

**FIRE MANAGEMENT PLAN**

**For the**

**COLUMBIA RIVER GORGE NATIONAL SCENIC AREA**

**June 10, 2008**

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## **1. Introduction:**

Federal wildland fire policy requires that every area with burnable vegetation must have a fire management plan. This document has been developed to meet that requirement and provide the Columbia River Gorge National Scenic Area with a dynamic Fire Management Plan (FMP) that addresses current policies and provides direction in; program scope, fire prevention, fire readiness, fire suppression, appropriate management response, organization and budget as well as fuels and smoke management. It will identify how it tiers to existing Land and Resource Management Plans, Federal Wildland Fire Policy (1995, 2000), existing Operating Plans, and Policy guidance from the Departments of Agriculture.

This fire management plan provides specific details of the fire program that meet fire management direction for the planning period, including; organization, facilities, equipment, activities, timing, locations, training, and related costs. This document is intended to be a working reference for fire program information.

This document further defines the Appropriate Management Response (AMR) to wildland fire on lands protected by the Columbia River Gorge National Scenic Area (CGF/Unit/Scenic Area) within its boundaries and provides the vehicle for cooperating agencies to address the same. This plan provides detailed descriptions of management objectives, fire protection, constraints and the procedures by which the appropriate management response will be implemented.

The Columbia River Gorge National Scenic Area encompasses 292,500 acres of federal, state, county, and private land in north central Oregon and south central Washington. The Scenic Area includes, within its boundaries, portions of two states and six counties. It encompasses 13 incorporated communities, 4 unincorporated communities and myriad state parks, National Wildlife Refuges, fish hatcheries and tribal allotments. The Scenic Area shares boundaries with the Mt. Hood National Forest on the south and the Gifford Pinchot National Forest on the north.



Land ownership patterns in the Scenic Area fall in checkerboard blocks that involve any combination of: private, federal, state, county, and tribal ownership. As a result the unit worked in close cooperation with and/or consulted; neighboring forests, local tribes, state, county, and municipal agencies in developing this FMP.

The Columbia River Gorge is nationally recognized for its scenic beauty and abundant recreational opportunities as well as its cultural resources. As a result, congress passed the Columbia River Gorge National Scenic Area Act and President Reagan signed it into law in 1986. The Forest Service has since been charged with:

1. Protecting and enhancing the scenic, cultural, natural recreational resources and wild and scenic river values of the Columbia River Gorge area for the long-term benefit of the environment and all people.
2. Supporting and protecting the economy of the Columbia River Gorge area by encouraging urban area growth and allowing compatible development. And
3. Working in partnership with the public in an atmosphere fostering openness, honesty, understanding and mutual respect.

**2. Policy, Land Management Planning and Partnerships:** Federal Land Management Agencies and local political authorities have planning levels that tier to the policies and laws, under which they operate. As these laws and policies evolve over time various levels of management plans are written to help define sound and implementable actions on the ground.

Federal Wildland Fire Management Policy and Program Review (USDA/USDI 1995) and the Wildland and Prescribed Fire Management Policy and Implementation Procedures

Reference Guide (Forest Service Manual 5101, 5103, and 5108); require development of a Fire Management Plan (FMP) for all federal lands subject to wildland fires.

## **2.1 Fire Policy**

The Fire Management Plan responds to goals and objectives of the National Fire Plan and the Columbia River Gorge National Scenic Area Management Plan. The Scenic Area Plan includes area-wide goals and objectives, and management area specific goals, and objectives. The Strategic Plan for the Columbia River Gorge National Scenic Area list site specific desired future conditions or “Niche Statements” for specific locations within the gorge.

The Fire Management Plan is supplemented by training and operational plans such as preparedness plans, dispatch plans, and prevention plans. The FMP includes a discussion of resource management objectives and activities, such as restoring and sustaining ecosystems and protecting communities and public safety. It also addresses public health and environmental issues such as air quality. This Fire Management Plan was developed and is intended to be implemented across agency boundaries to ensure consistent approaches to similar conditions.

Policy Documents used to develop this Fire Management Plan include:

1. Federal Wildland and Prescribed Fire Management Policy, Implementation Procedures and Reference Guide, August 1998
2. Review and update of the 1995 Federal Wildland Fire Management Policy, January 2001
3. USDA Forest Service Manual (FSM) 5100
4. USDA Forest Service Handbook (FSH) 5109

The 2001 Federal Wildland Fire Management Policy directs Federal agencies to achieve a range of acceptable practices from full response to fire use to protect life, property, resources, and maintain healthy ecosystems. The policy provides nine guiding principles that are fundamental to the success of the Federal wildland fire management program:

1. Fire Management Plans will be developed for every burnable acre of Federal Land.
2. Firefighter and public safety is the first priority in every fire management action.
3. The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process.
4. Fire management plans, programs, and activities will support land and resources management and their implementation.
5. Sound risk management is a basis for all fire management activities.

6. Fire management plans and activities incorporate public health and environmental quality considerations.
7. Federal, state, tribal, local, interagency coordination and cooperation are essential for implementing broad-scale fire management activities.
8. Incorporate standardization of policy and procedures among federal agencies.

**Authorities:**

FSM 5101 describes the authority for fire management activities on National Forest Systems Lands.

FSM 5108 lists pertinent references for guidance on the minimum standards and procedures for wildland fire management.

The Area Manager is responsible to the Regional Forester for the safe and efficient implementation of fire management activities within the Columbia River Gorge National Scenic Area, including cooperative activities with other agencies or landowners in accordance with delegations of authorities. The Area Manager or acting will meet the required elements outlined in the Management Performance Requirements for Fire Operations.

The Chief, Regional Forester, and Area Manager will personally communicate their expectation of leadership in fire management. This will be completed prior to fire season and in conjunction with National Leadership Team meetings and annual fire schools.

Agency administrators will ensure that items identified in the Thirtymile Accident Prevention Action Plan, and OSHA Hazard Abatement Plan, are reviewed to ensure full compliance.

This Fire Management Plan is a working document, and will be updated as policy or Land and Resource Management Plans change.

**2.2 Land and Resource Management Planning**

This Fire Management Plan, using federal fire policy as its guide, tiers to the land and resource management plans of each of the administrative units involved to provide clear direction for fire management activities. It describes the Scenic Area's program to manage wildland and prescribed fire as defined by direction in the Columbia River Gorge National Scenic Area Plan, the Mt. Hood National Forest Land and Resource Management Plan (LRMP), the Gifford Pinchot National Forest Land and Resource Management Plan, and the Northwest Forest Plan.

The FMP does not make decisions; rather, it provides the operational parameters needed to implement the Land Management and Resource Management Plans. It is a detailed program of action, on how to carry out fire management policies that will help achieve resource management objectives as defined in the Columbia River Gorge National Scenic Area Plan. It will be supplemented by specific operational plans such as prevention, preparedness, and preplanned dispatching of fire suppression resources.

Federal Land Management Agencies and local political authorities have planning levels that tier to the policies and laws, which they operate under. As these laws and policies evolve over time various levels of management plans are written to help define sound and implementable actions on the ground.

Documents used to develop this Fire Management Plan include:

- The Management Plan for the Columbia River Gorge National Scenic Area, approved in 1992 (revised 2004)
- Land & Resource Management Plan, Mt. Hood National Forest, approved in 1990
- Land & Resource Management Plan, Gifford Pinchot National Forest, approved in 1990
- The Record of Decision amended the Mt. Hood and Gifford Pinchot National Forests' Land & Resource Management Plans in 1994 within the Range of the Northern Spotted Owl. The Record of Decision is also referred to as the Northwest Forest Plan.

Direction from the Land and Resource Management Plans for Fire Management Activities includes:

- All fire management activities shall comply with Management Area management direction. FW-248
- Fire management planning should minimize “cost plus net value change”. Costs and changes to inherent resource values of the activity area should be minimized. FW-249
- All wildfires shall receive an “appropriate suppression response” (Regional Guide for Pacific Northwest Region, 1984). FW-256
- Dead, down woody material loading levels shall be managed to provide for multiple resource objectives (Regional Guide for Pacific Northwest Region, 1984). An economic analysis shall identify resource benefits and costs to determine appropriate funding. FW-265, FW-266
- The role and potential of fire as an integral part of the forest and rangeland environment shall be considered in obtaining multiple-use forest management objectives. FW-048



- Prescribed burning should be considered for use in meeting management objectives in areas where ecological studies show that natural fire has played a significant role in ecosystem development (Regional Guide for Pacific Northwest Region, 1984). FW-049
- Prescribed burning may be used when analysis indicates that it will be effective and feasible. Analysis shall include consideration of measures to mitigate impacts on air quality. FW-050, FW-051

The Management Plan for the Columbia River Gorge National Scenic Area identifies the goals of the unit as to:

- Protect and enhance the scenic, cultural, natural recreational resources and wild and scenic river values of the Columbia River Gorge area for the long-term benefit of the environment and all people.
- Support and protect the economy of the Columbia River Gorge area by encouraging urban area growth and allowing compatible development.

In addition the unit has an additional goal which is to:

- Work in partnership with the public in an atmosphere fostering openness, honesty, understanding and mutual respect.

Specific Desired Future Conditions may found in the unit's "Niche Statement" which is tiered to the Strategic Plan. The Strategic Plan is in turn tiered to the Land and Resource management plans for the Mt. Hood National Forest and the Gifford Pinchot National Forests as well as the Management Plan for the Columbia River Gorge National Scenic Area. Within the Strategic Plan the Scenic Area has been broken into "niches" where specific desired conditions are addressed at some detail. Specific desired conditions could be summarized as, protecting and enhancing existing natural, cultural, recreational, and cultural resource values.

### **2.3 Partnerships**

This plan is consistent with the Review and Update of the 1995 Federal Wildland Fire Management Policy, Wildland and Prescribed Fire Management Policy, and A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, 10 Year Comprehensive Study. It represents the participating federal agencies and provides local governments the collaboration necessary to address wildland fire management issues in conjunction with federal agencies.

While no formal partnerships were established, the following entities were consulted in the development of this plan and are routinely consulted during the implementation of the unit's detection, readiness, prevention, and suppression programs: Mt. Hood National Forest, Gifford Pinchot National Forest, Oregon

Department of Forestry; Central Oregon and Northern Cascades Districts, the Washington Department of Natural Resources; Pacific Cascades Region and Southeast Region, Yakama BIA, Warm Springs BIA, Ridgefield Wildlife Refuge Complex, Mid Columbia Fire & Rescue (The Dalles) Klickitat Rural Fire Protection Districts 5, 6, and 11, as well as the Spokane District of the BLM.

