</i> | Hanging Garden Sullivantia | BLM | 4 | East Douglas Creek |

1/ Federal Status (Endangered Species Act)

- T = Threatened;
 C = Candidate for Listing
 BLM = BLM Sensitive Species
- 2/ State List (Colorado Plant Species of Special Concern)
 List 1 = Federal threatened or endangered plant species and species that are rare throughout their range
 List 2 = Plant species which are rare in Colorado but relatively common elsewhere within their range
 List 3 = Plant species which appear to be rare but for which conclusive information is lacking
 List 4 = Plant species of limited distribution or of special interest
- 3/ ACEC - Area of Critical Environmental Concern designated, in part, as important habitat for the species identified, or other special management area

Although numerous wildlife species with special status (Table 4) occur or have the potential to use habitats affected by the FMP, many occur only as occasional migrants or take up residence in the winter. Others inhabit areas that are relatively resistant to fire (riverine woodlands, riparian areas, etc.) or have low fire occurrence (high elevation montane forests, rocky ridges and outcrops, etc.).

Protection for many of these species is provided specifically by the Endangered Species Act, but local protective measures have also been applied. The Colorado River fishes and the Colorado River Cutthroat Trout (90% of existing habitat) habitats are protected via ACEC designation, while the trout, raptor, sage grouse, and black-footed ferret habitats receive additional protection via the imposition of surface stipulations applicable to surface disturbing activities (No Surface Occupancy, Timing Limitations, Controlled Surface Use, and Lease Notices).

| TABLE 4. SPECIAL STATUS WILDLIFE SPECIES ¹ | | | |
|---|---------|---|--|
| SPECIES | STATUS | HABITAT AFFINITY | RESOURCE AREA STATUS |
| Colorado Squawfish (Pike-minnow) | FE, ST | large, turbid riverine systems of the Upper Colorado River Basin | critical habitat designated from Rio Blanco Lake to the Utah line |
| Mountain Sucker | SC, BLM | smaller rivers and streams with gravel, sand, and mud bottoms | uncertain; have been collected in Piceance Cr. |
| Flannelmouth Sucker | SC, BLM | large, turbid riverine systems of the Upper Colorado River Basin | found throughout the Lower White River |
| Bluehead Sucker | SC, BLM | headwater streams to large rivers with moderate-to-fast velocity and rock substrate | uncertain; likely common in middle and upper reaches of White River |
| Colorado Roundtail Chub | SC, BLM | large, turbid riverine systems of the Upper Colorado River Basin | found throughout the Lower White River |
| Colorado River Cutthroat Trout | SC, BLM | small, perennial headwater streams | hybridized populations occur in E.Douglas, Trapper's, and Big Beaver Cr. drainages |

TABLE 4. SPECIAL STATUS WILDLIFE SPECIES¹

| | | | |
|---------------------------|---------|--|---|
| Midget Faded Rattlesnake | SC, BLM | generalist in nature; may be found in mountain and semidesert shrublands, sagebrush, riparian vegetation, and PJ woodlands | found throughout RA; often associated with rocky slopes/outcrops and oakbrush associations |
| Boreal Toad | FC, SE | marshes, wet meadows, stream margins above 8500 feet, rarely below 7000 feet | uncertain; recorded above Buford in forested habitats; potential habitat available throughout resource area at higher elevations |
| Northern Leopard Frog | SC, BLM | banks and shallow portions of areas containing permanent water; also irrigation ditches and wet meadows | common, but generally in isolated areas throughout the RA associated with riparian habitat |
| Great Basin Spadefoot | SC, BLM | PJ woodlands, sagebrush, and semidesert shrublands | usually below 7000 feet; observed in salt-desert type in lower Wolf Cr., specimen collected from Piceance Basin in suitable habitat |
| Whooping Crane | FE, SE | irrigated meadows, sheetwater flats, broader drainage bottoms and reservoir margins | rare; incidental during migration, associated with greater sandhill cranes |
| Greater Sandhill Crane | ST | irrigated meadows, sheetwater flats, broader drainage bottoms and reservoir margins | incidental, migration-related stopovers with rare breeding occurrences |
| Bald Eagle | FT, ST | riverine cottonwood galleries for nesting and roost activities, scavenge extensively in open vegetation types in winter | winter residents and migrants along White River, with a small but regular contingent of nesting pairs |
| American Peregrine Falcon | FE | steep cliff faces usually associated with water | use likely occurs south of Dinosaur National Monument and north of Roan Cliffs in association with nesting territories |
| Mexican Spotted Owl | FT, ST | steep canyons with rocky cliffs, and multi-layered, uneven stands of old-growth conifers | observations in Dinosaur National Monument; unknown in remainder of RA |
| Western Burrowing Owl | ST | active rodent burrows, particularly associated with prairie dog colonies | uncommon breeding occurs mainly in lower Wolf Cr., Dinosaur, and Coyote Basin areas |
| Barrow's Goldeneye | SC, BLM | lakes, ponds, inland rivers | rare but regular winter resident found in White River and spring-fed ponds along Piceance Cr. |
| Ferruginous Hawk | SC, BLM | associated with prairie dog colonies, nesting in isolated junipers or on the ground | evenly distributed from Elk Springs west to Dinosaur and south to Rangely |

TABLE 4. SPECIAL STATUS WILDLIFE SPECIES¹

| | | | |
|-------------------------------|-------------|--|--|
| Northern Sage Grouse | SC, BLM | upland sagebrush stands | resident throughout the RA, specifically along the Piceance Rim/Roan Plateau and Blue Mountain |
| Western Snowy Plover | SC, BLM | lake and large river margins, mudflats | rare spring migrant; potential habitat at Rio Blanco Lake and Kenney Reservoir |
| Mountain Plover | FC, SC, BLM | sparse sagebrush/grassland, often associated with prairie dog colonies | uncertain; possibly rare breeder (Coyote Basin area) |
| American White Pelican | SC, BLM | open water habitats sustaining fisheries | uncommon spring migrant, mainly on Rio Blanco Lake or Kenney Reservoir |
| Northern Goshawk | BLM | coniferous or mixed forests, occasionally in PJ habitats | rare nesting observed in PJ and Douglas-fir stringers in Piceance and Douglas Cr. basins |
| White-faced Ibis | BLM | shallow pond/lake margins, hayland, and wet meadows | uncommon spring migrant across resource area in suitable habitat |
| Black Tern | BLM | open water marshes for breeding, larger ponds and reservoirs during migration | uncommon migrant; many records on Rio Blanco Lake and Divide Cr. Reservoir |
| Columbian Sharp-tailed Grouse | BLM | mountain browse, sagebrush, aspen complex | localized resident populations mainly in Danforth Hills |
| Long-billed Curlew | SC, BLM | salt-desert shrub type and shortgrass rangeland; irrigated meadows | rare migration-related stopovers in appropriate habitats |
| Fringed Myotis | BLM | coniferous woodlands and shrublands | uncommon; often associated with rocky areas and riparian habitats throughout the RA |
| Yuma Myotis | BLM | semiarid canyonlands | uncommon; often associated with rocky areas and riparian habitats throughout the RA |
| Townsend's Big-eared Bat | BLM | semidesert shrublands, PJ woodlands, and open montane forests | uncommon; often associated with rocky areas and riparian habitats throughout the RA |
| Black-footed Ferret | FE, SE | active prairie dog colonies | reintroduction imminent into suitable habitat |
| Lynx | FC, SE | coniferous forests of uneven age with relatively open canopies and well developed understories | potential travel corridors exist across Roan Plateau and Douglas/Baxter Pass areas |
| Wolverine | SE | higher elevations, including mountain browse/aspen associations | uncertain; historical records on Grand Hogback and Danforth Hills |

TABLE 4. SPECIAL STATUS WILDLIFE SPECIES¹

| | | | |
|-------------|----|---|---|
| River Otter | SE | larger streams and lakes with fisheries | uncertain; historically in White River drainage |
|-------------|----|---|---|

¹ Species observed or having potential to inhabit land within the FMP project area.

