

CENTRAL UTAH INTERAGENCY FIRE MANAGEMENT PLAN

**Fishlake National Forest
Richfield BLM Field Office
Fillmore BLM Field Office
2010**



**CENTRAL UTAH
FIRE MANAGEMENT PLAN
FISHLAKE NATIONAL FOREST
2010**



Reviewed and updated by: _____ Date _____

Interagency Federal fire policy requires that every area with burnable vegetation must have a Fire Management Plan (FMP). This FMP provides information concerning the fire process for the Fishlake National Forest, Richfield & Fillmore Field Office and compiles guidance from existing sources such as but not limited to, the Fishlake National Forest Land and Resource Management Plan (LMP), Richfield Field Office Resource Management Plan (RMP), Warm Springs RMP, House Range RMP, national policy, and national and regional directives.

The potential consequences to firefighter, public safety, natural and cultural resources, and values to be protected help determine the management response to wildfire. Firefighter and public safety are the first consideration and are always the priority during every response to wildfire.

While the Fire Management Plan is required for the Forest Service and the Bureau of Land Management, specific requirements and policy is different for each agency. Specific agency direction will be noted throughout this document with the following icons:

 Denotes direction specific to the USFS

 Denotes direction specific to the BLM

No agency icon signifies direction applicable to both agencies.

The following chapters discuss broad Forest and BLM specific Fire Management Unit (FMU) characteristics and guidance.

Chapter 1 introduces the area covered by the FMP, includes a map of the Central Utah Fire Management area, addresses the agencies involved, and states why the agencies are developing the FMP.

Chapter 2 establishes the link between higher-level planning documents, legislation, and policies and the actions described in FMP.

Chapter 3 articulates specific goals, objectives, standards, guidelines, and/or desired future condition(s), as established in the agencies LMP and RMP's, which apply to all the Central Utah Fire FMUs and those that are unique to individual FMUs.

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Chapter 1. INTRODUCTION

This Fire Management Plan (FMP) was developed as a decision support tool to help fire personnel and decision makers determine the management response to an unplanned ignition. FMPs do not make decisions. Instead, they provide information, organized by FMUs, which provides a finer scale summarization of information that is possible at the forest level. These descriptions bring specific detail about the identifiable areas on the ground. FMPs are not static documents. They will evolve and be revised as conditions changes on the ground and as modifications are made to the Forest’s LMP. The lands included here are those administered by Richfield Field Office of the Color Country District and the Fillmore Field Office of the West Desert District (BLM), and Fishlake National Forest (USFS) in Central Utah (see Figure 1). This plan applies to 8,679,286 acres of federally managed lands.

*The Boulder (02) and Teasdale (24) Fire Management Units are located within the Dixie National Forest, but are administered by the Fishlake National Forest. Fire Management activities on these FMU’s is the responsibility of the Central Utah Interagency Fire Program.

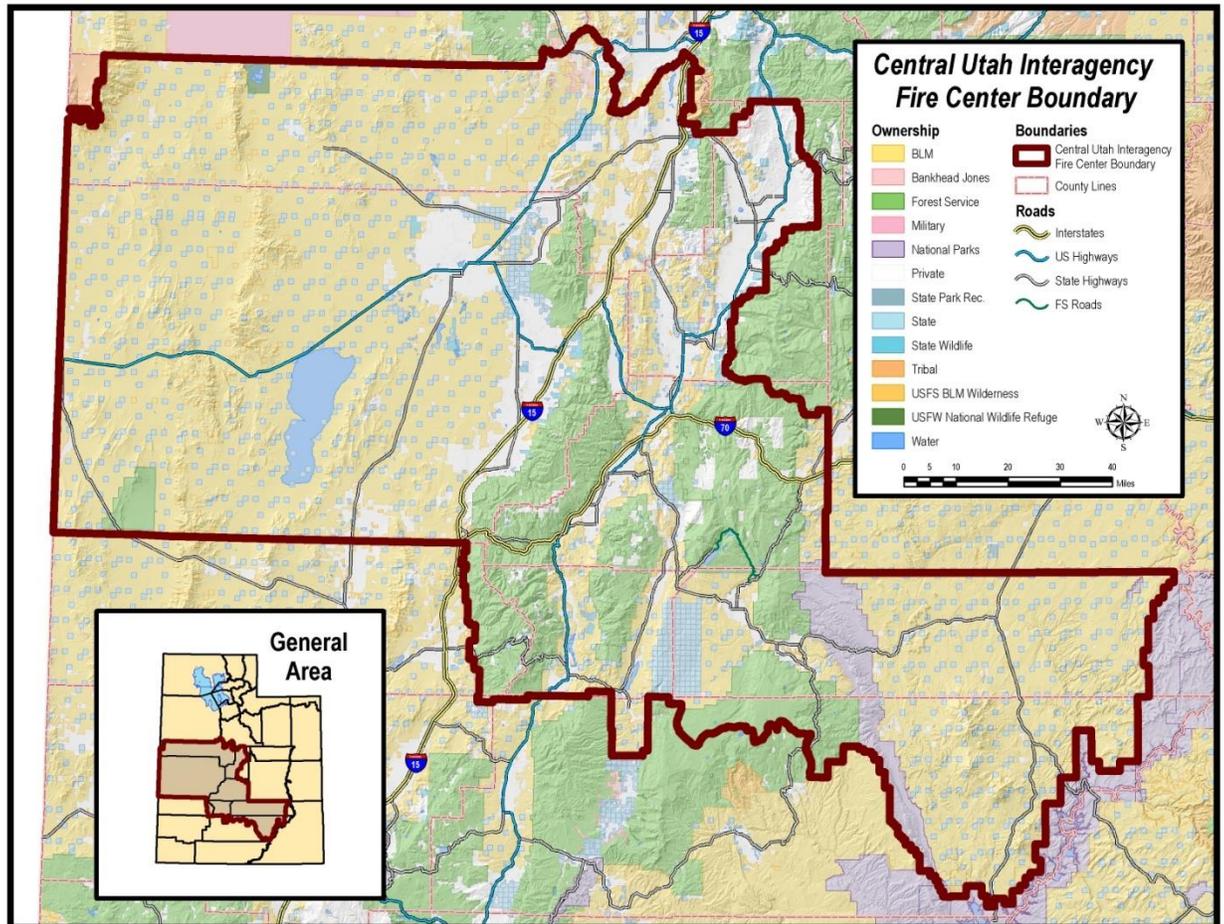


Figure 1

The purpose of this Central Utah Interagency Fire Management Plan (FMP) is to identify and integrate all Federal wildland fire management guidance, direction, and information required to implement national fire policy and fire management direction in a single document. The FMP allows management direction to be easily accessible by fire and resource personnel. It highlights management direction to facilitate development and implementation of fire management strategies.

This document provides information, organized by **Fire Management Units (FMUs)**, which provides a finer scale summarization of information than is possible at the forest-wide or BLM district-wide level. These descriptions bring specific detail about the identifiable areas on the ground.

Chapter 2. **POLICY, LAND MANAGEMENT PLANNING, AND PARTNERSHIPS**

In 2001 the Utah Fire Amendment updated the Land Management Plan for the Fishlake National Forest. The regulations and policy in the following documents guide the fire management as outlined in this FMP.

2.1. **National and Regional Fire Management Policy**

Forest Service & BLM policy and direction that are relevant to this plan include:

1995 Federal Wildland Fire Management Policy and Program Review (January 2001)

National Fire Plan

-  Forest Service Manual 5100
-  Forest Service Handbook 5109
-  Aerial Application of Fire Retardant, Decision Notice 2008
Guidance for Implementation of Federal Wildland Fire Management Policy. (February 13, 2009)
-  Richfield Fire Management Plan Environmental Assessment (UT-050-04-045, 2005)
-  Bureau of Land Management Manual 9200

2.2. **Land and Resource Management Plans**

-  Fishlake National Forest Land and Resource Management Plan and Record of Decision (1986, as amended).
 - Utah Fire Amendment, 2001
 - Goshawk Amendment, 2000
-  Dixie National Forest Land and Resource Management Plan and Record of Decision (1986, as amended).
 - Utah Fire Amendment, 2001
 - Goshawk Amendment, 2000
-  Richfield Field Resource Management Plan (2008)
-  Warm Springs Resource Management Plan (1986)
-  House Range Resource Management Plan (1987)

2.3. **Partnership**

The Central Utah Interagency Fire (CUIF) organization coordinates fire management planning. The group's mission is to promote safe, effective fire management through interagency cooperation. Because many wildland fires are of a multi-jurisdictional nature, interagency cooperation provides an ideal background for cohesive ecological, social, political, and economical considerations for fire management. CUIF is comprised of six local land agencies: the U.S. Forest Service (USFS); Bureau of Land Management (BLM); National Park Service (NPS);

Bureau of Indian Affairs (BIA); National Fish and Wildlife Service; and Utah Division of Forestry, Fire, and State Lands (FF&SL). Close collaboration between Fishlake National Forest, Fillmore Field Office and Richfield Field Office occurred during the development of this plan. Capitol Reef National Park has completed its own Fire Management Plan.

Chapter 3. FIRE MANAGEMENT UNIT DESCRIPTIONS

The primary purpose of developing FMUs in fire management planning is to assist in organizing information in complex landscapes. FMUs divide the landscape into smaller geographic areas to easily describe safety considerations, physical, biological, social characteristics and to frame associated planning guidance based on these characteristics.

The following information, including the summaries of fuels conditions, weather and burning patterns, and other conditions in specific FMUs, helps determine the management response to an unplanned ignition and provides a quick reference to the strategic goals in the forest’s LMP.

3.1. Fire Management Considerations Applicable to All Fire Management Units

3.1.1. Land and Resource Management Plan Guidance



Forest Service Specific Direction

Fishlake National Forest Land & Resource Management Plan

Goals

- Ecosystems are restored and maintained, consistent with land uses and historic fire regimes (Utah Fire Amendment, page 2-8).

Objectives

- Maintain structural diversity of vegetation on management areas that are dominated by forested ecosystems (*Fishlake NF LRMP*. 1986. P IV-11).
- General Direction** General direction and Standards and Guidelines are summarized from Section C (*Fishlake NF LRMP*. 1986., starting on page IV-11) for forest-wide implementation (unless superseded by specific management area direction). This table represents the general direction and Standards and Guidelines that management of unplanned ignitions may need to considered.