The federal and state entities listed above are partners in a local operating plan which is tiered to the Master Cooperative Fire Protection Agreement. The unit maintains separate cooperative agreements with Mid-Columbia Fire & Rescue, Klickitat County Fire District #11 (Whishram), and Klickitat County Fire District #6 (Dallesport).

Additionally, the unit participates in a bi-state six county wildland fuels coordinating effort through the Columbia Gorge Local Coordinating Group where fuels reduction and planning projects are reviewed and assessed for effectiveness and continuity.

### **3. Fire Management Unit Characteristics**

The Fire Management program includes all activities for the protection of natural resource and other values from wildland fire. In addition, the program provides leadership in the planning and execution of fuels management objectives to meet national, regional and local priorities. Fire managements' role is to coordinate, plan and implement the fire protection and fuels programs consistent with the standards and guidelines and management prescriptions.

The fire protection program includes fire prevention, pre-suppression (cooperation, aviation, fire danger rating, and training), fire suppression, and fire management analysis and planning activities.

#### **3.1 Area-wide Management Considerations**

Consistent with National and Regional Direction Fire suppression and fuels management are top priorities in the Columbia River Gorge National Scenic Area.

*The 2001 Federal Wildland Fire Management Policy* addresses the role of fire in ecosystem sustainability, the need for restoration and rehabilitation of fire damaged lands and ecosystems, the role of science in developing and implementing fire management programs, the importance of communication and education internally and externally, and the critical need for regular, ongoing evaluation of policies and procedures. Consistent with the intent of this policy the Columbia River Gorge National Scenic Area has identified 12 primary goals.

1. Achieve a program where firefighter and public safety is the highest priority in every fire management activity.

2. Organize for fighting fire with state, urban, and rural fire departments in the area through the use of cooperative planning and agreements.
3. Achieve a program that meets fiscal standards including cost containment objectives set forth in the Interagency Incident Business Management Handbook.
4. Develop and maintain cooperative plans for mobilizing and pre-positioning resources when fire danger is high or imminent, with an objective of protecting communities and municipal watersheds.
5. Achieve a program, which meets or exceeds the standards set forth in the "Standards for Fire and Aviation Operations."
6. Create defensible space for protection of structures and communities within and adjacent to National Forest Systems Lands.
7. Achieve a high standard for personnel and organizational capabilities to insure a high level of readiness to respond both locally and nationally. Provide for development of fire skills for all new employees as hired.
8. Achieve forest vegetation management priorities, which are coordinated with the need for landscape fuels management treatments.
9. Place priority on landscape scale fuels management treatments and the accompanying vegetation management treatments along National Forest boundaries. Work cooperatively with state and private landowners to provide for fuels management treatment on both sides of the National Forest boundary.
10. Achieve a program that supports land and resource management objectives as outlined in Land and Resource Management Plans.
11. Work with local city and county governments to improve planning and zoning regulations with respect to fire protection and prevention.
12. Maintain a high profile with the media and public AND carry a conservation message with all fire press releases and media contacts, as well as contacts with the public.

The goals support the standards set forth in the *10-Year Comprehensive Strategy* by:

1. Emphasizing the protection of communities and other high-priority watersheds at risk.
2. Collaborating with local governments and broadly represented stakeholders.
3. Establishing performance measures and monitoring protocols.

The goals contribute to accomplishing the *Federal Wildland Fire Management Policy* by:

1. Establishing firefighter and public safety as the first priority in every fire management activity.

2. Assuring that fire management plans, programs, and activities support land and resource management plans and their implementation.
3. Implementing sound risk management as a foundation for all fire management activities.
4. Promoting a fire management program and activities that are economically viable, based upon values to be protected, costs, and land and resource management objectives.
5. Assuring that fire management plans and activities incorporate public health and environmental quality considerations.
6. Promoting coordination and cooperation with other Federal, State, Tribal, and local interagency entities.
7. Promoting standardized policies and procedures among Federal agencies for cooperation and integration of fire activities across agency boundaries and to provide leadership for cooperation with State and local fire management organizations.

The goals contribute to accomplishing the *Cohesive Strategy* (Protecting People and Sustaining Resources in Fire-Adapted Ecosystems: A Cohesive Strategy, October 2000) by:

1. Prioritizing hazardous fuels reduction in and around communities at risk, readily accessible municipal watersheds, threatened and endangered species habitat, and other important local features, where conditions favor uncharacteristically intense fires.

The Wildland Fire Management Goals of the Columbia River Gorge National Scenic Area are consistent with *National Fire Plan* goals and objectives in that they:

1. Reduce the number of small fires that become large.
2. Restore natural ecological systems to minimize intense fires.
3. Create employment opportunities in both the private and public sectors.
4. Improve capabilities for state and volunteer fire organizations.
5. Reduce the threat to life and property from catastrophic wildfire.

The focus of the program to achieve the set of goals is through fire management missions such as wildland fire suppression and wildland fuels reduction. Missions that are carried out by the Columbia River Gorge National Scenic Area on a daily basis and that affect the health and safety of the employees and public, the character of the land being administered, and the size and type of organization needed to facilitate the program.

The unit's fire management program and strategy is carried out in close cooperation with other federal, state, and local cooperators to set priorities and

track accountability. The National Interagency Wildland Fire Master Cooperative Agreement, the Region-6 Operating Plan, and the Central Cascades Wildland Fire Operations Plan form the backbone of this cooperative effort.

All of the lands protected from wildland fire by the unit fall under one of the following categories:

- Wildland Urban/Interface
- Mixed federal & private ownership
- Late Successional Reserve (as defined by the Record of Decision) and /or Boarder the Portland Municipal Water Shed (Bull Run)

As a result of the complexities associated with a wildland fire burning in one or more of the these categories, the **Appropriate Management Response for all wildland fires within the Columbia River Gorge National Scenic Area has been identified as full suppression.**

#### **Management Objectives for all Gorge FMU's:**

1. Contain 95% of all wildfires during the initial attack (24 hours or 100 acres in the East FMU and 24 hours or 10 acres in the West FMU).
2. Move 25% of high priority condition class 3 acres to a better condition class within 3 years.
3. Conduct all prescribed burns in a manner consistent with Federal, state and local smoke management requirements.
4. Conduct all operations consistent with federal, state, and local safety regulations and guidelines with no lost time accidents.

#### **Management Constraints in all Gorge FMU's:**

1. Ensure wildland/urban interface impacts are minimized and other socio-political and economic impacts are considered.
2. Given that the protection of human life and property are the first priorities on every fire, ensure that impacts to T&E species and cultural resources are minimized. Where there is no threat to life and/or property; ensure there are no unacceptable impacts to T&E species and cultural resources.
3. Do not violate National Ambient Air Quality Standards (NAAQS) during prescribed fire activities.

#### **Fuels**

In response to the National Fire Plan and Initiative of 2001 the Columbia River Gorge National Scenic Area has focused its hazardous fuels reduction projects in the urban interface/intermix. Fuels treatment projects include assessments, planning, mechanical and hand treatments as well as prescribed fire and community assistance.

Even though the emphases of fuels treatment is targeted toward communities at risk and private boundaries, the unit has initiated planning initiatives that address ecosystem health, restoration and maintenance.

**Fire Regime Alteration:** Fire regimes are the baseline data that describe the historical role of fire in our landscapes. This information is critical to fire planning and vegetation management efforts of the Columbia River Gorge. Fire regimes assist in forming the basis for decisions when prioritizing hazardous fuels treatment areas and guiding the range of appropriateness.

Historic fire *frequency*, *severity*, and *size* are often used to describe *fire regimes*. Knowledge of the types and distribution of historic fire regimes help us understand the *role of fire* in shaping vegetation patterns and stand/plant community development.

Fire regimes for the Gorge Fire Management Units were identified using the National Fire Strategy (1999) descriptions refined for Region 6 (Table 1.). Fire regimes were named for the most common severity type, and the frequency of that expression on the landscape.

Seven fire regimes were identified throughout the Scenic Area. The most common regime is the III A <50 years, Mixed Severity that is found in each geographic sub-unit. The 0-35 year, low severity regime dominates from the Hood River to the east and is very localized from the Hood River to the west.

*I. 0-35 years, Low severity.*

Typical climax plant communities include ponderosa pine, eastside/dry Douglas-fir, pine-oak woodlands on serpentine soils, oak woodlands, and very dry white fir. Large stand-replacing fire can occur under certain weather conditions, but are rare events (i.e. every 200+ years).

*III A. <50 years, Mixed severity*

Typical potential plant communities include mixed conifer, very dry westside Douglas fir, and dry grand fir. Lower severity fire tends to predominate in many events.

*III B. 50-100 years, Mixed Severity*

Typical climax plant communities include well-drained western hemlock; warm, mesic grand fir, particularly east of the Cascade crest; and eastside western red cedar. The relative amount of lower and higher severity patches within a given event is intermediate between IIIa and IIIc.

### *III C. 100-200 years, Mixed Severity*

Typical potential plant communities include western hemlock, Pacific silver fir, and whitebark pine at or below 45 degrees latitude and cool, mesic grand fir and Douglas fir. Higher severity fire tends to dominate in many events.

### *IV B. 100+ years, Stand-replacing, Patchy arrangement*

Typical potential communities include subalpine fir and mountain hemlock parkland and whitebark pine north of 45 degrees latitude.

### *IV C. 100-200 years, Stand-replacing*

Typical plant communities include subalpine mixed conifer (spruce-fir), western larch, and western white pine. Important potential plant communities include mountain hemlock in the Cascades and Pacific silver fir north of 45 degrees latitude.

### *V A. 200-400 years, Stand-replacing*

Plant communities are at least somewhat fire adapted. Typical plant communities include Douglas fir, noble fir, and mountain hemlock on drier sites in parts of western Washington.

**Condition Class:** There are approximately 25,000 acres of National forest in the Gorge at risk for losing key ecosystem components. Of this 5,000 acres are at high risk, just over 15,200 acres are at moderate risk with the remaining acres being at low risk.

**Suppression:** The *Interagency Standards for Fire and Fire Aviation Operations*, including appendices, has been adopted by the unit as the minimum standard for fire operations, operational personnel, and equipment.