² FE–Federally Endangered, FT–Federally Threatened, FC–Federally Candidate, SE–State Endangered, ST–State Threatened, SC–State Special Concern, BLM–BLM Sensitive Species

Environmental Consequences and Mitigation Measures:

Proposed Action:

Special Status Plants:

Nearly all the special status plant species occur on barren land habitats devoid of any significant amounts of vegetation. Their habitats are usually natural barriers to fire and as a result, would not be impacted by the natural fire occurrences proposed. None of the special status plants are known to be extirpated from larger “fire maintained” habitats as a result of historic fire suppression efforts. Nor does fire create or expand habitats for these species.

Tactics used during fire suppression efforts could impact special status plants or their habitats. Because of their fire invulnerability, these habitats may be used by suppression personnel for fire suppression activities such as, line construction, retardant use, or off road use of vehicles and equipment. Utilizing barren land habitats as areas to anchor suppression lines or as safety zones and camp areas could have negative impacts on special status plant species. Individual plants and their habitat could be destroyed as a result, however, threats to entire populations of these plants are not likely. The suppression constraints listed for each polygon are proposed as mitigation to reduce potential impacts to special status plant species from suppression activities and to ensure maintenance of their habitats as required under Rangeland Health Standard #4.

Special Status Wildlife:

Most habitats used by special status wildlife species are fairly secure from negative impacts associated with wildland fire, and thus would only indirectly influence these animals. These include stream and riverine systems, irrigated hayland, riparian habitats, low elevation scrubland lacking a fine fuel component, and rocky outcrops. Other habitats, although susceptible to fire under extreme conditions, have not been impacted by fire in recent history (long fire return interval) or respond readily after fires have occurred (fire adapted vegetation). These habitats include high elevation montane forests and deciduous shrub communities, respectively. Those species associated with PJ (goshawk) and sagebrush (sage grouse) habitats have the highest potential to be adversely affected by fire, as these habitats are highly susceptible and receive the highest number of natural ignitions. Polygon constraints identified in the proposed action should limit impacts to these species. Most habitat where goshawks and sage grouse are known to reside have been placed either in B polygons where fires would be suppressed, or in D polygons where fire occurrence is fairly low and fire

sizes are relatively small.

Additionally, most special status wildlife species (fish, birds, and most amphibians) can avoid direct impacts from fire (i.e., death) by virtue of their habitat requirements (water/wetland associated species) or their ability to easily distance themselves from a fire scenario (avian species, except for young of the year). Fast-moving fires have a higher potential for impacting those species not capable of distancing themselves from fire in a relatively quick time frame. Snakes, toads, and mammalian species may suffer directly from fire.

Short-term habitat impacts caused by numerous smaller fires may decrease habitat quality until natural revegetation begins, but long-term impacts (which are few) would be minimized by breaking fuel continuity and decreasing the likelihood of huge fires which may remove significant amounts of habitat or potentially impact whole populations.

Alternative #1:

Special Status Plants:

As noted above, fire suppression activities have the greatest likelihood of impacting habitats for special status plants versus direct involvement by fire. Fire suppression is the only fire management option under this alternative. Over time, potential fire size and intensities would increase with continued suppression of every fire. This would prompt more extensive fire suppression actions in the future, thus increasing threats to special status plants including direct impacts to individual plants and their habitat. Threats to entire populations of these plants are not likely. However, specific habitats could be degraded resulting in long term declines on those habitats and potential loss of genetic diversity.

Special Status Wildlife:

Most impacts would be similar to that described for the proposed action. Short-term impacts would likely be less pronounced as all fires would be suppressed, and affected acreage would be minimized. In the long-term, however, because of increased fuel loadings, it is likely that fires would become larger with less opportunity for minimizing involvement of habitat and species at risk. This scenario would increase the potential for direct and indirect impacts to special status wildlife species.

STANDARD 5: The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated requirements set forth under State Law as required by section 303(c) of the Clean Water Act.

Affected Environment: Surface water quality data is available for several sites on the White

River, major tributaries, and many ephemeral drainages in the Piceance Basin, through various USGS publications. The Colorado Department of Health, Water Quality Control Commission, has adopted basic standards (Colorado Department of Health 1991) and an anti-degradation rule for all surface waters in the resource area. These standards reflect the ambient water quality and define maximum allowable concentrations for various water quality parameters. Most surface water segments on BLM lands are in the “use protected” category that states, at a minimum, all state surface waters shall be maintained and protected. No further water quality degradation is allowable that would further interfere with or become harmful to that streams designated uses.

Environmental Consequences and Mitigation Measures:

Proposed Action: Sediment production is the major detriment to water quality which one might expect following fire. The severity of the burn dictates the amount of bare ground exposed, the percentage of over- and understory vegetation kill, and tendency toward hydrophobic condition. If fire conditions are such that grass crowns are not killed and hydrophobic soils are not created, a rapid recovery with a more complete herbaceous ground cover than before the fire would be expected. If this is the case, the area may, within months, be less erosive than when it supported woody species.

Nutrient release may also occur following fire. Research indicates there is an increase in phosphorous, potassium, and calcium in runoff waters following fire. Whether nutrient release is a positive or negative impact depends on the location of the burn in relation to the streams. This nutrient release may provide a fertilizing effect for herbaceous vegetation that would encourage an increase in herbaceous cover.

Alternative #1: Impacts would be similar as those described for the proposed action. In the short-term, fire impacts would likely be held to a minimum through immediate suppression. However, larger fire could be expected in the long-term (due to fuels build-up) which may increase erosion and subsequently degrade water quality.

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: Regional haze and Colorado nonattainment areas may be affected by implementation of the FMP. Regional haze is the predominant source of visibility impairment in pristine (Colorado Category I) areas in Colorado. Dinosaur National Monument and the Flat Tops Wilderness Area are directly adjacent to public lands covered under this FMP, while the Mount Zirkel Wilderness Area and the Colorado National Monument may be influenced by activities identified in the FMP. Visibility impacts occur from atmospheric increases in small, light-scattering particles or increases in light-absorbing gasses. Steamboat Springs and Aspen

are the closest areas that have historically violated state and federal health based air quality standards (exceeding state standards for fine particulates). Currently, air quality is not being monitored locally, however, levels are estimated to be low and within standards.

On a more local level, the towns of Meeker, Rangely, and Dinosaur (and to a lesser extent Craig and Rifle), as well as paved highways (U.S. Highway 40 and Colorado Highways 13, 64, and 139) may also be affected by visibility and smoke management issues.

Environmental Consequences and Mitigation Measures:

Proposed Action: Wildland fires, under current policy, are exempted from regulations concerning visibility, smoke management, and air quality. Life, property, and cost are higher priorities in a wildland fire situation. Under conditions where smoke-related issues become problematic, wildland fire suppression actions may be changed to more appropriately address these problems (e.g., change strategy to full and immediate suppression to minimize particulate release). Closing portions of highways, enacting temporary flight restrictions, and other such measures may also be employed to minimize potentially adverse effects caused by visibility impairment.

WFURB (technically a prescribed fire) would be subject to visibility and health standards. Managing an ignition as a WFURB would likely increase particulate levels in the atmosphere and cause a temporary reduction in visibility. However, burning under conditions which maximize smoke dispersal should in large measure mitigate this impact. Regardless of conditions, if a natural ignition is to be managed as a WFURB, a smoke permit would be acquired from the Colorado State Air Quality Board as required, prior to fully implementing the WFURB plan. Additionally, prevailing winds (in relation to Dinosaur National Monument) and distance to Category I airsheds (in relation to the Flat Tops Wilderness Area) likely minimize impacts to these areas.

In regards to health standards of air quality, gaseous emissions from fires burning as a resource benefit likely have no significant negative effect locally. In addition, nonattainment areas should not receive added levels of fine particulates which adversely impact air quality. These areas usually do not meet health-based air quality standards in the winter when prescribed burning is not an issue, and local smoke issues would not likely impact an area greater than 30 miles away.