MANAGEMENT PRESCRIPTION MANAGEMENT ACTIVITIES	GENERAL DIRECTION	STANDARDS AND GUIDELINES
Diversity on National Forests and National Grasslands (A00)	1. Maintain structural diversity of vegetation on management areas that are dominated by forested ecosystems.	<ul style="list-style-type: none"> a. Maintain or establish a minimum of 20 percent of the forested area within a management area to provide vertical density. b. Maintain or establish a minimum of 30 percent of the forested area within a management area to provide horizontal diversity. c. In forested areas of a unit, 5 percent or more should be in old-growth and 5 percent or more should be in grass/forb stages.

		d. In forested areas, create or modify created openings so they have a Patton edge shape index of at least 1.4 and have at least a medium—edge contrast.
	2. Manage medium –contrast edges created in management areas dominated by grassland or shrubland.	
	3. In forested ecosystems, maintain snags well distributed over the ecosystem.	
	4. Manage Aspen for retention where needed for wildlife watershed or esthetic purposes.	
	5. Manage seral aspen stands for a diversity of age classes.	
	6. Assist in the establishment and management of Research Natural Areas.	
Cultural Resource Management (A02)	1. Protect, find an adaptive use for , or enhance all cultural resources on a National Forest System (NFS) Lands which are listed on or are eligible for the National Register of Historic places.	a. Follow direction in FSM 2360.
	2. Protect all National Forest cultural resources: <ul style="list-style-type: none"> a. Complete cultural resource surveys prior to any federal undertaking which could affect significant cultural resources. b. Avoid disturbance of cultural resources until evaluated and until evaluated and until appropriate adverse effect mitigation procedures are affected for significant properties. 	a. Follow direction in FSM 2360.
Visual Resource Management (A04)	4. Plan, design and locate vegetation manipulation in a scale which retains the color and texture of characteristic landscape, borrowing directional emphasis of form and line from natural features.	<ul style="list-style-type: none"> a. Meet the visual quality objectives of retention and partial retention of one full growing season after completion of a project. Meet modification and maximum modification objectives three full growing seasons after completion of a project. b. Determine sensitivity levels in accordance with FSH 2309.16, Agriculture Handbook No. 462, vol. 2, Chapter 1; Sensitivity Levels.

Wildlife and Fish Resource Management (CO1)	2. Maintain habitat for viable populations of existing vertebrate wildlife species.	a. Habitat for each species on the forest will be maintained by protecting at least 40 percent of the ecosystems for existing species. Proper juxtaposition of ecosystems must be considered.	
	3. Allow for the establishment of Elk and other desirable species on sites that supply the habitat needs of the species.		
	4. Manage waters capable of supporting self-sustaining trout populations to provide for those populations.	<p>a. Maintain 40 percent or more of overhanging grasses, forbs sedges and shrubs along banks of streams.</p> <p>b. Maintain 50 percent or more of total stream bank length in stable condition where natural conditions allow. (See PFANKUCH, 1978, for stability rating.)</p> <p>c. No more than 25 percent of stream substrate should be covered by inorganic sediment less than 3.2mm in size where natural conditions allow. (use R—4 GAWS Aquatic Habitat Surveys Handbook).</p>	
	5. Manage and provide habitat for recovery of endangered and threatened species.		
	6. Do not allow activities or practices that would negatively impact endangered, threatened, or sensitive plant or animal species.		
Wildlife Habitat Improvement and Maintenance (C02, 04, 05, and 06)	1. Use both commercial and noncommercial silvicultural practices to accomplish wildlife habitat objectives.	<p>a. In forested areas, maintain deer or elk hiding cover on 60 percent or more of the perimeter of all natural openings, all created openings and along at least 75 percent of the edge of arterial and collector roads and 40 percent along streams and rivers.</p> <p>b. In management areas dominated by forested ecosystems, maintain a minimum of 40 percent of the vegetation in deer or elk hiding cover. This hiding cover should be well distributed over the unit. One half of the hiding cover should also be thermal cover where biologically feasible.</p> <p>c. In management areas dominated by non-forested eco-systems, maintain deer and elk hiding cover as follows:</p>	
		% of Unit Forested	% of Forested Area in Cover
		35-50	At least 50%
		20-34	At least 60%
		Less than 20	At least 75%

		<p>These levels may be exceeded temporarily during periods when stands are being regenerated to meet the cover standard, or to correct tree disease, problems, in aspen stands, or where windthrow or wildfire occurred. In critical big game habitat maintain hiding cover along at least 75 percent of the edge of arterial and collector roads, and at least 60% along streams and rivers, where trees occur.</p> <p>d. Alter age classes of browse stands in a management area, no more than 25 percent within a ten—year period.</p>
	2. Improve habitat capability through direct treatments of vegetation, soil, and waters.	
	4. Provide maximum wildlife habitat diversity.	
	5. Follow Fishlake snag policy as stated in forest supplement to FSM 2630.	
Range Resource Management (D02)	1. Provide forage for livestock and wildlife within range capacity to sustain local dependent livestock industry, an wildlife numbers.	
	3. Achieve or maintain fair or better range conditions on all rangelands used by livestock.	
	4. Treat noxious weeds in the following priority: <ul style="list-style-type: none"> a. Invasion of new plant species classified as noxious weeds; b. Infestation of new areas c. Expansion of existing infestations 	
Range Improvements and Maintenance (D03, 04, 05, and 06)	2. Structural range improvement should be designed to benefit wildlife and livestock.	a. Structural improvements and maintenance will be in accordance with FSH 2209.22-R4
Silvicultural Prescriptions (E03, 06 and 07)	2. Apply a variety of silvicultural systems and harvest methods which best meet resource management objectives.	a. The appropriate harvest methods by forest cover type are <i>described on page IV-24-27 of the LMP.</i>
	3. Clearcuts may be applied to Dwarf Mistletoe infected stands of any forest cover type.	
	4. Assure that all even-aged stands scheduled to be harvested during the planning period will generally have reached the culmination of mean annual increment of growth.	
	5. The maximum size of openings created by the application of even-aged silviculture will be 40 acres. Exceptions are: <ul style="list-style-type: none"> a. Proposals for larger openings are subject to a 60-day public review and are approved by the regional forester. 	a. SIZE OF OPENINGS Patch Clearcuts: 1-10 acres Clearcuts: 10-40 acres

	<ul style="list-style-type: none"> b. Larger openings are the result of natural catastrophic conditions of fire, insect or disease attack, windstorm, or c. The area does not meet the definition of created openings. d. Aspen cover type where desirable to assure regeneration or manage individual clones. 	
	8. Acceptable management intensity activities to determine harvest levels are: <i>described on page IV30 of the LMP.</i>	
Riparian Area Management (F03)	1. Special protection and management will be given to floodplains, wetlands, and all land and vegetation for a minimum of 100 feet from the edges of all perennial streams, lakes and other bodies of water or to the outer margin of the riparian ecosystem if wider than 100 feet.	
	<ul style="list-style-type: none"> 4. Prescribe silvicultural systems to achieve riparian area objectives. <ul style="list-style-type: none"> a. Prohibit the operation of motorized equipment within the riparian area except at constructed stream crossings. 	<ul style="list-style-type: none"> a. Maintain shade, bank stability and sediment standards as specified under wildlife and fish resource management standards and guidelines.
Water Resource Improvement and Maintenance (F05 and 06)	1. Maintain needed instream flows and protect public property and resources.	
	2. Improve or maintain water quality to meet State water quality standards. However, where the natural background water pollutants cause degradation, it is not necessary to implement improvement actions. Short—term or temporary failure to meet some parameters of the State standard, such as increased sediment from road crossing construction or water resource development may be permitted in special cases.	
	4. Rehabilitate disturbed areas that are contributing sediment directly to perennial streams as a result of management activities to maintain water quality and reestablish vegetation cover.	<ul style="list-style-type: none"> a. Reduce to natural rate any erosion due to management activity through necessary mitigation measures such as water barring and revegetation. Rehabilitation measures will be implemented within one year of the activity.
Mining Law Compliance and Administration (Local tables) (G01)	3. Minimize or as appropriate, prevent adverse impacts on surface resources.	

<p>Soil Resource Management (KA1)</p>	<ol style="list-style-type: none"> 1. Maintain soil productivity, minimize man—caused soil erosion, and maintain the integrity of associated ecosystem. <ol style="list-style-type: none"> a. Use site preparation methods which are designed to keep fertile, friable topsoil essentially intact. b. Give roads and trails design considerations to prevent resource damage on capability areas containing soils with high shrink—swell capacity. c. Provide adequate road and trail cross drainage to reduce sediment transport energy. d. Revegetate all areas capable of supporting vegetation, disturbed during road construction and/or reconstruction to stabilize the area and reduce soil erosion. Where practicable use less palatable plant species on cuts, fills , and other areas subject to trampling damage by domestic. e. Prevent livestock and wildlife grazing which reduces the percent of plant cover to less than the amount needed for watershed protection and plant health. f. Place tractor—built fire lines on the contour where possible, and avoid use of tractors on highly erodible sites. g. Provide permanent drainage and establish protective vegetative cover on all new temporary roads or equipment ways, and all existing roads which are being removed from the transportation system. h. Minimize soil compaction by limiting vehicle passes, skidding on snow, frozen or dry soil; or by off-ground logging systems. i. Restore soil disturbance caused by human use to soil loss tolerance levels commensurate with the natural ecological processes for the treatment areas. 	<ol style="list-style-type: none"> a. Use the following standards and guidelines unless more site specific requirements are developed during project design. <ol style="list-style-type: none"> 1. Limit intensive ground disturbing activities on unstable slopes and highly erodible sites. 2. Apply Packer’s Guides in designing for cross drain spacing and buffers. 3. Chisel or rip compacted soils. Soils are considered compacted where there is a 15 percent increase in bulk density or 50 percent decrease in macro pore space.
	<ol style="list-style-type: none"> 2. Identify at the project level, upland areas that are immediately adjacent to riparian (prescription 9A) management areas. Adjacent upland areas are those portions of a management area which, when subjected to management activities, have a potential for directly affecting the condition of the adjacent riparian management area. The magnitude of effects is dependent upon 	<ol style="list-style-type: none"> a. The following is a guide to identify the approximate extent of adject upland areas:

	<p>slope steepness, and the kin amount, and location of surface and vegetation disturbance within the adjacent upland unit.</p>	<p>Slope gradient of upland areas adjacent to riparian management area.</p> <table border="1"> <thead> <tr> <th>% Slope Range</th> <th>Upslope distance from boundary of riparian management area. Feet</th> </tr> </thead> <tbody> <tr><td>0-20</td><td>100</td></tr> <tr><td>20-30</td><td>180</td></tr> <tr><td>30-40</td><td>280</td></tr> <tr><td>40-50</td><td>400</td></tr> <tr><td>50-60</td><td>520</td></tr> <tr><td>60-70</td><td>640</td></tr> <tr><td>70-80</td><td>760</td></tr> <tr><td>80-90</td><td>880</td></tr> <tr><td>90-100</td><td>1000</td></tr> <tr><td>100-150</td><td>1000-1300</td></tr> </tbody> </table>	% Slope Range	Upslope distance from boundary of riparian management area. Feet	0-20	100	20-30	180	30-40	280	40-50	400	50-60	520	60-70	640	70-80	760	80-90	880	90-100	1000	100-150	1000-1300	
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	<p>3. Reduce project caused, on site, erosion rates through designed management practices and appropriate erosion mitigation, vegetation or restoration measures.</p>		<p>a. Reduce erosion by 75% within the first year after disturbance. Reduce project caused on-site erosion by 95% within five years after initial disturbance. Calculate erosion with appropriate universal soil loss equation methodology.</p>																						
<p>Transportation system Management (L01 and 20)</p>	<p>3. Closed or restricted roads maybe used for and to accomplish administrative purposes when:</p> <ol style="list-style-type: none"> Prescribed in management area direction statements; Authorized by the forest supervision; and In case of emergency. 																								
<p>Wildland Fire Suppression</p>		<p>Standard - Human life (firefighter and public safety) is the highest priority during a fire. Once firefighters have been assigned to a fire, their safety becomes the highest value to be protected. Property and natural and cultural resources are lower priorities.</p> <p>Guideline - When assigning protection priorities to property and natural and cultural resources, decisions will be based on the relative values to be protected, commensurate with fire management costs.</p> <p>Standard - Human-caused fires (either accidental or arson), are unwanted wildland fires, and will be suppressed. Natural ignitions will be suppressed in areas not covered by an approved fire management plan.</p> <p>Guideline - The full range of suppression tactics is appropriate to consider forestwide, consistent with forest and management area emphasis and direction.</p>																							

Prescribed Fire		Guideline - Prescribed fire is authorized forestwide. (Use prescribed fire in wilderness only to meet wilderness management objectives.)
Wildland Fire Use		<p>Guideline - Wildland fire use is authorized forestwide except in:</p> <ul style="list-style-type: none"> • administrative sites • developed recreation sites • summer home sites • designated communication sites • oil and gas facilities • mining facilities • above-ground utility corridors • high-use travel corridors. <p>The management response for these locations will be suppression if they are threatened.</p> <p>In areas authorized for wildland fire use, the full range of management responses--from full suppression to monitoring--may be used.</p>
Fuels		Guideline - Reduce hazardous fuels. The full range of fuel reduction methods is authorized, consistent with forest and management area emphasis and direction.
Air Resource Management (P16)	1. Comply with State and Federal Air Quality Standards. (FSM 2120 and 5180)	a. Meet applicable state air quality standards.
Insect and Disease Management/Suppression (P35)	1. Prevent or suppress epidemic insect and disease populations with an integrated pest management (IPM) approach consistent with resource management objectives.	

 **Dixie Land and Resource Management Plan Guidance**

Boulder(02) & Teasdale(24) FMU Specific Direction

Goals

-  Ecosystems are restored and maintained, consistent with land uses and historic fire regimes.

Objectives

-  Maintain structural diversity of vegetation on management areas that are dominated by forested ecosystems (*Dixie NF LRMP*. 1986. P IV-25).

General Direction

-  General direction and Standards and Guidelines are summarized from Section E (*Dixie NF LRMP*. 1986., starting on page IV-24) for forest-wide implementation (unless superseded by specific management area direction). This table represents the general direction and Standards and Guidelines that management of unplanned ignitions may need to consider.

MANAGEMENT PRESCRIPTION MANAGEMENT ACTIVITIES	GENERAL DIRECTION	STANDARDS AND GUIDELINES
<p>Diversity on National Forests and National Grasslands (A00)</p>	<p>1. Maintain structural diversity of vegetation on management areas that are dominated by forested ecosystems.</p>	<p>e. Maintain or establish a minimum of 20 percent of the forested area within a management area to provide vertical density.</p> <p>f. Maintain or establish a minimum of 30 percent of the forested area within a management area to provide horizontal diversity.</p> <p>g. In forested areas, create or modify created openings so they have a Patton edge shape index of at least 1.4 and have at least a medium—edge contrast.</p>
	<p>2. Maintain existing medium— or high—contrast edges within forested management areas.</p>	
	<p>3. If medium—contrast edges are created in units dominated by grassland or shrubland, create openings with Patton edge— shape index of at least 1.4.</p>	<p>a. Maximum size of individual treated areas is 500 acres.</p>
	<p>4. In forested management areas, maintain a minimum on each treated area, an average of 20—30 snags (in all stages of development) per 10 acres, well distributed over the management areas.</p>	<p>a. Provide at a minimum, an average of 2-12 hard snags per 10 acres of the following minimum diameters (where biologically feasible):</p> <ul style="list-style-type: none"> - Ponderosa pine, Douglas-fir and spruce-fir: 10 inches dbh. - Aspen: 8 inches dbh <p>b. Retain an average length per acre of down-dead logs (where feasible) of the following minimum diameters:</p> <ul style="list-style-type: none"> - Ponderosa pine, Douglas-fir and spruce-fir -12 inch diameter, 50 linear feet per acre - Aspen - 10 inch diameter, 33 linear feet per acre
	<p>5. Manage aspen for retention wherever it occurs, unless justified by one of the following:</p> <ul style="list-style-type: none"> a. Conversion of determinate aspen to conifers, or shrub—or grass/forb seral stages for wildlife, esthetic, recreation, transportation, or watershed purposes. b. Conversion of determinate aspen to conifers on sites with a high demand for softwood, or c. Areas of aspen which are larger than are needed for wildlife or esthetic purposes. 	<p>a. Silvicultural standards: (These standards may be exceeded in areas managed for old growth.)</p> <ul style="list-style-type: none"> 1. Clearcut (Stand or Clone) Rotation Age: 80—120 years Thinning Cycle: N/A 2. Limit individual regeneration acres to a maximum of 40, or the size of a clone, whichever is smaller.

	<p>6. If determinant aspen stands are managed for regeneration, treat contiguous areas no larger than 40 acres, unless larger areas are needed to protect aspen regeneration or prevent decadence. Treat entire clones in determinate (climax) aspen stands can be converted to other cover types if needed to meet other objectives.</p>	
Cultural Resource Management (A02)	<p>1. Protect, find an adaptive use for, or interpret all cultural resources on National Forest System lands (NFS) lands which are listed on or eligible for inclusion in the National Register of Historic Places, as detailed in the forest protection/ maintenance and interpretive plans.</p>	A. Follow direction in FSM 2360.
	<p>2. Protect and foster public use and enjoyment of cultural resources:</p> <ul style="list-style-type: none"> a. Complete cultural resource surveys prior to any ground— disturbing project, b. Avoid disturbance of known cultural resources until evaluated and determined not significant, c. Mitigate sites where there is no other way to protect the properties, 	
	<p>3. Achieve enhancement of landscapes through addition, subtraction or alteration of elements of the landscape such as vegetation, rockform, water features or structures, examples of these include:</p> <ul style="list-style-type: none"> a. Addition of vegetation species to introduce unique form, color or texture to existing vegetation. b. Vegetation manipulation to open up vistas or screen out undesirable views. 	
	<p>4. Plan, design and locate vegetation manipulation in a scale which retains the color and texture of the characteristic, borrowing directional emphasis of form and line from natural features.</p>	
Wilderness Area Management (B02)	<p>9. Restore soil disturbances caused by human use (past mining, grazing, trail construction and use, camping, etc.) to soil loss tolerance levels commensurate with the natural ecological processes for the treatment area.</p>	

	13. Implement revegetation only for rehabilitation of areas in less than fair range condition based upon their natural potential. Use only native species for revegetation. Implement only where natural vegetation possibilities are poor, and only where degradation was due to human activities.	A. Base range condition on the standards in the Range Analysis Handbook (FSH 2209.21)
	16. Suppress man-caused wildfires.	
	17. Maintain fire dependent ecosystems using prescribed fires ignited naturally. Reclaims areas disturbed as part of fire control activities to meet the visual quality objective of retention.	
	18. Protect air quality related values from adverse effects from air pollution.	A. See criteria and standards in FSM 2120.
Wildlife and Fish Resource Management (CO1)	3. Manage habitat for viable populations of all existing vertebrate wildlife species.	
	4. Allow for re-establishment of deer herds to the population levels outlined in the Utah Deer Herd Unit Management Plans	
	6. Manage waters capable of supporting self-sustaining trout populations to provide for those populations,	Where natural geologic and biologic conditions will allow, maintain the following stream habitat conditions: <ul style="list-style-type: none"> a. Maintain 40 percent or more of overhanging grasses, forbs sedges and shrubs along banks of streams. b. Maintain 50 percent or more of total streambank length in stable condition c. No more than 25 percent of stream substrate should be covered by inorganic sediment less than 3.2mm in size(use R—4 GAWS Aquatic Habitat Surveys Handbook). d. Maintain overall stream habitat condition at or above 40 percent of optimum (use R—4 GAWS Aquatic Habitat Surveys Handbook).
	7. Manage and provide habitat for recovery of endangered and threatened species,	
Wildlife Habitat Improvement and Maintenance (C02, 04, 05, and 06)	1. Use appropriate silvicultural practices to accomplish wildlife habitat objectives forestwide.	A. In forested areas, where biologic-hiding cover ^{1/} on 50 percent or more of the perimeter of all natural and created openings along at least 75 percent of the edge of arterial and connector roads ^{2/} . and along at least 50 percent along streams and rivers, In areas of winter and transition ranges at least 20 percent of the cover should quality as thermal cover.