**Prevention:** The unit is active in the Mid-Columbia Fire Prevention Cooperative, which includes the Oregon Department of Forestry; The Dalles Unit, the Washington Department of Natural Resources; Southwest and Southeast Regions, Klickitat Rural Fire Protection District, Mid-Columbia Fire & Rescue (The Dalles), the Mt. Hood National Forest and the Gifford Pinchot National Forest.

The prevention strategy which was developed in 2004 through the use of the Risk Assessment and Mitigation System (RAMS) is consistent with the guiding principals of with the 10-Year Comprehensive Strategy, which includes:

1. Setting priorities that emphasizes the protection of communities and other high-priority watersheds at risk
2. Collaboration among governments and broadly representative stakeholders
3. Accountability through performance measures and monitoring for results

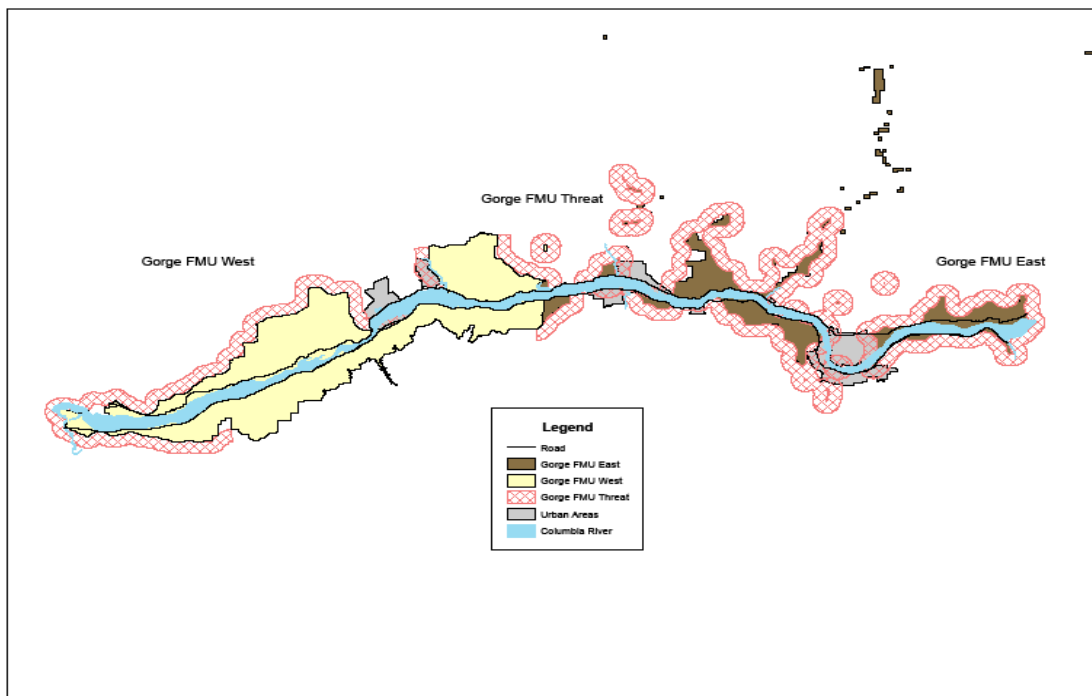
### **Dispatching**

The combined Mt. Hood and Gifford Pinchot National Forest dispatch (Central Cascades Communication Center) provides dispatching services for the unit and their

annual mobilization guide outlines the roles and responsibilities of the dispatch office, the duty officer, and suppression resources.

### **3.2 Fire Management Unit Specific Descriptions**

Based on ownership patterns, fuel and climate conditions and topography, and access, three Fire Management Units (west, east, & threat) have been identified within the Columbia River Gorge National Scenic Area. The west/east FMU break occurs at the City of Hood River and the threat FMU extends around the parameter of all National Forest Systems lands managed by the unit.



### **Common FMU Characteristics**

Volcanism, lava flows, glaciations, flooding, and river erosion have been the key forces that formed the Columbia Gorge landscape. Steep basalt cliffs, waterfalls, talus slopes and sharply defined ridges are present in all three Gorge FMU's. Steep north and south aspects dominate the topography of the Gorge FMU's where elevations range from 70 to 3700 feet and in many areas such elevation changes occur in three miles or less.

### **Urban Interface**

There are 13 designated Urban Areas within the Columbia River Gorge National Scenic Area. All 13 encompass incorporated communities ranging in population from 300 to 12,500. There are eight unincorporated communities (Murdock, Rowena, Dodson, Warrendale, Prindle, Underwood, Corbet, and Skamania) that range in



population from 20 to 150. The majority of the private land that lies outside of these urban areas is broken into 5 to 20 acre parcels developed with homes and other structures. As a result, approximately 80% of the lands protected against fire fall into the Wildland/Urban interface category.

**Infrastructure:** In that the Columbia Gorge is the only east/west sea level pass through the Cascade Mountain Range it is a significant commercial corridor. Freeways, highways, rail lines, power lines and natural gas pipelines thread the lower elevations of the gorge. Higher elevations are dotted with radio, television, and Federal Aviation Administration and cellular telephone communication sites. In addition, the west end of the Columbia River Gorge borders the Portland Municipal Water Shed. There are three municipal airports (Troutdale, Cascade Locks, & The Dalles) within or adjacent to the National Scenic Area. The gorge is a training route for naval aircraft as well as a high traffic area both emergency (Coast Guard & Life Flight) and civilian aircraft. Wildland fire and suppression activities in the gorge routinely impact all of these services and uses.

**Wildlife:** A wildlife inventory prepared for the 1992 NSA Management Plan identified the following types of Wildlife in the Columbia Gorge; elk (Rocky Mt. & Roosevelt), deer, black bear, cougars, wolverine, mountain goat habitat (to be reintroduced), coyote, red fox, beaver (and other fur-bearers) Bald eagle, Golden eagle, Osprey, Peregrine falcon, Northern spotted owl, turkey, waterfowl, bats, amphibians (Red legged and Cascade Frogs), Great blue heron rookeries, woodpeckers, assorted rodentia (Yellowbellied Marmots, Pine marten, Purple martin Pika, squirrels, mice, moles, etc), tributary fish habitat, Western pond turtle, Larch mountain salamander, Rubber boa and California Mt. King snake.

Species federally designated as threatened or endangered

<u>Wildlife</u>	<u>Status</u>	<u>Known Sites</u>
Northern spotted owl	Threatened	20 owls, Hatfield Wilderness

<u>Fish</u>	<u>Status</u>
Steelhead trout	Threatened
Bull trout	Threatened
Chinook salmon	Threatened
Chum	Threatened
Coho Salmon	Threatened

**Species recognized by tribes** (cultural/spiritual significance): Tribes in ceremonial, subsistence and commercial treaty fisheries utilize Chinook and coho salmon, and steelhead trout. Pacific lamprey are also important for cultural and subsistence purposes. Deer, elk, bear, cougar, and grouse are used for meat, skins, or feathers.

**Anadromous Salmonids:** Four anadromous species are known to spawn within the confines of the Columbia River Gorge: steelhead trout (*Oncorhynchus mykiss*), Chinook salmon (*O. tshawytscha*), Coho salmon (*O. kisutch*), and chum salmon (*O. keta*).

**Resident Salmonids:** Rainbow trout are the predominant resident salmonid present. Cutthroat trout have been observed in Lindsey and Viento creeks. The possible presence of an inland subspecies of rainbow trout (*O. mykiss irideus*) is noted above barrier falls in Lindsey Creek but genetic confirmation is not yet completed. Resident rainbow and/or cutthroat trout occur in several subbasin streams above their waterfall barriers. Foraging or migrating bull trout are potentially able to use tributary mouths. A 1990 USFS survey found rainbow trout in Herman Creek up to at least River Mile 5.5. Cutthroat and rainbow trout have been observed in Phelps Creek above Frankton Road.

**Columbia River Tributaries:** There are some 54 streams and rivers that drain into the Columbia River within the National Scenic Area. These tributaries provide fish and wildlife habitat, irrigation, and recreation opportunities.

**Aquatic Resources:** Riparian plants in upper stream elevations within the upper Scenic Area and in the Hatfield Wilderness are believed to be in a natural condition. These riparian areas were assessed by the USFS as meeting ACS riparian plant objectives, and as having a high future potential to meet them (Tables 23 and 24, USFS1998). The Aquatic Conservation Strategy Objectives (ACS) are a series of 9 objectives that deal with maintaining or improving the ecological function of a watershed.

**Recreation:** Fire management policies, practices and activities can and do have a tremendous impact on recreational users in the gorge every year. The Columbia River Gorge has attracted recreational users for over 100 years. With its spectacular scenery, waterfalls and forested cliffs it has attracted visitors since before the turn of the century by steamboat and rail. The completion of the Historic Columbia River Highway ushered in the modern era of recreation. The corresponding increase in recreation use and easy access prompted the Secretary of Agriculture to designate the Columbia Gorge Park Division of the Oregon National Forest in 1915. The park stretched from Warrendale to Viento and appears to be the first time the Forest Service designated an area purely for recreational use.

Today the congressionally designated Columbia River Gorge National Scenic Area continues to be one of the most significant tourist destinations in the Pacific Northwest. In a recent visitor use survey (2001) total annual National Forest visits were estimated at 2.0 million with 3.2 million site visits. Day users make up the bulk of the visitation to the gorge at 89% while 11% were overnight visitors. Recreation activities that visitors engage in most often on National Forest Systems lands are

viewing wildlife/nature, hiking/walking, and general relaxation, driving for pleasure and visiting historic sites.

**Parks, Camp Grounds and Day Use:** Within in the Columbia River Gorge National Scenic Area there are some 60 state and federal parks, campgrounds, trailheads, visitor sites and other day use areas. There are well over 200 miles of maintained hiking; biking and horseback riding trails and two natural area preserves. In addition, there are six national and state fish hatcheries and three wildlife refuges.

**Windsurfing/Kite Boarding:** The Columbia River Gorge has become a world-renowned destination for windsurfers and kite boarders bringing thousands of visitors to the area every year.

**Weather Patterns Influencing Fire Behavior:** The Cascade Mountain Range serves as an effective moisture barrier causing weather systems to dump the majority of their moisture west of the peaks leaving the east end of the gorge in a “rain shadow.” As a result, the Columbia River Gorge National Scenic Area has two very distinct climates, east and west.