All BLM actions and use authorizations concerning the use of fire as a resource benefit or in regards to wildland fire suppression would either comply with all applicable local, state, and federal air quality laws, regulations, and implementation plans, or would be suppressed in a manner which minimizes potential impacts when conditions exist that may adversely impact visibility or health standards.

Alternative #1: Impacts would be similar as described in the proposed action. WFURB

would not be considered an option, thus, all fires would be considered a wildland fire in need of suppression. Aspects of prescribed burning (which have not been considered or addressed in this document outside of WFURB) would be addressed similarly as above, except that traditional prescribed burns would have been planned prior to an ignition through burn plans and environmental assessments, and mitigative concerns would be addressed more fully and in a more timely manner.

CULTURAL RESOURCES

Affected Environment: Although cultural resources can be found throughout the area, the nature of development (i.e., ground disturbances related to public land use activities) has allowed only specific areas to be adequately inventoried. Areas similar in physical characteristics likely contain high concentrations of archaeological resources as well, however, development activities have not permitted cultural investigations to occur in any large numbers, thus inventory data is insufficient to make any sweeping inferences.

Rock art is a particular resource of concern since fire can cause spalling of the rock face if hot enough and in close proximity to the heat source. Also of concern is anything perishable, especially wood resources such as wickiup villages, historic dugouts, cabins, corrals, etc. Horse traps (including 18th and 19th century traps constructed by the Utes and the more modern ones constructed by settlers), drive lanes for hunting, or possibly 19th century drift and pasture fences made of piled PJ slash are also particularly vulnerable and of concern when exposed to fire.

Environmental Consequences and Mitigation Measures:

Proposed Action: Generally speaking, allowing fire to burn without aggressive suppression places resources at greater risk of loss. Resources with above-ground perishable materials such as wickiups, cabins, dugouts, horse traps and so on are at greater risk of loss and destruction. In polygons with fewer known or lower expected site densities, cultural resources may only occasionally fall within the fire perimeter. Any site known or previously unrecorded would be adversely impacted by fire. Any impacts or loss would be considered long-term and irretrievable. Measures capable of mitigating potential cultural resources impacts include: inventory when and where funding and staffing permit to identify vulnerable resources; consider fuel reduction measures or other protection measures for known resources; protect known resources to the extent possible without compromising fire fighter safety; utilize resource advisors on fires greater than 10 acres or that require extended attack.

Numerous polygons are known to contain high numbers of cultural resources (B1, B4, B5, B6, C1, C2, C4, and C7). Some (B4, B5, B6, C1) are known to contain high numbers of above-ground, perishable remains, while others (C2, C4, C7) have a high potential for containing these types of remains based on similar physical attributes of the land. Only polygon B1 does not have a high probability of containing these

above-ground resources, due mainly to the vegetation community present (i.e., sagebrush). Allowing fires to burn up to the allowable acreage may put increased numbers of resources at risk for loss than might be threatened by more aggressive fire suppression. Fast moving low intensity fires may cause discoloration or heat crazing of surface artifacts. If fires move quickly with short residence times and low intensities, subsurface remains, if any, will be substantially less affected. Rehabilitating burned areas, control lines, and suppression equipment trails may cause additional displacement and breakage of surface artifacts. Limiting off road travel and mechanized line construction greatly reduces impacts to surface artifacts and features. Measures capable of mitigating potential impacts to cultural resources include: identify known resources with higher values at risk (e.g., wickiups, horse traps, cabins) and protect with fuel breaks and hazardous fuel reductions where feasible; protect all known resources to the extent possible without compromising fire fighter safety; inventory fire line construction in sensitive areas whenever possible and avoid placing control lines, base camps, and support facilities within site boundaries; inventory all ground disturbing rehabilitation activities and use non-ground disturbing techniques within known and newly identified site boundaries; utilize resource advisors on fires that may exceed 10 acres in size or require extended attack.

Alternative #1: Aggressive fire suppression would continue to limit the overall threat to cultural resource sites from fire, but sites would continue to be impacted by fires. However, hazardous fuel build-up would continue to occur, increasing the likelihood of large catastrophic fires that would pose a greater threat to resources. Sites would be under slightly greater threat from control line construction and off road use of suppression equipment. Some impacts would be significant, long term, and irretrievable. Measures capable of mitigating potential impacts to cultural resources include: rehabilitate control lines, equipment trails, and burn areas to control erosion; all fence lines and ground disturbing rehabilitation activities must be inventoried for cultural resources; use non-ground disturbing rehabilitation techniques within the boundaries of known and newly recorded sites; try to protect known resources to the maximum extent possible without compromising fire fighter safety; utilize resource advisors on fires that may exceed 10 acres in size or require extended attack.

FLOODPLAINS, WETLANDS, RIPARIAN ZONES, AND ALLUVIAL VALLEYS

Affected Environment: See discussion under Standard 2.

Environmental Consequences and Mitigation Measures:

Proposed Action:

Alternative #1:

PRIME AND UNIQUE FARMLANDS

Affected Environment: Prime farmlands are those whose value derives from their general advantage as cropland due to soil and water conditions. Unique farmlands are those whose value derives from their particular advantage for growing specialty crops. Most prime and unique farmlands are found in river and creek bottoms at lower elevations. In general, these lands are all privately held.

Environmental Consequences and Mitigation Measures:

Proposed Action: As decisions in the FMP apply only to public lands, little or no impacts would be expected to occur on prime and unique farmlands as a result of a wildland fire. In the case where a public land fire crosses onto privately held farmlands, the initial response would be to immediately suppress the fire. If damage does occur as a result of suppression actions, immediate rehabilitation would be initiated.

Alternative #1: Impacts under the no action alternative would be similar to that described above in the proposed action.

THREATENED AND ENDANGERED SPECIES

Affected Environment: See discussion under Standard 4.

Environmental Consequences and Mitigation Measures:

Proposed Action:

Alternative #1:

WASTES, HAZARDOUS OR SOLID

Affected Environment: Although small isolated sites where solid wastes have been illegally disposed of are known to exist on the subject lands, no inventory has been completed to identify and or map them. Some of these sites may also contain small quantities of hazardous materials or wastes.

No listed or extremely hazardous materials in excess of threshold limits are proposed for use in this project. While commercial preparations of materials such as lubricants and fuels may contain hazardous constituents, these materials would be transported, stored, and used in an appropriate manner.

Environmental Consequences and Mitigation Measures:

Proposed Action: If fires spread into locations where materials have been illegally dumped, there would be potential for the creation of hazardous materials through combustion. This could pose a threat to nearby fire fighters or monitors. Any organized fire suppression activities would also result in the creation of solid wastes from use of supplies, port-a-johns, etc. Proper disposal of these materials would be required.

Alternative #1: The impacts of this alternative would be essentially the same as under the proposed action.

WATER QUALITY, SURFACE OR GROUND

Affected Environment: See discussion under Standard 5.

Environmental Consequences and Mitigation Measures:

Proposed Action:

Alternative #1:

WILDERNESS, AREAS OF CRITICAL ENVIRONMENTAL CONCERN, WILD AND SCENIC RIVERS

Affected Environment: Six Wilderness Study Areas (WSAs) exist in the project area, located in polygons D-2, D-3, and D-5. Only 3 areas have been recommended for wilderness designation, and all 3 are located in polygon D-2. All of the WSAs were studied under Section 603 of the Federal Land Policy and Management Act. They were included in the Craig District Final Wilderness Environmental Impact Statement (1990) and in the Craig District Wilderness Study Report (1991). The attributes of each WSA are described in these documents. Fifteen Areas of Critical Environmental Concern (ACECs) exist in the project area. Each is assigned base surface use stipulations (no surface occupancy and controlled surface use) to protect resources of concern for which the ACEC was designated. Special status plant and animal species, remnant plant associations, riparian habitats, and cultural and paleontological values have all been identified as resources in need of additional protection through ACEC designation. No wild and scenic river segments have been designated. Those segments that were considered for eligibility are now afforded protection via ACEC designation.