		<p>1) Big game hiding cover is defined as that needed to hide 90 percent of a standing deer or elk at a distance of at least 200 feet.</p> <p>2) Road design speed and vehicle and animal safety need to be considered on a case—by—case basis</p> <p>B. In management areas dominated by non—forested ecosystems, maintain deer and elk hiding cover as follows;</p> <table border="1" data-bbox="1024 470 1498 638"> <thead> <tr> <th data-bbox="1024 470 1230 533">% of Unit Forested</th> <th data-bbox="1230 470 1498 533">% of Forested Area in Cover</th> </tr> </thead> <tbody> <tr> <td data-bbox="1024 533 1230 569">35-50</td> <td data-bbox="1230 533 1498 569">At least 50%</td> </tr> <tr> <td data-bbox="1024 569 1230 604">20-34</td> <td data-bbox="1230 569 1498 604">At least 60%</td> </tr> <tr> <td data-bbox="1024 604 1230 638">Less than 20</td> <td data-bbox="1230 604 1498 638">At least 75%</td> </tr> </tbody> </table> <p>These levels may be exceeded temporarily during periods when stands are being regenerated to meet the cover standard, or to correct tree disease, problems, in aspen stands, or where windthrow or wildfire occurred. In critical big game habitat maintain hiding cover along at least 75 percent of the edge of arterial and collector roads, and at least 60% along streams and rivers, where trees occur.</p> <p>C. Alter age classes of browse stands in a management area, no more than 25 percent within a ten—year period.</p>	% of Unit Forested	% of Forested Area in Cover	35-50	At least 50%	20-34	At least 60%	Less than 20	At least 75%
% of Unit Forested	% of Forested Area in Cover									
35-50	At least 50%									
20-34	At least 60%									
Less than 20	At least 75%									
	<p>2. Improve habitat capability through direct treatments of vegetation, soil, and waters.</p>									
	<p>4. Provide maximum wildlife habitat diversity.</p>	<p>a. Where silviculturally practical, maintain edge contrast# of at least medium or high between tree stands created by even aged management. CONTRAST BY AGE CLASS IS described on page IV-35 of the LMP</p> <p>b. B. Utilize both even and uneven aged timber management systems and a variety of harvest methods.</p>								
<p>Range Resource Management (D07)</p>	<p>1. Provide forage to sustain local dependent livestock industry.</p> <p>4. Achieve or maintain satisfactory range conditions on all rangelands.</p> <p>6. Control noxious farm weeds in the following priority:</p> <ul style="list-style-type: none"> a. Musk thistle; Scotch thistle; Canada thistle b. Invasion of new plant species classified as noxious farm weeds; c. Infestation in new areas; d. Expansion or existing infestations of Scotch, Musk and Canada thistle, and other noxious farm weeds; and 	<p>A. All suitable rangelands currently in “poor” condition, as determined according to FSH 2209.21 (R—4) will be improved to “fair” or better condition by 2030.</p>								

	e. Reduce acreage of current infestation.	
Silvicultural Prescriptions (E03, 06 and 07)	2. Apply a variety of silviculture systems and harvest methods which best meet resource management objectives.	b. The appropriate harvest methods by forest cover type are <i>described on page IV-38-39 of the LMP.</i> c. D. To facilitate the control of soil erosion within acceptable tolerance soil surveys or site specific soil data will be used to develop project level harvest systems.
	3. Clearcuts may be applied to dwarf mistletoe infected stands of any forest cover type.	
	4. Assure that all even-aged stands scheduled to be harvested during the planning period will generally have reached the culmination of mean annual increment of growth.	
	6. The maximum size of openings created by the application of even-aged silviculture will be 40 acres regardless of forest cover type. Exceptions are: a. Proposals for larger openings are subject to a 60-day public review and are approved by the Regional Forester. b. Larger openings are the result of natural catastrophic conditions of fire, insect or disease attack, windstorm, or c. The area does not meet the definition of created openings.	A. SIZE OF OPENINGS Patch Clearcuts: 1-10 acres Clearcuts: 10-40 acres
	7. Acceptable management intensity activities to determine harvest levels are <i>described on page IV-40 of the LMP.</i>	
	9. Examine modifications to silvicultural techniques and harvest practices in the spruce-fir and mixed conifer timber types to increase water yield. Implement changes when not inconsistent with other multiple use management goals.	
	4. Where appropriate, use K—V funds for soil and watershed rehabilitation and/or wildlife habitat improvement.	
Riparian Area Management (F03)	1. Special protection and management will be given to land and vegetation for a minimum of 100 feet from the edges of all perennial streams, lakes and other bodies of water or to the outermargin of the riparian ecosystem if wider than 100 feet.	
	2. Design and implement activities in management areas to protect and manage the riparian ecosystem.	
	4. Prescribe silvicultural systems to achieve riparian area objectives.	a. Maintain shade, bank stability and sediment standards as specified under

		<p>Wildlife and Fish Resource Management, Standards and Guidelines.</p> <p>b. B. Maintain at least 70 percent of the linear distance of all riparian ecosystems in at least an upper mid-seral successional stage.</p>
Water Resource Improvement and Maintenance (F05 and 06)	1. Maintain needed instream flows and protect public property and resources.	
	2. Improve or maintain water quality to meet State water quality standards. However, where the natural background water pollutants cause degradation, it is not necessary to implement improvement actions. Short-term or temporary failure to meet some parameters of the State standard, such as increased sediment from road crossing construction or water resource development may be permitted in special cases.	
	3. Evaluate all management activities within 100 feet of any spring for impacts on springflow, riparian habitat and soil disturbance.	
	4. Rehabilitate disturbed areas that are contributing sediment directly to perennial streams as a result of management activities to maintain water quality and reestablish vegetation cover.	A. Reduce to natural rate any erosion due to management activities in the season of disturbance and sediment yields within one year of the activity through necessary mitigation measures such as water barring and revegetation.
Mining Law Compliance and Administration (Locatables)	1. Minimize or, as appropriate, prevent adverse impacts on surface resources.	
Soil Resource Management (KA1)	<p>1. Maintain soil productivity, minimize man-caused soil erosion, and maintain the integrity of associated ecosystem.</p> <p>j. Use site preparation methods which are designed to keep fertile, triable topsoil essentially intact.</p> <p>k. Give roads and trails special design considerations to prevent resource damage on capability areas containing soils with high shrink-swell capacity.</p> <p>l. Provide adequate road and trail cross drainage to reduce sediment transport energy.</p> <p>m. Revegetate all areas capable of supporting vegetation, disturbed during road construction and/or reconstruction to stabilize the area and reduce soil erosion.</p> <p>n. Prevent livestock and wildlife grazing which reduces the percent of plant cover to less than the</p>	<p>A. Use the following standards and guidelines unless more site specific requirements are developed during project design.</p> <ol style="list-style-type: none"> 1. Limit intensive ground disturbing activities on unstable slopes and highly erodible sites. 2. Apply Packer's Guides in designing for cross drain spacing and buffers. 3. Chisel or rip compacted soils. Soils are considered compacted where there is a 15 percent increase in bulk density or 50 percent decrease in macro pore space.

	<p>amount needed for watershed protection and plant health.</p> <ul style="list-style-type: none"> o. Place tractor—built firelines on the contour where practical, and avoid use of tractors on highly erodible sites. p. Provide natural channel drainage and establish protective vegetative cover on all new roads or equipment ways, and all existing roads which are being removed from the transportation system. q. Minimize soil compaction by limiting vehicle travel; skidding on snow, frozen or dry soil; or using off-ground logging systems. r. Restore disturbed soil areas caused by human use to soil loss tolerance levels commensurate with the natural ecological processes for the treatment areas. 	
	<p>2. Repair and improve degraded watershed areas through initiation of watershed restoration projects.</p>	<ul style="list-style-type: none"> a. Eliminate watershed restoration backlog by year 2000. b. Base priority of watershed restoration projects on watershed improvement needs inventory & cost—benefit analysis emphasizing improvement opportunities in wet meadows and riparian areas.
<p>Transportation system Management (L01 and 20)</p>	<p>4. Closed or restricted roads may be used for and to accomplish administrative purposes when:</p> <ul style="list-style-type: none"> a. Prescribed in management area direction statements; b. Authorized by the Forest Supervisor; and c. In case of emergency. 	
<p>Fire Planning and Suppression (P01)</p>	<p>1. Plan and provide a level of protection from wildfire that will meet management objectives for the area, considering the following:</p> <ul style="list-style-type: none"> a. The values of the resources that are threatened by fire, b. The probability of fire occurrence, c. The fuelbed that fires will probably occur in, d. The weather conditions that will probably influence fires that occur, e. The costs of fire protection programs (FFP and FFF), f. The social, economic, political, cultural, environmental, life and property concerns, and g. Management objectives for the area. Use the National Fire Management Analysis Process (NFMAS). 	

Escaped Fire Suppression (P09)	<ol style="list-style-type: none"> 1. Take suppression action on all escaped fires considering the following: <ol style="list-style-type: none"> a. The values of the resources threatened by the fire (both positive and negative), b. Management objectives for the threatened area(s), c. The fuelbeds the fire may burn in, d. The current and projected weather conditions that will influence fire behavior, e. Natural barriers and fuel breaks, f. Social, economic, political, cultural, and environmental concerns, g. Public safety, h. Firefighter safety, and i. Costs of alternative suppression strategies. Use the Escaped Fire Situation Analysis (EFSA) to make this determination. 	
Air Resource Management (P16)	<ol style="list-style-type: none"> 1. Comply with State and Federal Air Quality Standards. (FSM 2120 and 5180) 	
Insect and Disease Management/Suppression (P35)	<ol style="list-style-type: none"> 1. Prevent or suppress epidemic insect and disease populations that threaten forest stands with an integrated pest management (IPM) approach consistent with resource management objectives. 	

Guidelines

-  Guideline – When assigning protection priorities to property and natural and cultural resources, decisions will be based on relative values to be protected, commensurate with fire management costs (Utah Fire Amendment, page 2-8).
-  Guideline – The full range of suppression tactics is authorized forest wide, consistent with fore and management area emphasis and direction (Utah Fire Amendment, page 2-8).
-  Guideline – Wildland fire use is authorized forest wide except in:
 - Administrative sites
 - Developed recreation sites
 - Summer home sites
 - Designated communication sites
 - Oil and gas facilities
 - Mining facilities
 - Above-ground utility corridors
 - High-use corridors.

The management response for these locations will be suppression if they are threatened. (Utah Fire Amendment EA. 2000. P 2-9).