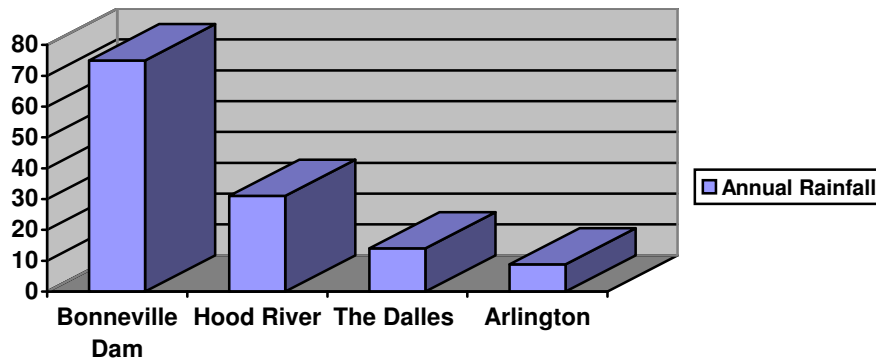
The Columbia River Gorge connects the Columbia Basin with the Willamette Valley and Pacific coastline. As a result, vigorous winds are common year round. In the spring and summer, wind direction is predominately from the west as the cooler west side air near the Pacific Ocean pushes through the gorge to replace the warmer rising air of the desert interior. In the fall this pattern begins to fluctuate and gives rise to significant episodic east wind events.

East end wind readings recorded at an Air Quality Monitoring Station in Wishram, Washington for the summer of 2000 show an average wind speed for June through August of 18.4 MPH, that the wind was out of the west 88 % of the time, and the maximum wind speed was 47.5 MPH.

Temperature readings measured in The Dalles, Oregon from 1975 through 1995 indicate that the east end of the gorge spends an average of 42.6 days above 90° F. The average number of days with temperatures between 90°-100° F. was 34 and an average of nine days are experienced with temperatures exceeding 100° F.

Rainfall totals are collected and averaged at weather stations managed throughout the gorge by the Oregon Climate Service (OCS). From 1961-1990 the station at Bonneville Dam recorded an average 74.99 inches of rain per year. The Hood River weather station averaged 31.05 inches of rain per year. During the same time period the OCS weather station in The Dalles recorded an average 13.97 inches of rain per year and the station in Arlington recorded an average 8.83 inches per year.

## 29-Year Average Annual Rainfall Amounts in Inches



Cool wet winters and warm dry summers characterize the climate in the western half of the gorge. These climatic conditions closely resemble the Mediterranean climates that occur in California.

In early September east wind conditions develop and the directional pattern throughout the gorge begins to fluctuate. Under the right atmospheric conditions the gorge acts like a chimney and carries the arid east wind directly through the west end of the gorge. Early settlers referred to the east wind as the “Devil Wind” for the fire problems it created.

From early September through mid-October the west end of the gorge offers the best of all worlds from a fire’s perspective. The tremendous fuel loading of a west side forest coupled with hot and dry wind and incredibly steep terrain make for some of the most spectacular burning conditions the Pacific Northwest has to offer.

Extreme fire behavior associated with the ‘Devil Wind’ has been observed in the west end of the Columbia River Gorge since the late 1800’s when the Yacolt Fire burned over 200,000 acres in less than 36 hours.

Like the remainder of western Oregon and Washington a winter rainfall climate predominates in the west end of the gorge. Season ending events usually occur by mid-October and rain generally continues to fall throughout the late fall and winter.

### Significant East Wind Fires

Yacolt Fire	238,000 acres	1902
Carson Fire	2,716 acres	1910
Stevenson Fire	7,606 acres	1917
Rock Creek Fire	52,500 acres	1927
Dole Valley Fire	202,500 acres	1929
Born	7,897 acres	1936
Beacon Rock	3,658 acres	1949
Skamania Fire	1,057 acres	1952
Multnomah Falls Fire	1,200 acres	1991
Herman Creek	375 acres	2003

While small, the Herman Creek fire is considered significant due to the complexity of the incident. Three structures were lost and many more were threatened, the Oregon State Conflagration Act was activated, Interstate 84 and the Union Pacific rail line were shut down for numerous days.

**Fire Season Determination:** Fires occur in all months of the year within the boundaries of Columbia River Gorge National Scenic Area. However, fire season in Columbia River Gorge is defined as the period between May 15 and October 31.

The climatic conditions that set up the typical fire season in the East FMU begin in late April as seasonal rains begin to taper off and the grass and brush reach maturity. By mid May the cheat grass (primary fire carrier) on the east end is typically 50-70% cured in the lower elevations and available to burn. During this same period, temperatures on the east end fluctuate between the mid-sixties and mid eighties and the strong west winds begin their daily migration through the gorge.

Fire season parameters were derived from this combination of decreased live and dead fuel moisture, increased temperatures and strong winds. Consistent with this data, the aforementioned historical fires show that of the fires within the analysis period, 98% occurred between May 15 and November 1.

For the West FMU “season ending events,” defined as, 1 inch of rain over a 3-day period after October 1, typically occur in mid to late October. Within the East FMU season ending events are defined as ¼ inch of rain over a 3-day period after October 1, with a favorable long range forecast. Season ending events in the East FMU typically occur in mid to late October.

### Characteristics Specific to the West FMU

Much of the West FMU burned during the “turn of the century fires” (1898-1910) and

as a result true old growth is rare. Pockets of old growth can be found on the Oregon side in the deeper drainages such as Herman Creek and Eagle Creek. Given the steepness of the slopes little timber harvesting has ever occurred above the elevation of 300 feet on most National Forest Systems land. Given these two factors, most of the lands managed by the unit on the Oregon side in this FMU are considered to be late seral forest reserves. River level forest communities include riparian hardwoods such as red alder, big leaf maple, black cottonwood and Oregon ash, and varied wetlands ecosystems. With the elevation rise these forest communities rapidly transition to Douglas fir and then upland western hemlock.

The geology and forest communities on the Washington side of the river are very similar to those found on the Oregon side. The primary difference is that the elevation rise occurs over a greater distance allowing for a greater amount of arable land. As a result, there is substantially more private and state protected land here than on the Oregon side.

The West FMU, on the Oregon side, hosts the Historic Columbia River Highway. The highway threads past spectacular waterfalls and offers access to miles of the most popular hiking trails in the gorge. This, coupled with its proximity to the greater Portland/metropolitan area makes it one of the most heavily visited Forest Service sites in the Pacific Northwest.

Jurisdictionally, ownership in the West FMU is a checkerboard of state, county, and private. The FMU encompasses portions of both Multnomah and Hood River Counties. Cooperating fire agencies on the Oregon side include the: Oregon Department of Forestry (The Dalles Unit of the Central Oregon District and the Molalla Unit of the North Cascades District), Multnomah County Fire District #14 (Corbet), Cascade Locks Fire Department, and West Side Fire Department (Hood River). To the south the West FMU borders the Mt. Hood National Forest along the Bull Run Water Shed and the Mark O. Hatfield Wilderness. Fire Management policies, decisions and practices in the gorge may have a direct impact on all of these agencies and resources.

Cooperating fire protection agencies on the Washington side of the river include the: Pacific Cascades and Southeast Regions of the Washington Department of Natural Resources; Skamania County Fire Districts #1, #2, #3, #4, & #5. The Scenic Area shares a 5 miles of boarder with the Gifford Pinchot National Forest some 3.5 miles north of Home Valley, WA. The FMU encompasses portions of Klickitat, Skamania, and Clark Counties.

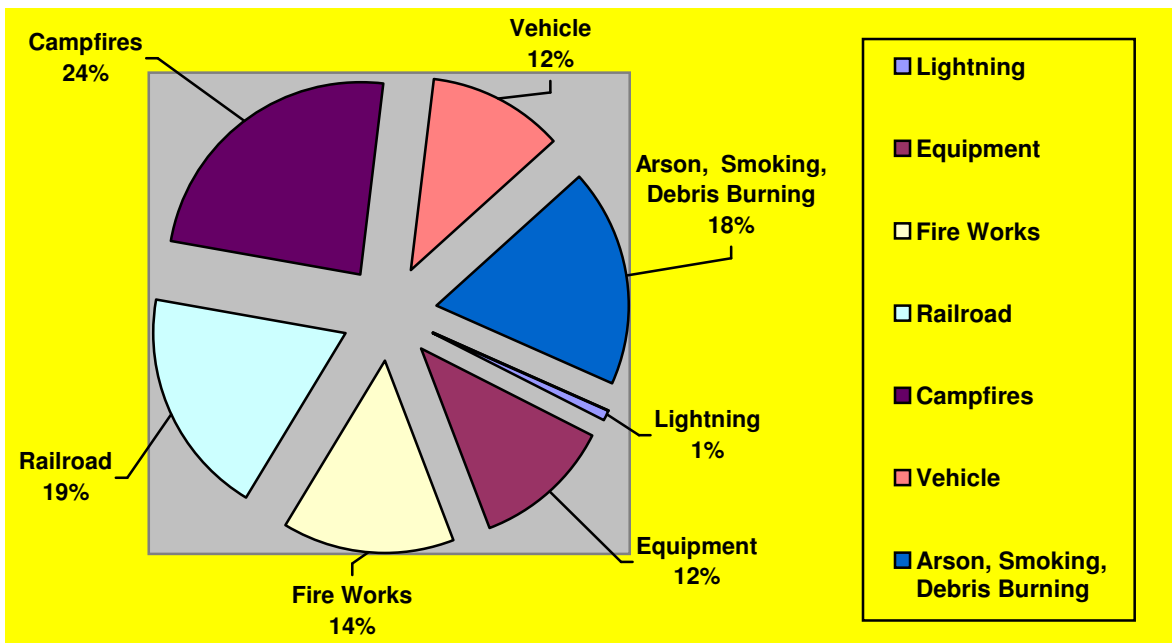
Incorporated communities in the West FMU include: Cascade Locks and Hood River on the Oregon side and North Bonneville, Stevenson, Carson, Home Valley, and White Salmon. Unincorporated communities include: Dodson/Warrendale, OR and Skamania, Cook, and Underwood, WA.

### Characteristics Specific to the East FMU

Beginning just west of Hood River the forest cover transitions from conifer to Oregon oak/ponderosa pine forests and finally annual grasses (cheat, reed canary, etc) with no over story in the East FMU. Additionally, slopes begin to moderate and river tributaries become less frequent here. Moderated slopes and drier climate allow for and invite higher population densities. As result, outside designated urban areas, the east FMU is a checkerboard of private, state, and federal ownership that falls in 5-20 acre parcels.