Environmental Consequences and Mitigation Measures:

Proposed Action: Natural ignitions within WSAs would be managed in accordance with guidelines identified in the Interim Management Policy for Lands Under Wilderness

Review (Handbook 8550-1). Unnecessary impairment of an area's suitability for preservation as wilderness would be avoided by using "Light-Hand-on-the-Land" fire suppression tactics. Although present suppression methods may be used in suppressing a fire within a WSA (including the use of power tools, aircraft, and motorized firefighting equipment), use of this equipment must be judicious and not impair wilderness qualities. Rehabilitation would occur immediately following control of a wildland fire, with the results fully mitigating any adverse impacts upon wilderness qualities resulting from suppression efforts or unacceptable impacts as a direct result of fire (noxious weed infestations, excessive erosion, etc.). All suppression and rehabilitation efforts should involve a resource advisor with intimate knowledge of wilderness management.

As all WSAs are located within D polygons, it is assumed that suppression efforts would be held to the minimum necessary to protect life and property. WFURB would be a viable option for all natural ignitions within WSAs. Possible impacts and alternatives would be analyzed under a separate NEPA document when managing a wildland fire for resource benefit. By definition, areas considered for wilderness designation should be minimally impacted by humans and their activities. Few if any resources exist in these WSAs that would require fire suppression activities for protection, and in fact, the resources identified as essential in a wilderness setting (solitude, primitive and unconfined recreation, high scenic quality, and naturalness) would likely be lost (albeit temporarily) if employing minimal use of suppression methods and adequate and timely rehabilitation.

Surface disturbing activities within ACECs related to fire suppression activities, including mechanized fireline construction, handline construction, off-road vehicle use, and the use of retardant, would be limited in use as identified in the polygon descriptions in the proposed action, and often would only be employed when human life would be threatened. Limited use of these tactics would preserve the integrity of the systems found within identified ACECs. The effects of surface disturbing activities are often more detrimental to the plant, animal, soil, and paleontological resources than direct involvement by fire. The notable exception being cultural resources (rock art and wickiups) which may be directly and irreversibly impacted by fire. Additional information regarding special status plant management as related to ACEC management can be found in the discussion under Standard 4.

Alternative #1: Wildland fire situations within WSAs would be managed according to guidelines identified in the Interim Management Policy for Lands Under Wilderness Review (Handbook 8550-1). Few appreciable differences would occur under this alternative as compared to the proposed action for both wilderness and ACEC management.

NON-CRITICAL ELEMENTS

ACCESS AND TRANSPORTATION

Affected Environment: Access to and across public lands is scattered throughout the area. Such access is provided by Federal, State, and County roads and highways, as well as Bureau resource roads.

Environmental Consequences and Mitigation Measures:

Proposed Action: Localized, short term restrictions to access may be expected.

Alternative #1: Localized, short term restrictions to access may be expected.

PALEONTOLOGY

Affected Environment: The resource area is rich in fossil bearing formations. Formations represented include Triassic, Jurassic and Eocene. The Resource Area has several ACECs that were listed because of the fossils contained in them. Some 30 to 40 fossil species have been first described in the formations within the resource area.

Environmental Consequences and Mitigation Measures:

Proposed Action: Only exposed formations and fossils themselves are directly threatened by fire. Areas covered in vegetation don't usually contain exposed fossil remains and so aren't usually areas of concern. However, cliffs and outcrops that are in close proximity to dense vegetation growth might be areas where fossil resources would be threatened with loss due to fire effects. Rock faces might crack and spall off damaging fossils that might be present during fire events. Where possible and feasible, fuel breaks should be created between cliff faces and dense vegetation to reduce the potential threats to fossil resources in exposed rock substrates. Where fossil localities are known, line construction through identified areas should be avoided. Avoid known fossil localities during base camp and support facility placement.

Alternative #1: Fossils would continue to be threatened by fires and to some extent by suppression activities, especially on horizontal surfaces where control lines might be constructed. Exposed cliff faces might also be affected by heat from fires causing spalling of rock faces and possible damage to fossils that might be contained in the rock. Where fossil localities are known, line construction through identified areas should be avoided. Avoid known fossil localities during base camp and support facility placement.

RECLAMATION/NOXIOUS WEEDS

Affected Environment: Noxious weeds and their continued encroachment on BLM lands

represent a serious threat to the long-term productivity, diversified use, and aesthetic value of public lands. An active noxious weed management program currently exists and emphasizes cooperation with the BLM, Rio Blanco County, private landowners, and public land users. Existing management is based in part on the 1990 WRRRA Noxious Weed Management Plan and the priorities established by the ROD, Vegetation Treatment on BLM Lands, 13 Western States.

Environmental Consequences and Mitigation Measures:

Proposed Action: Noxious weeds, particularly cheatgrass and diffuse, spotted and Russian knapweed, are prime candidates to invade burned areas. For the knapweeds, any burn adjacent to or crossed by a road or motorized vehicle trail would have a high potential for invasion. Any burn would represent a “clean” site for the establishment of noxious perennial weeds, particularly the aforementioned knapweeds. Once established, the negative impact would be largely irreversible, and thus, these areas would not meet the conditions outlined in Standard 3. This impact could be in large measure eliminated by an aggressive monitoring and weed eradication program. In the case of cheatgrass, burns that occur in the lower elevation plant communities in polygons B3, B5, C2, C3, C4, and C5 are likely to be invaded and dominated by this species if an aggressive and effective post burn revegetation plan is not implemented. Cheatgrass, once established, perpetuates a cycle of plant community degradation that is largely irreversible. In this scenario, the principal plant communities that would be negatively impacted would be the low elevation Wyoming big sagebrush, salt desert shrub, greasewood, and juniper types. Conversion of these communities to a cheatgrass type would not be consistent with meeting conditions identified in Standard 3 (Plant Communities).

The opportunity for noxious weed infestations may increase through implementation of the proposed action. Less aggressive suppression strategies and the desire to increase the number of 40-200 acre burns may provide areas suitable for the establishment of noxious weeds. However, prompt revegetation and rehabilitation through the coordinated efforts of resource advisors and rangeland management specialists following a burn event would minimize potential infestations. Prolonged monitoring of burned areas to ascertain the level of weed establishment would be necessary to determine when and to what level a weed eradication program should be initiated.

Restricting the use of heavy equipment used during line construction and off-road vehicle travel should decrease the potential for the proliferation of noxious weed infestations. Off-road vehicle use and fireline construction areas are often the initial sites for weed infestations; by limiting these practices where opportunity exists, vegetation would be protected from excessive damage, thereby decreasing the likelihood of weed establishment.

Alternative #1: Under the no action alternative, surface disturbing activities would

continue during suppression operations. Prompt revegetation and rehabilitation through the coordinated efforts of resource advisors and rangeland management specialists following a burn event would minimize potential infestations. Openings created by fire would likely remain small in the short-term due to suppression, but larger fires would be likely in the long-term due to increased fuel loadings. These larger fires could provide the opportunity for large scale weed infestations, and in a cumulative sense, could be considered much more detrimental.

FOREST MANAGEMENT

Affected Environment: Timberlands are predominantly made up of Douglas-fir, spruce/fir, lodgepole pine, and aspen, and management focuses mainly on wood products measured in board feet. Using current soil surveys, which allows current and potential forest sites to be considered, there are approximately 24,125 acres of timberlands in the resource area. Within the 5 timber management areas, about 5,110 acres of timber exists. Timber species usually occur at elevations greater than 7,000 feet and predominantly on east- and north-facing aspects. They are also found in canyon bottoms and along riparian corridors in high elevation drainages. Under current polygon designation, most timber is found in polygons C8 and D5, with lesser amounts in B1, B9, C7, C9, D3, and D4.

Environmental Consequences and Mitigation Measures:

Proposed Action: Under the preferred alternative, fires in the Douglas-fir and spruce/fir types in polygon C8 would be suppressed if capable of exceeding 5 acres. Stand-replacing fires are not desired, but smaller fires that may promote aspen suckering would be well received and would not adversely impact the conifer communities. Within this unit, ignitions within these forest types are rare. There are examples within the resource area of stand replacing fires and these type fires are expected to continue in the future regardless of suppression efforts. There is no indication that fire control under this alternative would significantly alter the size of a fire.