NOTE: Wildland fire use is an out-dated term. The LRMP direction will be applied consistent with new terminology.

-  Guideline -- Avoid Aerial application of retardant or foam within 300 feet of waterways (Aerial Application of Fire Retardant Decision, page 9). A waterway is defined as “Any body of water including lakes, rivers, streams and ponds whether or not they contain aquatic life.” Exceptions may be made under the following conditions:
- When alternative line construction tactics are not available due to terrain constraints, congested area, life and property concerns or lack of ground personnel, it is acceptable to anchor the foam or retardant application to the waterway. When anchoring a retardant or foam line to a waterway, use the most accurate method of delivery in order to minimize placement of retardant or foam in the waterway (e.g., a helicopter rather than a heavy airtanker).
 - Deviations from these guidelines are acceptable when life or property is threatened and the use of retardant or foam can be reasonably expected to alleviate the threat.
 - When potential damage to natural resources outweighs possible loss of aquatic life, the unit administrator may approve a deviation from these guidelines.

Standards

-  Human life (firefighter and public safety) is the highest priority during a fire. Once firefighters have been assigned to a fire, their safety becomes the highest value to be protected. Property and natural and cultural resources are lower priorities (*Utah Fire Amendment EA. 2000. P 2-8*).
-  Standard – Human-caused fires (either accidental or arson) are unwanted wildland fires, and will be suppressed. Natural ignitions will be suppressed in areas not covered by an approved fire management plan (*Utah Fire Amendment EA. 2000. P 2-8*).



Bureau of Land Management Specific Direction

Richfield & Fillmore Resource Management Plans & Richfield FMP Environmental Assessment



Goals

- Allow fire to function in its ecological role when appropriate for the site and situation, while still protecting resource values at risk.
- Reduce human and ecological losses; complete resource management objectives and sustain the productivity of biological systems through fire management.
- Restore wildland fire to ecosystems when feasible and to minimize undesirable fire systems.



Objectives

- Manage fire and fuels, where appropriate, to restore natural systems to their desired future condition, considering the interrelated social and economic components.
- Manage wildland fires to minimize cost considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives.
- Manage fire and fuels to protect life, firefighter safety, property, and critical resource values.
- Reduce the threat of wildfire in the Wildland Urban Interface (WUI).



BLM General Direction

- Protection of human life is the most important goal for all resource protection measures (RPMs).
- Abbreviations for fire management actions: SUP: Wildfire suppression; NF: Non-fire fuels treatment; WFU: Wildland fire which will be beneficial to the landscape; ESR: Emergency Stabilization and Rehabilitation; RX: Prescribed Fire

Code	Protection Measures (and applicable fire management practices)	FMUs
Air Quality		
AQ-1	Evaluate weather conditions, including wind speed and atmospheric stability, to predict impacts from smoke from prescribed fires and wildland fire use. Coordinate with Utah Department of Environmental Quality for prescribed fires and wildland fire use. (RX, WFU)	All
AQ-2	When using chemical fuels reduction methods, follow all label requirements for herbicide application. (NF)	All
Cultural Resources		
CR-1	Cultural resource advisors should be contacted when fires occur in areas containing sensitive cultural resources. (SUP)	All
CR-2	Wildland fire use is discouraged in areas containing sensitive cultural resources. A Programmatic Agreement is being prepared between the Utah State Historic Preservation Office, BLM, and the Advisory Council to cover the finding of adverse effect on cultural resources associated with wildland fire use. (WFU)	All
CR-3	Potential impacts of proposed treatment should be evaluated for compliance with the National Historic Preservation Act (NHPA) and the Utah Statewide Protocol. This should be conducted prior to the proposed treatment. (RX, NF, ESR)	All
CR-4	The resource advisor would consult with the agency archaeologist prior to construction of dozer/major hand lines and use of fire retardant. (SUP, WFU, RX)	All
Invasive, Non-native Species		
INV-1	Wash any equipment used in areas where noxious weeds occur to minimize spread of noxious weeds. (SUP, WFU, RX, NF, ESR)	All
INV-2	In areas known to have weed infestations, aggressive action should be taken in rehabilitating firelines, seeding and follow-up monitoring, and treatment to reduce the spread of noxious weeds. Monitor burned areas and treat as necessary. All seed used would be tested for purity and for noxious weeds. Seed with noxious weeds would be rejected (ROD 13 Western States Vegetation Treatment EIS 1991). (SUP, WFU, RX, NF, ESR)	All
INV-3	Use certified weed-free seed on suppression rehabilitation. (SUP)	All
Native American Religious Concerns		
NAT-1	Consultation would be completed on an individual site-specific basis. (SUP, WFU, RX, NF, ESR)	All
Threatened, Endangered or Candidate Species- Plants and Animals		
END-1	Initiate Emergency Section 7 consultation with United States Fish and Wildlife Service (USFWS) upon the determination that wildfire suppression may pose a potential threat to any listed threatened or endangered species or adverse modification of designated critical habitat. (SUP)	All
END-2	Prior to planned fire management actions, survey for listed threatened and endangered (T&E) and non-listed sensitive species. Initiate Section 7 consultation with USFWS as necessary if proposed project may affect any listed species. Review appropriate management, conservation, and recovery plans and include recovery plan direction into project proposals. For non-listed special status plant and animal species, follow the direction contained in the BLM 6840 Manual. Ensure that any proposed project conserves non-listed sensitive species and their habitats and ensure that any action authorized, funded, or carried out by BLM does not contribute to the need for any species to become listed. (RX, NF, ESR)	All

Code	Protection Measures (and applicable fire management practices)	FMUs
END-3	See site-specific conservation measures identified in the Biological Assessment. (SUP, WFU, RX, NF, ESR)	All
Wastes (Hazardous or Solid)		
HW-1	Recognize hazardous wastes and move fire personnel to a safe distance from dumped chemicals, unexploded ordnance, drug labs, wire burn sites, or any other hazardous wastes. Immediately notify BLM Field Office hazmat coordinator or state hazmat coordinator upon discovery of any hazardous materials, following the BLM hazardous materials contingency plan. (SUP, WFU, RX, NF, ESR)	All
Wetlands/Riparian Zones		
WET-1	Plan and implement projects taking into account the potential impacts on water quality, including increased water yields that can threaten: fisheries and aquatic habitat; improvements at channel crossings; channel stability; and downstream values. Of special concern are: small headwaters of moderate to steep watersheds; erosive soils; multiple channel crossings; at-risk fisheries; and downstream residents. (RX, NF, ESR)	All
WET-2	When using chemical fuel reduction treatments follow all label directions, additional mitigations identified in project NEPA evaluation and the Approved Pesticide Use Proposal. At a minimum, provide a 100-foot-wide riparian buffer strip for aerial application, 25 feet for vehicle application and 10 feet for hand application. Any deviations must be in accordance with the label. Herbicides would be applied to individual plants within 10 feet of water where application is critical (BLM ROD 13 Western States Vegetation Treatment EIS 1991). (NF)	All
WET-5	Plan and implement projects consistent with compliance strategies for restoring or maintaining the restoration of water quality impaired [303(d) listed] waterbodies. Planned activities should take into account the potential impacts on water quality, including increased water yields that can threaten fisheries and aquatic habitat; improvements at channel crossings; channel stability; and downstream values. Of special concern are small headwaters of moderate to steep watersheds; erosive or saline soils; multiple channel crossings; at-risk fisheries; and downstream residents. (RX, NF, ESR)	All
WET-6	Suppress wildfires consistent with compliance strategies for restoring or maintaining the restoration of water quality impaired [303(d) listed] waterbodies. Do not use retardant within 300 feet of water bodies. (SUP, WFU)	All
WET-7	Avoid heavy equipment in riparian or wetland areas. During wildfire suppression or wildland fire use, consult a resource advisor before using heavy equipment in riparian or wetland areas. (SUP, WFU, RX, NF, ESR)	All
WET-8	Limit ignition within native riparian or wetland. Allow low-intensity fire to burn into riparian areas. (RX)	All
Wild and Scenic Rivers—Not Indicated		
Wilderness, Wilderness Study Areas (H-8550-1, H-1742-1, Manual Section 1742)		
Wild-1	The use of earth-moving equipment must be authorized by the field office manager. (SUP, WFU, RX, ESR)	All
Wild-2	Fire management actions would rely on the most effective methods of suppression that are least damaging to wilderness values, other resources and the environment, while requiring the least expenditure of public funds. (SUP, WFU)	All
Wild-3	A resource advisor should be consulted when fire occurs in Wilderness and WSA. (SUP, WFU)	All
Wild-4	All methods and tools used for suppression within the Wilderness Study Areas would be consistent with Interim Management Policy and Guidelines (BLM Manual H-8550-1). (SUP)	All