### Historical Fire Occurrence

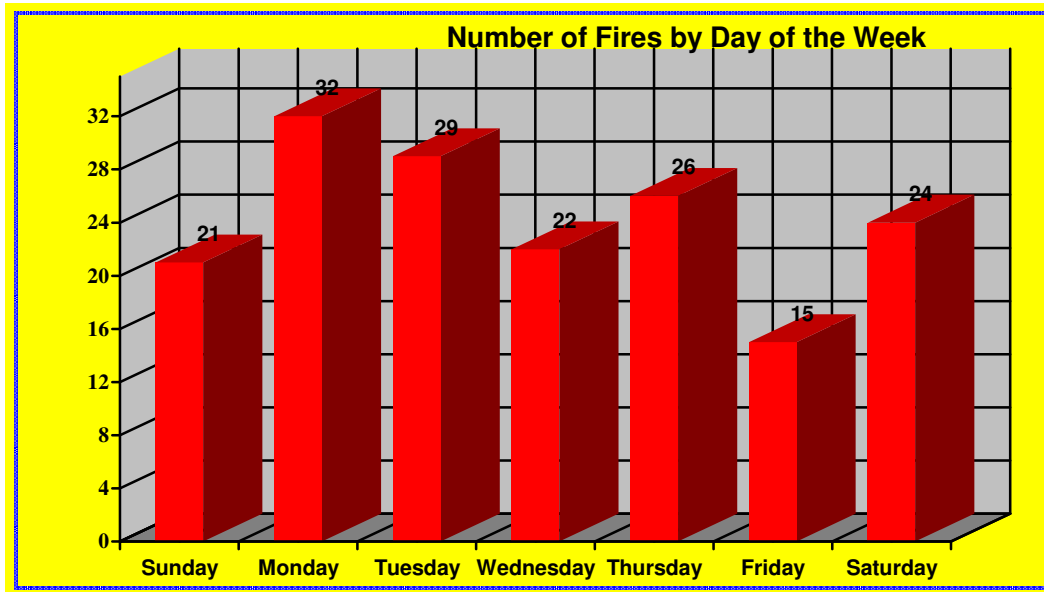
The unit used statistical fire information collected between 1992 and 2003 for analysis. Ignition point data from 169 fires were analyzed to determine fire locations, cause, and acres burned. The chart below displays the percentage of fires by cause.



From 1992 to 2003 the number of statistical fires was 70 fires in the west FMU and 88 fires in the east FMU. The number and type of starts is relatively even throughout the gorge yet given the fuel types and the consistent wind there is a large discrepancy between the numbers of acres burned in the east and west Fire Management Units.

In the same time period statistical fires burned a total of 16,954 acres within the Scenic Area for an average of 1,541 acres per year. Of those 16,954 acres, 16,204 of burned in the East FMU.

The data also reveals that the greatest number of starts occurred on Mondays, Tuesdays and Thursdays. As the chart below illustrates, fire starts during the remainder of the week are relatively even.



### Fire Management Situation

Fuel conditions that influence fire behavior: Fire has been a dominant and constant presence in the Columbia Gorge influencing vegetation for at least several centuries. Historic fires in the gorge have been a variety of sizes, from small patchy fires to very large burns covering thousands of acres.

On the east end initial fire carriers consist of annual grasses and shrubs which transport fire into typically overstocked stands of Ponderosa pine, Douglas fir, and white oak. Infestations of bark beetle, black cone pine scale, and mortality due to drought stress and stand density have created pockets of both standing and down and dead fuels.

Given the heavy urban interface and predominant winds, the fuel types and conditions in the east FMU where unwanted fires may occur can accurately be described as; *once annual grasses have cured and five days have passed without significant precipitation*. Recent examples of East FMU problem fires include:

1. The **Rowena Fire** burned 1200 acres of grass, pine and oak forcing the evacuation of 600 people on the west end of The Dalles, closed Interstate-84 and the Union Pacific rail line. The Rowena fire started on August 9, 1998



2. The **Major Creek Fire** consumed 400 acres of grass and scattered Ponderosa pine in mid July of 1999. Fire activity closed Washington State Route 14, forced the evacuation of some 40 residents and a Type II Incident Management Team was assigned.
3. The **Major II Fire** started in mid August 1999 and burned 300 acres of grass and scattered Ponderosa pine. One primary residence was destroyed and fire activity closed Washington State Route 14, the Burlington Northern/Santa Fe rail line and forced the evacuation of some 60 residents. A Type II Incident Management Team was assigned.
4. The **Murdoc Fire** of July 2002 burned 80 acres of grass. This fire destroyed 3 primary residences, closed Washington State Route 14 and forced residential evacuations.
5. The **Chip Mill Fire** burned 60 acres of grass, completely destroyed a chip mill and jumped the Columbia River to threaten the town of Dallesport. This fire burned in August 2002.

In the west FMU fuel types and conditions where unwanted fires cause problems typically develop with seasonal drying in early August and continue through mid-to-late October. West end fuels are dominated by a heavy natural loading that produces high resistance to control. This coupled with the exceptionally steep terrain; east winds, urban interface and infrastructure translate to wildfires that cause problems whenever they exceed 2-3 acres in size.

Recent examples of problematic West FMU fires include:

1. The **Wauna Point Fire** burned 70 acres of timber in September of 1991 and forced the evacuation of recreation sites and trails and closed campgrounds. Suppression activity forced modifications in the traffic patterns on Interstate-84. A Type II Incident Management Team was assigned.
2. The **Multnomah Falls Fire** started in early October 1991 and consumed 1200 acres of timber. Fire behavior closed Multnomah Falls (Oregon's most popular tourist attraction), the surrounding recreational trail systems, stopped traffic on Interstate-84 and eventually forced significant residential evacuations. A Type I Incident Management Team was assigned.
3. The **Eagle Creek Fire** burned 7 acres of timber in early August of 1997. The fire forced the closure of the Eagle Creek Camp Ground, the Eagle Creek trail and the shut down of a Bonneville Power Administration high voltage power line.

4. The **Oneonta Fire** burned 5 acres of timber in September of 2000 and forced the closure of Highway 30 for two days; as well as the evacuation and closure of the surrounding trail system.
5. The **Herman Creek Fire** burned some 375 acres of timber in early September 2003. This fire destroyed 3 primary residences, 1 commercial structure, closed Interstate-84 for 3 days, and shut down the Union Pacific rail line for a full day.

While the majority of fires within the Scenic Area are stopped at Class A, B and C fires, the entire drainage has a history of large fire activity. A total of 7 Class E & F fires ranging from 240 - 4,600 acres have occurred with one class G fire since 1991.

Mobilization of Type I or II Incident Management Teams has occurred 7 times since 1991 and “State Mobilizations” (Washington) and “Conflagration Act” enactments (Oregon) some 7 times since 1991.

Between 1992 and 2003 approximately 98 percent of fires in the gorge were human caused with the heaviest fire load coming in the months of June, July, August and September.

The eleven-year annual average for all fire causes is 15 fires per year burning an average of 1,541 acres per year.

Multiple fire days consisting of 2 or more fires per day have occurred 10 times since 1991.

**Control Problems and Dominant Topographic Features:** A 3,700-foot deep canyon dominates the gorge and its steep to vertical topography, frequent high winds and flashy to heavy fuel loading present problems on nearly every fire.

As previously mentioned in this document the Gorge FMU’s are laced with Urban Interface. There are 13 designated Urban Areas all of which encompass incorporated communities ranging in population from 300 to 12,500. There are eight unincorporated communities that range in population from 20 to 150. The majority of the private land that lies outside of these urban areas is broken into 5 to 20 acre parcels and is developed with homes and other structures. As a result approximately 85% of the lands protected against fire by the USDA Forest Service within the Scenic Area fall into the Wildland/Urban interface category.

Because the gorge is the only sea level pass through the Cascade Mountains and the Columbia River provides extensive amounts of hydro-electricity to the region, the Gorge FMU’s are rife with transportation, power and communication infrastructure. High voltage electrical power lines, natural gas pipelines, an interstate freeway, state highways, scenic byways, major rail lines, and communication sites traverse and dot

the unit and frequently become factors when setting suppression priorities and objectives.

All of the aforementioned elements routinely present fire suppression and aviation safety hazards and concerns. Such hazards are mitigated through agency standards and policy.

**Range of Potential Behavior**

The Columbia River Gorge supports a variety of fuel types, including grass; sage/grass; oak-brush/grass; Oregon white oak/ponderosa pine; Oregon white oak/ponderosa pine/mixed-conifer; and mixed conifer.

The following table represents the best available information on fuels complexes within the gorge and expected fire behavior during fire season. Wind elements were added to the calculations to reflect typical conditions in the gorge.

<b>Fuel Model 2 – Open Ponderosa Pine (Timber/Litter and Grass)</b>			
<b>Wind Speed mph</b>	<b>Rate of Spread (ROS) ch/hr</b>	<b>Flame Lengths ft</b>	<b>Fire Characteristics</b>
5	35	4	High POI and rapid ROS due to fine herbaceous fuel
20	377	13.7	High POI and rapid ROS due to fine herbaceous fuel, torching & spotting
<b>Fuel Model 6 – Decadent white oak with FM 2 ground fuel</b>			
5	32	6	High rates of spread due to minimal wind break associated with white oak
20	123	10.5	Long range spotting due to leaf characteristics and high POI of grass component.

<b>Fuel Model 2 – Grasslands/Sagebrush (Grass Fuel Group)</b>			
5 mph	35	4	Rapid ROS through fine herbaceous intermixed brush with fire brand spotting & a high POI
20 mph	343	13.7	
<b>Mixed Conifer (Timber Fuel Group)</b>			
5 mph	7.9	4.8	Stand maturity & crowding causes greater limb count that can lead to faster ROS
20 mph	48	10.8	Due to abundant ladder fuels this has the highest ROS of the timber group

**Fire Prevention, Community Education, Community Risk Assessment and Community Assistance Activities:** The annual prevention program includes special events, education programs, outreach, signing and patrol during high probability ignition times (July 4, etc.). The Fire Prevention Plan including the unit’s latest Risk Assessment and Mitigation System (RAMS) is on file at the unit.