Within D polygons under the preferred alternative, naturally occurring fires would be encouraged. Fires in the Douglas-fir and spruce/fir types are uncommon, but can be of scale to be stand replacing under extreme conditions. Given the segregated nature of these forest stands, removal of an entire stand would have negligible impact on the total acreage of this vegetation type.

There is no record of fire occurrence in the aspen type in this resource area. No change in fire management will affect this forest type.

Alternative #1: Current fire management is for aggressive control of all fire starts. Given the low fire occurrence in the Douglas-fir and spruce/fir types, there is no indication that aggressive control efforts have reduced the size of fires in these vegetation types. Given

the lack of fires in the aspen type, aggressive fire control efforts would have no effect on aspen forests.

GEOLOGY AND MINERALS

Affected Environment: Four major structural features, with the help of erosion, have resulted in the exposure of a sequence of sedimentary formations that range from the Paleozoic to the Cenozoic Eras. It has been estimated that the rock units in the resource area represent a sedimentary column nearly 28,000 feet thick. With this sedimentary environment in place, it is logical to expect the presence of oil and gas, coal, and evaporative minerals such as salt and sodium.

Environmental Consequences and Mitigation Measures:

Proposed Action: There would be no impacts to geology from the Proposed Action. However, mineral development facilities could be at risk in those areas where well pads, compressor stations/gas plants, and pipeline facilities for oil and gas resources, wells and facilities for sodium mining, and coal mine facilities (mine, conveyor, loadouts and railroad) are not identified for the appropriate level of suppression.

Alternative #1: There would be no impacts, above those that occurred prior to the Fire Management Plan, to Geology and Minerals if wildfires are immediately suppressed.

Mitigation Measures: Facilities associated with Mineral development should be identified and the appropriate level of suppression applied to assure protection of those investments.

HYDROLOGY AND WATER RIGHTS

Affected Environment: The resource area lies within the Green River Basin, a tributary to the Colorado River. Major tributaries to the Green River are the Yampa and White Rivers. Approximately 88% of the resource area contributes flow to the White River, 6% to the Yampa River, and 3% each to the Green River and Upper Colorado River. Perennial streams receiving significant flows from lands administered by BLM are Piceance Creek, Yellow Creek, and Douglas Creek. These drainages flow into the White River. There are many smaller watersheds. These are generally lower elevation, semi-arid streams, which are either intermittent (having segments of perennial flow near springs) or ephemeral (flow during spring runoff and intense summer storms). Frequently these drainages are straight channels that are eroding in the upper reaches and aggrading below. Channels are often deeply incised with steep banks that slough and develop new headcuts perpendicular to the main stream. A localized intense storm can erode upstream sediments deposited over a 5-10 year period in one event.

Annual runoff varies due to soils, vegetation, watershed aspect and slope, precipitation, and temperature. Currently, agriculture accounts for the largest amount of water used in the basin. Other uses include municipal, industrial, domestic, recreation, wildlife, and livestock. Total consumptive use in the White River averages 45,000 acre feet per year with 30,850 acre feet consumed for irrigation. Natural flows to the White River are further modified by the operation of three principal reservoirs, Lake Avery, Rio Blanco Lake, and Kenney Reservoir. There are many smaller water developments on BLM lands. These structures help provide water for livestock and wildlife, and control erosion. BLM has water rights on over 800 springs, seeps, reservoirs, and wells. Most of these water rights are mapped in GIS. These waters are important for satisfying livestock, wildlife, and recreational uses on BLM lands.

Environmental Consequences and Mitigation Measures:

Proposed Action: Hydrologic processes that may be affected by fire include: rainfall interception, infiltration, soil moisture storage, snow accumulation, snowmelt, overland flow, and surface erosion. The effects of fire on these processes vary widely with fire condition. Generally fire increases the sensitivity of watersheds to eroding forces and reduces land stability. The significance of these impacts would be dependent on climatic conditions during the time following a fire and prior to successful re-vegetation. The vulnerability of overland erosion, usually decreases significantly after the first growing season and diminishes to pre-fire conditions or better, within three years.

Exposure of the mineral soil surface to full rain drop impact, combined with reduction of the surface organic matter, could decrease water infiltration rates. This decrease in rate of infiltration could directly affect the rate of overland flows. Bare areas, subjected to high intense storms immediately after burning, can expect flashy runoff. These runoff events are major water quality hazards associated with fire because of increases in erosion and sediment yields. Based on the proposed action, this impact would most probability be a temporary condition, correcting itself in 1-2 years post-burn.

Associated with PJ encroachment are higher erosion rates as the PJ species outcompete herbaceous species and allow for excess bare ground. Although infiltration rates are decreased immediately following a fire, once the vegetation is reestablished, the conditions would be improved overall. Shrubs tend to grow where soils are relatively deep with an established perennial grass understory. Fires on these sites would experience an increase in off-site sedimentation associated with runoff immediately following fire until vegetation can be established.

Allowing for an increase in the size of natural fires, by reducing the number of single tree fires, would help eliminate some associated negative impacts. There would likely be less off-road vehicle traffic which compacts the soil and reduces water infiltration. Building mechanical firelines would not be allowed in many of the areas which would reduce the amount of soil disturbance and soils available for runoff.

Alternative #1: Impacts under the no-action alternative would be larger similar as described in the proposed action. Many of the impacts associated with fire suppression activities would continue to occur, and would likely increase due to continued accumulations of fuel which consequently would require an elevated suppression presence during the fire season.

LAND STATUS/REALTY AUTHORIZATIONS

Affected Environment: Several rights-of-way, both linear and site-type, buried and surface, are scattered throughout the area. Many areas exist where such facilities are concentrated due to mineral development activities.

Environmental Consequences and Mitigation Measures:

Proposed Action: Generally, only above-ground facilities may be at risk from fire events. In particular, power and telephone poles would be vulnerable, as would pedestals related to buried phone cables. While most building complexes, such as compressor stations, tend to keep surrounding vegetation to a minimum, these structures may also be at risk. The location of these types of facilities should be identified to the extent practicable, and any destroyed under resource benefitting burn scenarios should be replaced at Bureau expense.

Alternative #1: The anticipated impacts for this alternative would be essentially the same as under the proposed action.

RANGELAND MANAGEMENT

Affected Environment: See additional discussion on plant communities and vegetation under Standard 3.

Environmental Consequences and Mitigation Measures:

Proposed Action: Adoption of the preferred alternative, with its range of fire at a low level to the foreseeable maximum would generally foster enhanced rangeland productivity by allowing fire to be a key factor in stand renewal processes in effected plant communities. The major positive impact on productivity would take place in Wyoming big sagebrush, basin big sagebrush, and PJ plant communities through the increase in herbaceous productivity and its benefit to domestic herbivores that utilize those rangelands. Wildland fire, as the major stand renewal agent, would also present an opportunity to substantially change the plant species components of an area if post-burn revegetation efforts are aggressive and successful. For a site dominated by cheatgrass prior to burning, prompt seeding (of fires 10 acres or greater) with adapted perennial

grasses would relegate cheatgrass to a minor role in the post-burn vegetation composition.

In those polygons with the greatest likelihood of cheatgrass invasion (B3, B5, C2, C3, C4, and C5), large herbivores may also play a prominent role in the post-burn vegetation composition. In many cases, pre-burn vegetation composition may be a determining factor in the rate and direction of post-burn vegetation succession. A heavy stocking rate of large herbivores in the post-burn environment can significantly enhance cheatgrass as a competitor, resulting in cheatgrass dominance of the site. The smaller the burn, the more pronounced this effect will be. Decreasing stocking rates (or complete removal of livestock, depending on the size and pre-burn condition of the site) in the short-term may be necessary to provide the competitive edge to native vegetation such that cheatgrass or other non-native annuals do not dominate post-burn vegetation composition.