Code	Protection Measures (and applicable fire management practices)	FMUs
Livestock Grazing (43 CFR 4160.1, and 43 CFR 4190, Utah Standards and Guidelines for Healthy Rangelands 1997)		
L-1	Notify permittees of requirements for non-use or rest of treated areas. Coordinate with permittees regarding the requirements for non-use or rest of treated areas. (SUP, WFU, RX, NF, ESR)	All
L-2	Rangelands that have been burned, by wildfire, prescribed fire, or wildland fire use, would be ungrazed for a minimum of one complete growing season following the burn. (SUP, WFU, RX)	All
L-3	Rangelands that have been re-seeded or otherwise treated to alter vegetative composition, chemically or mechanically, would be ungrazed for a minimum of two complete growing seasons. (RX, NF, ESR)	All
L-4	Consider impacts on allotment management during wildland fire operations. (SUP, WFU, RX, NF, ESR)	All
Woodland/Forestry		
WF-1	Planned projects should be consistent with HFRA Section 102(e) (2) to maintain or contribute to the restoration of old-growth stands to a pre-fire suppression condition and to retain large trees contributing to old-growth structure. (SUP, WFU, RX, NF)	All
WF-2	During planning, evaluate opportunities to utilize forest and woodland products prior to implementing prescribed fire activities. Include opportunities to use forest and woodland product sales to accomplish non-fire fuel treatments. In forest and woodland stands, consider developing silvicultural prescriptions concurrently with fuel treatments prescriptions. (RX, NF)	All
Vegetation including Special Status Plants		
V-1	When restoring or rehabilitating disturbed rangelands, non-intrusive, nonnative plant species are appropriate for use when native species: (1) are not available; (2) are not economically feasible; (3) cannot achieve ecological objectives as well as nonnative species; and/or (4) cannot compete with already established native species (Noxious Weeds Executive Order 13112 2/3/1999; BLM Manual 9015; BLM ROD 13 Western States Vegetation Treatment EIS 1991). (RX, NF, ESR)	All
Fish and Wildlife including Special Status species		
FWSS-1	Avoid treatments during nesting, fawning, spawning, or other critical periods for wildlife or fish. (RX, NF, ESR)	All
FWSS-2	Avoid if possible or limit the size of, wildland fires in important wildlife habitats such as, mule deer winter range, riparian and occupied sage grouse habitat. Use resource advisors to help prioritize resources and develop Wildland Fire Situation Analyses (WFSAs) and Wildland Fire Implementation Plans (WFIPs) when important habitats may be impacted. (SUP, WFU)	All
FWSS-3	Minimize wildfire size and frequency in sagebrush communities where sage grouse habitat objectives would not be met if a fire occurs. Prioritize wildfire suppression in sagebrush habitat with an understory of invasive, annual species. Retain unburned islands and patches of sagebrush unless there are compelling safety, private property, and resource protection or control objectives at risk. Minimize burn-out operations (to minimize burned acres) in occupied sage-grouse habitats when there are no threats to human life and/or important resources. (SUP)	All
FWSS-4	Establish fuels treatment projects at strategic locations to minimize size of wildfires and limit further loss of sagebrush. Fuel treatments may include greenstripping to help reduce the spread of wildfires into sagebrush communities. (RX, NF)	All
FWSS-5	Use wildland fire to meet wildlife objectives. Evaluate impacts on sage grouse habitat in areas where wildland fire use for resource benefit may be implemented. (WFU, RX)	All
FWSS-6	Create small openings in continuous or dense sagebrush (>30% canopy cover) to create a mosaic of multiple-age classes and associated understory diversity across the landscape to benefit sagebrush-dependent species. (WFU, RX, NF)	All

Code	Protection Measures (and applicable fire management practices)	FMUs
FWSS-7	On sites that are currently occupied by forests or woodlands, but historically supported sagebrush communities, implement treatments (fire, cutting, chaining, seeding, etc.) to reestablish sagebrush communities. (RX, NF)	All
FWSS-8	Evaluate and monitor burned areas and continue management restrictions until the recovering and/or seeded plant community reflect the desired condition. (SUP, WFU, RX, ESR)	All
FWSS-9	Utilize the Emergency Stabilization and Rehabilitation program to apply appropriate post-fire treatments within crucial wildlife habitats, including sage grouse habitats. Minimize seeding with non-native species that may create a continuous perennial grass cover and restrict establishment of native vegetation. Seed mixtures should be designed to re-establish important seasonal habitat components for sage grouse. Leks should not be re-seeded with plants that change the vegetation height previously found on the lek. Forbs should be stressed in early and late brood-rearing habitats. In situations of limited funds for ESR actions, prioritize rehabilitation of sage grouse habitats. (ESR)	All
Soil		
S-1	Avoid heavy equipment use on highly erosive soils (soils with low soil loss tolerance), wet or boggy soils, and slopes greater than 30%, unless otherwise analyzed and allowed under appropriate NEPA evaluation with implementation of additional erosion control and other soil protection mitigation measures. (SUP, WFU, RX, NF, ESR)	All
S-2	There may be situations where high intensity fire would occur on sensitive and erosive soil types during wildland fire, wildland fire use or prescribed fire. If significant areas of soil show evidence of high severity fire, then evaluate area for soil erosion potential and downstream values at risk and implement appropriate or necessary soil stabilization actions such as mulching or seeding to avoid excessive wind and water erosion. (SUP, WFU, RX)	All
S-3	Complete necessary rehabilitation on firelines or other areas of direct soil disturbance, including but not limited to waterbarring firelines, covering and mulching firelines with slash, tilling and/or subsoiling compacted areas, scarification of vehicle tracks, OHV closures, seeding and/or mulching for erosion protection. (SUP, WFU, RX)	All
S-4	When using mechanical fuels reduction treatments, limit tractor and heavy equipment use to periods of low soil moisture to reduce the risk of soil compaction. If this is not practical, evaluate sites, post treatment, and if necessary, implement appropriate remediation, such as subsoiling, as part of the operation. (NF)	All
S-5	Treatments such as chaining, plowing, and roller chopping shall be conducted as much as practical on the contour to reduce soil erosion (BLM ROD 13 Western States Vegetation Treatment EIS 1991). (NF, ESR)	All
Recreation		
REC-1	Wildfire suppression efforts would preferentially protect Special Recreation Management Areas and recreation site infrastructure in line with fire management goals and objectives. (SUP)	All
REC-2	Vehicle tracks created off of established routes would be obliterated after fire management actions in order to reduce unauthorized OHV travel. (SUP, WFU, RX, NF, ESR)	All
Mineral Resources		
M-1	A safety buffer should be maintained between fire management activities and at-risk facilities. (SUP, WFU, RX)	All
Paleontology		
P-1	Plan and implement projects consistent with BLM Manual and Handbook H-8270-1, Chapter III (A) and III (B) in order to avoid areas where significant fossils are known or predicted to occur, or to provide for other mitigation of possible adverse effects. (RX, NF, ESR)	All

Code	Protection Measures (and applicable fire management practices)	FMUs
P-2	In the event that paleontological resources are discovered in the course of surface fire management activities, including fires suppression, efforts should be made to protect these resources. (SUP, WFU, RX, NF, ESR)	All
Lands/Access		
L-1	Fire management practices would be designed to avoid or otherwise ensure the protection of authorized rights-of-way and other facilities located on the public lands, including coordination with holders of major rights-of-way systems within rights-of-way corridors and communication sites. (WFU, RX, NF, ESR)	All
L-2	Individual project plans will, as appropriate, identify and analyze access requirements for the timely implementation of fire management activities. Where legal access needs are not required, appropriate coordination with non-federal land owners would occur. (RX, NF, ESR)	All
L-3	The actions of any fire management practice shall not destroy, deface, change, or remove to another place any monument or witness tree of the Public Land Survey System. Cadastral Surveys (see 18 USC Sec. 1858, Title 18, Part I, Chapter 91, Section 1858) (SUP, WFU, RX, NF, ESR)	All
Wild Horse and Burros		
WHB-1	Avoid fencing that would restrict access to water. (ESR)	All

 **Threatened and Endangered Species** (*Richfield FMP EA. 2005. P I-2&3*)

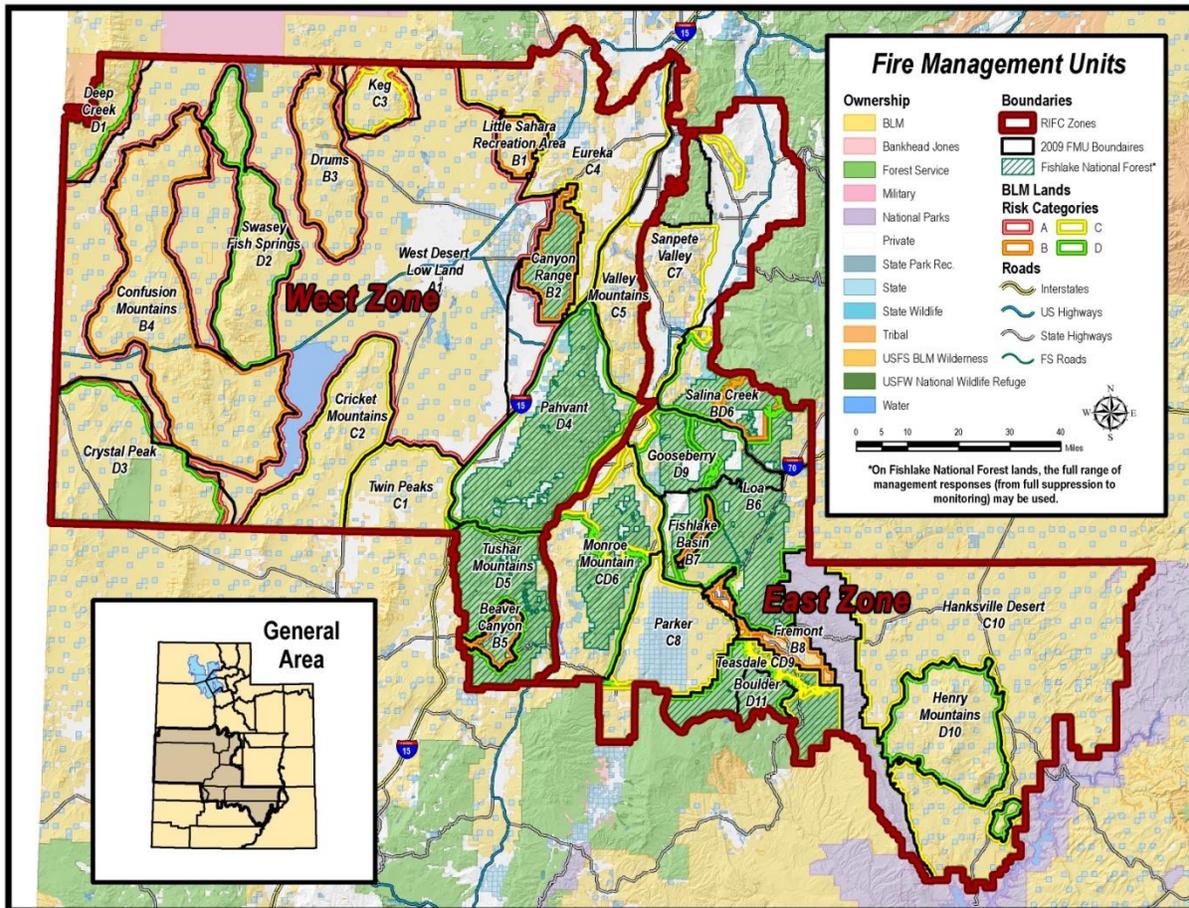
- Before the beginning of each fire season, a threatened and endangered species education program will be presented to all personnel anticipated to be within federally listed species habitats during suppression activities. Following training, each individual will sign a completion sheet to be placed on file at the local BLM office.
- A qualified Resource Advisor will be assigned to each wildfire that occurs in or threatens listed species habitat.
- If available, maps shall be provided to dispatch centers showing general locations of listed species. Local BLM or UDWR biologists shall be consulted for specific locations if fires occur within or near the general locations delineated on the map.
- Emergency Stabilization and Rehabilitation efforts must focus on areas in the spread of non-native species particularly within suitable habitat for federally listed species.