Fire prevention activities also include participation in the Mid-Columbia Fire Prevention Cooperative and the Western Washington Cooperative. The Scenic Area is an active participant in prevention events and education programs throughout the Columbia Gorge. Examples of events include the Spring Safety Fair (Fire Prevention, Emergency Medical Services, Search and Rescue), county fairs (Wasco, Hood River Skamania & Klickitat) parades, rodeos and special events (Smokey’s birthday, park openings etc). Education programs include “Team Teaching” and an outreach program that targets fifth and sixth graders. The prevention program also includes an area sign program and outreach and prevention material at Multnomah Falls, which sees approximately 1.5 million visitors per year.

With the national emphasis on the Wildland Urban Interface the Scenic Area is involved in implementing Firewise Councils and partnerships, Firewise evaluation and risk planning and assessments for communities throughout the gorge.

The Western Governors Association definition of Wildland Urban Interface (WUI) will be used to define WUI and Non-WUI projects: “*Wildland urban interface – The line, area, or zone where structures and other human development meet or*

*intermingle with undeveloped wildland or vegetative fuels (Glossary of Wildland Fire Terminology, 1996).* This definition includes municipal watersheds.

The priority for both mechanical and prescribed fire hazardous fuels work is intended to be WUI until such a time as the WUI areas are treated or determined to no longer rate as communities at risk involving the Columbia River Gorge National Scenic Area.

**Special Orders and Closures:** The Scenic Area Manager or delegated acting has the authority to issue restrictions and closures. Fire restrictions and closures are closely coordinated with local cooperators (WADNR S/E, WADNR S/W, ODF The Dalles, ODF Molalla, & Mid-Columbia Fire & Rescue) and neighboring forests (Mt Hood NF & Gifford Pinchot NF). Annual fire closures in Klickitat County go into effect on July 1. In Skamania, Hood River, Wasco and Multnomah Counties fire closers go into effect when state fire jurisdictions institute burn bans. There are annual fire closures in place for Chenoweth Table, the Warrendale Riverfront, and the Sandy River Delta that take effect on July 1.

**Industrial Operations and Fire Precautions:** Industrial Fire restrictions are closely coordinated with the states of Oregon and Washington as well as the Mt. Hood National Forest and the Gifford Pinchot National Forest. The majority of commercial operations on National Forest Systems lands within the Columbia River Gorge National Scenic Area are contractors working on Forest Service recreation, trails, and fuels projects.

The majority of the counties and communities associated with the Columbia River Gorge National Scenic Area have completed or initiated Community Wildfire Protection Plans (CWPP). As of June 9, 2008 the following counties and communities have approved CWPP's: Wasco County; The Dalles, Rowena, Mosier, Hood River County; Hood River and Cascade Locks, Skamania County; Carson/Home Valley, Klickitat County; Lyle, Wishram, Dallesport, White Salmon, and Bingen.

As of June 9, 2008 the following communities in Skamania County have CWPP's that are anticipated to be approved by August 2008: Underwood and Mill A.

As of June 9, 2008 the following counties and communities have initiated CWPP's: Stevenson, Skamania, and North Bonneville in Skamania County and Multnomah County.

**Training:** Training and fitness requirements for all personal involved in fire suppression and fuels management requiring fire line qualifications can be found in PMS 310-1, FSH 5109.17, and the Interagency Standards for Fire and Aviation Management.

Attendance at annual fire refresher training along with successful completion of the appropriate level of work capacity fitness test is a prerequisite for the issuance of a “Red Card.” The unit’s Incident Qualifications Review Committee meets bi-annually to review and approve fire and aviation qualifications.

**Fire Season Readiness:** The unit’s line officer or acting along with the Fire Staff Officer conduct annual fire readiness reviews consistent with emphasis found in the *Pacific Northwest Fire and Aviation Management Wildland Fire Preparedness* guide. Readiness Reviews are typically conducted in late June or early July once seasonals are on and have completed mandatory training. Readiness Review records are maintained in the CGF fire office.

**Incident Business Management Guidelines:** The unit uses the current Interagency Incident Business Management Handbook for the uniform application of interagency policy and guidelines. Likewise, the unit follows all FSM and FSH direction regarding fire and fire procurement.

**Fire Cache Considerations, Stocking Levels and Management:** The unit maintains a small cache stocked to fully outfit its engine crews as well as two twenty-person crews and fully plumb a 10-acre fire. Cache inventory and management, including equipment maintenance and replacement is consistent with Region 6 cache standards. Equipment maintenance and replacement records and schedules can be found at the fire cache, which is located in the Herman Creek Work Center.

**Detection:** Fire detection within the Columbia River Gorge relies upon reports from other agencies, the public and employees. Activity patrols at high probability times and in likely areas within the gorge are routinely conducted on the ground, with fire detection flights following lightning storms. Aerial detection is closely coordinated for coverage by coordinating flights with local cooperators.

**Fire Weather and Fire Danger:** There are no Remote Automatic Weather Stations (RAWS) within the Columbia River Gorge National Scenic Area and RAWS stations on neighboring forests are not representative of weather conditions within the gorge. As a result, the CGF uses weather data from area METAR stations at The Dalles Municipal Airport and the Troutdale Airport.

**Forest Service Policy, Manual and Handbook Direction:** There are no policies or directions that are strictly unique to the unit.

**Engine Configuration:** The unit maintains two Model 33U, Type VI engines and provides 3 cooperative firefighters for engines managed by the states of Oregon and Washington. Coop firefighters are typically assigned to Type VI and/or Type IV

engines, which, under the operating plan, are local shared resources for fire dispatches within the gorge.

The Forest Service engines are staffed with 3 people, seven days per week and the coop engines are staffed with 2-3 people five days per week.

The unit adheres to *Safety* guidelines and direction as found in Forest Service Manuals and Handbooks as well as National and Regional supplemental standards such as the *Interagency Standards for Fire and Fire Aviation Operations*.

**Critical Thresholds of Firefighting Resource Needs:** The unit maintains thorough qualifications records in ICQS and the availability of those resources is routinely updated through the Resource Ordering and Status System (ROSS). In addition, MHF dispatch maintains a list of CGF fire-qualified individuals in their Mob Guide and routinely dispatches them to local, regional and national incidents.

Minimum initial attack resource needs on the unit have been identified as one Type III Incident Commander, one FS Type VI engine module, and three coop engine modules.

**Aviation Management:** The Columbia River Gorge NSA, the Mt. Hood National Forest and the Gifford Pinchot National Forest (Tri-Unit) share an Aviation Officer. All flights involving CGF employees and/or projects are coordinated through the Tri Unit Aviation Officer. The unit shares an aviation plan with the Tri-unit, a copy of which is on file in the fire management office. Local vendors are available and may be ordered through dispatch or acquired through contracting.

**Initial Attack:** Initial attack is aggressive fire suppression action consistent with firefighter and public safety. Tactics and strategies will be based on the current and predicted fire behavior and weather. Through agreement, the Mt Hood National Forest dispatches CGF resources.

**Information Used To Set Initial Attack Priorities:** The highest priority fires within the Columbia River Gorge for initial attack are ranked as fires that:

- 1) Threaten life
- 2) Threaten real property
- 3) Threaten natural, cultural, and historical resources.

Initial Attack standards may be found in the *Interagency Standards for Fire and Fire Aviation Operations*. Initial attack dispatch and fire reporting procedures are located in the MHF Mobilization Guide.

**Appropriate Initial Attack Response:** Criteria that is used to define the appropriate level of initial response is negotiated between federal, state, and local

cooperators annually and documented in the local operating plan as well as the “Pre-planned Dispatch Blocks,” which are included in the Mt. Hood NF Mobilization Guide.

**Confinement as an Initial Strategy:** The unit has fire protection responsibility for four islands that lie within the Columbia River. They are: Miller; Wells; Ives; and Skamania Islands. A confinement strategy may be implemented on the islands when current and extended weather and fuels conditions are such that escape from the island is considered improbable. Confinement may also be a strategic selection for the islands when resources are limited.

**Tracking Type III-V Incidents Including Identification of IC and Transition Process:** All personnel arriving on Type III-V fires will make contact with the IC or Operation Section Chief (when assigned) for a complete briefing. The preferred method of contact will be face-to-face however; there may be instances when a radio or cell phone briefing is required. Once resources have been briefed the IC will notify dispatch for documentation in the IA log.

**Tracking Work/Rest:** Fire Duty Officers will track work/rest via daily monitoring and through the review of time sheets to ensure that agency and regional standards are met.

**Response Times:** The unit has Type VI engines and patrol modules stationed at various locations throughout the gorge. Average response times range from ten to twenty-five minutes for lower elevation fires (the vast majority of the unit’s fire load) and three to six hours for remote higher elevation fires in the steep topography on the west end, specifically on the Oregon side.

**Restrictions and Special Concerns:** The Columbia River Gorge National Scenic Area manages no wilderness areas. As a result there are no general restrictions on equipment, aircraft, fire retardant or fireline explosives within the unit.

**Social and Political Issues:** The unit encompasses portions of two states, six counties and includes 13 incorporated communities. The tribes of Warm Springs, Yakama, Nez Pierce, and Umatilla share treaty rights to fisheries, fishery habitat and cultural sites in the area. At last count there were some 120 special interest groups that monitor and advocate for and against activities in the gorge. As a result, there are frequently competing interests and political concerns. While there are myriad issues, at the fire management level, differences have been worked out through cooperative agreements and local operating plans.

**Extended Attack Fires and Large Fire Suppression:** Extended attack operations may or may not be in conjunction with declaring a fire an escape. This is dependent upon whether or not tactical objectives can be achieved with on-scene and assigned



in-coming resources. Consistent with the ISFFA a fire that has escaped initial attack and is considered in extended attack when it:

- Has not been contained by the initial attack resources dispatched to the fire
- Will not have been contained within the management objectives established for the area
- Has not been contained within the first full operational period and there is no estimate of containment or control.

Implementation of extended attack operations denote that either initial attack objectives and/or tactics have failed, or are anticipated to fail based on current information. Implementation of extended attack operations may also result from the inability to implement initial attack actions in a timely manner due to priority setting during multiple ignition events.

**WFS Development:** A Wildland Fire Situation Analysis (WFS) for extended attack and large fire suppression may be prepared to evaluate suppression responses that have exceeded initial attack or planned management capability. For multiple jurisdiction fires that exceed initial attack a WFS should be prepared when Forest Service protection exceeds 25% and/or the fire threatens to move onto or continue burning additional FS systems lands.