It is likely that in B polygons, where resource concerns are much more tightly constrained, the influence of fire would be much less visible than in C or D polygons where fire may be used more liberally. Additional vegetation manipulations (outside of natural fire) may be necessary in B polygons to improve rangeland conditions such that herbaceous productivity is enhanced. These may be done in conjunction with hazard fuels reductions (mitigative measures capable of resource protection) where results may be more directly beneficial to livestock operations. Resource benefitting fires in the C and D polygons would have a greater opportunity for acting as stand renewal agents and may be managed to achieve more specified objectives.

Alternative #1: Adoption of the No Action Alternative would maintain the present situation of limiting fire and its effect as a natural factor in determining rangeland vegetation structure and composition. The effect of this is the curtailment of fire as a stand renewal agent which reduces primary productivity in virtually all grazeable plant communities and minimizes the potential for natural perturbations to set succession back in an ecologically defensible manner. The most notable negative impact has and would continue to occur in the big sagebrush and PJ plant communities in all polygons where the assumed fire return interval is not being met. Thus, in order to accomplish stand renewal we must prescription burn or apply mechanical/herbicidal treatments which would simulate the role that fire (as a stand renewal agent) would normally play in the natural environment. The former is not done on a sufficient scale to even remotely substitute for natural fire, and the latter methods are either very costly or have inherent qualities which may be considered undesirable, thus frequently relegating them to nonuse. The principal effect of adopting the no action alternative would be to foster continued conversion of big sagebrush/grass dominated range sites to juniper and PJ woodlands. This would reduce rangeland productivity for herbivores over both the short- and the long-term until extreme fire conditions allow the area to burn. Fires occurring under extreme conditions (hotter, larger fires) often negatively impact other resources and relegate any potential rangeland benefits to losses (via conversion of large acreages to weeds, loss of grazeable forage, etc.) in the short-term.

Comparison of Alternatives: Wildfires and man-caused fires have played an important role in increasing the production of herbaceous forage within the Yellow Creek allotment (06030) in polygon B-6 and the Greasewood (06036) and Little Spring Creek (06038) allotments in polygons C-5 and B-6 and on the North Dry Fork allotment (06005), polygon C-6. Because of the size and extent of past burns in these allotments (and polygons) and the constraints imposed as part of the proposed action (polygon B-6), it is unlikely that naturally ignited fires greater than 100 acres would occur. Therefore, there would be little difference between the No Action alternative and the Proposed action as it affects forage production in these allotments. Typically, forage production per acre increased 3-4 times or more from the preburn level within 5 years following the burns. It is likely that this production would be maintained for the long term (20+ years) under appropriate grazing management and if conditions are favorable (i.e., growing season moisture, lack of weeds). Wildfires and man-caused fires have also played a significant role in increasing forage production on the K Ranch (6307), polygons D-2 and B-1 and the Wolf Creek (6323) allotments, polygon B-1. Because of the size and extent of past fires and the constraints in polygon B-1, it is likely that fire would not be a significant factor in increasing forage production on these two allotments in polygon B-1.

Under the proposed action fire could play a role in increasing forage production in allotments in polygon D-5, Piceance Mtn. (06023), Fawn Creek (06024) and Black Sulphur (06029). However, the historical occurrence of fire is low and total acreage burned in the three principal vegetation types--mountain shrub, PJ, and big sagebrush--has been on the order of 1% or less of the total acreage of each type annually. Opportunities for a significant increase in forage production under the Proposed Action would increase with potential for managing fires for resource benefit. Under the No Action alternative, natural fire would likely play a minimal role in forage enhancement; it is more likely that prescribed burns on these allotments would account for significant increases in forage production. Although Table 1 does not reflect it, fire could play a significant positive role in polygon D-2. In the past, several 1000+ acre fires (that occurred 10-25 years past) increased burned area forage production fivefold on the K Ranch allotment (06307), however there is question whether these fires were wild or man-caused (man-caused fires would still be suppressed under the proposed action).

Historically, grazing preference on allotments has not been adjusted upward as a result of either prescribed or substantial wildfire burns. Under the proposed action, burns would not be assessed for an increase in grazing preference on the allotment on which they occurred because such fires merely compensate for the rate of forage loss which continues to occur as a result of big sagebrush and juniper encroachment and other land use and management practices. Relative to this, there would be no significant difference between the No Action alternative and the Proposed Action.

Historical fire information indicates that there is little likelihood that a fire of sufficiently

large scale would occur that would prevent the use of an entire allotment by a permittee(s). Electric fencing could be used to control grazing use after burning for the purpose of enhancing revegetation. This would be addressed in the required Emergency Fire Rehabilitation Plan or in subsequent grazing management reviews. There is also little likelihood that the principal range improvement impacted by fire (fencing) would be significantly impacted by adoption of the proposed action. On large scale burns, by policy, fence reconstruction would be addressed in an Emergency Fire Rehabilitation Plan.

WILD HORSE MANAGEMENT

Affected Environment: Wild horses presently occur in and are managed on a total of 358,611 acres of public lands in the project area. At present there are approximately 361 horses distributed among 3 wild horse units, only 1 of which is a herd management area (HMA). Wild horse movement within the 3 horse units is heavily influenced by livestock fences that occur in the 10 overlapping allotments. Lack of complete boundary fencing on the HMA and large population increases have fostered horse movement into areas not recently occupied. Seasonal factors also influence horse movements and areas of concentration. During periods of deep snow, horses concentrate on wind-swept ridges and southern exposures where forage is more readily available. During summer, early fall, and throughout drought years, horses rely heavily on perennial water sources. Increased forage requirements for the increasing horse numbers have resulted in expansion of wild horse range, and presently, horses inhabit areas beyond the recognized horse range, established under the Wild and Free-Roaming Horse and Burro Act of 1971.

Environmental Consequences and Mitigation Measures:

Proposed Action: Generally, burning, through its effect in stimulating herbaceous productivity, will have a beneficial impact on wild horses when it occurs within the HMA (polygons B6, C3, C6, and D5). Burning will enhance forage quality and quantity. Horses have animal component natural affinity for large burned areas, both because of the improved forage offered on those areas, and the fact that they prefer to forage and loaf in areas that provide the greatest habitat visibility. The occurrence of fire at the foreseeable maximum as presented in the proposed action Table 2 would positively effect herd fecundity and possibly, herd recruitment rates.

Alternative #1: Adoption of the No Action alternative would maintain the present situation of limiting fire as a stand renewal agent; however, there would be no significant impact upon wild horses.

RECREATION

Affected Environment: The White River Extensive Recreation Management Area consists of

1,431,589 acres of public land. These lands generally complement recreational opportunities available in other areas by providing a wider range of settings for unrestricted activities. Hunting is the dominant recreational activity, mainly occurring during the big game rifle seasons in the fall. Camping and off-highway vehicle use occurs mainly as spinoffs from hunting. Wilderness Study Areas and road-closure areas provide exceptional opportunities for primitive recreational pursuits. Native American rock art sites with associated interpretive sites abound south of Rangely and have seen increased visitor use in recent years.

Environmental Consequences and Mitigation Measures:

Proposed Action: As most recreational use occurs in the form of hunting, implementation of the proposed action would have minimal short-term adverse impacts and significant beneficial long-term impacts. Short-term impacts include the occasional wildland fire that may occur in the area where hunting would currently be taking place. This fire activity would likely force hunters to move out of the area (due to suppression activity or increased human presence). Fire occurrence falls drastically during the early fall period with the majority of fires being man-caused (unattended campfires, cigarettes, wood-cutting, etc.). All man-caused fires would be suppressed, and natural ignitions that may occur when hunters are in the field may also be suppressed if public safety is a concern. Fire activity that occurs prior to the hunting season may impact the lands in such a way that game would no longer be found in historic hunting areas. These short-term impacts would be minor in comparison to the benefits that may be realized in subsequent years. New growth would attract many species of game, and hunting conditions may actually improve over the long-term. By attempting to allow more fire of smaller size to occur, plant succession (structural and age-class diversity) would occur over a larger area in a dispersed manner such that local game populations could take advantage of these small changes through population increases or better conditioning.