3.1.2. **Physical Characteristics that Apply to All Fire Management Units**

The Fire Management Plan establishes specific geographic areas as Fire Management Units (FMUs). Each FMU establishes prescriptive criteria and other guidance, which provide area specific direction for managers to implement the objectives of the LRMP, RMPs and other activity-level plans. There are 28 separate fire management units in the Central Utah Interagency Fire Management Area.

3.2. **Fire Management Considerations for Specific Fire Management Units**

- | | |
|---------------------------|---------------------------------------|
| 3.2.1. Beaver Canyon | 3.2.15. Keg |
| 3.2.2. Boulder | 3.2.16. Little Sahara Recreation Area |
| 3.2.3. Canyon Range | 3.2.17. Loa |
| 3.2.4. Confusion | 3.2.18. Monroe Mountain |
| 3.2.5. Crickets | 3.2.19. Pahvant |
| 3.2.6. Crystal Peak | 3.2.20. Parker |
| 3.2.7. Deep Creeks | 3.2.21. Salina Creek |
| 3.2.8. Drums | 3.2.22. Sanpete Valley |
| 3.2.9. Eureka | 3.2.23. Swasey/Fish Springs |
| 3.2.10. Fishlake Basin | 3.2.24. Teasdale |
| 3.2.11. Fremont | 3.2.25. Tushar Mountains |
| 3.2.12. Gooseberry | 3.2.26. Twin Peaks |
| 3.2.13. Hanksville Desert | 3.2.27. Valley Mountains |
| 3.2.14. Henry Mountains | 3.2.28. West Desert Lowlands |



3.2.1 Beaver Canyon (B5)

FMU Snap Shot:

- **FMU Name:** Beaver Canyon
-  **General Risk Category: B**
- **Fire Behavior Indicator:** ERC
- **NFDRS Weather Station:** Signal Peak – NWSID: 421904
- **Nearest Weather Station:** Signal Peak – NWSID: 421904
- **Acres/Agency:** 46,628 Beaver Ranger District 3,194 Private 1,070 State
- **Predominant Vegetation Types:** Vegetation in this FMU ranges from pinion/juniper woodlands and mountain brush at the lower elevations to aspen, aspen/mixed-conifer, and spruce/fir forests at the higher elevations.
- **Critical Issues:** Aquatic Invasives present, Invasive plants present
- **IA assets assigned to this FMU:** E-631, Tushar Mountain WFM, 3A661
- **Duty Officer:** West Zone FMO (Primary)
- **IA Dispatch Office:** RIFC
- **Resource Advisors/contact numbers: FS:** Steve Flinders 435-421-9010, Cindy Mackelprang 435-310-1023, Monty Cartwright 435-310-0121, Reggie Swenson 435-310-0122

3.2.1.1 FMU Guidance (FS):



 **Desired Conditions:**

- No clearly stated desired condition with current Forest Management Plan.

 **Objectives:**

- No FMU level objectives identified in Utah Fire Amendment.

 **Guidelines:**

- **2B Management Prescription- Emphasis is on rural and roaded-natural recreation opportunities** (*Fishlake NF* LMRP. 1986. P IV-66).

Management Activities	General Direction	Standards & Guidelines
Visual Resource Management (<i>Fishlake NF</i> LMRP. 1986. P. 1986. P IV-67)	Design and implement all management activities to provide a visually appealing landscape. Enhance or provide more viewing opportunities and increase vegetation diversity in selected areas.	a. Minimum visual quality objective (VQO) shall be partial retention

Recreation Opportunities and use of Administration <i>(Fishlake NF LRMP. 1986. P. 1986. P IV-68)</i>	5. Prohibit motorized vehicle use off forest system roads and trails (except snowmobiles operating on snow) where needed to protect soils, vegetation, or special wildlife habitat	
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- **3A Management Prescription – Emphasis is on providing non-motorized recreation with development of other resources** (*Fishlake NF LRMP. 1986. P IV-73*).
 - No standards and guidelines specific to fire management refer to forest LRMP for guidance.
- **3B Management Prescription - Emphasis is on providing non-motorized recreation without development of other resources** (*Fishlake NF LRMP. 1986. P IV-80*)
 - Prescribed fires are employed to manage vegetation.

Management Activities	General Direction	Standards & Guidelines
Silvicultural Prescriptions <i>(Fishlake NF LRMP. 1986. P IV-83)</i>	1. Do not implement silvicultural practices (other than prescribed fire to manage forested vegetation.	
Fire Planning and Suppression <i>(Fishlake NF LRMP. 1986. P IV-83)</i>	1. Maintain fire dependent ecosystems using prescribed fires from planned and unplanned ignitions. Reclaim areas disturbed as part of fire control activities to meet the visual quality objective of retention.	

- **4A Management Prescription – Emphasis is on fish habitat improvement** (*Fishlake NF LRMP. 1986. P IV-85*).
 - No standards and guidelines specific to fire management refer to forest LRMP for guidance.
- **4B Management Prescription- Emphasis is on habitat for management indicator species.** (*Fishlake NF LRMP. 1986. P IV-95*)
 - No standards and guidelines specific to fire management, refer to forest LRMP for guidance

- **5A Management Prescription- Emphasis on big game winter range/ nonforested areas.** (*Fishlake NF* LRMP. 1986. P IV-103)
 - No standards and guidelines specific to fire management, refer to forest LRMP for guidance

- **6B- Management Prescription- Emphasis is on livestock grazing.** (*Fishlake NF* LRMP. 1986. P IV-109)
 - Non-structural restoration and forage improvement practices available are seeding, planting, prescribed fire and wildland fire use, fertilizing, pitting, furrowing spraying, crushing, plowing and chaining. (*Utah Fire Amendment EA*. 2000. P A-42)

Management Activities	General Direction	Standards & Guidelines
Visual Resource Management (<i>Fishlake NF</i> LRMP. 1986. P IV-110)	Design and implement all management activities to blend with the natural landscape.	a. Minimum visual quality objective (VQO) shall be partial retention b. When projects require clearing or vegetation and (or) clearing edges and shapes to blend with the natural landscapes
Wildlife and Fish Resource Management (<i>Fishlake NF</i> LRMP. 1986. P IV-112)	1. Maintain habitat capability for management indicator species	a. Maintain 60 percent or more ecosystems required for these species.
	2. Provide adequate forage to sustain big game population levels agreed to in the statewide comprehensive wildlife management plan on NFS lands.	a. Allocate 90% of available forage to livestock.
Silvicultural Prescriptions (<i>Fishlake NF</i> LRMP. 1986. P IV-112)	1. Maintain and manage forested inclusions to provide a high level of forage production, wildlife habitat, and diversity.	

- **7A Management Prescription- Emphasis is on wood-fiber production and utilization** (*Fishlake NF* LRMP. 1986. P IV-114)
 - No standards and guidelines specific to fire management, refer to forest LRMP for guidance

- **7B Management Prescription- Emphasis is on wood-fiber production and utilization through selecting planting stock** (*Fishlake NF* LRMP. 1986. P IV-121)
 - No standards and guidelines specific to fire management, refer to forest LRMP for guidance

- **7C Management Prescription- Emphasis is on management of forested areas on steep slopes** (*Fishlake NF* LRMP. 1986. P IV-122)
 - No standards and guidelines specific to fire management, refer to forest LRMP for guidance

- **7D Management Prescription- Emphasis is on wood fiber production and utilization for products other than saw timber** (*Fishlake NF LRMP*. 1986. P IV-134)
 - No standards and guidelines specific to fire management, refer to forest LRMP for guidance

- **9A Management Prescription- Emphasis is on riparian area management** (*Fishlake NF LRMP*. 1986. P IV-141)
 - No standards and guidelines specific to fire management, refer to forest LRMP for guidance

- **9F Management Prescription- Emphasis is on improved watershed condition** (*Fishlake NF LRMP*. 1986. P IV-151)

Management Activities	General Direction	Standards & Guidelines
Wildlife and Fish Resource Management (<i>Fishlake NF LRMP</i> . 1986. P IV-67)	1. Maintain habitat capability for management indicator species	a. Maintain habitat needed to support state population goals for big game and exceed habitat requirements for minimum viable population levels for other management indicator species.
Range Resource Management (<i>Fishlake NF LRMP</i> . 1986. P IV-152)	1. Stabilize and/or regenerate suitable areas that are in less than good range or watershed condition.	a. Base range and watershed condition on standards in range analysis handbook (FSH 2209.21)
Soil Resource Management (<i>Fishlake NF LRMP</i> . 1986. P IV-153)	1. Restore soil disturbances caused by human use (past mining, grazing, trail construction and use, camping) to soil loss tolerance levels commensurate with the natural ecological processes for the treatment area.	a. Follow preliminary threshold rates established for the forest, contained in the soil monitoring plan.

- **10A Management Prescription - Emphasis is on Research Natural Area** (*Fishlake NF LRMP*. 1986. P IV-154)
 - No standards and guidelines specific to fire management, refer to forest LRMP for guidance

- **10E Management Prescription - Emphasis is on management of municipal watershed and supply** (*Fishlake NF LRMP*. 1986. P IV-157).
 - No standards and guidelines specific to fire management, refer to forest LRMP for guidance

 **Goals:**

- Integrate vegetation management with resource management to maintain productivity and provide for diversity of plant and animal communities. (*Fishlake NF LRMP*. 1986. P IV-3)
- Use prescribed fire to reduce fuel buildup and meet resource objectives. (*Fishlake NF LRMP*. 1986. P IV-5)
- Maintain air quality to comply with Federal and State laws. (*Fishlake NF LRMP*. 1986. P IV-5)
- Provide cost-effective (level of) fire protection. (*Fishlake NF LRMP*. 1986. P IV-5)

3.2.1.2 FMU Characteristics

3.2.1.2.1 Safety:

- Access/Egress – numerous dead end 2-track roads, steep narrow roads with numerous blind corners with limited shoulder and pull-out opportunities
- Roads become slippery with any amount of precipitation due to clay surfaces
- Potential for high amount of traffic including ATVs due to high recreational usage
- Potential need for traffic control and possible evacuation coordination with Beaver County dispatch and Sheriff's office's
- Numerous dispersed recreation sites
- Notify special use and permitted users of fire management activities
- Ensure public notification
- Rattlesnakes, bees, wasps, hornets
- Steep, rocky terrain
- Numerous hunting seasons occur during the late summer and fall which may be impacted by Wildland Fire Use and Prescribed fires, notification of limited entry of hunters may be necessary (DWR)
- Aviation Hazards
 - Power Lines
 - Communication sites
- Due to the historic nature of the area, mineshafts may be prevalent

3.2.1.2.2 Physical:

 **Location Description:**

- The FMU boundaries begin at the Forest Service Boundary on the west and follow the ridgelines that define the Beaver River watershed. The area lies within Beaver County. The nearest communities are Beaver and Manderfield to the West, Junction and Circleville to the East.