**Complexity Process for Incident Transition:** Extended Attack fires can be managed as a more complex initial attack action where on-going tactical operations will achieve control objectives; or as a transition period between initial attack and large fire management. This occurs when committed resources are unable to meet tactical and control objectives. In either case, as an incident becomes more complex the need for an increased level of planning, oversight and depth in the incident management organization is necessary. Specific Incident Command System organizational and hazard mitigation issues must be addressed to support on-going operations in order to maintain a proactive management approach. The focus will remain on fire fighter and public safety.

**Transition From Initial Attack (IA) When:**

- Attempts to complete an IA incident with normal tactics are unsuccessful
- Management complexity increases beyond current capability
- Current and/or predicted resource availability will not achieve tactical objectives
- Information is sporadic, incomplete and not understood.
- Crew, Supervisory Control and Management Oversight Levels meet or exceed predetermined levels. Supervisory controls will be maintained at the 3-7 span of control and qualifications will match current and expected complexity.

Management oversight will be conducted by qualified personnel and should be ordered as fire danger thresholds are potentially met to ensure adequate staffing prior to fire occurrence.

Critical human factors shall be considered when planning for and implementing extended attack operations. Clear objectives, continuous monitoring and evaluation of firefighter actions, quick and decisive decision making on the incident and by managers, and anticipation of tactical needs for current and future operational periods are all necessary to manage an incident at the extended attack level. Adherence to work rest guidelines and fatigue management are also essential elements of EA management.

The transition from IA to extended attack operations should be managed systematically to provide for continuous actions. This transition requires strong leadership and positive situational awareness.

Extended attack and large operations on the unit are based on the established protocols set forth in the *Interagency Standards for Fire and Fire Aviation* and are intended to provide for/that:

- Safety of the public and fire fighters is not compromised
- Critical intelligence is gathered
- Communication channels are secure
- Positive command and control structure is in place
- Critical information is well understood by all
- Strong effective leadership is in place
- Work rest guides are followed and fatigue management is in place
- All personnel are qualified in the positions assigned
- Decisions are regularly reviewed
- Human factors including decision-making and situational awareness are monitored

Extended Attack incidents should be continuously evaluated against these criteria to assist in the decision to continue actions or transition to a large fire organization.

Extended Attack positions that are available within the Tri-Unit area such as Incident Commander Type III (ICT3), Task Force Leader (TFLD), Strike Team Leader Crews (STCR) and support positions are reported to MHF dispatch daily. A standing Type III organization is then formalized and available to be dispatched within the Tri-Unit area. These resources can also be ordered, as needed, by initial attack Incident Commanders and Fire Duty Officers.

Additional direction for extended attack operations can be found in the *Interagency Standards for Fire and Fire Aviation Operations*.

**Transition to Large Fire Operations:** Treat the Extended Attack transition to Large Fire management as an incident within an incident. Established protocols, including the Agency Administrators Briefing found in Interagency Standards for Fire and Fire Aviation Operations, should be used. Communicate intentions, and staff appropriately to manage the transition and continue to stress fire fighter and public safety.

Utilize complexity analysis's to assist in the decision to transition to a large fire organization. In that three or more of the items listed in the standard complexity analysis are routinely experienced on CGF incidents the anticipated duration of the incident is also used as part of the decision criteria.

**Exceeding Wildland Fire Implementation Plan (WFIP):** A WFIP is a progressively developed assessment and operational management plan that documents the analysis and describes the appropriate management response for a wildland fire. Given that the appropriate management response for all fires within the unit has been identified as suppression, the likelihood of exceeding a WFIP virtually nonexistent.

**Emergency Rehabilitation and Restoration:** The unit has had four fire rehabilitation projects since 1992. The unit does not have a formal Fire Rehabilitation Plan. When emergency rehabilitation or restoration is needed, an interdisciplinary-burned area rehabilitation team is formed, and plans are developed at that time. Emergency fire rehabilitation based on FMU requirements would most likely be focused on:

- Slopes of 40% where surface erosion from water is likely
- Temporary fences should be considered in areas where grazing pressure may inhibit re-establishment of native plants following wildfire.
- Re-seeding of natural vegetation to restore plant communities.
- Road obliteration or restoration

**Equipment Rental Agreements:** The unit uses emergency rental agreements prepared through a zoned contracting office located on the Mt Hood National Forest. Copies are maintained in Mt. Hood N.F. dispatch and the unit fire office.

**Fuels and Prescribed Fire:** The Columbia River Gorge National Scenic Area Act created the unit in 1986. In 1992 the Scenic Area initiated its fire management program. Since 1986 the unit has continued to acquire lands, most of which have been under state or private management. As a result, the prescribed fire and fuels management program on the unit is young.

**Planning and Documentation:** The unit's prescribed fire program is linked to treatments outlined in the Area's 5-year plan. The unit projects that its mechanical

fuels manipulation will allow prescribed burning (other than pile burning) to begin in 2007.

Fuel Project prioritization is based on fire regime, condition class, location within a WUI, and known contingencies such as community involvement in concurrent projects. Priorities may change due to flexibility in contingency planning.

The project priority and schedule table on page 12 of the five-year plan lists each treatment area and the planned data collection, planning, implementation, and prescribed maintenance burn years. Planning a larger area allows more flexibility and variety of implementation methods and creates shelf-stock quickly. It also means that most of our environmental documents will most likely be Environmental Assessments: Each project will be formally monitored and the monitoring results will be applied to the next treatment unit.

**Collaboration:** Described below are current relationships the Forest Service developed in the unit regarding fire prevention and vegetation treatment needs and priorities:

**City of Cascade Locks and City of White Salmon:** The unit's Fire Staff attended to planning meetings concerning fire prevention (including fuels management) organized by city planners in addition the regular meetings of the Columbia Gorge Local Coordinating Group.

**Burdoin Mt. Residents:** The Burdoin Mt. project was coordinated with the efforts of local residents to reduce fuel loading around their homes. The first phase of this treatment was completed in 2005 and the second phase is currently under scheduled under a Stewardship contract.

**Oregon Department of Transportation:** Unit staff offers technical assistance to ODOT's forester in order to facilitate their efforts to treat and control vegetation when necessary to protect safety along the Interstate 84. The establishment of this relationship will contribute a new line of communication concerning treatment needs on National Forest System lands.

**Rowena Dell Homeowners Association:** NF System lands border and intrude into the housing development in Rowena Dell. The unit's goal is to work with the neighborhood association to establish a permit that allows them to keep fuels down on NF lands within the development. The unit has initiated fuels reduction on NF at a landscape level surrounding the area.

**Gifford Pinchot and Mt. Hood National Forest:** The unit's vegetation team includes employees from the Gifford Pinchot NF in order to share skills. Additionally, in that the unit has no timber target, employees from the Gifford

Pinchot N.F. provided the timber and silviculture expertise for the Catherine Creek Stewardship Contract which is a fuels reduction/forest health project which encompasses some 1200 acres in Klickitat County. Unit fire management resources assist both the Mt. Hood N.F. and Gifford Pinchot N.F. in meeting their prescribed fire targets. We have agreed to move people and money where the work is needed as the basis of our fuels contingency planning.

**WADNR and ODF Firewise Landscaping and Defensible Space and National Fire Plan Grants:** Senior members of the unit's fire management program cooperate with these agencies in order to help them navigate the complex planning regulations in the CRGNSA. In addition, the unit plans its fuels treatment areas to coincide with the efforts of communities actively taking advantage of this program.

**Washington Department of Fish & Wildlife:** The unit has developed a relationship with Washington State Fish and Wildlife regarding prescriptions for restoring oak woodlands.

**The Long Term Prescribed Fire Strategy:** The unit's prescribed fire strategy is consistent with FSM 5150.2 and identifies, develops, and maintains fuel profiles that contribute to the most cost-efficient fire protection program in support of land and resource management direction. Areas of naturally occurring hazardous fuels will be identified and treatment plans will be developed. The quantity of acres treated annually is dependant on completed NEPA work and the allocation of funding.

Levels and methods of fuel treatment will be guided by the protection and resource objectives of each management area. The following will be considered when prioritizing which projects will be funded by appropriated hazardous fuels funds:

- Urban Interface Treatment Acres (including municipal watersheds)
- Fire Regime Classification
- Current Condition Class
- T&E Habitat Protection
- Decision Notice signed
- Further prioritization may consider:
  - Watershed Analyses
  - Region 6 Fuels Policy 1999
  - Review and Update of the 1995 Federal Wildland Fire Management Policy: [http://www.nifc.gov/fire\\_policy/index.htm](http://www.nifc.gov/fire_policy/index.htm)
- Project longevity, management allocation, cooperative partnerships, NEPA work completed, and probability of completion, safety considerations, and potential for success.

Economic efficiency will be a consideration when selecting proposed fuel treatments, including the decision to not treat fuels. Several methods exist including the Fuels Appraisal Process (FAP), as taught in Elements of Fuels Management RX-450, and the fire prevention planning software Risk Assessment and Mitigation Strategies (RAMS), available through fire prevention technicians.

**Numbers and kinds of qualified personnel necessary for the Rx Fire program:** Due to the youth and size of the unit's fuels management program and its ability to draw on neighboring forests and cooperators for resources the unit currently requires no recourses, beyond that of the suppression program.

The unit requires that all personnel engaged in prescribed fire duties meet or exceed the standards established by FSM 5109-17. A certified prescribed fire burn boss will supervise all prescribed fires. The Burn Boss will have experience in the specific fuel model and be qualified at the prescribed fire complexity rating.

**Prescribed Fire Accomplishment Reporting:** and documentation will be done through FACTS. Likewise, fuels treatments on federal lands within the Columbia River Gorge National Scenic Area documented via FACTS.

**Burn Plan Requirements:** While Forest Service direction (FSM 5140.42) allows the Forest Supervisor (Area Manager) to delegate Burn Plan approval authority, the Area Manager will approve all Burn Plans.

A written burn plan will be prepared and approved prior to any ignition. The required elements are discussed in the Federal Wildland and Prescribed Fire Policy Guide and the Forest Service Manual 5140 as well as the Interagency Standards for Fire and Fire Aviation Operation.

**Burn Plan Elements:** All elements of the R-6 standardized burn plan should at least be considered; however, the extent that each element is evaluated and described depends on the complexity of the burn. If an element does not apply to a given burn such may be documented in the burn plan. All Burn Plans will be reviewed to insure that they meet agency and FMP requirements and are technically sound.