Dispersed recreational activities such as hiking, wildlife viewing, mountain biking, cultural site viewing, etc. may also be impacted in the short-term by wildland fire activity. Under no scenario would a fire be managed in a manner which would risk public safety. Public land users may be inconvenienced by suppression activities or the increase in smoke, and may be forced to make minor adjustments in areas of recreational use or in the timing of such use.

Alternative #1: Impacts would be similar to that described above.

SOILS

Affected Environment: See discussion under Standard 1.

Environmental Consequences and Mitigation Measures:

Proposed Action:

Alternative #1:

VISUAL RESOURCES

Affected Environment: Table 2-51 of the draft resource management plan serves as a description of the affected environment. Map 2-19 shows the final visual resource management classifications. The majority of the resource area acreage and fire polygons, are in the the visual class III. Additional comparative observations of visual resource management classifications and fire management plan polygons include:

- The Bull Canyon/Skull Creek Wilderness polygon D2 contains all of the resource area's visual resource management Class 1
- Fire polygons B1, B9, and the west half of D5 contain the majority visual resource class II acreage
- Fire polygons B5 and C1 contain the majority of the visual class IV acreage

The following discussion describes how fire and fire fighting activities tend to affect the visual resource criteria of line, form, color and texture.

Line - The mosaic pattern associated with natural fires seldom puts lines on the landscape that adversely affect the natural setting. Conversely, fire control lines, particularly large lines constructed with mechanical equipment, can result in an unnatural visual appearance.

Form - Both fires and firefighting activities tend to have little effect on the form of a landscape.

Color - Because fires tend to convert tree and shrub types to herbaceous communities, color will change by season. In the spring there may be little color difference. By mid-summer, cured grasses may contrast with the green tones of unburned shrubs. Under snow cover white burned areas will contrast with the green or brown of unburned areas.

Texture - Unburned areas contrast with burned areas - the unburned areas have a more course texture.

Environmental Consequences and Mitigation Measures:

Proposed Action: Because the proposed action entails management of natural ignition, no adverse action is expected even in class I visual resource management zones, where the resource management plan specifies that "natural ecological changes would predominate." Large fires may reduce visual quality. Constraints on fire line

construction should benefit visual resource quality.

Alternative #1: While this alternative seldom adversely affects visual quality, the alternative entails more potential for scars associated with mechanical fire line construction.

WILDLIFE, AQUATIC

Affected Environment: See discussion under Standard 3.

Environmental Consequences and Mitigation Measures:

Proposed Action:

Alternative #1:

WILDLIFE, TERRESTRIAL

Affected Environment: See discussion under Standard 3.

Environmental Consequences and Mitigation Measures:

Proposed Action:

Alternative #1:

LIST OF PREPARERS:

The preparation of this document was accomplished using an interdisciplinary team approach. An internal review of the document was conducted at each stage of its preparation. Specialists at the state and district levels of the BLM were consulted, reviewed the analysis, and supplied information where necessary. Contributions by individual specialists were subject to revisions by staff members during the internal review process.

| NAME | TITLE/POSITION | RESPONSIBILITY |
|-----------------|---|----------------------------|
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| Bruce Davenport | Fire Management Officer | Fire Management Oversight |

| NAME | TITLE/POSITION | RESPONSIBILITY |
|-------------------|---------------------------------------|---|
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| Mark Hafkenschiel | Rangeland Management Specialist | Rangeland Management Wild Horses Reclamation/Noxious Weeds |
| Garner Harris | Range Technician/Fire Station Manager | Appendix A Development Public Meeting Visual Aids |
| Bill Hill | Supervisory Physical Scientist | Geology and Minerals |
| Carol Hollowed | Hydrologist | Soils Water Quality Hydrology and Water Rights |
| Ed Hollowed | Wildlife Biologist | Wildlife Special Status Wildlife |
| John Mehlhoff | Field Office Manager | Signing Authority |
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| Mike Rieser | Fire Control Officer | Fire Control Oversight Implementation of Proposed Action |
| Rusty Roberts | Rangeland Management Specialist | Development of Proposed Action Vegetation Special Status Plants |
| Mark Robertson | Team Leader | Project Oversight Remaining Resources Not Covered |
| Mike Selle | Archaeologist | Cultural Resources Paleontology |

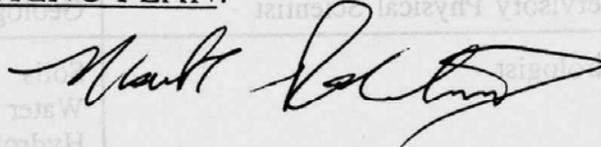
FONSI

The environmental assessment, analyzing the environmental effects of the proposed action, has been reviewed. The approved mitigation measures result in a finding of no significant impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

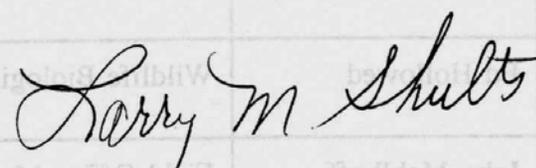
DECISION AND RATIONALE: It is my decision to Approve.

MITIGATION MEASURES:

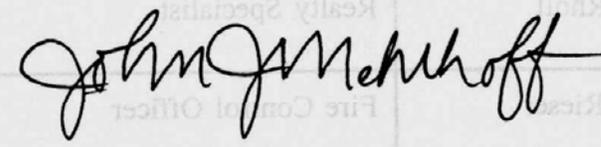
COMPLIANCE AND MONITORING PLAN:

SIGNATURE OF PREPARER: 

DATE SIGNED: 6-29-99

SIGNATURE OF ENVIRONMENTAL COORDINATOR: 

DATE SIGNED: 6-29-99

SIGNATURE OF AUTHORIZED OFFICIAL: 

DATE SIGNED: 6-29-99

ATTACHMENTS:

- Appendix A.-Common acronyms used in the document.
- Appendix B.-Preparedness levels, resource and fire situation parameters, and implementation options to be considered when seeking an appropriate management response of a wildland fire ignition.
- Appendix C.-Initial fire assessment checklist required before proceeding into an appropriate management response that may consider WFURB.
- Figure 1.-National Wildfire Coordinating Group Wildland Fire Management Policy flowchart representing the inter-agency approved diagram illustrating the broad framework within which the new policy will be implemented.

Appendix A. Common acronyms used in the document.

| Acronym | Definition |
|----------------|---|
| ACEC | Areas of Critical Environmental Concern |
| AMR | Appropriate Management Response |
| BLM | Bureau of Land Management |
| EFRP | Emergency Fire Rehabilitation Plan |
| EIS | Environmental Impact Statement |
| ERC | Energy Release Component |
| FMP | Fire Management Plan |
| FS | Forest Service |
| HMA | Herd Management Area |
| ID | Inter-disciplinary |
| LU | Land Unit |
| NEPA | National Environmental Policy Act |
| NFDRS | National Fire Danger Rating System |
| NRCS | Natural Resources Conservation Service |
| PJ | Pinyon-Juniper |
| PNF | Prescribed Natural Fire |
| RAC | Resource Advisory Committee |
| RMP | Resource Management Plan |
| ROD | Record of Decision |
| T&E | Threatened and Endangered |
| USGS | United States Geological Service |
| WFSA | Wildland Fire Situation Analysis |
| WFURB | Wildland Fire Used for Resource Benefit |
| WRFO | White River Field Office |

| | |
|-------|---------------------------|
| WRRRA | White River Resource Area |
| WSA | Wilderness Study Area |

Appendix B. Preparedness levels, resource and fire situation parameters, and implementation options to be considered when seeking an appropriate management response of a wildland fire ignition.