• **Detailed Boundary Description:**

- This FMU boundary begins at Highway 153 and the Western forest boundary following the ridgeline North of Highway 153. Turning North near Mud Flat to the

head of Baker Canyon. Following the ridgeline heading North East across Shelly Baldy Peak to Mud Lake. Following the ridgeline South East along the Beaver/Piute County line to the South Western end of the Tushar Mountains. Turning North West along the ridgeline toward Tushar Lakeside continuing to Porkies Pasture then West to the Forest Boundary. North along the forest boundary to the starting point.

- **Dominate topographic features:**
 - There are several peaks that rise above 11,500 feet. The Tushar Mountains are filled with many deep, steep canyons that dissect these steep mountain slopes.
- **Topography:**
 - The Tushar Mountains are the remnants of ancient volcanoes that form a thick pile of volcanic rocks. Erosion has largely removed the distinctive volcano shape from these mountains. Deep, steep canyons dissect these mountains. There is a variety of different terrain features: flats, benches, drainages, canyons, foothills and high mountains. At lower elevations, the topography goes from flat valley floors to rolling hills, to steep rugged canyons at the higher elevations.
- **Elevation:**
 - 6,000 feet to 12,169 feet.



- **Soils:**
 - Majority of the soils are deep to moderately deep, mildly alkaline to strongly acidic, with surface layers being brown to very dark grayish-brown, loams, silt loams, clay loams, and cobble stones in places. Soils are moderately well drained to somewhat excessively drained. Permeability is slow to rapid. Runoff is medium to slow and sediment production is moderately low.
- **Air Quality:**
 - Class I Air Sheds:
 - None
 - **Residential Areas and communities:**
 - Beaver
 - Big Rock Candy Mountain Homes
 - Bullion Canyon Homes
 - Circleville
 - Cove Fort
 - Fremont Indian State Park
 - Junction
 - Kingston
 - Manderfield
 - Marysvale
 - Monroe
 - North Creek
 - Piute State Park (recreation area)
 - Sulphurdale
 - Thompsonville
 - **Transportation Corridors:**
 - Highway 153
 - Highway 20
 - Highway 89
 - Interstate 15
 - Interstate 70

3.2.1.2.3 **Biological:**

- Vegetation:
 - Vegetation in this FMU ranges from pinion/juniper woodlands and mountain brush at the lower elevations to aspen, aspen/mixed-conifer, and spruce/fir forests at the higher elevations. There are some scattered ponderosa pine stands within the FMU at the lower elevations along the Beaver River.



Timber Management Areas:

- Consider timber harvest areas that are both planned and ongoing, as well as tree plantations.
- **Wildlife habitats:**
 - The lower elevations of this FMU are critical winter range for both deer and elk. Many deer populations also utilize these lower elevations for summer range.
 - Low elevation browse communities are especially vulnerable to conversion due to fire when sagebrush, cliffrose, or bitterbrush communities are threatened-- usually these occur around the edges of the Forest Boundary.



Sensitive Species:

- Sensitive plant species are present within the FMU, Contact Wildlife Biologist (Steve Flinders Ph# 435-421-9010).
- Various sensitive plants may be present, especially in the highest elevations. Contact Botanist (Dave Tait Ph# 435-201-1600).
- Goshawk habitat is abundant in the aspen and conifer forested vegetation types and may be improved by fire treatment, especially in aspen, active nests should be protected.

- **Flowering Plants**

- Tushar paintbrush (*Castilleja parvula* var. *parvula*)
- Creeping draba (*Draba sobolifera*)

- **Birds**

- Northern Goshawk (*Accipiter gentiles*)

- **Mammals**

- Pygmy rabbit (*Brachylagus idahoensis*)

- **Fish**

- Bonneville Cutthroat Trout (*Oncorhynchus clarki Utah*)

- **Invertebrates**

- None

- **Amphibians**

- None



Threatened/endangered Species:

- Habitat is low elevation, riparian areas. Contact Wildlife Biologist (Steve Flinders Ph# 435-421-9010).
- **Flowering Plants**
 - None

- **Birds**
 - Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) is a threatened/endangered candidate species
- **Mammals**
 - None
- **Invertebrates**
 - None
- **Fish**
 - None



Fisheries:

- Bonneville cutthroat Trout are present in many watersheds and the USFS fisheries biologist and/or Division of Wildlife Resources fisheries personnel should be contacted if a large portion of a watershed is impacted by fire or if sediment as a result of fire is expected to end up in stream.

3.2.1.2.4 Resources:



Special designations:

- Inventoried roadless areas consists of Tushar Mountain and Bullion/Delano (see Forest IRA map)



Cultural and historical:

- Cultural resource sensitivity for this area is low to moderate. Several cultural resource inventories have been completed, and many sites have been recorded. They include Archaic, Fremont, and Historic.

- **Recreation:**

- Extensive ATV trail system throughout the FMU with heavy use
- Dispersed camping and private cabin use
- Hunting and fishing use throughout the FMU
- Equestrian/foot trails
- Sightseeing/wildlife viewing day use

- **Identified Infrastructure:**

- **Campgrounds and dispersed Recreation Sites:**

- | | |
|--------------------------------|-------------------------|
| • Anderson Meadow Campground | • Ponderosa Picnic Area |
| • Kents Lake Campground | • Tushar Group Site |
| • LeBaron Campground | • Big John Flat |
| • Little Cottonwood Campground | • Big Flat |
| • Little Res. Campground | • Betenson Flat |
| • Mahogany Cove Campground | • Timid Springs |
| | • Jimmy Reed |
| | • Merchant Valley |
| | • Puffer Lake |

- **Numerous private cabins**

- **Guard Stations:**
 - Big Flat Guard Station

- **Communication and Electronic Sites:**
 - Edna Peak
 - Delano Peak

- **In holdings and Subdivisions:**
 - Within**
 - Arrowhead Estate
 - BSA Camp
 - Hi-Low Estate
 - LeBaron Estates
 - Merchant Valley Summer Homes
 - Mount Holly Club
 - Numerous private homes/cabins
 - Whispering Pines
 - Adjacent:**
 - Beaver
 - Big Rock Candy Mountain Homes
 - Birch Creek Campground
 - Bullion Canyon Homes
 - Circleville
 - City Creek Campground
 - Cove Fort
 - Fremont Indian State Park
 - Junction
 - Kingston
 - Manderfield
 - Marysville
 - Monroe
 - North Creek
 - Piute State Park (recreation area)
 - Sulphurdale
 - Thompsonville

- **Pipelines and power corridors:**
 - Beaver City Power Hydro-electric Power Plants
 - Associated pipelines
 - Associated power lines
 - Surge tanks
 - Diversion structures and valves

- **Municipal Watersheds**
 - Beaver City municipal water lines and dams:
 - Dams:
 - Blue Lake
 - Three Creeks
 - Twin Lakes
 - LeBaron
 - Anderson Meadows
 - Upper Kents
 - Middle Kents
 - Lower Kents
 - Little Res

- **Municipal Water Lines:**
 - Manderfield town municipal water line
 - Sulphurdale water line
 - Circleville town municipal water line
 - Junction town municipal water line
 - North Creek subdivision water line

3.2.1.3 FMU Fire Environment

3.2.1.3.1 Fire Behavior:

- This FMU includes a range of fire regime categories (I, II, III, IV) with fire frequency ranging from 35 years in the grass- sagebrush component to 100+ years in the dry shrub-land and spruce-fir types. Most of the FMU is Condition Class 3 due to loss of aspen, expansion of Pinyon-juniper woodlands, and presence of agricultural/urban areas. Fuels treatments (mechanical, prescribed fire) and unplanned fire may improve overall condition class, but potential for spread of invasives should be considered with any disturbance.

Major Vegetation Types	Percent of FMU	Fire Regime	Current Condition Class
Ponderosa Pine	2%	1	2
Sagebrush/Grassland	8%	2	3
Pinyon/ Juniper	17%	2	3
Mixed Conifer	28%	3	2
Aspen	5%	4	2
Mountain Shrub	17%	2	2
Spruce/ Subalpine Fir	23%	4	3

- **Fuels conditions in the FMU likely to influence fire behavior:**
 - Live fuel moisture in the Pinyon/juniper, Gamble oak, sagebrush, mixed conifer, scattered Ponderosa Pine, spruce/fir, and aspen communities appears to be a significant factor in fire spread and intensity. A low relative live fuel moisture condition combined with a continuous fuel bed with available fine fuels sets the stage for large fire growth. An abundance of 1000 hr. fuels (due to north aspect) in a low moisture state will contribute to higher fire severity.
- **Potential Control Problems:**
 - Moderate to heavy fuel loading in much of the forested areas
 - Plume dominated fires are common in mixed conifer/aspen and mixed shrub fuel types
 - Frequent strong thermal belt development during June, July and August up to 9500' elevation causes increased night time fire behavior
 - Steep slopes
 - Limited road access in the Roadless areas
 - Old mines and open shafts are very common
 - Numerous WUI areas, privately owned, with substantial developments (camps, summer homes, mining operations)
 - High level of interest in this area with many involved private parties and local organizations

3.2.1.3.2 Weather:

- **Weather patterns influencing fire behavior and historical weather analysis:**

- Average annual precipitation is 8 to 10 inches in lower elevations and 20 to 30 in the upper elevations. A neutral to unstable atmosphere predominates with winds usually from the southwest during the day and local down-canyon winds at night. Storm systems generally come from the northwest or west, preceded by winds from the southwest to southeast. High intensity thunderstorms are common from mid-July through September.
- **Fire season determination:**
 - Historical analysis has determined the wildland fires typically occur early June through mid October. Most fires occur in July, August and September from lightning associated with cold front passage.