Contingency resources, if required, will be identified in the Burn Plans and will be activated through dispatch or the Duty Officer in the event that dispatch is not staffed. The Duty Officer will coordinate for contingency resources on a daily basis and will survey Daily Staffing reports the evening prior to the burn to evaluate the number of personnel available for contingency.

Planning for and implementing the prescribed fire program involves operations during the entire year. These operations include planning, reconnaissance, evaluation, documentation, the development of prescriptions, interagency coordination, smoke management, interdisciplinary team coordination, upward reporting and request for funding, fire effects monitoring and accomplishment evaluation, personnel management and training, fiscal analysis, coordination with the public regarding fuels treatments and their timing, coordination of hazardous fuels treatments on non-federal land. The FMO and AFMO will ensure all new projects are properly coordinated with the public, staff and interagency partners through appropriate planning procedures and documents.

After each prescribed fire is implemented the Burn Boss will prepare a post-burn cost, tactical, and operations summary. A critique of operations, safety, communications, smoke impacts, prescribed fire behavior and lighting sequencing, contingency needs and overall achievement of burn objectives will be performed by the burn boss and documented for the intention of program improvement.

**Exceeding Existing Burn Plan:** In situations where implementation of the prescribed fire was unsuccessful the contingency plan outlined in the burn plan will be followed. If on scene resources cannot contain the escaped fire then additional suppression actions will be consistent with the direction outlined in the contingency plan.

**Smoke Management:** Pertinent air quality issues within the Columbia Gorge include:

- The Columbia River Gorge National Scenic Area is considered a “smoke sensitive area”
- The Unit’s proximity to the Portland/Vancouver metropolitan area.
- Its location near Class I Air Sheds.

Activities that will create smoke emissions must follow the States of Oregon and Washington Smoke Management Plans. Generally this requires registering planned burns, inputting the planned acreage amounts and locations, and reporting actual activity accomplishments. FASTRACS is currently the program used to track and transmit this information.

**Location of Class I Air Sheds:** The Mt. Adams Wilderness on the Gifford Pinchot National Forest and the Mt. Hood Wilderness on the Mt. Hood National Forest are the only Class I Air Sheds in the vicinity of the Columbia River Gorge National Scenic Area. The Mt. Hood and Gifford Pinchot National Forests maintain Visibility Plans for these Class 1 Areas.

**Local and Regional Smoke Management Restrictions and Procedures:** The Columbia River Gorge National Scenic Area addresses smoke management through NEPA and State Implementation Plans (SIP, Oregon and Washington). The Environmental Protection Agency (EPA) has identified seven items that should be addressed in NEPA documents if prescribed fire is planned for fuel treatment (Regional guidance letter June, 1992) they are:

- Describe alternative fuel treatments considered and reasons why they were not selected over prescribed fire.
- Quantify fuels to be burned (acres, tons, types).
- Describe types of burns (broadcast, piles, understory, etc.)
- Describe measures taken to reduce emissions (fuels moisture content, site preparation, removal of some debris (PUM, YUM, whole tree yarding, etc).
- Quantify the amount of PM10 and PM2.5 emissions to be released
- Describe the regulatory/permit requirements for burning
- Provide a qualitative description of air quality impacts of burning activities, focusing on new or increased impacts on down wind communities, visibility impacts in Class I Wilderness, etc.

**Reporting Processes:** Smoke from all management-ignited burning must be reported. The software program FASTRACS will be used to meet the requirements for prescribed fire smoke management reporting to the States of Oregon and Washington. Registering, planning and reporting accomplishment of prescribed fire activities will be accomplished using FASTRACS and FACTS. The database will be updated with accomplishment information within 2 weeks of completing an activity.

Ignitions will be coordinated with surrounding units and Forests for the successful management of emissions that occur during peak periods of activity.

The Prescribed Fire Manager is responsible for ensuring that the data is properly entered into the database, prior to the burn, the day of the burn, and following completion. This work may be delegated to the assigned Burn Boss or other knowledgeable personnel.

**Operational Requirements:** Dispersion models exist to help plan and project smoke dispersion. NFSPuff3 is currently the best model when used with metrological information obtained from the MM5 Model. Others exist and more are in the design phase.

**Forecasts:** Smoke dispersal forecasts are provided by ODF and are available via the Internet. For multiple day burns or on marginal days it is recommended that they be contacted for additional guidance and consultation concerning the burn.



**Mechanical Treatments and Other Applications:** The unit's mechanical treatments are outlined in the 5-year plan. Proposed mechanical treatments consist primarily of hand and light mechanical applications. In 2003, the unit contracted its first mechanical fuels reduction project in the Burdion Mt WUI for 180 acres. These acres were moved from FRCC III to FRCC II. Since that time, the unit has treated some additional 450 acres with another 1200 acres approved under NEPA for a Stewardship Contract.

**Monitoring and Evaluation:** Monitoring and evaluating the fire program will occur to determine if the program and associated projects are meeting the various resource plans directions and to determine if the costs of implementing the fire program and management effects are occurring as predicted.

Monitoring related to wildland fire or fire related projects falls under the general monitoring and evaluation guidelines outlined in the Land & Resource Management Plans. Site specific monitoring needs are identified in analysis for individual fire related projects.

Monitoring and evaluation are separate, sequential activities that provide information to determine whether programs and projects are meeting Management Plan direction. Monitoring collects information, on a sample basis, from sources specified in the Management Plan. Evaluation of monitoring results is used to determine the effectiveness of the Management Plan and the need to either change the plan through amendment or revision, or to continue with the plan. Overall direction is found in FSM 1922.7, FSH 1909.12 (CH. 6), and 36 CFR 219.12(k).

1. The goals for monitoring and evaluating this Plan are to determine:
2. How well the Columbia River Gorge is meeting its planned goals and objectives.
3. If existing and emerging public issues and management concerns are being adequately addressed.
4. How closely the Plan's management standards are being followed.
5. If outputs and services are being provided as predicted.
6. If the effects of implementing the Plan are occurring as predicted;
7. If the costs of implementing the Plan are as predicted;
8. How implementing the Plan is affecting the land, resources, and communities adjacent to or near the Columbia Gorge;
9. If activities on nearby lands managed by Federal or other governmental agencies are affecting management of the Columbia River Gorge.
10. If research is needed to support the management of the Plan; and
11. If there is a need to amend or revise the Plan.

The result of the evaluation of data gathered during monitoring may lead to the following types of action:

1. Continuing the management practices;
2. Referring the problem to the appropriate line officer for improvement of the application of the management practice;
3. Modifying the management practice as a Forest Plan amendment;
4. Modifying the land management prescription as a Forest Plan amendment;
5. Revising the schedule of outputs;
6. Revising the cost/unit output; or
7. Initiating revision of the Unit Plan.

**Annual Monitoring** (including Government Performance and Results Act): The unit will monitor and evaluate the fire program to determine whether the program and associated projects are meeting plan direction. Specific goals are to:

1. Ensure that the plan goals and objectives are being achieved and management prescriptions are being implemented as directed.
2. Determine if the costs of implementing the fire program and the management effects are occurring as predicted.

The unit will carry out monitoring commensurate with the risks, costs, and values involved in meeting fire program and plan objectives through resource management. This may include the use of the formal management review system in FSM 1400 as an approach to evaluate the overall effectiveness of fire program monitoring. Involve the public and other agencies, as appropriate, in the monitoring process.

**Requirements from LRMP's and Management Plan:** Conduct implementation monitoring as part of routine assignments and document the results in project files as part of fire management responsibilities. Implementation monitoring should be used to determine if prescriptions, projects, and activities within the fire program are implemented as designed and in compliance with fire program and plan objectives, standards, and guidelines.

Effectiveness monitoring is intended to determine if plans, prescriptions, projects, and activities are effective in meeting management objectives, standards, and guidelines. Resource and/or technical specialists should conduct this level of monitoring on a limited basis as determined by resource values and risk, and by public issues. The unit should initiate effectiveness monitoring only after determining that the fire program prescription, project, or activity to be monitored has been implemented according to plan direction.

Validation monitoring determines whether the initial data, assumptions, and coefficients used in development of the fire program are correct or if there is a better way to meet fire program and plan regulations, policies, goals, and

objectives. Conduct validation monitoring when effectiveness monitoring indicates that basic assumptions or coefficients are questionable. In general, conduct validation monitoring by establishing permanent plots or studies in close coordination with research personnel. Limit the scope of validation monitoring to coefficients and standards that are not reasonably substantiated by existing research. These levels are defined in FSM 1922.7.

**Minimum Monitoring to Address Key Issues and Questions:** The Fire Staff shall monitor program performance and document the results annually. The evaluation shall estimate how well the objectives of the plan are being met, and measure the deviation from the expected costs and outputs of the fire management analysis process. This measurement and evaluation must recognize that planned program performance based on the analysis process is measured in terms of expected outputs for the time period referenced in the plan. These outputs may deviate from this plan due to weather and other natural, variable factors; measurements taken over a decade or longer better reflect performance.

The evaluation should include, as a minimum, the following:

1. The changes in fire activity (fire occurrence and acres burned by size and intensity) and comparison with the predictions derived in the LNV for that area where fuel conditions have been altered by management practices.
2. A comparison of the prevention program projections for person-caused fires, with trends evidenced by the fire occurrence statistics.
3. An evaluation of the adequacy of the fire management organization to meet the expected fire frequency and size distribution at the expected cost and net value change levels as projected for the selected fire program.
4. A determination of the adequacy of the value change analysis, by comparing the reported annual value change from the individual fire reports with the projected analysis.

**Evaluation of Monitoring Results:** Monitoring and evaluation are separate, sequential tasks. Monitoring is designed to observe and record the results of both natural processes and actions permitted by the plan. Evaluation examines those results, determines how well those results meet plan direction, and identifies measures to keep the plan viable.

**Evaluation Techniques:** Use a full spectrum of techniques and methods to evaluate the results obtained from monitoring. Evaluation techniques include, but are not limited to:

1. Site-specific observations by on-site resource specialists.
2. Field assistance trips by other technical specialists.
3. General field observations by unit officials.

4. On-going accomplishment reporting processes.
5. Formal management reviews on a scheduled basis.
6. Discussions with other agencies and the public users.
7. Management team review of monitoring results.
8. Interdisciplinary team reviews of monitoring results.
9. Involvement with existing research activities.
10. Review and analysis of records documenting monitoring results.

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DANIEL T. HARKENRIDER  
Area Manager  
Columbia River Gorge National Scenic Area

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Date