| Preparedness/ Planning Level | Fire Situation/Definition | Implementation Process |
|------------------------------------|--|---|
| Level I | <p style="text-align: center;">National</p> <ul style="list-style-type: none"> * No large fire activity nationally * Most geographic areas have low to moderate fire danger * Little or no commitment of national resources <p style="text-align: center;">Regional</p> <ul style="list-style-type: none"> * Wildfire activity within region is light and large fires are short in duration with low complexity * Little or no commitment of area or national resources <p style="text-align: center;">Local</p> <ul style="list-style-type: none"> * Little or no fire activity * Resources committed: 25% | <p style="text-align: center;">National</p> <ul style="list-style-type: none"> * Agency/geographic areas will determine appropriate actions <p style="text-align: center;">Regional</p> <ul style="list-style-type: none"> * Optimum conditions for normal prescribed fire operations and implementation of wildfire for use as a resource benefit (WFURB) <p style="text-align: center;">Local</p> <ul style="list-style-type: none"> * No constraints limiting full implementation of fire management plan |
| Level II | <p style="text-align: center;">National</p> <ul style="list-style-type: none"> * Fire activity is occurring and potential exists for large incidents * One geographic area experiencing high fire danger * Minimal mobilization of resources from other areas * Potential for mobilizing additional resources <p style="text-align: center;">Regional</p> <ul style="list-style-type: none"> * Increased fire activity with most fires remaining at low to moderate complexity * Moderate potential for large fires and extended attack for more than one burn period * Potential for frequent mobilization of resources between dispatch centers <p style="text-align: center;">Local</p> <ul style="list-style-type: none"> * Fire activity low to moderate with multiple fires 20 acres or less * Potential for fires to exceed 20 acres * Interagency involvement occurring within zone * Resources committed: 50% | <p style="text-align: center;">National</p> <ul style="list-style-type: none"> * Agency/geographic areas will determine appropriate actions * Monitor national wildfire, WFURB, and prescribed fire status, resource commitments, and preparedness levels <p style="text-align: center;">Regional</p> <ul style="list-style-type: none"> * Resources are adequate for wildfire, WFURB, and prescribed fire activity <p style="text-align: center;">Local</p> <ul style="list-style-type: none"> * Maintain communication between fire staff and field office concerning needs for prevention, presuppression, detection, and suppression * Appropriate suppression strategies may be utilized * Develop a fire situation analysis to document decisions on WFURB |

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| <p>Level III</p> | <p style="text-align: center;">National</p> <ul style="list-style-type: none"> * Two or more geographic areas experiencing wildfire, WFURB, and prescribed fire activity requiring a major commitment of national resources <p style="text-align: center;">Regional</p> <ul style="list-style-type: none"> * Multiple large incidents are occurring in two or more areas within the region * High potential for fires to be moderate to high complexity * Increased mobilization of area and national resources is occurring with some significant delays and some resources unavailable <p style="text-align: center;">Local</p> <ul style="list-style-type: none"> * Multiple fires occurring with increased potential for escaped fires 20 acres or larger * Resources committed: 75% | <p style="text-align: center;">National</p> <ul style="list-style-type: none"> * Agency/geographic areas monitor wildfire, WFURB, and prescribed fire activity, and suppression requirements to maximize efficient utilization for identified priorities * Coordinate prepositioning of national resources <p style="text-align: center;">Regional</p> <ul style="list-style-type: none"> * Provide national interagency coordination center with timely intelligence on existing and emerging situations <p style="text-align: center;">Local</p> <ul style="list-style-type: none"> * Consider ordering intelligence officer, fire behavior analyst, support dispatchers, and additional suppression resources * Appropriate suppression strategies reevaluated * Full suppression strategy implemented in high risk/value areas * Evaluate need for fire restrictions * Increase communication between fire staff and field office to review continued implementation of fire management plan |
|-------------------------|---|---|

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| <p>Level IV</p> | <p style="text-align: center;">National</p> <ul style="list-style-type: none"> * Two or more geographic areas experiencing incidents requiring Type I management teams * Competition exists for resources between geographic areas <p style="text-align: center;">Regional</p> <ul style="list-style-type: none"> * Increased activity of large, complex incidents * Multiple incident management teams are extended * Continued high potential for additional activity and increased complexity <p style="text-align: center;">Local</p> <ul style="list-style-type: none"> * Multiple fires occurring * Increased number of fires over 20 acres with potential for escapes of 100 acres or larger * Increased number of incidents requiring extended attack * Resources committed: 100% | <p style="text-align: center;">National</p> <ul style="list-style-type: none"> * WFURB and prescribed fire application can be continued or initiated if the proposed action is approved by an agency at regional or state level * Approval must be based on an assessment of risk and impacts of proposed actions on area resources and activities * Final decision resides with implementing agency * Geographic areas provide national interagency coordination center with fire priorities and additional pertinent information daily <p style="text-align: center;">Regional</p> <ul style="list-style-type: none"> * WFURB and prescribed fire applications can continue or be initiated if the following conditions are met: * All units conducting WFURB and prescribed fire activities must have completed and approved fire management plans including decision criteria and prescription elements * Local units responsible for Go/No-Go checklist * Regional or state level agency representative must concur with local agency recommendation for managed fires * Evaluation of significant risk made by regional or state agency representative in presentation of WFURB or prescribed fire implementation proposal to geographic multi-agency coordinating group prior to any approval <p style="text-align: center;">Local</p> <ul style="list-style-type: none"> * Reevaluate state of readiness of initial attack resources and order if needed * Suspend declaration of WFURB except those that are of no significant risk * Have WFURB burn plan available for review by unit administrator * Unit managers evaluate and document all WFURB and prescribed fire activity (planned and active) to assure plans and contingencies can be accomplished with current resource commitments |
|------------------------|---|--|

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| <p>Level V</p> | <p style="text-align: center;">National</p> <ul style="list-style-type: none"> * Several geographic areas experiencing major incidents which have potential to exhaust all agency fire resources <p style="text-align: center;">Regional</p> <ul style="list-style-type: none"> * High complex fire activity has increased to state/area wide * Major priority setting is occurring through multi-agency coordinating group <p style="text-align: center;">Local</p> <ul style="list-style-type: none"> * Multiple large fires (100 acres or greater) * Resources committed: 100% | <p style="text-align: center;">National</p> <ul style="list-style-type: none"> * Prepare geographic area evaluation/assessment of current and projected fire situation * WFURB and prescribed fire application can be continued or initiated if proposed action is recommended by regional or state level representative * National agency representative will assess risk and impact of proposed actions and discuss with national multi-agency coordinating group * Final decision to implement resides with implementing agency <p style="text-align: center;">Regional</p> <ul style="list-style-type: none"> * WFURB and prescribed fire applications can continue or be initiated if the following conditions are met: * National agency representative must concur with regional or state recommendation * National level representative will present evaluation of significant risk in proposal to national multi-agency coordinating group prior to any approval <p style="text-align: center;">Local</p> <ul style="list-style-type: none"> * No new prescribed fires initiated * Units conducting prescribed burns will report assessment of ability to maintain fire within prescription, stop further ignition, and suppress to a safe point where contingency resources can be made available for wildfire incidents * Assess risk and impact on resources and wildfire activity of proposed WFURB prior to initiation and receive approval from region and national multi-agency coordinating groups * Implement highest level of burn restrictions |
|-----------------------|---|--|

Appendix C. Initial fire assessment checklist required before proceeding into an appropriate management response that may consider WFURB.

DECISION CRITERIA CHECKLIST

| Decision Element | Yes | No |
|---|-----|----|
| Is there a threat to life, property, or resources that cannot be mitigated? | | |
| Are potential effects on cultural and natural resources outside the range of acceptable effects? | | |
| Are relative risk indicators and/or risk assessment results unacceptable to the appropriate Agency Administrator? | | |
| Is there other proximate fire activity that limits or precludes successful management of this fire? | | |
| Are there other Agency Administrator issues that preclude wildland fire use? | | |

The Decision Criteria Checklist is a process to assess whether or not the situation warrants continued wildland fire use implementation. A “Yes” response to any element on the checklist indicates that the appropriate management response should be suppression-oriented.

| | | |
|---|--|--|
| Recommended Response Action (check appropriate box) | No-Go (Initial attack/suppression action) | |
| | Go (Other appropriate management response) | |

Signature _____

Date _____

Figure 1. National Wildfire Coordinating Group Wildland Fire Management Policy flowchart representing the inter-agency approved diagram illustrating the broad framework within which the new policy will be implemented.